HPE ProLiant DL20 Gen10 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.

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Illustrated parts catalog

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

Mechanical components

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

https://www.hpe.com/info/partssurfer
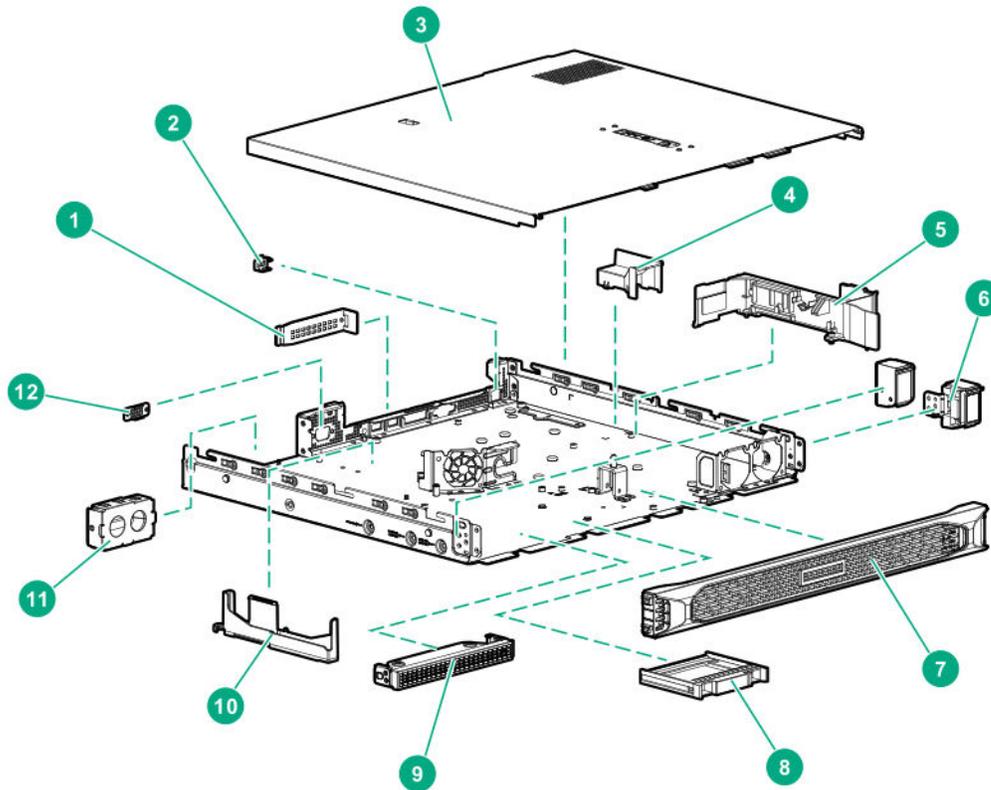
Item	Description
1	**FlexibleLOM blank spare part**
2	**iLO dedicated network port blank spare part**
3	**Access panel spare part**
4	**M.2 air guider spare part**
5	**DIMM guard spare part**
6	**Quick-release latch ear spare part**
7	**Front bezel spare part**

Table Continued

Item	Description
8	**SFF drive blank spare part**
9	**Media bay blank spare part**
10	**Energy pack holder spare part**
11	**Power supply blank spare part**
12	**Serial port blank spare part**

Access panel spare part

Customer self repair: Mandatory

Description	Spare part number
Access panel	P07879-001

For more information on the removal and replacement procedures, see **Removing and replacing the access panel**.

DIMM guard and M.2 air guider spare kit

Customer self repair: Mandatory

Description	Spare part number
DIMM guard, M.2 air guider	P07880-001

For more information on the removal and replacement procedure of DIMM guard, see **Removing and replacing the DIMM guard**.

For more information on the removal and replacement procedure of system air baffle, see **Removing and replacing the M.2 air guider**.

Quick-release latch ear spare part

Customer self repair: Mandatory

Description	Spare part number
Quick-release latch ears	P07882-001

For more information on the removal and replacement procedures, see **Removing and replacing the quick-release latch ear**.

Front bezel spare part

Customer self repair: mandatory

Description	Spare part number
Front bezel	875561-001

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

SFF drive blank spare part

Customer self repair: Mandatory

Description	Spare part number
SFF drive blank	670033-001

For more information on the removal and replacement procedures of SFF drive blank, see **Removing and replacing an SFF drive blank**.

Energy pack holder spare part

Customer self repair: Mandatory

Description	Spare part number
Energy pack holder	P07881-001

For more information on the removal and replacement procedures, see **Removing and replacing the energy pack holder**.

Power supply blank spare part

Customer self repair: Mandatory

Description	Spare part number
Power supply blank	775423-001

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

Serial port blank spare part

Customer self repair: Mandatory

Description	Spare part number
Serial port blank	878510-001

For more information on the removal and replacement procedures of serial port blank, see **Removing and replacing the serial port blank**.

Miscellaneous blanks spare kit

Customer self repair: Mandatory

Description	Spare part number
Miscellaneous blanks kit	P07883-001

Includes:

- FlexibleLOM blank

- iLO dedicated network port blank

- Media bay blank

For more information on the removal and replacement procedure of the FlexibleLOM blank, see **Removing and replacing the FlexibleLOM blank**.

For more information on the removal and replacement procedure of the dedicated iLO management port blank, see **Removing and replacing the iLO dedicated network port blank**.

For more information on the removal and replacement procedure of the media bay blank, see **Removing and replacing the media bay blank**.

System components

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https://www.hpe.com/info/partssurfer
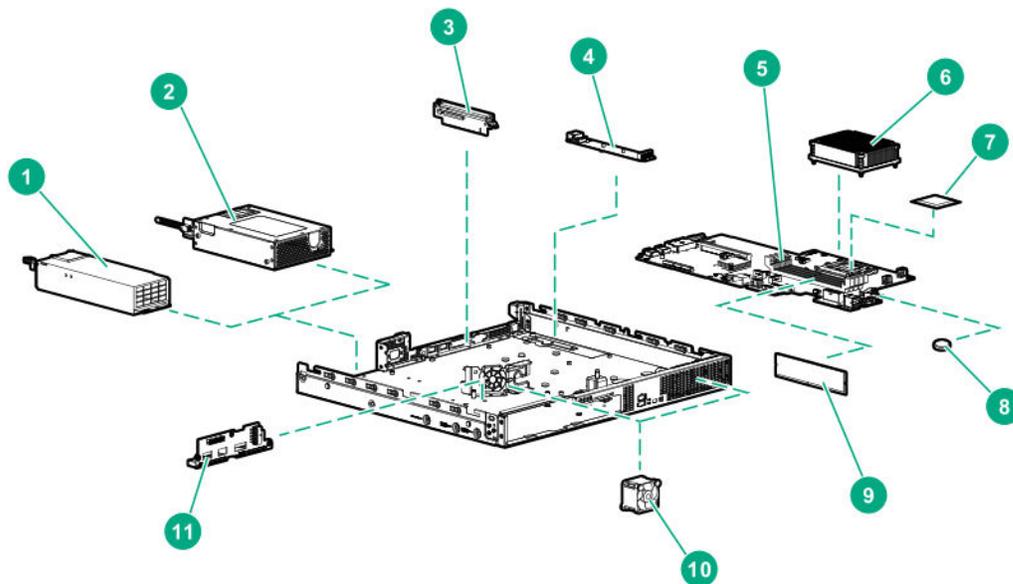
Item	Description
1	**Flexible Slot power supply spare parts (hot-plug)**
2	**Non-hot-plug power supply spare parts**
3	**Riser board spare parts**

Table Continued

Item	Description
4	**M.2 SSD/dedicated iLO/serial port enablement board spare part**
5	**System board assembly spare parts**
6	**Heatsink spare part**
7	**First-generation Intel processor spare parts**
8	**System battery spare part**
9	**DIMM spare parts**
10	**Fan spare part**
11	**Power distribution board spare part**

Flexible Slot power supply spare parts (hot-plug)

Customer self repair: Mandatory

Description	Spare part number
HPE 800 W Flexible Slot -48VDC Hot-plug Low Halogen Power Supply	866728-001
HPE 500 W Flexible Slot Platinum Hot-plug Low Halogen Power Supply	866729-001

For more information on the removal and replacement procedures, see **Removing and replacing a Flexible Slot power supply**.

Non-hot-plug power supply spare parts

Customer self repair: mandatory

Description	Spare part number
ATX 290W Non-hot-plug Power Supply (92% efficiency)	P07898-001
ATX 290W Platinum Non-hot-plug Power Supply (94% efficiency)	P21834-001

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

Riser board spare parts

Customer self repair: Mandatory

Description	Spare part number
FlexibleLOM riser board	P07886-001
PCIe low profile riser board	P07885-001

For more information on the removal and replacement procedures of FlexibleLOM riser board, see **Removing and replacing the FlexibleLOM riser board**.

For more information on the removal and replacement procedures of PCIe low profile riser board, see **Removing and replacing the PCIe riser board**.

M.2 SSD/dedicated iLO/serial port enablement board spare part

Customer self repair: Mandatory

Description	Spare part number
M.2 SSD/dedicated iLO/serial port enablement board	P07480-001

For more information on the removal and replacement procedures, see **Removing and replacing the M.2 SSD/dedicated iLO/serial port enablement board**.

System board assembly spare parts

Customer self repair: optional

Description	Spare part number
System board assembly	P07884-001[1]
	P19256-001[2]

[1] Embedded with HPE 332i 1Gb 2-Port Network Adapter and only supports the **Intel Xeon E-2100 Family/Intel Core i3-8300/Intel Pentium Gold G5400 processor**.

[2] Embedded with HPE 361i 1Gb 2-Port Network Adapter and only supports the **Intel Xeon E-2200 Family/Intel Core i3-9100/Intel Pentium Gold G5420 processor**.

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

Heatsink spare part

Customer self repair: Optional

Description	Spare part number
Heatsink	687242-001

For more information on the removal and replacement procedure, see **Removing the heatsink**.

First-generation Intel processor spare parts

Customer self repair: optional

Description	Spare part number
Intel Xeon E-2100 Family processors[1]	—
3.30 GHz Intel Xeon E-2124, 4C, 71 W	P07865-001
3.30 GHz Intel Xeon E-2136, 6C, 80 W	P07861-001
3.30 GHz Intel Xeon E-2126G, 6C, 80 W	P07863-001
3.50 GHz Intel Xeon E-2134, 4C, 71 W	P07862-001

Table Continued

Description	Spare part number
3.60 GHz Intel Xeon E-2144G, 4C, 71 W	P07860-001
3.80 GHz Intel Xeon E-2174G, 4C, 71 W	P07858-001
3.80 GHz Intel Xeon E-2186G, 6C, 95 W	P07899-001
Intel Xeon E-2200 Family processors[2]	—
3.40 GHz Intel Xeon E-2224, 4C, 71 W	P19426-001
3.40 GHz Intel Xeon E-2226G, 6C, 80 W	P19112-001
3.40 GHz Intel Xeon E-2236, 6C, 80 W	P19113-001
3.40 GHz Intel Xeon E-2278G, 8C, 80 W	P19108-001
3.60 GHz Intel Xeon E-2234, 4C, 71 W	P19114-001
3.80 GHz Intel Xeon E-2244G, 4C, 71 W	P19111-001
3.80 GHz Intel Xeon E-2276G, 6C, 80 W	P19109-001
4.00 GHz Intel Xeon E-2274G, 4C, 83 W	P19110-001
4.00 GHz Intel Xeon E-2286G, 6C, 95 W	P19107-001
Intel Core i3 Family processors	—
3.60 GHz Intel core i3-9100, 4C, 65 W[3]	P19115-001
3.70 GHz Intel Core i3-8300, 4C, 62 W[4]	P07866-001
Intel Pentium Gold Family processors	—
3.70 GHz Intel Pentium Gold G5400, 2C, 58 W[4]	P07869-001
3.80 GHz Intel Pentium Gold G5420, 2C, 54 W[3]	P19425-001

[1] These processors are supported on the P07884-001 system board assembly spare.

[2] These processors are supported on the P19256-001 system board assembly spare.

[3] This processor is supported on the P19256-001 system board assembly spare.

[4] This processor is supported on the P07884-001 system board assembly spare.

For more information on the removal and replacement procedure, see **Removing the processor**.

System battery spare part

Customer self repair: Mandatory

Description	Spare part number
System battery	319603-001

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

DIMM spare parts

Customer self repair: Mandatory

Description	Spare part number
8 GB, single-rank x8 PC4-2666V-E	P06772-001
16 GB, single-rank x8 PC4-2400T-E	P06773-001

For more information on the removal and replacement procedures, see **Removing and replacing a DIMM**.

Fan spare part

Customer self repair: Mandatory

Description	Spare part number
Fan	P07202-001

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

Power distribution board spare part

Customer self repair: Mandatory

Description	Spare part number
Power distribution board	P07887-001

For more information on the removal and replacement procedures, see **Removing and replacing the power distribution board**.

Server options

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https://www.hpe.com/info/partssurfer
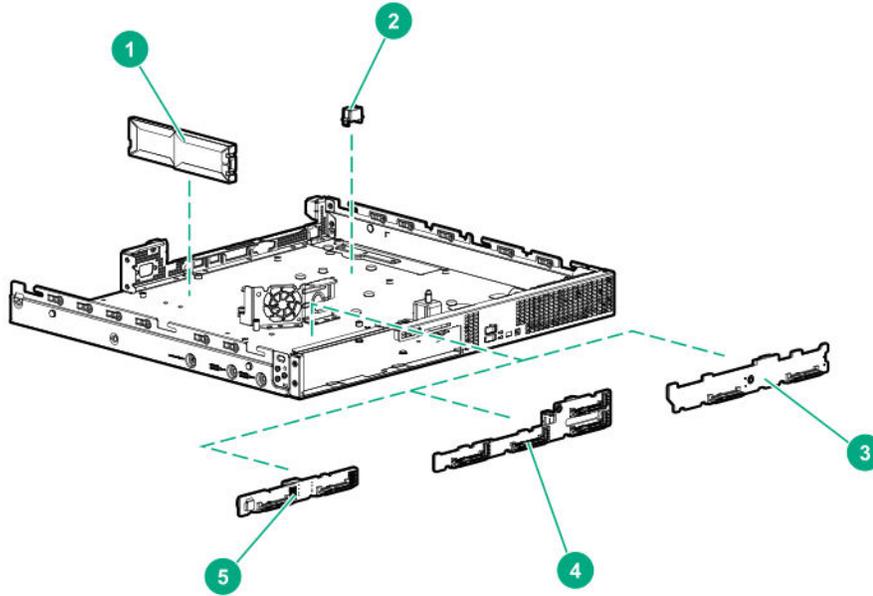
Item	Description
1	**Energy pack spare part**
2	**HPE Trusted Platform Module 2.0 spare part**
3	**Two-bay LFF drive backplane spare part**
4	**Four-bay SFF drive backplane spare part**
5	**Two-bay SFF drive backplane spare part**
6	**Drive cable spare parts***
7	**System cable spare parts***
8	**Power cable spare part***

* Not shown

Energy pack spare part

Customer self repair: Mandatory

Description	Spare part number
HPE Smart Storage Battery 12 W, 230 mm cable	878641-001

For more information on the removal and replacement procedures, see **Removing and replacing the energy pack**.

HPE Trusted Platform Module 2.0 spare part

Customer self repair: No

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

Drive backplane spare parts

Customer self repair: **Optional**

Description	Spare part number
Two-bay LFF drive backplane	P07888-001
Four-bay SFF drive backplane	P07889-001
Two-bay SFF drive backplane	775401-001

For more information on the removal and replacement procedure of the Two-bay LFF drive backplane, see **Removing and replacing the two-bay LFF drive backplane** .

For more information on the removal and replacement procedure of the Four-bay SFF drive backplane, see **Removing and replacing the four-bay SFF drive backplane** .

For more information on the removal and replacement procedure of the Two-bay SFF drive backplane, see **Removing and replacing the two-bay SFF drive backplane** .

Drive cable spare parts

Customer self repair: **Mandatory**

Description	Spare part number
Two-bay LFF drive backplane cable kit Includes: • Two-bay LFF drive backplane power cable • Two-bay LFF drive backplane Mini-SAS cable	P07891-001
Two-bay SFF drive backplane cable kit Includes: • Two-bay SFF drive backplane power cable • Two-bay SFF drive backplane Mini-SAS cable (for connection to system board) • Two-bay SFF drive backplane Mini-SAS cable (for connection to AROC)	P07892-001
Two-bay LFF non-hot-plug SATA drive cable	P07893-001
Optical drive cable	P07894-001

Table Continued

Description	Spare part number
Four-bay SFF drive backplane cable kit	P07897-001

Includes:

- Four-bay SFF drive backplane power cable

- Four-bay SFF drive backplane Mini-SAS cable

Description	Spare part number
Drive backplane cables	P08067-001

Include:

- Two-bay LFF/Four-bay SFF drive Mini-SAS cable for slot 1

- Two-bay SFF drive Mini-SAS cable for slot 1

- Two-bay LFF non-hot-plug SATA drive cable

System cable spare parts

<u>Customer self repair</u>: **Mandatory**

Description	Spare part number
Chassis intrusion detection switch cable	875570-001
Serial port cable to M.2 SSD/dedicated iLO/serial port enablement board	P07896-001
Slot 1 M.2 SATA Card to system board cables	P07895-001

Include:

- Slot 1 M.2 SATA card to system board cable

- Slot 2 M.2 SATA card to system board cable

- Two bay LFF drive backplane Mini-SAS to Smart Array Controller (AROC) cable

Power cable spare part

<u>Customer self repair</u>: **Mandatory**

Description	Spare part number
Power distribution board cable kit	P07890-001

Includes:

- Power distribution board power cable

- Power distribution board sideband cable

Customer self repair

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

- **Mandatory**—Parts for which customer self repair is mandatory. If you request Hewlett Packard Enterprise to replace these parts, you will be charged for the travel and labor costs of this service.

- **Optional**—Parts for which customer self repair is optional. These parts are also designed for customer self repair. If, however, you require that Hewlett Packard Enterprise replace them for you, there may or may not be additional charges, depending on the type of warranty service designated for your product.

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

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

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

Parts only warranty service

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

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

Réparation par le client (CSR)

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

- **Obligatoire—**Pièces pour lesquelles la réparation par le client est obligatoire. Si vous demandez à Hewlett Packard Enterprise de remplacer ces pièces, les coûts de déplacement et main d'œuvre du service vous seront facturés.

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

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

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

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

Service de garantie "pièces seules"

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

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

Riparazione da parte del cliente

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

- **Obbligatorie—**Parti che devono essere necessariamente riparate dal cliente. Se il cliente ne affida la riparazione ad Hewlett Packard Enterprise, deve sostenere le spese di spedizione e di manodopera per il servizio.

- **Opzionali—**Parti la cui riparazione da parte del cliente è facoltativa. Si tratta comunque di componenti progettati per questo scopo. Se tuttavia il cliente ne richiede la sostituzione ad Hewlett Packard Enterprise, potrebbe dover sostenere spese addizionali a seconda del tipo di garanzia previsto per il prodotto.

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

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

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

Servizio di garanzia per i soli componenti

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

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

Customer Self Repair

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

- **Zwingend**—Teile, für die das Customer Self Repair-Verfahren zwingend vorgegeben ist. Wenn Sie den Austausch dieser Teile von Hewlett Packard Enterprise vornehmen lassen, werden Ihnen die Anfahrt- und Arbeitskosten für diesen Service berechnet.

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

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

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

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

Parts-only Warranty Service (Garantieservice ausschließlich für Teile)

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

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

Reparaciones del propio cliente

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

- **Obligatorio**—Componentes cuya reparación por parte del usuario es obligatoria. Si solicita a Hewlett Packard Enterprise que realice la sustitución de estos componentes, tendrá que hacerse cargo de los gastos de desplazamiento y de mano de obra de dicho servicio.

- **Opcional**—Componentes cuya reparación por parte del usuario es opcional. Estos componentes también están diseñados para que puedan ser reparados por el usuario. Sin embargo, si precisa que Hewlett Packard Enterprise realice su sustitución, puede o no conllevar costes adicionales, dependiendo del tipo de servicio de garantía correspondiente al producto.

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

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

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

Servicio de garantía exclusivo de componentes

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

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

Customer Self Repair

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

- **Verplicht**—Onderdelen waarvoor reparatie door de klant verplicht is. Als u Hewlett Packard Enterprise verzoekt deze onderdelen voor u te vervangen, worden u voor deze service reiskosten en arbeidsloon in rekening gebracht.

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

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

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

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

Garantieservice "Parts Only"

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

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

Reparo feito pelo cliente

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

- **Obrigatória**—Peças cujo reparo feito pelo cliente é obrigatório. Se desejar que a Hewlett Packard Enterprise substitua essas peças, serão cobradas as despesas de transporte e mão-de-obra do serviço.

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

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

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

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

Serviço de garantia apenas para peças

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

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

カスタマーセルフリペア

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

- **必須** - カスタマーセルフリペアが必須の部品。当該部品について、もしもお客様がHewlett Packard Enterpriseに交換作業を依頼される場合には、その修理サービスに関する交通費および人件費がお客様に請求されます。

- **任意** - カスタマーセルフリペアが任意である部品。この部品もカスタマーセルフリペア用です。当該部品について、もしもお客様がHewlett Packard Enterpriseに交換作業を依頼される場合には、お買い上げの製品に適用される保証サービス内容の範囲内においては、別途費用を負担していただくことなく保証サービスを受けることができます。

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

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

部品のみ保証サービス

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

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

客户自行维修

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

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

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

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

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

仅部件保修服务

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

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

客戶自行維修

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

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

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

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

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

僅限零件的保固服務

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

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

고객 셀프 수리

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

- 필수 - 고객 셀프 수리가 의무 사항인 필수 부품. 사용자가 Hewlett Packard Enterprise에 이 부품의 교체를 요청할 경우 이 서비스에 대한 출장비 및 작업비가 청구됩니다.

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

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

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

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

부품 제공 보증 서비스

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

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Removal and replacement procedures

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

Required tools

You need the following items for some procedures:

- T-10 Torx screwdriver
- T-15 Torx screwdriver
- T-25 Torx screwdriver
- Phillips No. 1 screwdriver
- Phillips No. 2 screwdriver
- Hex nut screwdriver
- Alcohol swab
- Thermal grease
- Small flat-bladed, nonconductive tool

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

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

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

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

- Do not disassemble, crush, or puncture the energy pack.

- Do not short external contacts.

- Do not dispose of the energy pack in fire or water.

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

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

- N'essayez pas de démonter, d'écraser ou de percer le module batterie.

- Ne court-circuitez pas ses contacts externes.

- Ne jetez pas le module batterie dans le feu ou dans l'eau.

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

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

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

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

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

Rack warnings and cautions

WARNING: When all components are removed, the server weighs 6 kg (13.22 lb). When all components are installed, the server can weigh up to 9.46 kg (20.85 lb).

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

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

- Observe local occupational health and safety requirements and guidelines for manual material handling.

- Get help to lift and stabilize the product during installation or removal, especially when the product is not fastened to the rails. The server weighs more than 6 kg (13.22 lb), so at least two people must lift the server into the rack together. An additional person may be required to help align the server if the server is installed higher than chest level.

- Use caution when installing the server in or removing the server from the rack.

- Adequately stabilized the rack before extending a component outside the rack. Extend only one component at a time. A rack may become unstable if more than one component is extended.

- Do not stack anything on top of rail-mounted component or use it as a work surface when extended from the rack.

⚠ **WARNING:** To reduce the risk of personal injury or damage to the equipment, observe the following precautions:

- The leveling jacks are extended to the floor.

- The full weight of the rack rests on the leveling jacks.

- The stabilizing feet are attached to the rack if it is a single-rack installation.

- The racks are coupled together in multiple-rack installations.

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

- At least two people are needed to safely unload the rack from the pallet. An empty 42U rack can weigh as much as 115 kg (253 lb), can stand more than 2.1 m (7 ft) tall, and might become unstable when being moved on its casters.

- Never stand in front of the rack when it is rolling down the ramp from the pallet. Always handle the rack from both sides.

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

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

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

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

Preparation procedures

Remove the front bezel

Procedure

1. If installed, unlock and remove the Kensington security lock.

   For more information, see the lock documentation.

2. Press and hold the front bezel latch.

3. Open the front bezel.

4. Detach the front bezel from the chassis ear.
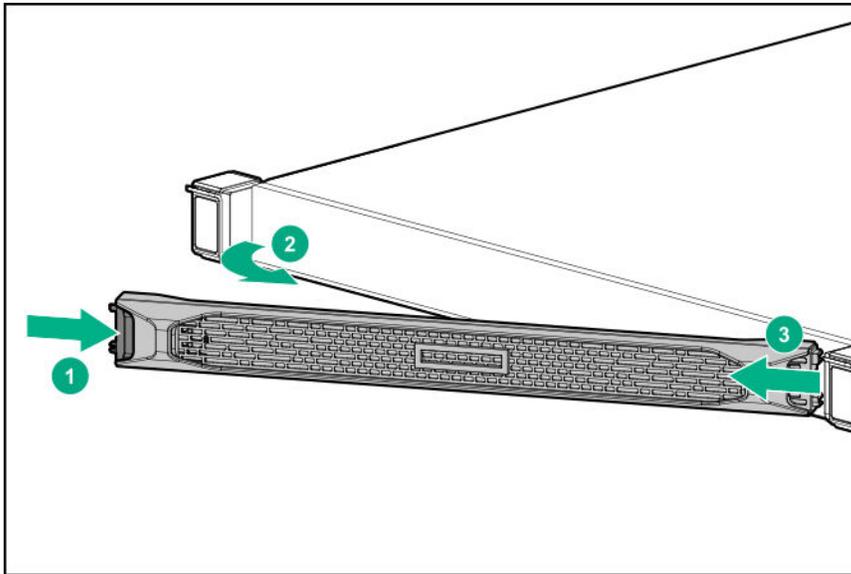
Power down the server

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

> (!) **IMPORTANT:** When the server is in standby mode, auxiliary power is still being provided to the system.

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

- Press and release the Power On/Standby button.

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

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

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

- Use a virtual power button selection through iLO 5.

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

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

Power up the server

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

- Press the Power On/Standby button.

- Use the virtual power button through iLO.

Extend the server from the rack

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

Prerequisites

Before you perform this procedure, make sure that you have a T-25 Torx screwdriver available.

Procedure

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

2. **Power down the server**.

3. Remove all power:

   a. Disconnect each power cord from the power source.

   b. Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. Do one of the following:

   - For a server that has thumbscrew chassis ears, do the following:

   a. Loosen the captive thumbscrews that secure the server to the rack.

   b. Slide the server out of the rack.
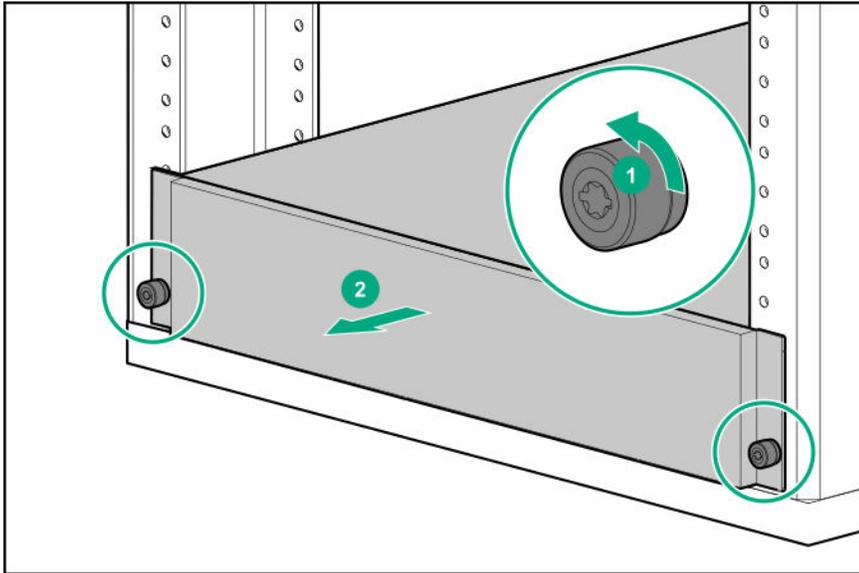
- For a server that has quick-release latch chassis ears, do the following:

  a. Open the latches on both sides of the server.

  b. If necessary, loosen the shipping screws.

  c. Slide the server out of the rack.
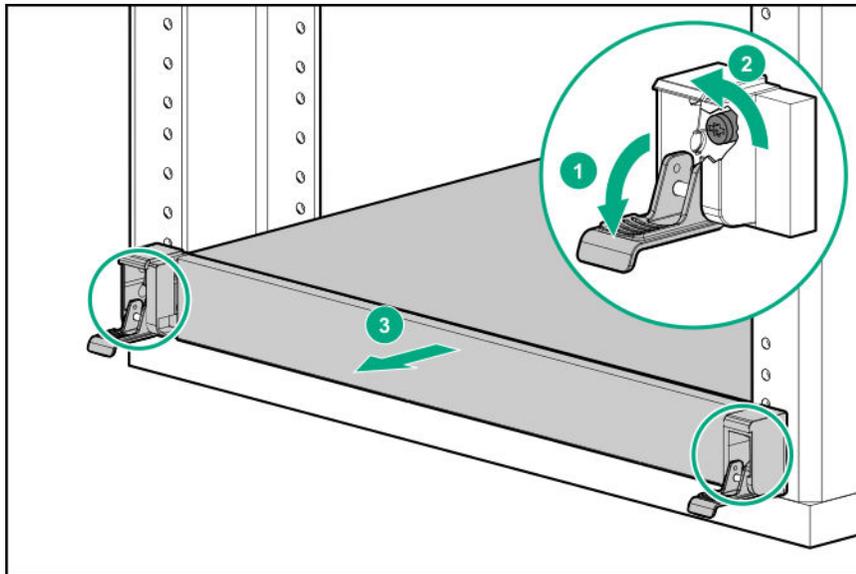
6. Extend the server on the rack rails until the server rail-release latches are engaged.

Remove the server from the rack

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

Procedure

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

2. **Power down the server**.

3. Remove all power:

   a. Disconnect each power cord from the power source.

   b. Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. **Extend the server from the rack**.

6. Press and hold the chassis release latches, and then remove the server from the rack.
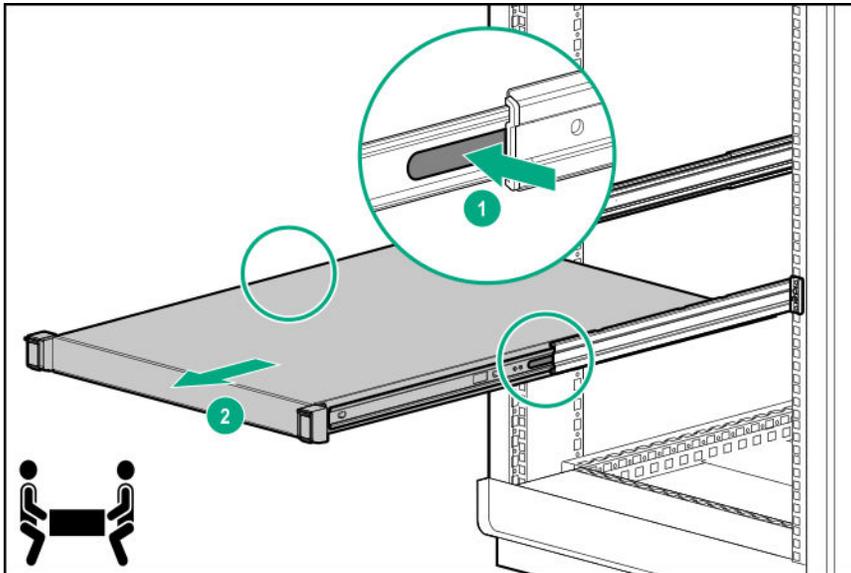
7. Place the server on a sturdy, level surface.

Remove the access panel

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

CAUTION: To prevent damage to electrical components, take the appropriate anti-static precautions before beginning any installation, removal, or replacement procedure. Improper grounding can cause electrostatic discharge.

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

Prerequisites

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

Procedure

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

2. **Power down the server**.

3. Remove all power:

   a. Disconnect each power cord from the power source.

   b. Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. **Remove the server from the rack**.

6. Remove the access panel:

   a. If necessary, unlock the access panel latch.

   b. Press the release button.

   c. Pull up the latch to disengage the access panel from the chassis.

   d. Lift the rear side of the access panel to remove the panel from the chassis.
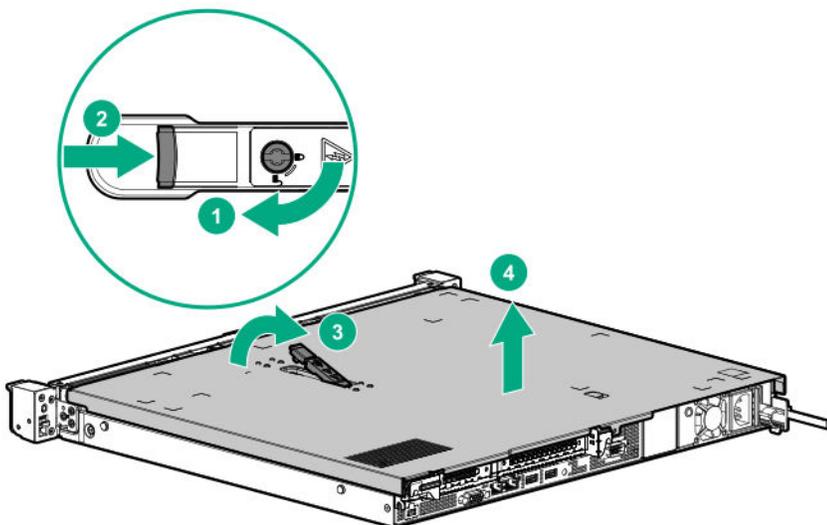
Remove the rack rails

Procedure

1. **Remove the server from the rack**.

2. Loosen the mounting rails on the rack columns:

    -   For round-hole or square-hole racks: Remove the rail pins from the rack column holes.
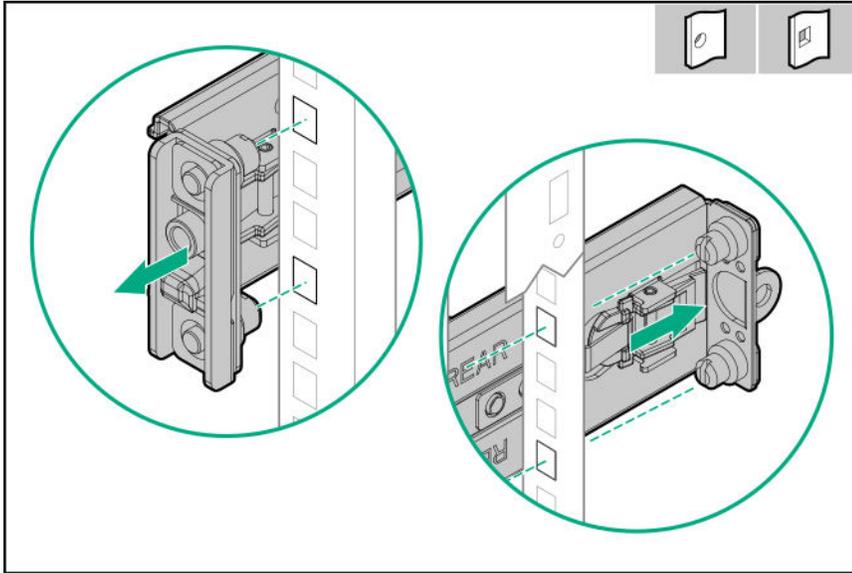
    -   For threaded-hole rack: Remove the mounting screws, and then remove the rail pins from the rack column holes.
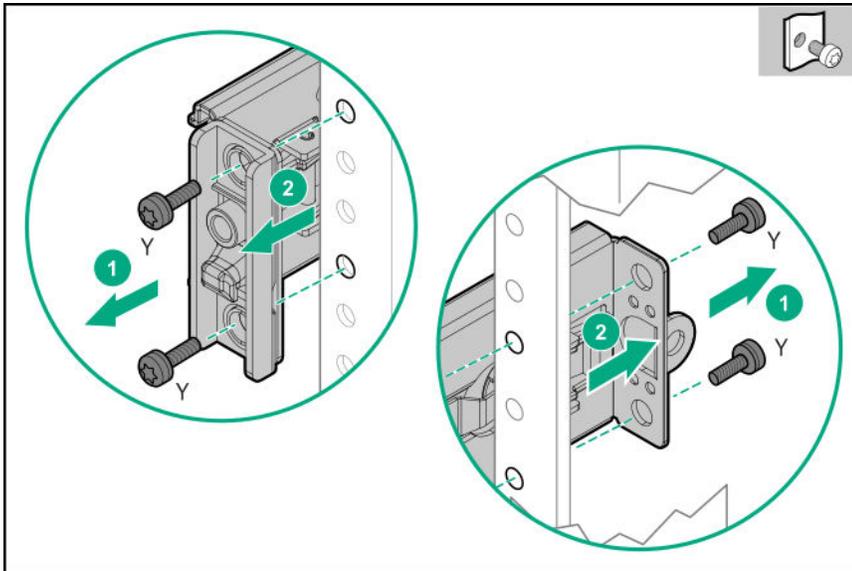
Remove the inner left rail attached to the chassis

Procedure

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

2. **Power down the server**.

3. Remove all power:

   a. Disconnect each power cord from the power source.

   b. Disconnect each power cord from the server.

4. **Remove the server from the rack**.

5. Remove the inner left rail from the chassis.
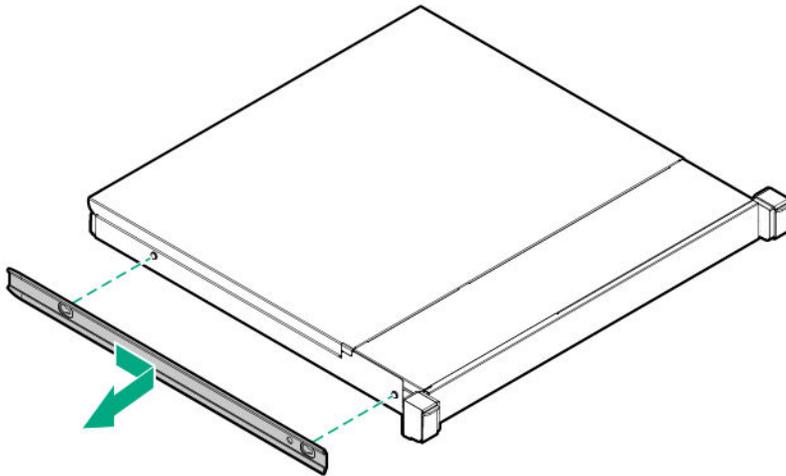
Remove the riser cage

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

Procedure

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

2. **Power down the server**.

3. Remove all power:

   a. Disconnect each power cord from the power source.

   b. Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. **Remove the server from the rack**.

6. **Remove the access panel**.

7. If installed, disconnect all cables connected to existing expansion boards.

8. Remove the riser cage.
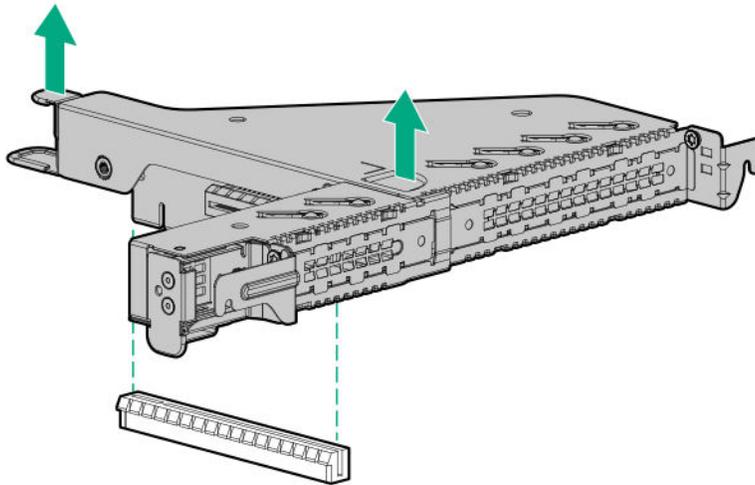
Install the access panel

Prerequisites

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

Procedure

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

2. Close the access panel latch.

   The access panel slides to a closed position.

3. Tighten the access panel latch screw.
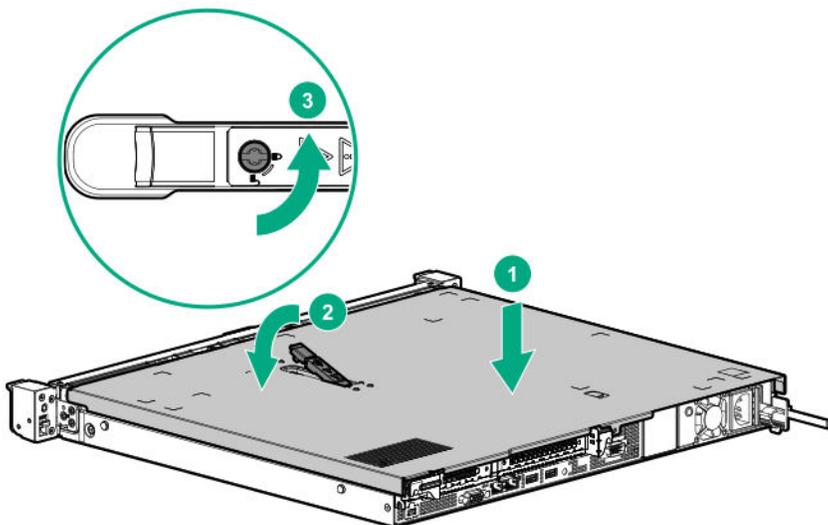
Install the server into the rack

Prerequisites

Before you perform this procedure, make sure that you have a T-25 Torx screwdriver available.

Procedure

1. Install the server into the rack:

   a. Insert the server sliding rails into the rack mounting rails.

   b. Slide the server into the rack until the chassis ears are engage with the rack column.
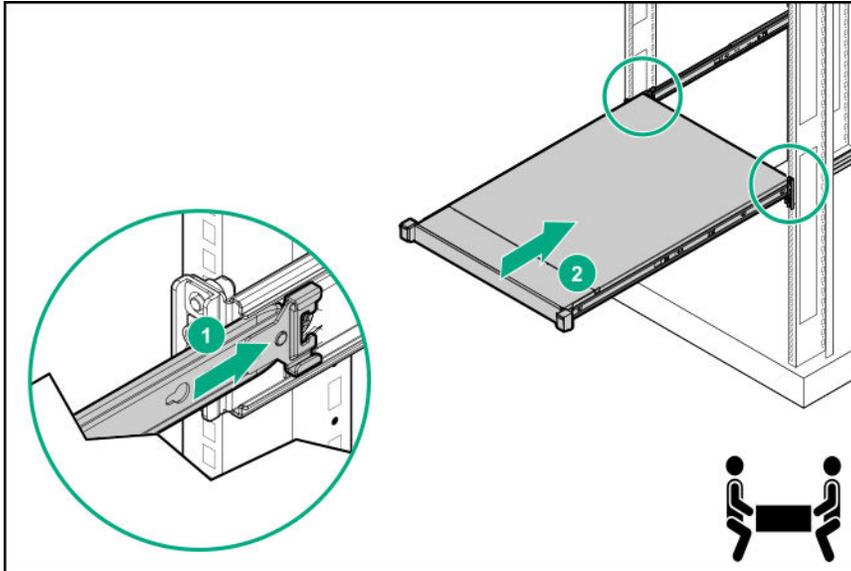
2. Do one of the following:

   - For a server that has thumbscrew chassis ears, tighten the captive thumbscrews.
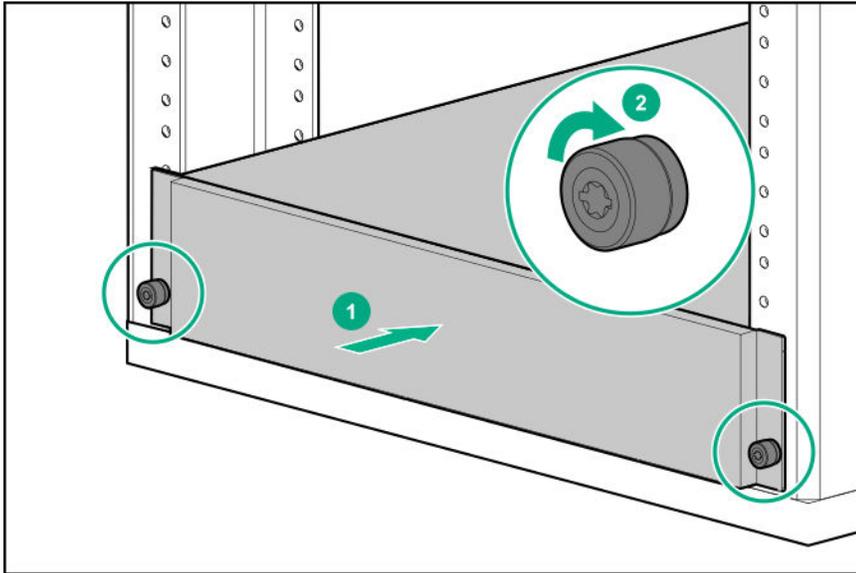
- For a server that has quick-release latch chassis ears, if necessary, open the latches and tighten the shipping screws.
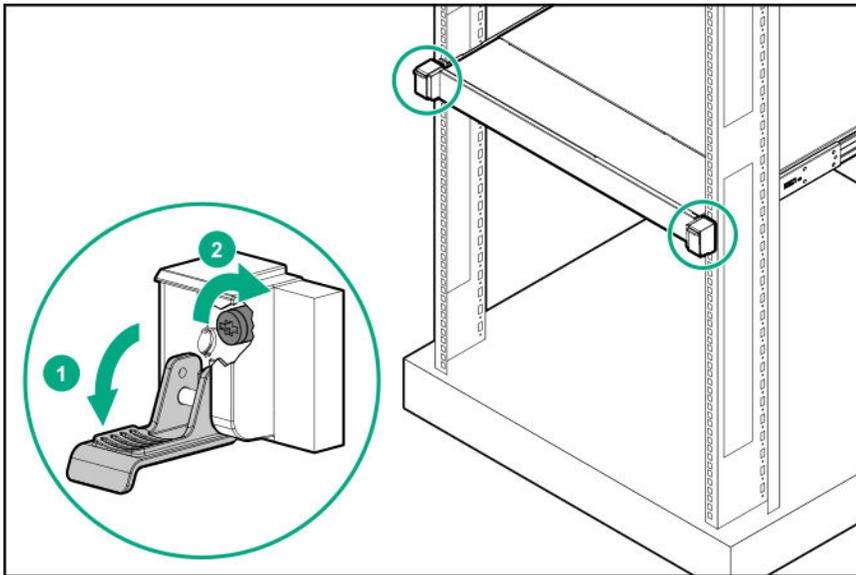
3. Connect the peripheral devices to the server.

   For information on identifying I/O ports, see **Rear panel components**.

4. **For a hot-plug power supply:** To prevent accidental power cord disconnection when sliding the server in and out of the rack, secure the power cord in the strain relief strap attached to the power supply handle:

   a. Connect the power cord to the power supply.

   b. Unwrap the strain relief strap from the power supply handle.

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

   c. Secure the power cord with the strain relief strap.
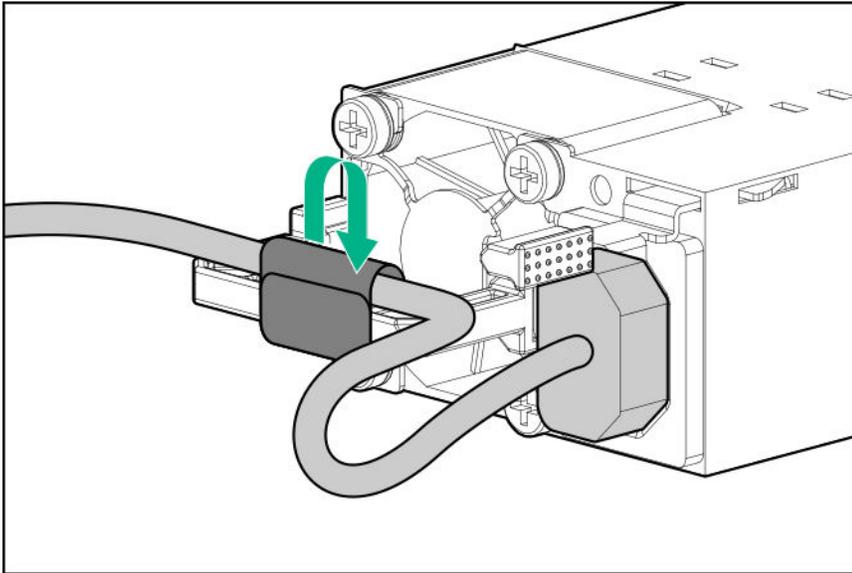
5. **For a non-hot-plug power supply:** To prevent the accidental disconnection of the power cord when sliding the server into and from the rack, secure the power cord through the strain relief clip:

   a. Pull the release tab and then slide the clip backward to avoid having the power cord connection blocked by the clip.
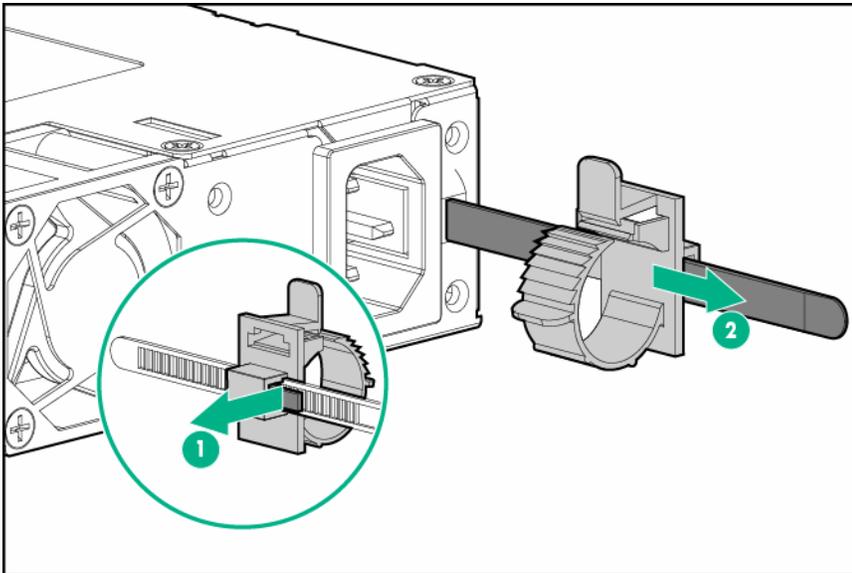
   b. Connect the power cord to the power supply.

   c. Press the top part of the clip, and then pull the clip open.

   d. Position the power cord inside the clip, and then close the clip.
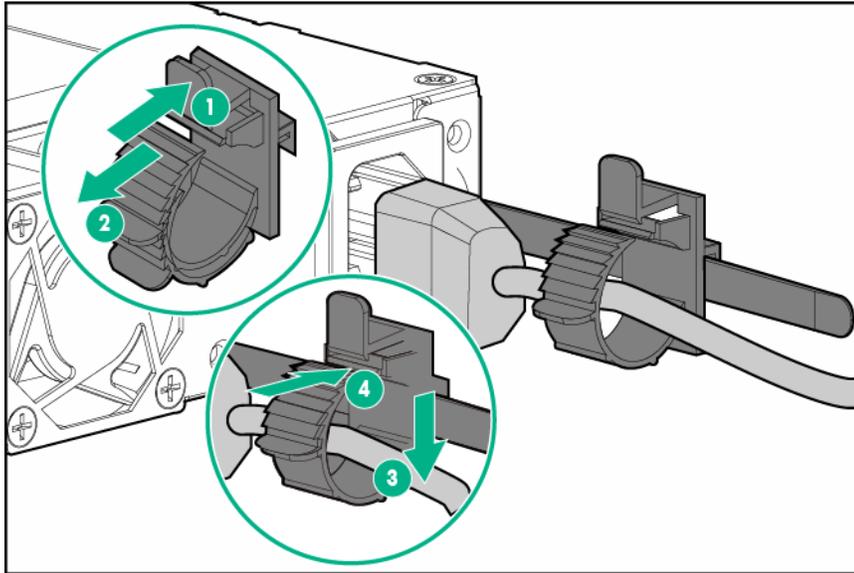
e. Slide the clip forward until it is flush against the edge of the power cord plug.
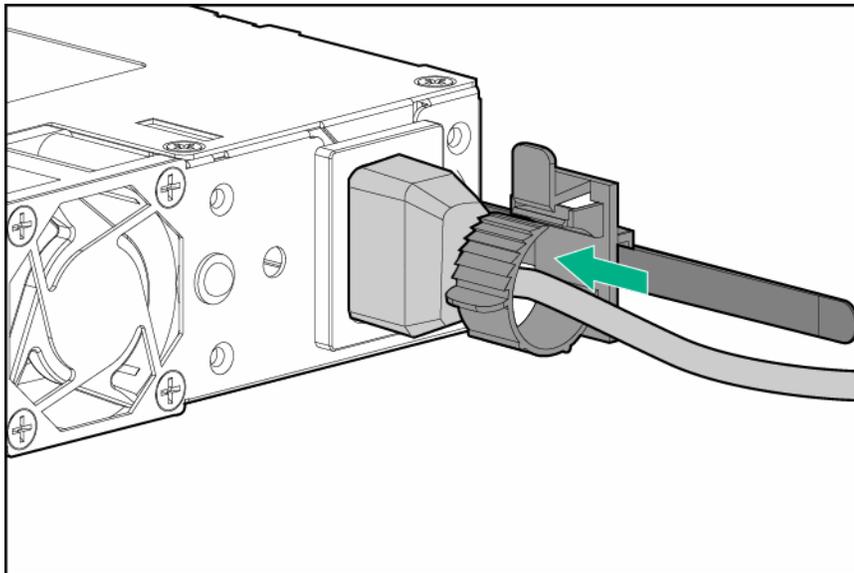
6. To secure the power cords and other rear panel cables to the rack rail, use the hook-and-loop strap.

7. Connect each power cord to the power source.

8. **Power up the server**.

Removing and replacing the front bezel

Procedure

1. If installed, unlock and remove the Kensington security lock.

For more information, see the lock documentation.

2. Press and hold the front bezel latch.

3. Open the front bezel.

4. Detach the front bezel from the chassis ear.

To replace the component, reverse the removal procedure.

Removing and replacing the access panel

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

⚠ **CAUTION:** To prevent damage to electrical components, take the appropriate anti-static precautions before beginning any installation, removal, or replacement procedure. Improper grounding can cause electrostatic discharge.

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

Prerequisites

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

Procedure

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

2. **Power down the server**.

3. Remove all power:

   a. Disconnect each power cord from the power source.

   b. Disconnect each power cord from the server.

**4.** Disconnect all peripheral cables from the server.

5. **Remove the server from the rack**.

6. Remove the access panel:

   a. If the locking latch is locked, unlock the latch.

   b. Press the release button.

   c. Pull up the latch to disengage the access panel from the chassis.

   d. Lift the rear side of the access panel to remove the panel from the chassis.
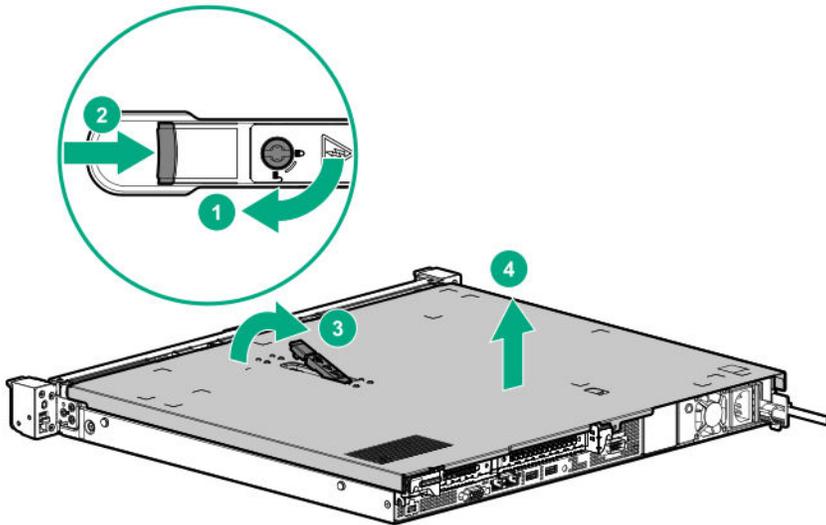
To replace the component, reverse the removal procedure.

Removing and replacing the DIMM guard

Prerequisites

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

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

Procedure

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

2. **Power down the server**.

3. Remove all power:

   a. Disconnect each power cord from the power source.

   b. Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. **Remove the server from the rack**.

6. **Remove the access panel**.

7. Do one of the following:

   - For a server that has thumbscrew chassis ears, do the following:

     a. Remove the screws.

     b. Pull the thumbscrew ear away from the chassis.
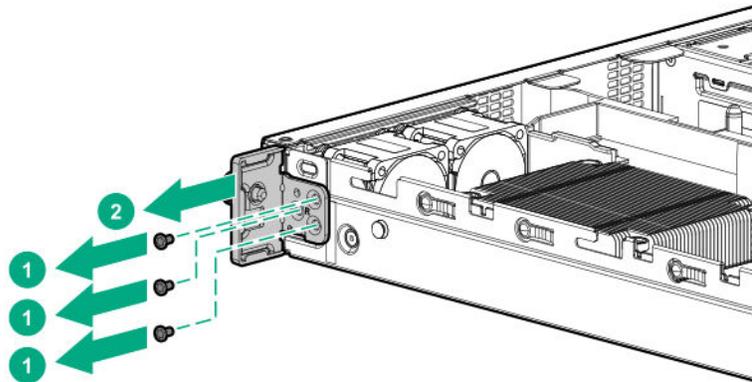
   - For a server that has quick-release latch chassis ears: **Remove the quick-release latch ears**.

8. Remove the front bezel.
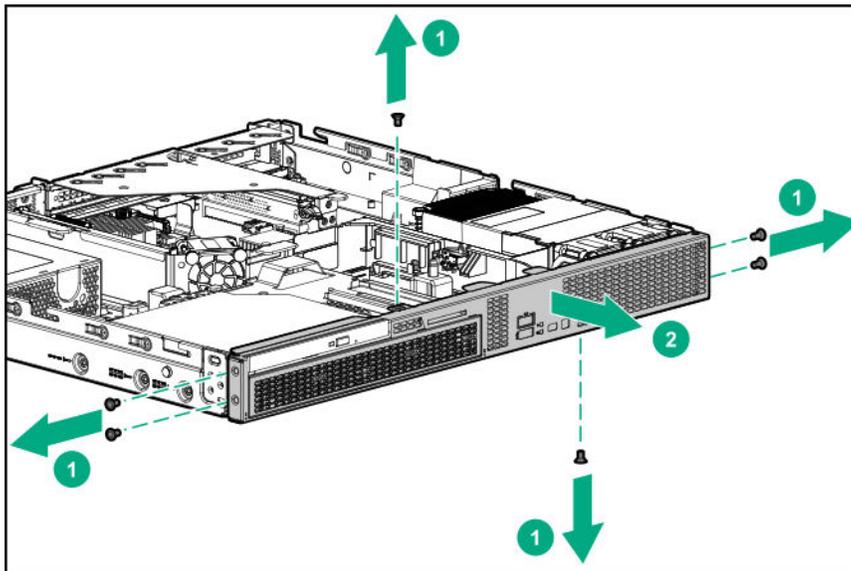
9. If installed, remove the processor air baffle.
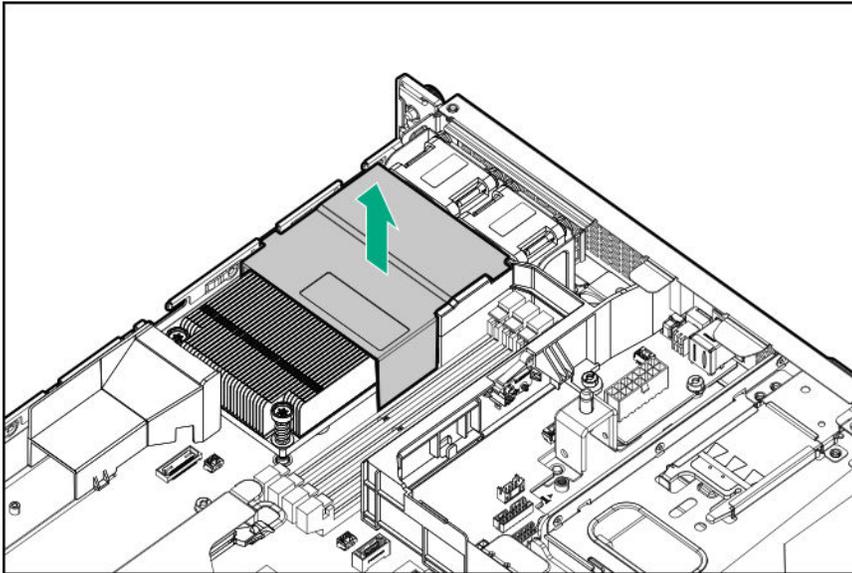
10. If installed, **remove the chassis intrusion detection switch**.

11. **Remove the heatsink**.

12. Remove the DIMM guard.
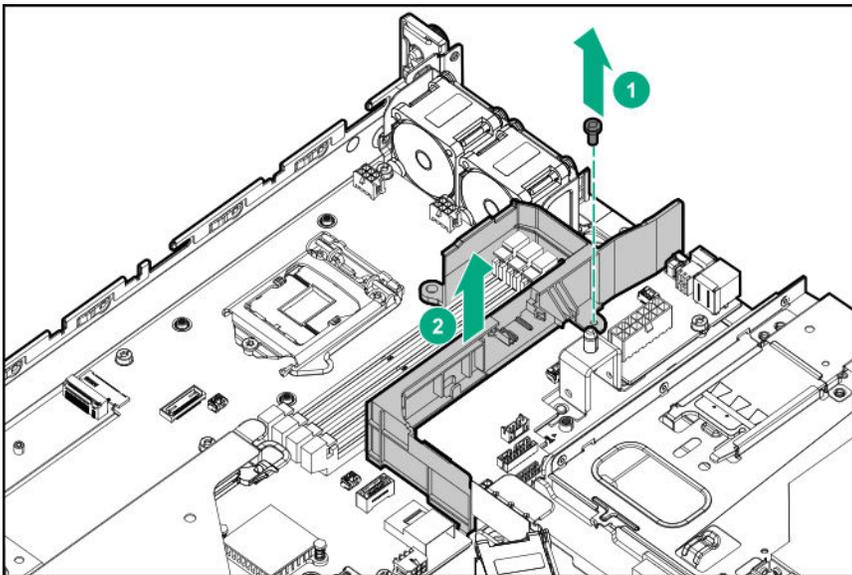
To replace the component, reverse the removal procedures.

Removing and replacing the M.2 air guider

Procedure

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

2. **Power down the server**.

3. Remove all power:

    a. Disconnect each power cord from the power source.

    b. Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. **Remove the server from the rack**.

6. **Remove the access panel**.

7. Remove the M.2 air guider.
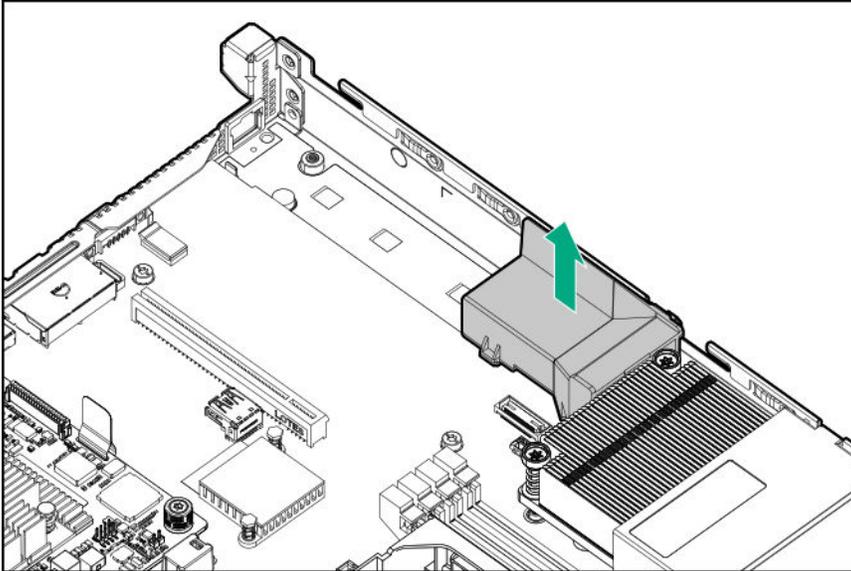
To replace the component, reverse the removal procedures.

Removing and replacing the quick-release latch ear

Prerequisites

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

Procedure

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

2. **Power down the server**.

3. Remove all power:

    a. Disconnect each power cord from the power source.

    b. Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. **Remove the server from the rack**.

6. **Remove the inner left rail attached to the chassis**.

7. Remove the quick-release latch ear:

a. Remove the screws.

   Retain the screws for future use.

b. Pull the quick-release latch ear away from the chassis.
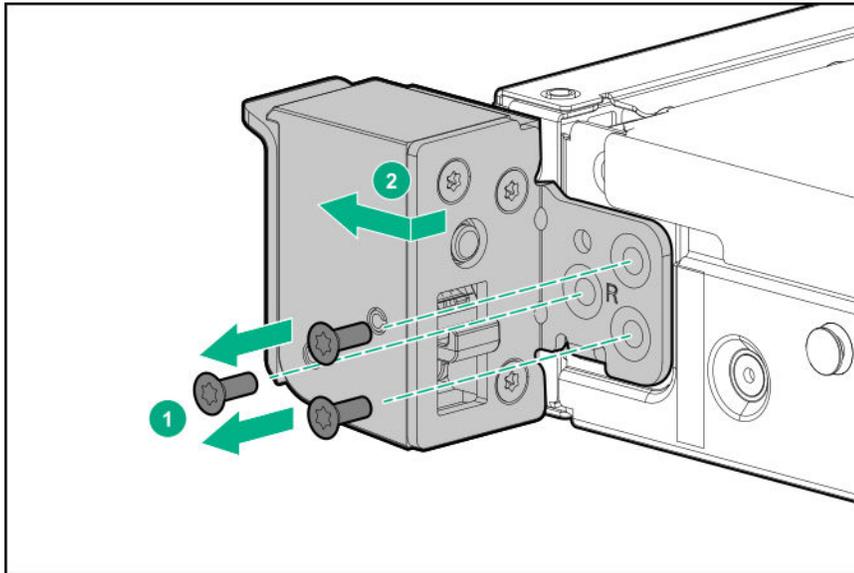
c. Repeat step 7-a and 7-b for left quick-release latch ear.

To replace the component, reverse the removal procedure.

Removing and replacing an SFF drive blank

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

Procedure

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

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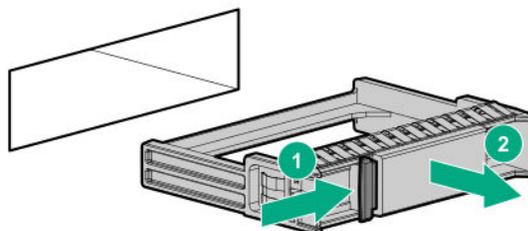
To replace the SFF drive blank, while pressing the release latch, slide the component into the bay until it is fully seated.

Removing and replacing drives

Removing and replacing an LFF hot-plug drive

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

Procedure

1. Back up all server data on the drive.

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

3. **Determine the status of the drive from the drive LED definitions**.

4. Remove the drive.
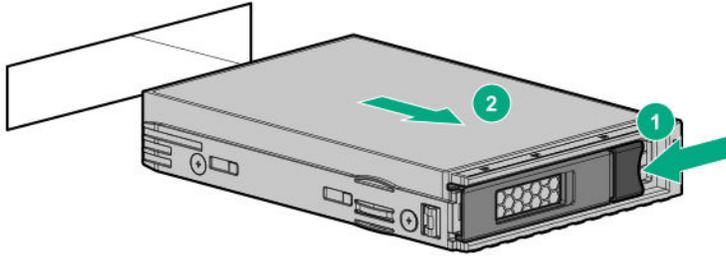
To replace the component, reverse the removal procedure.

Removing and replacing an SFF hot-plug drive

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

Procedure

1. Back up all server data on the drive.

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

3. **Determine the status of the drive from the drive LED definitions**.

4. Remove the drive.
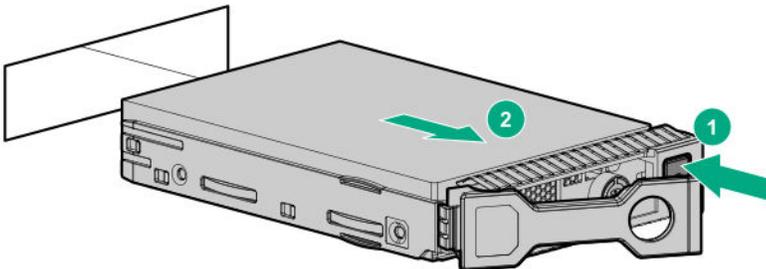
To replace the component, reverse the removal procedure.

Removing and replacing an LFF non-hot-plug drive

**Prerequisites**

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

- T-15 Torx screwdriver
- Phillips No. 2 screwdriver

Procedure

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

2. **Power down the server**.

3. Remove all power:

   a. Disconnect each power cord from the power source.

   b. Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. **Remove the server from the rack**.

6. **Remove the access panel**.

7. **Disconnect all existing drive cage cables**.

8. Remove the non-hot-plug drive cage.
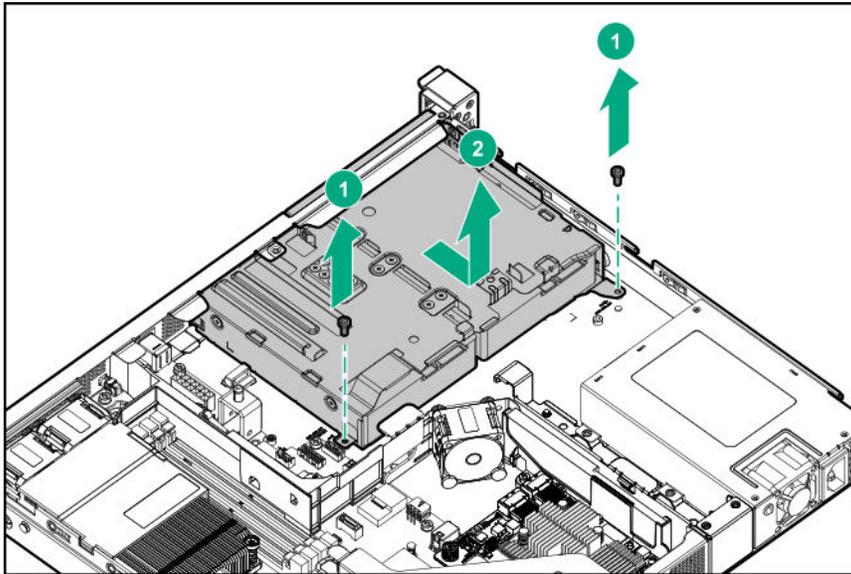
9. Remove the non-hot-plug drive.
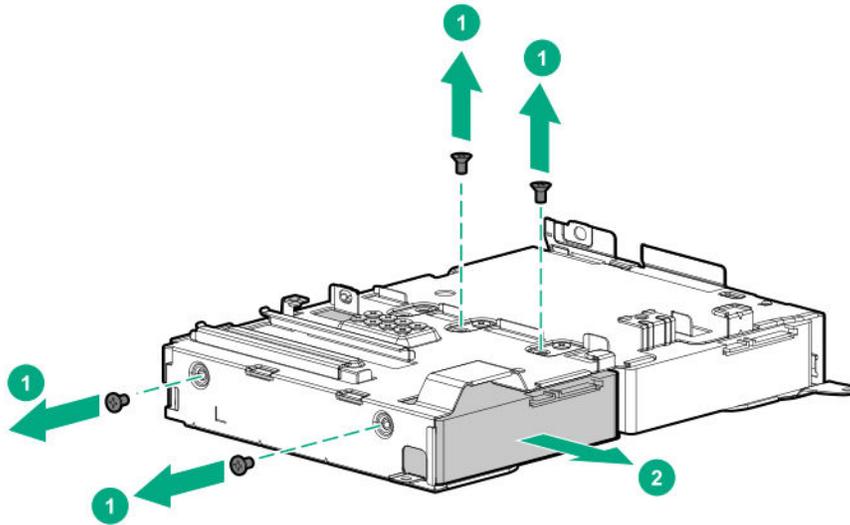
Retain the screws for future use.

To replace the component, reverse the removal procedure.

Removing and replacing the optical drive from an SFF chassis

Prerequisites

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

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

Procedure

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

2. **Power down the server**.

3. Remove all power:

   a. Disconnect each power cord from the power source.

   b. Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. **Remove the server from the rack**.

6. **Remove the access panel**.

7. **Disconnect all existing optical drive cables**.

8. Remove the optical drive cage assembly from the server.

   Retain the screws for future use.
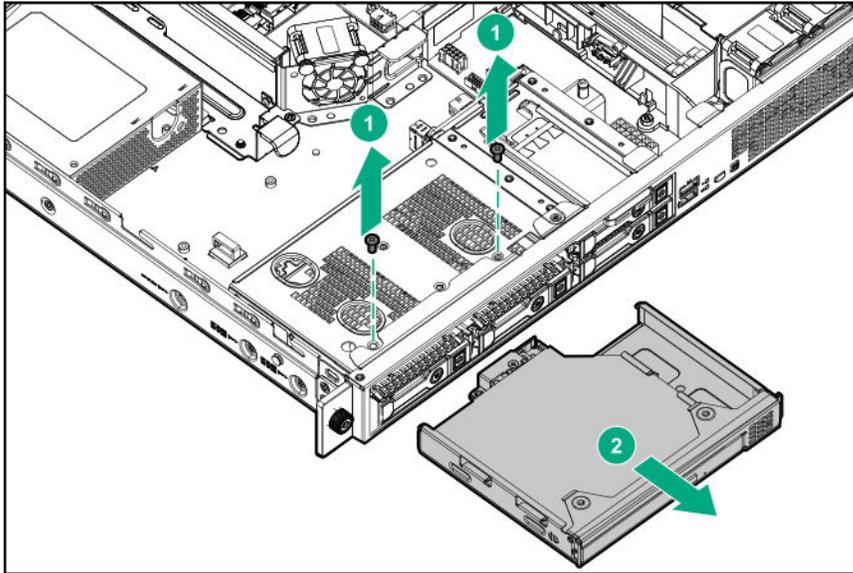
9. Remove the optical drive from the cage.

   Retain the screws for future use.
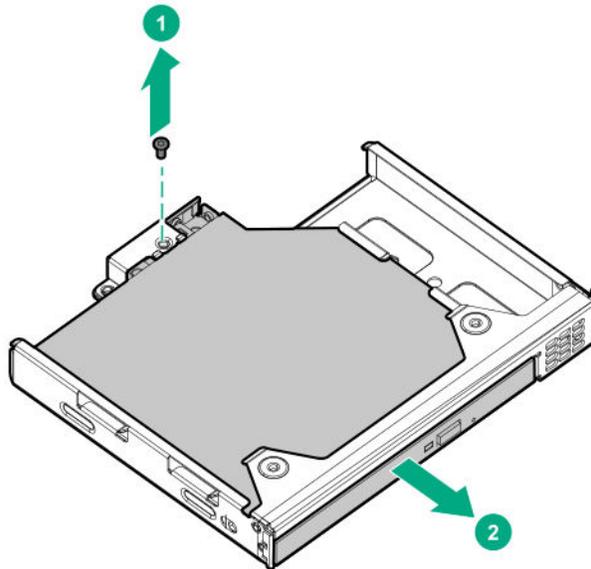
To replace the component, reverse the removal procedure.

Removing and replacing the optical drive from an LFF chassis

Prerequisites

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

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

Procedure

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

2. **Power down the server**.

3. Remove all power:

   a. Disconnect each power cord from the power source.

   b. Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. **Remove the server from the rack**.

6. **Remove the access panel**.

7. **Disconnect all existing optical drive cables**.

8. Remove the optical drive from the optical drive bay.

   Retain the screw for future use.
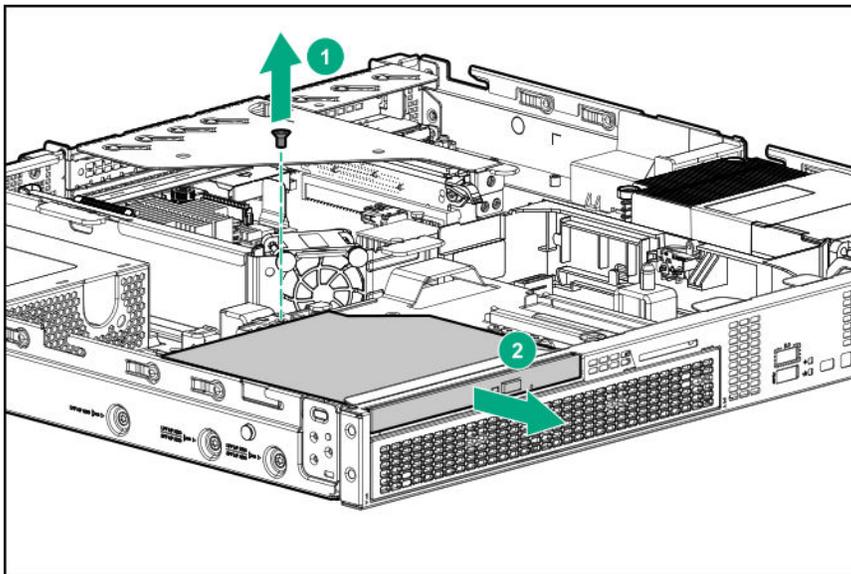
To replace the component, reverse the removal procedure.

Removing and replacing the media bay blank

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

Prerequisites

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

Procedure

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

2. **Power down the server**.

3. Remove all power:

    a. Disconnect each power cord from the power source.

    b. Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. **Remove the server from the rack**.

6. **Remove the access panel**.

7. Remove the media bay blank:

    a. Remove the screws securing the media bay blank.

    Retain the screws for future use.

    b. Disengage the media bay blank.

    c. Remove the media bay blank.
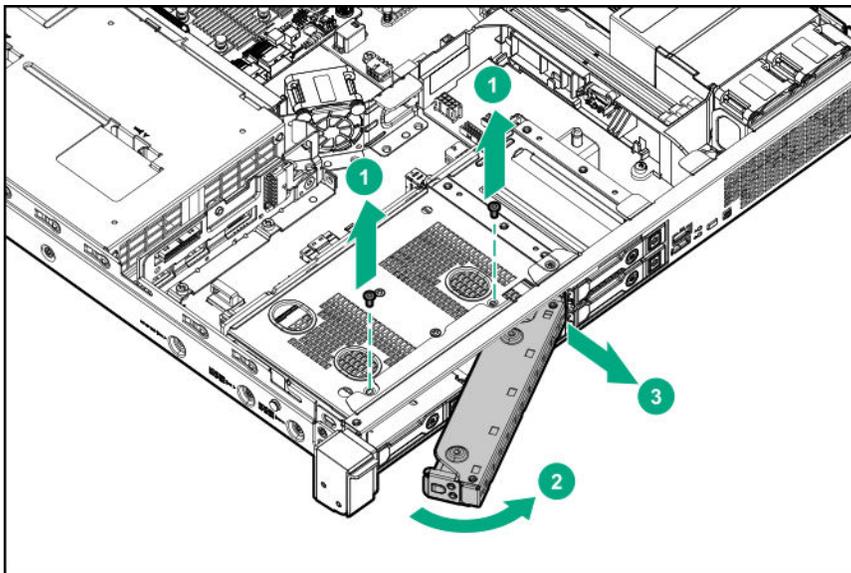
To replace the component, reverse the removal procedure.

Removing and replacing the two-bay LFF drive backplane

Prerequisites

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

- T-10 Torx screwdriver

- T-15 Torx screwdriver

Procedure

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

2. **Power down the server**.

3. Remove all power:

   a. Disconnect each power cord from the power source.

   b. Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. **Remove the server from the rack**.

6. **Remove the inner left rail attached to the chassis**.

7. **Remove the access panel**.

8. Do one of the following:

   - For a server that has thumbscrew chassis ears, do the following:

     a. Remove the screws.

     b. Pull the thumbscrew ear away from the chassis.
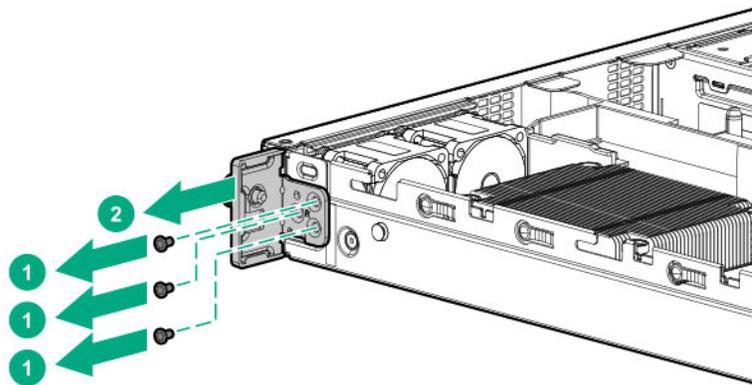
   - For a server that has quick-release latch chassis ears: **Remove the quick-release latch ears**.

9. Remove the front bezel.
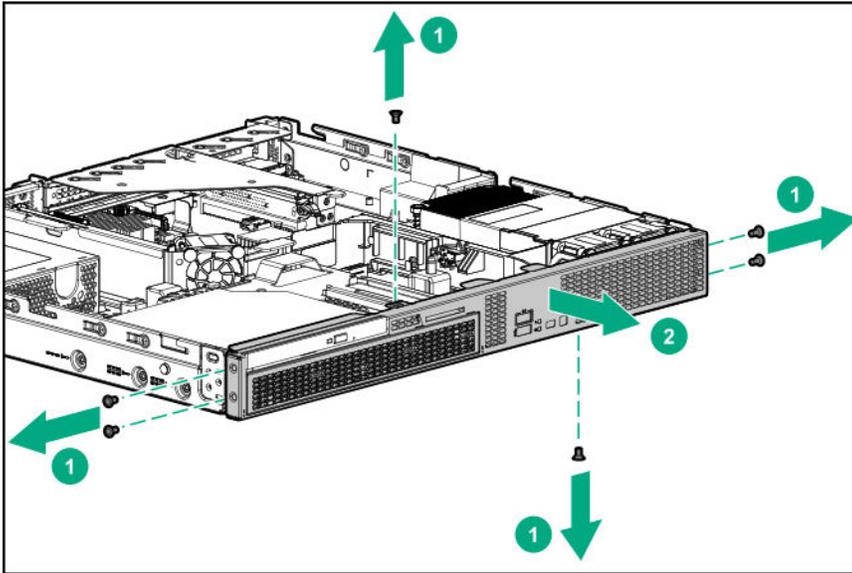
10. **Disconnect all cables from the backplane**.

11. **Remove all drives**.

12. Remove the two-bay LFF drive cage:

    a. Remove all the screws securing the drive cage to the chassis.

    b. Slide the drive cage out of the chassis.

13. Remove the two-bay LFF drive backplane.
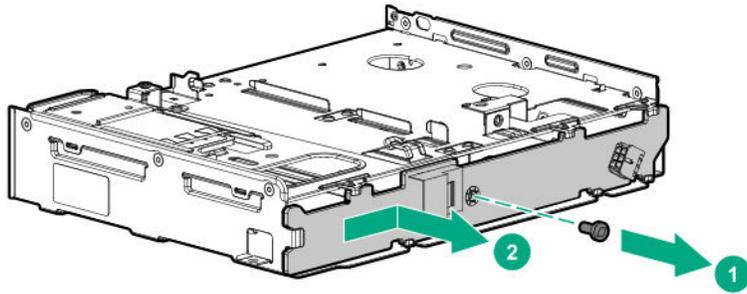
To replace the component, reverse the removal procedures.

# Removing and replacing the four-bay SFF drive backplane

Prerequisites

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

- T-10 Torx screwdriver

- T-15 Torx screwdriver

Procedure

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

2. **Power down the server**.

3. Remove all power:

   a. Disconnect each power cord from the power source.

   b. Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. **Remove the server from the rack**.

6. **Remove the inner left rail attached to the chassis**.

7. **Remove the access panel**.

8. Remove the front bezel.
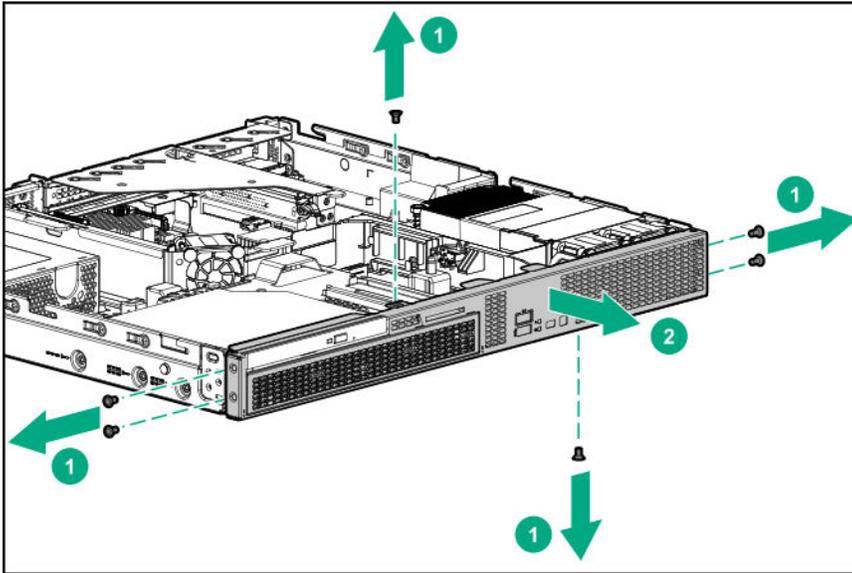
9. **Disconnect all cables from the drive backplane**.

10. **Remove all drives**.

11. Remove the four-bay SFF drive cage:

    a. Remove all the screws securing the drive cage to the chassis.

    b. Slide the drive cage out of the chassis.
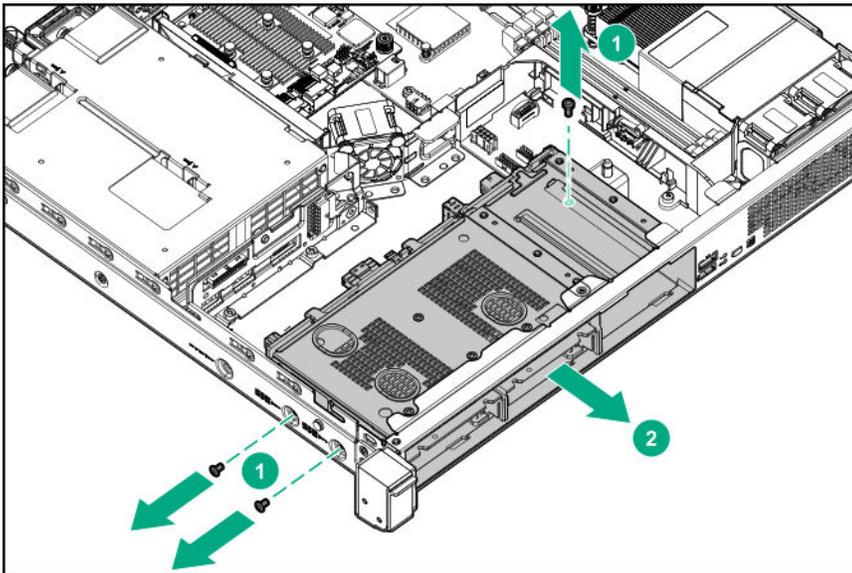
12. Remove the four-bay SFF drive backplane.
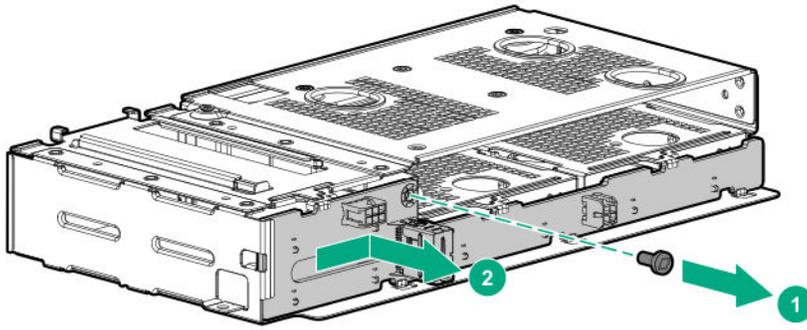
To replace the component, reverse the removal procedures.

Removing and replacing the two-bay SFF drive backplane

Prerequisites

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

Procedure

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

2. **Power down the server**.

3. Remove all power:

   a. Disconnect each power cord from the power source.

   b. Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. **Remove the server from the rack**.

6. **Remove the access panel**.

7. **Disconnect all cables from the drive backplane**.

8. **Remove all drives**.

9. Remove the two-bay SFF drive cage:

   a. Remove all the screws securing the drive cage to the chassis.

   b. Slide the drive cage out of the chassis.
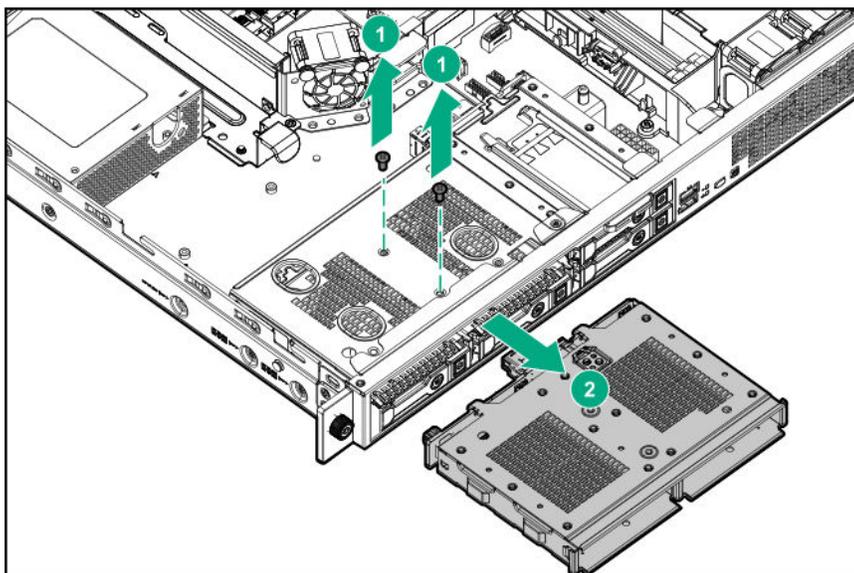
10. Remove the two-bay SFF drive backplane:

   a. Gently pull up the release tab.

   b. Slide the backplane out of the drive cage.
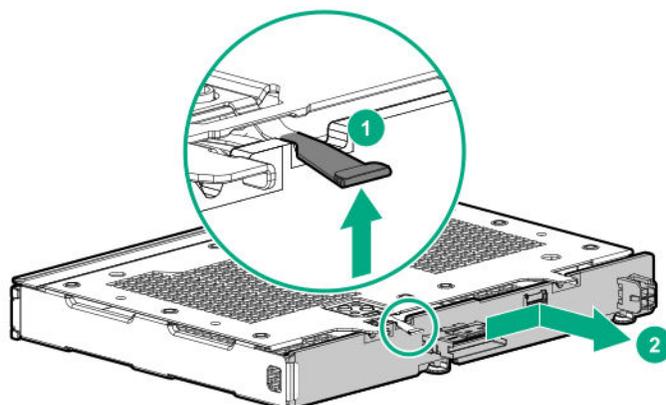
To replace the component, reverse the removal procedures.

Removing and replacing the expansion board

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

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

Prerequisites

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

- T-10 Torx screwdriver

- T-15 Torx screwdriver

Procedure

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

2. **Power down the server**.

3. Remove all power:

   a. Disconnect each power cord from the power source.

   b. Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. **Remove the server from the rack**.

6. **Remove the access panel**.

7. Disconnect all cables connected to existing expansion board.

8. **Remove the riser cage**.

9. Remove the expansion board installed in slot 2 of the riser cage.
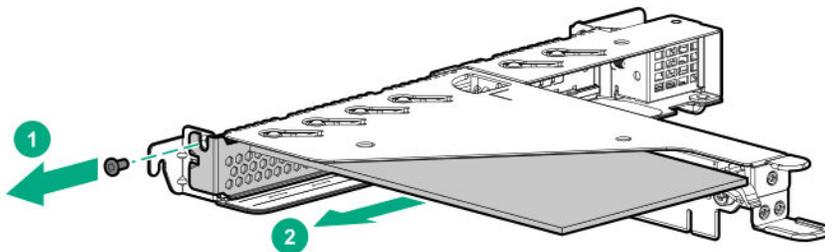
10. Remove the expansion board installed in slot 1 of the riser cage.
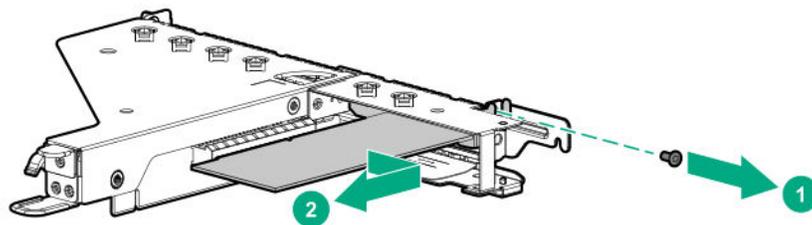
To replace the component, reverse the removal procedures.

Removing and replacing the type-a Smart Array modular controller (AROC)

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

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

Prerequisites

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

Procedure

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

2. **Power down the server**.

3. Remove all power:

   a. Disconnect each power cord from the power source.

   b. Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. **Remove the server from the rack**.

6. **Remove the access panel**.

7. **Remove the riser cage**.

8. Remove the type-a Smart Array modular controller (AROC):

   a. Loosen the controller board thumbscrews.

   b. Use the blue tab to pull up and remove the controller.
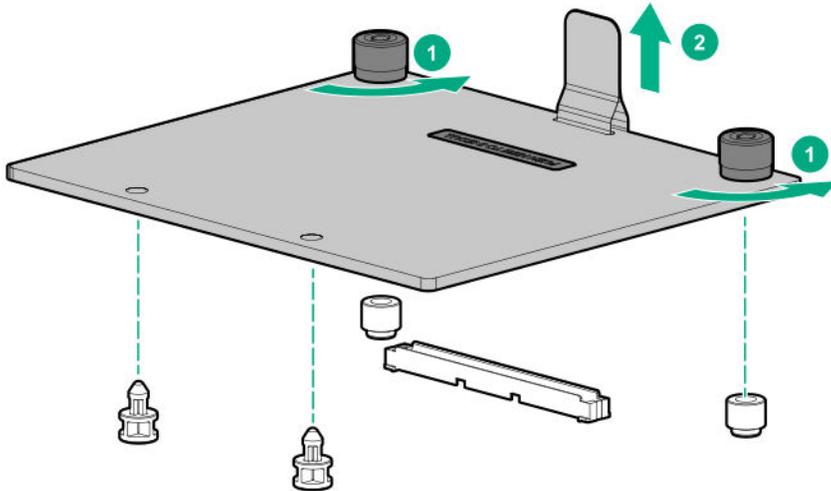
To replace the component, reverse the removal procedure.

Removing and replacing the Smart Array standup storage controller

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

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

Prerequisites

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

- T-10 Torx screwdriver

- T-15 Torx screwdriver

Procedure

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

2. **Power down the server**.

3. Remove all power:

   a. Disconnect each power cord from the power source.

   b. Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. **Remove the server from the rack**.

6. **Remove the access panel**.

7. **Remove the riser cage**.

8. Remove the controller installed in slot 2 of the riser cage.
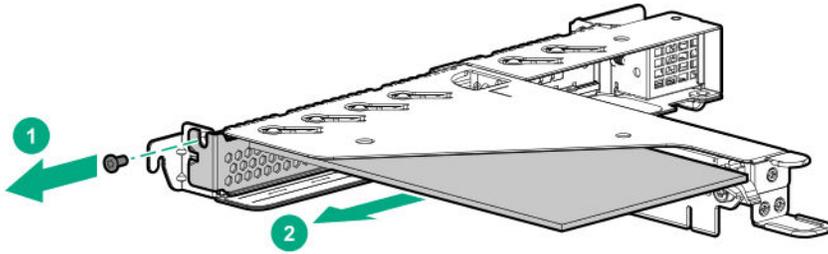
9. Remove the controller installed in slot 1 of the riser cage.
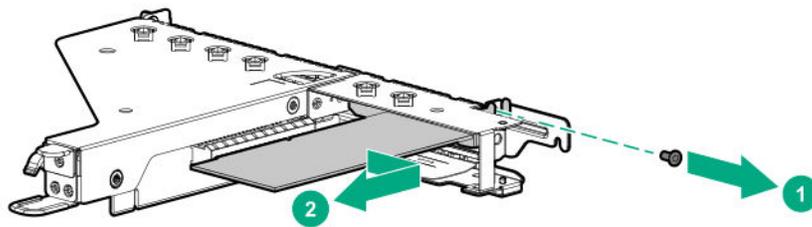
To replace the component, reverse the removal procedures.

Removing and replacing a power supply blank

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

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

Procedure

1. Remove the power supply blank.
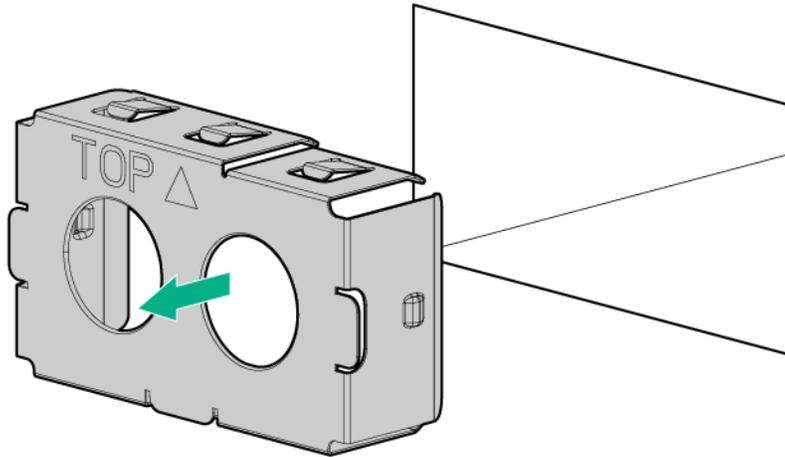
2. Immediately install the replacement power supply blank spare.

Removing and replacing a Flexible Slot power supply

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

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

⚠️ **CAUTION:** Mixing different types of power input modules in the same server might:

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

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

Prerequisites

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

Procedure

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

   a. Back up all server data.

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

   c. **Power down the server**.

   d. Disconnect all peripheral cables from the server.

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

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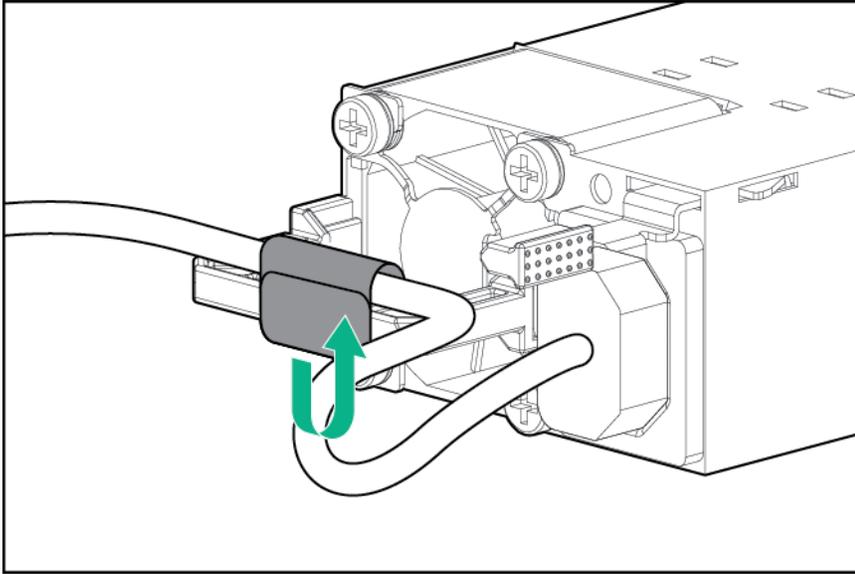
- DC power supply
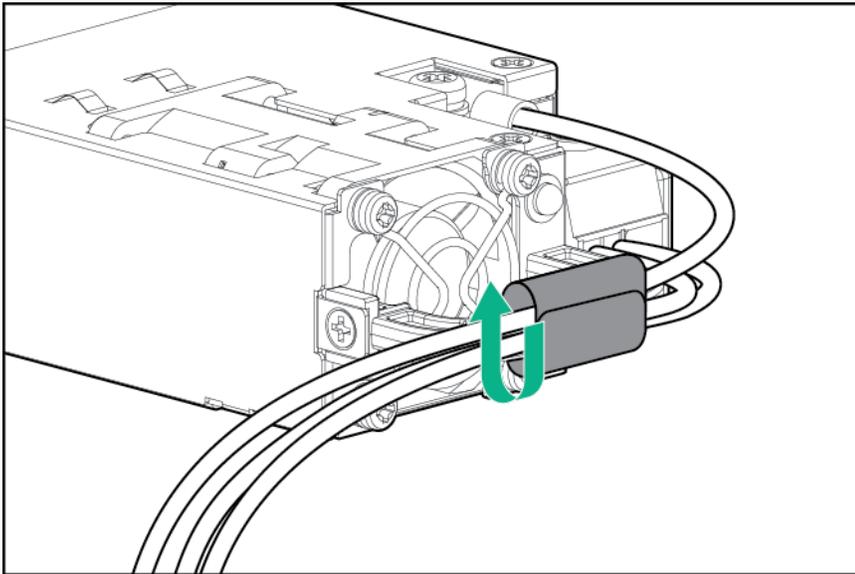
3. For an AC power supply, do the following:

   a. Disconnect the power cord from the power supply.
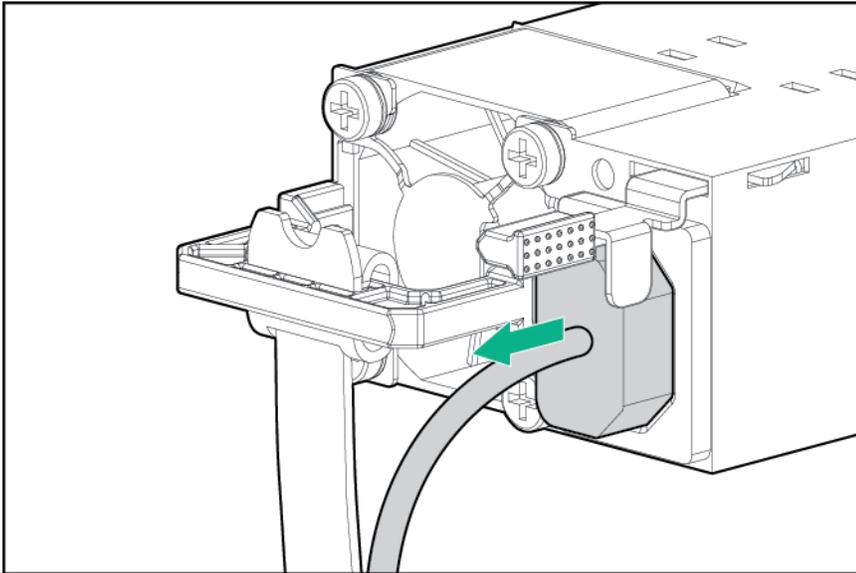
b. Remove the power supply.
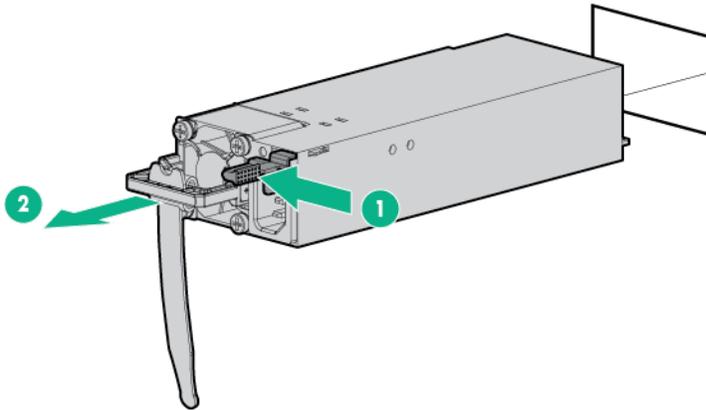

4. For a DC power supply, do the following:

    a. Slide the power supply out of the bay just enough to access the ground cable screw.

   **b.** Detach the ground (earthed) cable from the power supply.
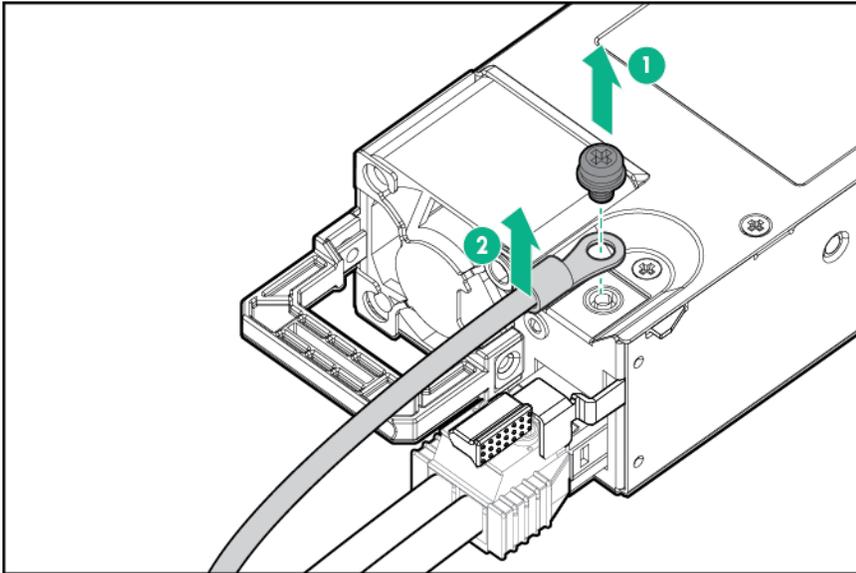
c. Remove the terminal block connector from the power supply.
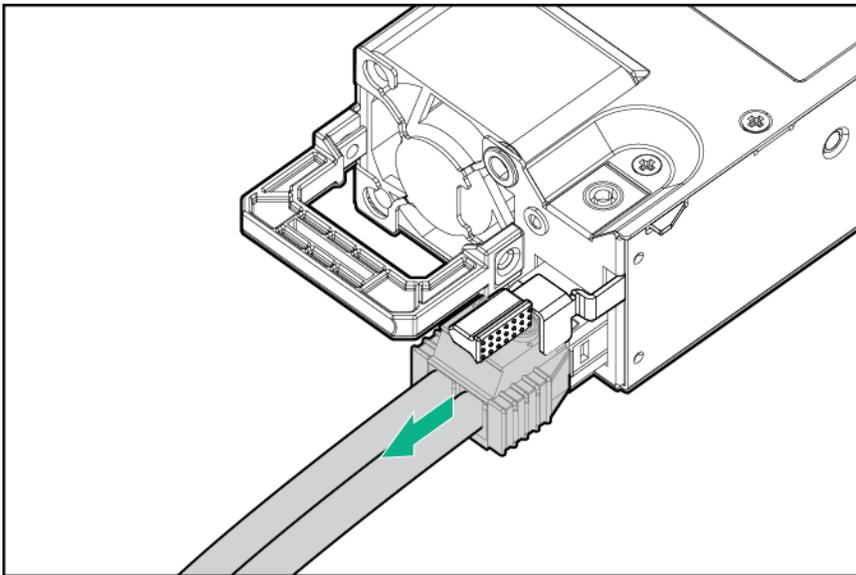
d. Remove the power supply.
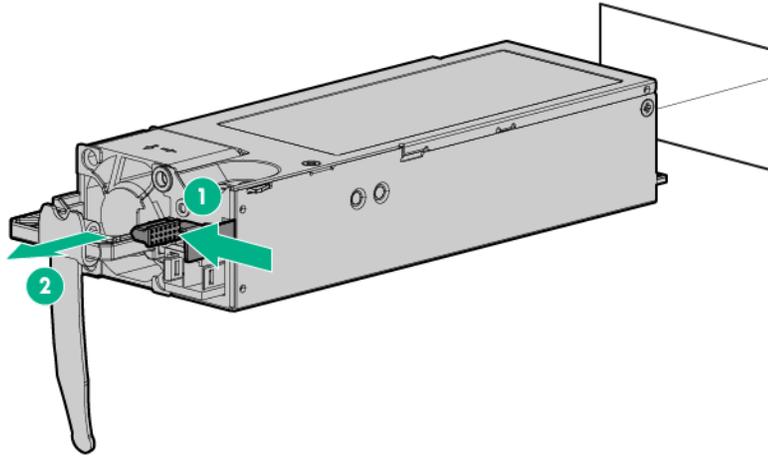
To replace the component, reverse the removal procedure.

Removing and replacing the non-hot-plug power supply

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

- Do not disable the power cord grounding plug. The grounding plug is an important safety feature.

- Plug the power cord into a grounded (earthed) electrical outlet that is easily accessible at all times.

- Unplug the power cord from the power supply to disconnect power to the equipment.

- Do not route the power cord where it can be walked on or pinched by items placed against it. Pay particular attention to the plug, electrical outlet, and the point where the cord extends from the server.

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

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

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

Prerequisites

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

Procedure

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

2. **Power down the server**.

3. Remove all power:

     a. Disconnect each power cord from the power source.

     b. Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. <u>**Remove the server from the rack**</u>.

6. <u>**Remove the inner left rail attached to the chassis**</u>.

7. <u>**Remove the access panel**</u>.

8. <u>**Disconnect the power supply cables from the system board**</u>.

9. Release the power cord from the strain relief clip.
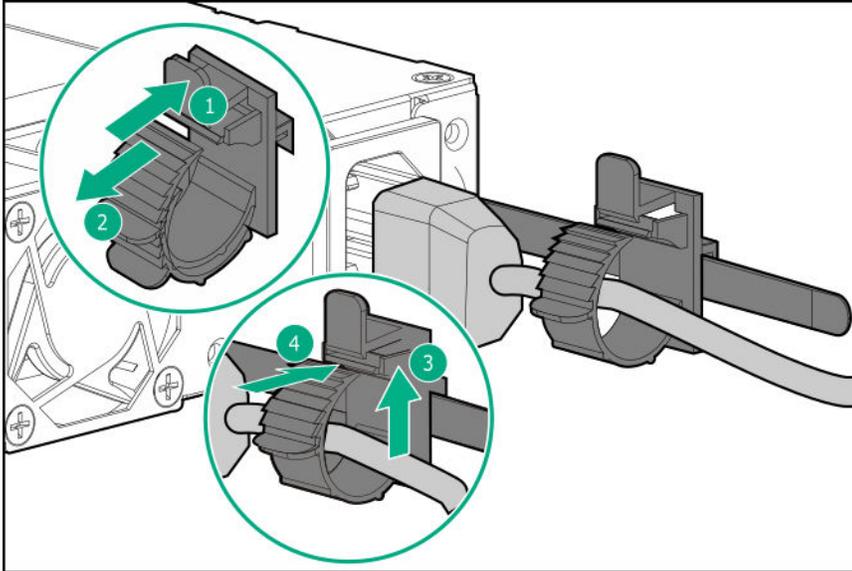
10. Remove the power supply.
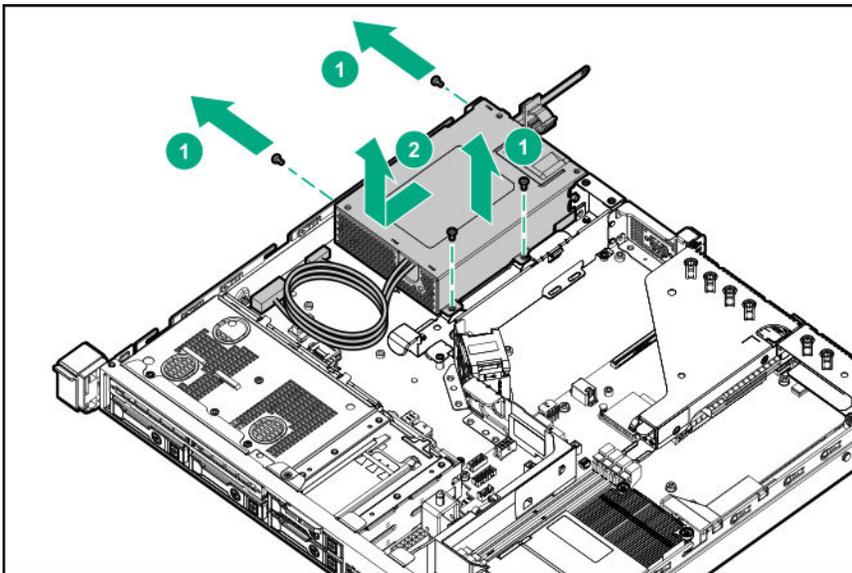
To replace the components, reverse the removal procedure.

Removing and replacing the power distribution board

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

Prerequisites

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

Procedure

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

2. **Power down the server**.

3. Remove all power:

   a. Disconnect each power cord from the power source.

   b. Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. **Remove the server from the rack**.

6. **Remove the access panel**.

7. **Disconnect all cables from the power distribution board**.

8. Do one of the following:

   a. **Remove the Flexible Slot power supply**.

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

9. Remove the power distribution board assembly.
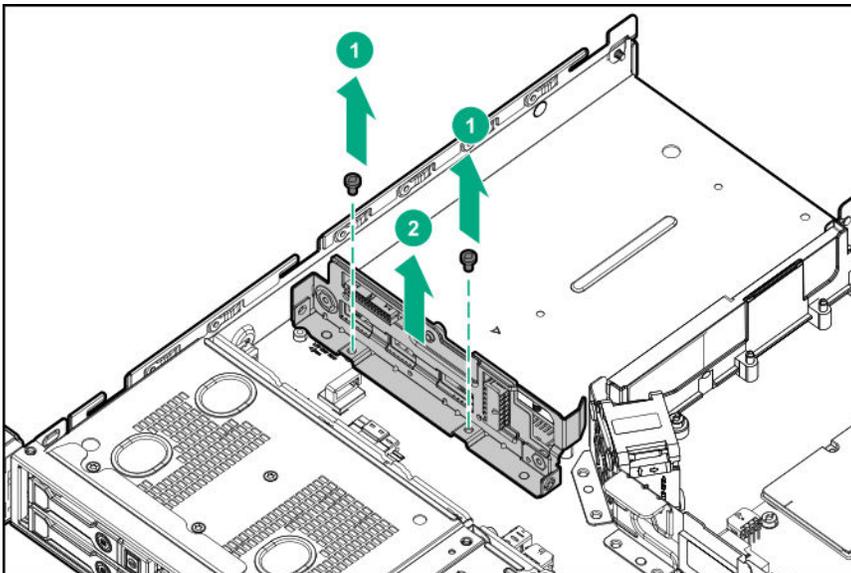
10. Remove the power distribution board.
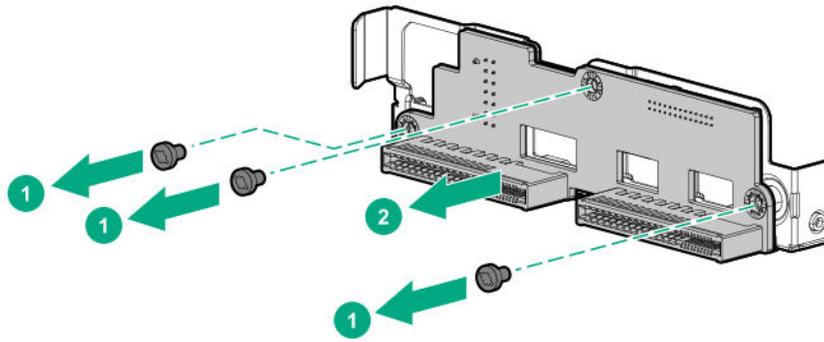
To replace the component, reverse the removal procedure.

Removing and replacing the FlexibleLOM blank

Prerequisites

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

Procedure

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

2. **Power down the server**.

3. Remove all power:

   a. Disconnect each power cord from the power source.

   b. Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. **Remove the server from the rack**.

6. **Remove the access panel**.

7. **Remove the FlexibleLOM riser cage**.

8. Remove the FlexibleLOM blank.
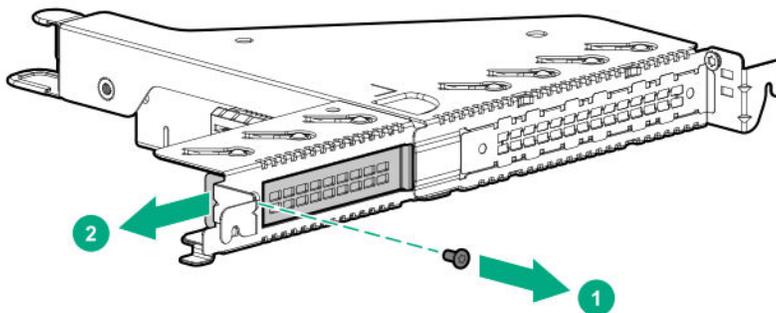
To replace the component, reverse the removal procedure.

Removing and replacing the iLO dedicated network port blank

Procedure

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

2. **Power down the server**.

3. Remove all power:

    a. Disconnect each power cord from the power source.

    b. Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. **Remove the server from the rack**.

6. **Remove the access panel**.

7. **Remove the riser cage**.

8. Remove the iLO dedicated network port blank.
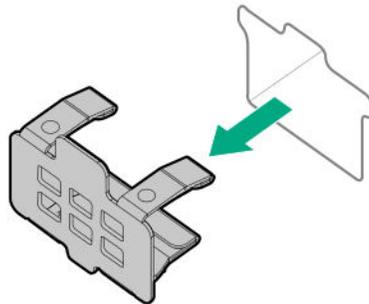
To replace the component, reverse the removal procedure.

# Removing and replacing the serial port blank

Procedure

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

2. **Power down the server**.

3. Remove all power:

    a. Disconnect each power cord from the power source.

    b. Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. **Remove the server from the rack**.

6. **Remove the access panel**.

7. Remove the serial port blank.

To replace the component, reverse the removal procedure.

Removing and replacing the FlexibleLOM riser board

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

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

Prerequisites

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

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

Procedure

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

2. **Power down the server**.

3. Remove all power:

   a. Disconnect each power cord from the power source.

   b. Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. **Remove the server from the rack**.

6. **Remove the access panel**.

7. Disconnect all cables connected to existing expansion board and FlexibleLOM riser board.

8. **Remove the FlexibleLOM riser cage**.

9. If installed, remove the expansion board installed in slot 2 of the riser cage.
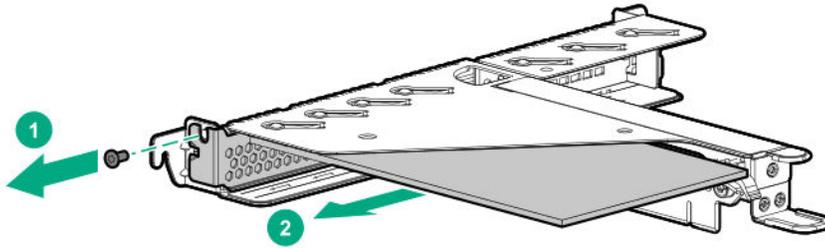
10. If installed, remove the FlexibleLOM adapter installed in slot 1 of the riser cage.
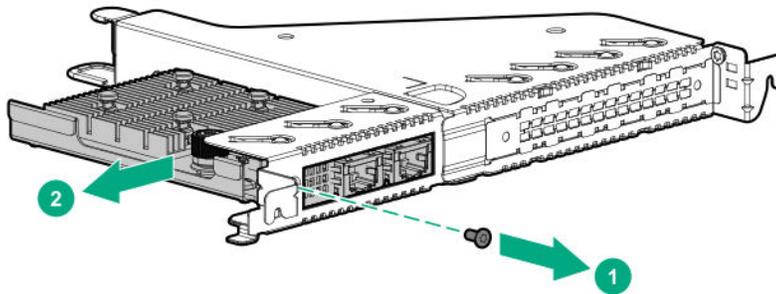
11. Remove the FlexibleLOM riser board.

To replace the component, reverse the removal procedures.

Removing and replacing the PCIe riser board

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

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

Prerequisites

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

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

Procedure

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

2. **Power down the server**.

3. Remove all power:

   a. Disconnect each power cord from the power source.

   b. Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. **Remove the server from the rack**.

6. **Remove the access panel**.

7. **Remove the PCIe riser cage**.

8. If installed, remove the expansion board installed in slot 2 of the riser cage.
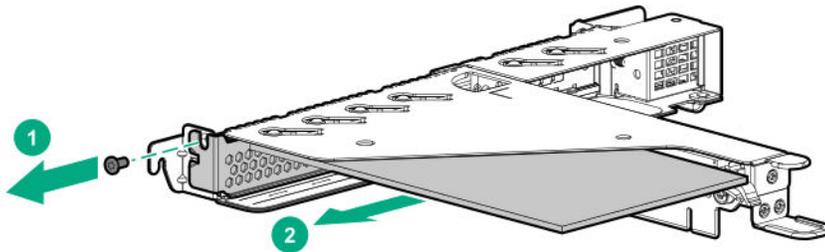
9. If installed, remove the expansion board installed in slot 1 of the riser cage.
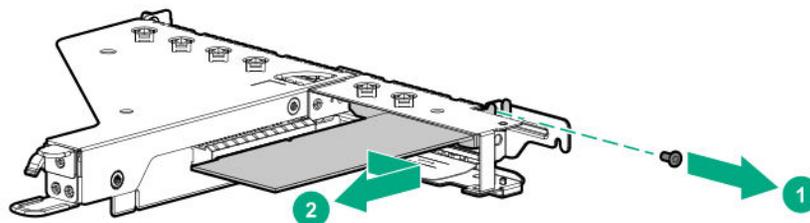
10. Remove the PCIe riser board.
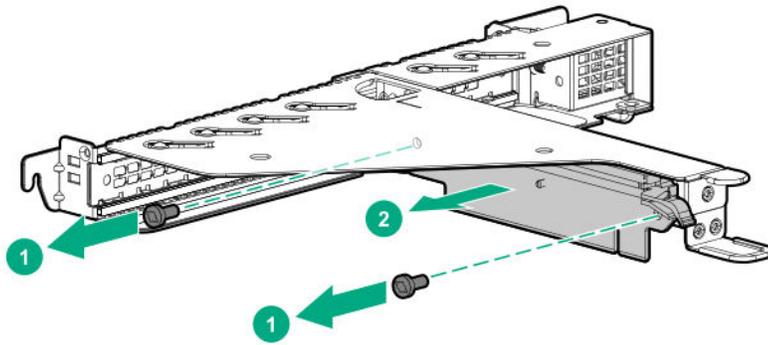
To replace the component, reverse the removal procedures.

Removing and replacing the M.2 SSD/dedicated iLO/serial port enablement board

**Prerequisites**

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

- T-15 Torx screwdriver

- Phillips No. 1 screwdriver

- 4.5 mm hex nut screwdriver

Procedure

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

2. **Power down the server**.

3. Remove all power:

   a. Disconnect each power cord from the power source.

   b. Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. **Remove the server from the rack**.

6. **Remove the access panel**.

7. **Remove the riser cage**.

8. **Remove the M.2 air guider**.

9. If installed, **disconnect the serial port cable**.

10. If installed, **remove the M.2 SSD**.

11. Remove the standoff screw from the enablement board.

Retain the standoff screw for future use.
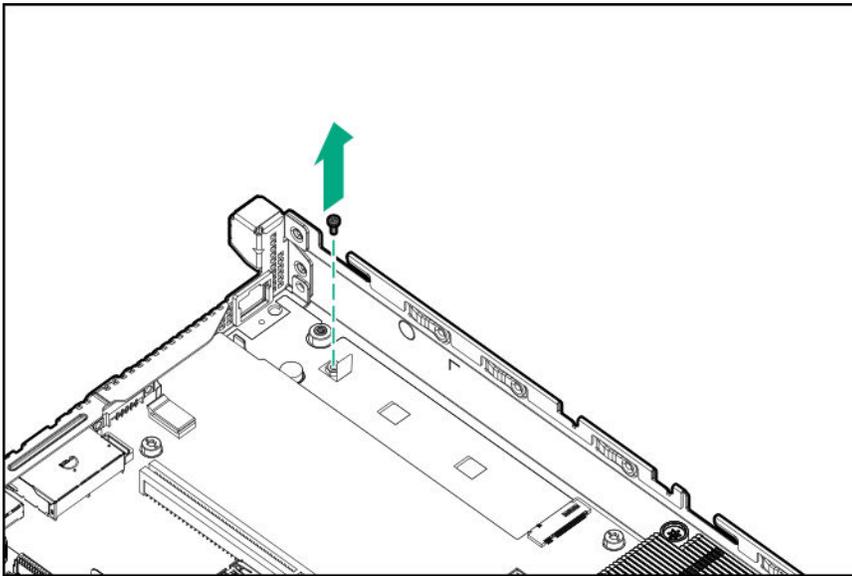
12. Remove the M.2 SSD/dedicated iLO/serial port enablement board:

    a. Remove the screw securing the enablement board to the system board.

    b. Lift the rear end of the board in the upward direction.

    c. Disconnect the board from the slot.
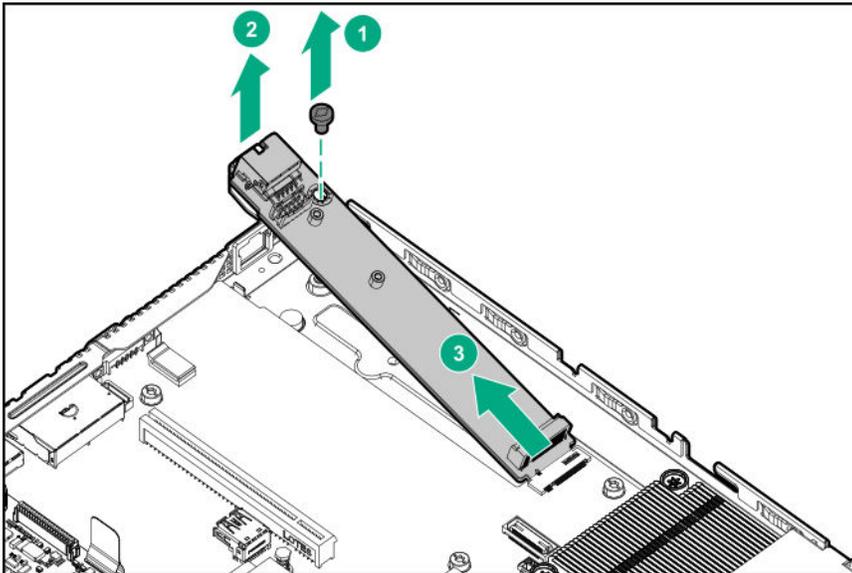
To replace the component, reverse the removal procedures.

Removing and replacing the M.2 SSD

M.2 SSD might be installed on the enablement board or the system board.

Prerequisites

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

Procedure

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

2. **Power down the server**.

3. Remove all power:

   a. Disconnect each power cord from the power source.

   b. Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. **Remove the server from the rack**.

6. **Remove the access panel**.

7. **Remove the riser cage**.

8. **Remove the M.2 air guider**.

9. Remove the M.2 SSD:

   a. Remove the SSD mounting screw.

   b. Lift the M.2 SSD at a 45° angle.

   c. Remove the M.2 SSD from the M.2 SSD slot.
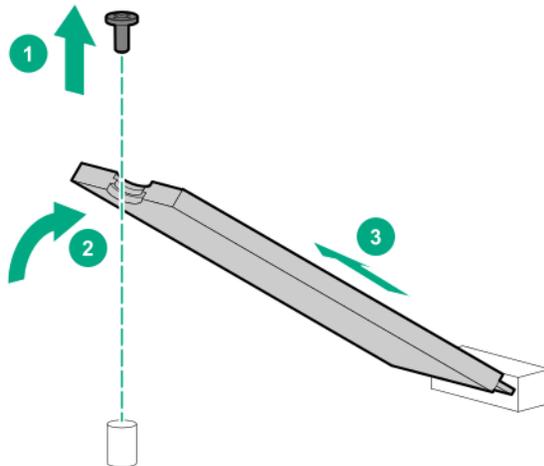
To replace the component, reverse the removal procedures.

Removing and replacing the energy pack

Procedure

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

2. **Power down the server**.

3. Remove all power:

    a. Disconnect each power cord from the power source.

    b. Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. **Remove the server from the rack**.

6. **Remove the access panel**.

7. If installed, **remove the Smart Array modular controller (AROC)**.

8. Remove the energy pack from the holder:

    a. Disconnect the energy pack cable.

    b. Gently pull the release latch.

    c. Slide the energy pack out of the holder.
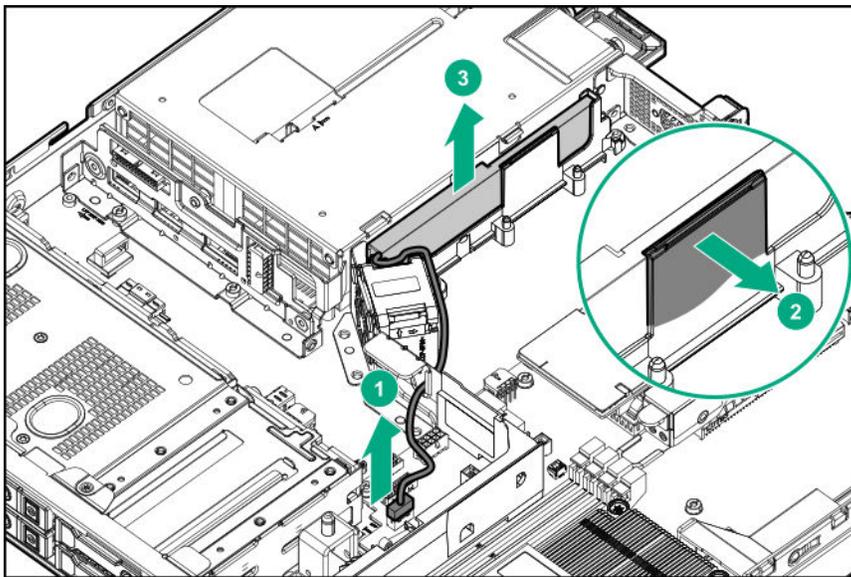
To replace the component, reverse the removal procedures.

Removing and replacing the energy pack holder

Prerequisites

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

Procedure

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

2. **Power down the server**.

3. Remove all power:

    a. Disconnect each power cord from the power source.

    b. Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. **Remove the server from the rack**.

6. **Remove the access panel**.

7. If installed, **remove the Smart Array modular controller (AROC)**.

8. **Remove an energy pack**.

9. Remove the energy pack holder.
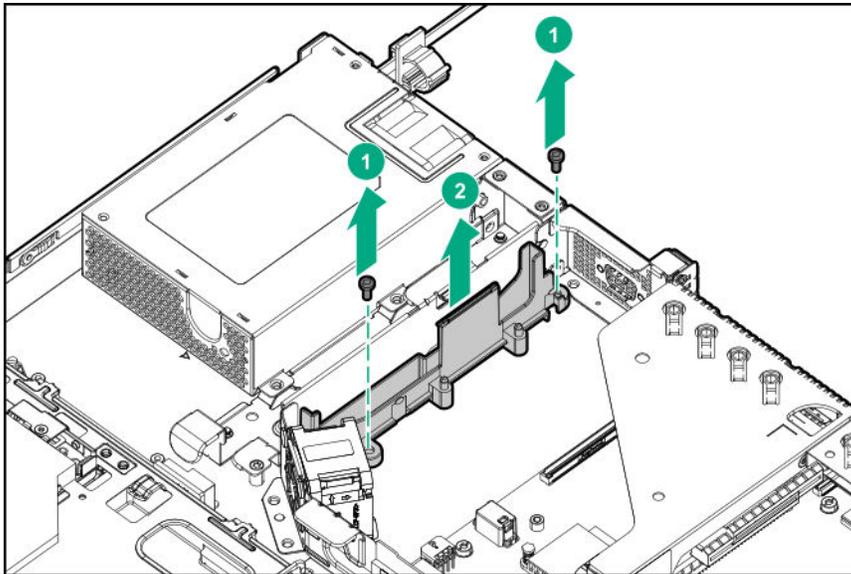
To replace the component, reverse the removal procedures.

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. Disconnect all peripheral cables from the server.

5. **Remove the server from the rack**.

6. **Remove the access panel**.

7. Remove the chassis intrusion detection switch on the DIMM guard:

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

b. Open the latches that secure the switch to the DIMM guard.

c. Remove the chassis intrusion detection switch.
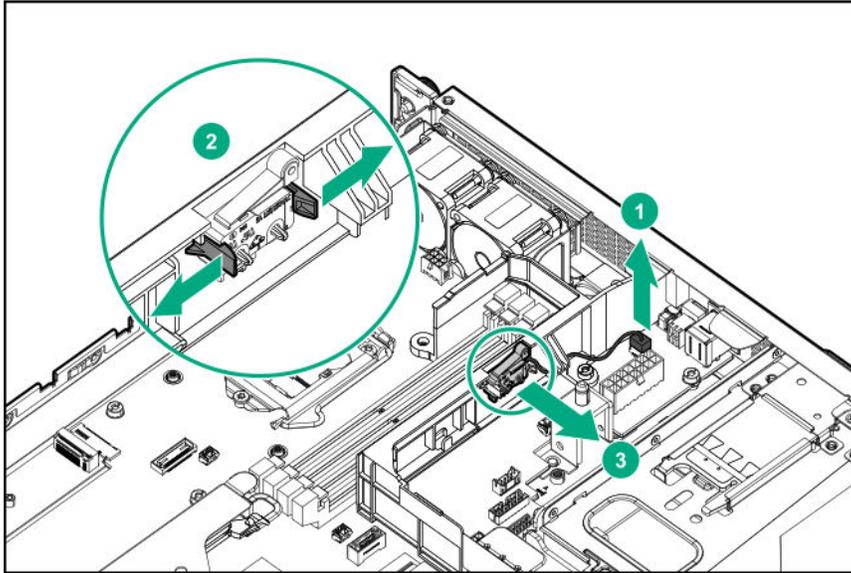

To replace the component, reverse the removal procedure.

Removing and replacing a fan

Procedure

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

2. **Power down the server**.

3. Remove all power:

    a. Disconnect each power cord from the power source.

    b. Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. **Remove the server from the rack**.

6. **Remove the access panel**.

7. If installed, remove the processor air baffle before removing fan 1 or 2.
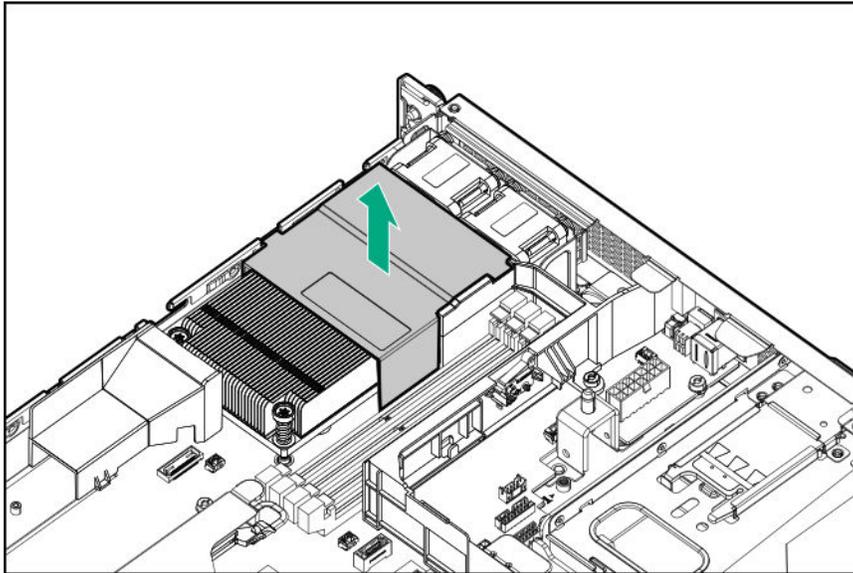
8. Remove the fan.
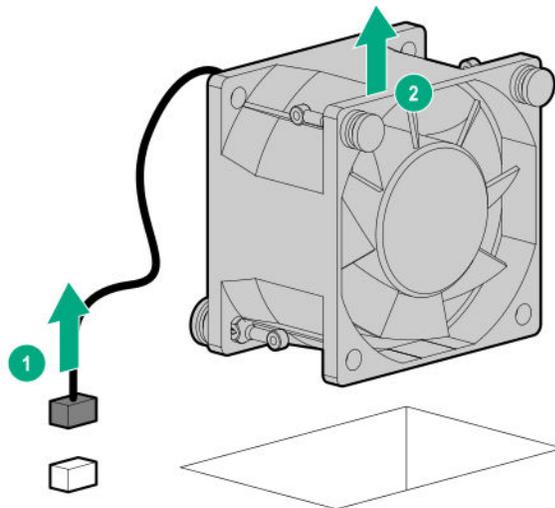
To replace the component, reverse the removal procedure.

DIMM-processor compatibility

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

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

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

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

Removing and replacing a DIMM

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

Procedure

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

2. **Power down the server**.

3. Remove all power:

   a. Disconnect each power cord from the power source.

   b. Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. **Remove the server from the rack**.

6. **Remove the access panel**.

7. Remove the DIMM.
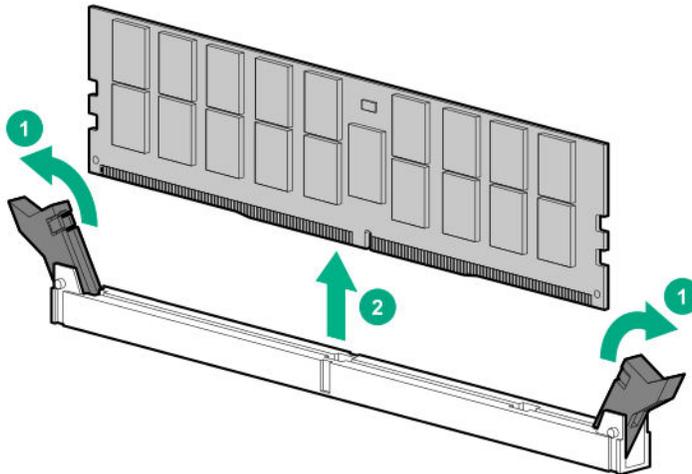
To replace the component, reverse the removal procedure.

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

Removing and replacing a heatsink

Removing the heatsink

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

> **⚠ CAUTION:** To prevent damage to electrical components, take the appropriate anti-static precautions before beginning any installation, removal, or replacement procedure. Improper grounding can cause electrostatic discharge.

Prerequisites

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

Procedure

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

2. **Power down the server**.

3. Remove all power:

   a. Disconnect each power cord from the power source.

   b. Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. **Remove the server from the rack**.

6. **Remove the access panel**.

7. If installed, remove the processor air baffle.

8. **Remove the M.2 air guider**.

9. Allow the heatsink to cool.

10. Remove the heatsink:

    a. Loosen one pair of diagonally opposite screws halfway, then loosen the other pair of screws.

    b. Completely loosen all screws in the same sequence.

    c. Remove the heatsink from the processor backplate.

Replacing the heatsink

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

⚠️ **CAUTION:** To prevent damage to electrical components, take the appropriate anti-static precautions before beginning any installation, removal, or replacement procedure. Improper grounding can cause electrostatic discharge.

Prerequisites

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

- T-15 Torx screwdriver
- Alcohol swab

Procedure

1. Clean the old thermal grease from the processor with the alcohol swab.

   Allow the alcohol to evaporate before continuing.

2. Remove the thermal interface protective cover from the heatsink.
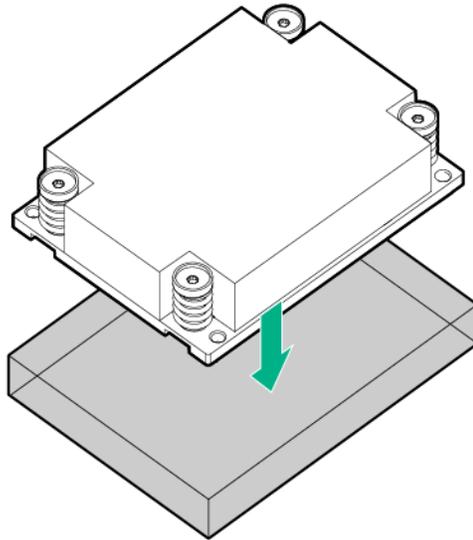
3. Install the heatsink:

   a. Position the heatsink on the processor backplate.

   b. Tighten one pair of diagonally opposite screws halfway, then tighten the other pair of screws.

   c. Finish the installation by completely tightening the screws in the same sequence.
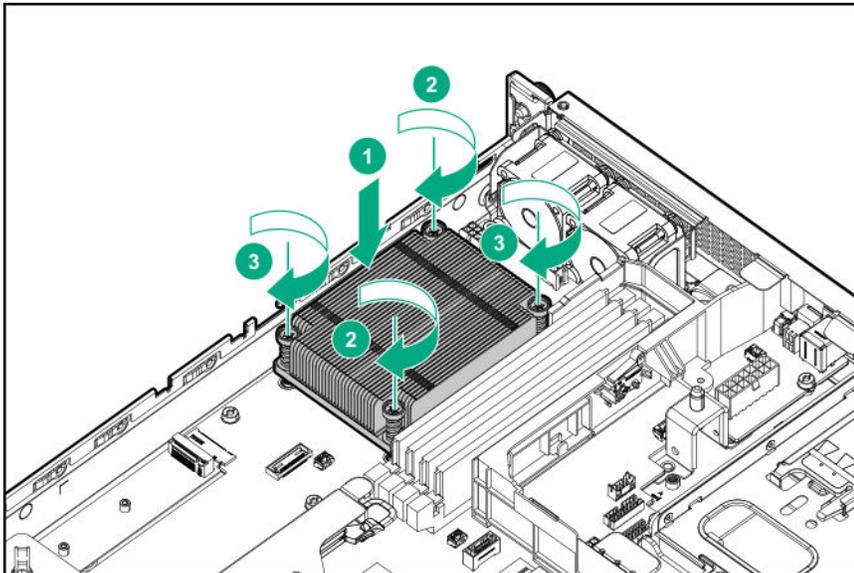
4. If removed, install the processor air baffle.

5. Install the M.2 air guider.

6. Install the access panel.

7. Install the server into the rack.

8. Connect all peripheral cables to the server.

9. Connect the power cords:

    a. Connect each power cord to the server.

    b. Connect each power cord to the power source.

10. **Power up the server**.

11. If removed, install the front bezel.

Removing and replacing a processor

Removing the processor

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

> ⚠ **CAUTION:** To prevent damage to electrical components, take the appropriate anti-static precautions before beginning any installation, removal, or replacement procedure. Improper grounding can cause electrostatic discharge.

Prerequisites

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

- T-15 Torx screwdriver

- Torque screwdriver

Procedure

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

2. **Power down the server**.

3. Remove all power:

    a. Disconnect each power cord from the power source.

    b. Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. **Remove the server from the rack**.

6. **Remove the access panel**.

7. If installed, remove the processor air baffle.

8. **Remove the M.2 air guider**.

9. Allow the heatsink to cool.

10. Remove the heatsink:

    a. Loosen one pair of diagonally opposite screws halfway, then loosen the other pair of screws.

    b. Completely loosen all screws in the same sequence.

    c. Remove the heatsink from the processor backplate.

11. Open the processor load plate:

    a. Push the processor locking lever down to unclip it, and then pivot it to the vertical position (callout 1).

    b. Open the processor load plate (callout 2).
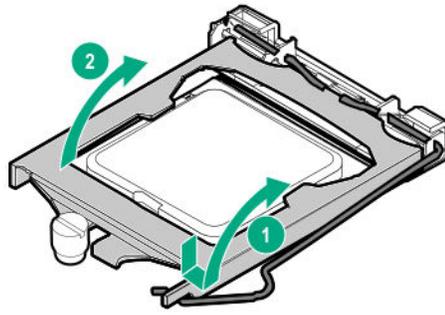
⚠ **CAUTION: THE PINS ON THE PROCESSOR SOCKET AND ON THE PROCESSOR ARE VERY FRAGILE AND EASILY DAMAGED.** Any damage to them might require replacing the system board.

12. Do not touch the socket contacts or the bottom of the processor.
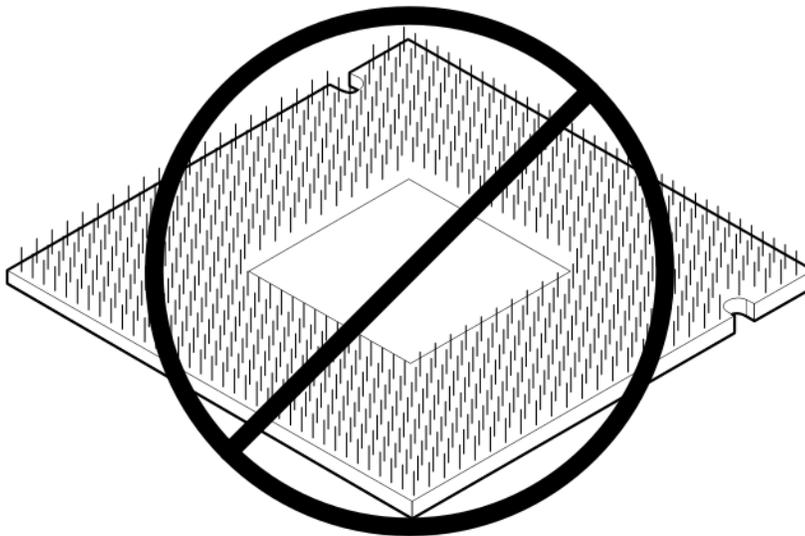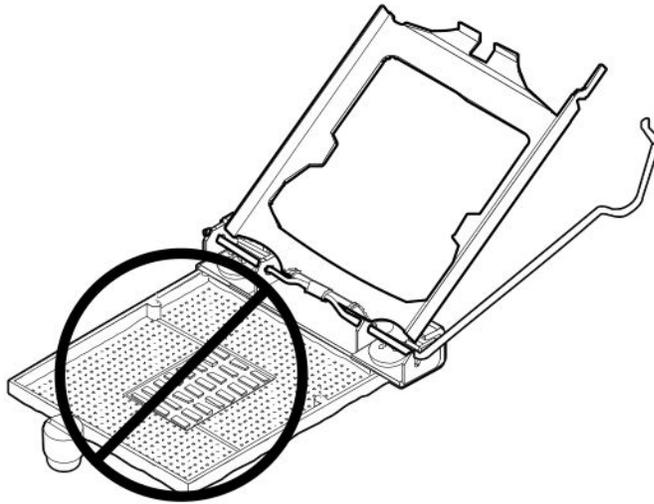
13. Hold the processor by the edges, and then lift it out of the socket.
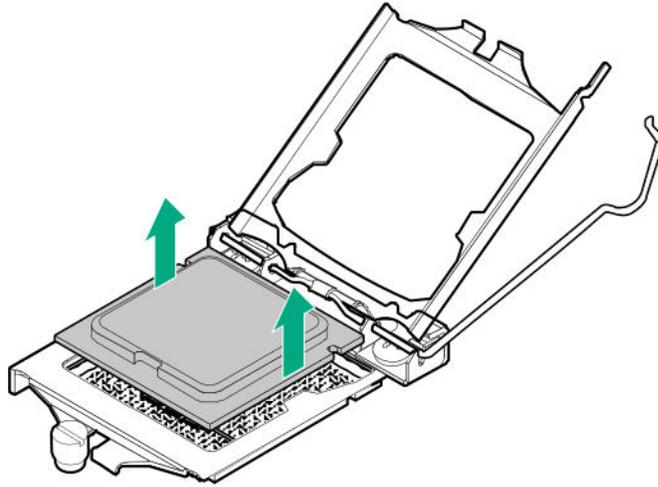
Replacing the processor

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

> ⚠ **CAUTION:** To prevent damage to electrical components, take the appropriate anti-static precautions before beginning any installation, removal, or replacement procedure. Improper grounding can cause electrostatic discharge.

Prerequisites

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

- T-15 Torx screwdriver
- Torque screwdriver
- Alcohol wipe
- 1.0 gm (0.5 ml) or two 0.5 gm (0.25 ml) of thermal grease

Procedure

1. Do not touch the socket contacts or the bottom of the processor.
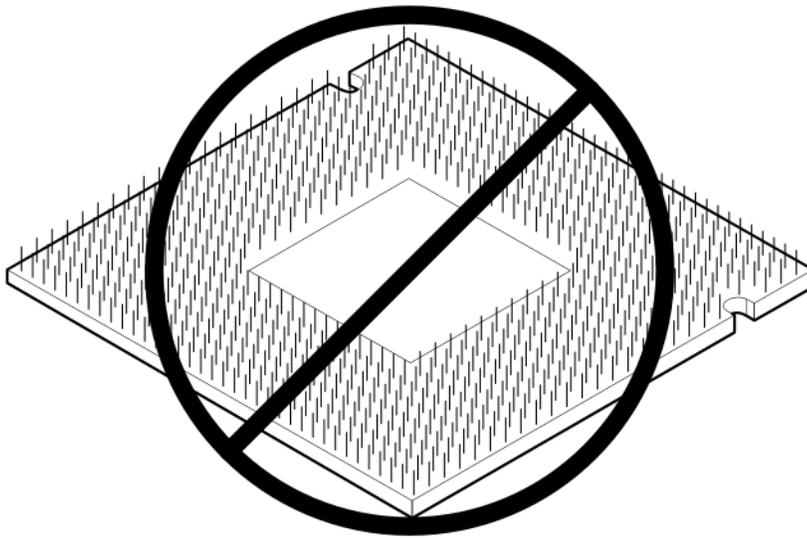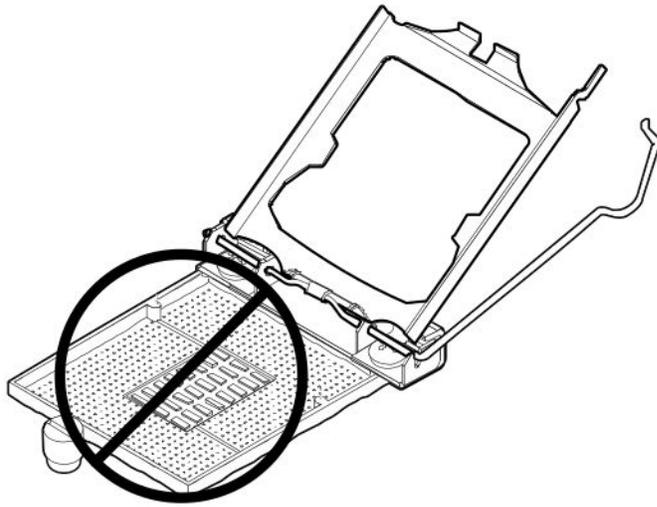
2. Install the processor:

   a. Hold the processor by the edges and align the:

      - Socket notches with the processor notches
      - Pin 1 indicator on the processor and the socket

   b. Lower the processor straight down, without tilting or sliding the processor in the socket .

      Make sure that the processor is properly seated in the socket.
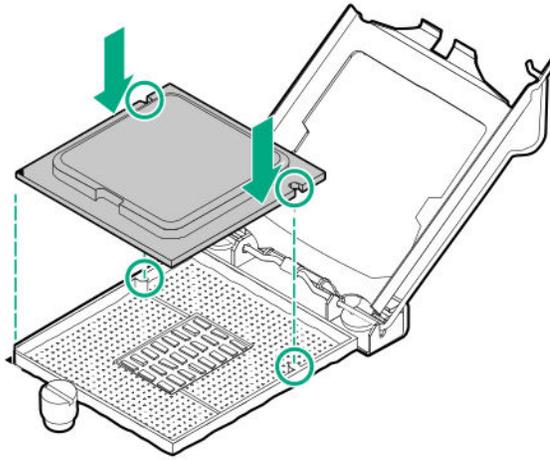
⚠️ **CAUTION:** The processor load plate and locking lever should close without resistance. Forcing to close these parts can damage the processor and the socket. This damage might require replacing the system board.

3. Close the processor load plate (callout 1), and then engage the processor locking lever (callout 2).
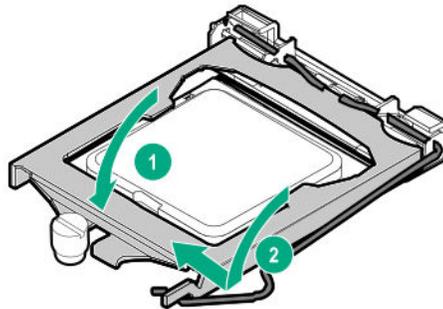
4. Use an alcohol wipe to remove the existing thermal grease from the heatsink.

Allow the alcohol to evaporate before continuing.

5. Apply new thermal grease to the processor in the following pattern to ensure even distribution. Use the full contents of the thermal grease syringe.
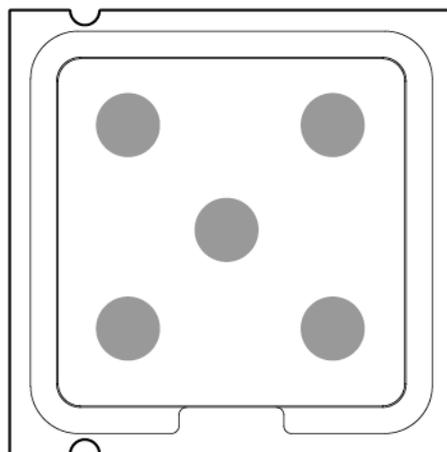
6. Install the heatsink:

a. Position the heatsink on the processor backplate.

b. Tighten one pair of diagonally opposite screws halfway, then tighten the other pair of screws.

c. Finish the installation by completely tightening the screws in the same sequence.
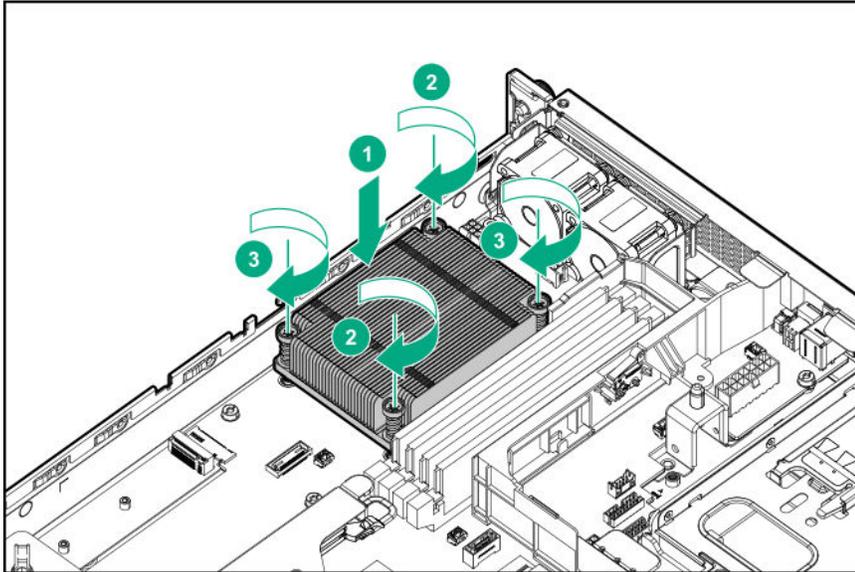
7. If removed, install the processor air baffle.

8. Install the M.2 air guider.

9. Install the access panel.

10. Install the server into the rack.

11. Connect all peripheral cables to the server.

12. Connect the power cords:

    a. Connect each power cord to the server.

    b. Connect each power cord to the power source.

13. **Power up the server**.

14. If removed, install the front bezel.

Removing and replacing the system board

Removing the system board

Prerequisites

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

Procedure

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

2. **Power down the server**.

3. Remove all power:

    a. Disconnect each power cord from the power source.

    b. Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. **Remove the server from the rack**.

6. **Remove the access panel**.

7. Remove the front bezel.
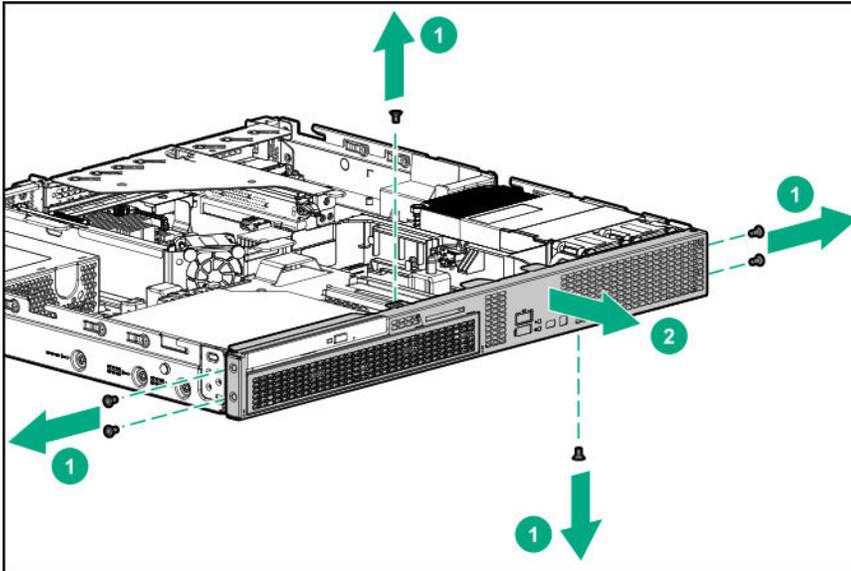
8. **Remove the M.2 air guider**.

9. If installed, remove the processor air baffle.
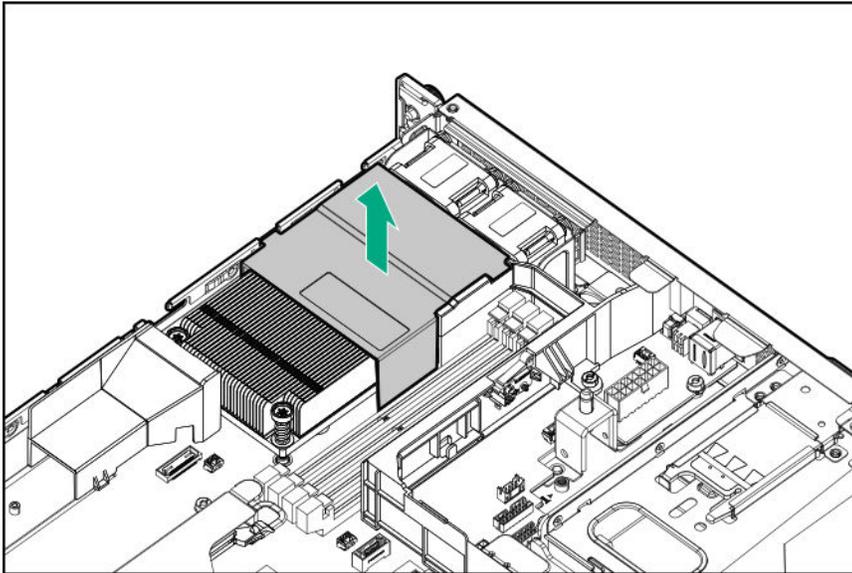
10. Remove and release all cables connected to the system board.

11. **Remove the riser cage**.

12. **Remove the DIMM**.

13. If installed, **remove the M.2 SSD/dedicated iLO/serial port enablement board**.

14. If installed, **remove the M.2 SSD**.

15. If installed, **remove the Smart Array modular controller (AROC)**.

16. Allow the heatsink to cool.

17. Remove the heatsink:

    a. Loosen one pair of diagonally opposite screws halfway, then loosen the other pair of screws.

    b. Completely loosen all screws in the same sequence.

    c. Remove the heatsink from the processor backplate.
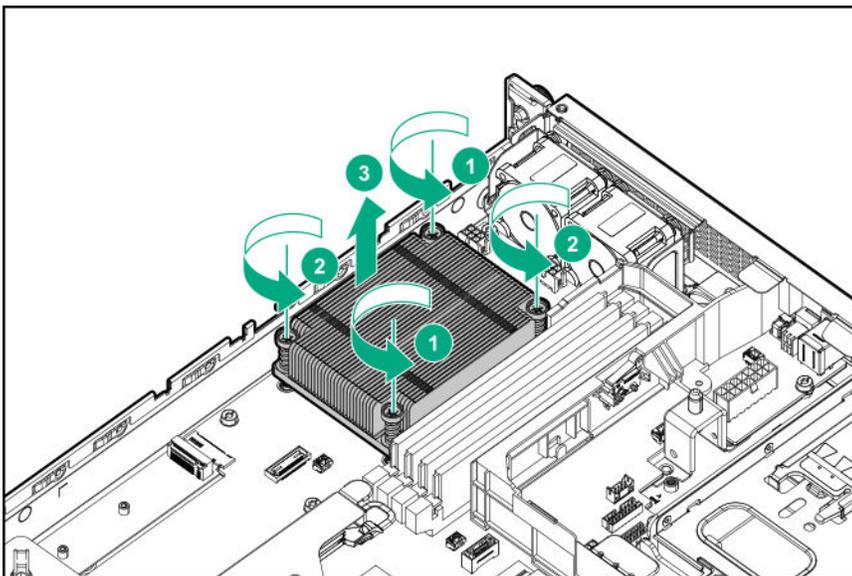
18. **Remove the DIMM guard**.

19. Open the processor load plate:

    a. Push the processor locking lever down to unclip it, and then pivot it to the vertical position (callout 1).

    b. Open the processor load plate (callout 2).
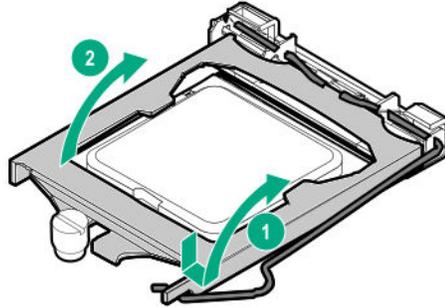
⚠ **CAUTION: THE PINS ON THE PROCESSOR SOCKET AND ON THE PROCESSOR ARE VERY FRAGILE AND EASILY DAMAGED.** Any damage to them might require replacing the system board.

20. Do not touch the socket contacts or the bottom of the processor.
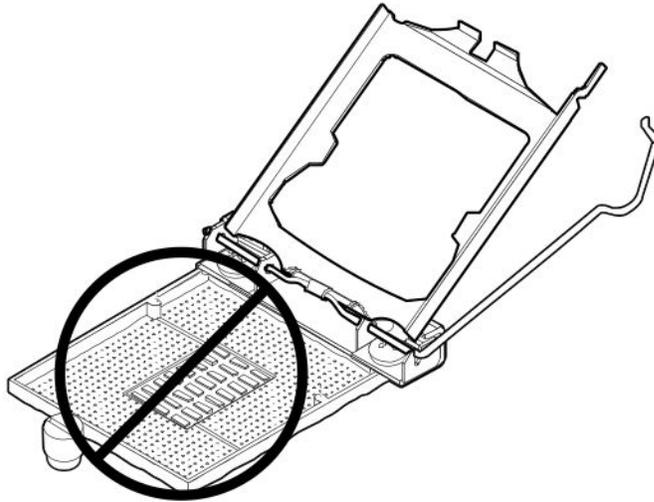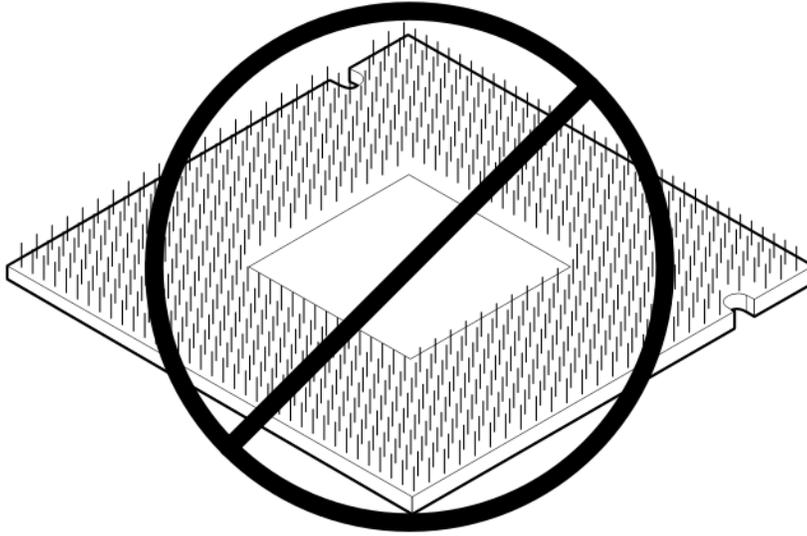
21. Hold the processor by the edges, and then lift it out of the socket.
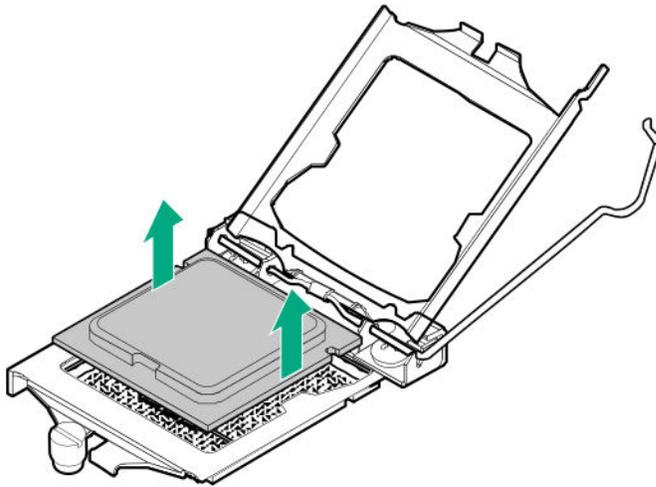
22. Remove the system board screws.
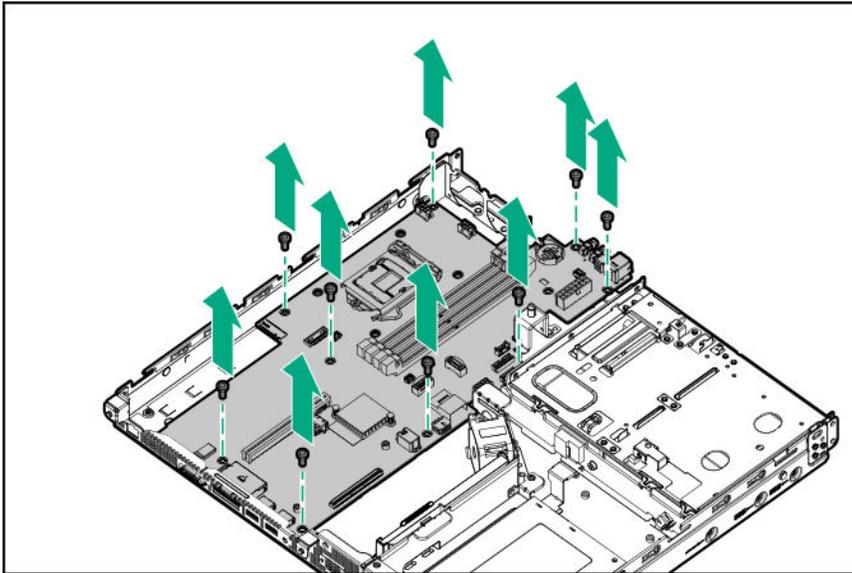
23. Remove the system board:

    a. Lift the system board in upward direction from the front side.

    b. Slide the system board away from the real panel.
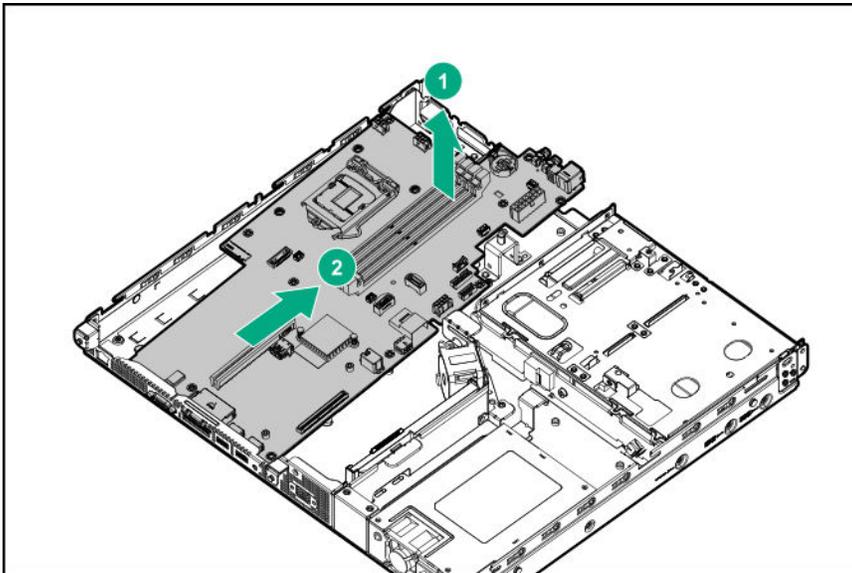
Replacing the system board

Prerequisites

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

- T-15 Torx screwdriver

- Alcohol wipe

- 1.0 gm (0.5 ml) or two 0.5 gm (0.25 ml) of thermal grease

Procedure

1. Install the spare system board:

    a. Slide the system board towards the real panel to attach it to the real panel.

    b. Press down the system board on the chassis.
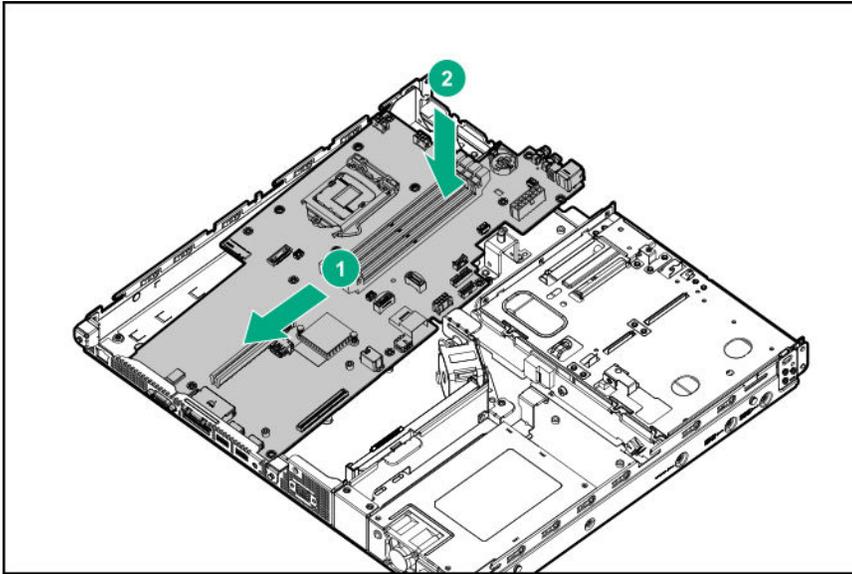
2. Install the system board screws.
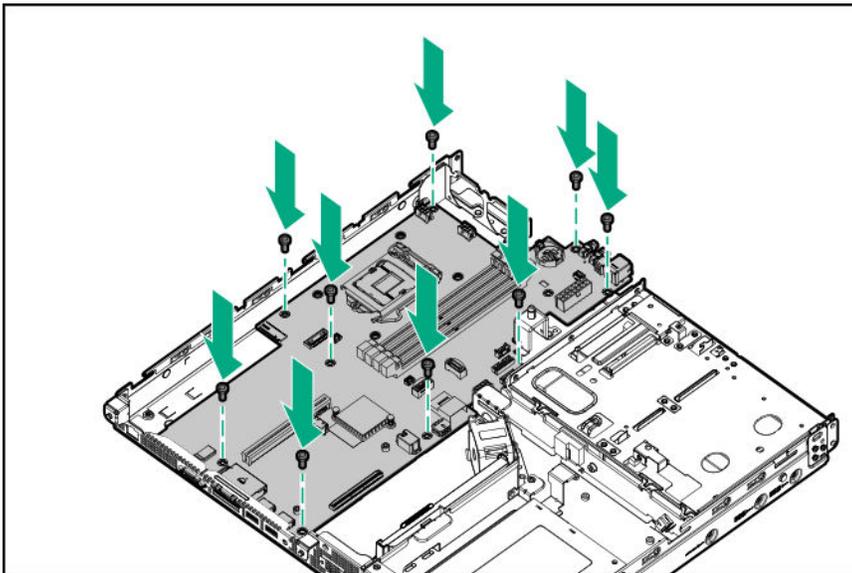
3. Open the processor load plate:

    a. Push the processor locking lever down to unclip, and then lift it upwards (callout 1).

    b. Open the processor load plate (callout 2).
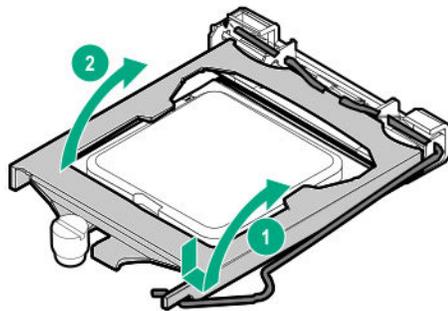
> ⚠ **CAUTION: THE PINS ON THE PROCESSOR SOCKET AND ON THE PROCESSOR ARE VERY FRAGILE AND EASILY DAMAGED.** Any damage to them might require replacing the system board.

4. Do not touch the socket contacts or the bottom of the processor.
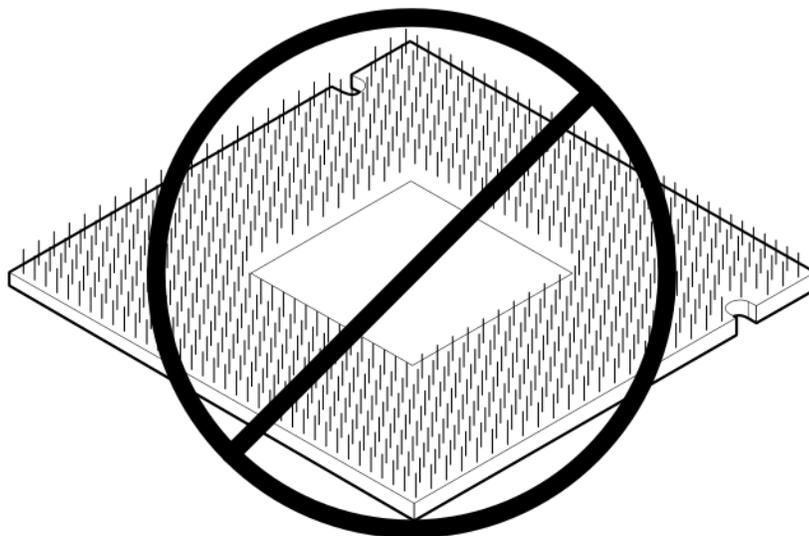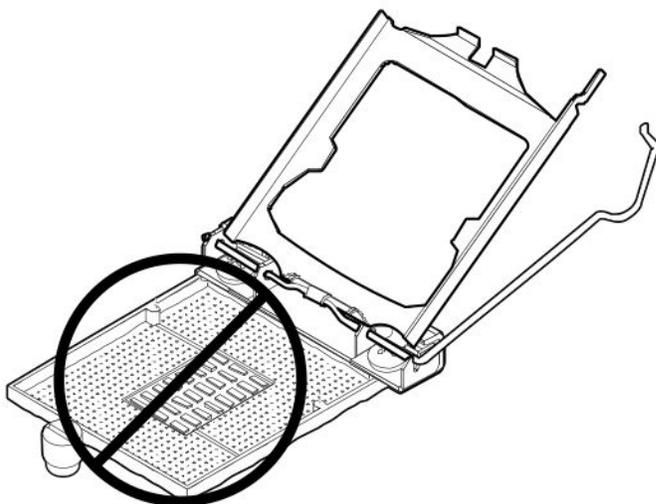
5. Remove the processor socket cover.
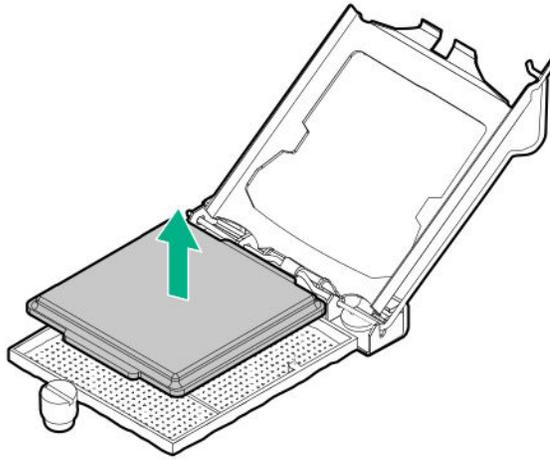
6. Install the processor:

   a. Hold the processor by the edges and align the:

      • Socket notches with the processor notches

      • Pin 1 indicator on the processor and the socket

   b. Lower the processor straight down, without tilting or sliding the processor in the socket .

      Make sure that the processor is properly seated in the socket.
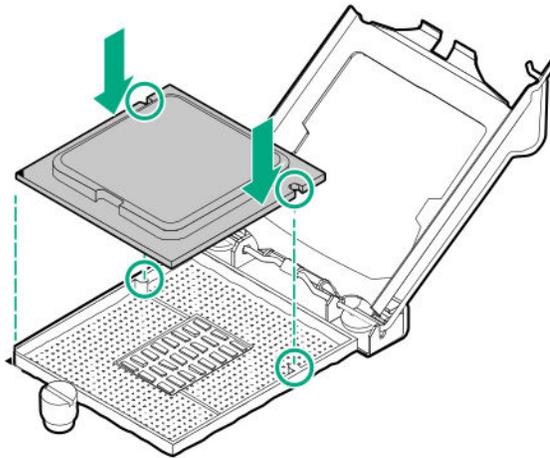
⚠ **CAUTION:** The processor load plate and locking lever should close without resistance. Forcing to close these parts can damage the processor and the socket. This damage might require replacing the system board.

7. Close the processor load plate (callout 1), and then engage the processor locking lever (callout 2).
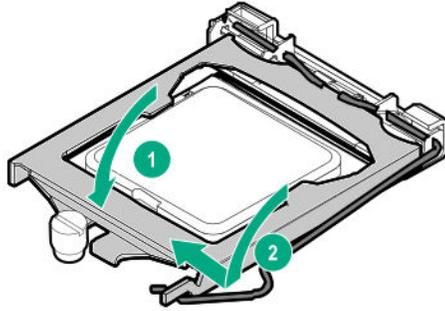
8. Use an alcohol wipe to remove the existing thermal grease from the heatsink.

    Allow the alcohol to evaporate before continuing.

9. Apply new thermal grease to the processor in the following pattern to ensure even distribution. Use the full contents of the thermal grease syringe.
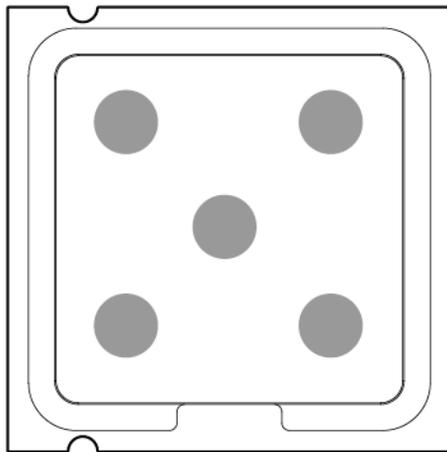
10. Install the DIMM guard.

11. Install the heatsink:

    a. Position the heatsink on the processor backplate.

    b. Tighten one pair of diagonally opposite screws halfway, then tighten the other pair of screws.

    c. Finish the installation by completely tightening the screws in the same sequence.
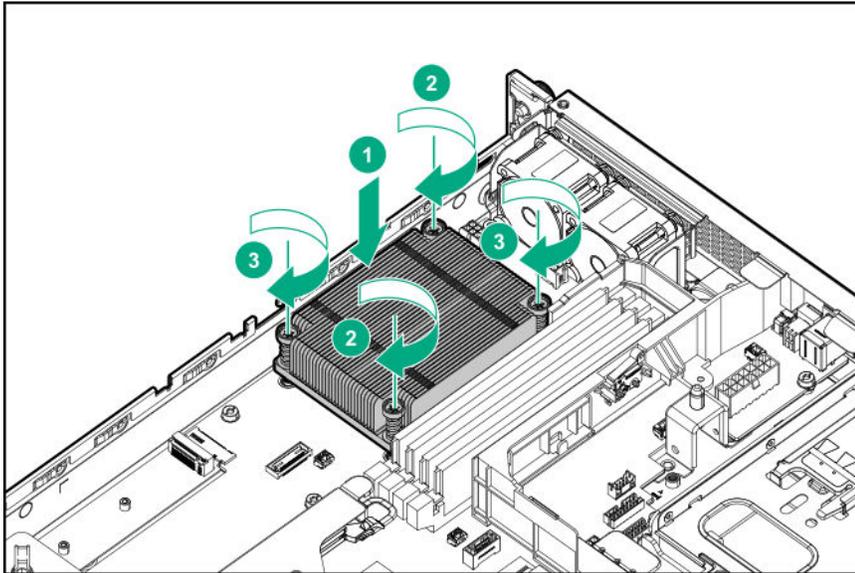
12. Install all the components removed from the failed system board.

13. Install the M.2 air guider.

14. If removed, install the processor air baffle.

15. Install the access panel.

16. Install the front bezel.

17. Install the server into the rack.

18. Connect all peripheral cables to the server.

19. Connect the power cords:

    a. Connect each power cord to the server.

    b. Connect each power cord to the power source.

20. **Power up the server**.

21. If removed, install the front bezel.

22. Ensure all firmware, including option cards and embedded devices, is updated to the same versions to ensure that the latest drivers are being used.

23. Re-enter any Secure Boot Keys that were previously added in the Secure Boot configuration.

24. **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, the server serial number and the product ID must be configured:

Procedure

1. Access System Utilities. During POST, press **F9**.

2. On the System Utilities home screen, select **System Configuration** > **BIOS/Platform Configuration (RBSU)** > **Advanced Options** > **Advanced Service Options**.

3. Select the Serial Number field and press **Enter**.

   The following alert appears:

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

4. Click **OK**.

5. Type the serial number and press **Enter**.

6. Select the Product ID field and press **Enter**.

   The following alert appears:

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

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

8. Press **F10** to save the configuration.

The procedure is complete.

System battery replacement

System battery information

The server contains an internal lithium manganese dioxide, a vanadium pentoxide, or an alkaline battery that provides power to the real-time clock. If this battery is not properly handled, a risk of the fire and burns exists. To reduce the risk of personal injury:

- Do not attempt to recharge the battery.

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

- Do not expose the battery to extremely low air pressure as it might lead to explosion or leakage of flammable liquid or gas.

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

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

Removing and replacing the system battery

Prerequisites

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

Procedure

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

2. **Power down the server**.

3. Remove all power:

    a. Disconnect each power cord from the power source.

    b. Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. **Remove the server from the rack**.

6. **Remove the access panel**.

7. **Locate the battery**.

8. Remove the system battery:

    a. Use a small flat-bladed, nonconductive tool to press the battery latch (callout 1).

    b. Remove the system battery from the socket (callout 2).
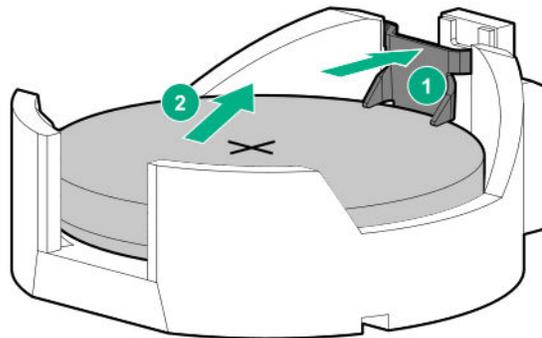
9. Install the system battery:

    a. With the side of the battery showing the "+" sign facing up, insert the battery into the socket (callout 1).

    b. Press the system battery down until it clicks into place (callout 2).
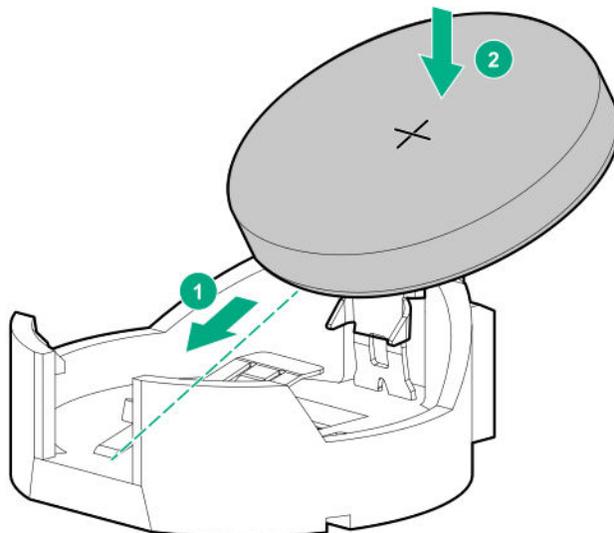
10. **Install the access panel**.

11. **Install the server into the rack**.

12. Connect all peripheral cables to the server.

13. Connect the power cords:

    a. Connect each power cord to the server.

    b. Connect each power cord to the power source.

14. **Power up the server**.

15. If removed, install the front bezel.

16. Properly dispose of the old battery.

    For more information about proper battery disposal, contact an authorized reseller or an authorized service provider.

HPE Trusted Platform Module 2.0 Gen10 Option

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

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

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

Troubleshooting

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.

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 reprovision the server to change the mode that launches when you boot to F10.

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

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

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

To access Intelligent Provisioning:

- Press **F10** from the POST screen and enter either Intelligent Provisioning or HPE Rapid Setup Software.

- From the iLO web interface using **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.

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

Two-bay LFF non-hot-plug drive model
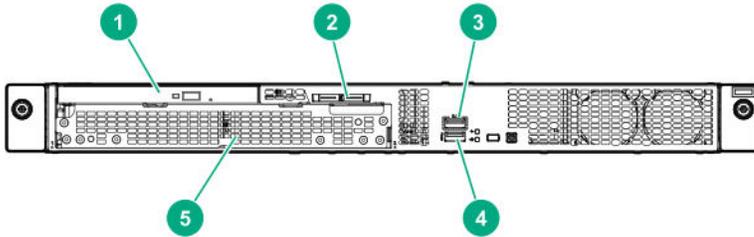
Item	Description
1	Optical drive (optional)
2	**Serial number/iLO information pull tab**
3	iLO Service Port
4	USB 3.0 port
5	LFF non-hot-plug drive cage

Two-bay LFF hot-plug drive model
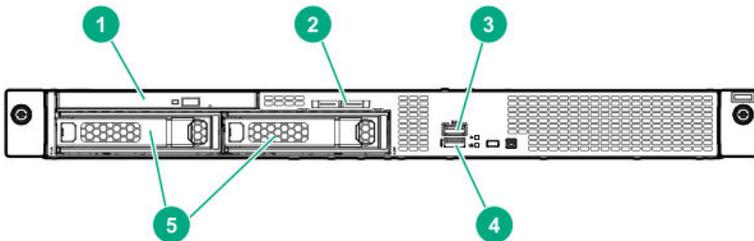
Item	Description
1	Optical drive (optional)
2	**Serial number/iLO information pull tab**
3	iLO Service Port
4	USB 3.0 port
5	LFF hot-plug drives

Four-bay SFF hot-plug drive model
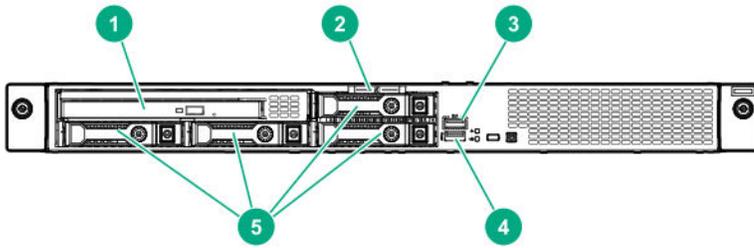
Item	Description
1	Media bay[1]
2	**Serial number/iLO information pull tab**
3	iLO Service Port
4	USB 3.0 port
5	SFF hot-plug drives

[1] The media drive bay supports an optical drive or a two-bay SFF drive cage.

Six-bay SFF hot-plug drive model
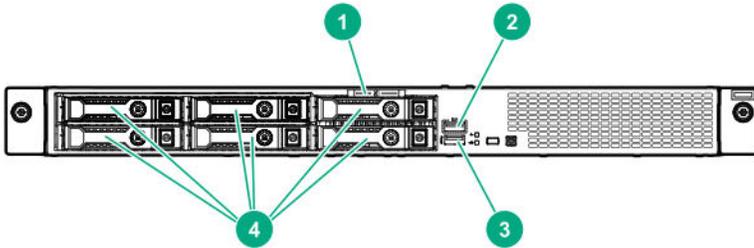
Item	Description
1	**Serial number/iLO information pull tab**
2	iLO Service Port
3	USB 3.0 port
4	SFF hot-plug drives

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 (**https://www.hpe.com/qref/dl20gen10**). This page contains links to server setup information, spare part numbers, QuickSpecs, troubleshooting resources, and other useful product links.

Front panel LEDs and buttons
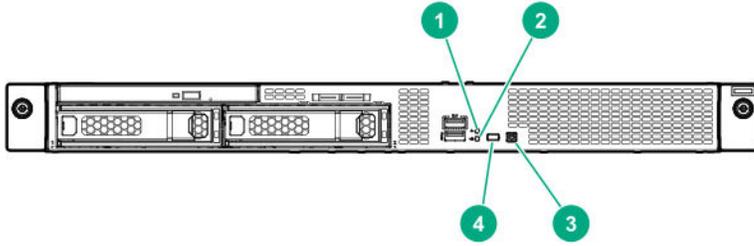
Item	Description	Status	Definition
1	Health LED[1]	Solid green	Normal
		Flashing green	iLO is rebooting
		Flashing amber	System degraded[2]
		Flashing red	System critical[2]
2	NIC status LED[1]	Solid green	Linked to network
		Flashing green	Network active
		Off	No network activity
3	Power On/Standby button and system power LED[1]	Solid green	System on
		Flashing green	Performing power-on sequence
		Solid amber	System in standby
		Off	No power present[3]
4	UID button/LED[1]	Solid blue	Activated
		Flashing blue	• 1 flash per second = Remote management or firmware upgrade in progress • 4 flashes per second = iLO manual reboot sequence initiated • 8 flashes per second = iLO manual reboot sequence in progress
		Off	Deactivated

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

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

[3] Facility power is not present, power cord is not attached, no power supplies are installed, or power supply failure has occurred.

Server UID LED

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

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
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
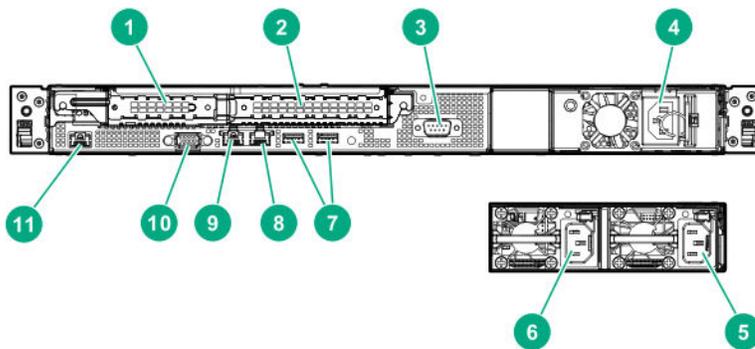
Item	Description
1	Slot 1 PCIe3 x8 (8, 4, 1)/FlexibleLOM slot[1]
2	Slot 2 PCIe3 x8 (8, 4, 1)[1]

Table Continued

Item	Description
3	Serial port (optional)
4	Non-hot-plug power supply
5	Hot-plug power supply bay 1 (optional)
6	Hot-plug power supply bay 2 (optional)
7	USB 3.0 ports (2)
8	NIC port 2
9	NIC 1/iLO Shared Network Port[2]
10	VGA port
11	iLO Dedicated Network Port (optional)

[1] For more information, see **PCIe riser slot definitions**.

[2] When a FlexibleLOM adapter is installed in a server with default iLO settings, the shared iLO port function is assigned to port 1 of the FlexibleLOM adapter.

Rear panel LEDs
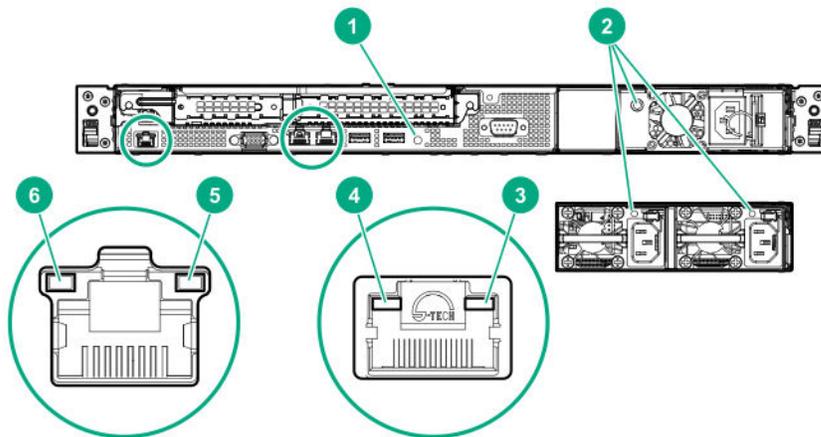
Item	LED	Status	Definition
1	UID	Solid blue	Activated
		Flashing blue	System is being managed remotely.
		Off	Deactivated
2	Power supply	Solid green	Normal
		Off	System is off or power supply has failed.
3	NIC/iLO status	Solid green	Linked to network

Table Continued

Item	LED	Status	Definition
		Flashing green	Network active
		Off	No network activity
4	NIC link	Solid green	Network link
		Off	No network link
5	iLO status	Solid green	Linked to network
		Flashing green	Network active
		Off	No network activity
6	iLO link	Solid green	Network link
		Off	No network link

System board components
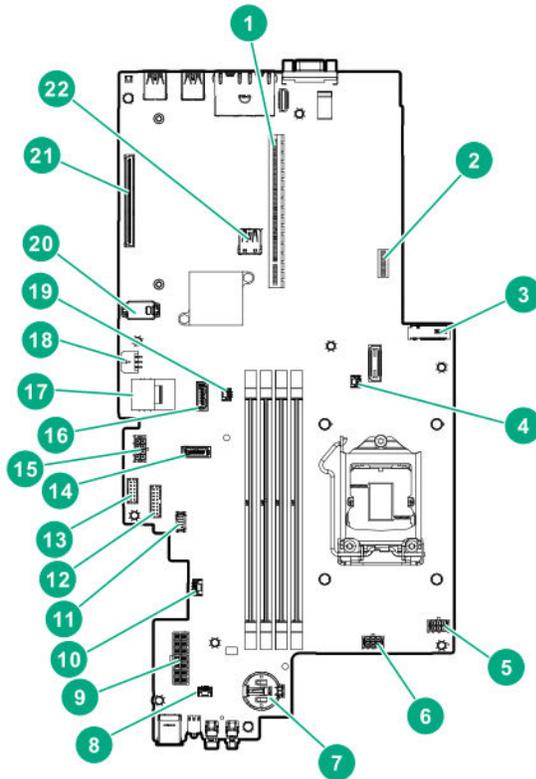
Item	Description
1	PCIe riser connector[1]
2	**System maintenance switch**
3	M.2 SSD slot

Table Continued

Item	Description
4	Controller backup power connector for slot 1
5	Fan connector 2
6	Fan connector 1
7	System battery
8	Chassis intrusion detection switch
9	Non-hot-plug or Flexible Slot power supply connector
10	Two-bay SFF drive sideband connector
11	Energy pack connector
12	Non-hot-plug or Flexible Slot power supply sideband connector
13	Flexible Slot power supply connector
14	x1 SATA port 2
15	Drive backplane and optical drive power connector
16	x1 SATA port 1
17	x4 SATA port (Mini-SAS connector)
18	Fan connector 3
19	Controller backup power connector for slot 2
20	TPM connector
21	Smart Array modular controller connector (AROC)
22	Internal USB 3.0 connector

[1]   For more information on the supported riser board slots, see **PCIe riser slot definitions**.

System maintenance switch descriptions

Position	Default	Function
S1[1]	Off	Off = iLO 5 security is enabled.
		On = iLO 5 security is disabled.
S2	Off	Reserved
S3	Off	Reserved
S4	Off	Reserved
S5[1]	Off	Off = Power-on password is enabled.
		On = Power-on password is disabled.
S6[1, 2, 3]	Off	Off = No function
		On = Restore default manufacturing settings

Table Continued

Position	Default	Function
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

The arrow in the illustration points to the front of the server.
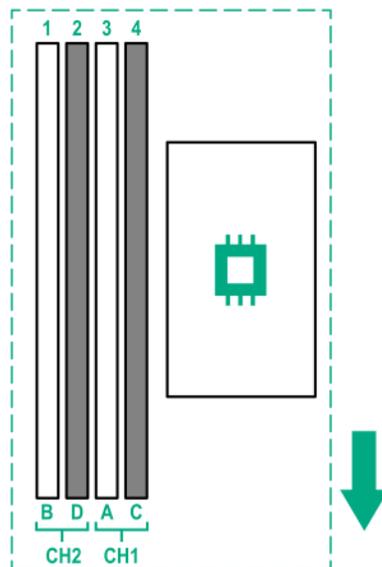
DIMM label identification

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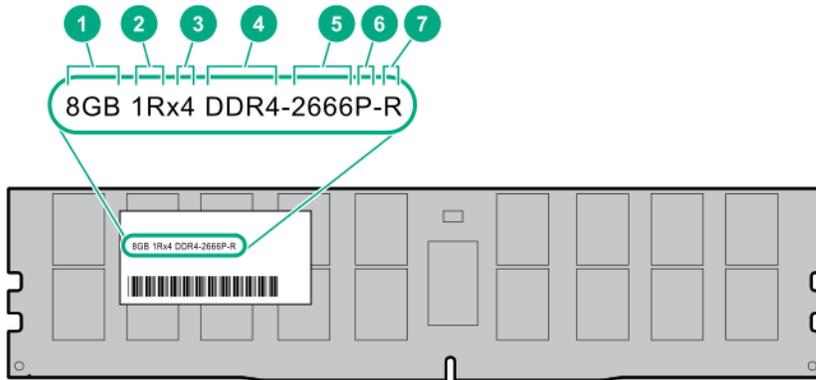
Item	Description	Example
1	Capacity	8 GB
		16 GB
		32 GB
		64 GB
		128 GB
2	Rank	1R = Single rank
		2R = Dual rank
		4R = Quad rank
		8R = Octal rank
3	Data width on DRAM	x4 = 4-bit
		x8 = 8-bit
		x16 = 16-bit
4	Memory generation	PC4 = DDR4
5	Maximum memory speed	2133 MT/s
		2400 MT/s
		2666 MT/s
		2933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

PCIe riser slot definitions
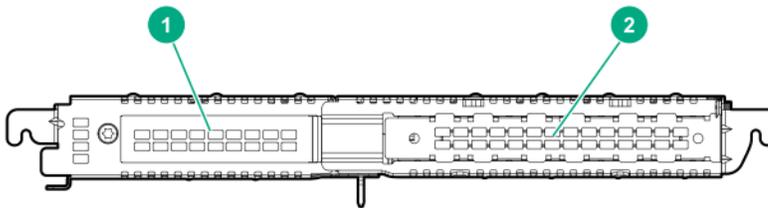
FlexibleLOM riser board

Item	Description	Supported options
1	FlexibleLOM slot, PCIe3 x8 (with NCSI)	FlexibleLOM adapter
2	Slot 2, PCIe3 x16 (8,4,1)	Full-height, half-length expansion boards

Two-slot PCIe riser board

| Item	Description	Supported options
1	Slot 1, PCIe3 x8 (8,4,1)	Half-height, half-length expansion boards
2	Slot 2, PCIe3 x16 (8,4,1)	Full-height, half-length expansion boards

Drive LED definitions

Low-profile LFF drive LED definitions

| Item	LED	Status	Definition
1	Fault \Locate	Solid amber	The drive has failed.
		Solid blue	The drive is operating normally and being identified by a management application.
		Flashing amber/blue (1 flash per second)	The drive has failed, or a predictive failure alert has been received for this drive; it also has been identified by a management application.
		Flashing amber (1 flash per second)	A predictive failure alert has been received for this drive. Replace the drive as soon as possible.
2	Online \Activity	Solid green	The drive is online and has no activity.
		Flashing green (4 flashes per second)	The drive is operating normally and has activity.
		Flashing green (1 flash per second)	The drive is doing one of the following: • Rebuilding • Performing a RAID migration • Performing a strip size migration • Performing a capacity expansion • Performing a logical drive extension • Erasing • Spare part activation
		Off	The drive is not configured by a RAID controller or a spare drive.

Smart Carrier (SC) drive LED definitions

Item	LED	Status	Definition
1	Locate	Solid blue	The drive is being identified by a host application.
		Flashing blue	The drive carrier firmware is being updated or requires an update.
2	Activity ring	Rotating green	Drive activity
		Off	No drive activity
3	Do not remove	Solid white	Do not remove the drive. Removing the drive causes one or more of the logical drives to fail.
		Off	Removing the drive does not cause a logical drive to fail.
4	Drive status	Solid green	The drive is a member of one or more logical drives.
		Flashing green	The drive is doing one of the following: • Rebuilding • Performing a RAID migration • Performing a strip size migration • Performing a capacity expansion • Performing a logical drive extension • Erasing • Spare part activation
		Flashing amber/green	The drive is a member of one or more logical drives and predicts the drive will fail.
		Flashing amber	The drive is not configured and predicts the drive will fail.
		Solid amber	The drive has failed.
		Off	The drive is not configured by a RAID controller or a spare drive.

Drive bay numbering

Two-bay LFF non-hot-plug drive model
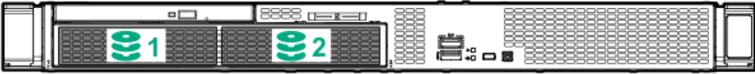
**Two-bay LFF hot-plug drive model**
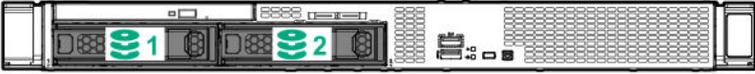
Four-bay SFF hot-plug drive model

Six-bay SFF hot-plug drive model

Fan bay numbering
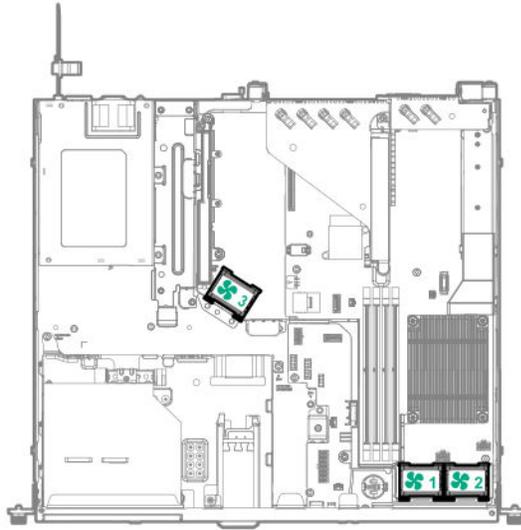
Fan mode behavior

The server supports only nonredundant fan mode. If a single fan fails or is missing, the following behaviors are exhibited:

- The health LED flashes amber.

- The operating system performs a graceful shutdown.

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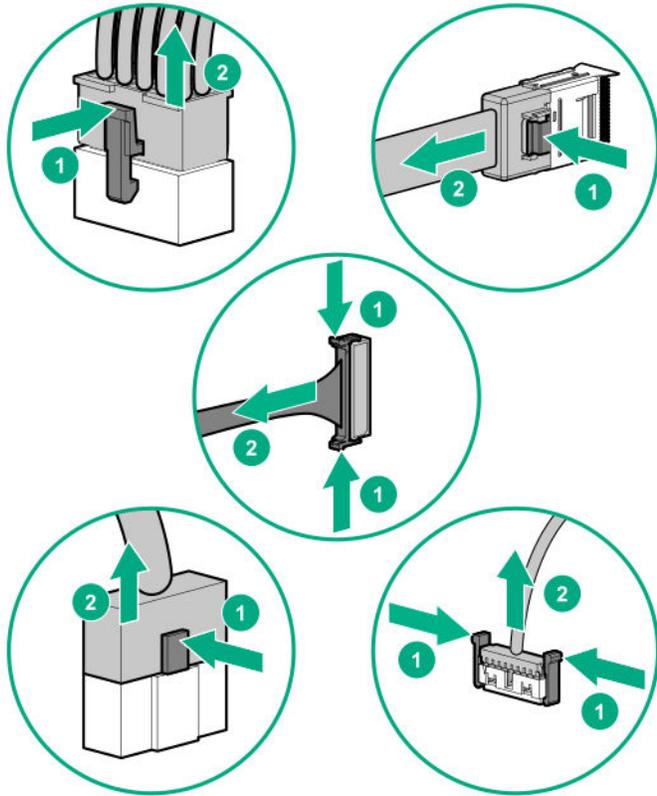
- Remove cables that are no longer being used. Retaining them inside the server can restrict airflow. If you intend to use the removed cables later, label and store them for future use.

Storage cabling

Non-hot-plug drive cabling

Two-bay LFF non-hot-plug drive for embedded controller cabling
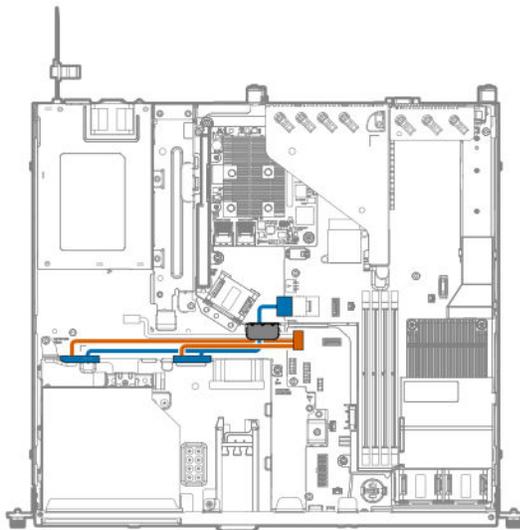
Cable color	Description
Orange	Non-hot-plug drive power cable
Blue	SATA cable

Two-bay LFF non-hot-plug drive for Smart Array modular controller (AROC) cabling
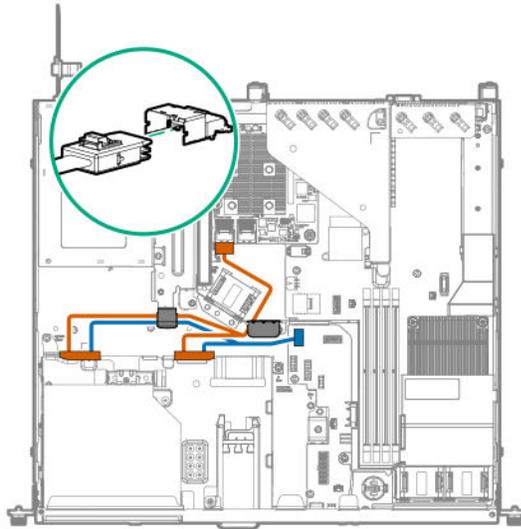
Cable color	Description
Orange	SATA cable from drive backplane to modular controller (AROC) port 1
Blue	Drive backplane power cable

Two-bay LFF non-hot-plug drive for type-p controller cabling
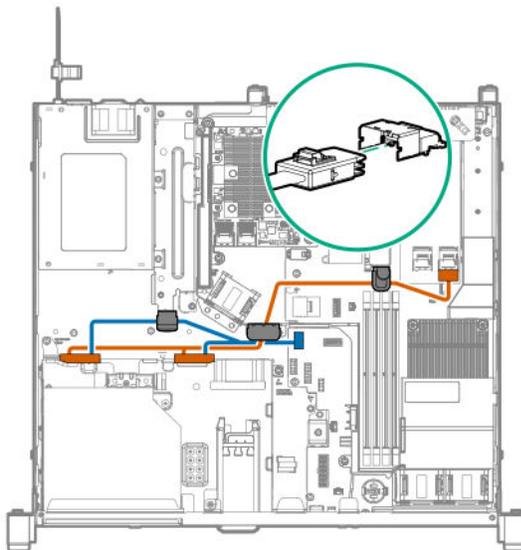
Slot 1

Cable color	Description
Orange	SATA cable from drive backplane to controller port 1
Blue	Drive backplane power cable

Slot 2
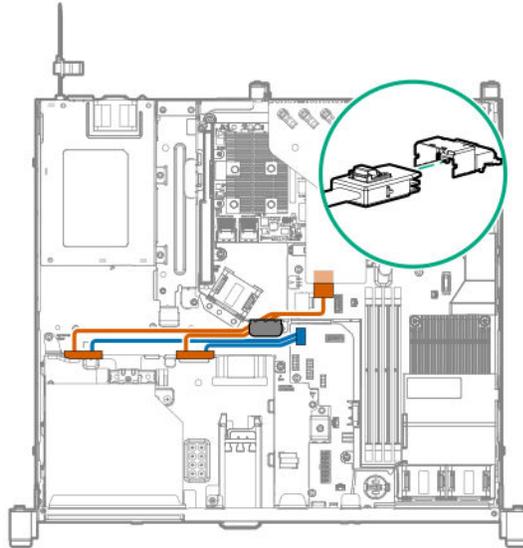
Cable color	Description
Orange	SATA cable from drive backplane to controller port 2
Blue	Drive backplane power cable

Hot-plug drive cabling

Two-bay LFF hot-plug drive cabling

Two-bay LFF hot-plug drive for embedded controller cabling
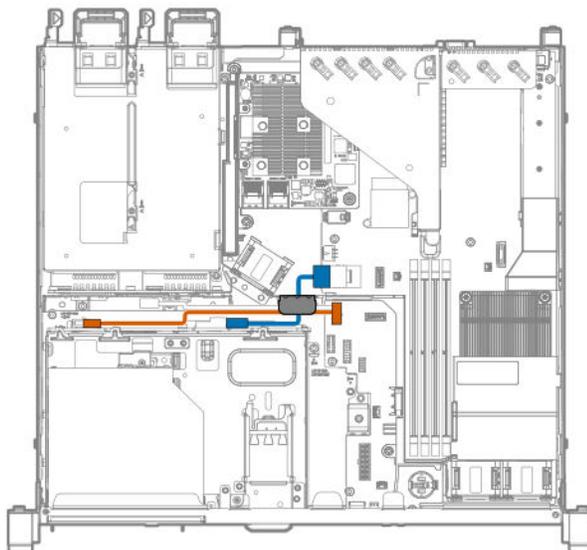
Cable color	Description
Orange	Two-bay LFF drive backplane power cable
Blue	Mini-SAS cable

Two-bay LFF hot-plug drive for Smart Array modular controller (AROC) cabling
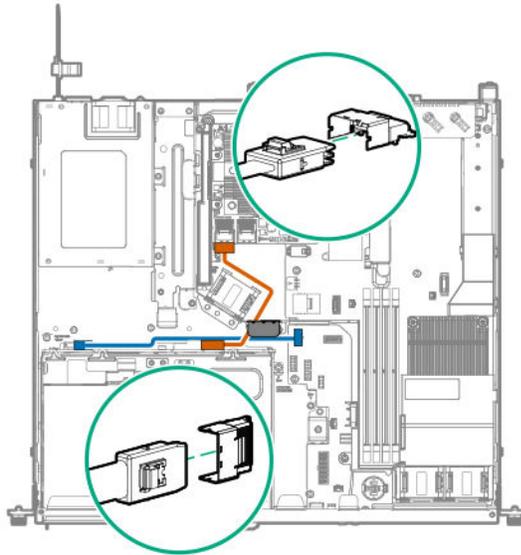
Cable color	Description
Orange	Mini-SAS cable from drive backplane to AROC port 1
Blue	Drive backplane power cable

Two-bay LFF hot-plug drive for type-p controller cabling
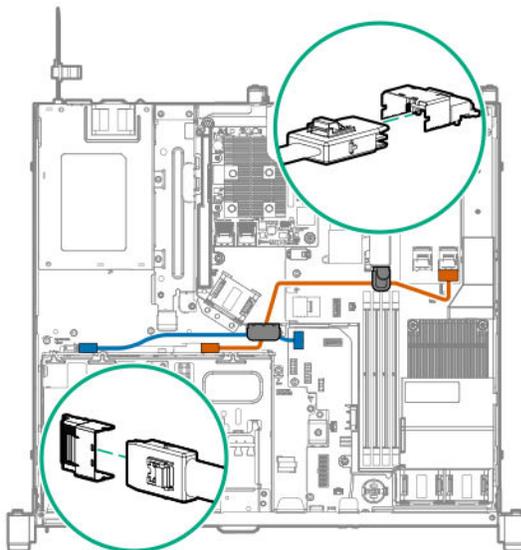
Slot 1

Cable color	Description
Orange	Mini-SAS cable from drive backplane to controller port 1
Blue	Drive backplane power cable

Slot 2
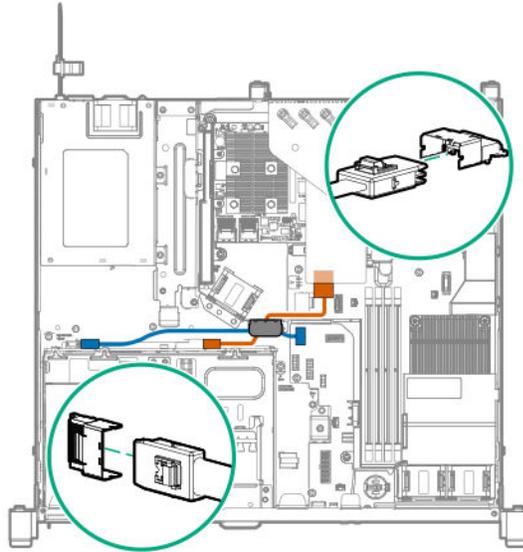
Cable color	Description
Orange	Mini-SAS cable from drive backplane to controller port 2
Blue	Drive backplane power cable

Four bay SFF hot-plug drive cabling

Four-bay SFF hot-plug drive for embedded controller cabling
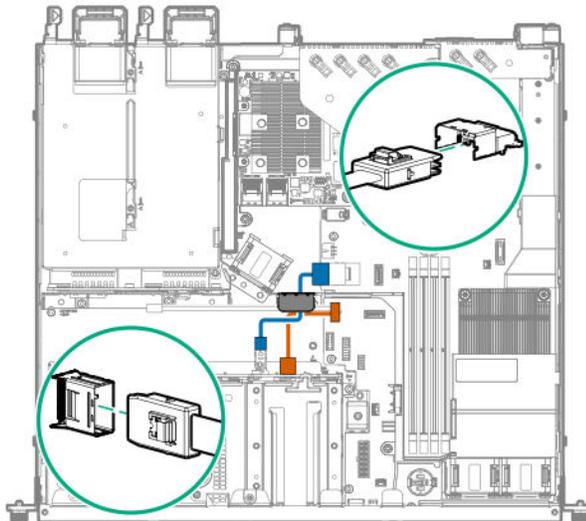
Cable color	Description
Orange	Four-bay SFF drive backplane power cable
Blue	Mini-SAS cable

4+2 bay SFF hot-plug drive cabling

4+2 bay SFF hot-plug drive for embedded controller cabling
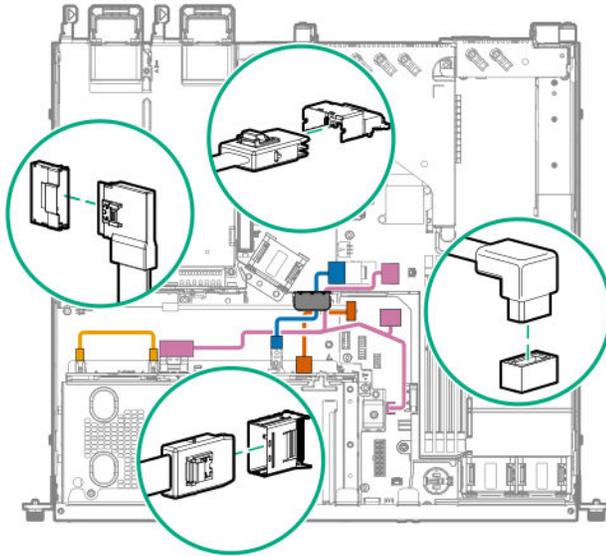
Cable color	Description
Orange	Four-bay SFF drive backplane power cable
Blue	Mini-SAS cable
Gold	Two-bay SFF to four-bay SFF drive backplane power cable
Pink	SATA cable and drive sideband cable

4+2 bay SFF hot-plug drive for Smart Array modular controller (AROC) cabling
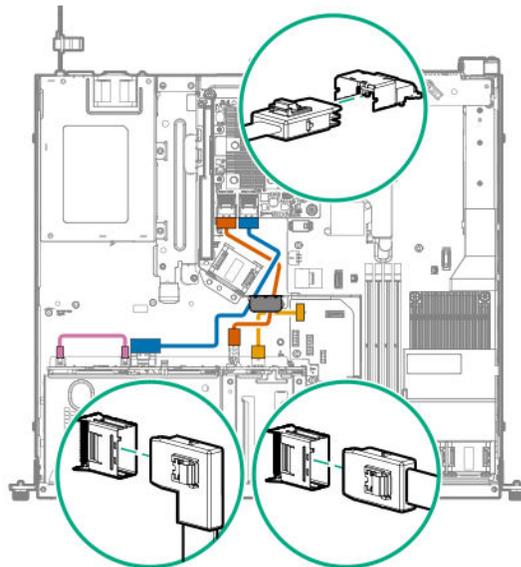
Cable color	Description
Orange	Mini-SAS cable from four-bay SFF drive backplane Mini-SAS cable to AROC port 1
Blue	Mini-SAS cable from two-bay SFF drive backplane to AROC port 2
Gold	Four-bay SFF drive backplane power cable
Pink	Two-bay to four-bay SFF drive backplane power cable

4+2 bay SFF hot-plug drive for type-p controller cabling

Slot 1

Cable color	Description
Orange	Mini-SAS cable from four-bay SFF drive backplane to controller port 1
Blue	Mini-SAS cable from two-bay SFF drive backplane to controller port 2
Gold	Two-bay to four-bay SFF drive backplane power cable
Pink	Four-bay SFF drive backplane power cable

Slot 2
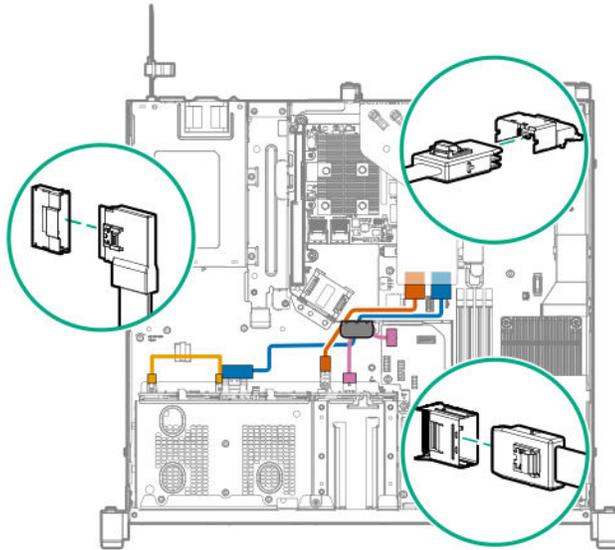
Cable color	Description
Orange	Mini-SAS cable from four-bay SFF drive backplane to controller port 1
Blue	Mini-SAS cable from two-bay SFF drive backplane to controller port 2
Gold	Two-bay to four-bay SFF drive backplane power cable
Pink	Four-bay SFF drive backplane power cable

M.2 SATA SSD cabling

M.2 SATA SSD in slot 1
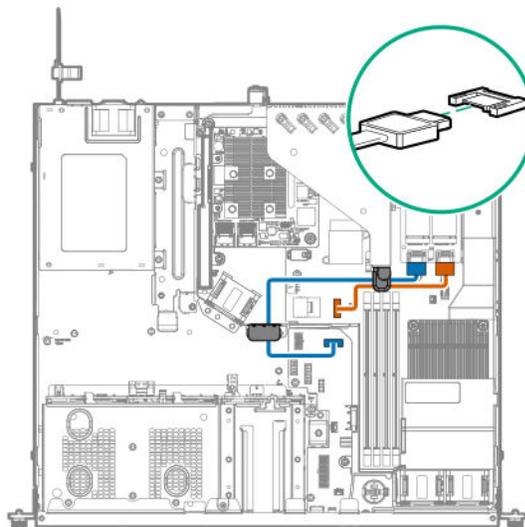
Cable color	Description
Orange	SATA cable to x1 SATA port 1
Blue	SATA cable to x1 SATA port 2

M.2 SATA SSD in slot 2
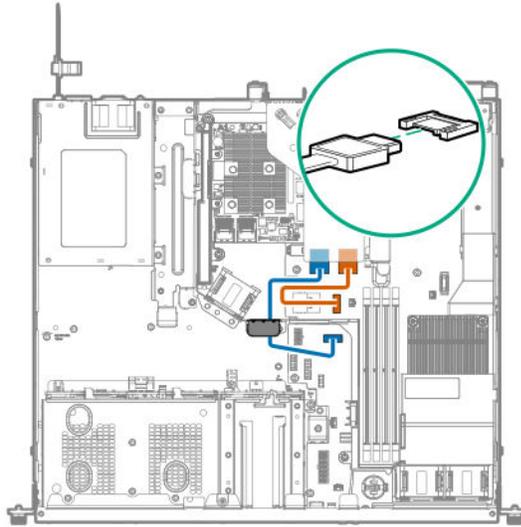
Cable color	Description
Orange	SATA cable to x1 SATA port 1
Blue	SATA cable to x1 SATA port 2

Energy pack cabling
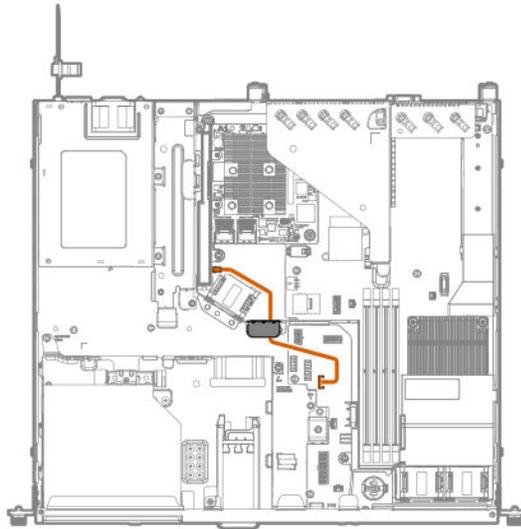
Controller backup power cabling

Slot 1
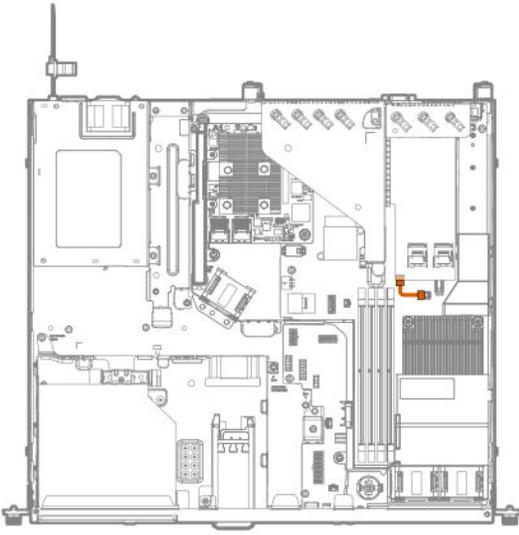
Slot 2
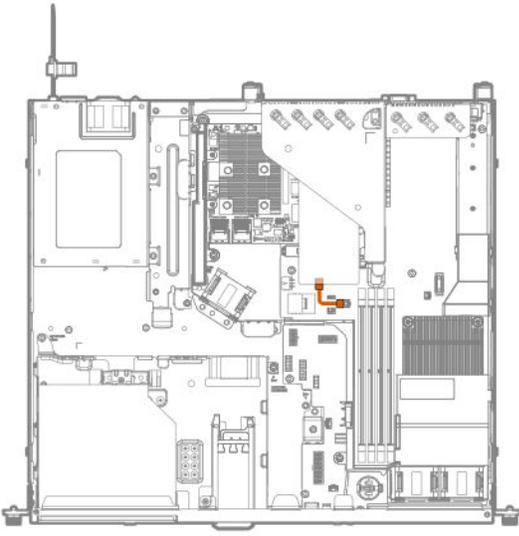
Optical drive cabling

LFF configuration
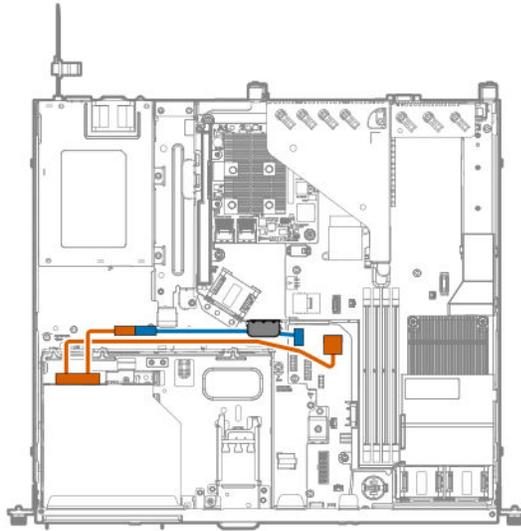
Cable color	Description
Orange	SATA-power Y-cable to x1 SATA port 2
Blue	Power extension cable

SFF configuration
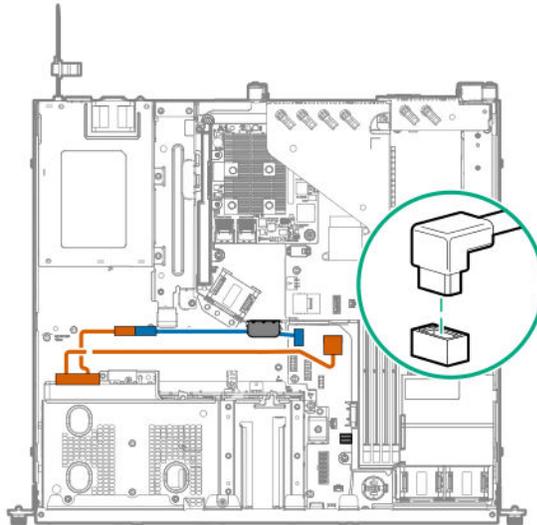
Cable color	Description
Orange	SATA-power-Y cable to x1 SATA port 2
Blue	Power extension cable

Fan cabling
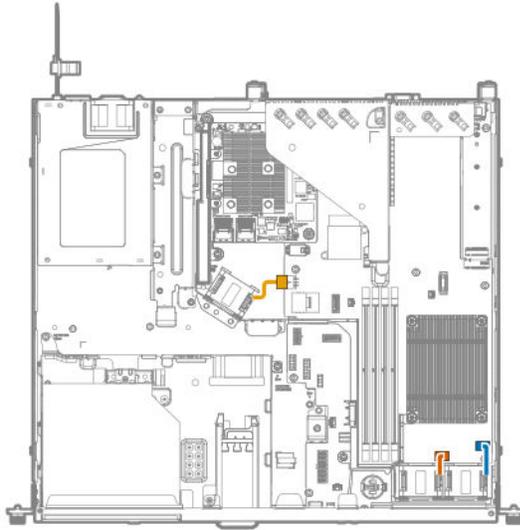
Cable color	Description
Orange	Fan 1 cable
Blue	Fan 2 cable
Gold	Fan 3 cable

Chassis Intrusion Detection cabling
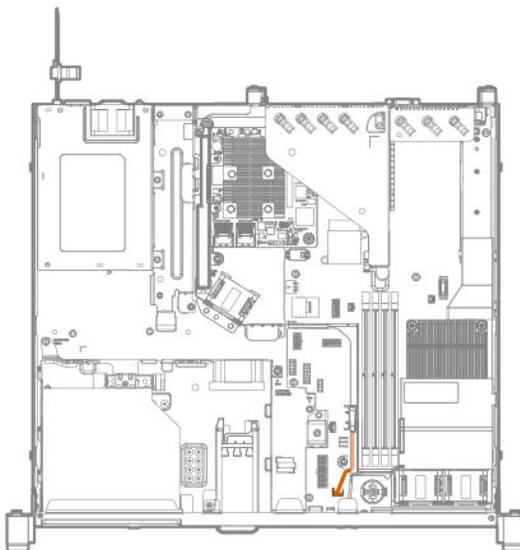
Serial port cabling
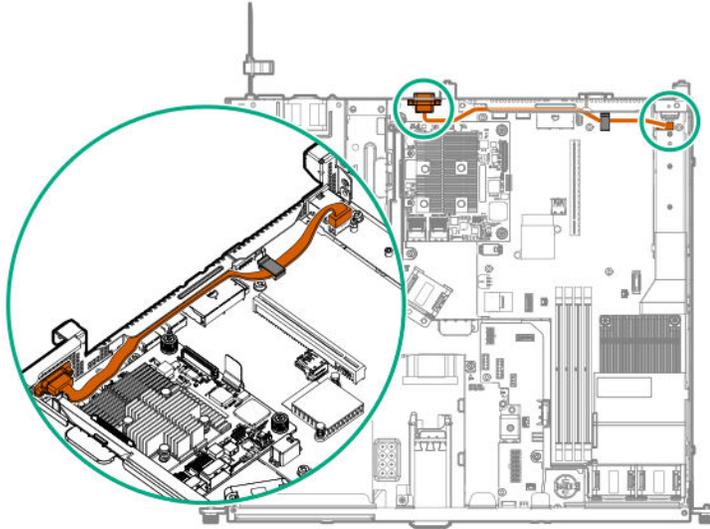
Power supply cabling

Non-hot-plug power supply cabling
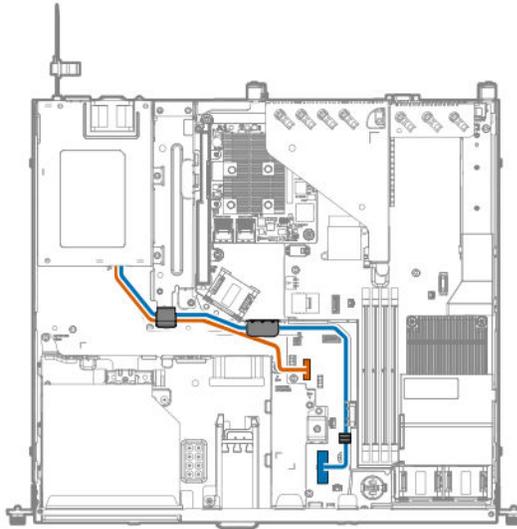
Cable color	Description
Orange	16-pin power supply sideband cable
Blue	14-pin power supply cable

Flexible Slot power supply cabling
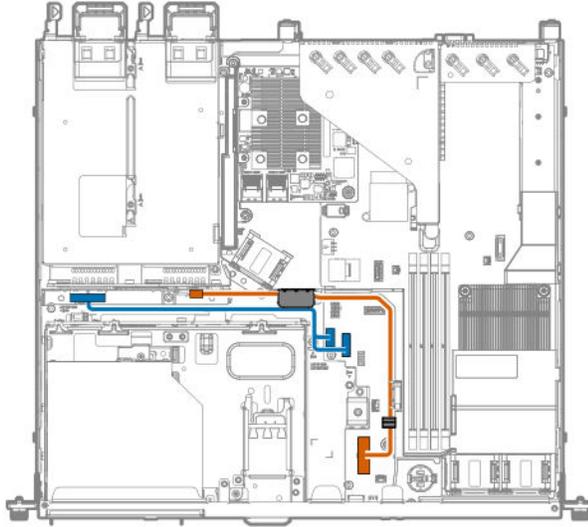
Cable color	Description
Orange	14-pin power supply cable
Blue	Redundant power supply sideband cable

Specifications

Environmental specifications

Specifications	Value
Temperature range*	—
Operating	10°C to 35°C (50°F to 95°F)
Nonoperating	-30°C to 60°C (-22°F to 140°F)
Relative humidity (noncondensing)	—
Operating	8% to 90% 28°C (82.4°F) maximum wet bulb temperature
Nonoperating	5 to 95% 38.7°C (101.7°F) maximum wet bulb temperature
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).
Nonoperating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).

Standard operating support

10°C to 35°C (50°F 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 above 30°C (86°F).

Extended ambient operating support

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

Mechanical specifications

Specification	Value
Height	4.32 cm (1.70 in)
Depth	38.22 cm (15.05 in)
Width	43.46 cm (17.11 in)
Weight, maximum	9.46 kg (20.85 lb)
Weight, minimum	6.0 kg (13.22 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:

- **ATX 290W Non-hot-plug Power Supply (92% efficiency)**

- **ATX 290W Platinum Non-hot-plug Power Supply (94% efficiency)**

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

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

These are entry class power supply products for ProLiant Servers. For detailed power supply specifications, see the QuickSpecs on the **Hewlett Packard Enterprise website**.

ATX 290W Non-hot-plug Power Supply (92% efficiency)

Specification	Value
Input requirements	—
Rated input voltage	100 VAC to 240 VAC
Rated input frequency	50 Hz to 60 Hz
Rated input current	5.5 A
Maximum rated input power	331 W at 115 VAC
	330 W at 230 VAC
Efficiency	No less than 88% at 100% load
	No less than 92% at 50% load
	No less than 88% at 20% load
Power supply output	—

Table Continued

Specification	Value
Rated steady-state power	290 W
Maximum peak power	366 W
Rated output power	290 W

ATX 290W Platinum Non-hot-plug Power Supply (94% efficiency)

Specification	Value
Input requirements	—
Rated input voltage	100 VAC to 240 VAC
Rated input frequency	50 Hz to 60 Hz
Rated input current	5.5 A
Rated input power	331 W at 115 VAC
	319 W at 230 VAC
Efficiency	At 230 VAC/50 Hz:
	No less than 91% at 100% load
	No less than 94% at 50% load
	No less than 90% at 20% load
	No less than 80% at 10% load
	At 115 VAC/60 Hz:
	No less than 87.6% at 100% load
	No less than 89.7% at 50% load
	No less than 87.2% at 20% load
	No less than 80.8% at 10% load
Power supply output	—
Rated steady-state power	290 W
Maximum peak power	366 W
Rated output power	290 W

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	—
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 -48VDC Hot plug Low Halogen Power Supply

Specification	Value
Input requirements	—
Rated input voltage	-40 VDC to -72 VDC
	-48 VDC

Table Continued

Specification	Value
Rated input current	24 A at -40 VDC
Rated input power (W)	874 W at -40 VDC
Rated input power (BTUs per hour)	2983 at -40 VDC
Power supply output	—
Rated steady-state power (W)	800 W at -40 VDC to -72 VDC
Maximum peak power (W)	800 W at -40 VDC to -72 VDC
Maximum peak power	800 W at 200 VAC to 277 VAC
	800 W at -40VDC to -72 VDC

⚠ **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.

Websites

General websites

Hewlett Packard Enterprise Information Library

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

Subscription Service/Support Alerts

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

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 general support websites, see **Support and other resources**.

Product websites

Product QuickSpecs

https://www.hpe.com/servers/dl20-gen10

HPE ProLiant DL20 Gen10 support page

https://www.hpe.com/support/dl20gen10

HPE ProLiant DL20 Gen10 user documents

https://www.hpe.com/info/dl20gen10-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.

Customer self repair

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

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

Remote support

Remote support is available with supported devices as part of your warranty or contractual support agreement. It provides intelligent event diagnosis, and automatic, secure submission of hardware event notifications to Hewlett Packard Enterprise, which 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

Hewlett Packard Enterprise is committed to providing documentation that meets your needs. To help us improve the documentation, send any errors, suggestions, or comments to Documentation Feedback (**docsfeedback@hpe.com**). When submitting your feedback, include the document title, part number, edition, and publication date located on the front cover of the document. For online help content, include the product name, product version, help edition, and publication date located on the legal notices page.

Acronyms and abbreviations

API

application program interface

CAS

column address strobe

CSR

Customer Self Repair

DDR4

double data rate-4

HPE SSA

HPE Smart Storage Administrator

iLO

Integrated Lights-Out

IML

Integrated Management Log

ISO

International Organization for Standardization

LFF

large form factor

LRDIMM

load reduced dual in-line memory module

NCSI

network controller sideband interface

PCIe

Peripheral Component Interconnect Express

POST

Power-On Self-Test

QR code

quick response code

RBSU

ROM-Based Setup Utility

RDIMM

registered dual in-line memory module

REACH

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

RoHS

Restriction of Hazardous Substances

SAS

serial attached SCSI

SATA

serial ATA

SFF

small form factor

SPP

Service Pack for ProLiant

SSD

solid-state device

TPM

Trusted Platform Module

UDIMM

unregistered dual in-line memory module

UEFI

Unified Extensible Firmware Interface

UID

unit identification