



Hewlett Packard
Enterprise

HPE ProLiant DL325 Gen10 Server Maintenance and Service Guide

Abstract

This guide describes identification and maintenance procedures, diagnostic tools, specifications and requirements for hardware components and software. This guide is for an experienced service technician. Hewlett Packard Enterprise assumes that you are qualified in the servicing of computer equipment, trained in recognizing hazards in products, and are familiar with weight and stability precautions.

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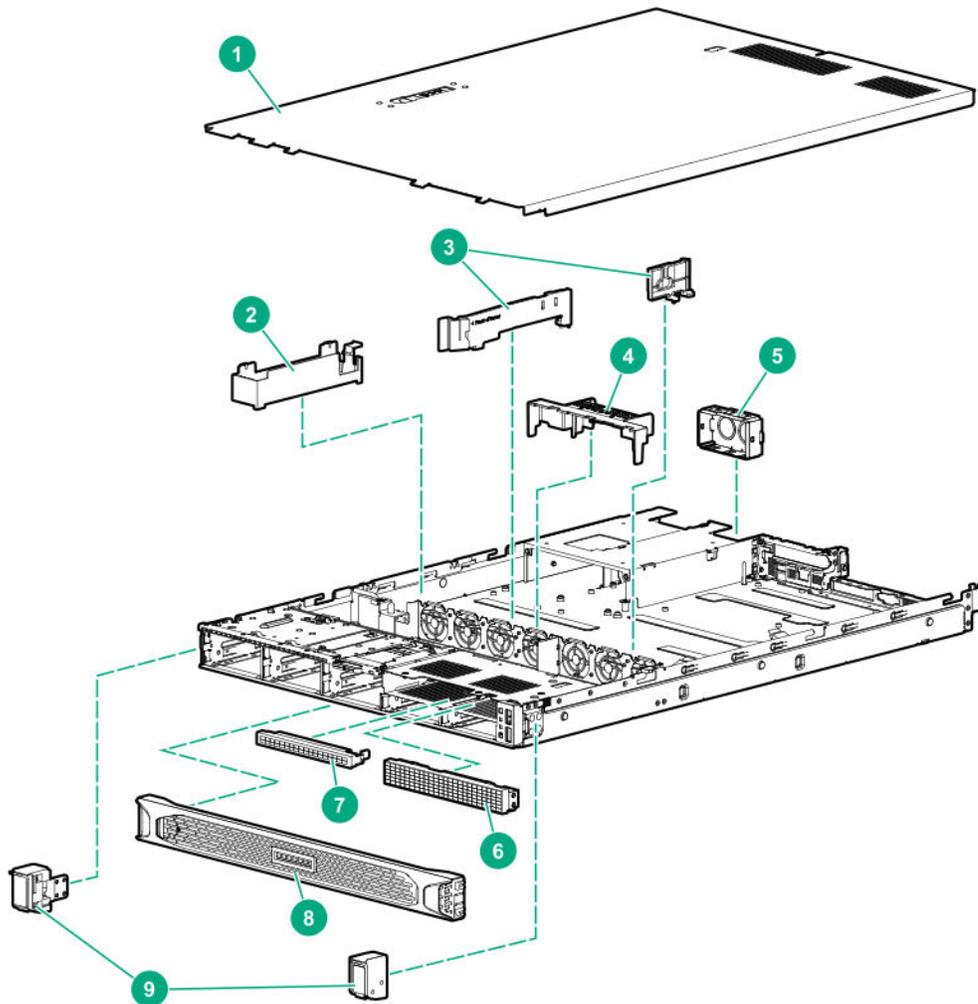


Illustrated parts catalog

Mechanical components

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

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



Item	Description
1	<u>Access panel spare part</u>
2	<u>Energy pack holder and fan blank spare parts</u>
3	<u>DIMM guard spare kit</u>
4	<u>Air baffle spare part</u>
5	<u>Power supply blank spare kit</u>

Table Continued



Item	Description
6	Media bay blank in SFF spare part
7	ODD blank spare part
8	Front bezel spare part
9	Chassis ear spare kit
10	Drive blank spare parts*
11	Secondary riser blank spare kit*

* Not shown

Access panel spare part

Customer self repair: mandatory

Description	Spare part number
Access panel	P06971-001

Energy pack holder and fan blank spare parts

Customer self repair: mandatory

Description	Spare part number
<ul style="list-style-type: none"> Energy pack holder Fan blank 	878530-001

DIMM guard spare kit

Customer self repair: mandatory

Description	Spare part number
<ul style="list-style-type: none"> Left DIMM guard Right DIMM guard 	P06972-001

Air baffle spare part

Customer self repair: mandatory

Description	Spare part number
Air baffle	P07015-001

Power supply blank spare kit

Customer self repair: mandatory



Description	Spare part number
Power supply blank ¹	775423-001

¹ The following items in the 775423-001 spare blank kit are not for use in this server:

- PN 750694-001
- PN 750695-001
- PN 750699-001

Media bay blank in SFF spare part

Customer self repair: mandatory

Description	Spare part number
2SFF media bay blank	878534-001

ODD blank spare part

Customer self repair: mandatory

Description	Spare part number
ODD blank	878533-001

Front bezel spare part

Customer self repair: mandatory

Description	Spare part number
Front bezel	875561-001

Chassis ear spare kit

Customer self repair: mandatory

Description	Spare part number
<ul style="list-style-type: none"> • Left ear 	P07014-001
<ul style="list-style-type: none"> • Right ear 	

Drive blank spare parts

Customer self repair: mandatory

Description	Part number
SFF drive blank	670033-001
LFF reduced length drive blank	827363-001



Secondary riser blank spare kit

Customer self repair: mandatory

Description	Spare part number
Secondary riser blank ¹	878632-001

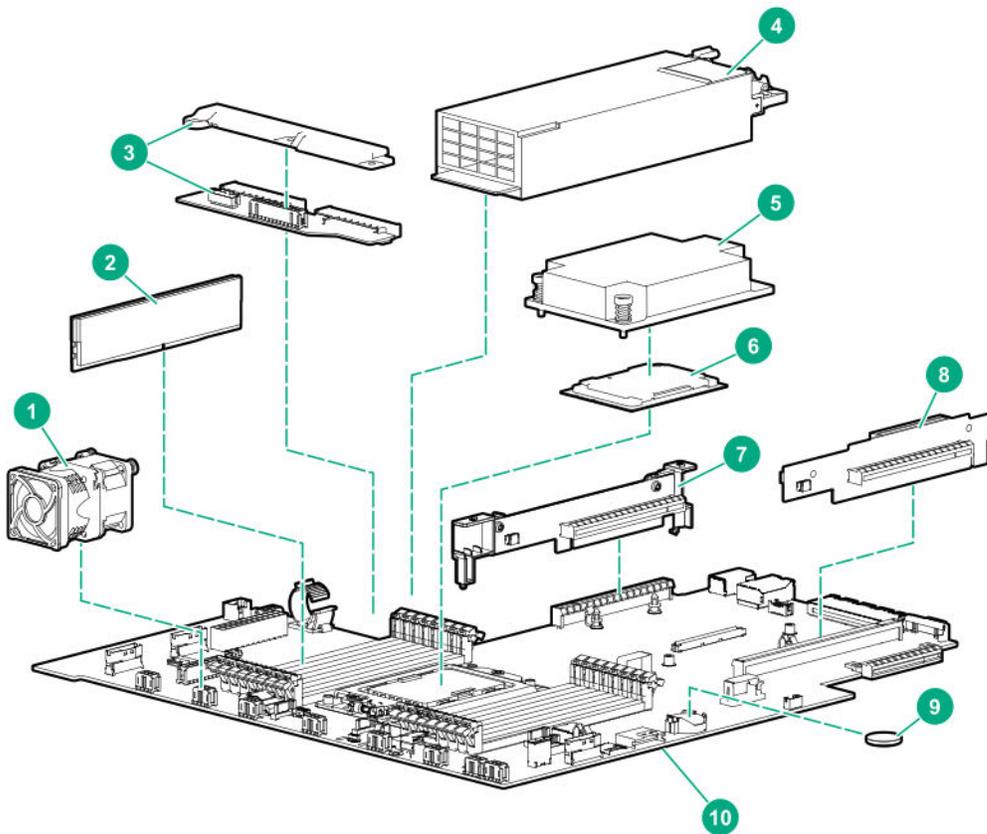
¹ The following items in the 878632-001 spare blank kit are not for use in this server:

- PN 870847-001
- PN 873529-001
- PN 575499-001

System components

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

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



Item	Description
1	Fan spare parts
2	DIMM spare parts
3	Power distribution board (PDB) spare part

Table Continued



Item	Description
4	Power supply spare parts
5	Heatsink spare parts
6	AMD EPYC 7xx1 processor spare parts AMD EPYC 7xx2 processor spare parts
7	Secondary riser board
8	Primary riser board
9	System battery spare part
10	System board assembly spare parts

Fan spare parts

Customer self repair: mandatory

Description	Spare part number
LFF fan (single rotor, standard)	878537-001
SFF fan (dual rotor, high-performance)	P06973-001

DIMM spare parts

Customer self repair: mandatory

Description	Spare part number
2666 MT/s DIMMs	—
8 GB, single-rank x8 PC4-2666V-R	868841-001
16 GB, single-rank x8 PC4-2666V-R	870840-001
16 GB, dual-rank x4 PC4-2666V-R	868842-001
32 GB, dual-rank x4 PC4-2666V-R	868843-001
64 GB, dual-rank x4 PC4-2666V-L	868844-001
64 GB, dual-rank x4 PC4-2666V-R	P06182-001
128 GB, dual-rank x4 PC4-2666V-L	868845-001
2933 MT/s DIMMs	—
8 GB, single-rank x8 PC4-2933Y-R	P19255-001
16 GB, single-rank x8 PC4-2933Y-R	P19253-001
16 GB, dual-rank x4 PC4-2933Y-R	P19254-001
32 GB, dual-rank x4 PC4-2933Y-R	P19252-001
64 GB, dual-rank x4 PC4-2933Y-L	P19251-001

Table Continued



Description	Spare part number
64 GB, quad-rank x4 PC4-2933Y-R	P19250-001
128 GB, quad-rank x4 PC4-2933Y-L	P19402-001

Power distribution board (PDB) spare part

Customer self repair: optional

Description	Spare part number
<ul style="list-style-type: none"> PDB PDB cover 	P07017-001

Power supply spare parts

Customer self repair: mandatory

Description	Spare part number
500W non-hot-plug power supply kit	866726-001
500W Flex Slot Platinum hot-plug power supply kit	866729-001
800W Flex Slot Titanium hot-plug power supply kit	866793-001
800W Flex Slot Universal hot-plug power supply kit	866727-001
800W Flex Slot Platinum hot-plug power supply kit	866730-001
800W Flex Slot -48VDC hot-plug power supply kit	866728-001
1600W Flex Slot Platinum hot-plug power supply kit	863373-001

Heatsink spare parts

Customer self repair: optional

Description	Spare part number
Standard heatsink	P06775-001
Performance heatsink (for 180 W TDP and higher processors)	P06774-001

AMD EPYC 7xx1 processor spare parts

Customer self repair: optional

Description	Spare part number
2.0GHz AMD EPYC 7251 processor, 8c, 120W	P00656-001
2.0GHz AMD EPYC 7401P processor, 24C, 170W	882445-001
2.0GHz AMD EPYC 7501 processor, 32C, 155W	P00651-001
2.0GHz AMD EPYC 7551P processor, 32C, 180W	882446-001

Table Continued



2.1GHz AMD EPYC 7281 processor, 16C, 170W	P00657-001
2.2GHz AMD EPYC 7301 processor, 16C, 155W	P00655-001
2.2GHz AMD EPYC 7601 processor, 32C, 180W	P00649-001
2.3GHz AMD EPYC 7451 processor, 24C, 180W	P00652-001
2.4GHz AMD EPYC 7351P processor, 16C, 170W	882444-001
2.5GHz AMD EPYC 7261 processor, 8C, 170W	P05452-001
3.1GHz AMD EPYC 7371 processor, 16C, 200W	P12475-001

AMD EPYC 7xx2 processor spare parts

Customer self repair: optional

Description	Spare part number
2.00GHz AMD EPYC 7702 processor, 64C, 200W	P17332-001
2.00GHz AMD EPYC 7702P processor, 64C, 200W	P17333-001
2.20GHz AMD EPYC 7552 processor, 48C, 200W	P21963-001
2.30GHz AMD EPYC 7352 processor, 24C, 155W	P21227-001
2.35GHz AMD EPYC 7452 processor, 32C, 155W	P17338-001
2.40GHz AMD EPYC 7532 processor, 32C, 200W	P25585-001
2.50GHz AMD EPYC 7502P processor, 32C, 180W	P17335-001
2.80GHz AMD EPYC 7282 processor, 16C, 120W	P23685-001
2.80GHz AMD EPYC 7402P processor, 24C, 180W	P17337-001
2.90GHz AMD EPYC 7272 processor, 12C, 120W	P23686-001
3.00GHz AMD EPYC 7302P processor, 16C, 155W	P17340-001
3.10GHz AMD EPYC 7232P processor, 8C, 120W	P22808-001
3.20GHz AMD EPYC 7262 processor, 8C, 155W	P17341-001

Riser board spare parts

Customer self repair: optional

Description	Spare part number
Primary riser board	P06514-001
Secondary riser board	P07016-001

System battery spare part

Customer self repair: mandatory

Description	Spare part number
System battery	319603-001



System board assembly spare parts

Customer self repair: optional

Description	Spare part number
System board with handle tool for AMD EPYC 7xx1 processors ¹	P07018-001
System board with handle tool for AMD EPYC 7xx2 processors ²	P17137-001

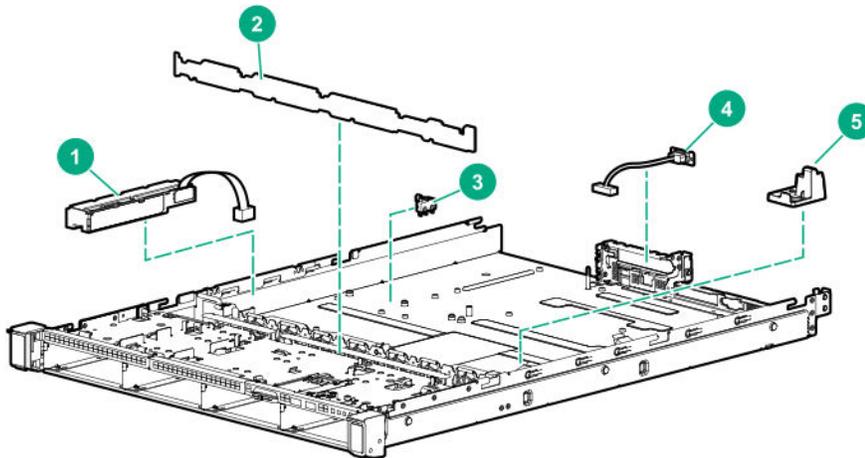
¹ For this system board to support both the AMD 7xx1 and 7xx2 processors, the system ROM A41 version 2.0 or later is required.

² Embedded 4x 1GbE network port is not equipped.

Server options

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

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



Item	Description
1	<u>Energy pack spare parts</u>
2	<u>Backplane board spare parts</u>
3	<u>Chassis intrusion detection switch spare part</u>
4	<u>Serial port cable spare part</u>
5	<u>GPU holder spare part</u>
6	<u>iLO Service Port spare part*</u>
7	<u>Cable spare parts*</u>
8	<u>HPE Trusted Platform Module 2.0 Gen10 spare part*</u>
9	<u>Thermal grease spare part*</u>
10	<u>FlexibleLOM adapter spare part*</u>
11	<u>Pensando Distributed Services Platform card spare parts*</u>



*Not shown

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

Backplane board spare parts

Customer self repair: optional

Description	Spare part number
4LFF SAS/SATA drive backplane	872885-001
8SFF SAS/SATA drive backplane	780428-001
2SFF SAS/SATA drive backplane	775401-001
2SFF NVMe drive backplane	875080-001
8SFF NVMe drive backplane	P07019-001

Chassis intrusion detection switch spare part

Customer self repair: mandatory

Description	Spare part number
Chassis intrusion detection switch	875570-001

Serial port cable spare part

Customer self repair: mandatory

Description	Spare part number
Serial port cable	875571-001

GPU holder spare part

Customer self repair: mandatory



Description	Spare part number
GPU holder	878630-001

iLO Service Port spare part

Customer self repair: optional

Description	Spare part number
iLO Service Port	878346-001

Cable spare parts

Customer self repair: mandatory

Description	Spare part number
USB 3.0 and SFF front I/O cable kit	878787-001
LFF front I/O cable kit	878541-001
ODD SATA cable	878324-001
4LFF SATA cable	878327-001
4LFF Mini-SAS cable	878758-001
4LFF S100i Mini-SAS to SATA cable	P09654-001
Power cable from system board to drive backplane and ODD	878332-001
8SFF SATA cable kit	P07471-001
8SFF Mini-SAS cable kit	878328-001
Power cable from 8SFF drive backplane to 2SFF drive backplane	875566-001
2SFF SATA cable kit	P07472-001
2SFF slimline/Mini-SAS and PDB cable kit	P07072-001
<ul style="list-style-type: none"> • Slimline cable for 2SFF NVMe • Mini-SAS cable for 2SFF SAS/SATA • Power cable for PDB 	
Signal cable for PDB	878322-001
8SFF NVMe slimline and power cable kit	P07020-001

HPE Trusted Platform Module 2.0 Gen10 spare part

Customer self repair: no

Description	Spare part number
HPE Trusted Platform Module (TPM) 2.0 Gen10	872159-001



Thermal grease spare part

Customer self repair: mandatory

Description	Spare part number
2.0g thermal grease (1g per processor)	777298-001

FlexibleLOM adapter spare part

Customer self repair: mandatory

Description	Spare part number
HPE Ethernet 1Gb 4-port 366FLR Adapter	669280-001

Pensando Distributed Services Platform card spare parts

Customer self repair: optional

Description	Spare part number
Pensando DSP DSC-25 2p SFP28 card	P27682-001
Pensando DSP iLO Sideband ALOM Module	P27683-001



Customer self repair

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

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

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

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

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

Parts only warranty service

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

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

Réparation par le client (CSR)

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

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



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

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

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

Service de garantie "pièces seules"

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

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

Riparazione da parte del cliente

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

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

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

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

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

Servizio di garanzia per i soli componenti

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



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

Customer Self Repair

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

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

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

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

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

Parts-only Warranty Service (Garantieservice ausschließlich für Teile)

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

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

Reparaciones del propio cliente

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



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

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

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

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

Servicio de garantía exclusivo de componentes

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

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

Customer Self Repair

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

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

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



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

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

Garantieservice "Parts Only"

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

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

Reparo feito pelo cliente

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

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

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

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

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



Service de garantie apenas para peças

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

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

カスタマーセルフリペア

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

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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。

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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。



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Removal and replacement procedures

Required tools

Some procedures may require the following tools:

- T-25 Torx screwdriver (for screws located inside the front panel quick-release ears)
- T-10/T-15/T-20 Torx screwdriver
- Flathead screwdriver (for replacing the system battery)

Safety considerations

Before performing service procedures, review all the safety information.

Preventing electrostatic discharge

To prevent damaging the system, be aware of the precautions you must follow when setting up the system or handling parts. 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 device.

Procedure

- 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.

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

Before installing a server, be sure that you understand the following warnings and cautions.



WARNING: To reduce the risk of electric shock, personal injury, and damage to the equipment:

- Do not attempt to service any parts of the equipment other than those specified in the following procedure. Any other activities may require that you shut down the server and remove the power cord.
- Installation and maintenance of this product must be performed by individuals who are knowledgeable about the procedures, precautions, and hazards associated with the product.



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





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

- Do not disassemble, crush, or puncture the energy pack.
- Do not short external contacts.
- Do not dispose of the energy pack in fire or water.

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

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

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

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



CAUTION: 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.



Warnings and cautions



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: Electrostatic discharge (ESD) can damage electronic components. Be sure that you are properly grounded (earthed) before beginning any installation procedure.



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.

Preparation procedures

To access some components and perform certain service procedures, you must perform one or more of the following procedures:

Procedure

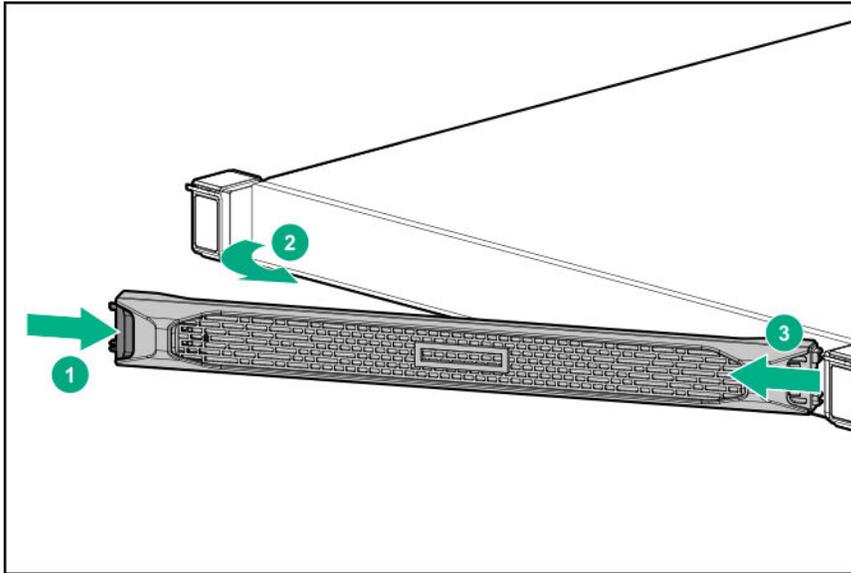
- If installed, **remove the bezel.**
- **Power down the server.**
- **Extend the server from the rack.**
- **Remove the server from the rack.**
- **Access the product rear panel.**
- **Remove the access panel.**
- **Remove the air baffle.**

Removing the bezel

Procedure

1. Remove the Kensington security lock.
2. Remove the bezel.
 - a. Press the latch.
 - b. Open the bezel.
 - c. Detach the bezel from the latch ear.





To replace the component, reverse the removal procedure.

Powering down the server

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

Prerequisites

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

Procedure

1. **Remove the bezel.**

2. 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.

3. Verify that the server is in standby mode by observing that the system power LED is amber.

Extending the server from the rack

To perform this procedure, you will need a T-25 screwdriver.



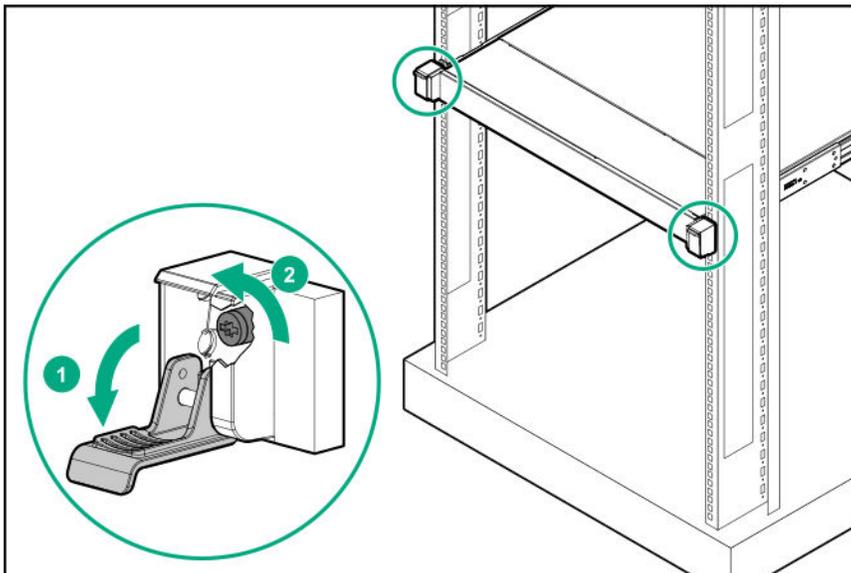
NOTE: If the cable management arm option is installed, you can extend the server without powering down the server or disconnecting peripheral cables and power cords. These steps are only necessary with the standard cable management solution.

⚠ 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.

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

Procedure

1. If installed, **remove the bezel.**
2. **Power down the server.**
3. Disconnect all peripheral cables and power cords.
4. Do the following:
 - a. Open the latches on both sides 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.



5. Extend the server on the rack rails until the server rail-release latches engage.



Removing the server from the rack



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

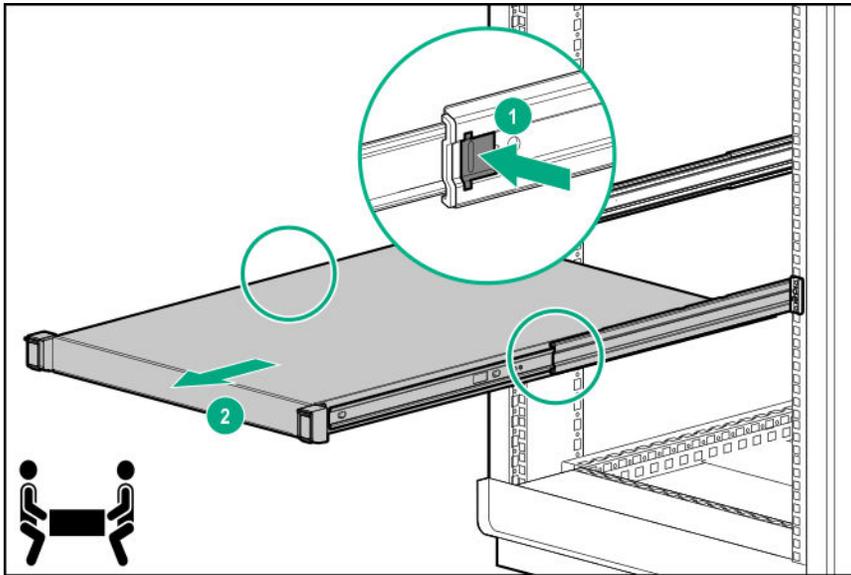
- Observe local occupational health and safety requirements and guidelines for manual material handling.
- Get help to lift and stabilize the product during installation or removal, especially when the product is not fastened to the rails.

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

Procedure

1. If installed, **remove the bezel.**
2. **Power down the server.**
3. **Extend the server from the rack.**
4. Remove the server from the rack. Press and hold both server rail-release latches while removing the server.



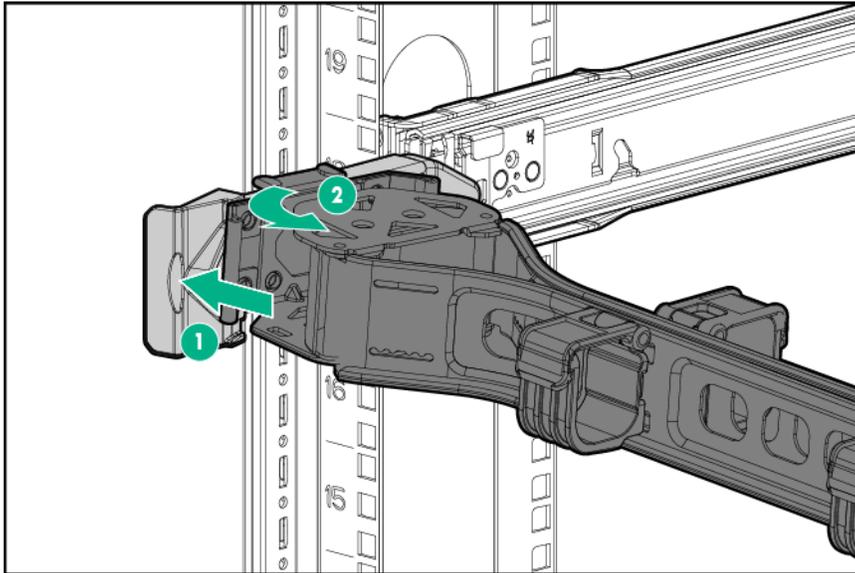
5. Place the server on a sturdy, level surface.

Accessing the product rear panel

Procedure

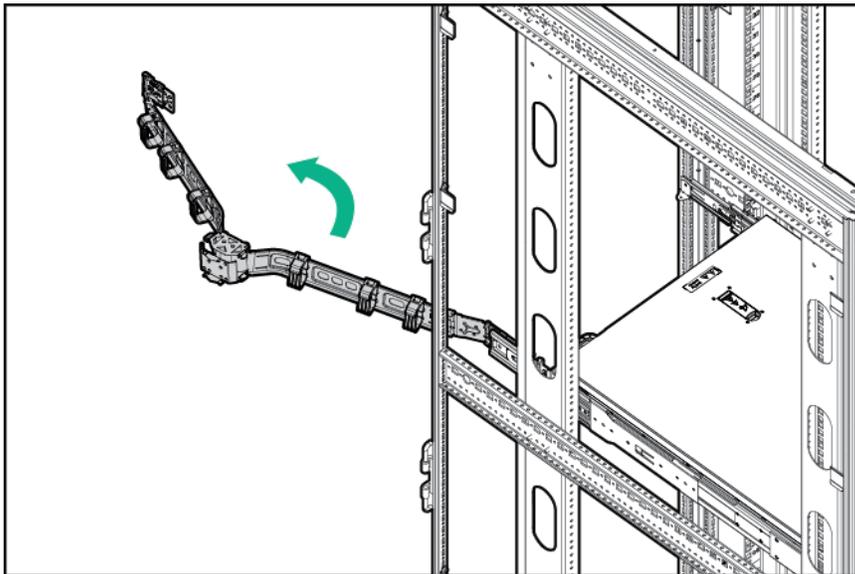
1. Release the cable management arm.





2. Open the cable management arm.

The cable management arm can be right-mounted or left-mounted.



Removing the access panel

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

Prerequisites

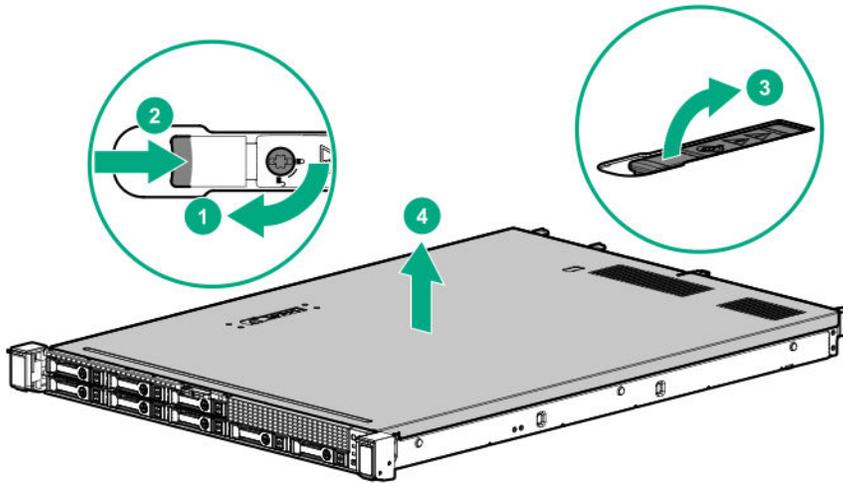
Before you perform this procedure, make sure that you have a T-15 Torx screwdriver available.

Procedure

1. If installed, **remove the 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:
 - a. If necessary, unlock the access panel latch.
 - b. Press the release button and pull up the latch to disengage the access panel from the chassis.
 - c. Lift up the access panel to remove the panel from the chassis.



Removing the air baffle

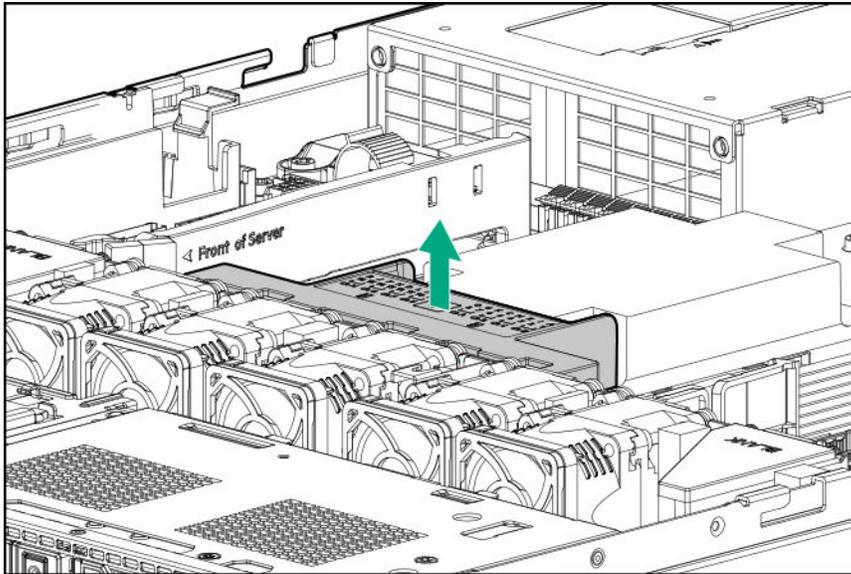
⚠ CAUTION: For proper cooling, do not operate the server without the access panel, baffles, expansion slot covers, or blanks installed. If the server supports hot-plug components, minimize the amount of time the access panel is open.

Procedure

1. If installed, **remove the 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.



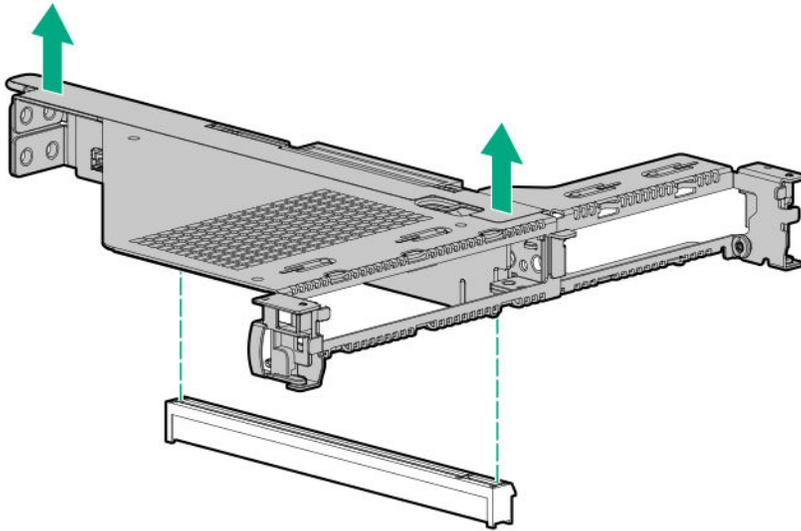
Remove the primary riser cage

- ⚠ CAUTION:** To prevent damage to the server or expansion boards, power down the server, and disconnect all power cords before removing or installing the PCIe riser board.

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. If present, disconnect all cables from the expansion board.
7. Remove the primary riser cage.





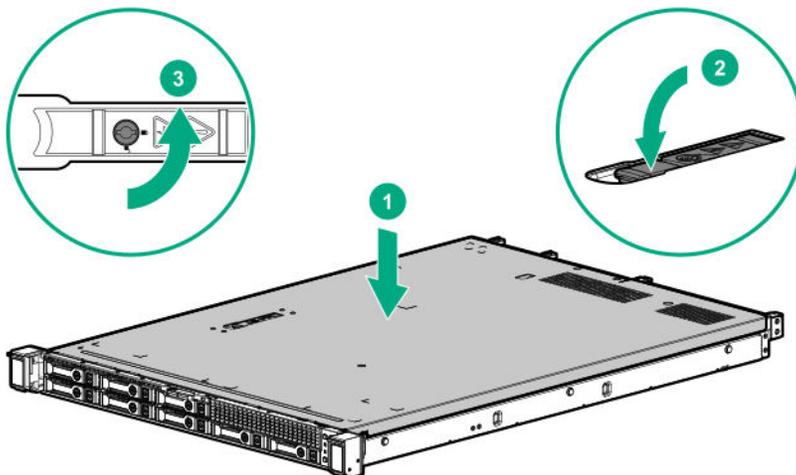
Installing the access panel

Prerequisites

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

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, if needed.



Installing the server into the rack

To install the server into a rack with square, round, or threaded holes, see the instructions that ship with the rack hardware kit.

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

- Observe local occupational health and safety requirements and guidelines for manual material handling.
- Get help to lift and stabilize the product during installation or removal, especially when the product is not fastened to the rails. Hewlett Packard Enterprise recommends that a minimum of two people are required for all rack server installations. A third person may be required to help align the server if the server is installed higher than chest level.
- Use caution when installing the server in or removing the server from the rack; it is unstable when not fastened to the rails.

⚠ 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.

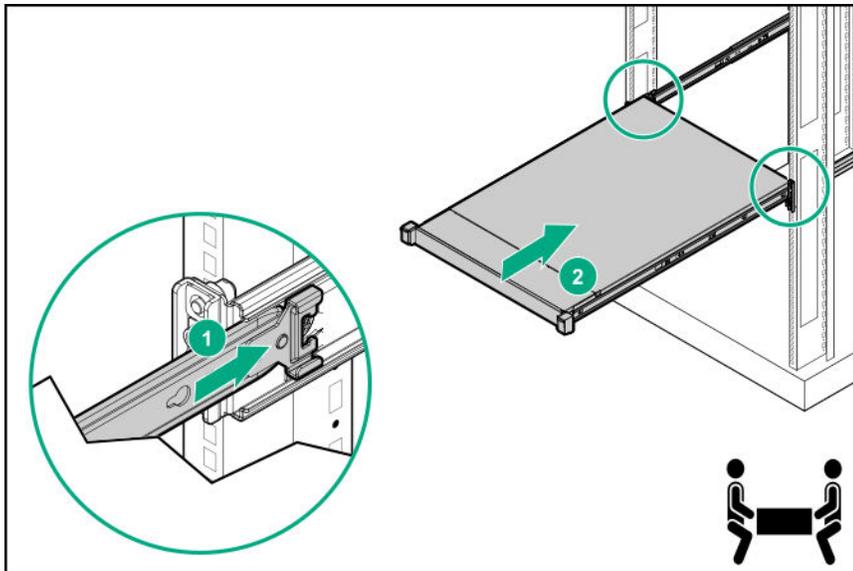
Procedure

1. Install the rack rail option.

For more information, see the installation instructions that ship with the selected rail system.

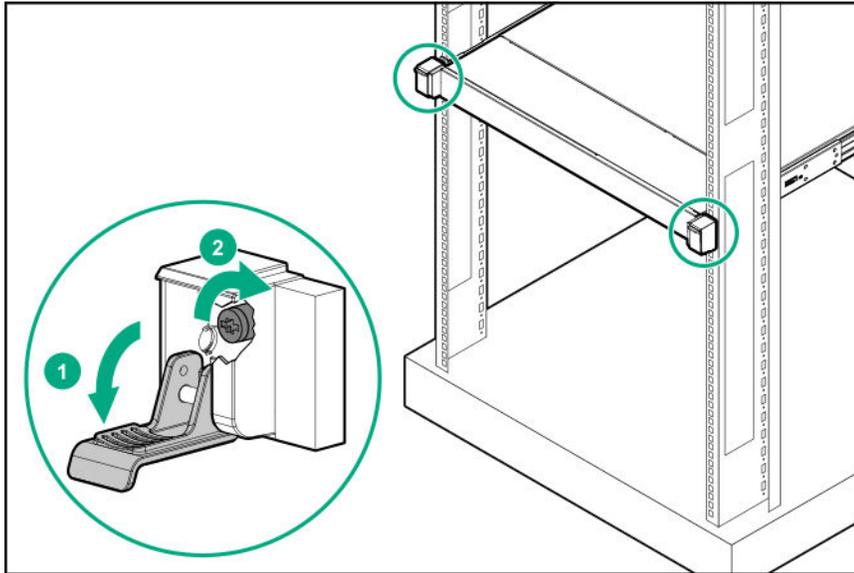
2. Install the server into the rack:

- a. Align the inner rail of the server with the outer rail.
- b. Slide the server into the rack until the quick-release latches engage with the front columns of the rack.



- c. Open the latches and tighten the shipping screws, if necessary.





3. Install the cable management arm into the rack.
For more information, see the installation instructions that ship with the option.
4. Connect peripheral devices to the server.
For information on identifying connectors, see **Rear panel components**.
5. Connect the power cord to the rear of the server.
6. Use the hook-and-loop strap to secure the power cord.
7. Connect the power cord to the power source.

Installing the access panel

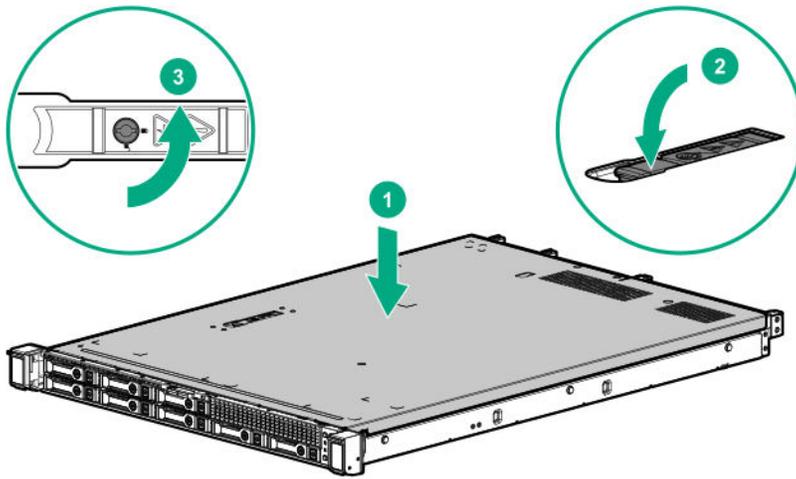
Prerequisites

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

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, if needed.





Powering up the server

Procedure

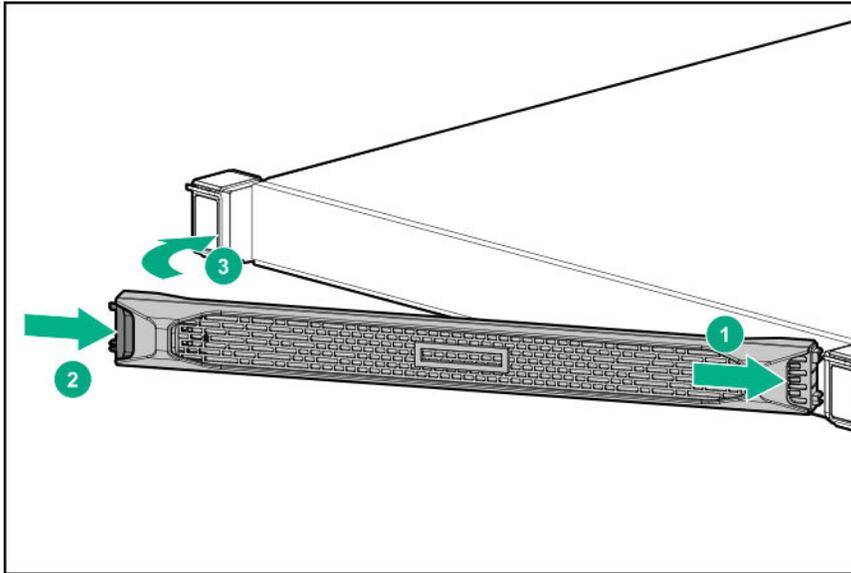
- 1. Remove the bezel.**
2. Use one of the following methods to power up the server:
 - Press the Power On/Standby button.
 - Use the virtual power button through iLO.
- 3. Install the bezel.**

Installing the bezel

Procedure

- 1.** Install the bezel.
 - a.** Attach the bezel to the latch ear.
 - b.** Press the latch.
 - c.** Close the bezel.





2. Install the Kensington security lock.

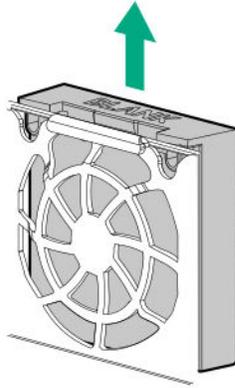
Removing and replacing a fan blank

CAUTION: To prevent improper cooling and thermal damage, do not operate the server unless all bays are populated.

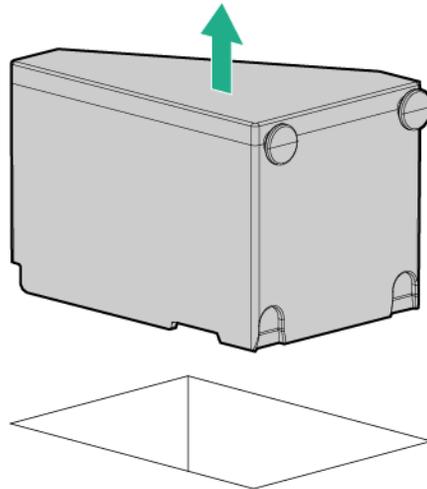
Procedure

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 fan blank.
 - LFF





- SFF



To replace the component, reverse the removal procedure.

Removing and replacing a fan

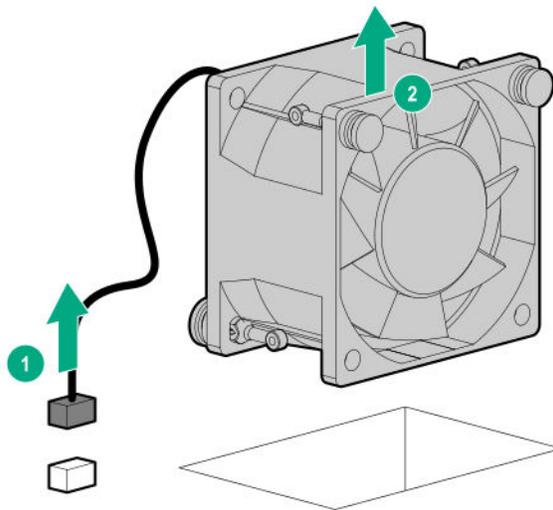
⚠ CAUTION: To prevent improper cooling and thermal damage, do not operate the server unless all bays are populated.

Procedure

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

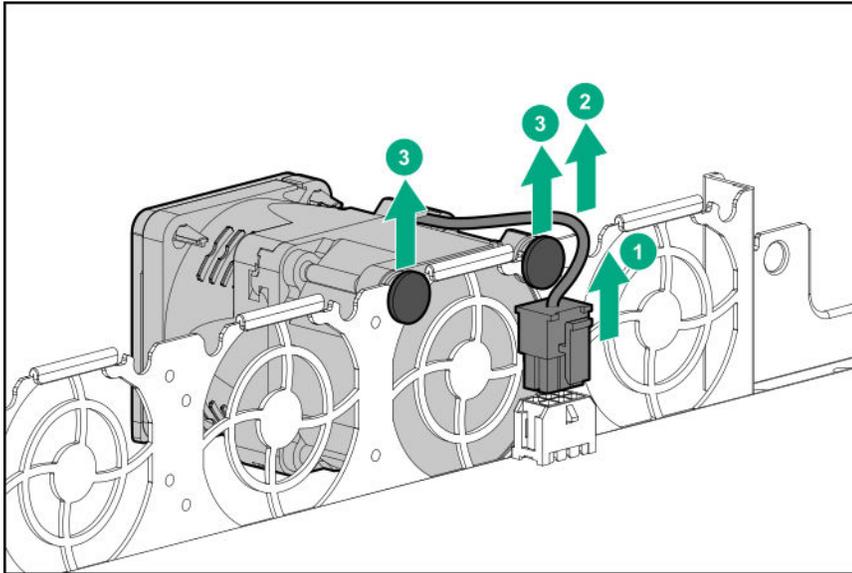


- a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Do one of the following:
- **Extend the server from the rack.**
 - **Remove the server from the rack.**
5. **Remove the access panel.**
6. If installed, **remove the air baffle.**
7. Disconnect the fan cable from the system board and remove the fan.
- LFF



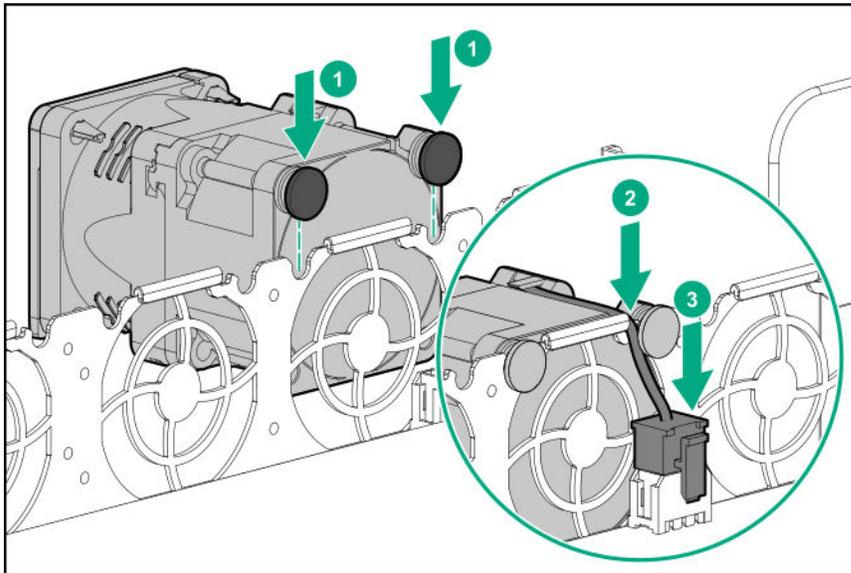
- SFF





To replace the component, reverse the removal procedure.

To install the SFF fan, manage the fan cable into the recess.



Removing and replacing a drive blank

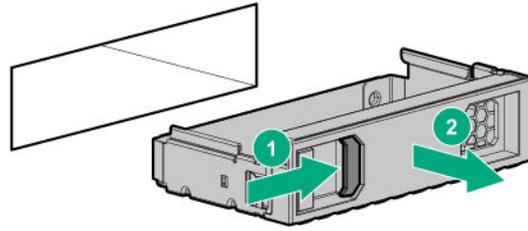
⚠ CAUTION: To prevent improper cooling and thermal damage, do not operate the server unless all bays are populated.

Procedure

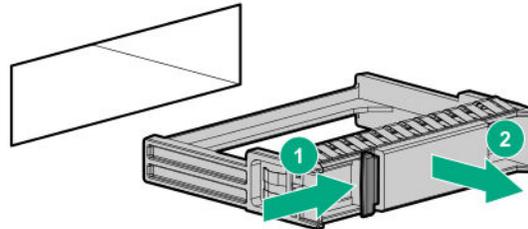
1. If installed, **remove the bezel.**
2. Remove the drive blank.



- LFF drive blank



- SFF drive blank



To replace the component, reverse the removal procedure.

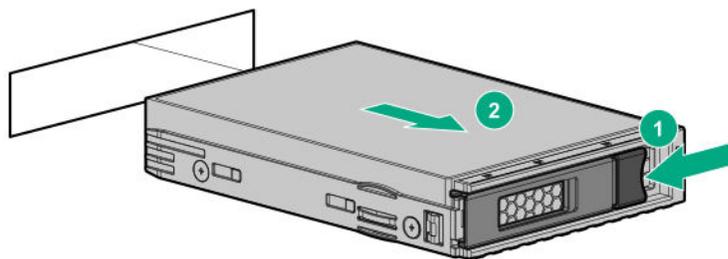
Removing and replacing a hot-plug drive

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

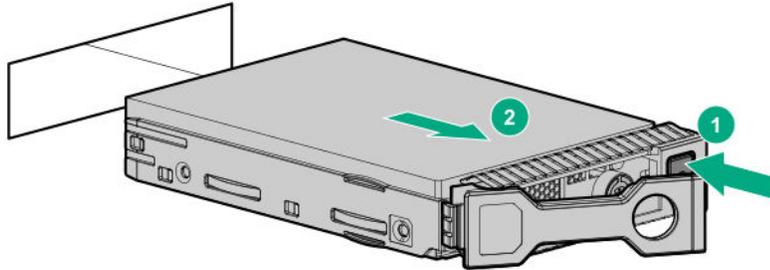
1. Back up all server data on the drive.
2. If installed, **remove the bezel.**
3. **Determine the status of the drive from the drive LED definitions.**
4. Remove the hot-plug drive.

- LFF drive

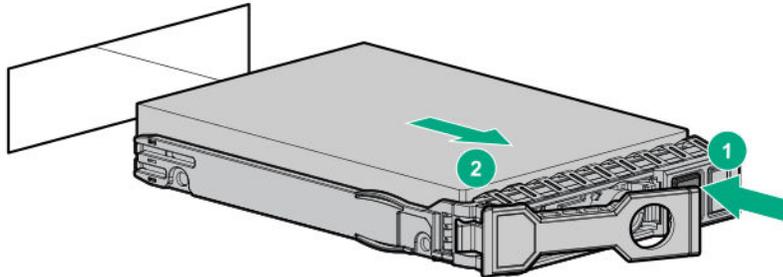


- SFF drive





- NVMe drive



To replace the component, reverse the removal procedure.

Removing and replacing an M.2 SSD

Prerequisites

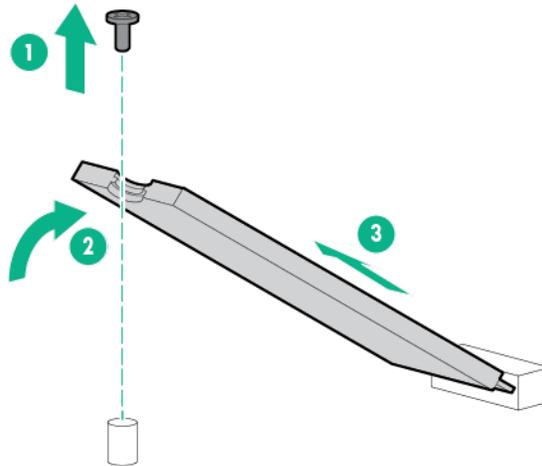
Before you perform this procedure, make sure that you have a Philips No. 1 screwdriver available.

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. Disconnect the SATA cables from the M.2 SSD enablement board.
7. If replacing the M.2 SSD enablement on the primary riser, **remove the primary riser cage.**



8. If replacing the M.2 SSD enablement on the secondary riser, **remove the secondary riser.**
9. **Remove the M.2 SSD enablement board.**
10. Remove the M.2 SSD.



To replace the component, reverse the removal procedure.

Drive backplanes

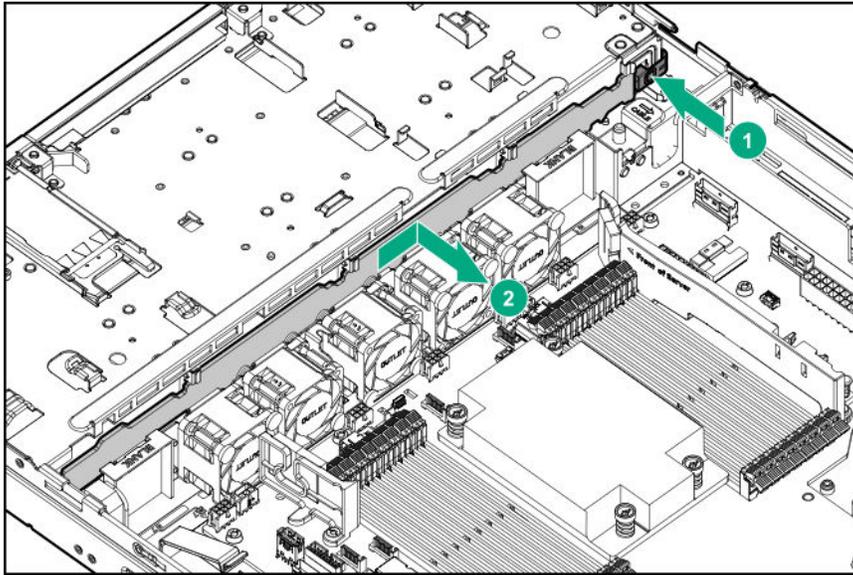
Removing and replacing the 4LFF SAS/SATA drive backplane

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 all installed LFF drives.**
7. Disconnect all cables from the 4LFF drive backplane.
8. Remove the 4LFF drive backplane.



- a. Press the latch.
- b. Slide the backplane and remove it from the chassis.



To replace the component, reverse the removal procedure.

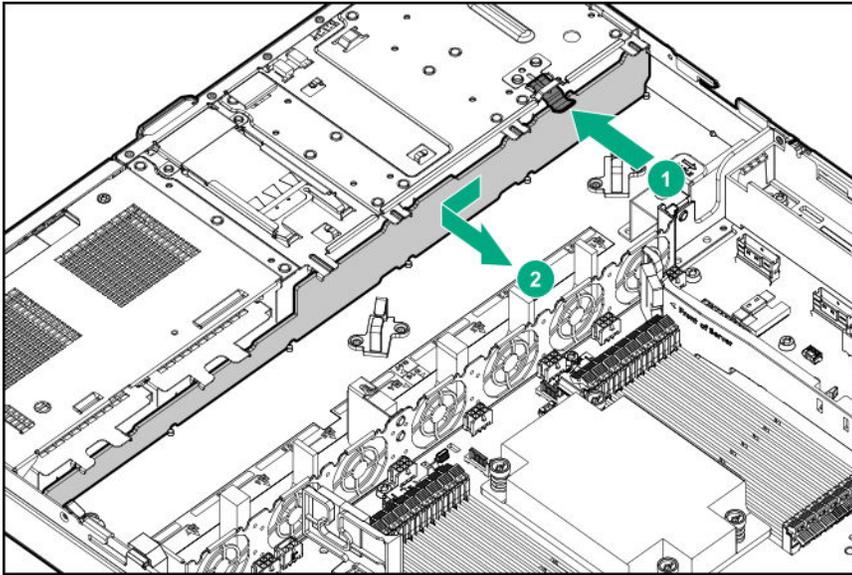
Removing and replacing the 8SFF SAS/SATA or NVMe drive backplane

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. If installed, **remove the air baffle.**
7. **Remove all the fans.**
8. **Remove all installed 8SFF drives.**
9. Disconnect all cables from the 8SFF drive backplane.
10. Remove the 8SFF drive backplane.



- a. Pull up the latch.
- b. Slide the backplane and remove it from the chassis.



To replace the component, reverse the removal procedure.

Removing and replacing the 2SFF SAS/SATA or NVMe drive backplane

Prerequisites

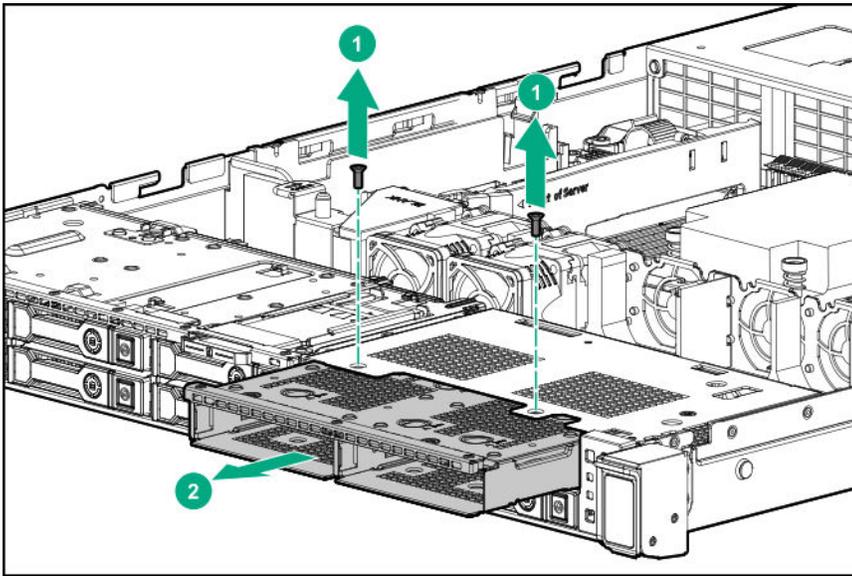
Before you perform this procedure, make sure that you have T-10 Torx screwdriver available.

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. If installed, **remove the air baffle.**
7. Remove the fans/fan blanks from **fan bay numbers 4-7.**
8. **Remove the 2SFF SAS/SATA or NVMe drives.**
9. Disconnect all cables from the 2SFF SAS/SATA or NVMe drive cage.

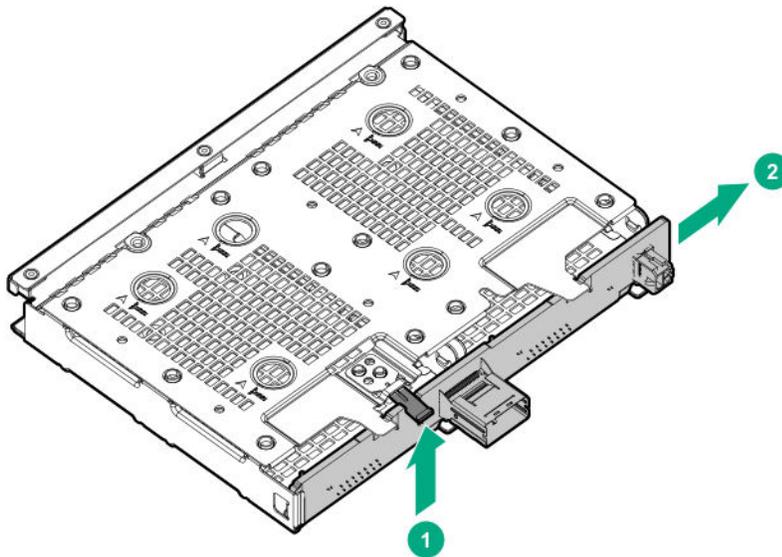


10. Remove the 2SFF SAS/SATA or NVMe drive cage.



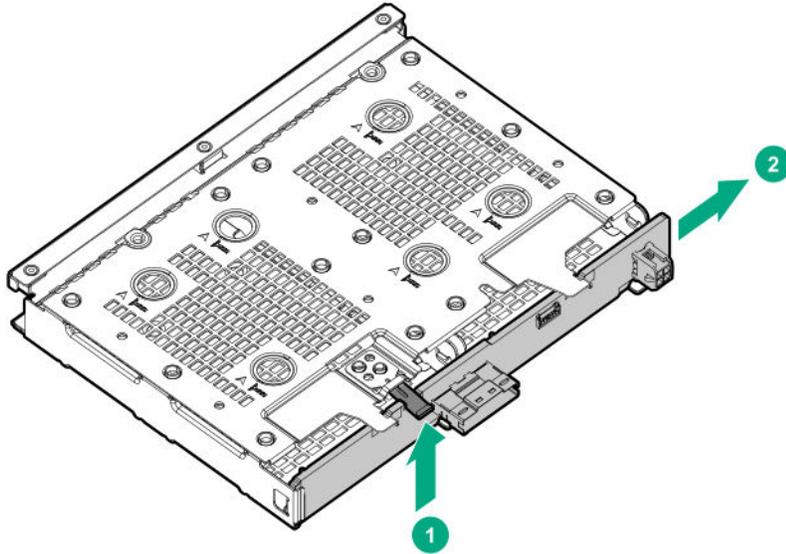
11. Remove the 2SFF SAS/SATA or NVMe drive backplane.

- a. Pull up the latch.
 - b. Detach the backplane.
- 2SFF SAS/SATA drive backplane



- 2SFF NVMe drive backplane





To replace the component, reverse the removal procedure.

Removing and replacing an expansion board

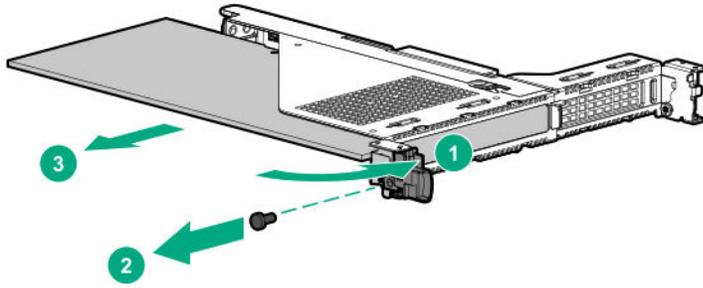
Prerequisites

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

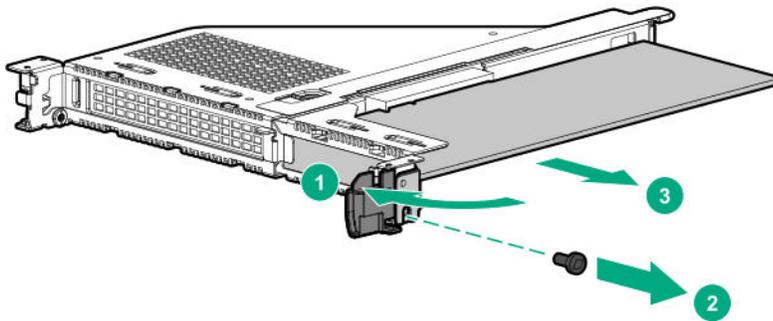
Procedure

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. If present, disconnect all cables from the expansion board.
7. If replacing the expansion board on the primary riser board, **remove the primary riser cage.**
8. Remove the expansion board.
 - Primary riser slot 1

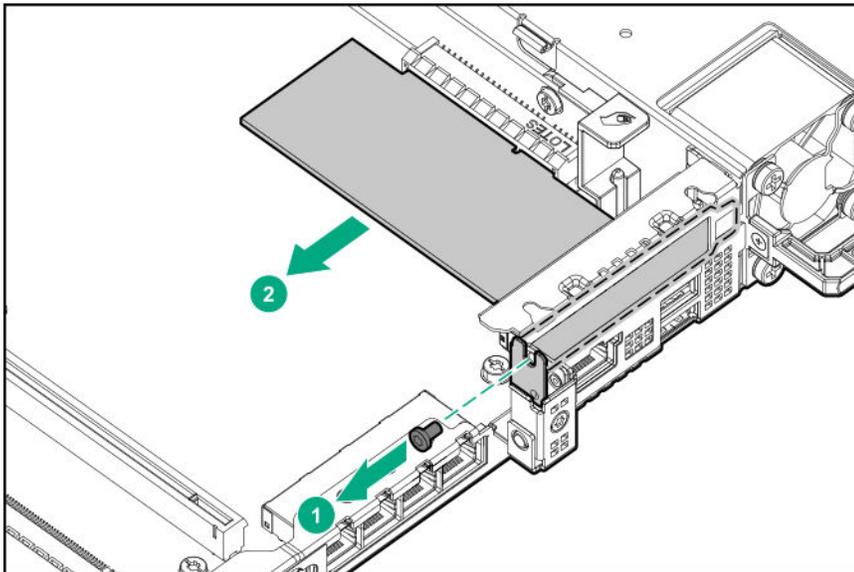




- Primary riser slot 2



- Secondary riser slot 3



To replace the component, reverse the removal procedure.



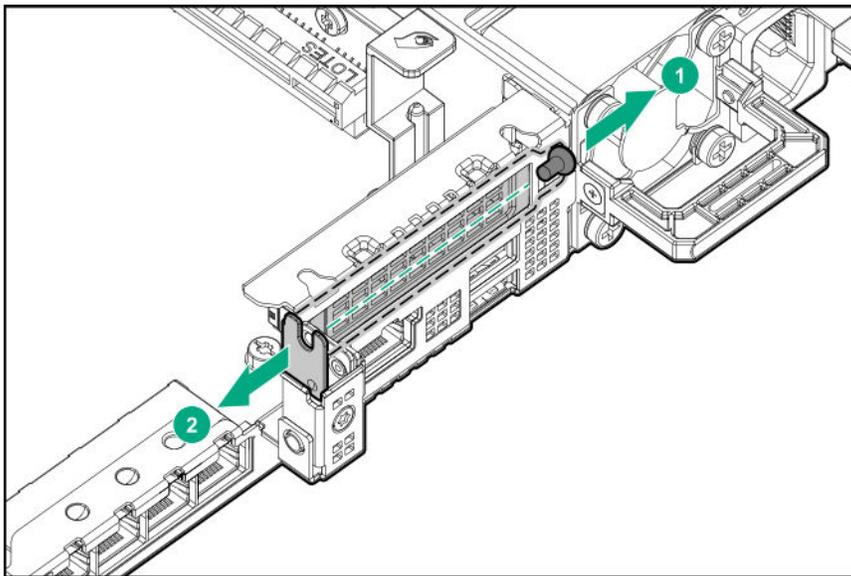
Removing and replacing the secondary riser blank

Prerequisites

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

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 secondary riser blank.



To replace the component, reverse the removal procedure.

Removing and replacing a riser board

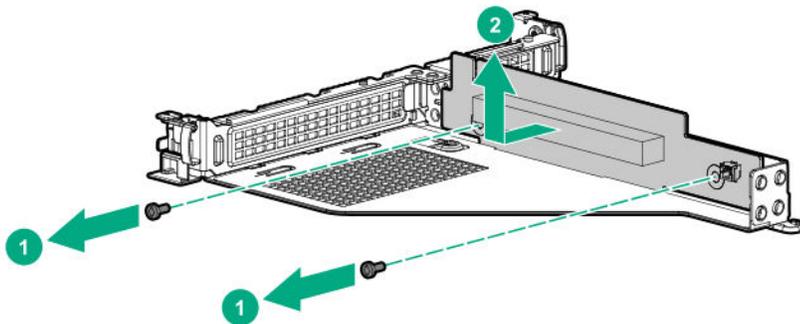
Prerequisites

If replacing the primary riser board, make sure that you have a T-15 Torx screwdriver available.



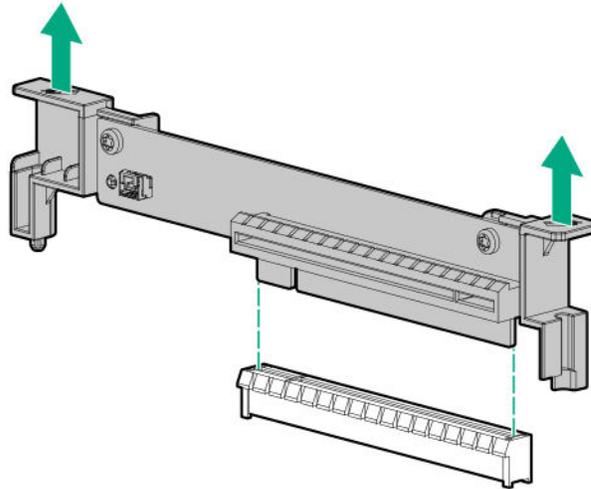
Procedure

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. If present, disconnect all cables from the expansion board.
7. If replacing the primary riser board, **remove the primary riser cage.**
8. If installed, **remove all expansion boards from the riser board.**
9. Remove the riser board.
 - Primary riser board



- Secondary riser board





To replace the component, reverse the removal procedure.

Removing and replacing the GPU holder

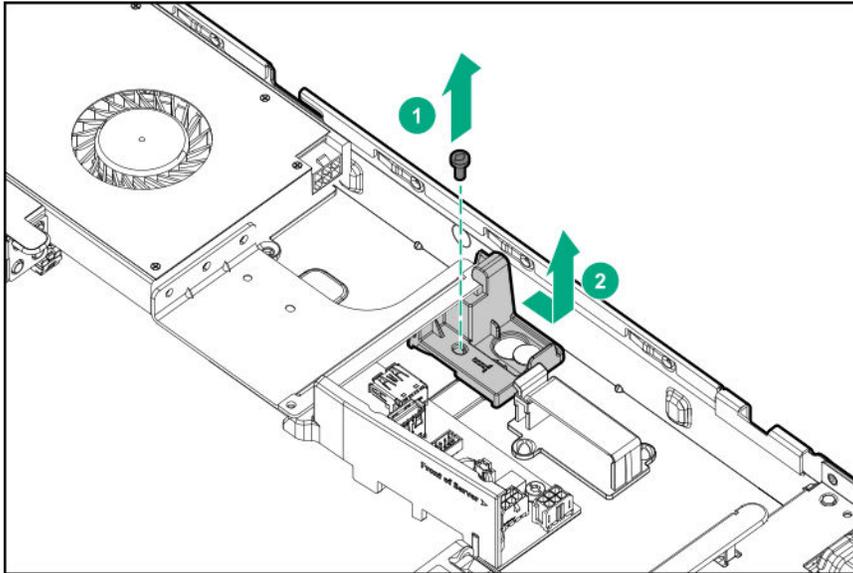
Prerequisites

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

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. Disconnect the cable from the GPU.
7. Remove the GPU holder.





To replace the component, reverse the removal procedure.

Removing and replacing the GPU

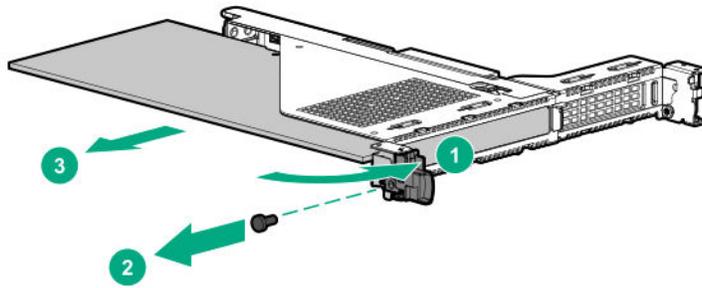
Prerequisites

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

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. Disconnect the cable from the GPU.
7. **Remove the GPU holder**.
8. **Remove the primary riser cage**.
9. Remove the GPU from the primary riser slot 1.





To replace the component, reverse the removal procedure.

Removing and replacing a Smart Array type-a modular controller

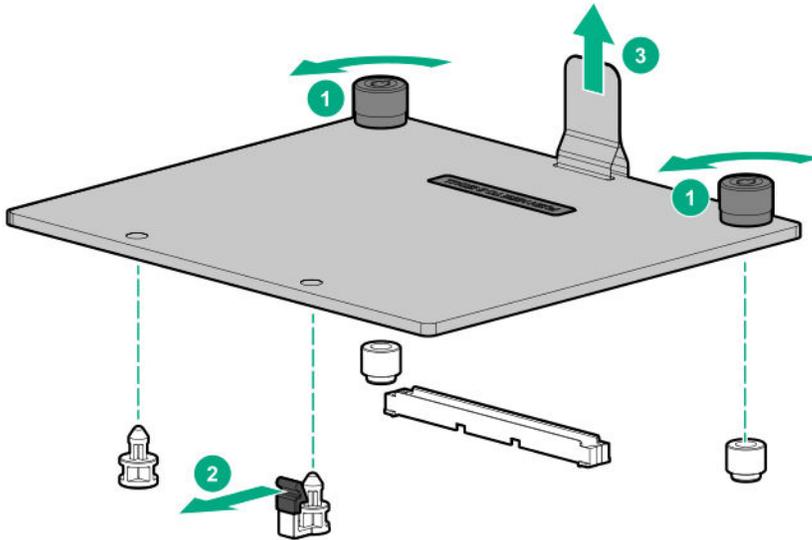
Prerequisites

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

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. Disconnect all cables from the type-a controller.
7. Remove the Smart Array type-a modular controller.





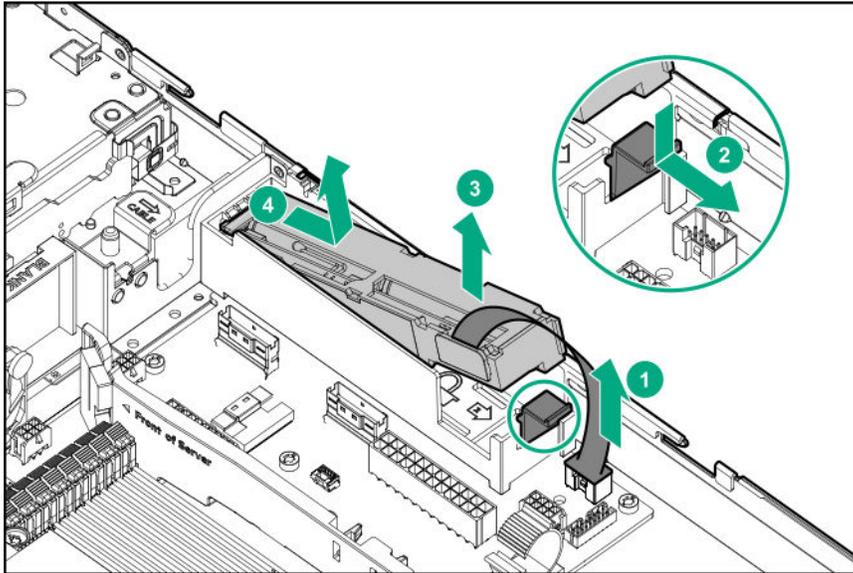
To replace the component, reverse the removal procedure.

Removing and replacing an energy pack

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. Disconnect the energy pack cable from the system board.
7. Remove the energy pack.





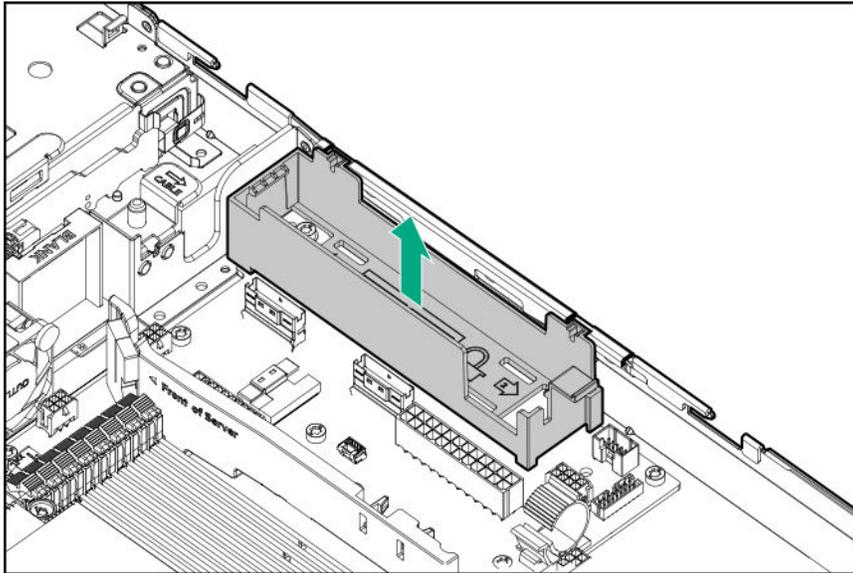
To replace the component, reverse the removal procedure.

Removing and replacing the energy pack holder

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 energy pack.**
7. Remove the energy pack holder from the chassis.





To replace the component, reverse the removal procedure.

Removing and replacing the optical drive blank

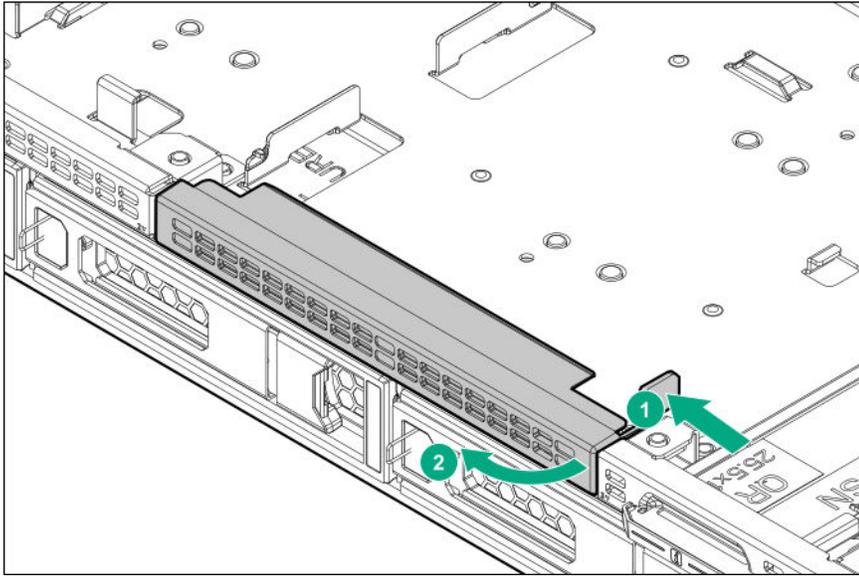
Prerequisites

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

Procedure

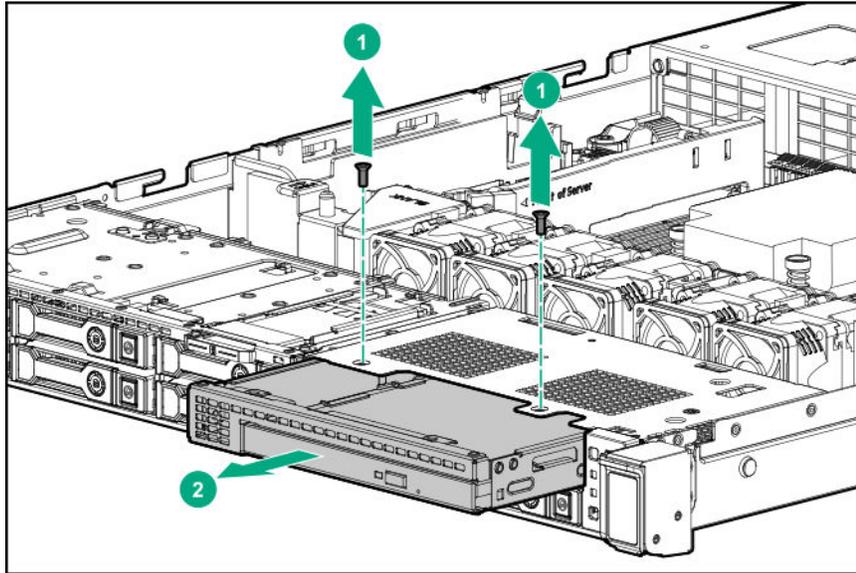
1. If installed, **remove the bezel.**
2. **Power down the server.**
3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Do one of the following:
 - **Extend the server from the rack.**
 - **Remove the server from the rack.**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





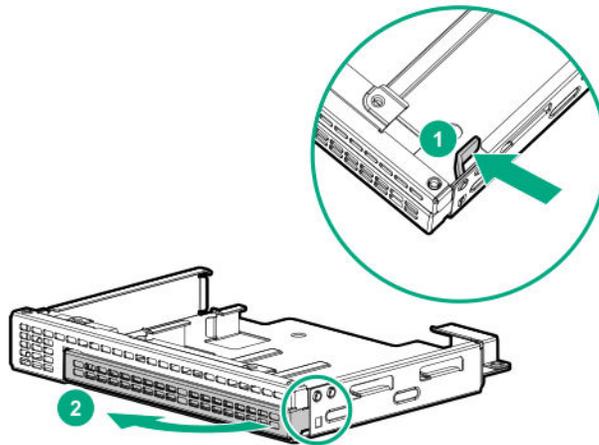
- SFF

- a. Remove the optical drive cage.



- b. Remove the blank.





To replace the component, reverse the removal procedure.

Removing and replacing the optical drive

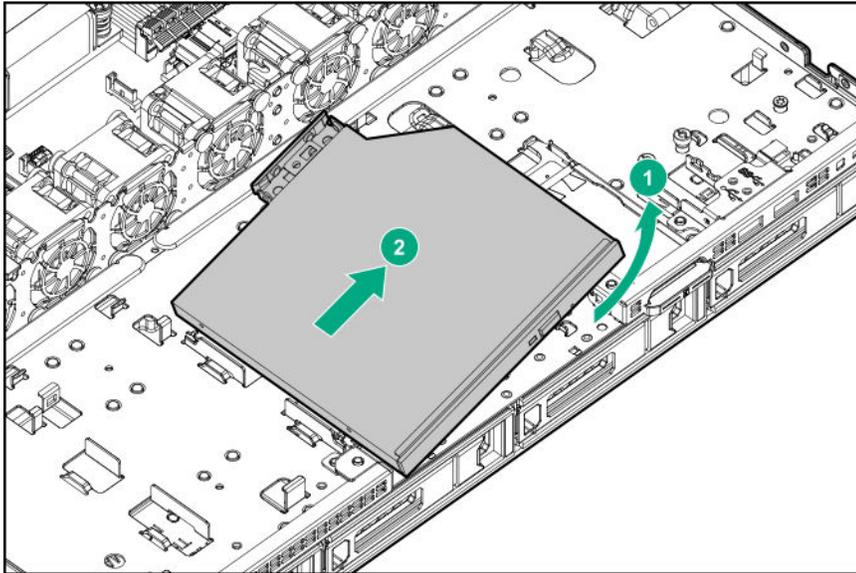
Prerequisites

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

Procedure

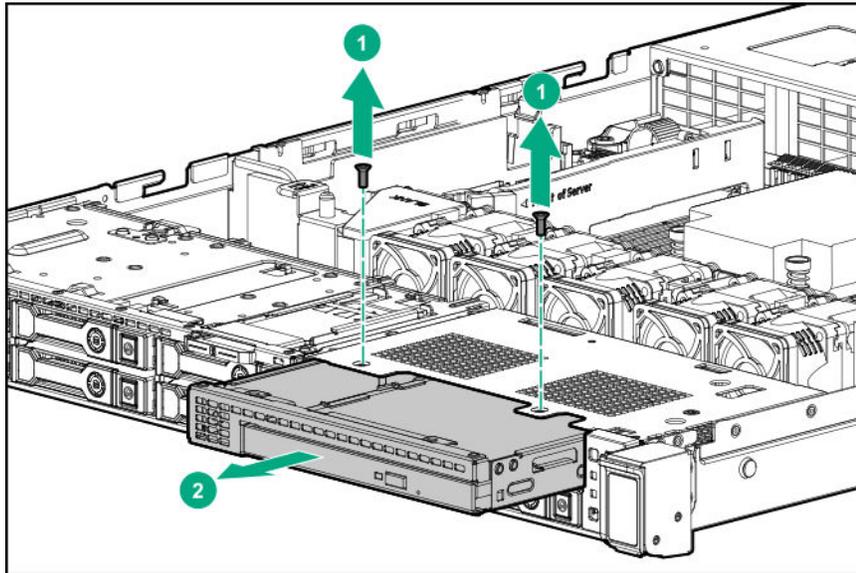
1. If installed, **remove the bezel.**
2. **Power down the server.**
3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Do one of the following:
 - **Extend the server from the rack.**
 - **Remove the server from the rack.**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





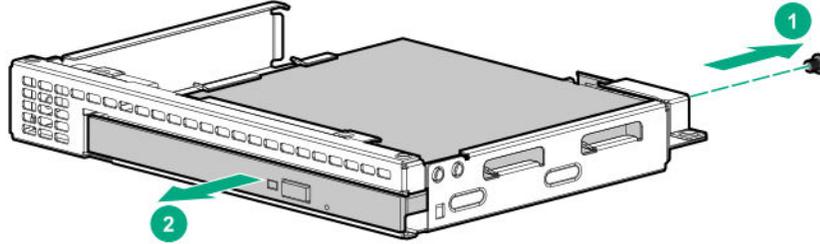
- SFF

a. Remove the optical drive cage.



b. Remove the optical drive.





To replace the component, reverse the removal procedure.

Removing and replacing a chassis ear

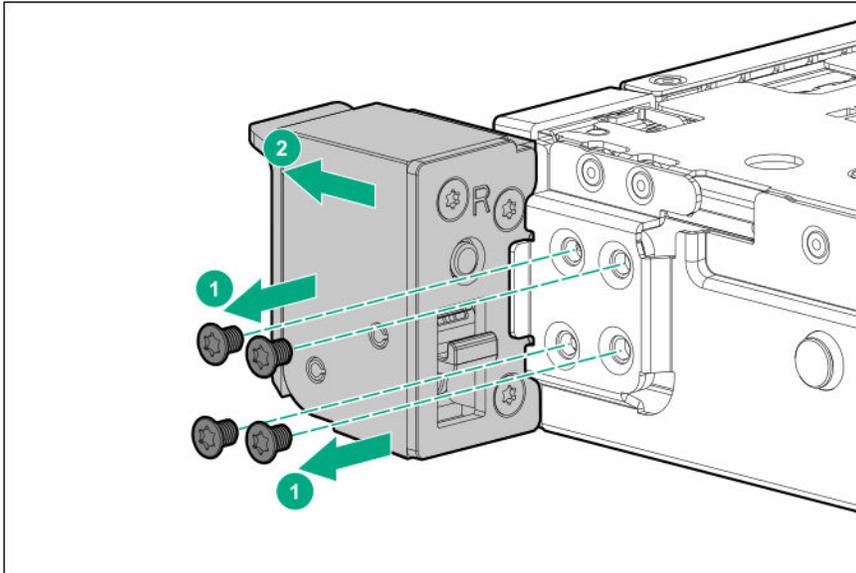
Prerequisites

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

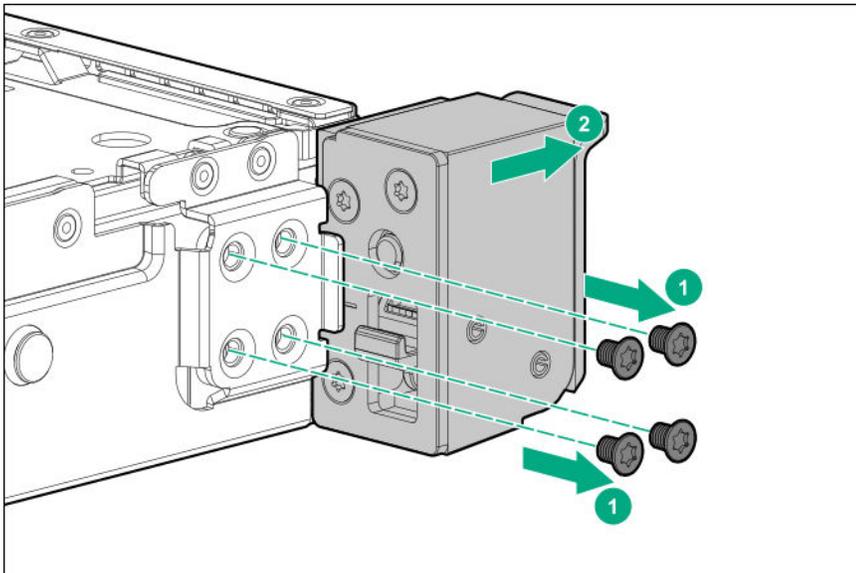
Procedure

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 chassis ear.
 - Right ear





- Left ear



To replace the component, reverse the removal procedure.

Removing and replacing the LFF front I/O assembly

Prerequisites

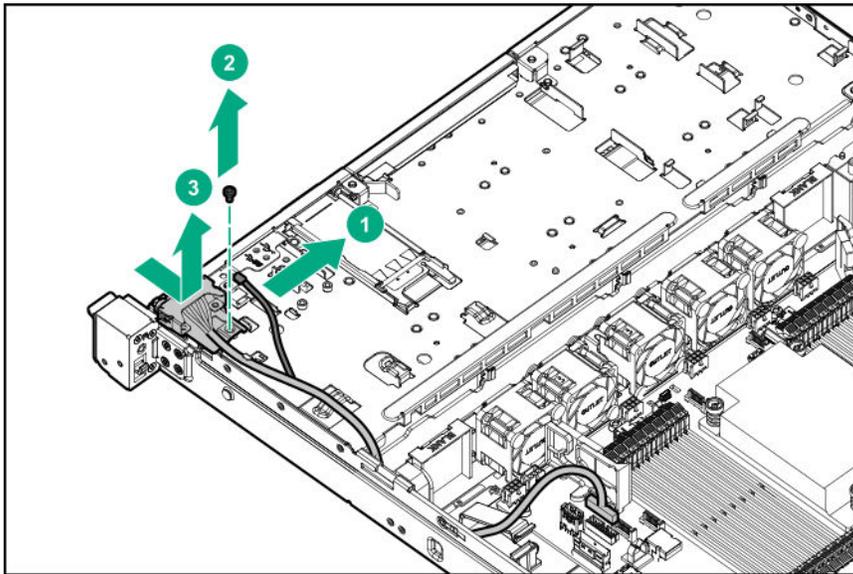
Before you perform this procedure, make sure that you have the T-10 screwdriver available.

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. Disconnect the front I/O cable from the system board.
7. Release the front I/O cable from the clips.
8. Remove the front I/O assembly.
- a. Detach the ambient thermal sensor cable from its clip.
 - b. Remove one T-10 screw.
 - c. Remove the front I/O module.



To replace the component, reverse the removal procedure.

Removing and replacing the SFF front I/O assembly

Prerequisites

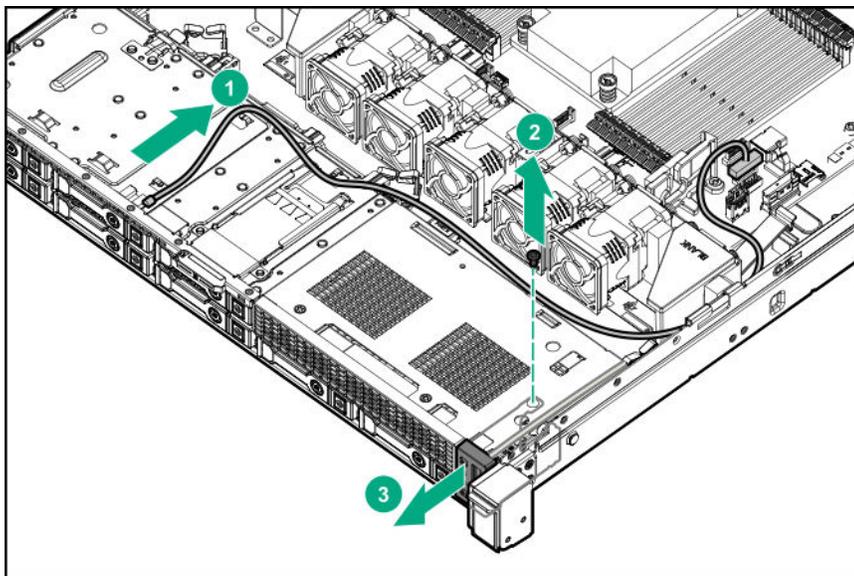
Before you perform this procedure, make sure that you have the following tools available.

- T-10 screwdriver
- T-15 screwdriver



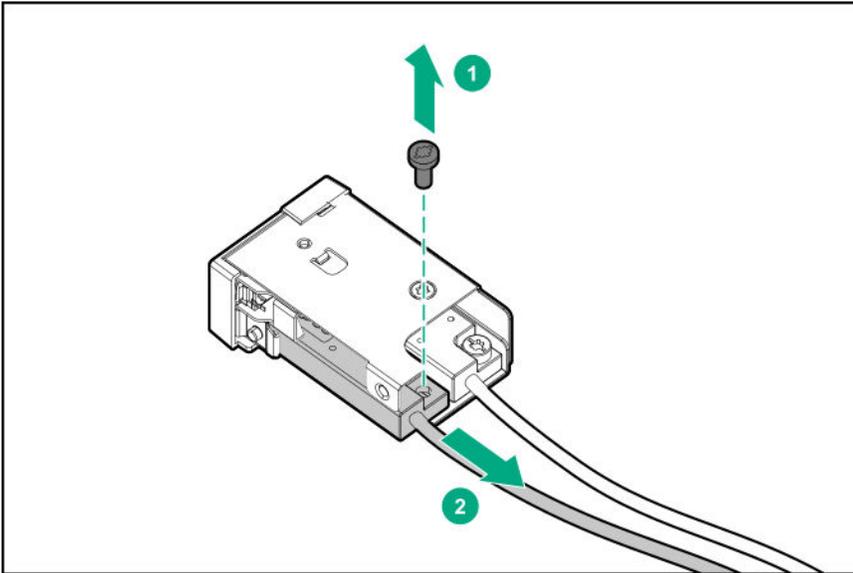
Procedure

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. Disconnect the following cables from system board:
 - Front I/O cable
 - iLO service port cable
 - USB 3.0 cable
7. Release all front I/O assembly cables from clips.
8. Remove the front I/O assembly.
 - a. Detach the ambient thermal sensor cable from its clip.
 - b. Remove one T-10 screw
 - c. Remove the front I/O assembly

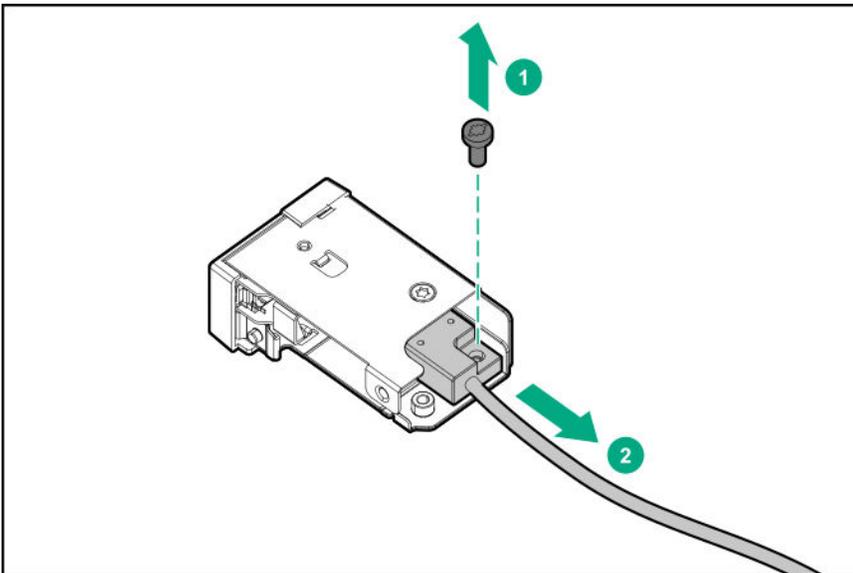


9. Remove the USB 3.0 cable assembly.



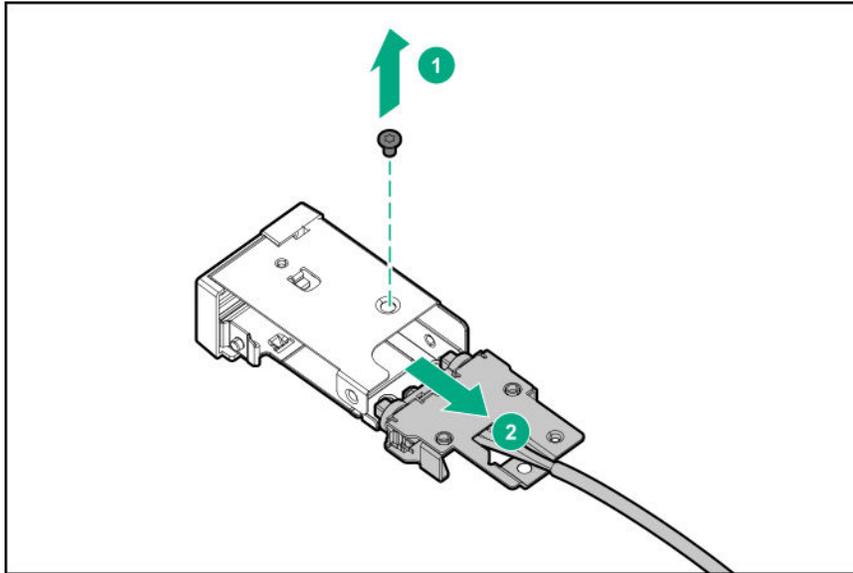


10. Remove the iLO service port assembly.



11. Remove the front I/O module.





To replace the component, reverse the removal procedure.

Removing and replacing the iLO Service Port assembly in LFF

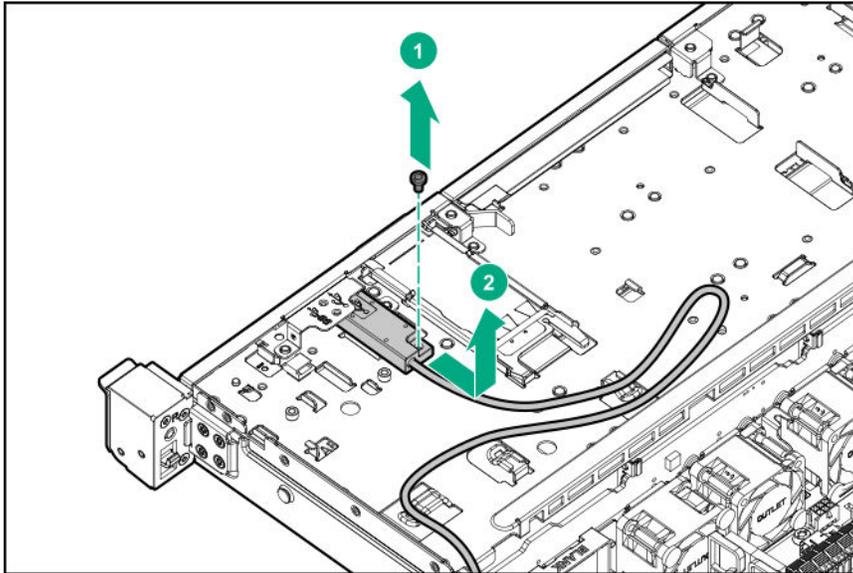
Prerequisites

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

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. Disconnect the iLO Service Port cable from the system board.
7. Release the cable from clips.
8. Remove the iLO Service Port assembly in LFF:
 - a. Remove one T-15 screw.
 - b. Remove the iLO Service Port assembly.





To replace the component, reverse the removal procedure.

Removing and replacing the iLO Service Port assembly in SFF

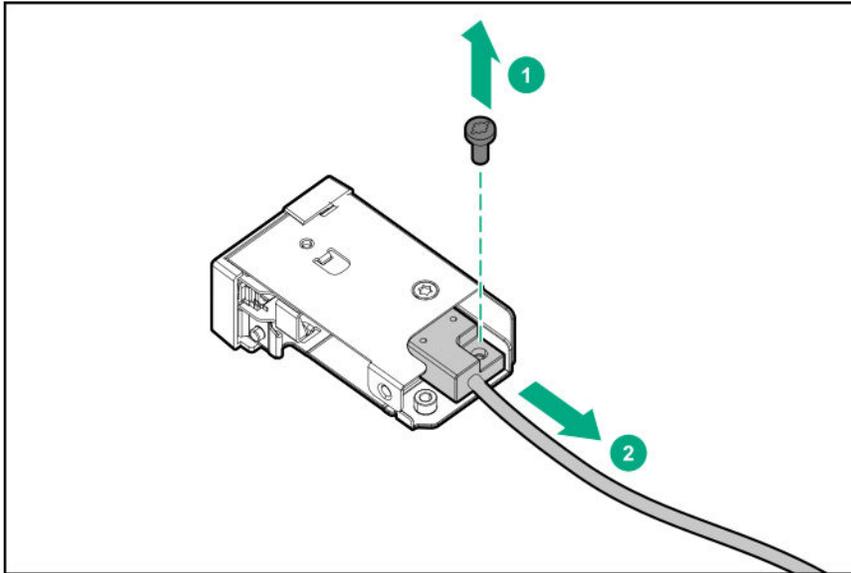
Prerequisites

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

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 SFF front I/O assembly.**
7. Remove the iLO Service Port assembly in SFF.
 - a. Remove one T-15 screw.
 - b. Remove the iLO Service Port assembly.





To replace the component, reverse the removal procedure.

Removing and replacing the USB 3.0 cable assembly in LFF

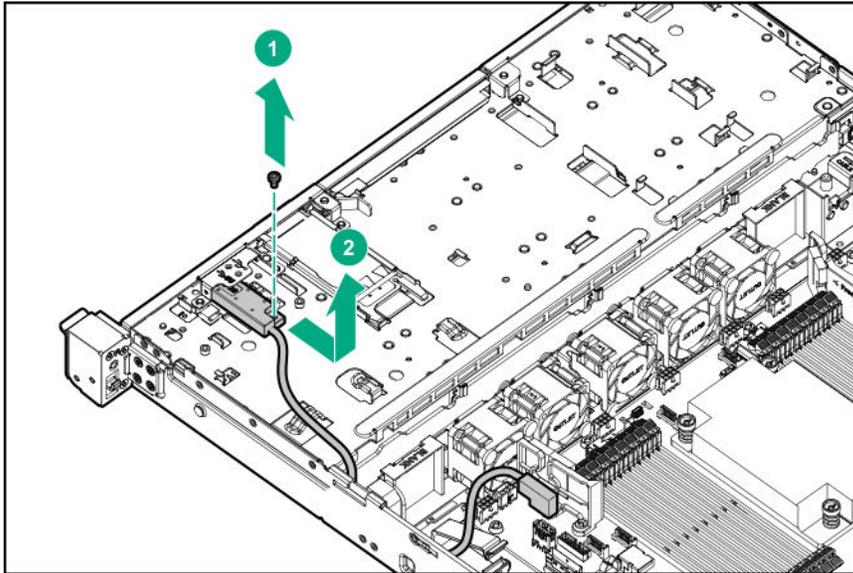
Prerequisites

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

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. Disconnect the USB 3.0 cable from the system board.
7. Release the cable from clips.
8. Remove the USB 3.0 cable assembly.





To replace the component, reverse the removal procedure.

Removing and replacing the FlexibleLOM adapter

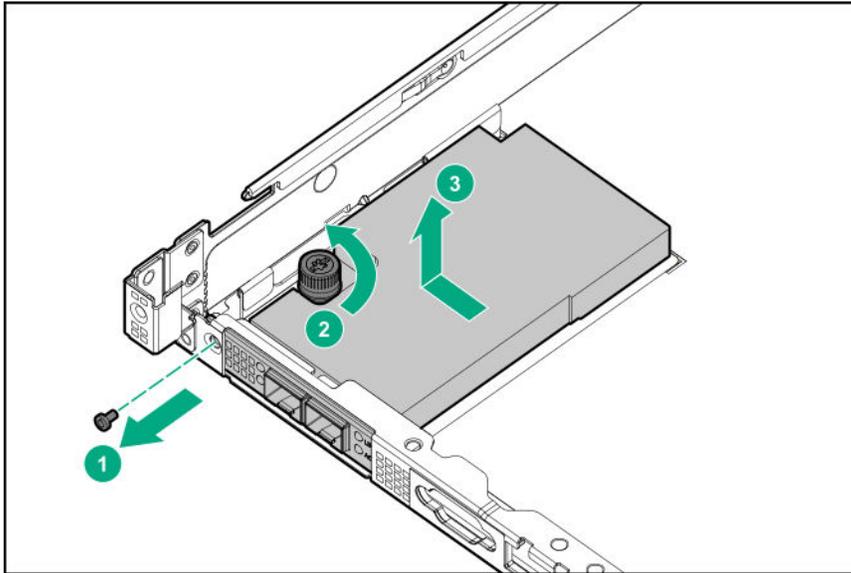
Prerequisites

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

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 primary riser cage**.
7. Disconnect all cables from the FlexibleLOM adapter.
8. Remove the FlexibleLOM adapter.





To replace the component, reverse the removal procedure.

Removing and replacing the Pensando DSP DSC-25 2p SFP28 card with the iLO Sideband ALOM Module

Decommissioning the Pensando DSP DSC-25 2p SFP28 card

Procedure

Before removing the DSC-25 card from the server, you must first decommission the card using the Pensando Policy and Services Manager (PSM).

For more information, see *Pensando Distributed Services Card for Single-Wire Management (DSC-25-SWM) Removal/Replacement Guide* on the Hewlett Packard Enterprise website (<https://www.hpe.com/support/dsc25-replacement>).

Removing and replacing the Pensando DSP DSC-25 2p SFP28 card

! **IMPORTANT:** Before beginning this procedure, follow the **warnings and cautions**.

Prerequisites

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

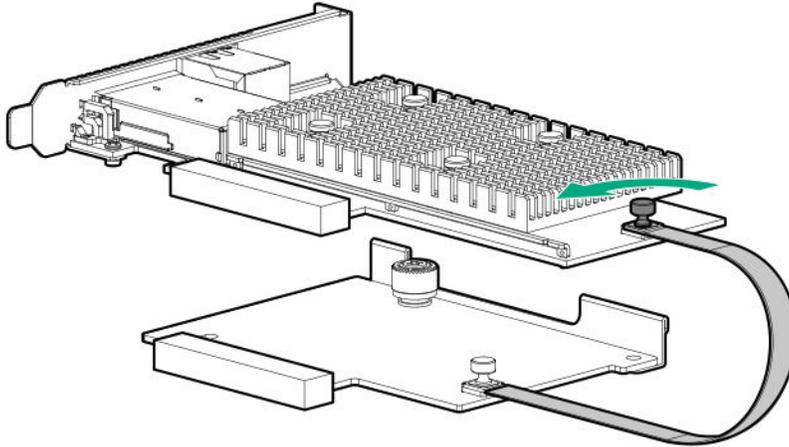
- The components included with the hardware option kit
- T-15 Torx screwdriver

Procedure

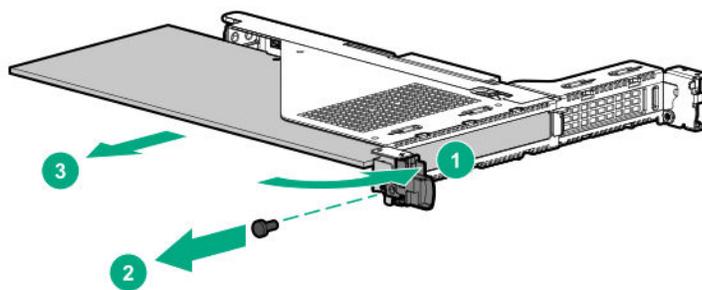
1. If installed, **remove the bezel**.
2. **Power down the server**.
3. Remove all power:



- 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. If the Pensando DSP iLO Sideband ALOM Module is installed, disconnect the auxiliary cable from the DSC-25 card.

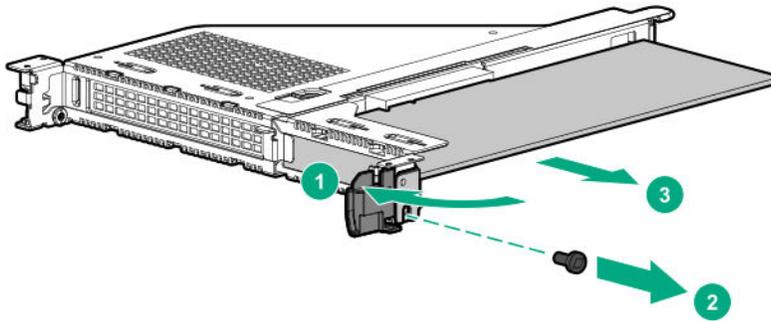


7. If replacing the DSC-25 card on the primary riser board, **remove the primary riser cage.**
8. Remove the DSC-25 card.
- Primary riser slot 1

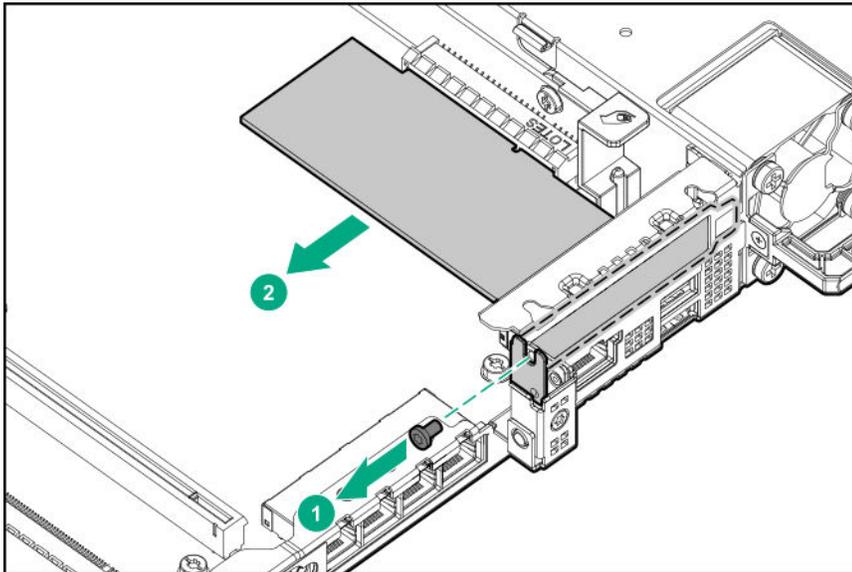


- Primary riser slot 2





- Secondary riser slot 3



To replace the component, reverse the removal procedure.

Removing and replacing the Pensando DSP iLO Sideband ALOM Module

! **IMPORTANT:** Before beginning this procedure, follow the **warnings and cautions**.

Prerequisites

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

- The components included with the hardware option kit
- T-15 Torx screwdriver

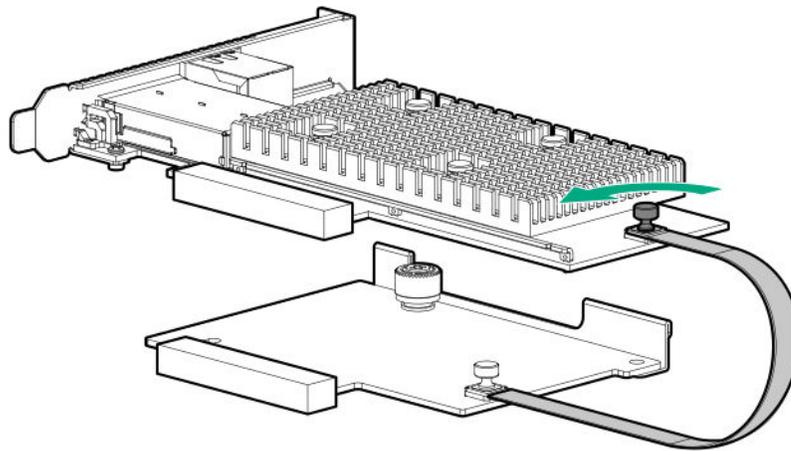
Procedure

1. If installed, **remove the bezel**.
2. **Power down the server**.



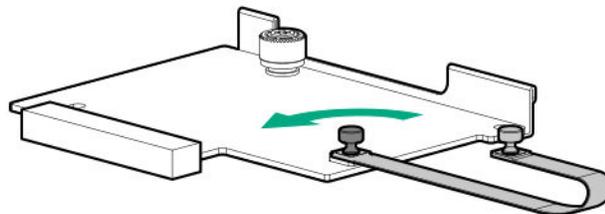
3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Do one of the following:
 - **Extend the server from the rack.**
 - **Remove the server from the rack.**
5. **Remove the access panel.**
6. Disconnect the auxiliary cable from the DSC-25 card before removing the PCIe riser cage.

NOTE: The PCIe riser cage is not shown in this illustration for clarity purposes.



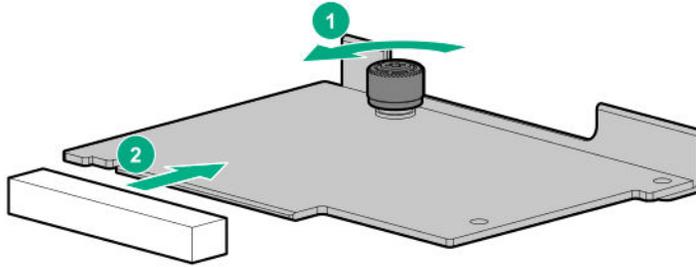
7. **Remove the primary riser cage.**
8. Disconnect the auxiliary cable from the ALOM module using the thumb screw.

NOTE: Be sure not to twist the cable.



9. Remove the Pensando DSP iLO Sideband ALOM Module from the FlexibleLOM adapter connector on the system board.





To replace the component, reverse the removal procedure.

Removing and replacing the serial port cable

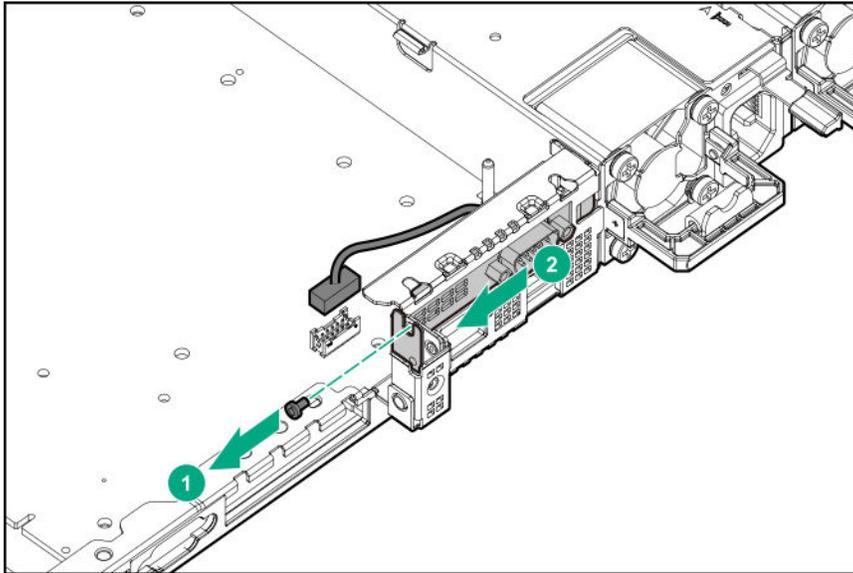
Prerequisites

Before you perform this procedure, make sure that you have a nut driver available.

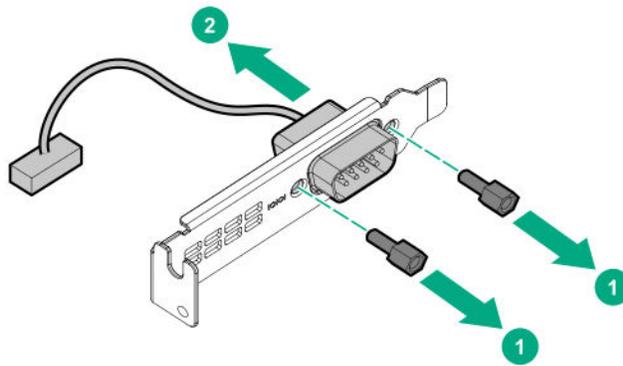
Procedure

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. Disconnect the serial port cable from the system board.
7. Remove the serial port assembly.





8. Remove the serial port cable.



To replace the component, reverse the removal procedure.

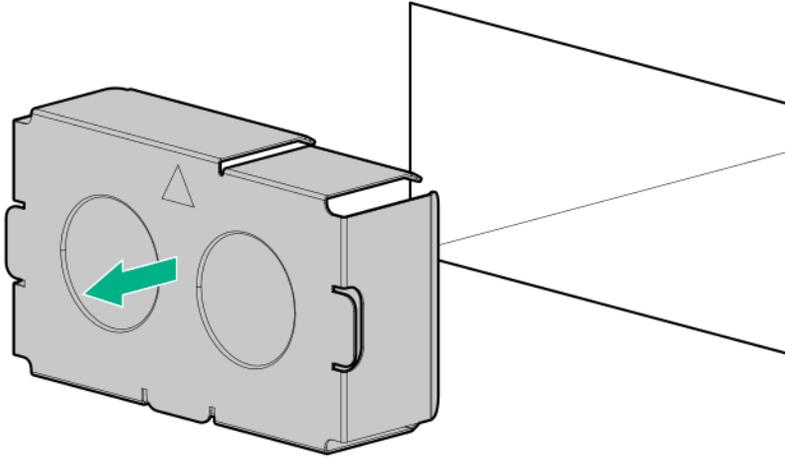
Removing and replacing a power supply blank

CAUTION: To prevent improper cooling and thermal damage, do not operate the server unless all bays are populated.

Procedure

Remove the power supply blank from the power supply bay.





To replace the component, reverse the removal procedure.

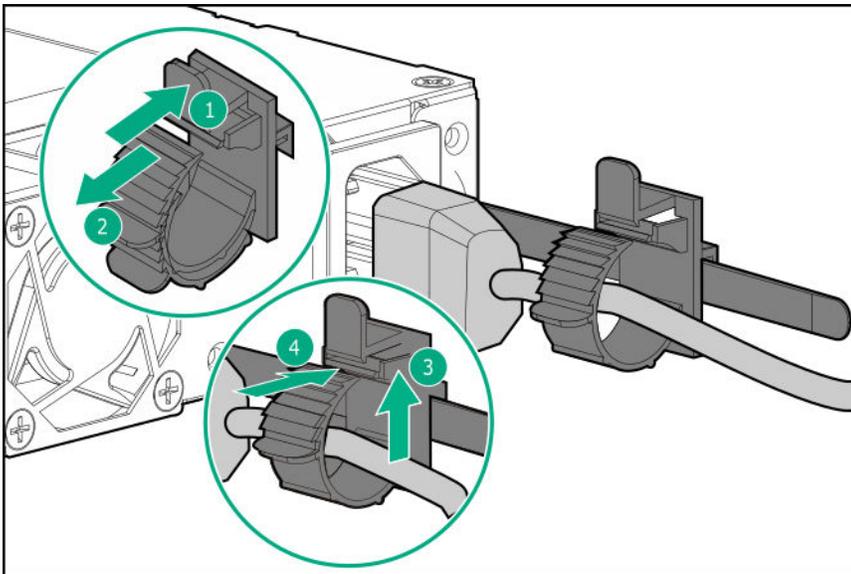
Removing and replacing the non-hot-plug power supply

Prerequisites

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

Procedure

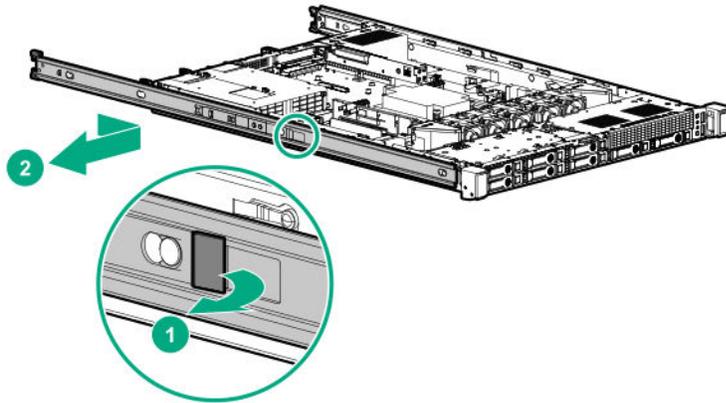
1. If installed, **remove the bezel.**
2. **Power down the server.**
3. **Access the product rear panel.**
4. Release the power cord from the strain relief clip.



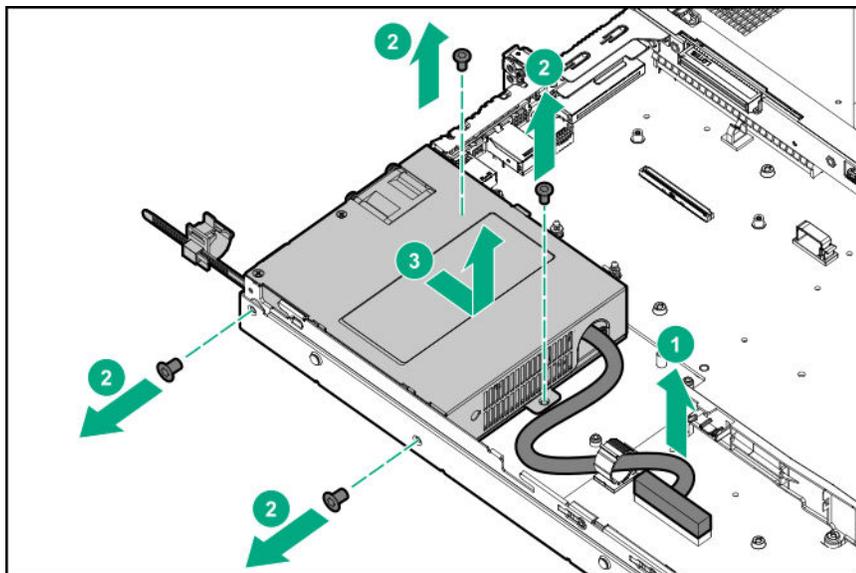
5. Remove all power:



- a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
- 6. Remove the server from the rack.**
7. Place the server on a flat, level work surface.
- 8. Remove the access panel.**
9. Remove the left rail.
- a. Pull the latch on the inner rail.
 - b. Detach the inner rail from the server.



- 10. Remove the non-hot-plug power supply.**
- a. Disconnect the power supply cable.
 - b. Remove four screws.
 - c. Remove the power supply.



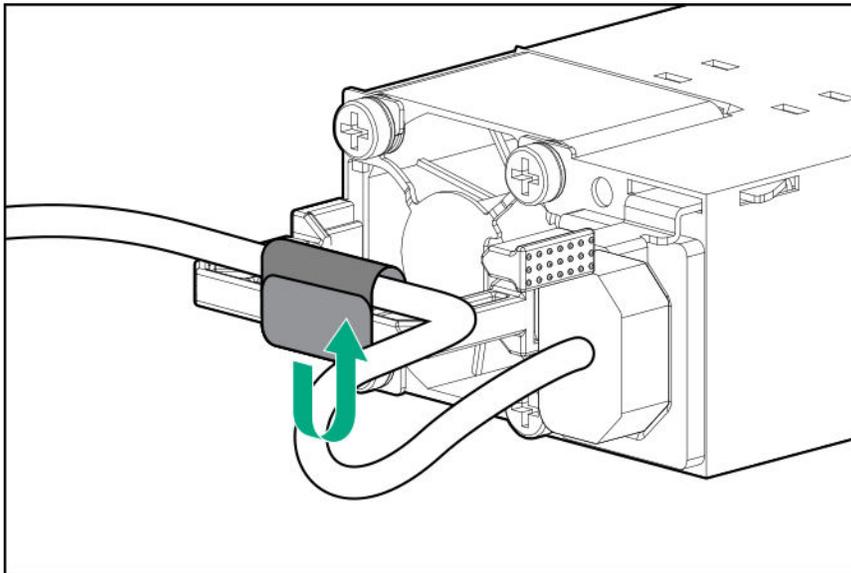
To replace the component, reverse the removal procedure.

Removing and replacing a hot-plug power supply

⚠ 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

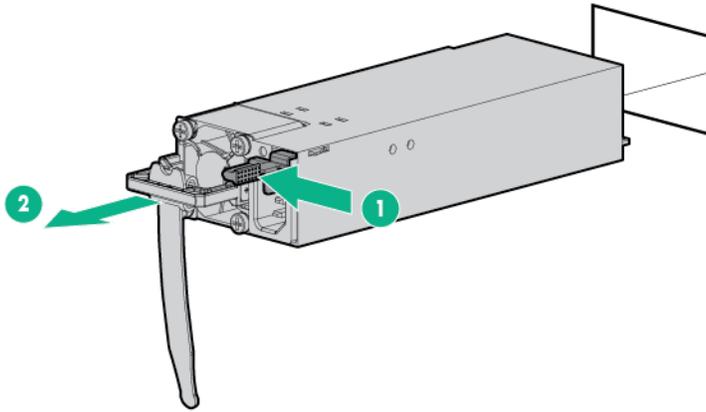
1. If installed, **remove the bezel.**
2. **Power down the server.**
3. **Access the product rear panel.**
4. Release the power cord from the strain relief strap.



5. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
6. Remove the power supply.

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





To replace the component, reverse the removal procedure.

Removing and replacing the PDB or PDB cover

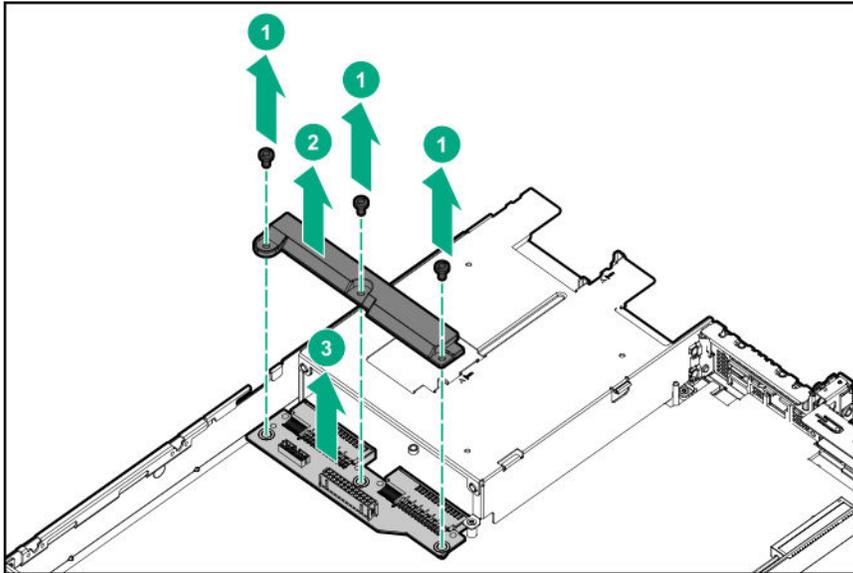
Prerequisites

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

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 all hot-plug power supplies**.
7. Disconnect the power and signal cables from the PDB.
8. Remove the PDB.
 - a. Remove the screws.
 - b. Remove the PDB cover.
 - c. Remove the PDB.





To replace the component, reverse the removal procedure.

Removing and replacing a DIMM guard

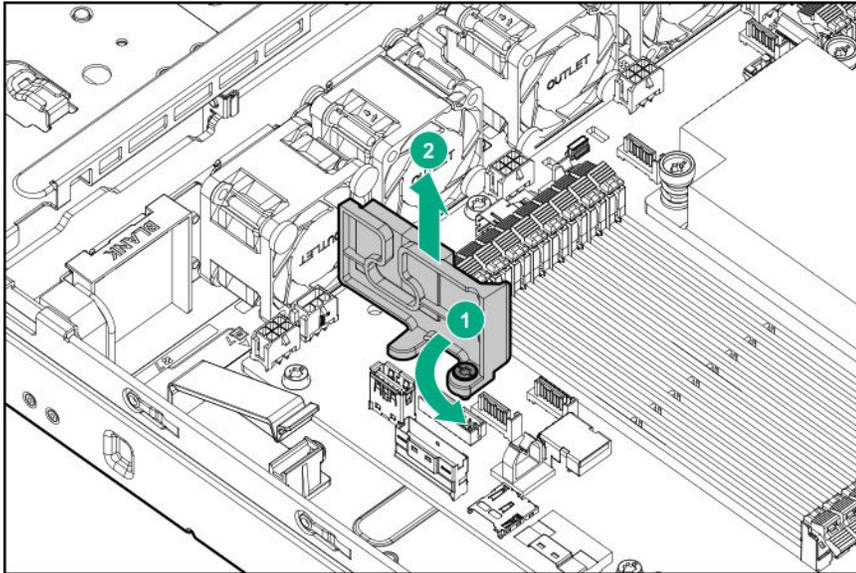
Prerequisites

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

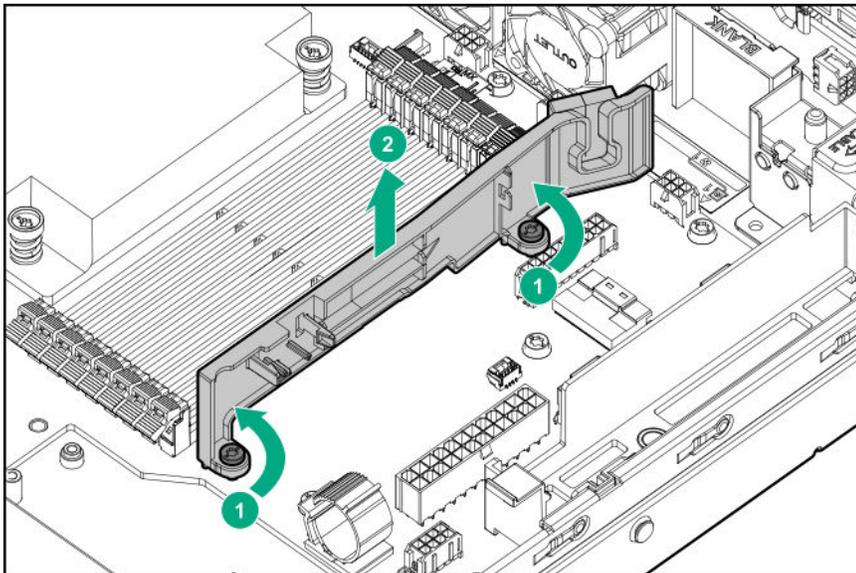
Procedure

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. If replacing the left DIMM guard, **remove the chassis intrusion detection switch.**
7. Remove the DIMM guard.
 - Right DIMM guard





- Left DIMM guard



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:

- AMD EPYC 7x1 processors support DDR4-2666 DIMMs.
- AMD EPYC 7x2 processors support DDR4-2933 DIMMs.

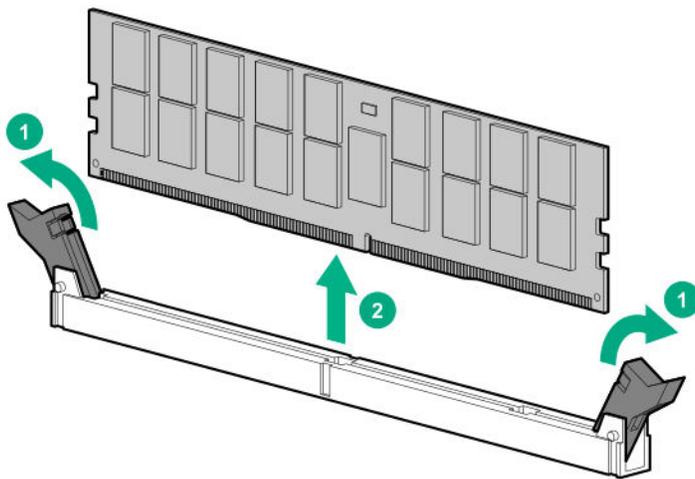
Mixing DIMM types is not supported. Install only the supported DDR4-2666 or DDR4-2933 DIMMs in the server.



Removing and replacing a DIMM

Procedure

1. 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 DIMM.



To replace the component, reverse the removal procedure.

Removing and replacing a heatsink

Removing a heatsink

Before you perform this procedure, make sure that you have a T-20 Torx screwdriver available.

Procedure

1. Observe the following alerts.



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

⚠ CAUTION: THE CONTACTS ARE VERY FRAGILE AND EASILY DAMAGED. To avoid damage to the socket or processor, do not touch the contacts.

2. If installed, **remove the bezel.**

3. **Power down the server.**

4. Remove all power:

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

5. Do one of the following:

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

6. **Remove the access panel.**

7. To remove the high-performance heatsink, **remove the air baffle.**

⚠ CAUTION: When handling the heatsink, always hold it along the top and bottom of the fins. Holding it from the sides can damage the fins.

8. Allow the existing heatsink to cool.

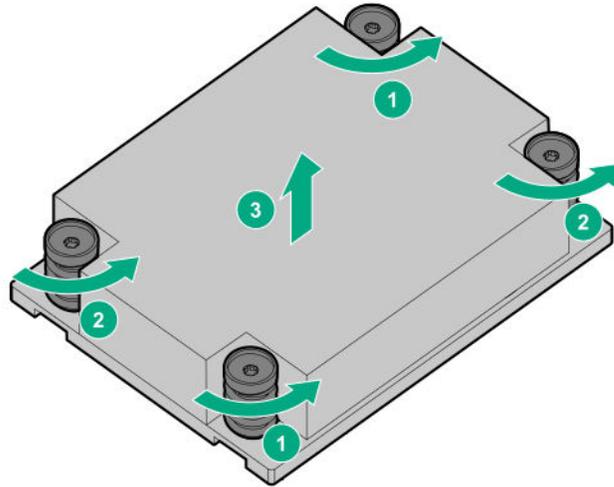
9. Remove the heatsink:

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

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

- a. Use a T-20 Torx screwdriver to loosen the captive screws in the sequence specified on the heatsink label.
- b. Lift the heatsink away from the system board.





- c. Place the heatsink on a flat work surface with its contact side facing upward.

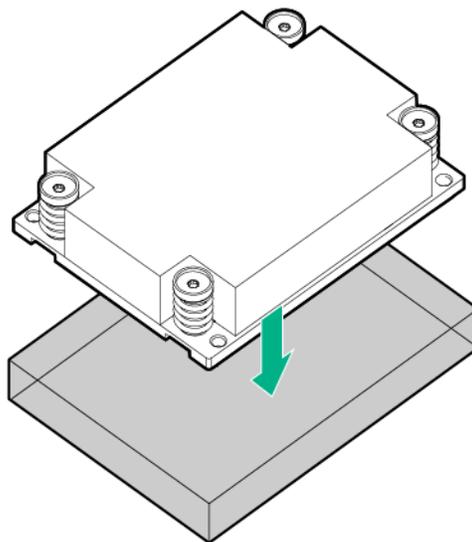
Replacing a heatsink

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

- T-20 Torx screwdriver
- Alcohol wipe

Procedure

1. Use an alcohol wipe to remove the existing thermal grease from the processor.
Allow the alcohol to evaporate before continuing.
2. Remove the thermal interface protective cover from the heatsink.

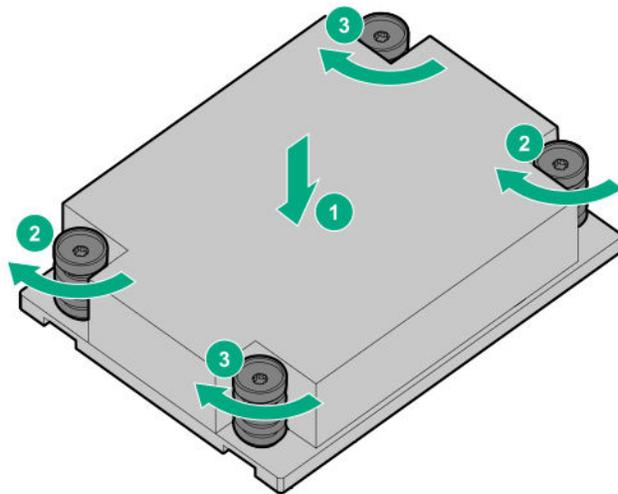


3. Install the heatsink:



-
- CAUTION:** To prevent mechanical damage or depositing oil on your hands or other contaminant to the heatsink contact surface, hold the heatsink only by the edge of its base plate. Do not touch the heatsink fins.
-
- CAUTION:** To prevent thermal failure or component damage, do not move the heatsink once the bottom of its base plate touches the top of the processor. Excessive heatsink movement can cause the thermal grease to smear and become uneven. Voids in the compound can adversely impact the transfer of heat away from the processor.
-
- CAUTION:** Heatsink screws must be tightened and loosened in alternating sequence. Do not overtighten the screws as this might damage the system board or the processor socket.
-

- a. Position the heatsink on top of the processor, ensuring that it is properly seated before securing the screws.
 - b. Use a T-20 Torx screwdriver to tighten the captive screws in the sequence specified on the heatsink label.
- When using a torque wrench to tighten the screws, apply a torque of 1.58 N-m (14 lbf-in).



4. If removed, install the air baffle.
5. Install the access panel.
6. Install the server into the rack.
7. Power up the server.
8. If removed, install the front bezel.

Removing and replacing a processor

Removing a processor

Prerequisites

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



- T-20 Torx screwdriver
- Alcohol wipe

Procedure

1. Observe the following alerts.



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



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



CAUTION: THE CONTACTS ARE VERY FRAGILE AND EASILY DAMAGED. To avoid damage to the socket or processor, do not touch the contacts.

2. If installed, **remove the front bezel.**

3. **Power down the server.**

4. Remove all power:

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

5. Do one of the following:

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

6. **Remove the access panel.**

7. To remove the high-performance heatsink, **remove the air baffle.**

8. Remove the heatsink:



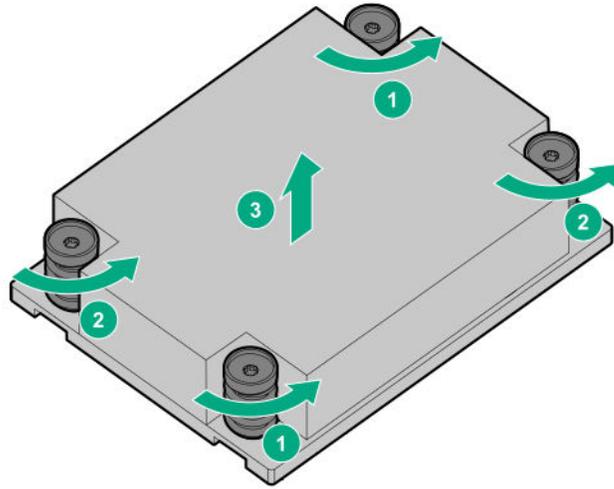
CAUTION: To prevent mechanical damage or depositing oil on your hands or other contaminant to the heatsink contact surface, hold the heatsink only by the edge of its base plate. Do not touch the heatsink fins.



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

- a. Use a T-20 Torx screwdriver to loosen the captive screws in the sequence specified on the heatsink label.
- b. Lift the heatsink away from the system board.

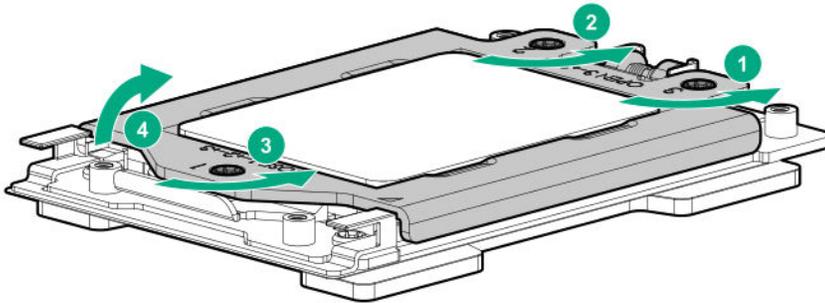




c. Place the heatsink on a flat work surface with its contact side facing upward.

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

10. Use a T-20 Torx screwdriver to loosen the three captive screws in the sequence shown in the following image, and then pivot the force frame upward.

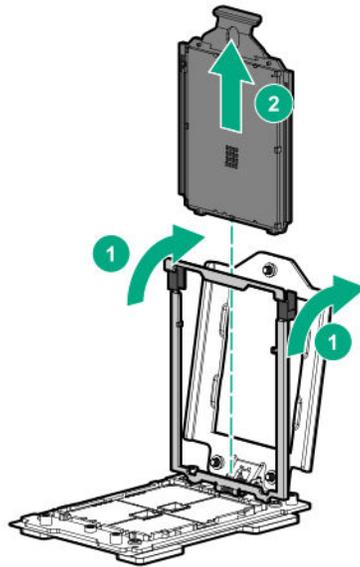


11. Remove the processor:

a. Hold the lift tabs near the front end of the rail frame, and then pivot the rail frame to the vertical position.

b. Slide the processor out of the rail frame.





Replacing a processor

Prerequisites

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

- T-20 Torx screwdriver
- Thermal grease (Spare part number: 777298-001)

Procedure

1. Observe the following alerts.

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

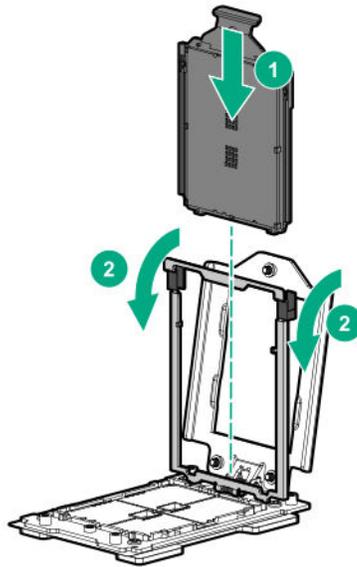
⚠ CAUTION: If installing a processor with a faster speed, update the system ROM before installing the processor.

To download firmware and view installation instructions, see the [**Hewlett Packard Enterprise Support Center website**](#).

⚠ CAUTION: THE CONTACTS ARE VERY FRAGILE AND EASILY DAMAGED. To avoid damage to the socket or processor, do not touch the contacts.

2. Install the spare processor:
 - a. Hold the processor by its carrier handle and slide the processor into the rail frame until it engages with a click sound.
 - b. Hold the lift tabs near the front end of the rail frame and pivot the rail frame to the closed position.
A click sound indicates that the rail frame is properly engaged.





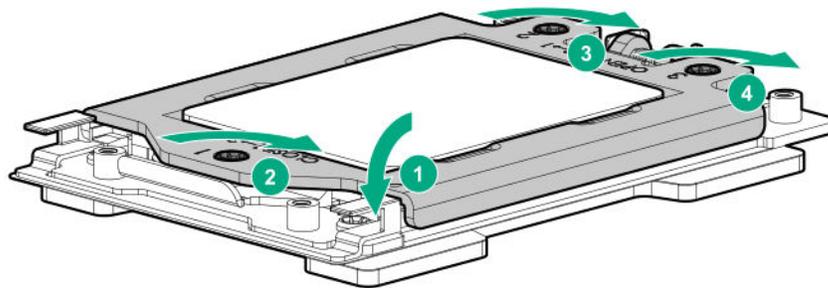
3. Close the force frame:



CAUTION: Do not overtighten the screws as this might damage the system board or the processor socket.

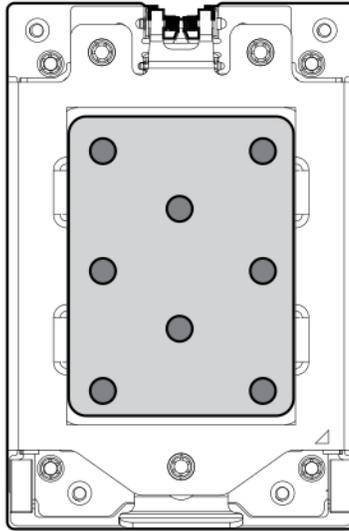
- a. Pivot the spring loaded force frame downward and hold it down (callout 1).
- b. Use a T-20 Torx screwdriver to tighten the captive screws in the sequence shown in the following image (callouts 2-4).

When using a torque wrench to tighten the screws, apply a torque of 1.58 N-m (14 lbf-in).



4. Apply new thermal grease to the processor in the pattern shown in the following image. Use the full contents of the thermal grease syringe.





5. Install the heatsink:

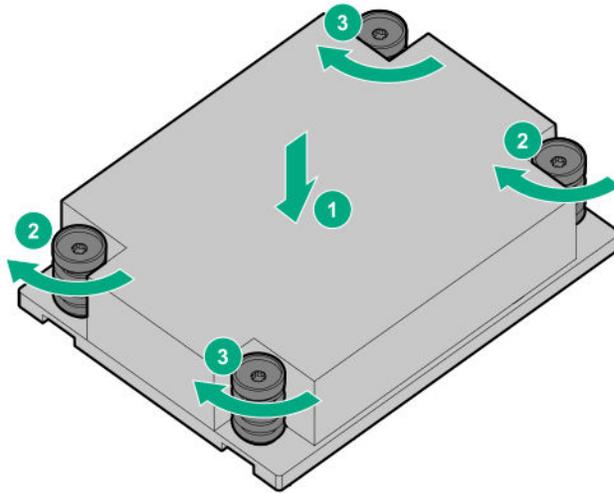
⚠ CAUTION: To prevent mechanical damage or depositing oil on your hands or other contaminant to the heatsink contact surface, hold the heatsink only by the edge of its base plate. Do not touch the heatsink fins.

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

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

- a. Position the heatsink on top of the processor, ensuring that it is properly seated before securing the screws.
- b. Use a T-20 Torx screwdriver to tighten the captive screws in the sequence specified on the heatsink label.
When using a torque wrench to tighten the screws, apply a torque of 1.58 N-m (14 lbf-in).





6. If removed, install the air baffle.
7. Install the access panel.
8. Install the server into the rack.
9. Power up the server.
10. If removed, install the front bezel.

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.

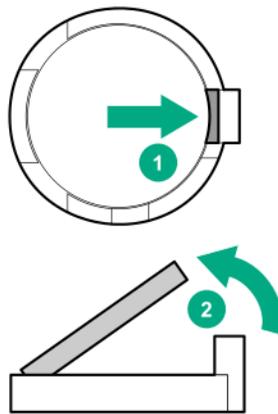
Removing and replacing the system battery

Procedure

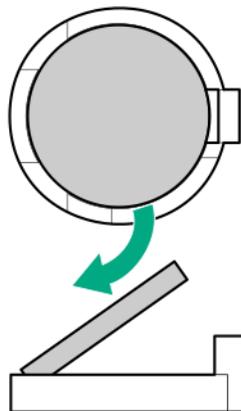
1. If installed, **remove the front bezel.**
2. **Power down the server.**



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. **Locate the battery on the system board.**
7. Remove the battery.



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



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



13. Connect each power cord to the power source.

14. **Power up the server.**

15. 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 screwdriver (for system board screws)
- T-20 screwdriver (for processor and heatsink screws)
- Alcohol wipe

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. If installed, **remove the air baffle.**
7. **Remove all fans.**
8. Disconnect the chassis intrusion detection switch cable and **remove the DIMM guards.**
9. **Remove all DIMMs.**
10. **Remove the primary riser cage.**
11. If installed, **remove the secondary riser.**
12. Remove all optional components from the system board.
13. Disconnect all cables from the system board.



14. Remove one of following power supplies:

- **Non-hot-plug power supply**
- **Hot-plug power supply**

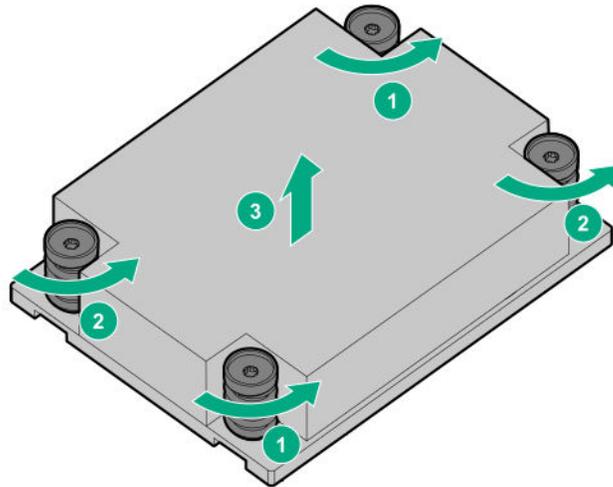
15. Allow the existing heatsink to cool.

16. Remove the heatsink:

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

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

- a. Use a T-20 Torx screwdriver to loosen the captive screws in the sequence specified on the heatsink label.
- b. Lift the heatsink away from the system board.



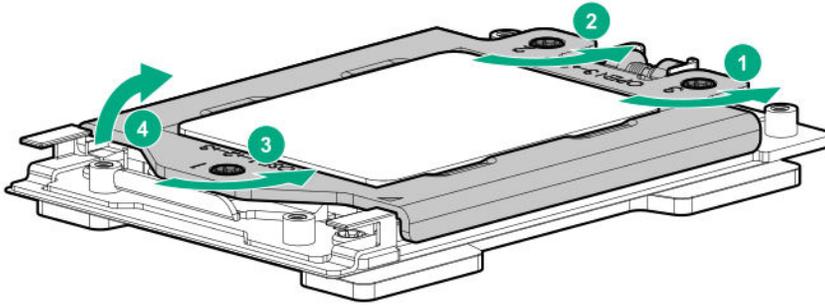
- c. Place the heatsink on a flat work surface with its contact side facing upward.

17. Use an alcohol wipe to remove the existing thermal grease from the heatsink.

Allow the alcohol to evaporate before continuing.

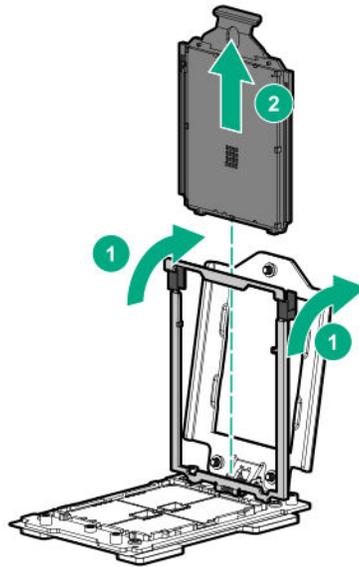
18. Use a T-20 Torx screwdriver to loosen the three captive screws in the sequence shown in the following image, and then pivot the force frame upward.





19. Remove the processor:

- a. Hold the lift tabs near the front end of the rail frame, and then pivot the rail frame to the vertical position.
- b. Slide the processor out of the rail frame.



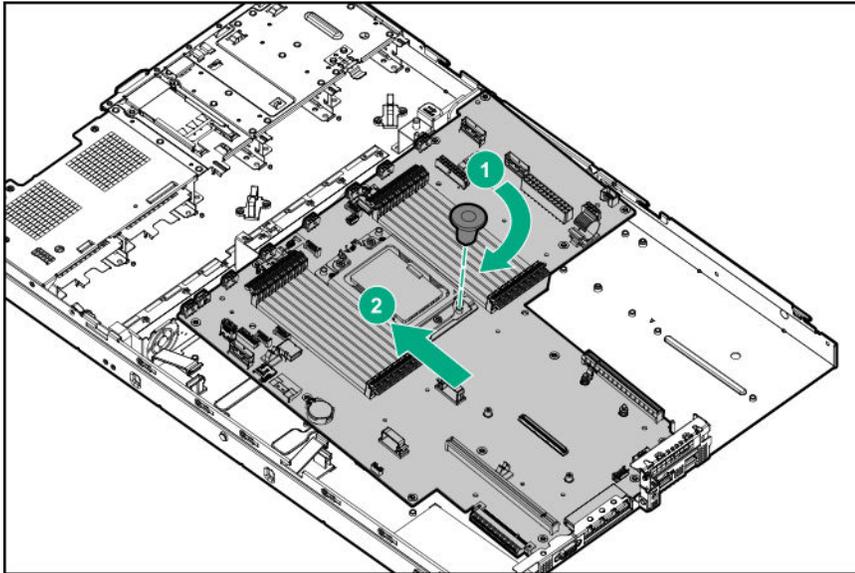
20. Use an alcohol wipe to remove the existing thermal grease from the processor.

Allow the alcohol to evaporate before continuing.

21. Remove the system board.

- a. Remove the system board screws.
- b. Install the system board handle on the system board.
- c. Hold the handle and lift the system board out of the chassis.





22. Remove the handle from the system board.

Replacing the system board

Prerequisites

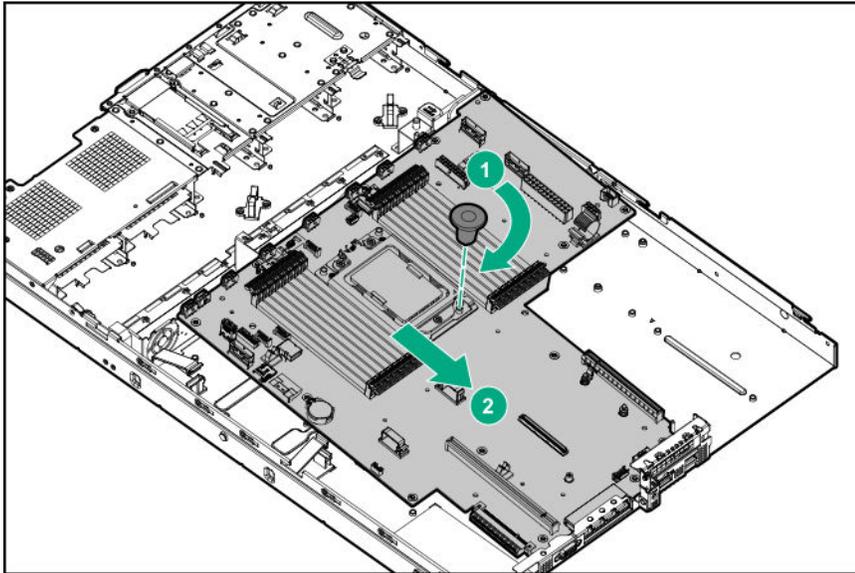
Before you perform this procedure, make sure that you have the following items available:

- T-15 screwdriver (for system board screws)
- T-20 screwdriver (processor and heatsink screws)
- Thermal grease (Spare part number: 777298-001)

Procedure

1. Install the spare system board.
 - a. Install the system board handle on the spare system board.
 - b. Place the spare system board in the chassis, holding the handle.





- c. Remove the handle from the system board.
- d. Install the system board screws.

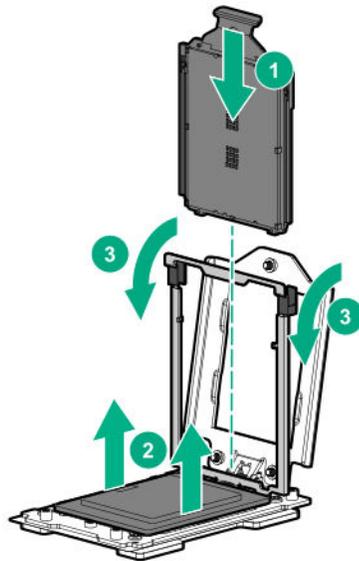
2. Install the processor:

- a. Hold the processor by its carrier handle and slide the processor into the rail frame until it engages with a click sound.
- b. Remove the pin field cover cap.

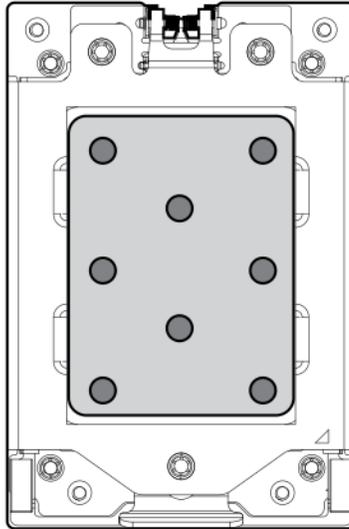


CAUTION: To prevent the risk of damaging the pins in the processor socket, do not reinstall the pin field cover cap after removing it.

- c. Hold the lift tabs near the front end of the rail frame, and then pivot the rail frame to the closed position. A click sound indicates that the rail frame is properly engaged.



3. Apply new thermal grease to the processor in the pattern shown in the following image. Use the full contents of the thermal grease syringe.



4. Install the heatsink:

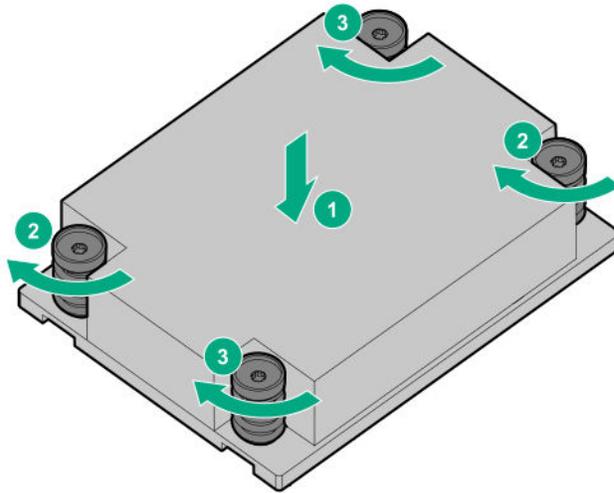
CAUTION: To prevent mechanical damage or depositing oil on your hands or other contaminant to the heatsink contact surface, hold the heatsink only by the edge of its base plate. Do not touch the heatsink fins.

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

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

- a. Position the heatsink on top of the processor, ensuring that it is properly seated before securing the screws.
- b. Use a T-20 Torx screwdriver to tighten the captive screws in the sequence specified on the heatsink label.
When using a torque wrench to tighten the screws, apply a torque of 1.58 N-m (14 lbf-in).





5. Install all the components removed from the system board.
6. Install the access panel.
7. Install the server into the rack.
8. Connect each power cord to the server.
9. Connect each power cord to the power source.
10. Power up the server.
11. If removed, install the front bezel.
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. **Re-enter the server serial number and the product ID.**

Re-entering the server serial number and product ID

After you replace the system board, you must re-enter the server serial number and the product ID.

Procedure

1. During the server startup sequence, press the **F9** key to access UEFI System Utilities.
2. Select **System Configuration > BIOS/Platform Configuration (RBSU) > Advanced Options > Advanced System ROM Options > Serial Number**, and then press the **Enter** key.
3. Enter the serial number and press the **Enter** key.

The following message appears:


```
The serial number should only be modified by qualified service personnel.  
This value should always match the serial number located on the chassis.
```
4. To clear the warning, press the **Enter** key.
5. Enter the serial number and press the **Enter** key.



6. Select Product ID.

The following warning appears:

Warning: The Product ID should ONLY be modified by qualified service personnel. This value should always match the Product ID located on the chassis.

7. Enter the product ID and press the **Enter key.**

8. To confirm exiting System Utilities, press the **F10 key.**

The server automatically reboots.

Removing and replacing the chassis intrusion detection switch

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.**

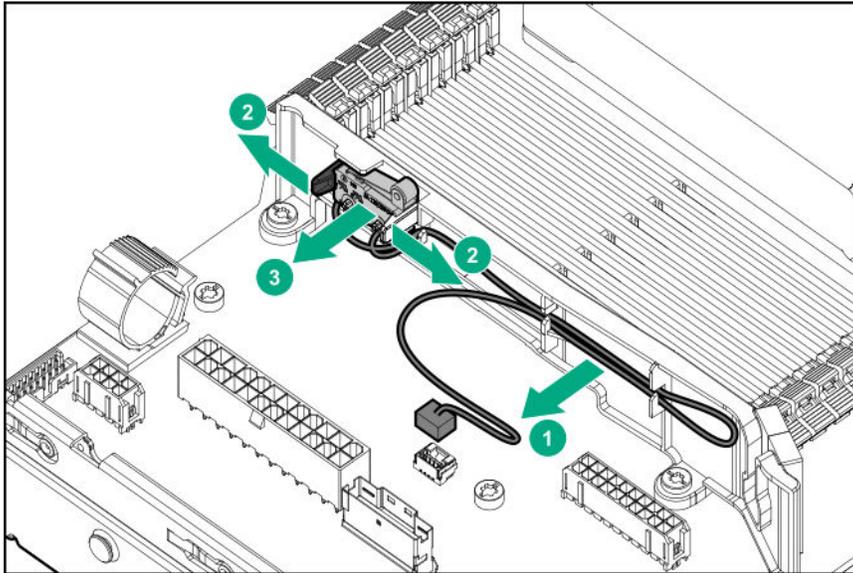
5. Remove the access panel.

6. Disconnect the chassis intrusion detection switch cable from the system board.

7. Remove the chassis intrusion detection switch.

- a.** Release the cable from the left DIMM guard.
- b.** Detach the switch from the left DIMM guard.





To replace the component, reverse the removal procedure.

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.



Intelligent Provisioning 3.30 and later includes HPE Rapid Setup Software. 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.

NOTE: After you have selected a mode, you must re provision 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 **Always On**. **Always On** 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.

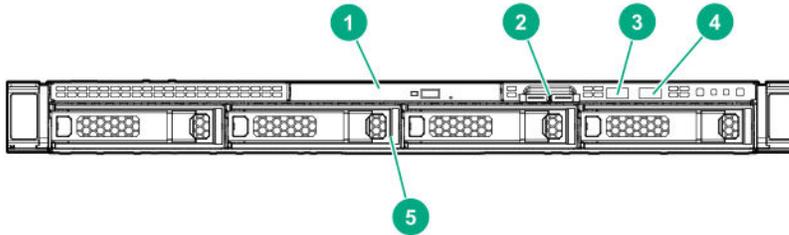
For more information, see *HPE Smart Array SR Gen10 Configuration Guide* at the [Hewlett Packard Enterprise website](#).



Component identification

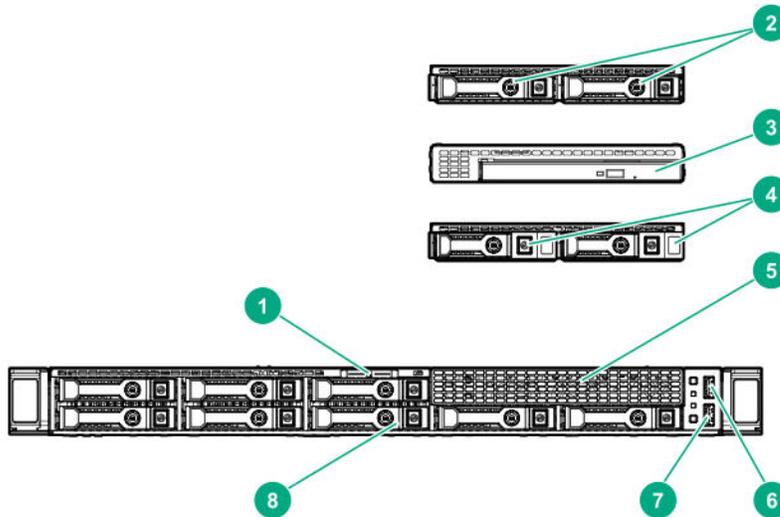
Front panel components

LFF drive model



Item	Description
1	Optical drive (optional)
2	Serial label pull tab
3	iLO service port
4	USB 3.0 port
5	LFF drive bays (up to 4 LFF drives)

SFF SAS/SATA drive model



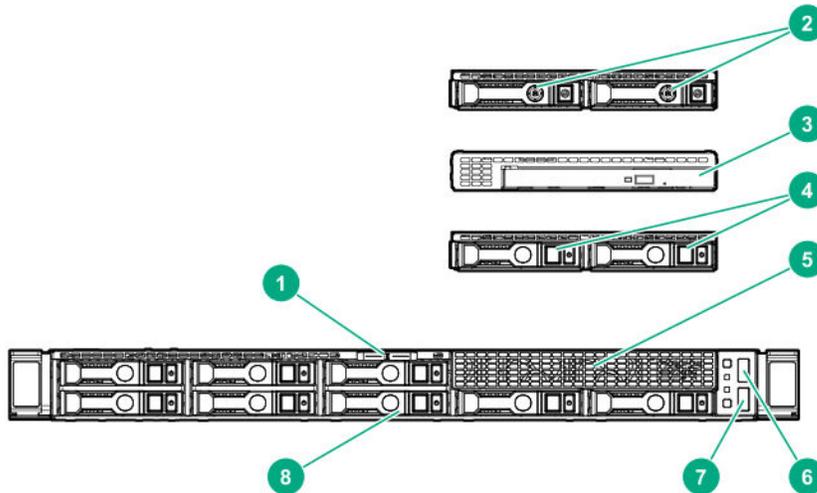
Item	Description
1	Serial label pull tab
2	2SFF SAS/SATA drive assembly (optional)

Table Continued



Item	Description
3	Optical drive assembly (optional)
4	2SFF NVMe drive assembly (optional)
5	Media bay blank
6	USB 3.0 port
7	iLO service port
8	SFF drive bays (up to 8 SAS/SATA drives)

SFF NVMe drive model



Item	Description
1	Serial label pull tab
2	2SFF SAS/SATA drive assembly (optional)
3	Optical drive assembly (optional)
4	2SFF NVMe drive assembly (optional)
5	Media bay blank
6	USB 3.0 port
7	iLO service port
8	SFF drive bays (up to 8 NVMe drives)

Serial number/iLO information pull tab

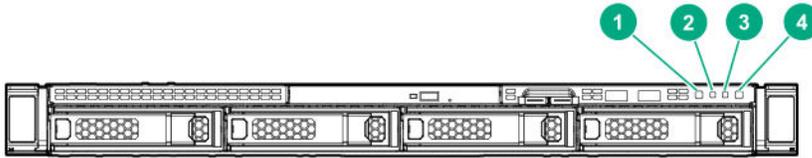
The serial number/iLO information pull tab is double-sided. One side shows the server serial number and the customer asset tag label. The other side shows the default iLO account information and QR code label.

Use a mobile device to scan the QR code label to display the server mobile product page (<http://www.hpe.com/qref/dl325gen10>). This page contains links to server setup information, spare part numbers, QuickSpecs, troubleshooting resources, and other useful product links.



Front panel LEDs and buttons

LFF drive model



Item	Description	Status
1	UID button/LED	<p>Solid blue = Activated</p> <p>Flashing blue:</p> <ul style="list-style-type: none"> • 1 flash per second = Remote management or firmware upgrade in progress • 4 flashes per second = iLO manual reboot sequence initiated • 8 flashes per second = iLO manual reboot sequence in progress <p>Off = Deactivated</p>
2	NIC status LED	<p>Solid green = Link to network</p> <p>Flashing green (1 flash per second) = Network active</p> <p>Off = No network activity</p>
3	Health LED	<p>Solid green = Normal</p> <p>Flashing green (1 flash per second) = iLO is rebooting</p> <p>Flashing amber = System degraded¹</p> <p>Flashing red (1 flash per second) = System critical¹</p>
4	Power On/Standby button and system power LED	<p>Solid green = System on</p> <p>Flashing green (1 flash per second) = Performing power on sequence</p> <p>Solid amber = System in standby</p> <p>Off = No power present ²</p>

¹ If the health LED indicates a degraded or critical state, review the system Integrated Management Log (IML) or use HPE iLO to review the system health status.

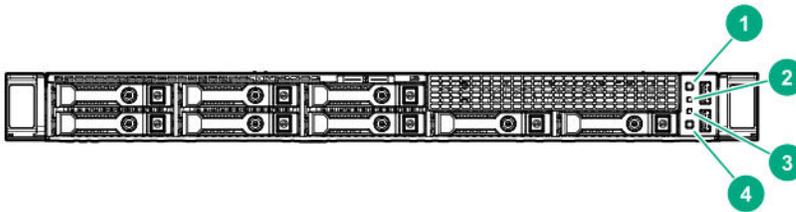


² If the system power LED is off, verify the following conditions:

- 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.

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

SFF drive model



Item	Description	Status
1	Power On/Standby button and system power LED	<p>Solid green = System on</p> <p>Flashing green (1 flash per second) = Performing power on sequence</p> <p>Solid amber = System in standby</p> <p>Off = No power present ¹</p>
2	Health LED	<p>Solid green = Normal</p> <p>Flashing green (1 flash per second) = iLO is rebooting</p> <p>Flashing amber = System degraded²</p> <p>Flashing red (1 flash per second) = System critical²</p>

Table Continued



Item	Description	Status
3	NIC status LED	<p>Solid green = Link to network</p> <p>Flashing green (1 flash per second) = Network active</p> <p>Off = No network activity</p>
4	UID button/LED	<p>Solid blue = Activated</p> <p>Flashing blue:</p> <ul style="list-style-type: none"> 1 flash per second = Remote management or firmware upgrade in progress 4 flashes per second = iLO manual reboot sequence initiated 8 flashes per second = iLO manual reboot sequence in progress <p>Off = Deactivated</p>

¹ If the system power LED is off, verify the following conditions:

- 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.

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

If all 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 iLO user guide on the Hewlett Packard Enterprise website (<https://www.hpe.com/support/iLO-docs>).

Front panel LED power fault codes

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

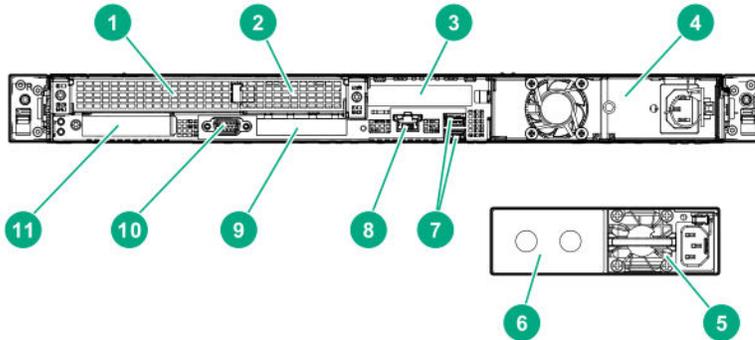
Subsystem	LED behavior
System board	1 flash
Processor	2 flashes
Memory	3 flashes
Riser board PCIe slots	4 flashes

Table Continued



Subsystem	LED behavior
FlexibleLOM	5 flashes
Storage controllers	6 flashes
System board PCIe slots	7 flashes
Power backplane or storage backplane	8 flashes
Power supply	9 flashes

Rear panel components



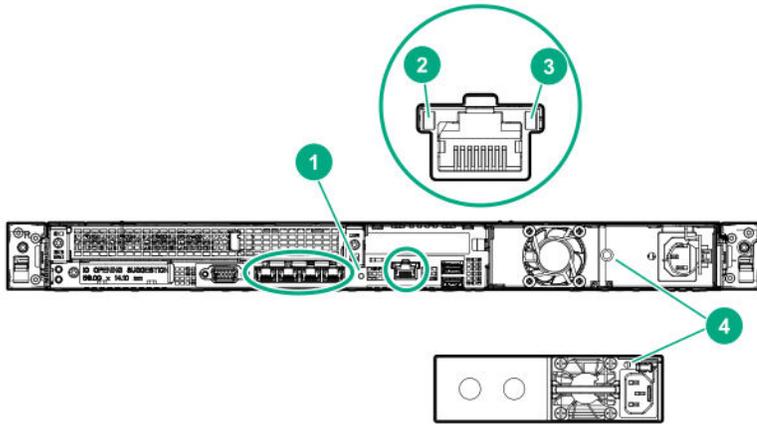
Item	Description
1	Slot 1 PCIe3 x16 (16, 8, 4, 1) ¹
2	Slot 2 PCIe3 x8 (8, 4, 1) ¹
3	Slot 3 PCIe3 x16 (16, 8, 4, 1) ¹ /Serial port (optional)
4	Standard power supply (non-hot plug)
5	Flex Slot power supply 1 (hot-plug)
6	Flex Slot power supply 2 (hot-plug)
7	USB 3.0 ports (2)
8	iLO Management port
9	NIC ports (if equipped) ²
10	Video port
11	FlexibleLOM (optional)

¹ For more information, see [PCIe riser board slot definitions](#).

² Embedded 4x 1GbE network port is not equipped on the system board for 7xx2 processors.



Rear panel LEDs

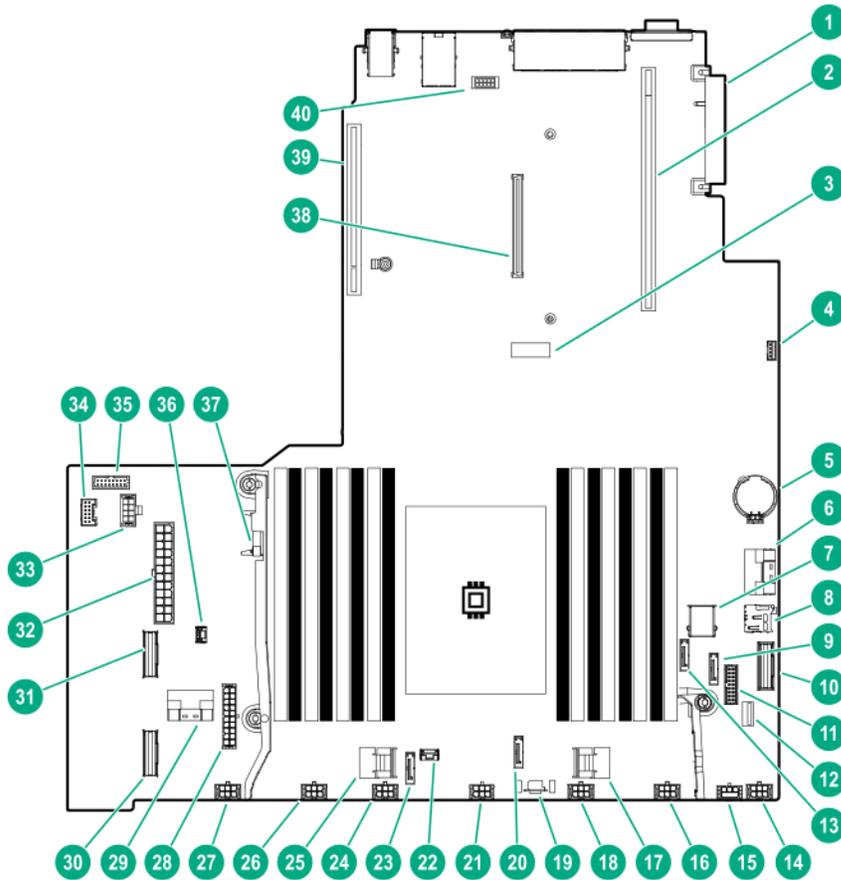


Item	LED	Status	Definition
1	UID	Solid blue	Activated
		Flashing blue	1 flash per sec = Remote management or firmware upgrade in progress
			4 flashes per sec = iLO manual reboot sequence initiated
			8 flashes per sec = iLO manual reboot sequence in progress
Off	Deactivated		
2	NIC link ¹	Green	Network link
		Off	No network link
3	NIC status ¹	Solid Green	Linked to network
		Flashing green	Network active
		Off	No network activity
4	Power supply	Solid green	Normal
		Off	System is off or power supply has failed.

¹ For servers equipped with onboard NIC ports



System board components



Item	Description
1	FlexibleLOM connector
2	Primary PCIe riser connector
3	System maintenance switch
4	iLO Service Port connector
5	System battery
6	NVMe connector port 4A
7	Internal USB 3.0 connector
8	microSD card slot ¹
9	x1 SATA port 4
10	NVMe connector port 5A
11	Front I/O connector
12	Front USB 3.0 connector
13	x1 SATA port 3

Table Continued



Item	Description
14	Fan connector 7
15	GPU power connector
16	Fan connector 6
17	x4 SATA port 2
18	Fan connector 5
19	TPM connector
20	x1 SATA port 2
21	Fan connector 4
22	SATA management port
23	x1 SATA port 1
24	Fan connector 3
25	x4 SATA port 1
26	Fan connector 2
27	Fan connector 1
28	Drive backplane power connector
29	NVMe connector port 3A
30	NVMe connector port 2A
31	NVMe connector port 1A
32	Power connector for Standard or Flex Slot power supply
33	Power connector for Flex Slot power supply
34	Energy pack connector
35	Sideband connector for Flex Slot power supply
36	Chassis intrusion detection switch connector
37	Chassis intrusion detection switch (optional)
38	Smart Array modular controller connector ²
39	Secondary PCIe riser connector
40	Serial port connector

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**.

² This connector is not available if the expansion board is installed in the secondary riser slot 3.



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
S11	—	Reserved
S12	—	Reserved

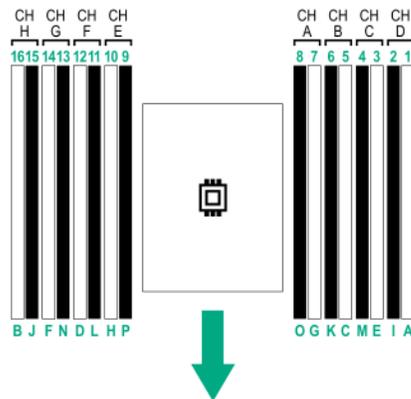
¹ To access the redundant ROM, set S1, S5, and S6 to On.

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 slot locations

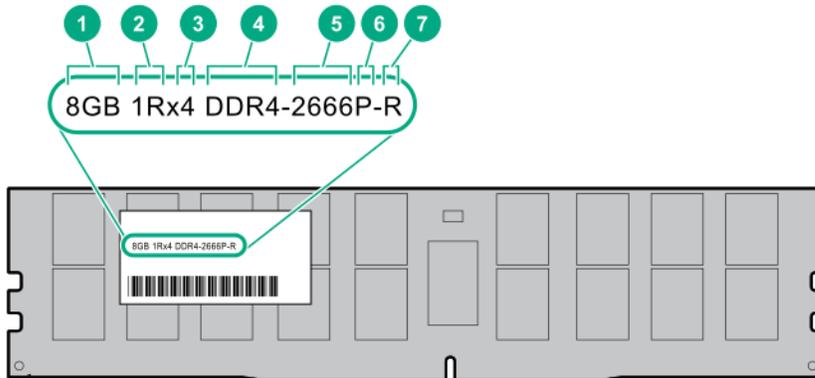
DIMM slots are numbered sequentially (1 through 16). The supported Advance Memory Protection (AMP) modes use the letter assignments for population guidelines.



The arrow points to the front of the server.

DIMM label identification

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



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

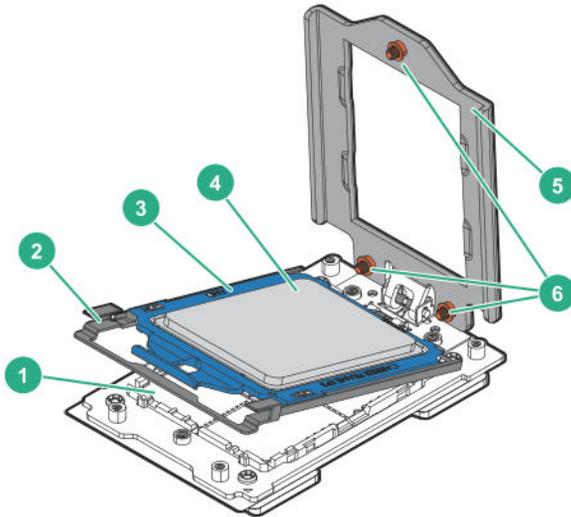
Table Continued



Item	Description	Example
6	CAS latency	P = 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>).

Processor and socket components



Item	Description
1	Pin field
2	Rail frame
3	Carrier frame
4	Processor

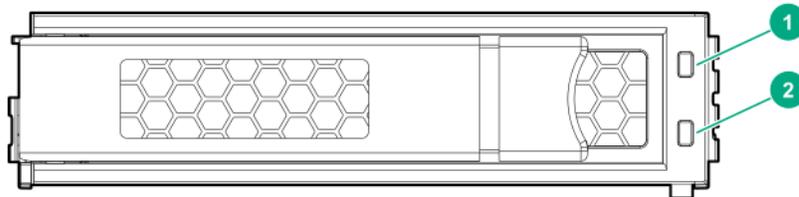
Table Continued



Item	Description
5	Force frame
6	Captive screws (Torx T-20)

Drive LEDs and buttons

Low-profile LFF drive LED definitions



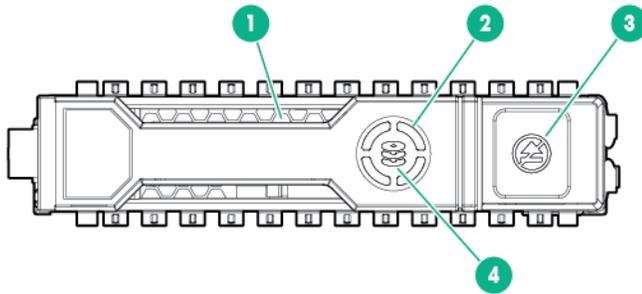
Item	LED	Status	Definition
1	Fault \Locate	Solid amber	The drive has failed.
		Solid blue	The drive is operating normally and being identified by a management application.
		Flashing amber/blue (1 flash per second)	The drive has failed, or a predictive failure alert has been received for this drive; it also has been identified by a management application.
		Flashing amber (1 flash per second)	A predictive failure alert has been received for this drive. Replace the drive as soon as possible.
2	Online \Activity	Solid green	The drive is online and has no activity.
		Flashing green (4 flashes per second)	The drive is operating normally and has activity.

Table Continued



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

Smart Carrier (SC) drive LED definitions



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

Table Continued

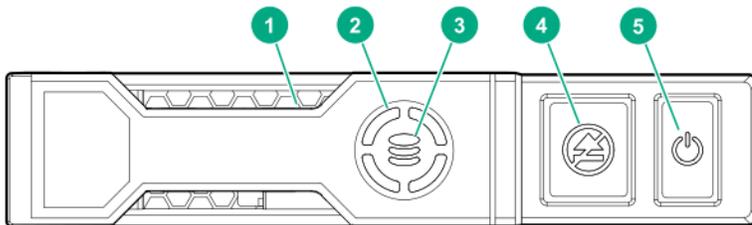


Item	LED	Status	Definition
		Flashing green	The drive is doing one of the following: <ul style="list-style-type: none"> • Rebuilding • Performing a RAID migration • Performing a strip size migration • Performing a capacity expansion • Performing a logical drive extension • Erasing • Spare part activation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

Smart Carrier NVMe (SCN) drive LED definitions

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

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



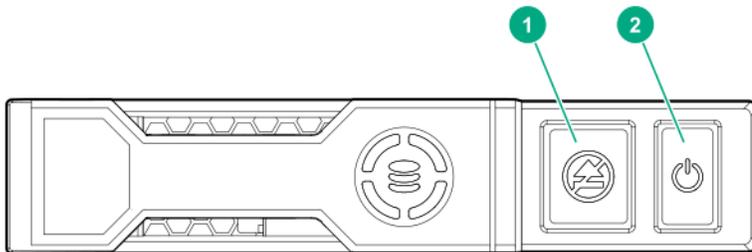
Item	LED	Status	Definition
1	Locate	Solid blue	The drive is being identified by a host application.
		Flashing blue	The drive carrier firmware is being updated or requires an update.
2	Activity ring	Rotating green	Drive activity
		Off	No drive activity
3	Drive status	Solid green	The drive is a member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

Table Continued



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

NVMe SSD button actions



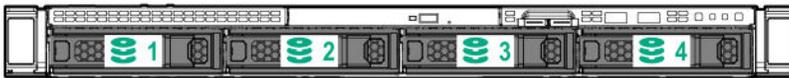
Item	Button	Action
1	Do Not Remove	Press to open the release lever.
2	Power	Press to request PCIe ejection. Removal request can be denied by the: <ul style="list-style-type: none"> RAID controller (one or more of the logical drives could fail) Operating system

Drive bay numbering

CAUTION: When a server is purchased without any drive installed, some drive bays might be empty while other drive bays might be populated with drive blanks.

To maintain proper system cooling, do not operate the server without a drive or a drive blank installed.

- LFF drive model



- SFF SAS/SATA drive model



Drive numbering colors	Description
Green	8SFF SAS/SATA drives
Blue	2SFF NVMe drives (optional)
Orange	2SFF SAS/SATA drives (optional)

- SFF NVMe drive model





Drive numbering colors	Description
Green	8SFF NVMe drives
Blue	2SFF NVMe drives (optional)
Orange	2SFF SAS/SATA drives (optional)

DSC-25 2-port SFP28 card ports and LEDs

Ports

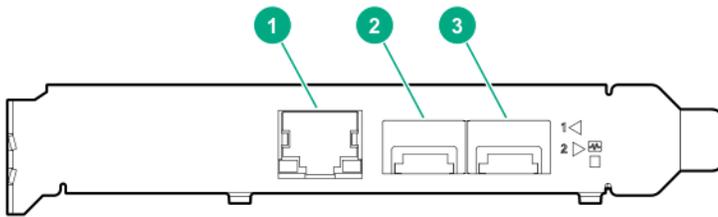


Table 1: Ports

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

LEDs

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



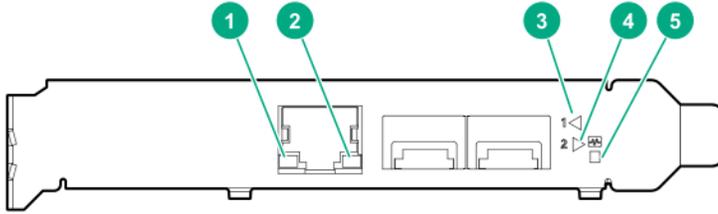


Table 2: LED indicators

Item	LED	Status	Description
1	Management Port Activity LED	Off	No activity
		Flashing	Passing traffic; flashing frequency indicates traffic intensity
2	Management Port Link LED	Off	A link has not been established
		Solid green	Valid Ethernet link
3	SFP Port 1 Link/Activity LED	Off	A link has not been established
		Solid green	Valid Ethernet link
		Flashing green	Passing traffic; flashing frequency indicates traffic intensity
		Solid amber	Link fault
4	SFP Port 2 Link/Activity LED	Off	A link has not been established
		Solid green	Valid Ethernet link
		Flashing green	Passing traffic; flashing frequency indicates traffic intensity
		Solid amber	Link fault
5	System status LED	Off	System is not powered
		Solid amber	Power is up, software has not booted yet
		Solid green	System is up and fully operational

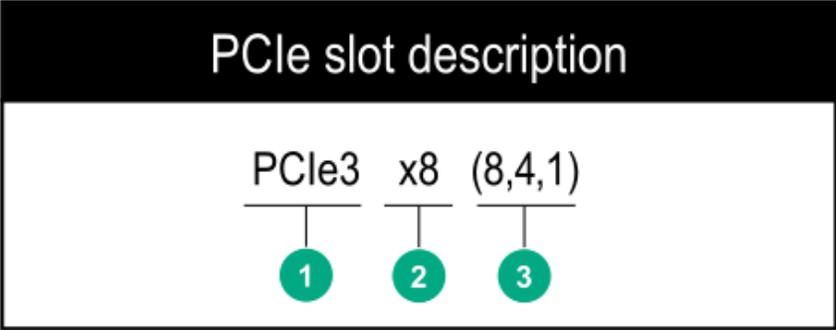


PCIe expansion slot definitions

Slot	Type	Form factor	Connector link width	Negotiable link width
1 ¹	PCIe 3.0	FL, FH ²	x16	16, 8, 4, 1
2	PCIe 3.0	HL, HH ³	x8	8, 4, 1
3 ⁴	PCIe 3.0	HL, HH ³	x16	16, 8, 4, 1

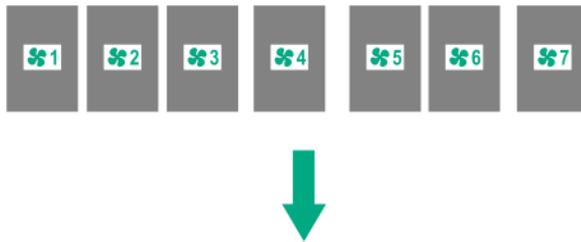
- ¹ GPU can be supported only in slot 1.
- ² FL, FH=Full length, full height
- ³ HL, HH=Half length, half height
- ⁴ Slot 3 is unavailable when a Smart Array type-a modular controller is installed in the system.

PCIe slot description



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

Fan bay numbering



The arrow points to the front of the server.



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.

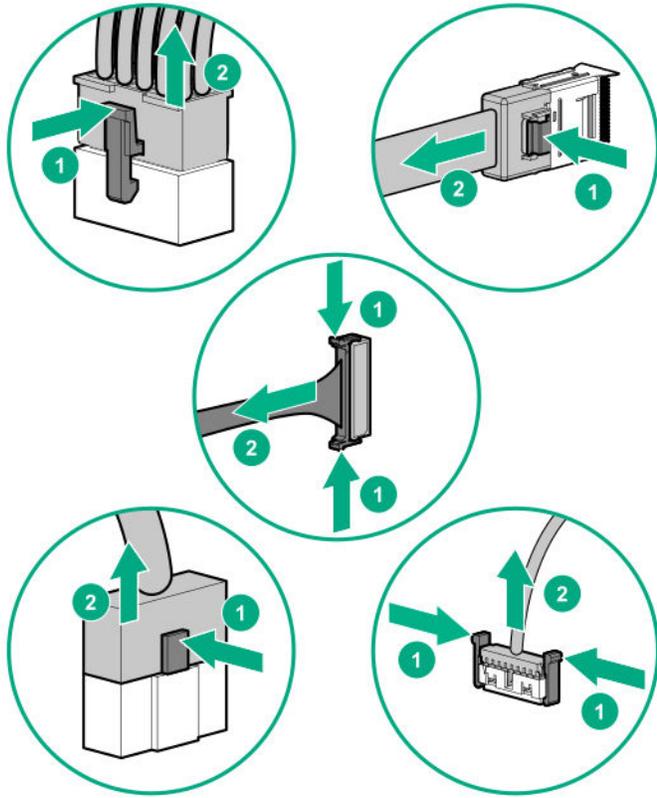
When connecting cables

- 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.

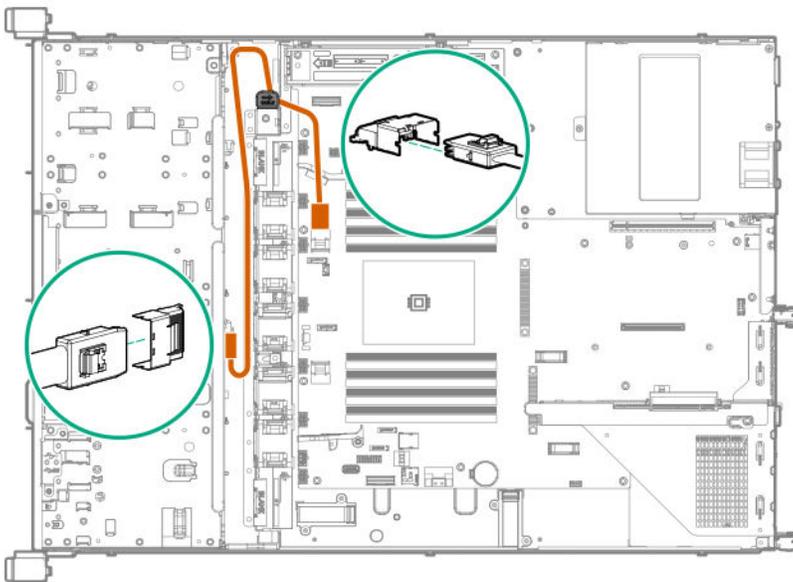




- Remove cables that are no longer being used. Retaining them inside the server can restrict airflow. If you intend to use the removed cables later, label and store them for future use.

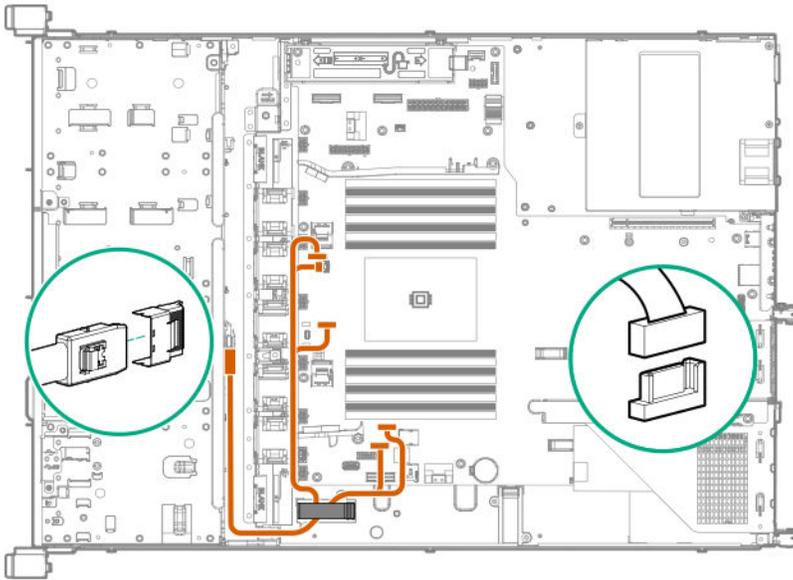
Cable routing: 4LFF drive model

- 4LFF drive connected to system board

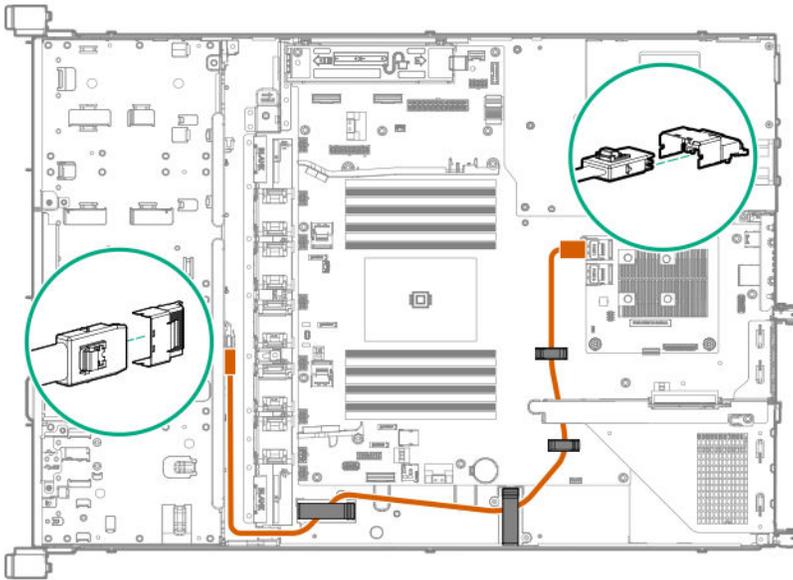


- 4LFF drive connected to Embedded HPE Smart Array S100i SR Gen10 Controller



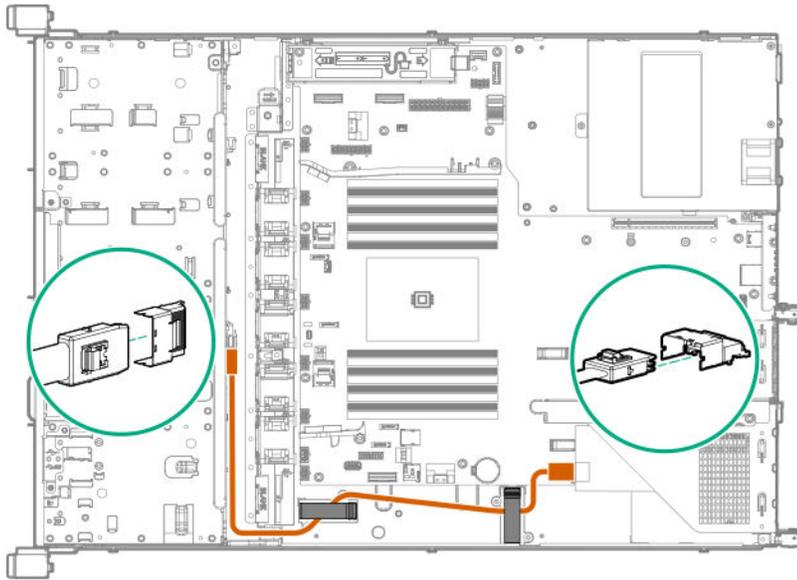


- 4LFF drive connected to type-a controller

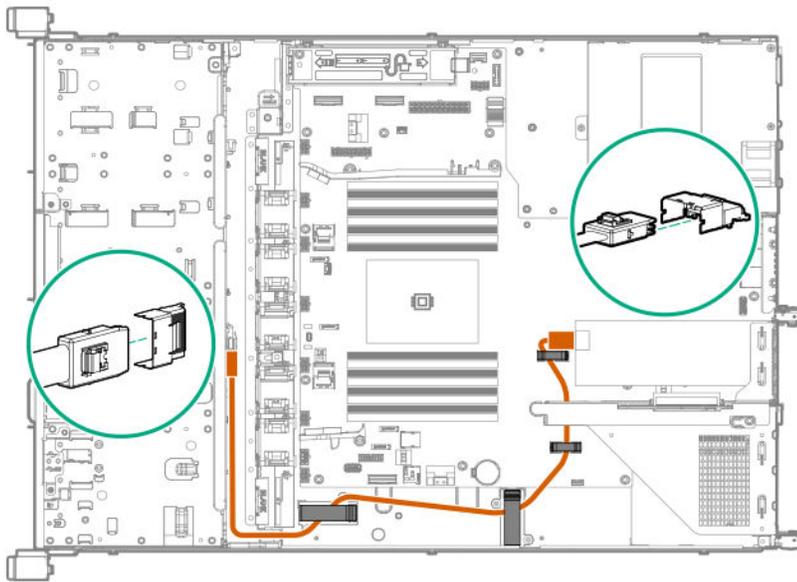


- 4LFF drive connected to type-p controller
 - Slot 1



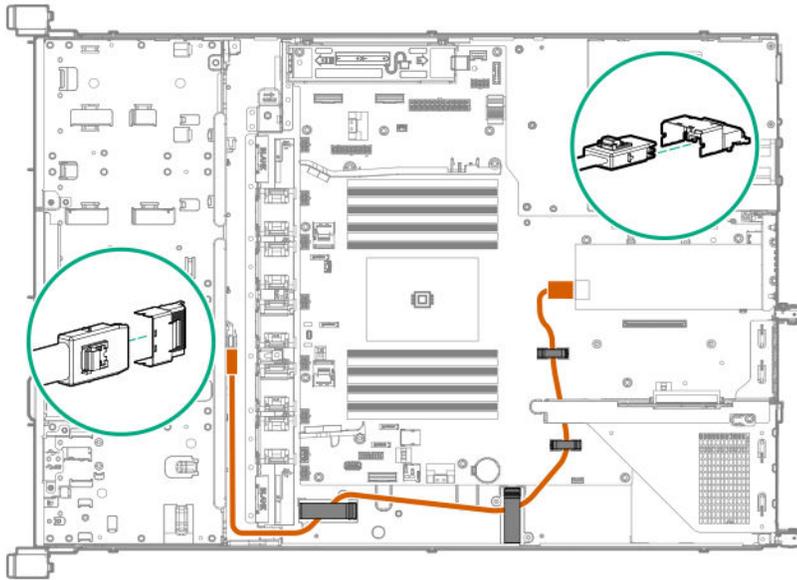


- Slot 2

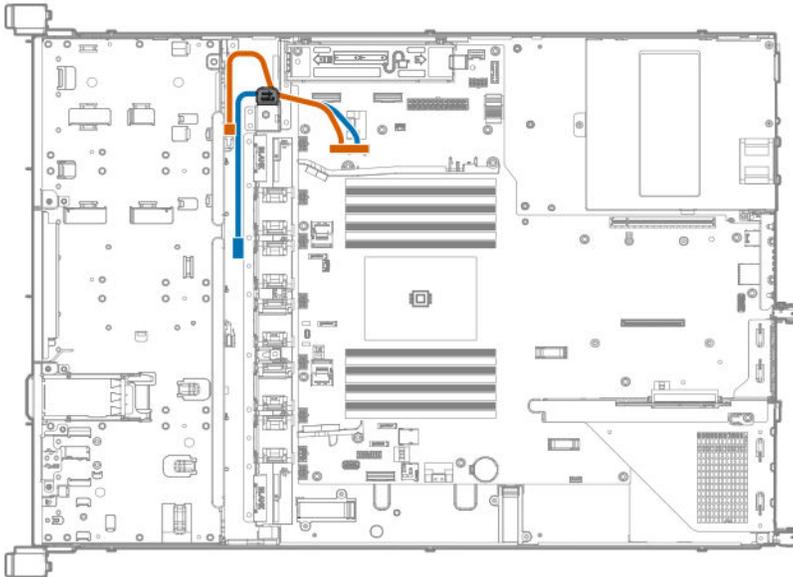


- Slot 3





- 4LF drive power cable

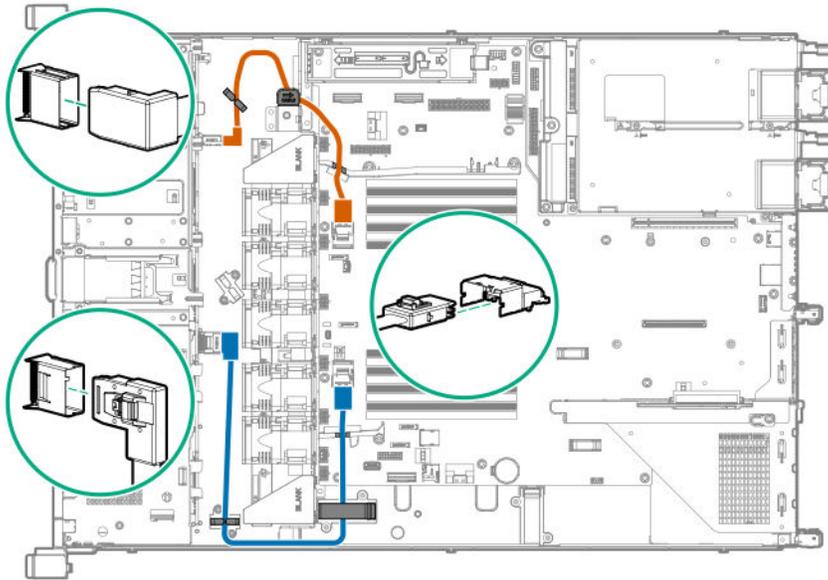


Cable color	Description
Orange	Power cable from system board to drive backplane
Blue	Power cable from system board to ODD (reserved)

Cable routing: 8SFF SAS/SATA drive model

- 8SFF drive connected to system board

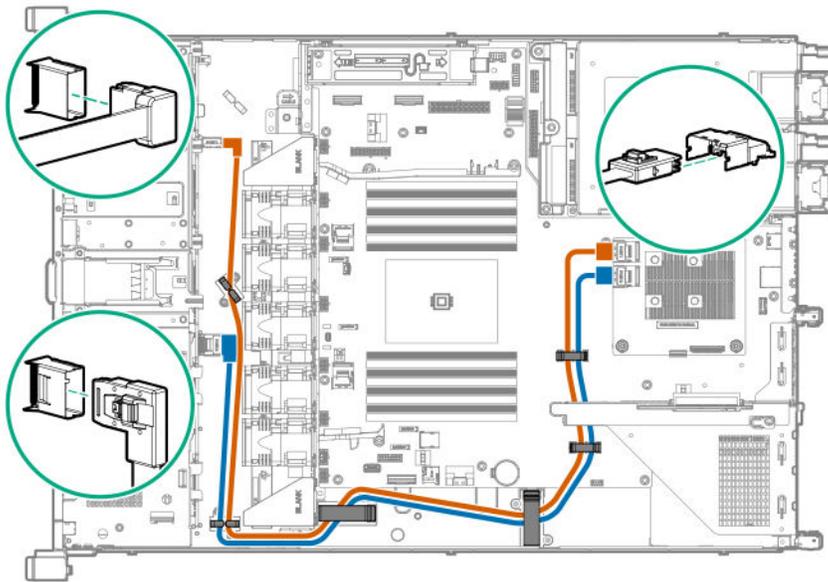




Cable color	Description
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Orange	SATA cable from port 1 backplane to port 1 system board
Blue	SATA cable from port 2 backplane to port 2 system board

- 8SFF drive connected to type-a controller

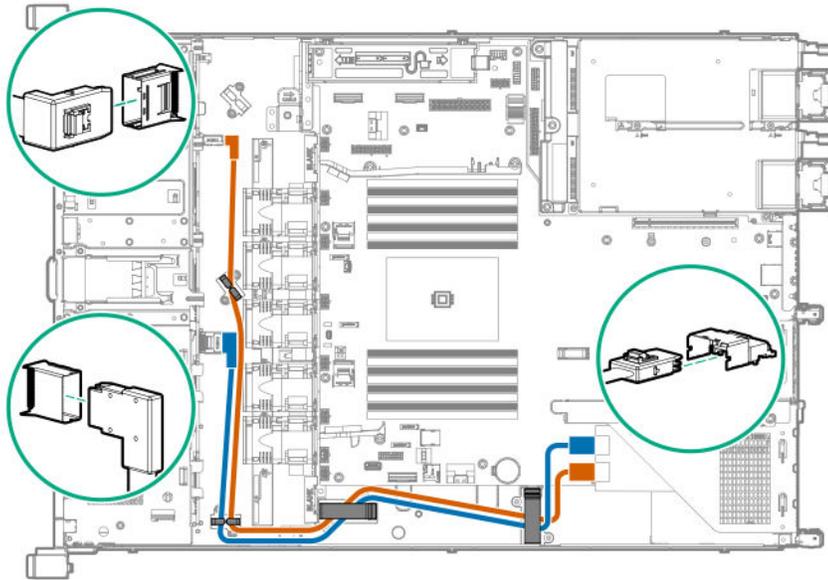


Cable color	Description
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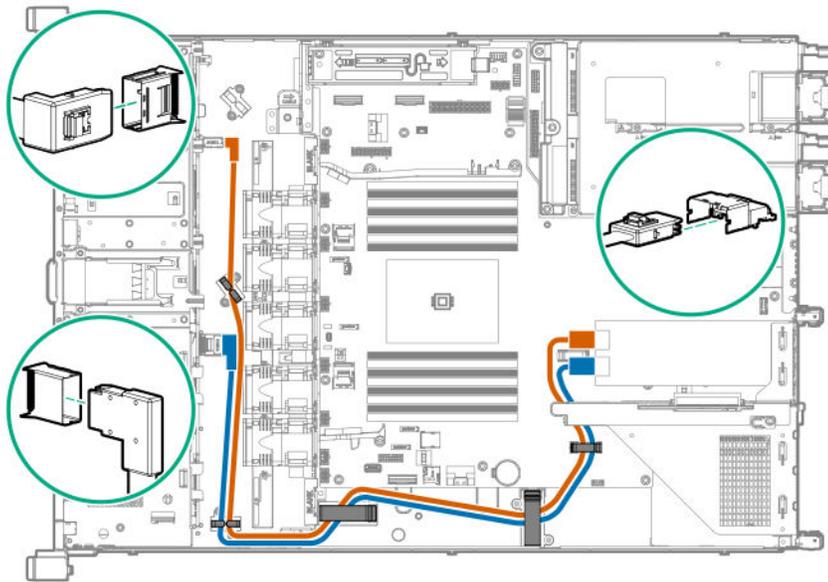
Orange	Mini-SAS cable from port 1 backplane to port 1 type-a controller
Blue	Mini-SAS cable from port 2 backplane to port 2 type-a controller

- 8SFF drive connected to type-p controller
 - Slot 1



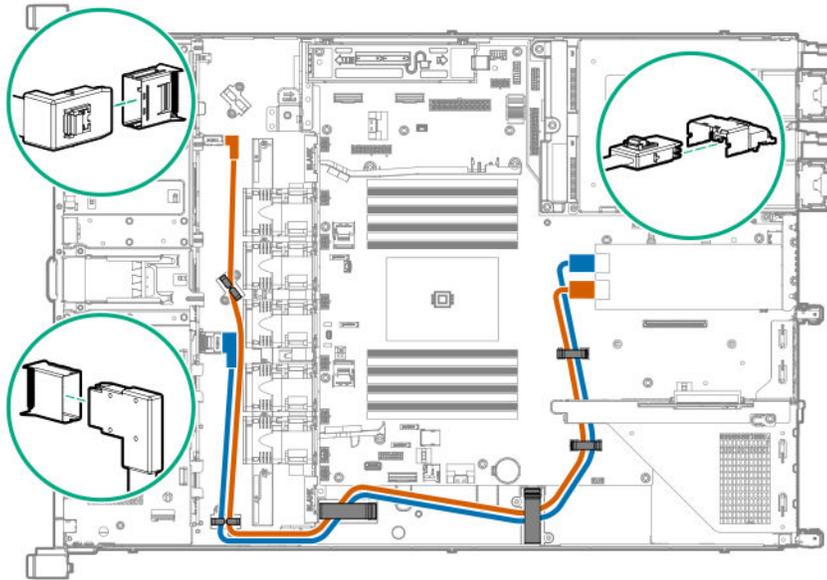


- Slot 2



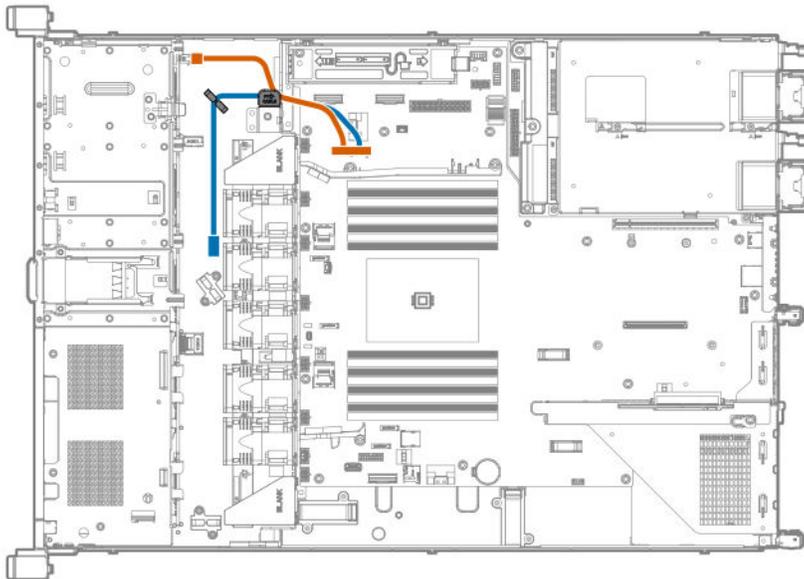
- Slot 3





Cable color	Description
Orange	Mini-SAS cable from port 1 backplane to port 1 type-p controller
Blue	Mini-SAS cable from port 2 backplane to port 2 type-p controller

- 8SFF SAS/SATA drive power cable

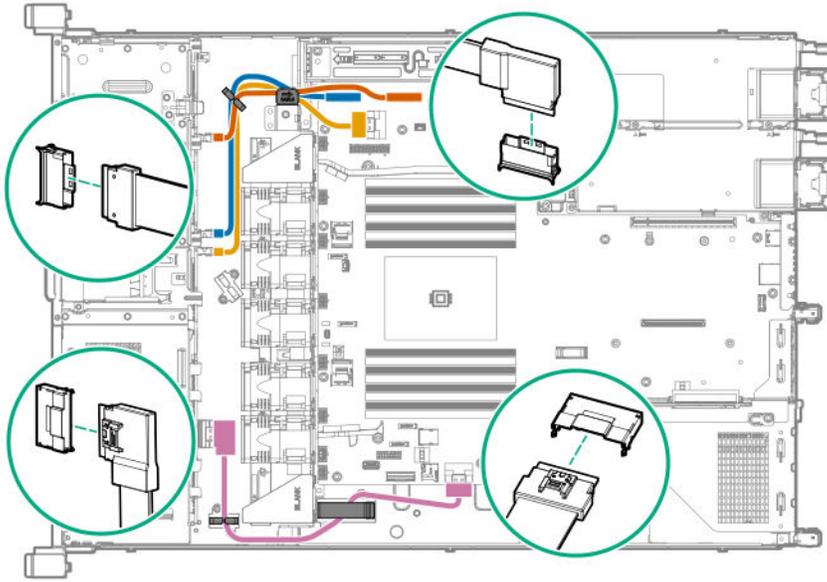


Cable color	Description
Orange	Power cable from system board to drive backplane
Blue	Power cable from system board to ODD (reserved)



Cable routing: 8SFF NVMe drive model

- 8NVMe drive connected to system board



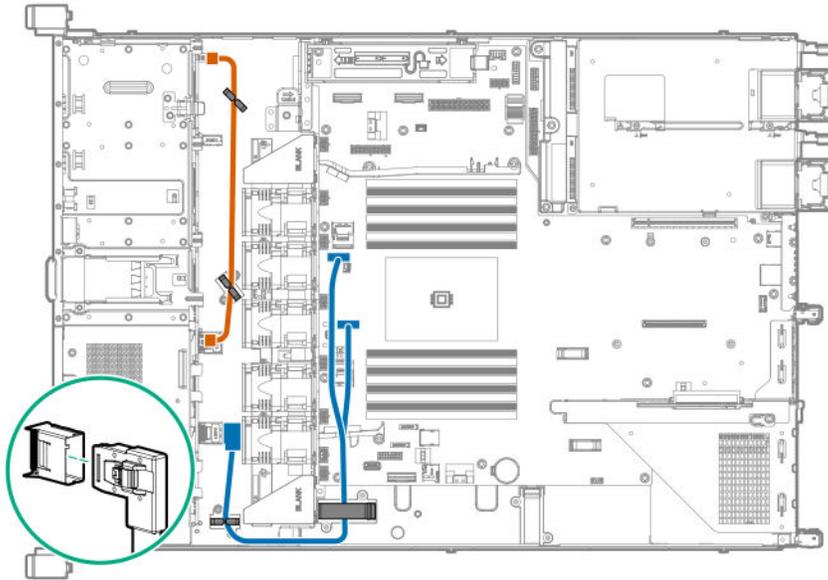
Item	Description
Orange	Slimline cable to NVMe port 1A on system board
Blue	Slimline cable to NVMe port 2A on system board
Gold	Slimline cable to NVMe port 3A on system board
Pink	Slimline cable to NVMe port 4A on system board

- **8NVMe drive power cable**

Cable routing: 2SFF SAS/SATA drive cage

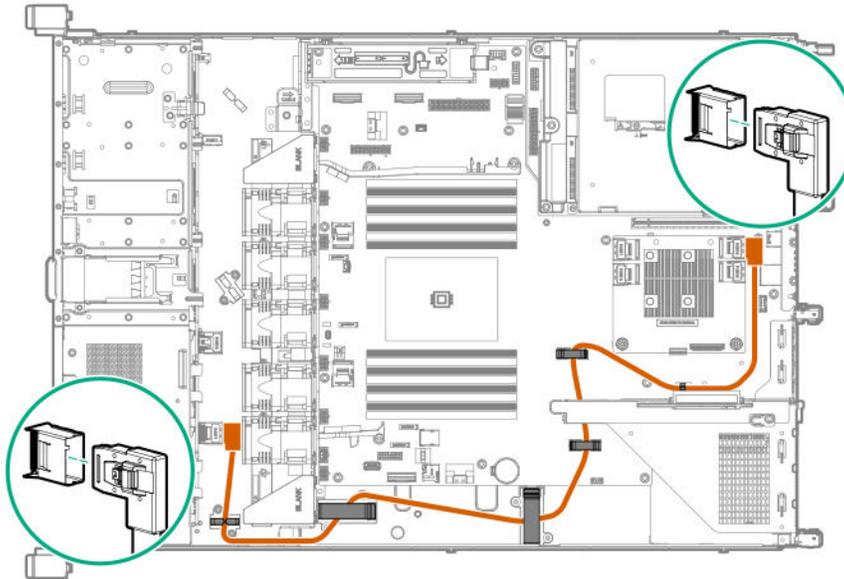
- SATA cable to system board



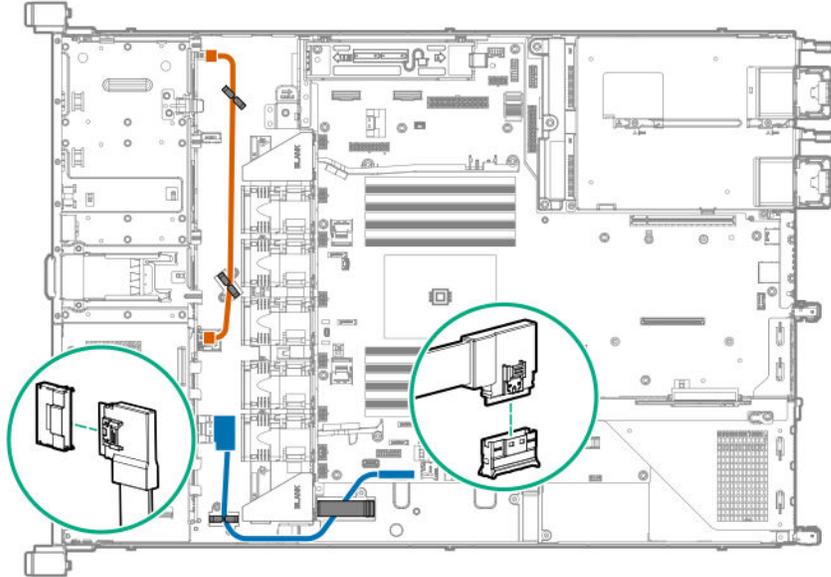


Item	Description
Orange	Power cable from 8SFF drive backplane to 2SFF drive backplane
Blue	SATA cable to SATA ports 1 & 2 on system board

- Mini-SAS cable to type-a controller



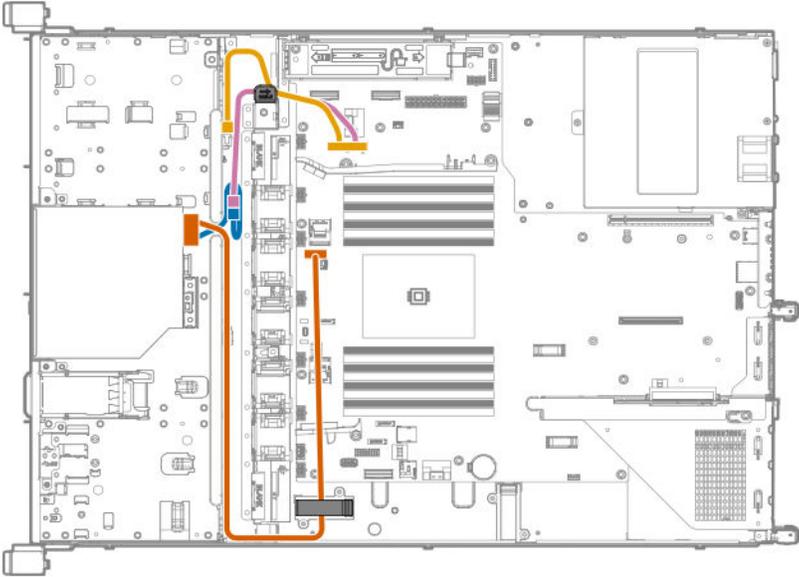
Cable routing: 2SFF NVMe drive cage



Item	Description
Orange	Power cable from 8SFF drive backplane to 2SFF drive backplane
Blue	Slimline cable to NVMe port 5A on system board

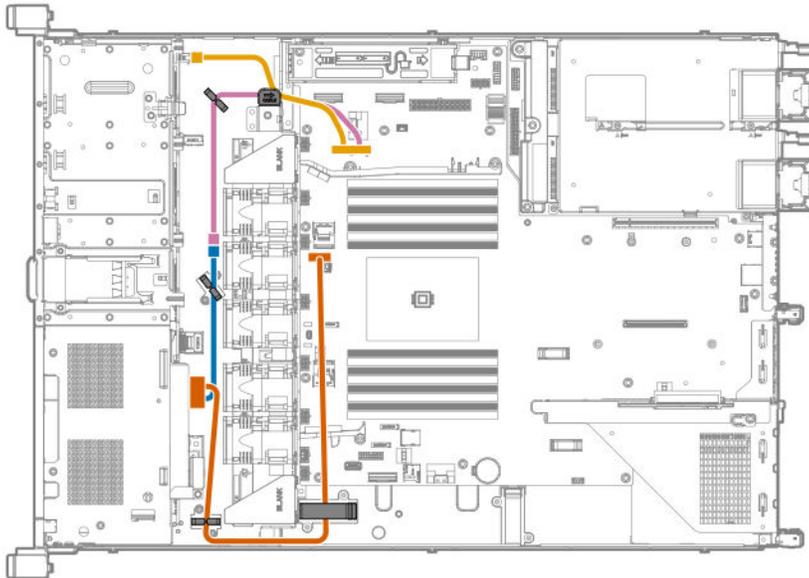
Cable routing: Optical Drive

- LFF



Item	Description
Orange	ODD SATA cable
Blue	ODD power cable
Pink	Power cable from system board to ODD
Gold	Power cable from system board to drive backplane

- SFF

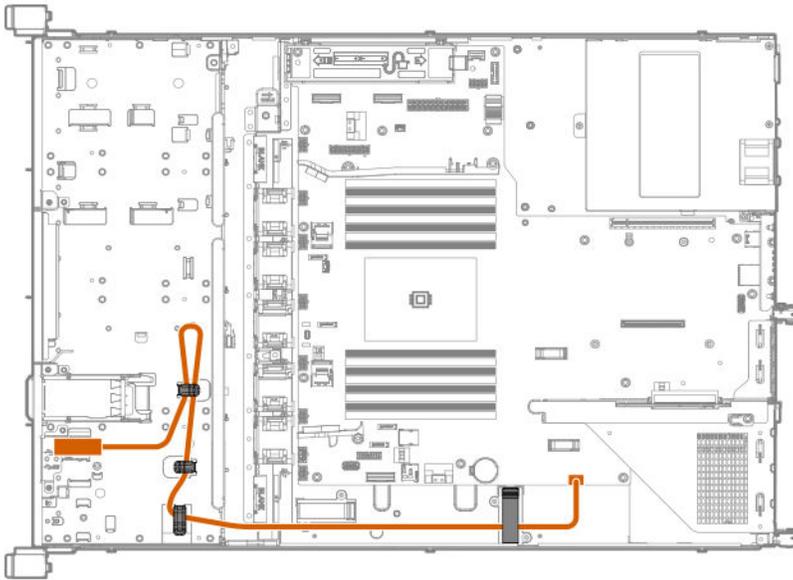


Item	Description
Orange	ODD SATA cable
Blue	ODD power cable
Pink	Power cable from system board to ODD
Gold	Power cable from system board to drive backplane

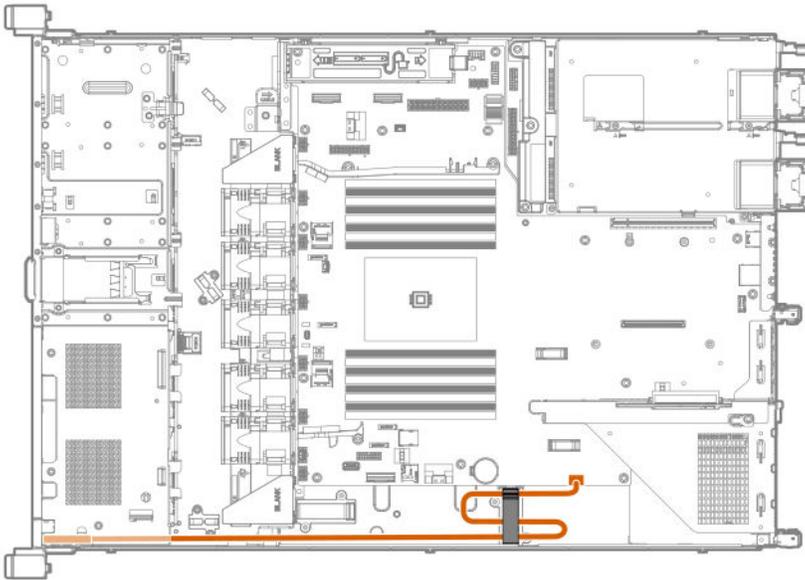
Cable routing: iLO service port

- LFF





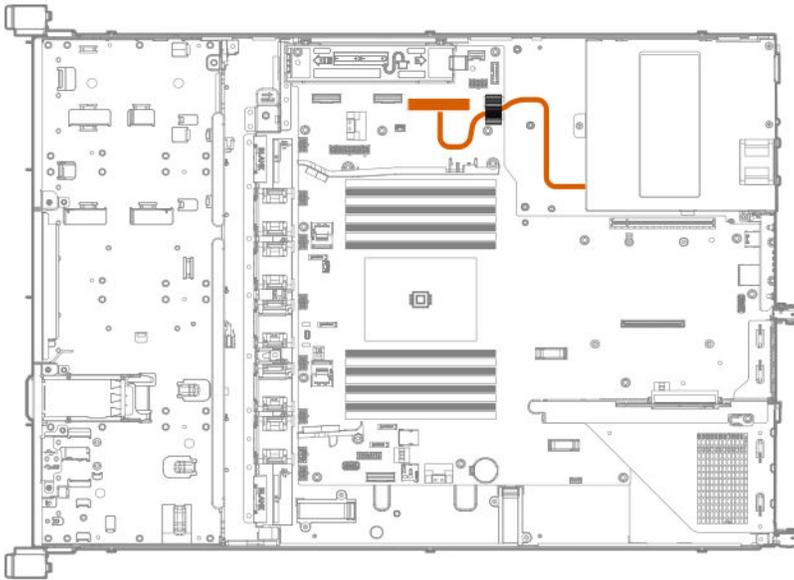
- SFF



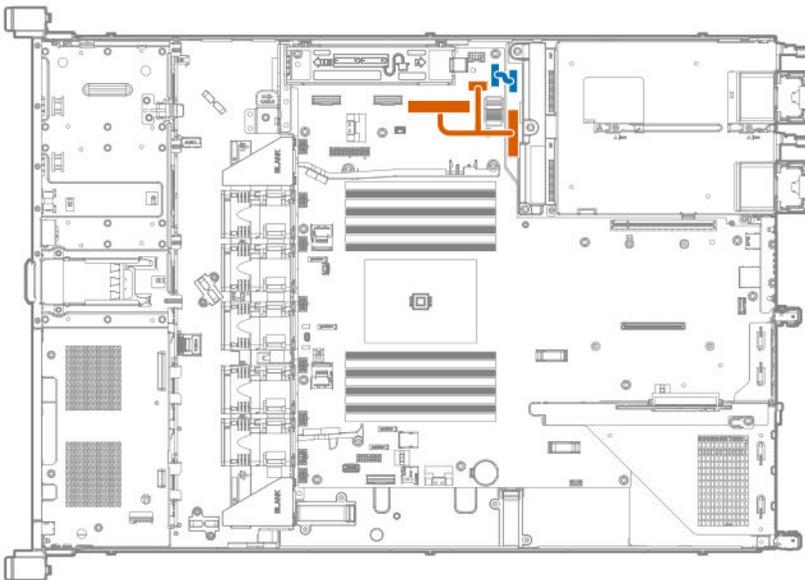
Cable routing: Power supply

- Non-hot-plug power supply





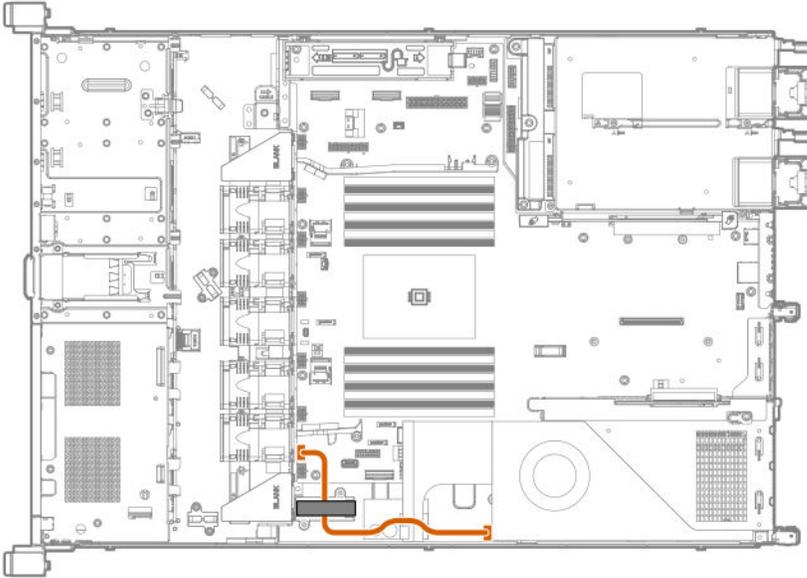
- Power distribution board (PDB) to system board



Item	Description
Orange	Power cable
Blue	Sideband signal cable

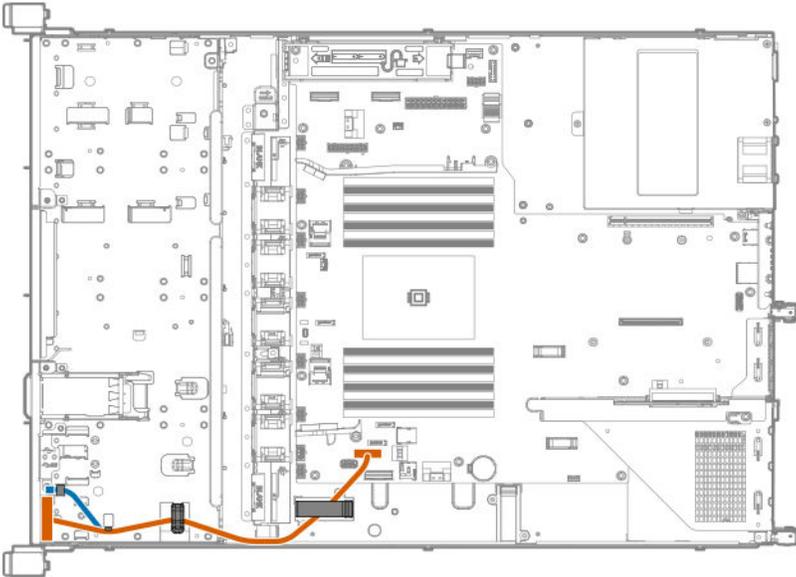


Cable routing: GPU



Cable routing: Front I/O

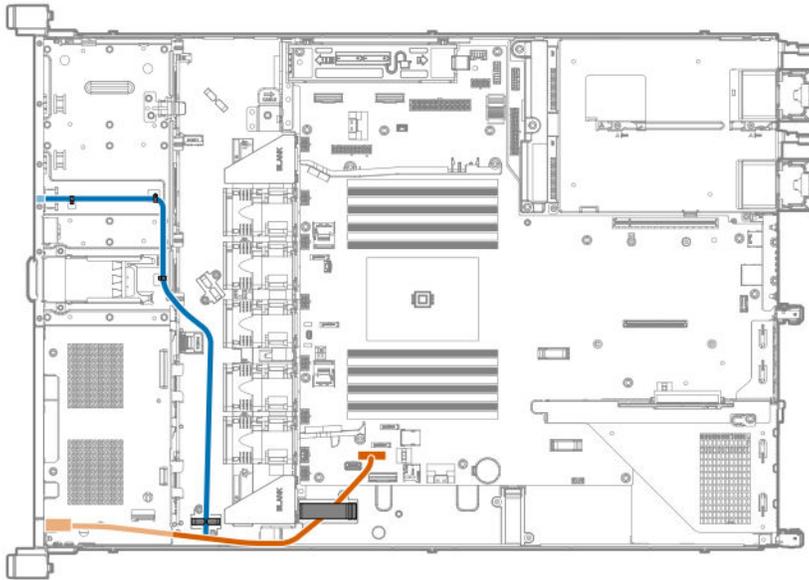
- LFF



Item	Description
Orange	Front I/O cable
Blue	Ambient temperature sensor cable

- SFF

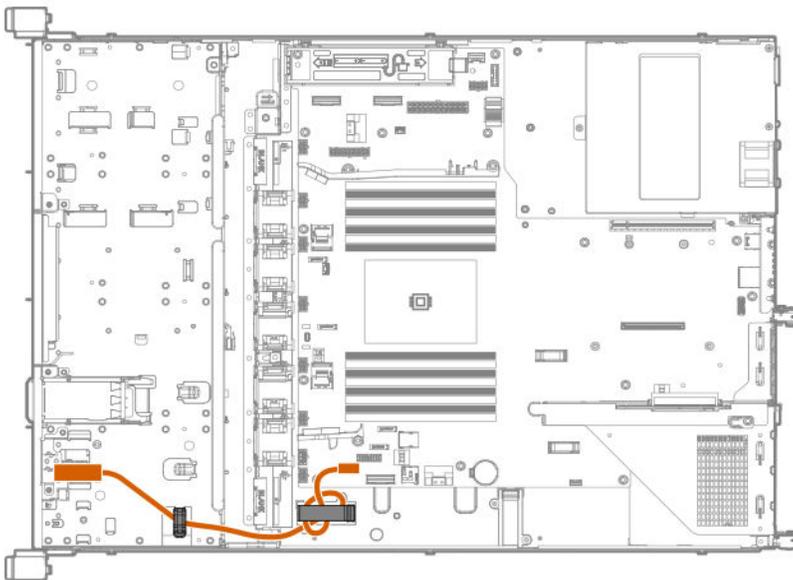




Item	Description
Orange	Front I/O cable
Blue	Ambient temperature sensor cable

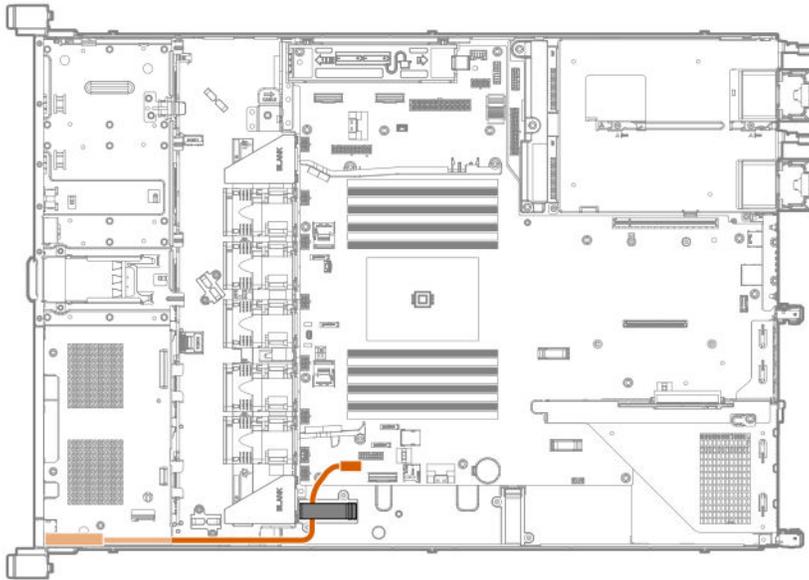
Cable routing: USB 3.0

- LFF

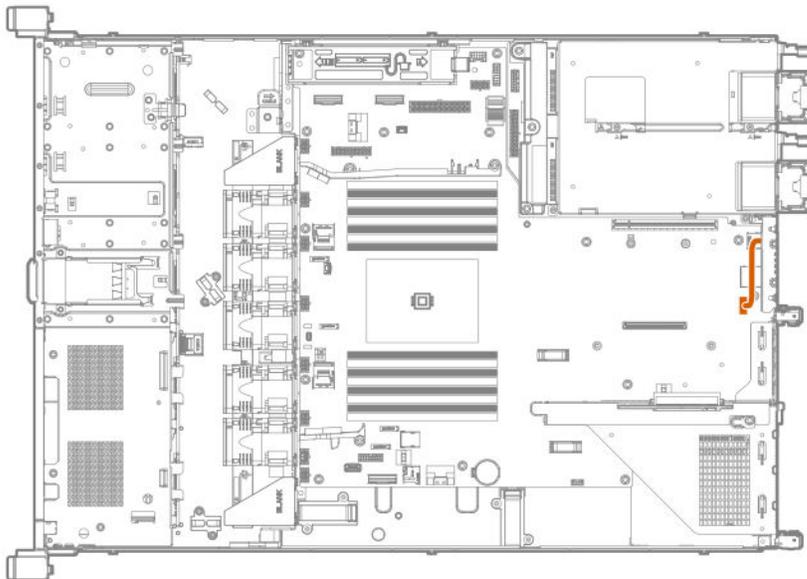


- SFF

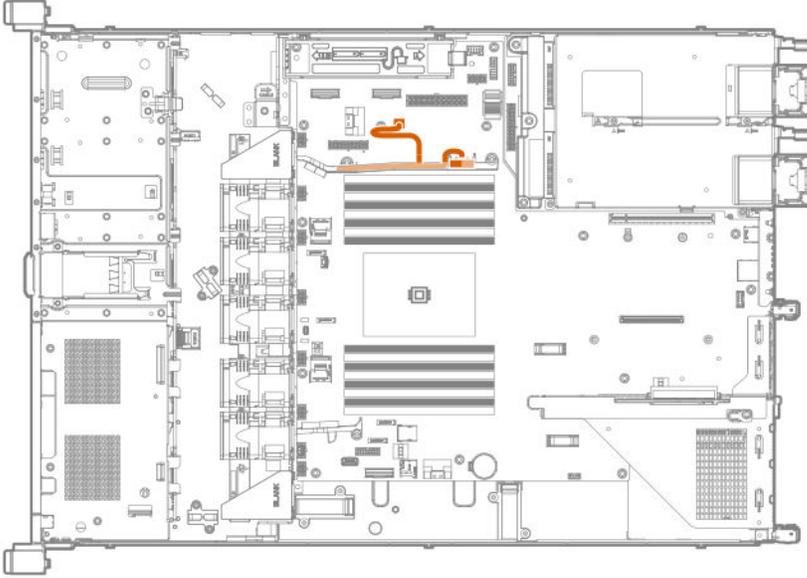




Cable routing: Serial port

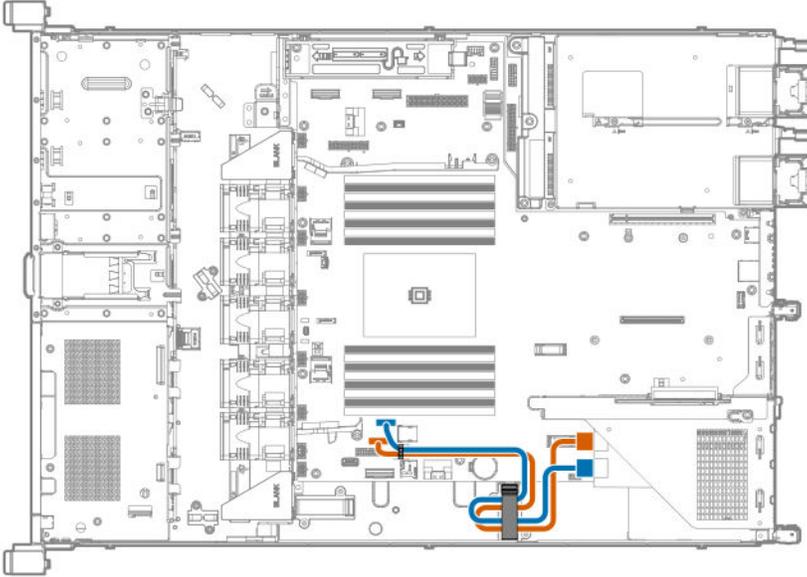


Cable routing: Chassis Intrusion Detection switch



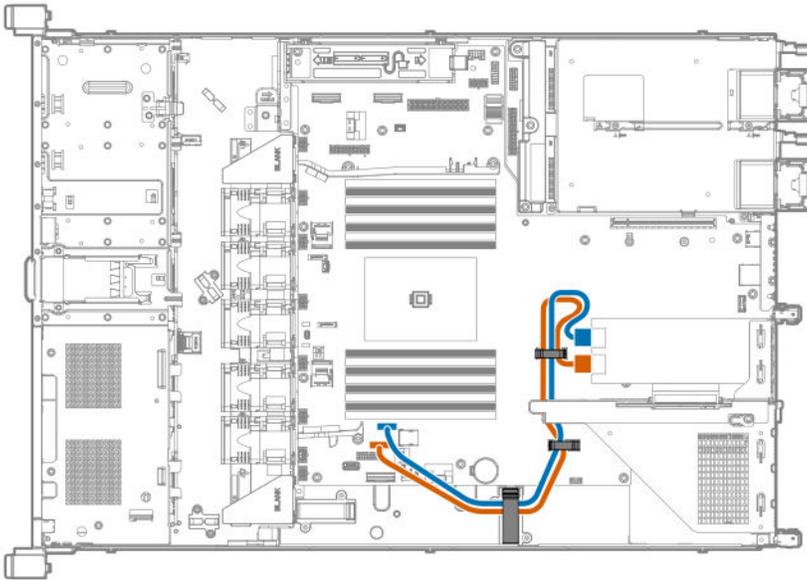
Cable routing: M.2 SSD

- Slot 1

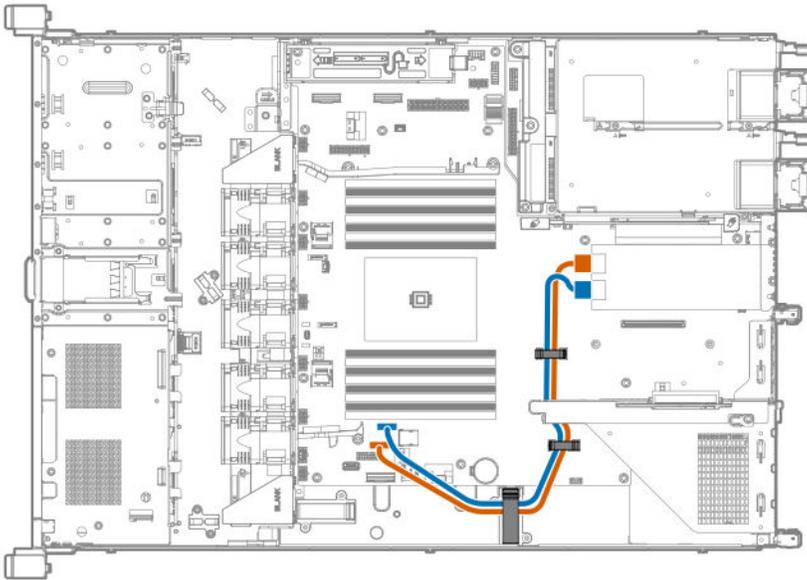


- Slot 2





- Slot 3



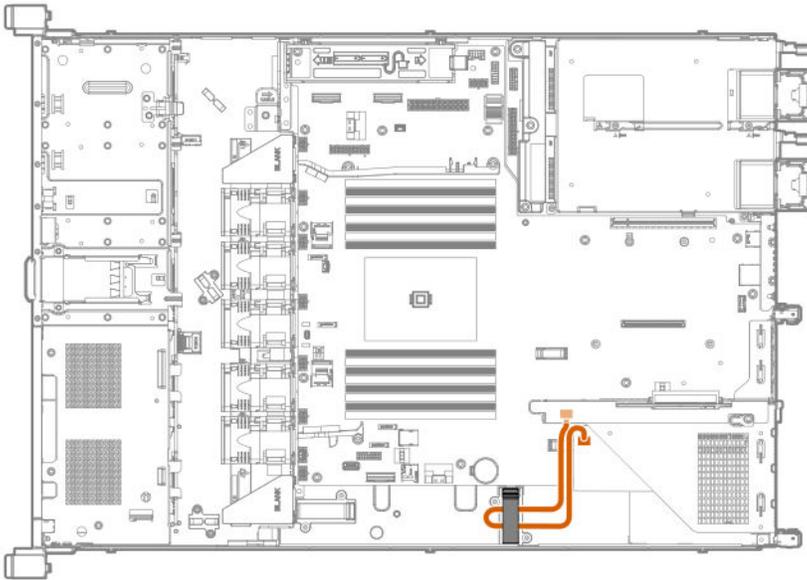
Item	Description
Blue	SATA cable from M.2 enablement board port 1 to x1 SATA port 3 on system board
Orange	SATA cable from M.2 enablement board port 2 to x1 SATA port 4 on system board

Cable routing: Controller backup power cable

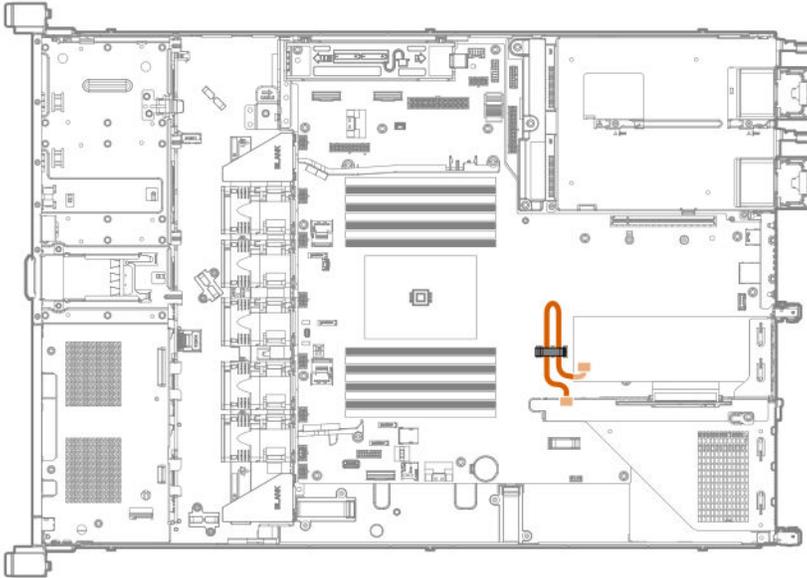
Depending on the controller option installed, the actual storage controller connectors might look different from what is shown in this section.

- Slot 1



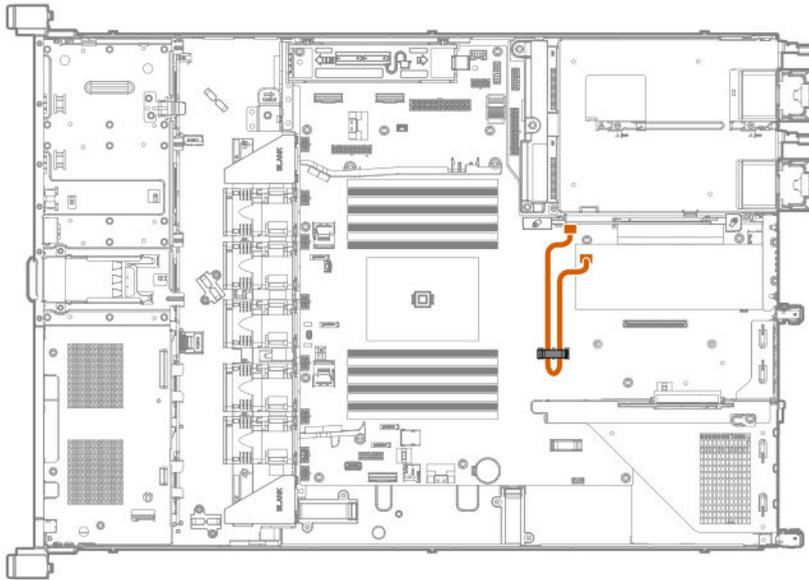


- Slot 2

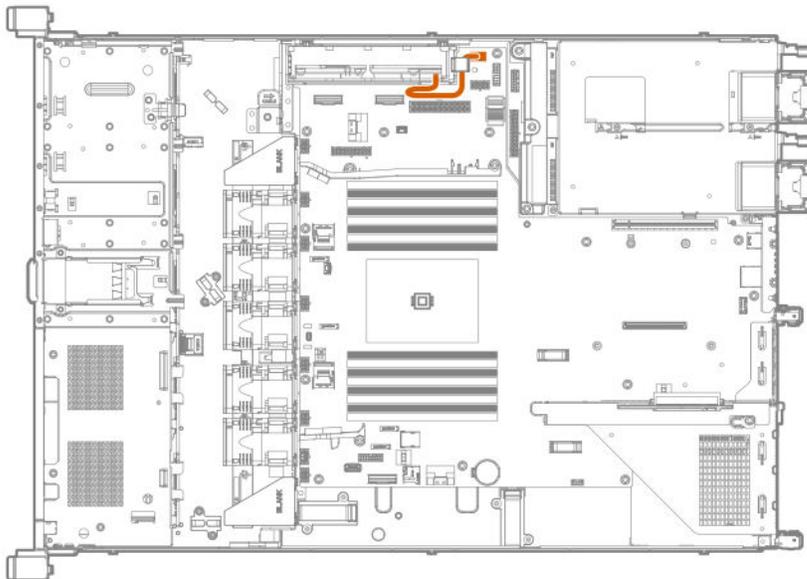


- Slot 3





Cable routing: Energy pack



Specifications

Environmental specifications

Specifications	Value
Temperature range*	—
Operating	10°C to 35°C (50°F to 95°F)
Nonoperating	-30°C to 60°C (-22°F to 140°F)
Relative humidity (noncondensing)	—
Operating	8% to 90% - Relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing
Nonoperating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing
Altitude	—
Operating	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).

Standard operating support

10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 20°C/hr (36°F/hr). The upper limit and rate of change may be limited by the type and number of options installed.

System performance during standard operating support may be reduced if operating with a fan fault or above 30°C (86°F).

Extended ambient operating support

For approved hardware configurations, the supported system inlet range is extended to be: 5° to 10°C (41° to 50°F) and 35° to 40°C (95° to 104°F) at sea level with an altitude derating of 1.0°C per every 175 m (1.8°F per every 574 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft). The approved hardware configurations for this system are listed at the [Hewlett Packard Enterprise website](#).

40°C to 45°C (104°F to 113°F) at sea level with an altitude derating of 1.0°C per every 125 m (1.8°F per every 410 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft). The approved hardware configurations for this system are listed on the [Hewlett Packard Enterprise website](#).

System performance may be reduced if operating in the extended ambient operating range or with a fan fault.



Mechanical specifications

Specification	Value
Height	4.29 cm (1.69 in)
Depth	61.49 cm (24.21 in)
Width	43.46 cm (17.11 in)
Weight (approximate range)	10.0 kg to 16.0 kg (22.05 lb to 35.27 lb)

Power supply specifications

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

- **HPE 500W Low Halogen Non-hot-plug Power Supply**
- **HPE 500W Flex Slot Platinum Hot-plug Low Halogen Power Supply**
- **HPE 800W Flex Slot Platinum Hot-plug Low Halogen Power Supply**
- **HPE 800W Flex Slot Titanium Hot-plug Low Halogen Power Supply**
- **HPE 800W Flex Slot Universal Hot-plug Low Halogen Power Supply**
- **HPE 800W Flex Slot -48VDC Hot-plug Low Halogen Power Supply**
- **HPE 1600 W Flex Slot Platinum Hot-plug Low Halogen Power Supply**

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

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

Specification	Value
Input requirements	—
Rated input voltage	100 VAC to 240 VAC 240 VDC for China only
Rated input frequency	50 Hz to 60 Hz
Rated input current	5.8 A at 100 VAC 2.3 A at 240 VAC 2.7 A at 240 VDC for China only
Maximum rated input power	578 W at 100 VAC 557 W at 240 VAC

Table Continued



Specification	Value
BTUs per hour	1953 at 100 VAC
	1882 at 240 VAC
Power supply output	—
Rated steady-state power	500 W at 100 VAC to 240 VAC input
	500 W at 240 VDC input for China only
Maximum peak power	500 W at 100 VAC to 240 VAC input
	500 W at 240 VDC input for China only

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

Specification	Value
Input requirements	—
Rated input voltage	100 VAC to 240 VAC
	240 VDC for China only
Rated input frequency	50 Hz to 60 Hz
	Not applicable to 240 VDC
Rated input current	5.6 A at 100 VAC
	2.7 A at 200 VAC
	2.3 A at 240 VDC for China only
Maximum rated input power	557 W at 100 VAC
	539 W at 200 VAC
	537 W at 240 VDC for China only
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	22.1 A at -40 VDC input 18.2 A at -48 VDC input, nominal input 12.0 A at -72 VDC input

Table Continued



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



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

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



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

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

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



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

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



Websites

General websites

Hewlett Packard Enterprise Information Library

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

Single Point of Connectivity Knowledge (SPOCK) Storage compatibility matrix

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

Storage white papers and analyst reports

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

For additional websites, see **Support and other resources**.

Product websites

HPE ProLiant DL325 Gen10 Server product page

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

HPE ProLiant DL325 Gen10 Server support page

<https://www.hpe.com/support/dl325gen10>

HPE ProLiant DL325 Gen10 Server user documents

<https://www.hpe.com/info/dl325gen10-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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