Hewlett Packard Enterprise

HPE Apollo 6500 Gen10 System/HPE ProLiant XL270d Gen10 Server Maintenance and Service Guide

Abstract

This document is for the person who installs, administers, and troubleshoots servers and storage systems. Hewlett Packard Enterprise assumes that you are qualified in the servicing of computer equipment, and trained in recognizing hazards in products with hazardous energy levels.

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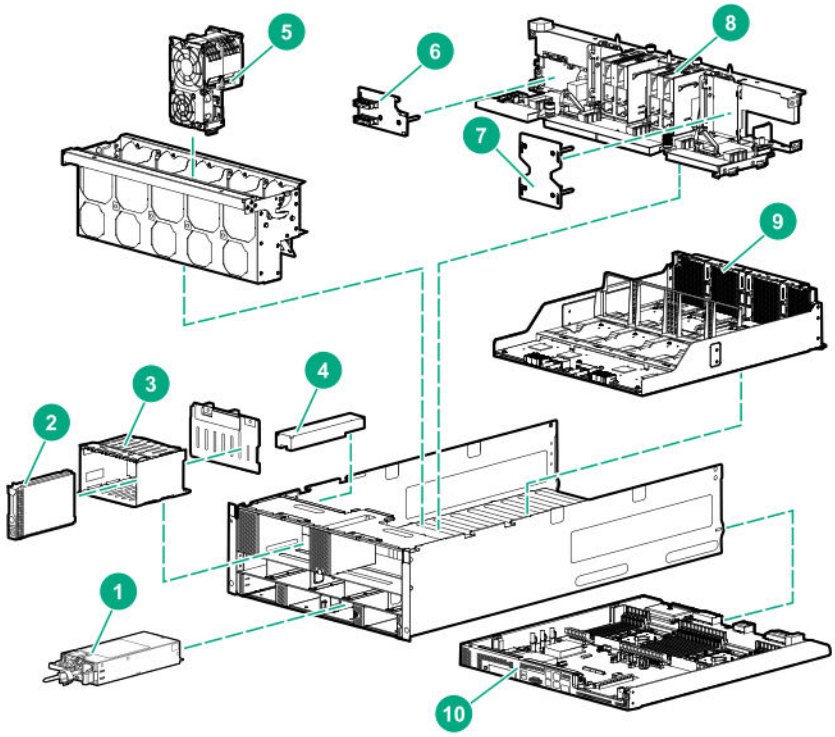
Hewlett Packard Enterprise continually improves and changes product parts. For complete and current supported parts information, see the Hewlett Packard Enterprise PartSurfer website (**http://www.hpe.com/info/partssurfer**).



Item	Description
1	**Power supply spare parts**
2	**Drive spare parts**
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4	**HPE Smart Storage Battery spare part**
5	**Fan module spare part**
6	**NVMe midplane board spare part**
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13	**SL6500 4U rail spare parts** [1]

[1] Not shown

For more information, see "**Removal and replacement procedures**."

Power supply spare parts

Customer self repair: **Mandatory**

Description	Spare part number
HPE 2200W Platinum Hot Plug Power Supply	P03737-001
Power supply blank	P03724-001

Drive spare parts

Solid-state drive M.2 spare parts

Customer self repair: **Mandatory**

Description	Spare part number
150GB SATA RI M.2 2280 DS SSD	875835-001
240GB SATA MU M.2 2280 DS SSD	875850-001
480GB SATA MU M.2 2280 DS SSD	875851-001
480GB SATA RI M.2 2280 DS SSD	875836-001
960GB SATA MU M.2 2280 DS SSD	875852-001

Solid-state NVMe spare parts

Customer self repair: **Mandatory**

Description	Spare part number
1TB NVMe x4 RI SFF SCN DS SSD	880241-001
1.6TB NVMe x4 MU SFF SCN DS SSD	880244-001
2TB NVMe x4 RI SFF SCN DS SSD	880242-001
3.2TB NVMe x4 MU SFF SCN DS SSD	880246-001

Solid-state drive SAS spare parts

Customer self repair: **Mandatory**

Description	Spare part number
400GB SAS 12G MU SFF SC DS SSD	873566-001
400GB SAS 12G WI SFF SC DS SSD	873563-001
800GB SAS 12G MU SFF SC DS SSD	873569-001
800GB SAS 12G WI SFF SC DS SSD	873564-001
1.6TB SAS 12G MU SFF SC DS SSD	873570-001

Table Continued

Description	Spare part number
1.6TB SAS 12G WI SFF SC DS SSD	873565-001
3.2TB SAS 12G MU SFF SC DS SSD	873571-001

Solid-state drive SATA spare parts

Customer self repair: **Mandatory**

Description	Spare part number
240GB SATA MU SFF SC DS SSD	882219-001
480GB SATA MU SFF SC DS SSD	879013-001
960GB SATA MU SFF SC DS SSD	879016-001
1.92TB SATA MU SFF SC DS SSD	879019-001

Drive cage spare parts

Customer self repair: **Mandatory**

Description	Spare part number
HDD blank SFF	670033-001
Miscellaneous blanks kit	875069-001
Drive cage blank	P07292-001

Customer self repair: **Optional**

Description	Spare part number
8-SFF 6 SAS/2 NVMe hard drive backplane	874933-001

Fan module spare part

Customer self repair: **Optional**

Description	Spare part number
Fan module	P03738-001

HPE Smart Storage Battery spare part

Customer self repair: **Mandatory**

Description	Spare part number
HPE Smart Storage Battery with cable, 96W	878644-001

NVMe midplane board spare part

Customer self repair: **Optional**

Description	Spare part number
NVMe midplane board	P03742-001

PCIe midplane board spare part

Customer self repair: **Optional**

Description	Spare part number
PCIe midplane board	P03745-001

Power distribution board spare part

Customer self repair: **Optional**

Description	Spare part number
Power distribution board	P03746-001

Cable spare parts

Customer self repair: **Mandatory**

Description	Spare part number
Mini SAS Bld Mate 4xAROC SAS/SATA cable	P03730-001
Mini SAS, Bld Mate 3xMB PCH SATA cable	P03729-001
Mini SAS cable kit	784629-001
GPU Slot Bd CPU8/PCIe8/PCIe6 power cable	P03732-001
Front Panel LEDs+Temp Sensor+Switch cable	P03733-001
HDD 12V PDB to HDD BP power cable	P03734-001
Slimline8 PCIe, NVMe, Mdp HDD cable	P03735-001
Bld mate, SAS/SATA to HDD BP cable	P03736-001
Slimline8 PCIe, NVMe bkp2 to HDD cable	P04281-001
Power cables kit	875096-001

Customer self repair: **Optional**

Description	Spare part number
AC Power C19 to C20	P03728-001

Access panel spare part

Customer self repair: **Mandatory**

Description	Spare part number
Access panel	P03725-001

SL6500 4U rail spare parts

Customer self repair: **Mandatory**

Description	Spare part number
SL6500 4U rails	P03718-001

GPU module components

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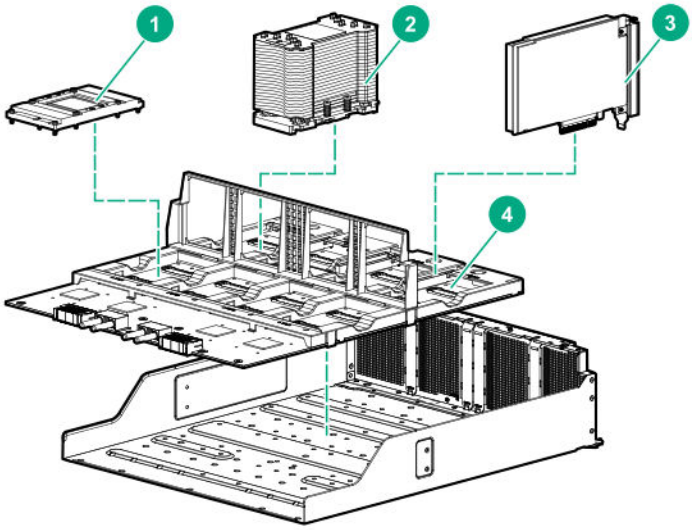


Item	Description
1	**SXM2 GPU module spare parts**
2	**GPU heatsink spare parts**
3	**PCIe GPU card spare parts**
4	**GPU module spare parts**

For more information, see "**Removal and replacement procedures**."

SXM2 GPU module spare parts

Customer self repair: **No**

Description	Spare part number
HPE NVIDIA Tesla V100 SXM2 16GB Module	876911-001
HPE NVIDIA Tesla V100 SXM2 32GB Module	P05912-001
HPE NVIDIA Tesla P100 SXM2 16GB Module	872324-001

Customer self repair: **Mandatory**

Description	Spare part number
SXM2 GPU blank	P03722-001

GPU heatsink spare parts

Customer self repair: **No**

Description	Spare part number
SXM2 GPU front heatsink	P03741-001
SXM2 GPU rear heatsink	P03740-001

PCIe GPU card spare parts

Customer self repair: **Optional**

Description	Spare part number
HPE NVIDIA Tesla P100 PCIe 16GB Module	868585-001
HPE NVIDIA Tesla P40 24GB Module	872323-001
HPE NVIDIA Tesla V100 16GB PCIe Module	876908-001
HPE NVIDIA Tesla V100 PCIe 32GB Module	P05913-001

Customer self repair: **Mandatory**

Description	Spare part number
PCIe Full-height, half-length blank	P03723-001
NVIDIA AMD rear retention bracket	P03721-001

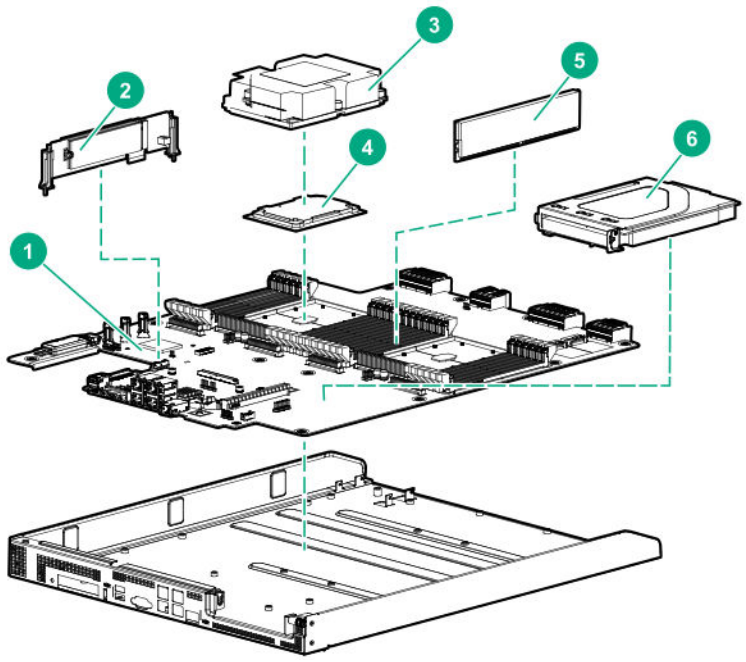
GPU module spare parts

Customer self repair: **Mandatory**

Description	Spare part number
SXM2 GPU module (includes tray, PCA, and screws)	P03727-001
PCIe GPU module (includes tray, PCA, and screws)	P03726-001

System board module components

Hewlett Packard Enterprise continually improves and changes product parts. For complete and current supported parts information, see the Hewlett Packard Enterprise PartSurfer website (**http://www.hpe.com/info/partssurfer**).



Item	Description
1	**System board module spare parts**
2	**M.2 enablement board spare parts**
3	**Heatsink spare part**
4	**Processor spare parts**
5	**DIMM spare parts**
6	**Riser cage assembly spare part**
7	**Controller spare parts** [1]
8	**NVMe enablement spare part** [1]
9	**Network adapter spare parts** [1]
10	**System battery spare part** [1]

[1] Not shown

For more information, see "**Removal and replacement procedures**."

System board module spare parts

Customer self repair: **Optional**

Description	Spare part number
System board module (includes tray, system board, and screws)	P03747-001

M.2 enablement board spare parts

Customer self repair: **Optional**

Description	Spare part number
M.2 enablement board	868124-001

Heatsink spare part

Customer self repair: **No**

Description	Spare part number
Heatsink, 1U Standard	872452-001

Processor spare parts

Customer self repair: **No**

Intel Xeon Scalable Processors

Table 1: 31XX processors

Description	Spare part number
1.75-GHz Intel Xeon Bronze 3104 processor	875709-001

Table 2: 61XX processors

Description	Spare part number
2.1-GHz Intel Xeon Gold 6152 processor	874730-001
2.7-GHz Intel Xeon Gold 6150 processor	874731-001
2.4-GHz Intel Xeon Gold 6148 processor	874732-001
2.6-GHz Intel Xeon Gold 6142 processor	874733-001
2.6-GHz Intel Xeon Gold 6142M processor	878085-001
2.3-GHz Intel Xeon Gold 6140 processor	874734-001
2.3-GHz Intel Xeon Gold 6140M processor	878084-001
3.0-GHz Intel Xeon Gold 6136 processor	875724-001
3.2-GHz Intel Xeon Gold 6134 processor	875723-001
2.6-GHz Intel Xeon Gold 6126 processor	875720-001

Table 3: 81XX processors

Description	Spare part number
2.1-GHz Intel Xeon Platinum 8176 processor	874727-001

Second Generation Intel Xeon Scalable Processors

Table 4: 42XX processors

Description	Spare part number
2.4-GHz Intel Xeon-S 4214R processor	P19245-001
3.2-GHz Intel Xeon-S 4215R processor	P25089-001
2.10-GHz Intel Xeon-S 4216 processor	P11609-001

Table 5: 52XX processors

Description	Spare part number
2.6-GHz Intel Xeon-G 5215 processor	P11610-001
2.1-GHz Intel Xeon-G 5218R processor	P25090-001
2.2-GHz Intel Xeon-G 5220 processor	P11613-001
2.2-GHz Intel Xeon-G 5220R processor	P19241-001

Table 6: 62XX processors

Description	Spare part number
2.8-GHz Intel Xeon-G 6226 processor	P12008-001
2.9-GHz Intel Xeon-G 6226R processor	P25094-001
2.1-GHz Intel Xeon-G 6230 processor	P11614-001
2.1-GHz Intel Xeon-G 6230R processor	P25095-001
3.4-GHz Intel Xeon-G 6234 processor	P12009-001
2.1-GHz Intel Xeon-G 6238 processor	P12010-001
2.2-GHz Intel Xeon-G 6238R processor	P25096-001
2.6-GHz Intel Xeon-G 6240 processor	P11615-001
2.4-GHz Intel Xeon-G 6240R processor	P25097-001
2.6-GHz Intel Xeon-P 6240Y processor	P11637-001
2.8-GHz Intel Xeon-G 6242 processor	P11616-001
3.1-GHz Intel Xeon-G 6242R processor	P25098-001
3.7-GHz Intel Xeon-G 6244 processor	P11617-001
3.3-GHz Intel Xeon-G 6246 processor	P12018-001
3.4-GHz Intel Xeon-G 6246R processor	P25099-001
2.6-GHz Intel Xeon-G 6248 processor	P11618-001
3.0-GHz Intel Xeon-G 6248R processor	P25100-001
2.1-GHz Intel Xeon-G 6252 processor	P11619-001
3.2-GHz Intel Xeon-G 6254 processor	P11620-001
2.7-GHz Intel Xeon-G 6258R processor	P25101-001

Table 7: 82XX processors

Description	Spare part number
2.4-GHz Intel Xeon-P 8260 processor	P11621-001
2.4-GHz Intel Xeon-P 8260M processor	P11628-001
2.9-GHz Intel Xeon-P 8268 processor	P11622-001
2.6-GHz Intel Xeon-P 8270 processor	P11623-001
2.3-GHz Intel Xeon-P 8276 processor	P11624-001
2.7-GHz Intel Xeon-P 8280 processor	P11625-001

DIMM spare parts

Customer self repair: **Mandatory**

Table 8: 2666 MT/s DIMMs

Description	Spare part number
DIMM, 16GB PC4-2666V-R, 2Rx8	868846-001
DIMM, 32GB PC4-2666V-R, 2Gx4	850881-001
DIMM, 64GB PC4-2666V-L, 2Gx4	850882-001
DIMM, 128GB PC4-2666V-L, 2Gx4	850883-001

Table 9: 2933 MT/s DIMMs

Description	Spare part number
DIMM, 8GB PC4-2933Y-R, 1Rx8	P06186-001
DIMM, 16GB PC4-2933Y-R, 1Rx4	P06187-001
DIMM, 16GB PC4-2933Y-R, 2Rx8	P06188-001
DIMM, 32GB PC4-2933Y-R, 2Rx4	P06189-001
DIMM, 64GB PC4-2933Y-R, 2Rx4	P06192-001
DIMM, 64GB PC4-2933Y-L, 4Rx4	P06190-001
DIMM, 128GB PC4-2933Y-L 3DS, 8Rx4	P06191-001

Riser cage assembly spare part

Customer self repair: **Optional**

Description	Spare part number
Riser cage assembly (includes cage, PCA, screws, and label)	P03744-001

Controller spare parts

Customer self repair: **Optional**

Description	Spare part number
HPE Smart Array P816i-a SR Gen10 Controller	836261-001
HPE Smart Array P408i-a SR Gen10 Controller	836260-001
HPE Smart Array P408i-p SR Gen10 Controller	836269-001

NVMe enablement spare part

Customer self repair: **Optional**

Description	Spare part number
NVMe riser board	P03743-001

Network adapter spare parts

Customer self repair: **Optional**

Description	Spare part number
HPE IB EDR 100Gb 1P 841QSFP28 Adapter	878578-001
HPE IB EDR/EN 100Gb 2P 841QSFP28 Adapter	878579-001
HPE IB EDR/EN 100Gb 1P 840QSFP28 Adapter	828107-001
HPE IB EDR/EN 100Gb 2P 840QSFP28 Adapter	828108-001
HPE 100Gb 1P OP101 QSFP2816 OPA Adapter	841703-001
HPE FlexFabric 10Gb 2P 534FLR-SFP+ Adapter	701531-001
HPE Ethernet 10Gb 2-port 562SFP+ Adapter	790316-001
HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter	790317-001
HPE Ethernet 10Gb 2P 562T Adapter	840137-001
HPE Ethernet 10/25Gb 2P 640FLR-SFP28 Adapter	840139-001
HPE Ethernet 10/25Gb 2P 640SFP28 Adapter	840140-001
HPE Ethernet 10/25Gb 2p 621SFP28 Adapter	869570-001
HPE Ethernet 10/25Gb 2p 622FLR-SFP28 CNA	869572-001

Customer self repair: **Mandatory**

Description	Spare part number
PCIe Slot InfiniBand blank	P03720-001

System battery spare part

Customer self repair: **Mandatory**

Description	Spare part number
System battery	319603-001

Customer self repair

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

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

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

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

For more information about the Hewlett Packard Enterprise CSR program, contact your local service provider. For the North American program, go to the **Hewlett Packard Enterprise CSR website** .

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. Pour plus d'informations sur ce programme en Amérique du Nord, consultez le site **Web Hewlett Packard Enterprise** .

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. Per il programma in Nord America fare riferimento **al sito Web**.

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. Informationen über das CSR-Programm in Nordamerika finden Sie auf der **Hewlett Packard Enterprise Website unter**.

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. Si está interesado en el programa para Norteamérica, visite **la página web de Hewlett Packard Enterprise CSR**.

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. Informatie over Service Partners vindt u op de **Hewlett Packard Enterprise website**.

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. Para o programa norte-americano, **visite o site da Hewlett Packard Enterprise** .

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。有关北美地区的计划，请访问 Hewlett Packard Enterprise 网站 (http://www.hpe.com/support/selfrepair)。

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。至於北美方案，請參閱 Hewlett Packard Enterprise 的 CSR 網站frepair (http://www.hpe.com/support/selfrepair)。

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

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- **필수 -** 고객 셀프 수리가 의무 사항인 필수 부품. 사용자가 Hewlett Packard Enterprise에 이 부품의 교체를 요청할 경우 이 서비스에 대한 출장비 및 작업비가 청구됩니다.
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Hewlett Packard Enterprise CSR 프로그램에 대한 자세한 내용은 가까운 서비스 제공업체에 문의하십시오. 북미 지역의 프로그램에 대해서는 Hewlett Packard Enterprise CSR 웹 사이트(http://www.hpe.com/support/selfrepair)를 참조하십시오.

부품 제공 보증 서비스

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

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

Removal and replacement procedures

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

Safety considerations

Before performing service procedures, review all the safety information.

Preventing electrostatic discharge

To prevent damaging the system, be aware of the precautions you must follow when setting up the system or handling parts. A discharge of static electricity from a finger or other conductor may damage system boards or other static-sensitive devices. This type of damage may reduce the life expectancy of the device.

Procedure

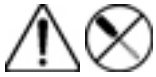
- Avoid hand contact by transporting and storing products in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.
- Place parts on a grounded surface before removing them from their containers.
- Avoid touching pins, leads, or circuitry.
- Always be properly grounded when touching a static-sensitive component or assembly.

Symbols on equipment

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

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

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



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

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

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

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

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

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

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

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

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

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

Server warnings and cautions

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

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

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

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

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

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

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

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

- N'essayez pas de démonter, d'écraser ou de percer le module batterie.
- Ne court-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: Do not operate the server for long periods with the access panel open or removed. Operating the server in this manner results in improper airflow and improper cooling that can lead to thermal damage.

Preparation procedures

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 .

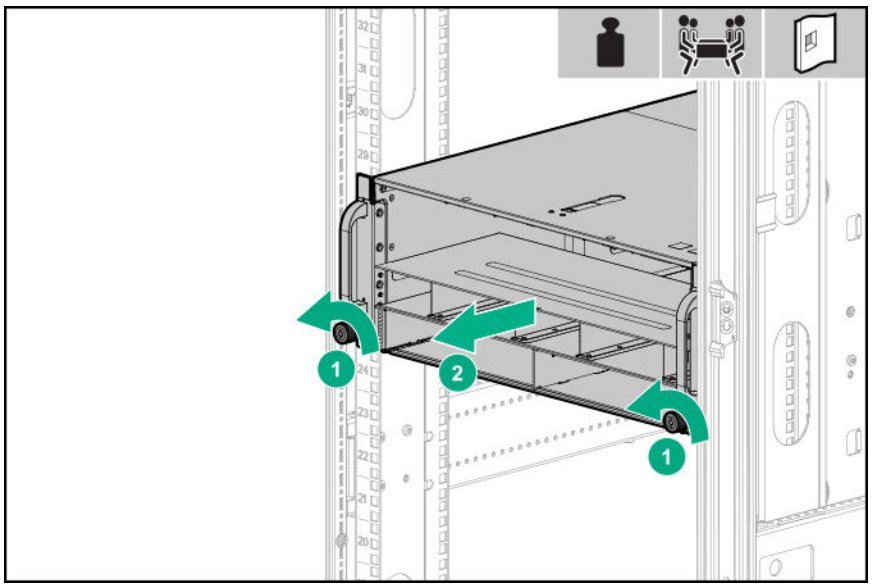
  This method initiates a controlled remote shutdown of applications and the OS before the server enters standby mode.

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

Extending the chassis from the rack

Procedure

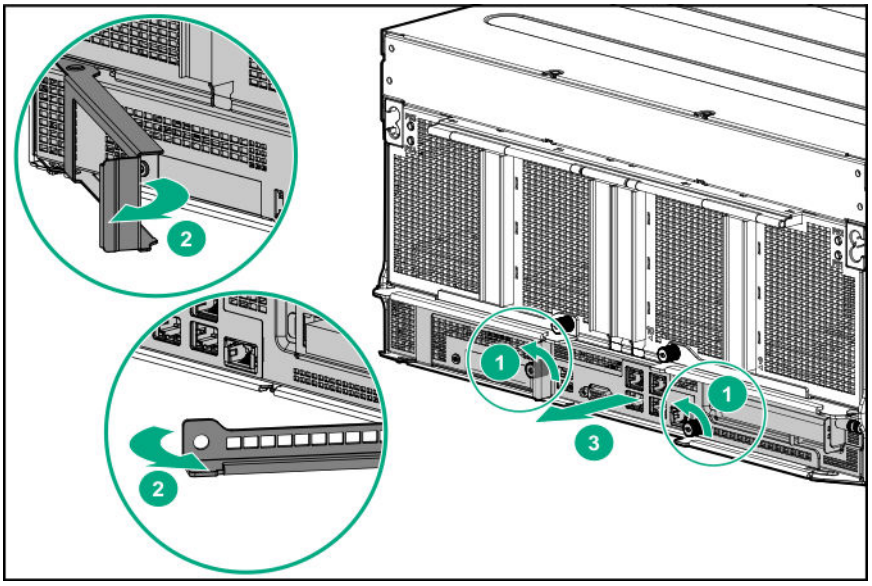
Loosen the thumbscrews on either side of the chassis, and then extend the chassis from the rack.



Removing the system board module from the chassis

Procedure

1. Back up all server data.
2. Power down the server (**Power down the server**).
3. Disconnect all peripheral cables from the server.
4. Remove the system board module from the chassis.

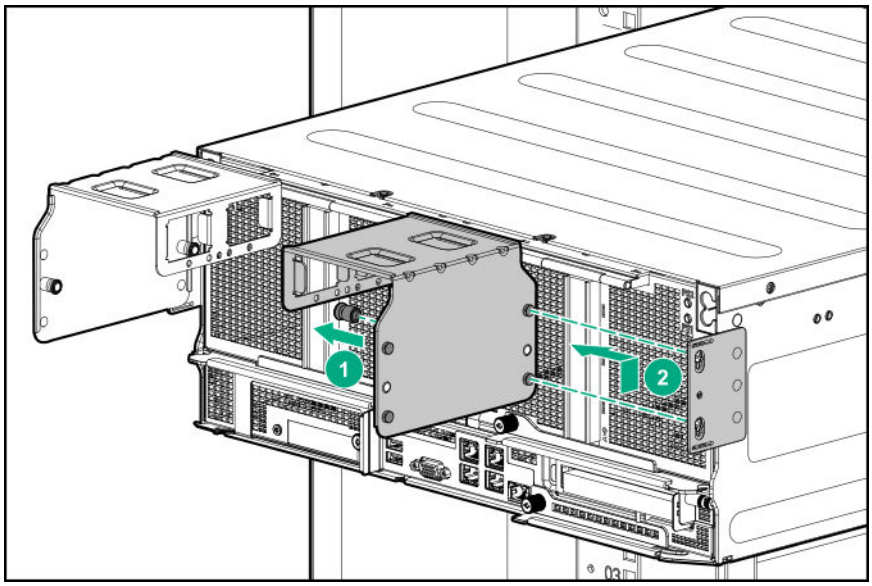


5. Place the tray on a flat, level work surface.

Removing the GPU tray from the chassis

Procedure

1. Power down the server (**Power down the server**).
2. Disconnect all peripheral cables from the GPU tray.
3. If installed, remove the power cord guides.



4. Remove the GPU tray from the chassis.

   Depending on the chassis configuration, your GPU tray might look different.

Removing the access panel

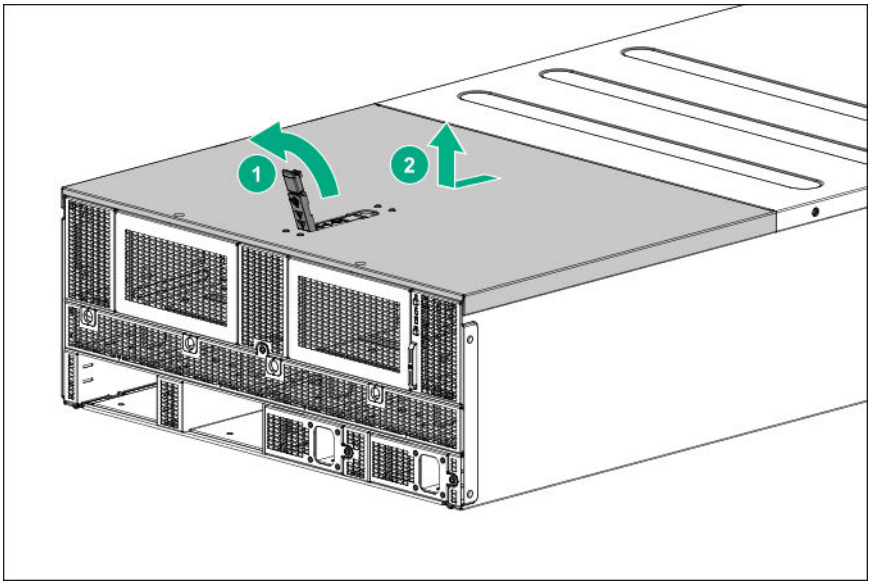
WARNING: To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

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

Procedure

1. Power down the server if a cable management arm is not installed (**Power down the server**).

   If a cable management arm is installed, the server does not need to be powered down before removing the access panel.
2. Extend the chassis from the rack (**Extending the chassis from the rack**).
3. If the locking latch is locked, unlock the latch with a T-15 Torx screwdriver.
4. Remove the access panel.

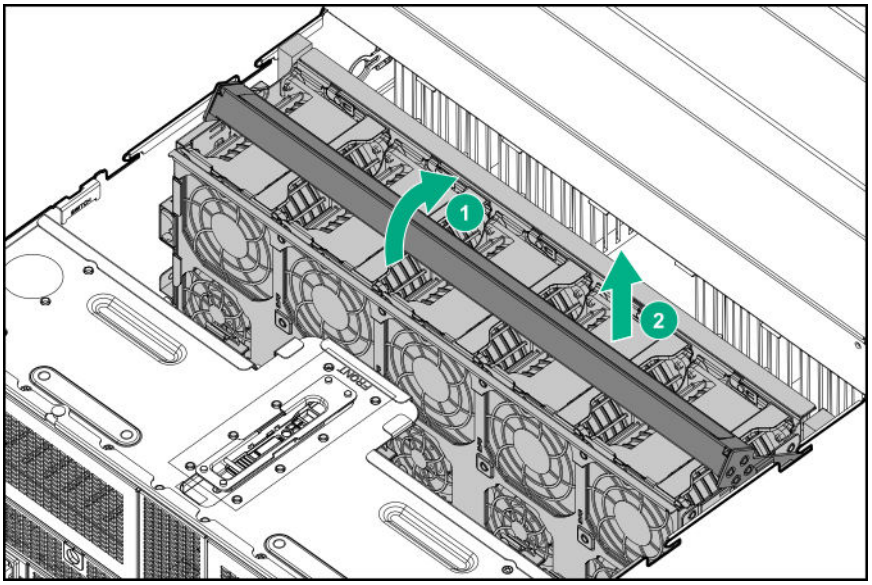


Removing the fan cage

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

Procedure

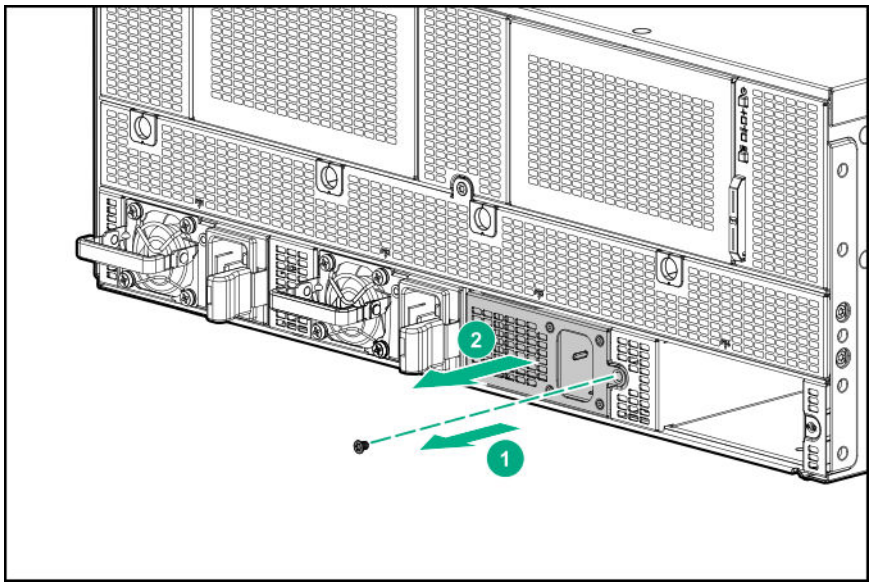
1. Power down the server (**Power down the server**).
2. Remove the access panel (**Removing the access panel**).
3. Remove the fan cage.



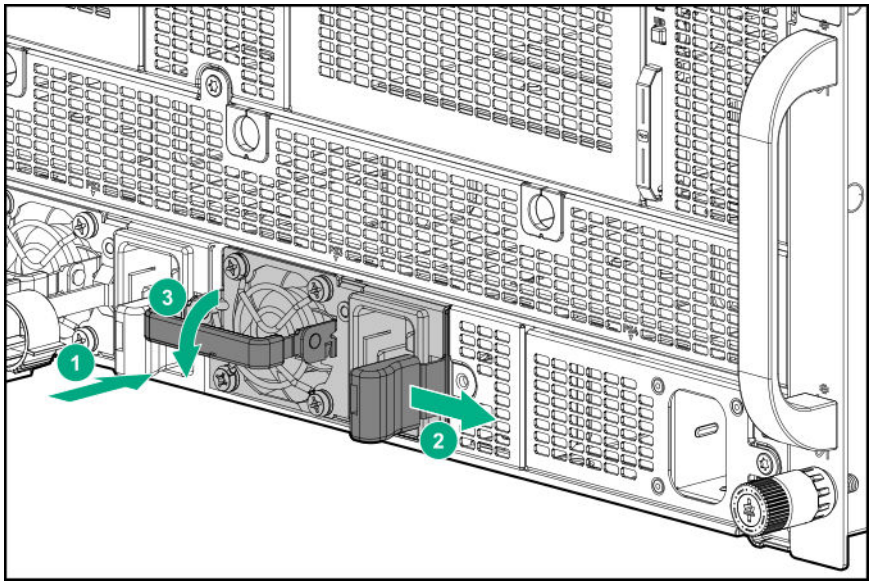
Removing and replacing a power supply blank

Procedure

1. Remove the power supply



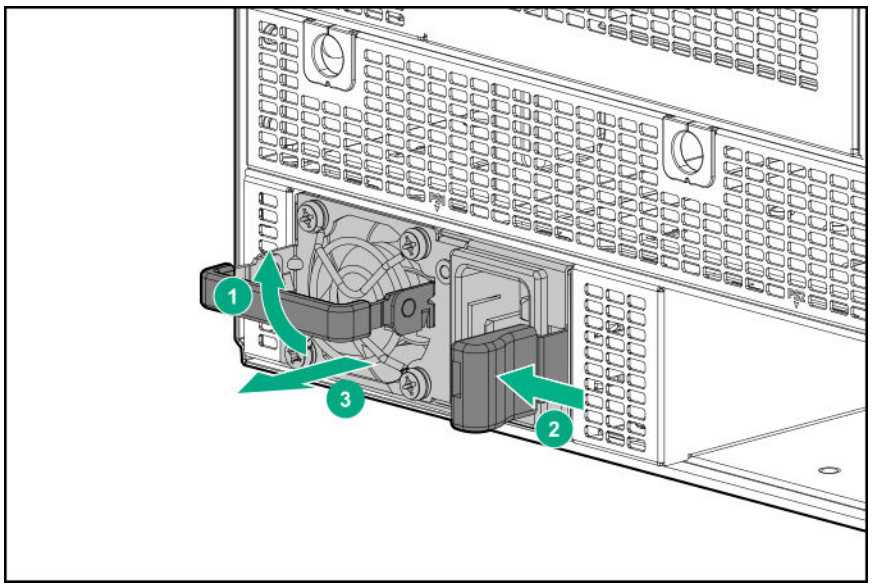
2. Install a power supply or, to replace the component, reverse the removal procedure.



Removing and replacing a power supply

Procedure

Remove the power supply

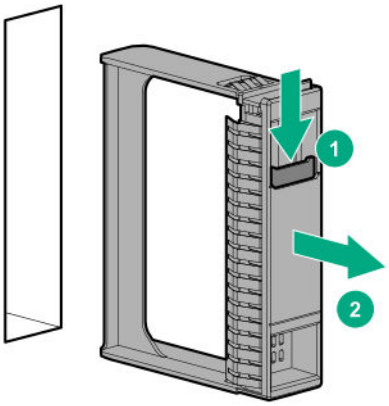


To replace the component, reverse the removal procedure.

Removing and replacing a drive blank

Procedure

1. Press the drive release button.
2. Remove the drive.



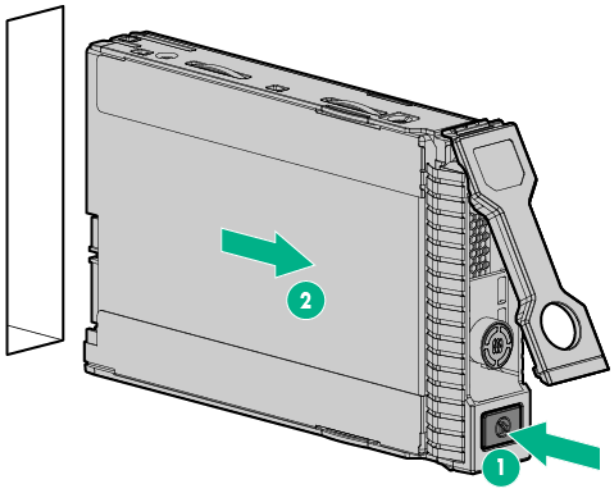
CAUTION: To prevent improper cooling and thermal damage, do not operate the compute module unless all bays are populated with either a component or a blank.

To replace the component, reverse the removal procedure.

Removing and replacing a hot-plug SAS or SATA drive

Procedure

1. Determine the status of the drive from the drive LED definitions (**Hot-plug drive LED definitions**).
2. Back up all data on the drive.
3. Remove the drive.



To replace the drive, slide the drive into the bay until it is fully seated, and then close the latch handle.

Removing and replacing an NVMe drive

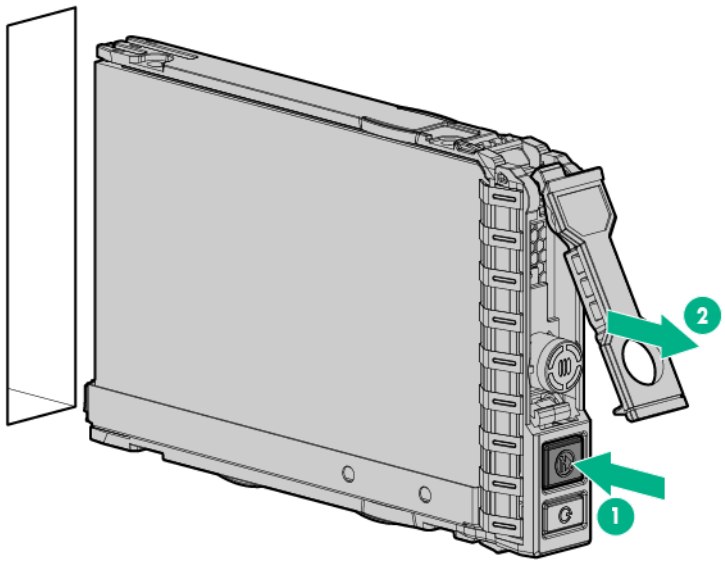
Procedure

1. Determine the status of the drive from the drive LED definitions (**NVMe SSD LED definitions**).
2. Back up all server data.
3. Remove the drive:
   a. Push the Power button.

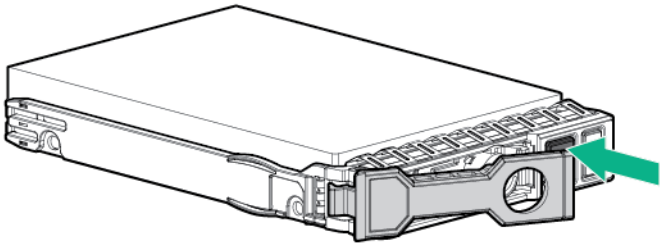
      The Do Not Remove button will illuminate and flash. Do not press the button while it is illuminated.

   b. When the flashing stops and the icon on the button is no longer illuminated or flashing, press the Do Not Remove button to release the release lever.

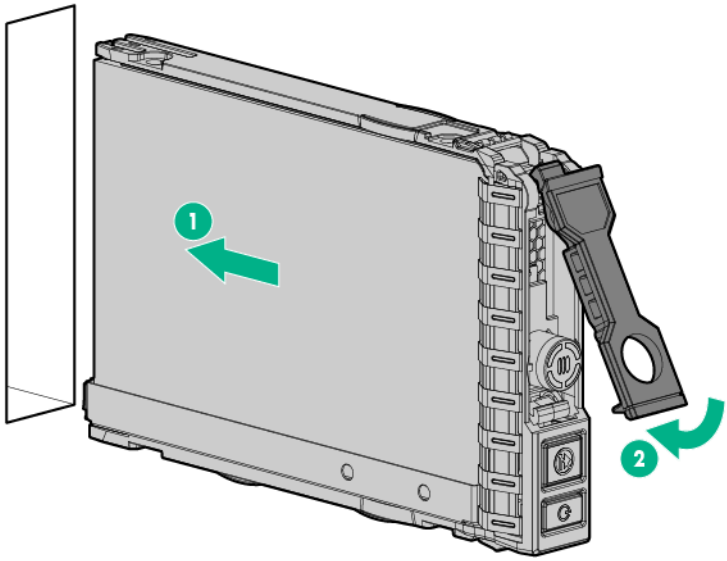
   c. Pull the release lever to disengage the drive from the backplane, and slide the drive out of the drive bay.



4. Prepare the replacement drive.



5. Install the drive.

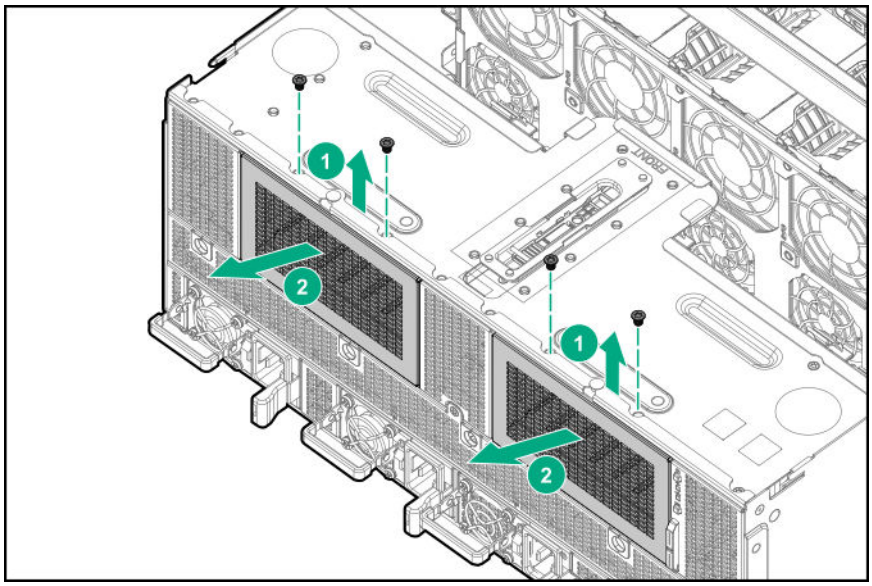


6. Observe the LED status of the drive.

Removing and replacing a drive cage blank

Procedure

1. Power down the server (**Power down the server**).
2. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
3. Do one of the following:
   a. Extend the chassis from the rack.
   b. Remove the chassis from the rack.
4. Remove the access panel (**Removing the access panel**).
5. Remove the drive cage blank.



To replace the component, reverse the removal procedure.

Removing and replacing a drive cage

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

Procedure

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

a. Disconnect each power cord from the power source.

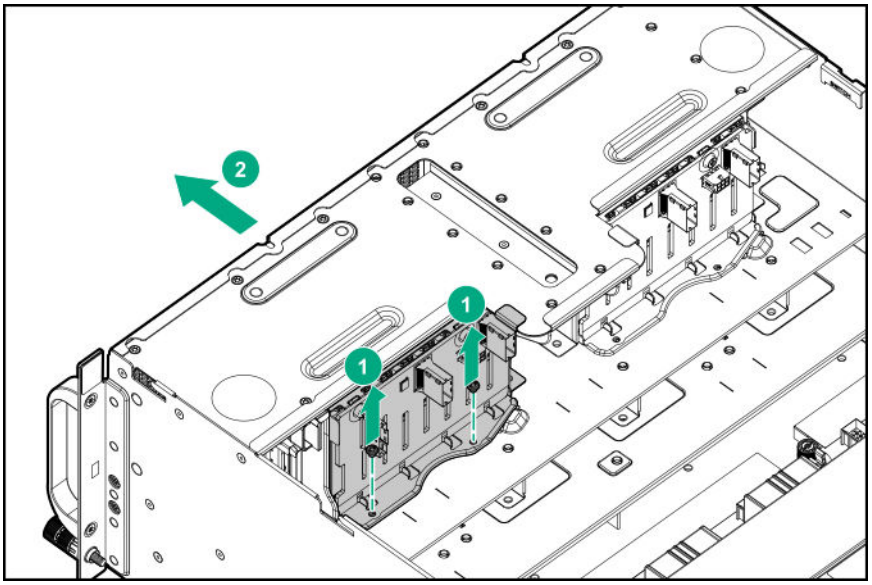
b. Disconnect each power cord from the server.

3. Do one of the following:

a. Extend the chassis from the rack.

b. Remove the chassis from the rack.

4. Remove the access panel (**Removing the access panel**).
5. Remove all SAS or SATA drives (**Removing and replacing a hot-plug SAS or SATA drive**).
6. If installed, remove all NVMe drives (**Removing and replacing an NVMe drive**).
7. Remove the fan cage (**Removing the fan cage**).
8. Disconnect all cables from the drive backplane.
9. Remove the drive cage.



To replace the component, reverse the removal procedure.

Removing and replacing a drive cage backplane

Procedure

1. Back up all server data.
2. Power down the server (**Power down the server**).
3. Remove all power:

a. Disconnect each power cord from the power source.

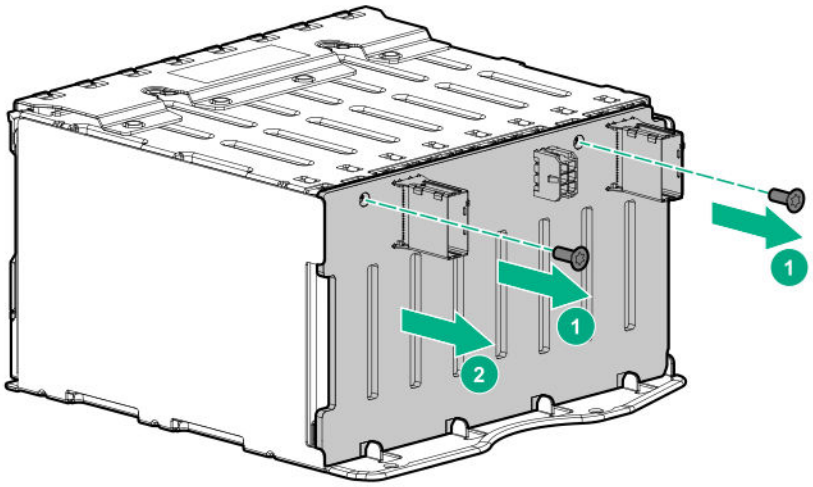
b. Disconnect each power cord from the server.

4. Do one of the following:

a. Extend the chassis from the rack.

b. Remove the chassis from the rack.

5. Remove the access panel (**Removing the access panel**).
6. Remove all SAS or SATA drives (**Removing and replacing a hot-plug SAS or SATA drive**).
7. If installed, remove all NVMe drives (**Removing and replacing an NVMe drive**).
8. Remove the fan cage (**Removing the fan cage**).
9. Disconnect all cables from the drive backplane.
10. Remove the drive cage (**Removing and replacing a drive cage**).
11. Remove the drive cage backplane.



To replace the component, reverse the removal procedure.

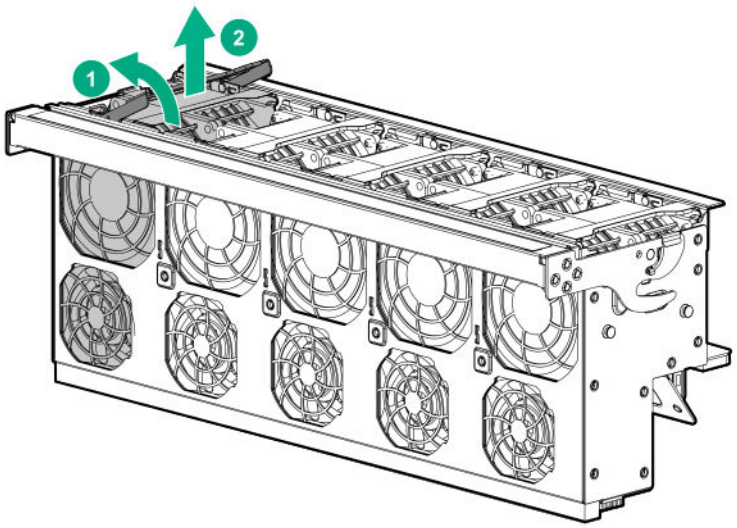
Removing and replacing a fan module if a cable management arm is not installed

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: Hot-plug functionality is supported only when the cable management arm is installed. The cable management arm is required to remove the fan modules without removing power or connectivity.

Procedure

1. Power down the server (**Power down the server**).
2. Remove the access panel (**Removing the access panel**).
3. Remove the fan module.



To replace the component, reverse the removal procedure.

Removing and replacing a hot-plug fan module if a cable management arm is installed

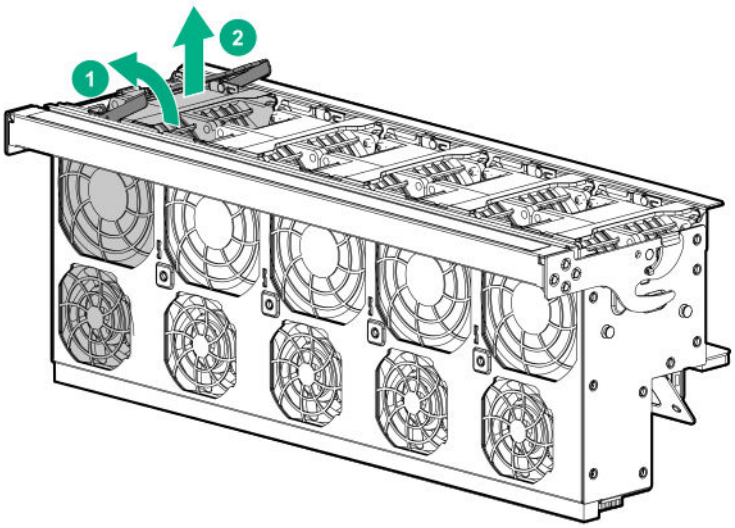
WARNING: To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

CAUTION: After removing a hot-plug fan module, install the new fan module within 60 seconds. Failure to replace the fan module within 60 seconds results in server shutdown.

WARNING: Hot-plug functionality is supported only when the cable management arm is installed. The cable management arm is required to remove the fan modules without removing power or connectivity.

Procedure

1. Extend the chassis from the rack (**Extending the chassis from the rack**).
2. Remove the access panel (**Removing the access panel**).
3. Remove the fan module.



To replace the component, reverse the removal procedure.

HPE Smart Storage Battery

The HPE Smart Storage Battery supports the following devices:

HPE Smart Array SR controllers

A single 96W battery can support up to 24 devices.

After the battery is installed, it might take up to two hours to charge. Controller features requiring backup power are not re-enabled until the battery is capable of supporting the backup power.

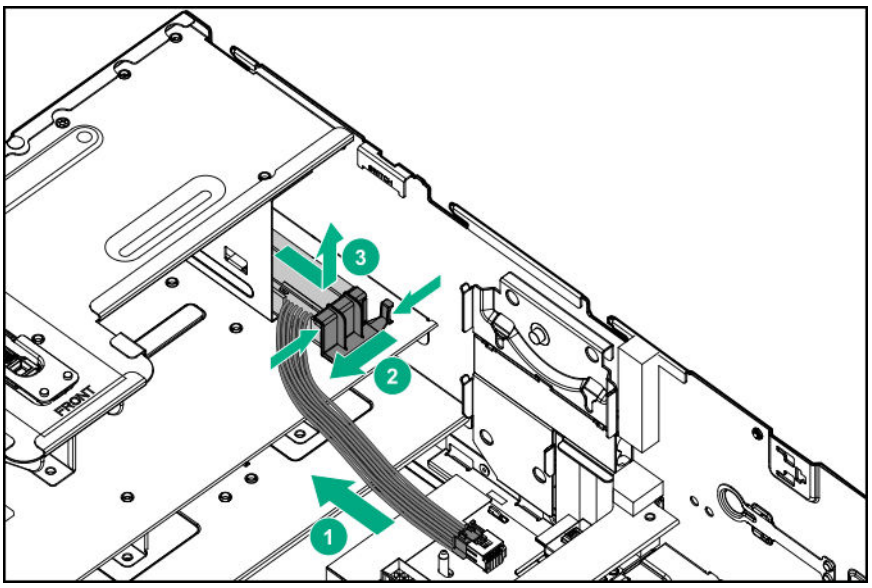
Removing and replacing an HPE Smart Storage Battery

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

NOTE: System ROM and firmware messages might display "energy pack" in place of "Smart Storage Battery." Energy pack refers to both HPE Smart Storage batteries and HPE Smart Storage Hybrid capacitors.

Procedure

1. Back up all server data.
2. Power down the server (**Power down the server**).
3. Remove the access panel (**Removing the access panel**).
4. Remove the fan cage (**Removing the fan cage**).
5. Disconnect the cable, and then remove the Smart Storage Battery.



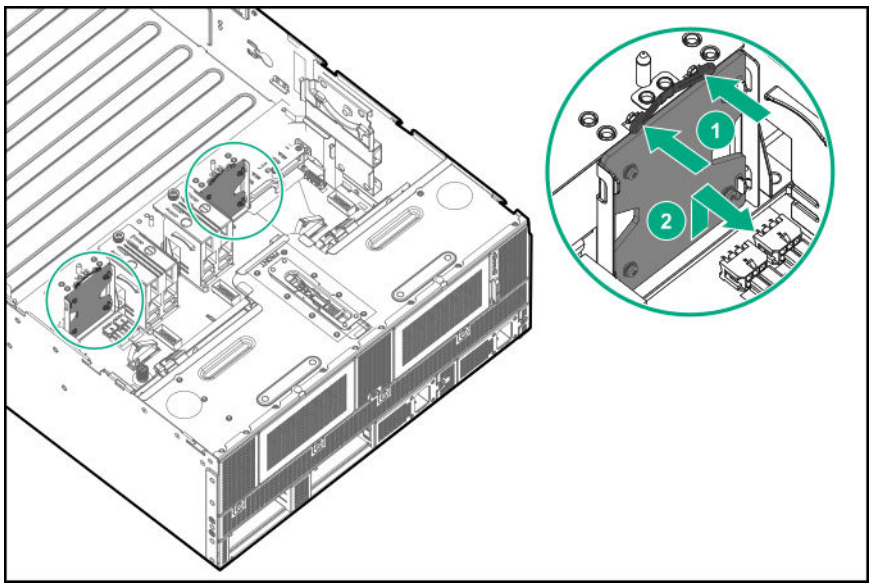
To replace the component, reverse the removal procedure.

Removing and replacing a PCIe midplane board

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

Procedure

1. Back up all server data.
2. Power down the server (**Power down the server**).
3. Disconnect all peripheral cables from the server.
4. Remove the system board module from the chassis (**Removing the system board module from the chassis**).
5. Place the tray on a flat, level work surface.
6. Remove the access panel (**Removing the access panel**).
7. Remove the fan cage (**Removing the fan cage**).
8. Remove the PCIe midplane board.



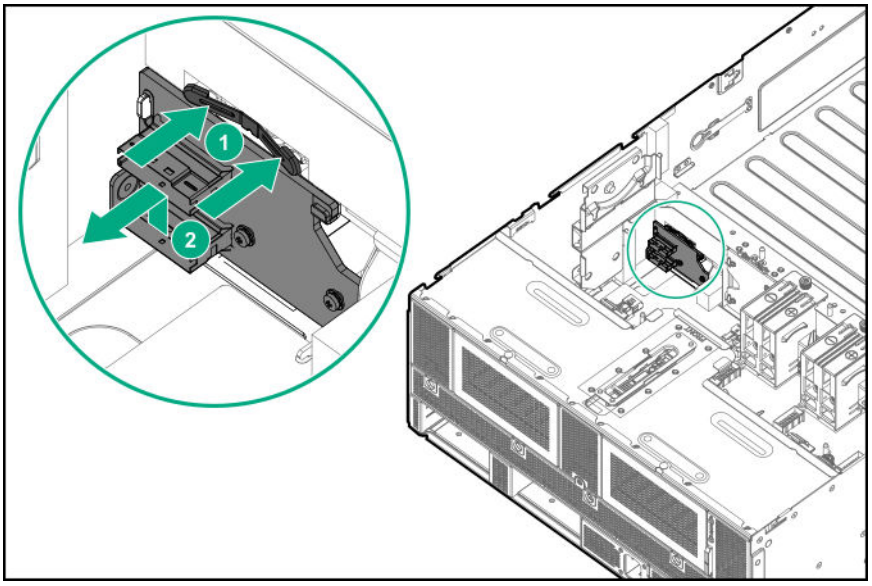
To replace the component, reverse the removal procedure.

Removing and replacing an NVMe midplane board

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

Procedure

1. Back up all server data.
2. Power down the server (**Power down the server**).
3. Disconnect all peripheral cables from the server.
4. Remove the system board module from the chassis (**Removing the system board module from the chassis**).
5. Place the tray on a flat, level work surface.
6. Remove the access panel (**Removing the access panel**).
7. Remove the fan cage (**Removing the fan cage**).
8. Disconnect the cables, and then remove the NVMe midplane board.



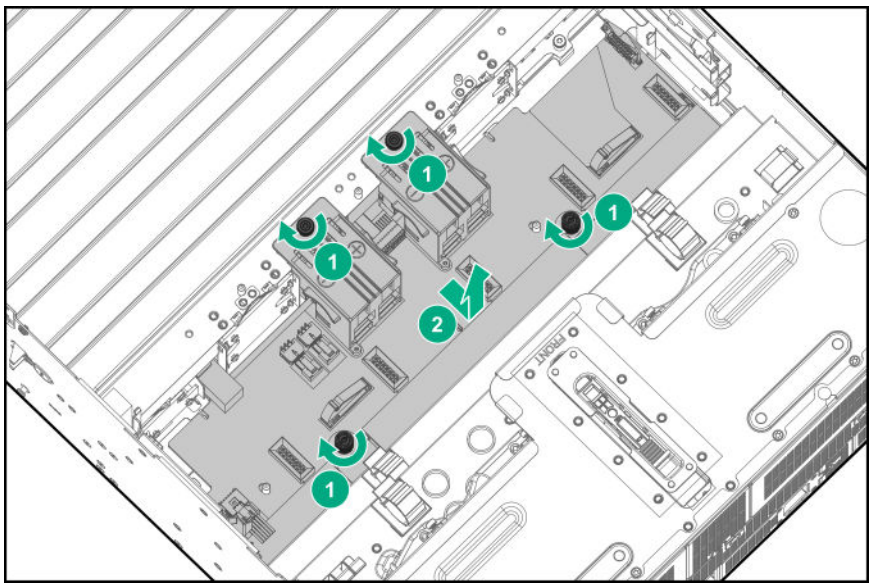
To replace the component, reverse the removal procedure.

Removing and replacing a power distribution board

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

Procedure

1. Back up all server data.
2. Power down the server (**Power down the server**).
3. Remove the access panel (**Removing the access panel**).
4. Remove the fan cage (**Removing the fan cage**).
5. Disconnect the cables connected to the power distribution board, and any cables routed through the cable clips on the power distribution board.
6. Remove the power distribution board.



To replace the component, reverse the removal procedure.

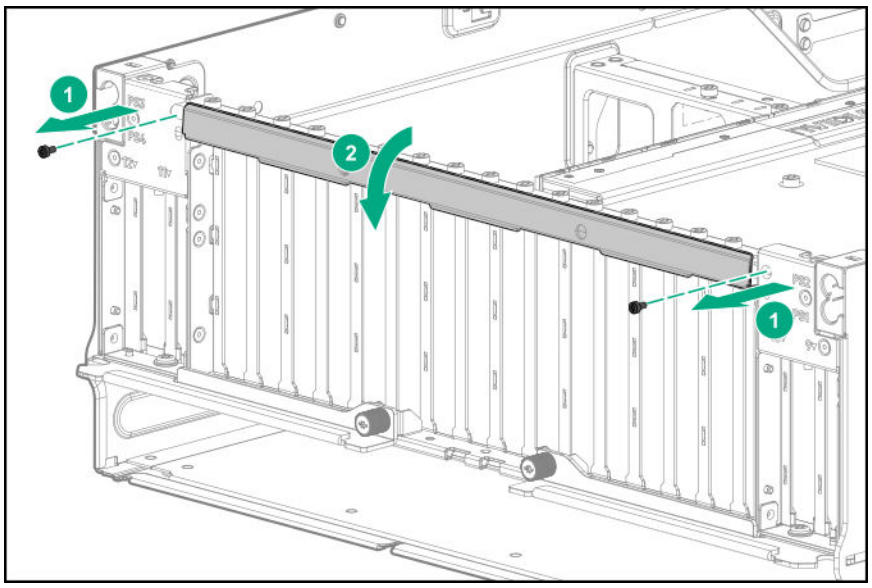
Removing a PCIe GPU

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

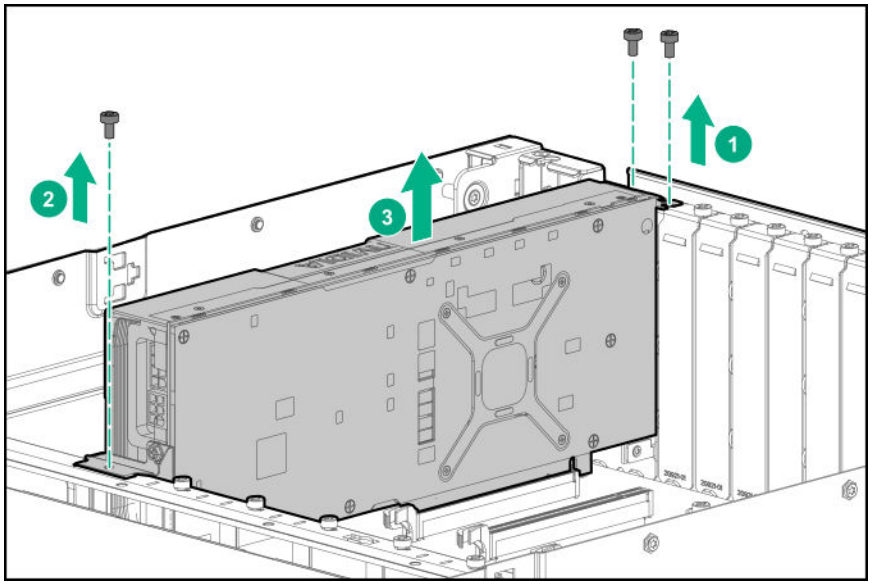
CAUTION: To prevent damage to electrical components, properly ground the server before beginning any installation procedure. Improper grounding can cause electrostatic discharge.

Procedure

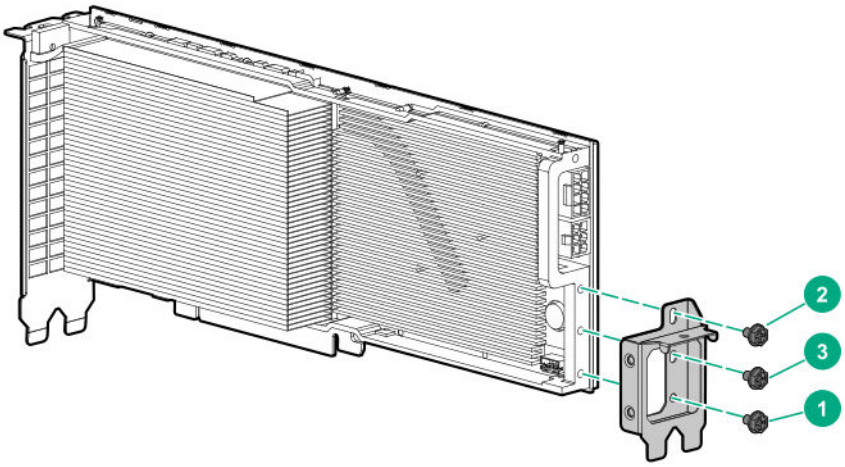
1. Back up all server data.
2. Power down the server (**Power down the server**).
3. Disconnect all peripheral cables from the server.
4. Remove the GPU module from the chassis (**Removing the GPU tray from the chassis**).
5. Place the tray on a flat, level work surface.
6. Open the retainer bracket.



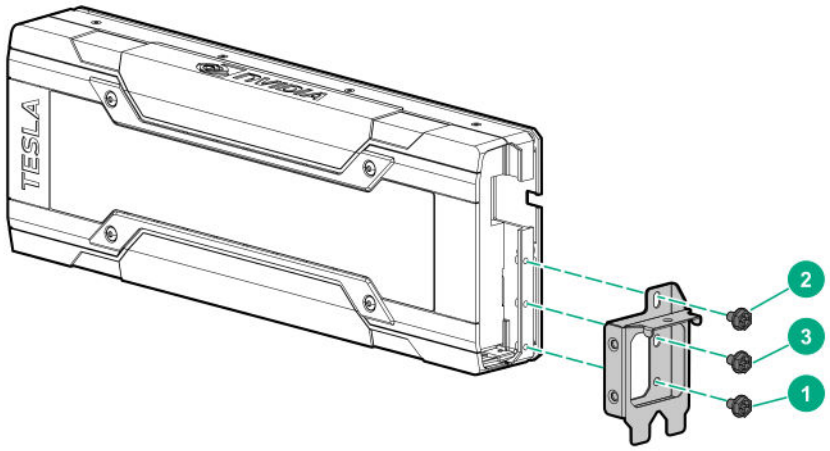
7. Remove the PCIe GPU card from the module.



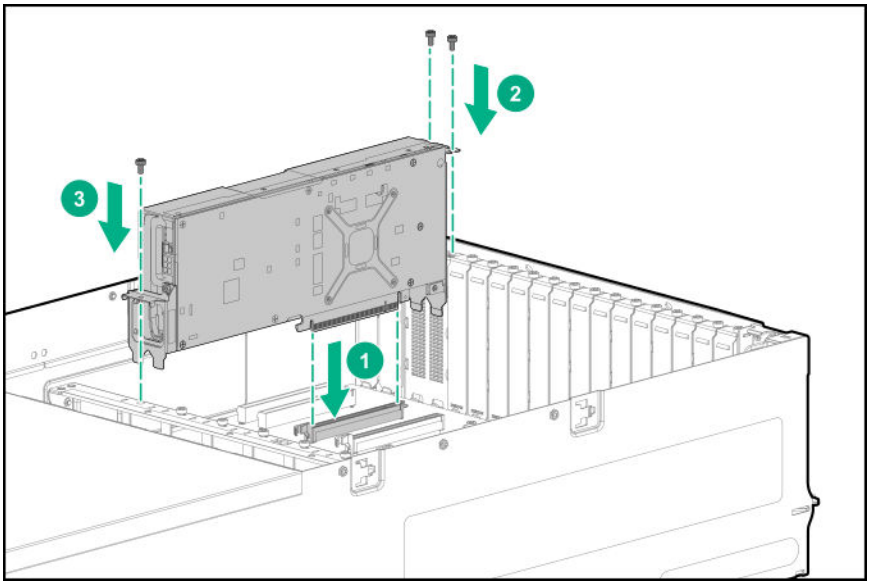
8. Remove the extender that is installed on the replacement GPU card.
9. Remove the bracket from the failed GPU card, reserving the bracket and screws.
10. Install the screws and bracket removed in the previous step onto the replacement GPU card.
    - AMD GPU



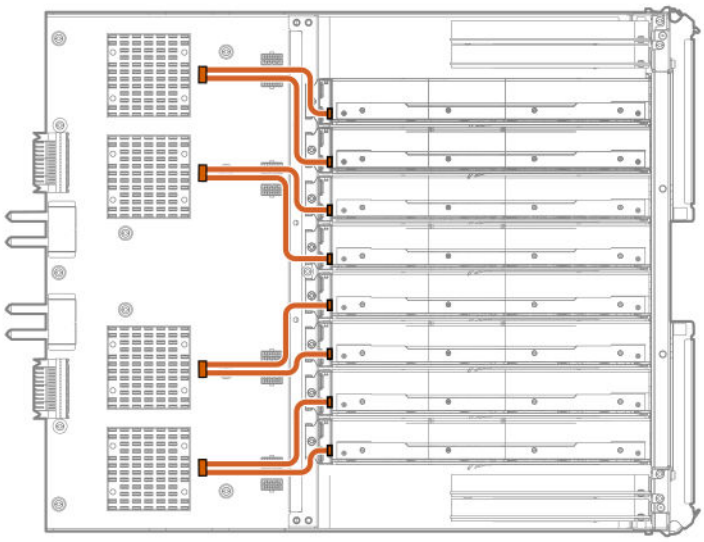
- NVIDIA GPU



11. Align and install the GPU.



12. Connect the power cable from the GPU to the GPU module.



13. Connect all peripheral cables to the server
14. Power up the server.
15. **Configure the PCIe GPU slots**.

Removing and replacing an SXM2 GPU

For the highest reliability and best end user experience, HPE or an authorized service provider must replace the SXM2 GPU. Customer self repair of the SXM2 GPU is no longer supported.

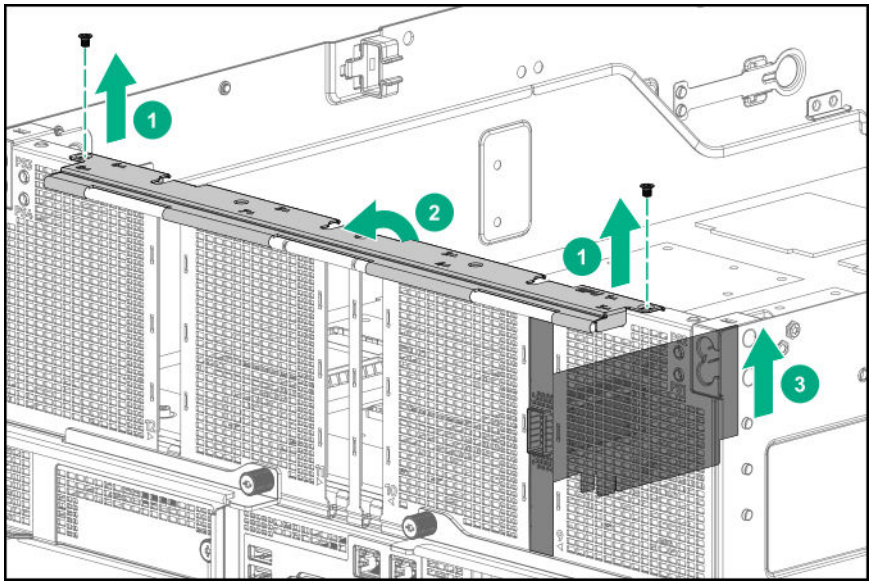
Removing a PCIe riser board from the GPU module

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.

Procedure

1. Back up all server data.
2. Power down the server (**Power down the server**).
3. Disconnect all peripheral cables from the server.
4. Remove the GPU module from the chassis (**Removing the GPU tray from the chassis**).
5. Place the tray on a flat, level work surface.
6. Open the retainer, and then remove the PCIe riser board.



To replace the component, reverse the removal procedure.

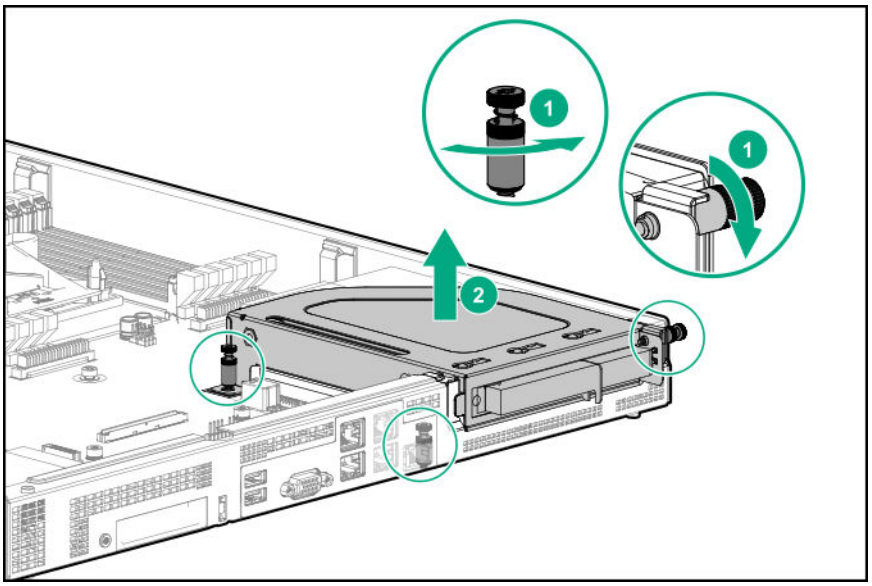
Removing the riser cage

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

Procedure

1. Back up all server data.
2. Power down the server (**Power down the server**).
3. Disconnect all peripheral cables from the server.

4. Remove the system board module from the chassis (**Removing the system board module from the chassis**).
5. Place the tray on a flat, level work surface.
6. Remove the riser cage.



To replace the component, reverse the removal procedure.

DIMM-processor compatibility

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

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

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

Removing and replacing a DIMM

CAUTION: Failure to properly handle DIMMs can damage the DIMM components and the system board connector. For more information, see the DIMM handling guidelines in the troubleshooting guide for your product on the Hewlett Packard Enterprise website:

- HPE ProLiant Gen10 (**http://www.hpe.com/info/gen10-troubleshooting**)
- HPE Synergy (**http://www.hpe.com/info/synergy-troubleshooting**)

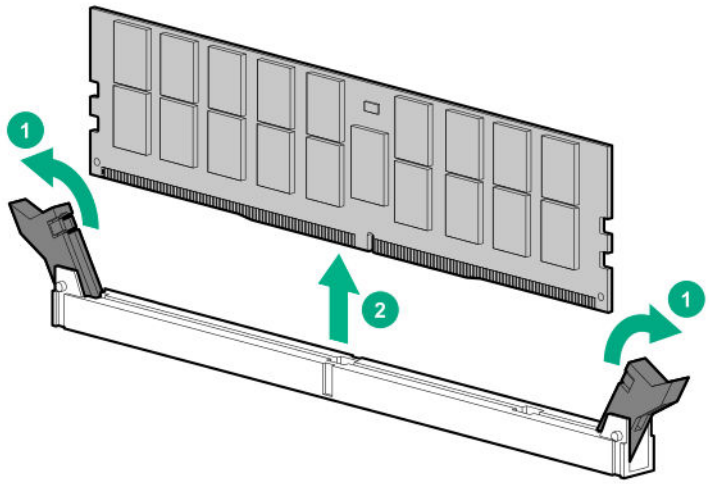
For specific DIMM population information, see the DIMM population guidelines on the Hewlett Packard Enterprise website (**http://www.hpe.com/docs/memory-population-rules**).

To identify the DIMMs installed in the server, see **DIMM slot locations**.

Procedure

1. Back up all server data.
2. Power down the server (**Power down the server**).

3. Disconnect all peripheral cables from the server.
4. Remove the system board module from the chassis (**Removing the system board module from the chassis**).
5. Place the tray on a flat, level work surface.
6. Remove the DIMM.



To replace the component, reverse the removal procedure.

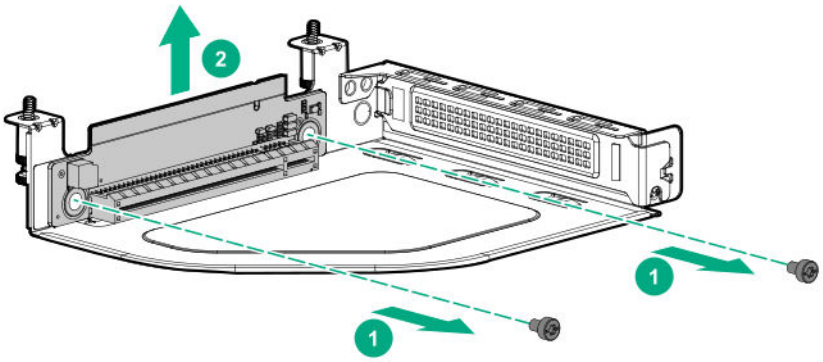
Removing and replacing the riser board

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

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

Procedure

1. Back up all server data.
2. Power down the server (**Power down the server**).
3. Disconnect all peripheral cables from the server.
4. Remove the system board module from the chassis (**Removing the system board module from the chassis**).
5. Place the tray on a flat, level work surface.
6. Remove the riser cage (**Removing the riser cage**).
7. Remove any controller or expansion boards installed in the riser cage.
8. Remove the riser board.



To replace the component, reverse the removal procedure.

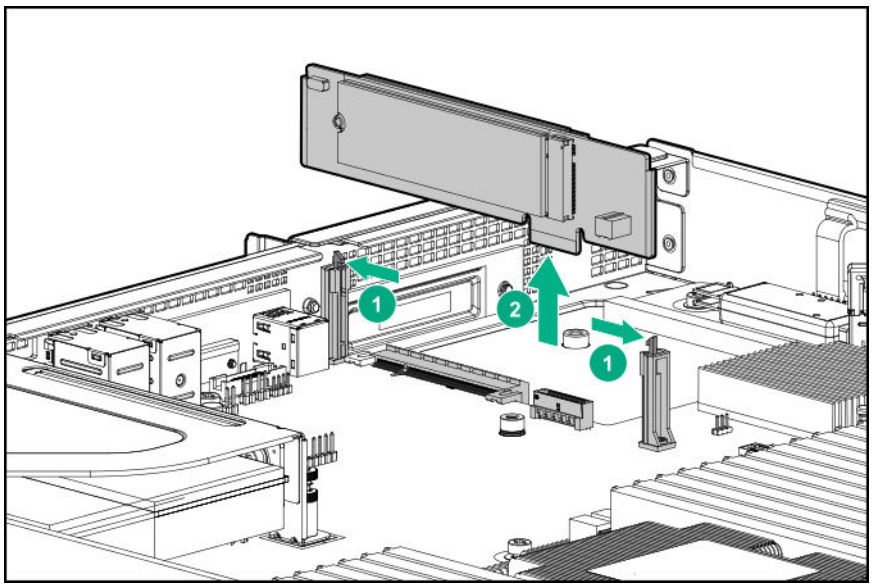
Removing and replacing the M.2 SSD riser board

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

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

Procedure

1. Back up all server data.
2. Power down the server (**Power down the server**).
3. Disconnect all peripheral cables from the server.
4. Remove the system board module from the chassis (**Removing the system board module from the chassis**).
5. Place the tray on a flat, level work surface.
6. Remove the riser board.



To replace the component, reverse the removal procedure.

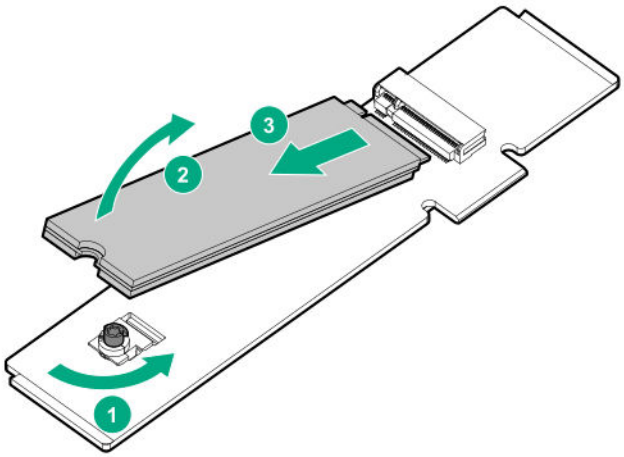
Removing and replacing the M.2 SSD drive

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.

Procedure

1. Back up all server data.
2. Power down the server (**Power down the server**).
3. Disconnect all peripheral cables from the server.
4. Remove the system board module from the chassis (**Removing the system board module from the chassis**).
5. Place the tray on a flat, level work surface.
6. Remove the M.2 riser board (**Removing and replacing the M.2 SSD riser board**).
7. Remove the drive from the riser board.



To replace the component, reverse the removal procedure.

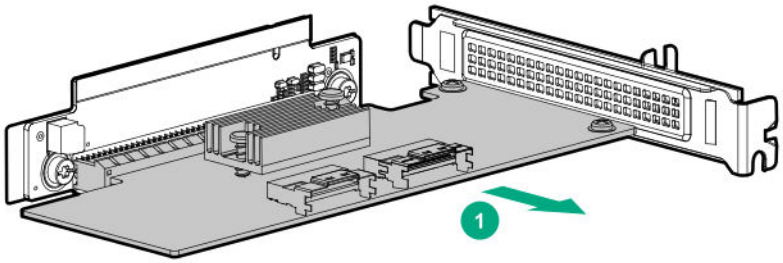
Removing and replacing a type -p controller

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.

Procedure

1. Back up all server data.
2. Power down the server (**Power down the server**).
3. Disconnect all peripheral cables from the server.
4. Remove the system board module from the chassis (**Removing the system board module from the chassis**).
5. Place the tray on a flat, level work surface.
6. Remove the riser cage (**Removing the riser cage**).
7. Disconnect any cables connected to the controller, and then remove the controller.



To replace the component, reverse the removal procedure.

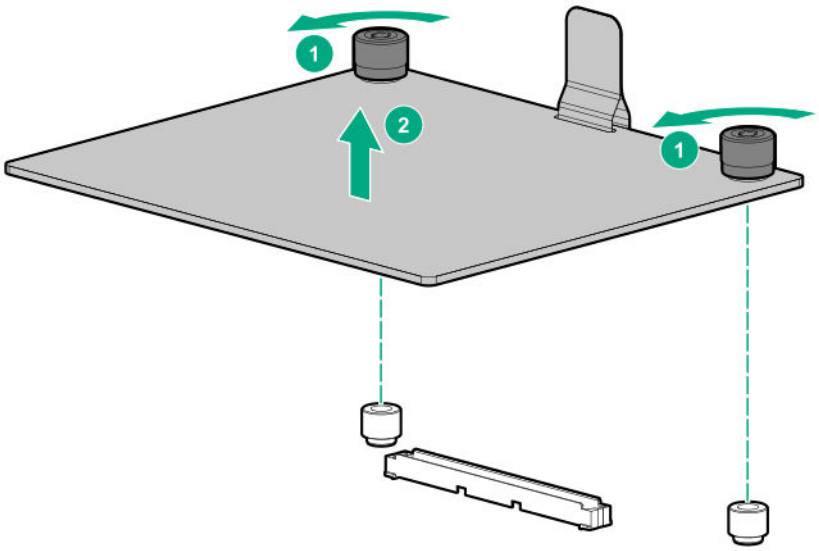
Removing and replacing a type -a controller

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.

Procedure

1. Back up all server data.
2. Power down the server (**Power down the server**).
3. Disconnect all peripheral cables from the server.
4. Remove the system board module from the chassis (**Removing the system board module from the chassis**).
5. Place the tray on a flat, level work surface.
6. Disconnect any cables connected to the controller, and then remove the controller.



To replace the component, reverse the removal procedure.

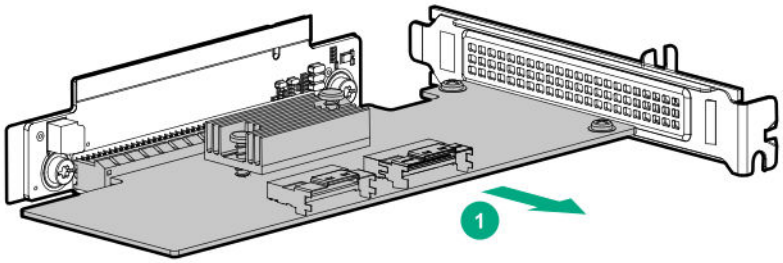
Removing the NVMe riser board

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

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

Procedure

1. Back up all server data.
2. Power down the server (**Power down the server**).
3. Disconnect all peripheral cables from the server.
4. Remove the system board module from the chassis (**Removing the system board module from the chassis**).
5. Place the tray on a flat, level work surface.
6. Remove the riser cage (**Removing the riser cage**).
7. Disconnect any cables connected to the NVMe riser board, and then remove the board.



To replace the component, reverse the removal procedure.

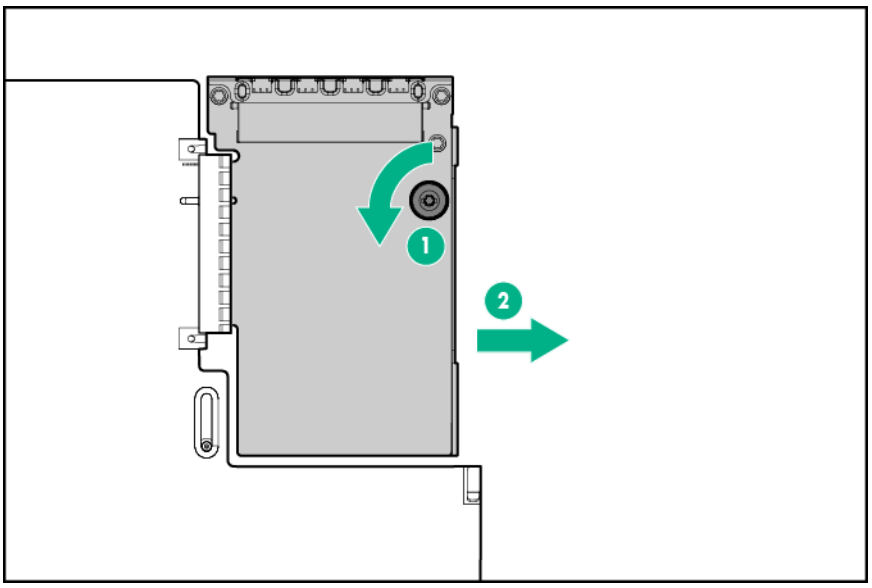
Removing and replacing the FlexibleLOM

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.

Procedure

1. Back up all server data.
2. Power down the server (**Power down the server**).
3. Disconnect all peripheral cables from the server.
4. Remove the system board module from the chassis (**Removing the system board module from the chassis**).
5. Place the tray on a flat, level work surface.
6. Remove the FlexibleLOM adapter.



To replace the component, reverse the removal procedure.

Removing and replacing the system battery

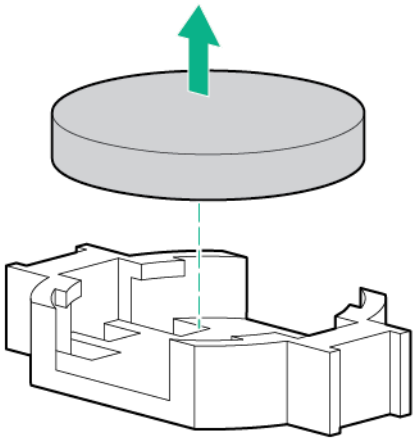
The system battery provides power to the internal clock. If the server no longer automatically displays the correct date and time, you might need to replace the system battery.

WARNING: The computer contains an internal lithium manganese dioxide, a vanadium pentoxide, or an alkaline battery pack. A risk of fire and burns exists if the battery pack is not properly handled. 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 disassemble, crush, puncture, short external contacts, or dispose of in fire or water.
- Replace only with the spare designated for this product.

Procedure

1. Back up all server data.
2. Power down the server (**Power down the server**).
3. Disconnect all peripheral cables from the server.
4. Remove the system board module from the chassis (**Removing the system board module from the chassis**).
5. Place the tray on a flat, level work surface.
6. Locate the battery (**System board components**).
7. Remove the battery.



To replace the component, reverse the removal procedure.

Replacing the system board module

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.

Procedure

1. Back up all server data.
2. Power down the server (**Power down the server**).
3. Disconnect all peripheral cables from the server.
4. Remove the system board module from the chassis (**Removing the system board module from the chassis**).
5. Place the tray on a flat, level work surface.
6. Remove the riser cage (**Removing the riser cage**).
7. Remove the M.2 riser board (**Removing and replacing the M.2 SSD riser board**).
8. Remove the type -a controller (**Removing and replacing a type -a controller**).
9. Remove the FlexibleLOM adapter (**Removing and replacing the FlexibleLOM**).
10. Remove all DIMMs (**Removing and replacing a DIMM**).
11. Disconnect all cables connected to the system board.
12. Observe the following cautions.

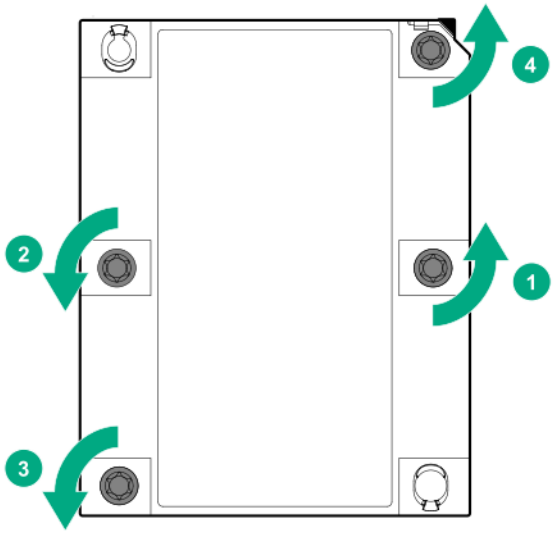
    CAUTION: Be sure to loosen each heatsink nut in the order indicated. Otherwise, damage might occur to the heatsink or processor.

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

13. Remove the processor heatsink assembly:

    a. Allow the heatsink to cool.

    b. Using a T-30 Torx screwdriver, loosen the heatsink nuts.



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

Installing components into the new system board module

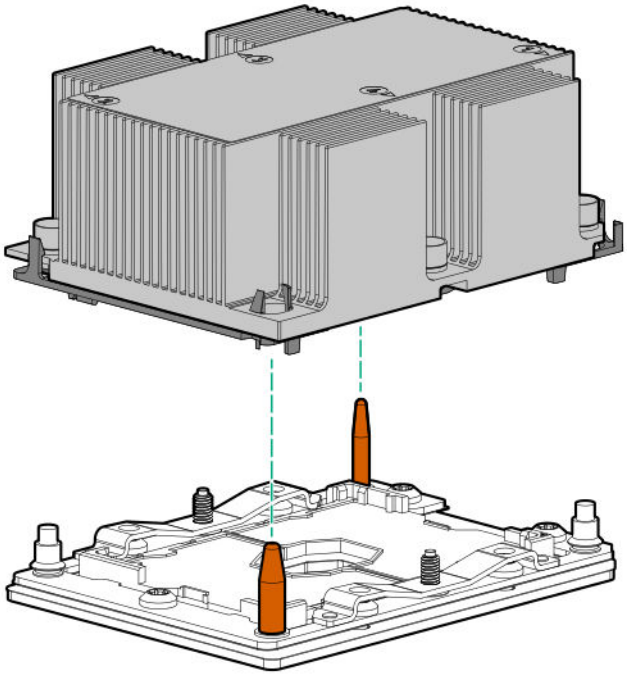
14. Install the processor heatsink assembly:

    a. Locate the Pin 1 indicator on the processor carrier and the socket.

    b. Align the processor heatsink assembly with the heatsink alignment pins, and then gently lower it down until it sits evenly on the socket.

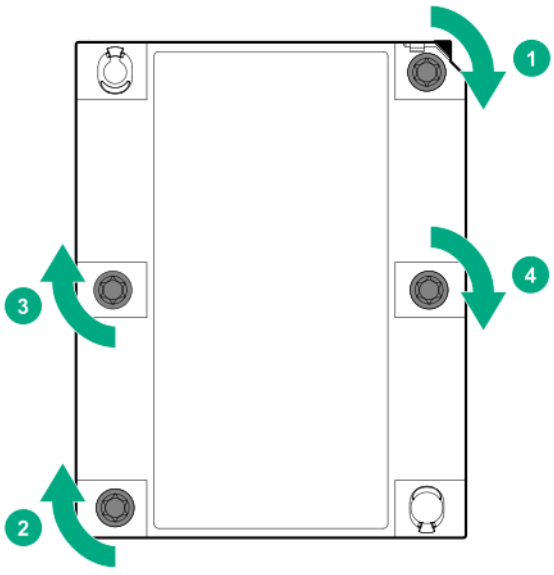
    The heatsink alignment pins are keyed. The processor heatsink assembly will only install one way.

    Your heatsink may look different than the one shown.



c. Using a T-30 Torx screwdriver, fully tighten each heatsink nut until it no longer turns.

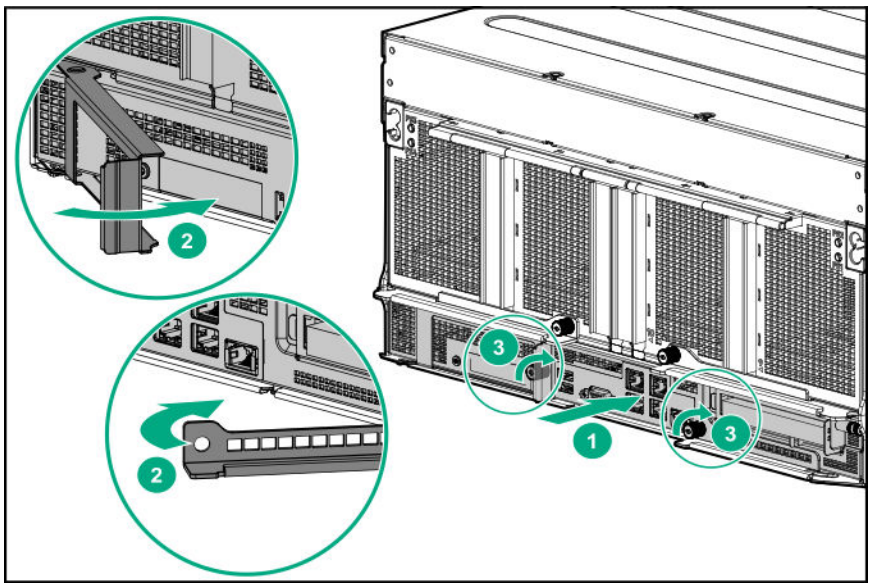
> **CAUTION:** Be sure to tighten each heatsink nut fully in the order indicated. Otherwise, boot failure or intermittent shutdowns might occur.



15. Install all components removed from the failed system board module.

> **IMPORTANT:** Install all components with the same configuration that was used on the failed system board.

16. Install the system board module into the chassis.



17. Power up the server.
18. Ensure all firmware, including option cards and embedded devices, is updated to the same versions to ensure that the latest drivers are being used.
19. Re-enter any Secure Boot Keys that were previously added in the Secure Boot configuration.
20. Re-enter the server serial number and the product ID (**Re-entering the server serial number and product ID**).
21. If PCIe GPU cards are installed in the server, reconfigure the PCIe GPU slots (**Configuring PCIe GPU slots**).

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.
   ```

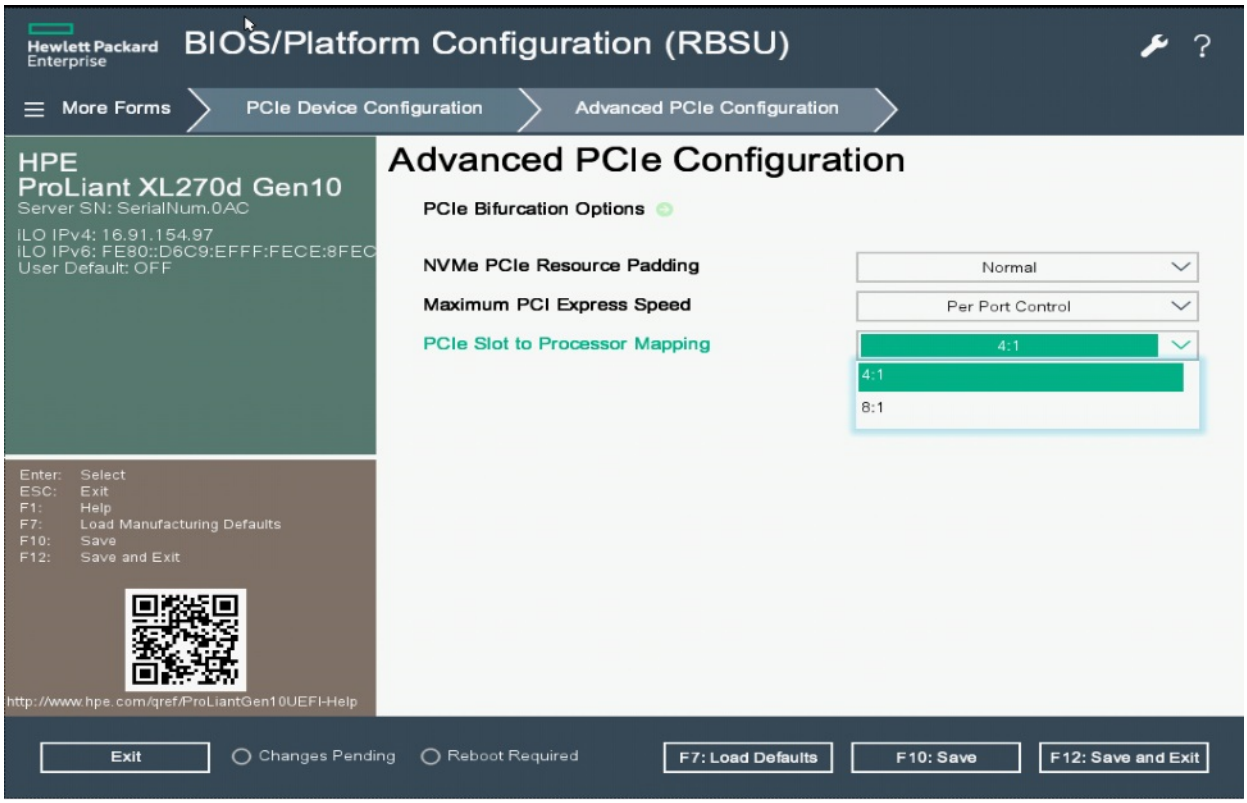
7. Type the product ID and press **Enter**.
8. Press **F10** to save the configuration.

The procedure is complete.

Configuring PCIe GPU slots

Procedure

1. Access System Utilities. During POST, press **F9**.
2. Select **System Configuration** > **BIOS/Platform Configuration (RBSU)** > **PCIe Device Configuration** > **Advanced PCIe Configuration**.
3. Select the preferred option from the **PCIe Slot to Processor Mapping** drop-down list.



Replacing the GPU module

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.

Procedure

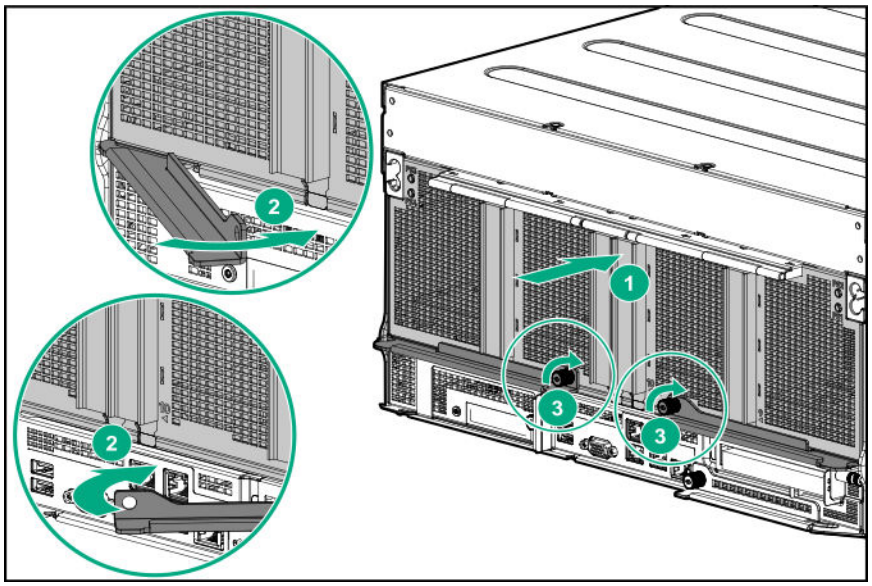
1. Back up all server data.
2. Power down the server (**Power down the server**).
3. Disconnect all peripheral cables from the server.
4. Remove the GPU module from the chassis (**Removing the GPU tray from the chassis**).
5. Place the tray on a flat, level work surface.
6. Remove all GPU cards installed in the module.
   - PCIe GPU cards (**Removing a PCIe GPU**)
   - SXM2 GPU cards (**Removing and replacing an SXM2 GPU**)

Installing components into the new GPU module

7. **IMPORTANT:** Install all components with the same configuration that was used on the failed system board.

   Install all components removed from the failed GPU module.
8. Install the GPU module into the chassis.

   Depending on the chassis configuration, your GPU module might look different.



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

Troubleshooting

NMI functionality

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

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

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

Troubleshooting resources

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

- *Troubleshooting Guide for HPE ProLiant Gen10 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.
- *Integrated Management Log Messages and Troubleshooting Guide for HPE ProLiant Gen10 and HPE Synergy* provides IML messages and associated troubleshooting information to resolve critical and cautionary IML events.

To access the troubleshooting resources, see the Hewlett Packard Enterprise Information Library (**http://www.hpe.com/info/gen10-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 (**http://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 **http://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 (**http://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 SMB Setup. When you launch F10 mode from the POST screen, you are prompted to select whether you want to enter the Intelligent Provisioning or HPE SMB Setup 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 SMB Setup.
- From the iLO web interface using **Always On**. **Always On** allows you to access Intelligent Provisioning without rebooting your server.

Intelligent Provisioning operation

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 (**http://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: **http://www.hpe.com/info/infosight-servers-docs**.

USB support

Hewlett Packard Enterprise Gen10 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

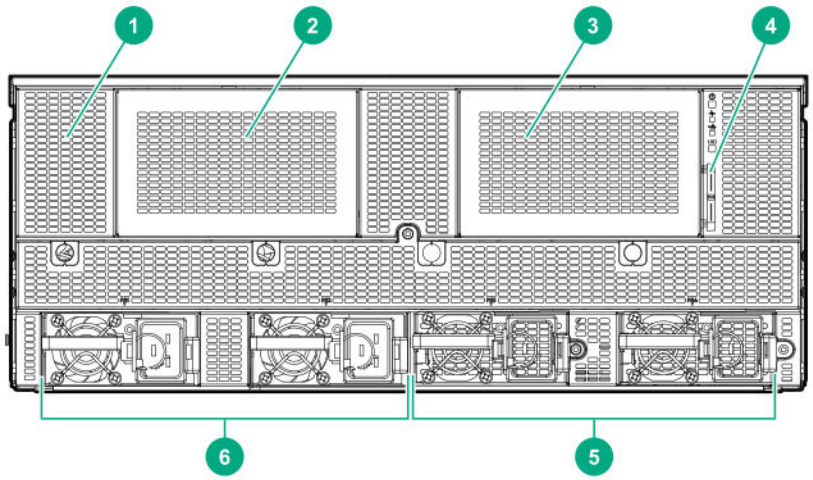
  This method requires an administrator to download the HPE SSA executables and install them. You can run HPE SSA online after launching the host operating system.

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

Component identification

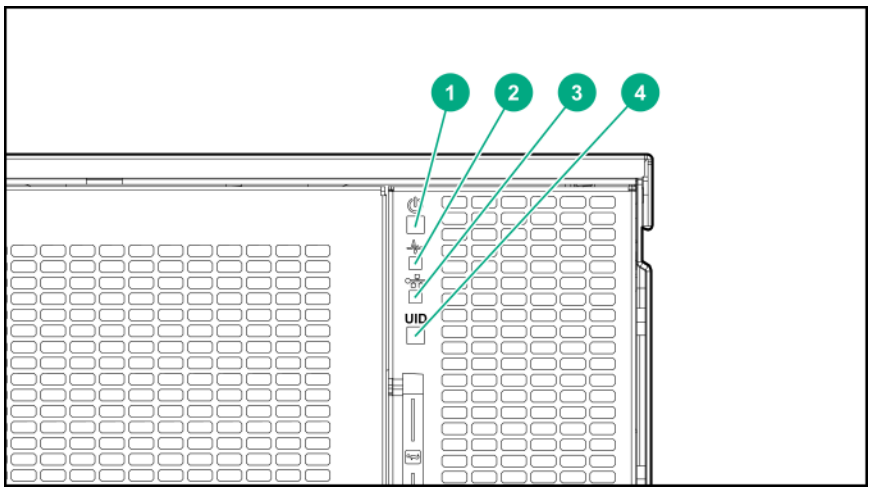
This chapter describes the external and internal server features and components.

Front panel components



Item	Description
1	HPE Smart Storage battery (located behind the chassis grill)
2	Drive bay 1 (for optional 8SFF drive cage)
3	Drive bay 2 (for optional 8SFF drive cage)
4	Serial label pull tab
5	Power supply bays 3 and 4 (for optional HPE 2200 W Platinum Hot Plug Power Supplies)
6	HPE 2200W Platinum Hot Plug Power Supplies 1 and 2 (standard)

Front panel LEDs and buttons



Item	Description	Status
1	Power on/Standby button and system power LED	Solid green = System on Flashing green = Performing power on sequence Solid amber = System in standby Off = No power present
2	Health LED	Solid green = Normal Flashing amber= System degraded Flashing red = System critical
3	NIC status LED	Solid green = Link to network Flashing green = Network active Flashing red = System critical
4	UID button LED	Solid blue = Activated Flashing blue = Remote management or firmware upgrade in progress Off = Deactivated

UID button functionality

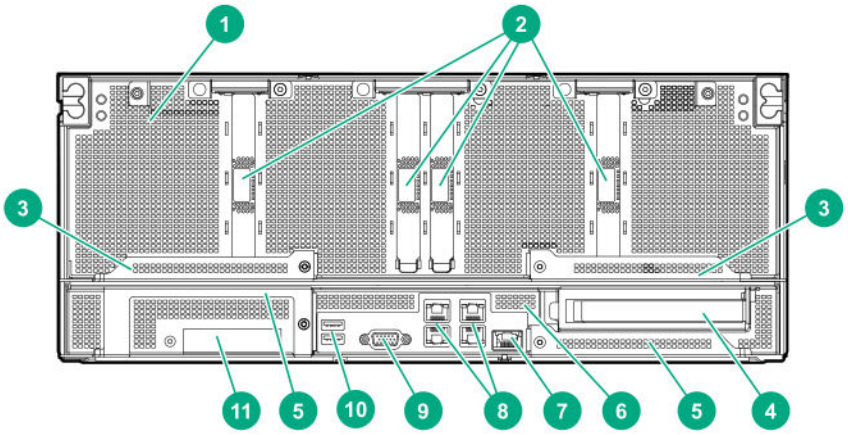
The UID button can be used to display the Server Health Summary when the server will not power on. For more information, see the latest *HPE iLO 5 User Guide* on the **Hewlett Packard Enterprise website**.

Front panel LED power fault codes

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

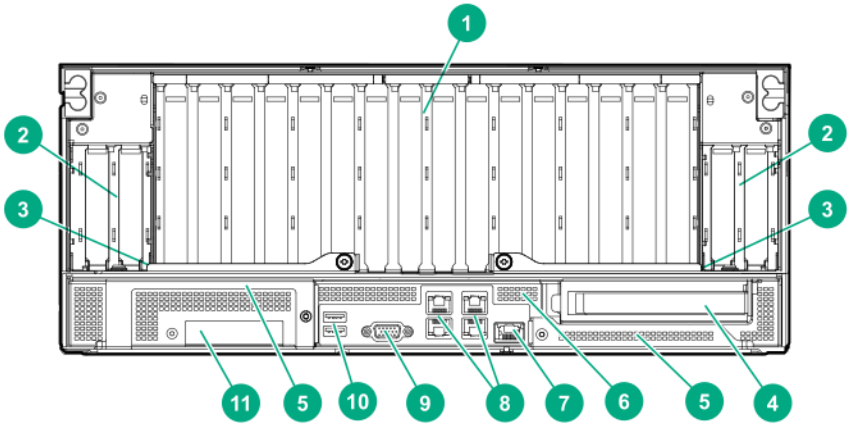
Subsystem	LED behavior
System board	1 flash
Processor	2 flashes
Memory	3 flashes
Riser board PCIe slots	4 flashes
FlexibleLOM	5 flashes
Removable HPE Smart Array SR Gen10 controller	6 flashes
System board PCIe slots	7 flashes
Power backplane or storage backplane	8 flashes
Power supply	9 flashes

Rear panel components (SXM2 GPU module)



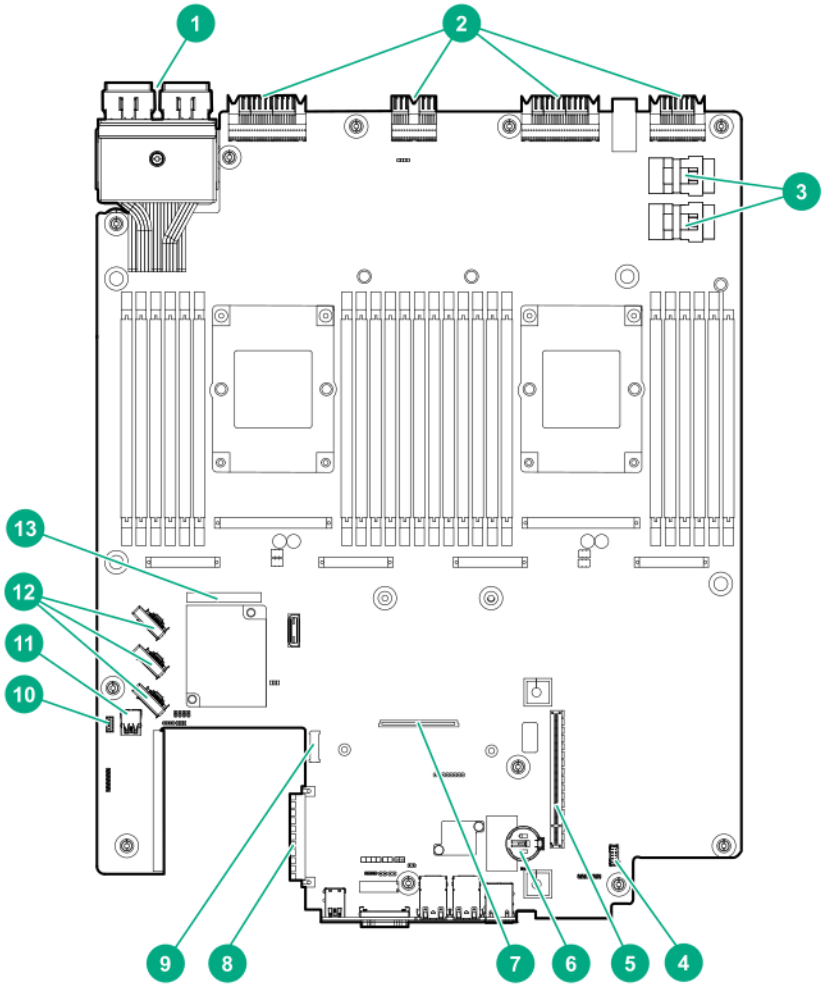
Item	Description
1	GPU module
2	PCIe slots 9-12
3	GPU module latches
4	Full Height Half Length PCIe Gen3 slot (system board module)
5	System board module latches
6	System board module
7	Dedicated iLO management port
8	Embedded 4 x 1GbE Network Adapter
9	Video connector
10	USB 3.0 ports
11	FlexibleLOM slot

Rear panel components (PCIe GPU module)



Item	Description
1	GPU slots 1-8
2	Low-profile PCIe Gen3 slots 9-12 (GPU module)
3	GPU module latches
4	Full Height Half Length PCIe Gen3 slot (system board module)
5	System board module latches
6	System board module
7	Dedicated iLO management port
8	Embedded 4 x 1GbE Network Adapter
9	Video connector
10	USB 3.0 ports
11	FlexibleLOM slot

System board components



Item	Description
1	Storage connector
2	Midplane connectors
3	NVMe drive ports
4	Internal communication port
5	PCIe riser cage connector
6	System battery
7	Type -a storage controller connector
8	FlexibleLOM connector
9	M.2 riser connector
10	iLO USB connector
11	Internal USB 3.0 connector

Table Continued

Item	Description
12	X4 embedded SATA ports 1-3
13	System Maintenance Switch

System maintenance switch descriptions

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

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

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

3 When the system maintenance switch position 6 is set to the On position and Secure Boot is enabled, some configurations cannot be restored. For more information, see **Secure Boot**.

NMI functionality

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

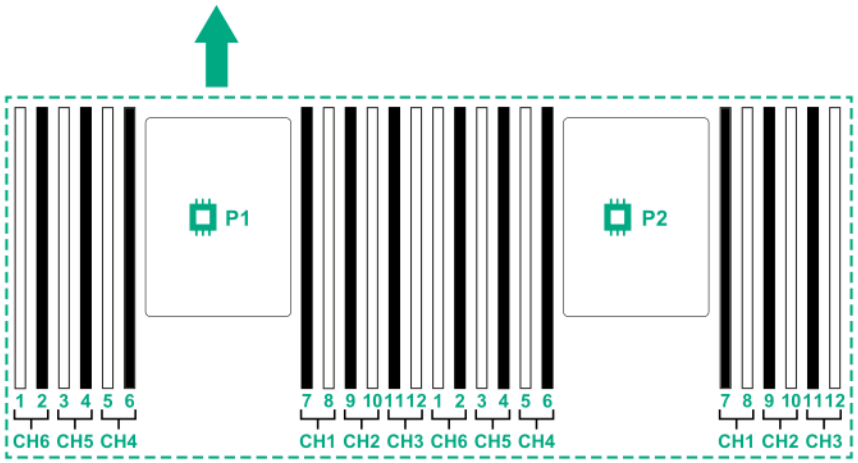
An analysis of the crash dump log is an essential part of diagnosing reliability problems, such as hanging operating systems, device drivers, and applications. Many crashes freeze a system, and the only available action for administrators is to cycle the system power. Resetting the system erases any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

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

DIMM slot locations

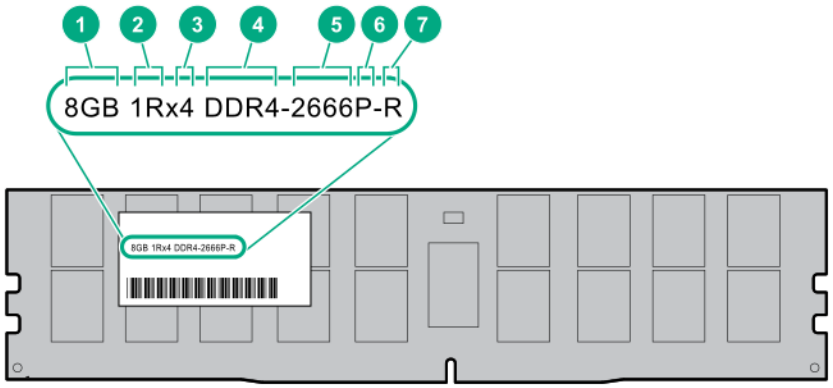
DIMM slots are numbered sequentially (1 through 12) for each processor. The supported AMP modes use the letter assignments for population guidelines.

The arrow indicates the front of the server.



DIMM label identification

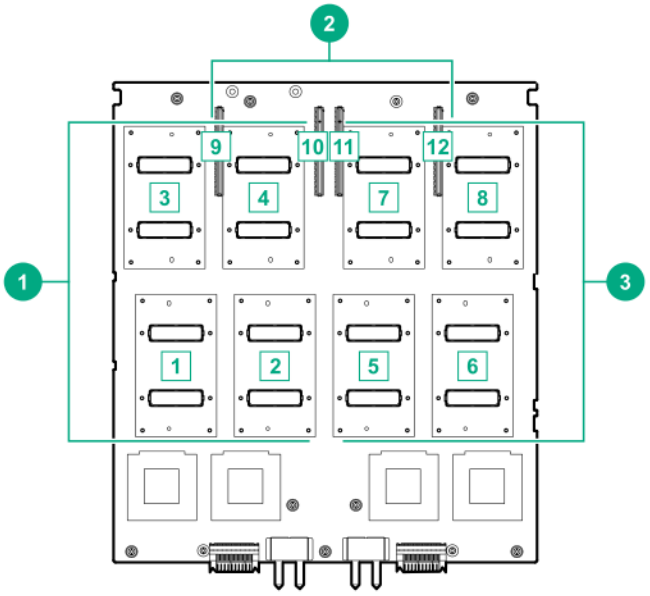
To determine DIMM characteristics, see the label attached to the DIMM. The information in this section helps you to use the label to locate specific information about the DIMM.



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
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)

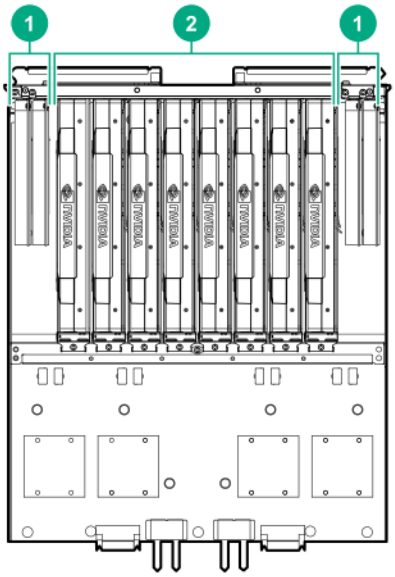
For more information about product features, specifications, options, configurations, and compatibility, see the HPE DDR4 SmartMemory QuickSpecs on the Hewlett Packard Enterprise website (**http://www.hpe.com/support/DDR4SmartMemoryQS**).

SXM2 GPU module components



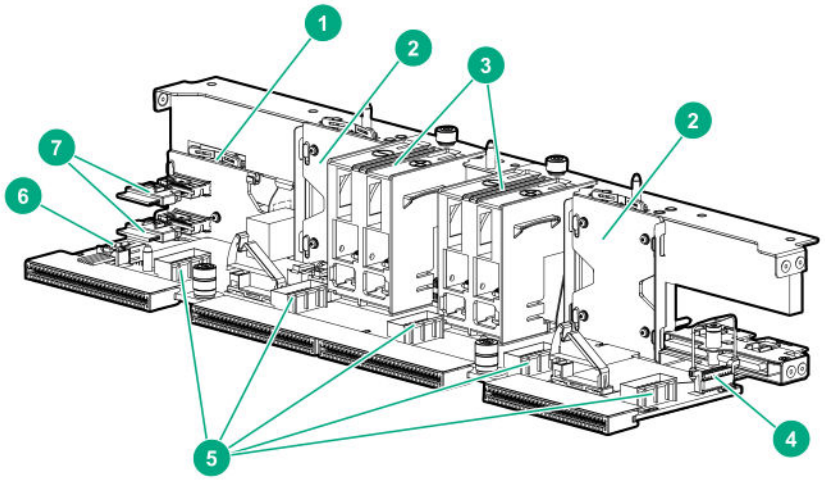
Item	Description
1	SXM2 GPU slots 1-4
2	PCIe slots 9-12
3	SXM2 GPU slots 5-8

PCIe GPU module components



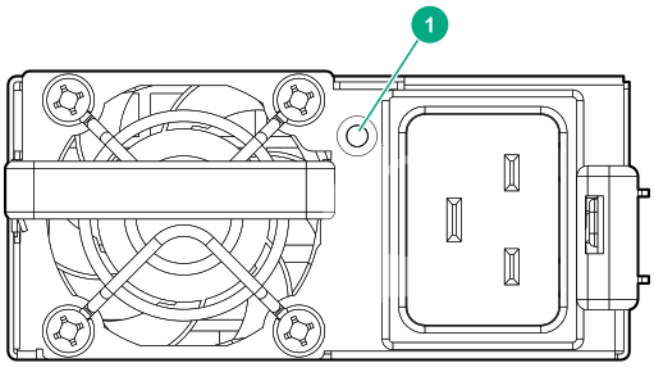
Item	Description
1	Low-profile PCIe Gen3 slots 9-12
2	PCIe GPU slots 1-8

Power distribution board and bus bar components



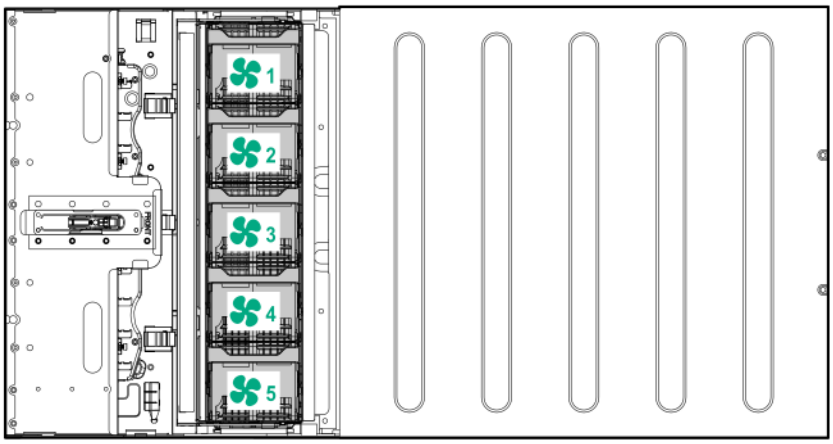
Item	Description
1	NVMe midplane
2	Processor/GPU midplane
3	Power busbars to GPU module
4	Front panel LED connector
5	Fan connectors 1-5
6	Energy pack connector
7	NVMe port cable connectors

Power supply LED



Status	Description
Solid green	Power supply is on and is operating normally.
Flashing green (0.5 Hz)	12 V standby power present (Power supply off)
Flashing green (2 Hz)	Power supply is in Smart redundant state or offline mode.
Solid amber	12 V fault caused a shutdown; power supply failed (overvoltage/undervoltage, overtemperature, overcurrent, short-circuit), fan failed, or input overvoltage protection
Off	No power present or standby power failed (overvoltage/ undervoltage, overtemperature, overcurrent, short-circuit, fan lock)

Fan module numbering



Supported drives

When one drive cage is installed, the following drive configurations are supported:

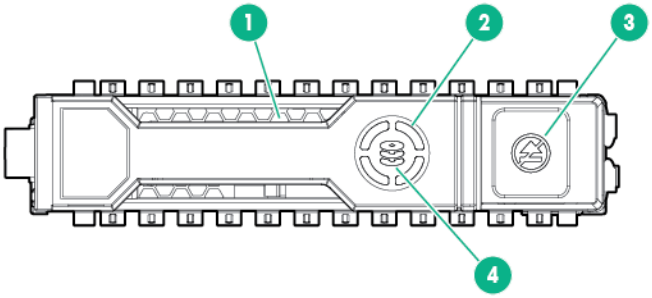
- 2 NVMe + 6 SATA
- 2 NVMe + 6 SAS
- 8 SAS/SATA when one of the following controllers is installed
  - P408i-p
  - P408i-a
  - P816i-a
- Embedded SATA: 6 SATA drives

When two drive cages are installed, the following drive configurations are supported:

- 4 NVMe (2/2) + 12 SATA (6/4)
- 4 NVMe (2/2) + 12 SAS (6/6)

- 16 SATA (p816i-a)
- 16 SAS/SATA (p408i-a + p408i-p)
- Embedded SATA: 12 SATA (6/6)

Hot-plug 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.

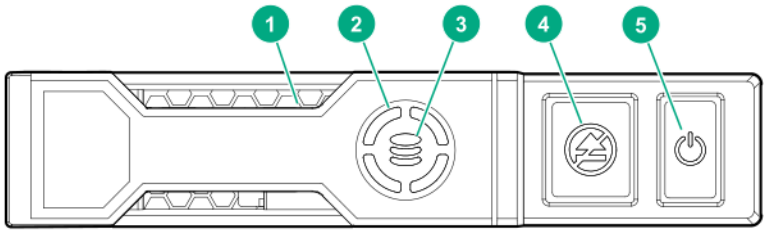
Table Continued

Item	LED	Status	Definition
		Solid amber	The drive has failed.
		Off	The drive is not configured by a RAID controller or a spare drive.

NVMe SSD LED definitions

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

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



Item	LED	Status	Definition
1	Locate	Solid blue	The drive is being identified by a host application.
		Flashing blue	The drive carrier firmware is being updated or requires an update.
2	Activity ring	Rotating green	Drive activity
		Off	No drive activity
3	Drive status	Solid green	The drive is a member of one or more logical drives.
		Flashing green	The drive is doing one of the following: • Rebuilding • Performing a RAID migration • Performing a stripe size migration • Performing a capacity expansion • Performing a logical drive extension • Erasing
		Flashing amber/ green	The drive is a member of one or more logical drives and predicts the drive will fail.

Table Continued

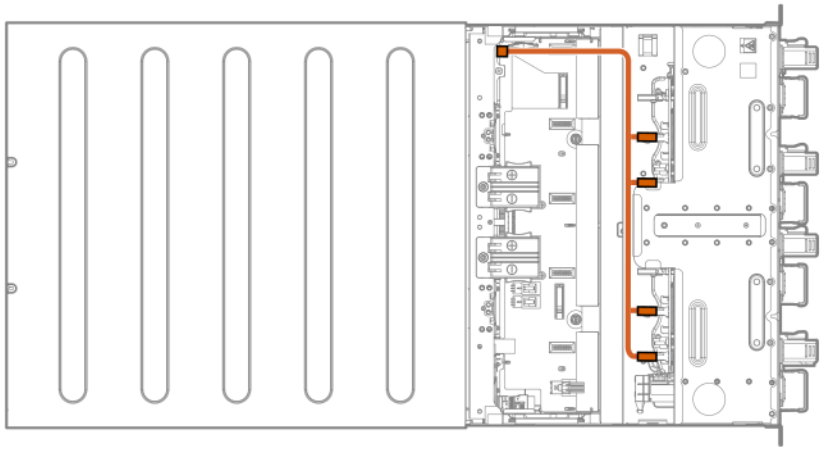
Item	LED	Status	Definition
		Flashing amber	The drive is not configured and predicts the drive will fail.
		Solid amber	The drive has failed.
		Off	The drive is not configured by a RAID controller.
4	Do not remove	Solid white	Do not remove the drive. The drive must be ejected from the PCIe bus prior to removal.
		Flashing white	The drive ejection request is pending.
		Off	The drive has been ejected.
5	Power	Solid green	Do not remove the drive. The drive must be ejected from the PCIe bus prior to removal.
		Flashing green	The drive ejection request is pending.
		Off	The drive has been ejected.

Cabling

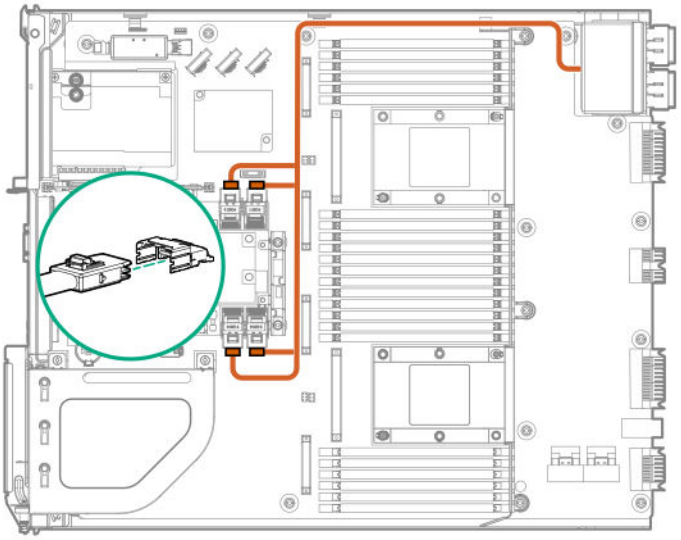
SAS/SATA cabling

CAUTION: Route the SAS/SATA cables on the drive bay shelf. If they are routed on the slot underneath the drive bay shelf where the AC power cables are routed, a power surge may occur.

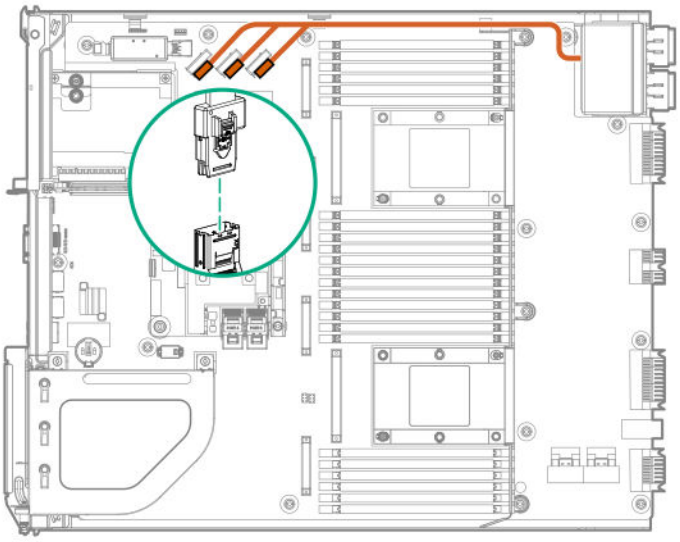
SAS/SATA cabling to the drives



SAS cabling to the system board



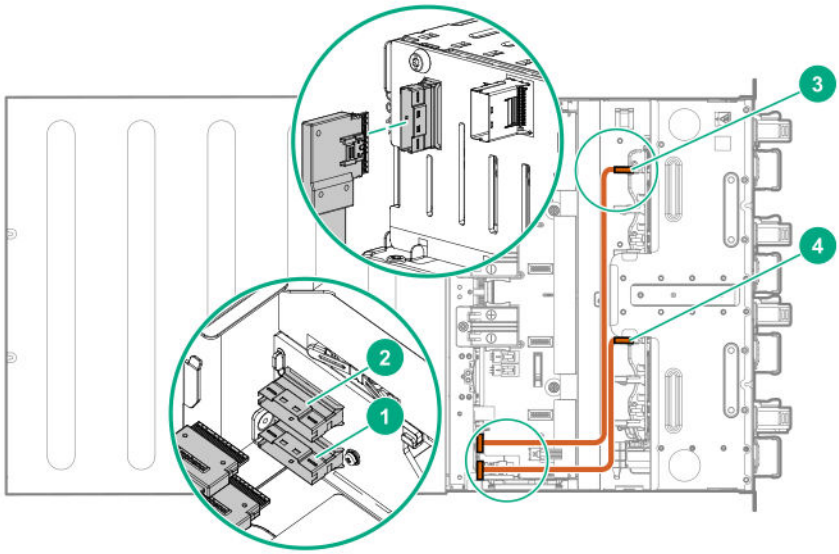
SATA cabling to the system board



NVMe cabling

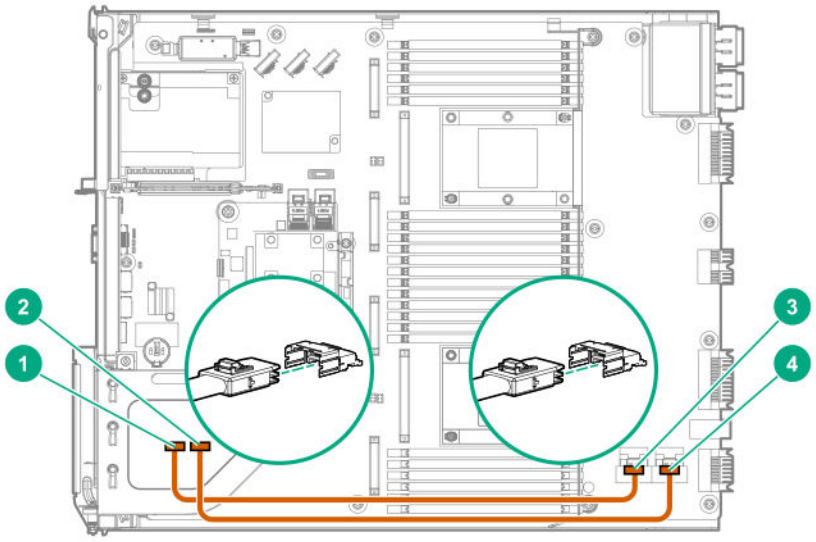
CAUTION: Route the NVMe cables on the drive bay shelf. If they are routed on the slot underneath the drive bay shelf where the AC power cables are routed, a power surge may occur.

NVMe cabling to the midplane



Item	Description
1	NVMe midplane connector J3 - Connects to drive cage 1
2	NVMe midplane connector J4 - Connects to drive cage 2
3	Drive cage 1
4	Drive cage 2

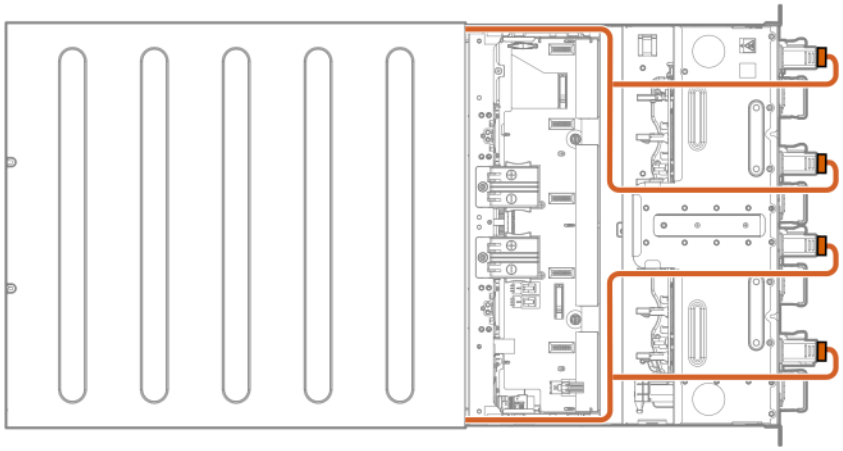
NVMe cabling to the system board



Item	Description
1	NVMe enablement board port J3
2	NVMe enablement board port J4
3	NVMe drive port J19
4	NVMe drive port J13

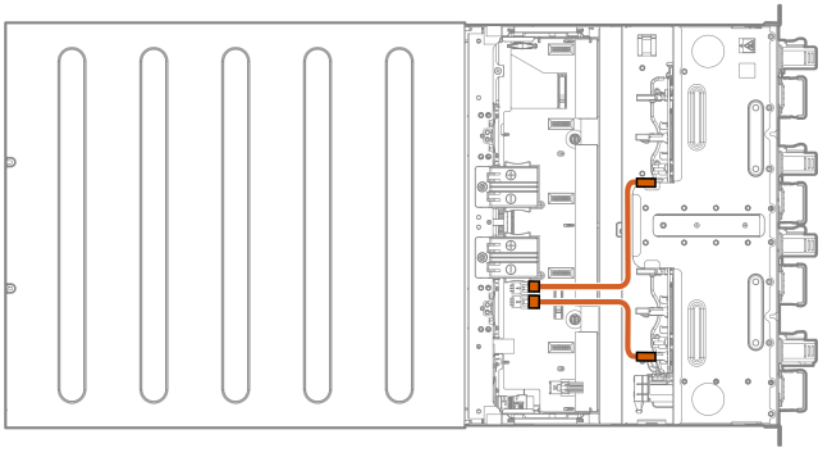
AC power cabling

CAUTION: Route the AC power cables on the slot underneath the drive bay shelf. If they are routed on the drive bay shelf, a power surge may occur.

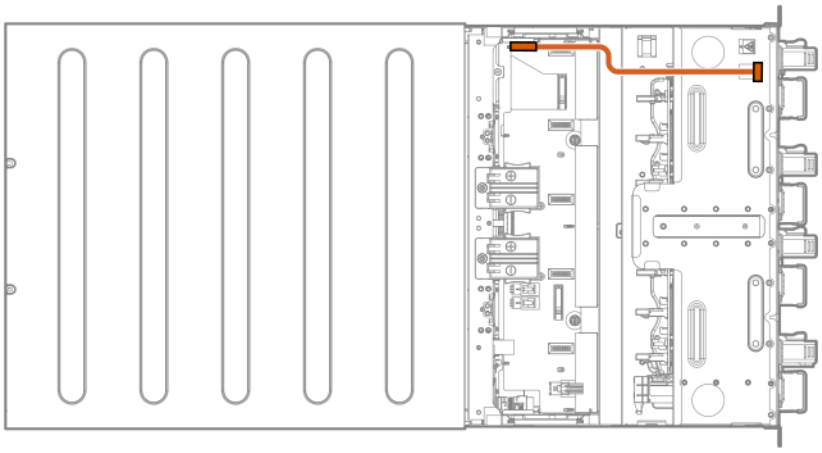


Drive power cabling

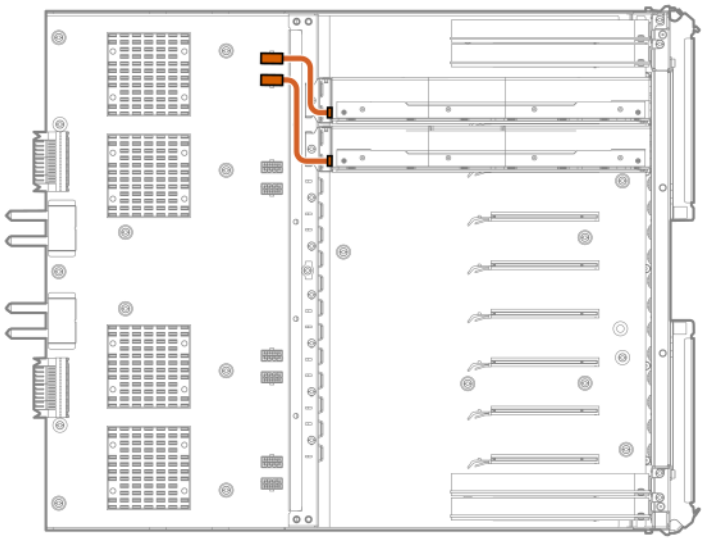
CAUTION: Route the drive power cables on the drive bay shelf. If they are routed on the slot underneath the drive bay shelf where the AC power cables are routed, a power surge may occur.



Front LED/power/UID cabling

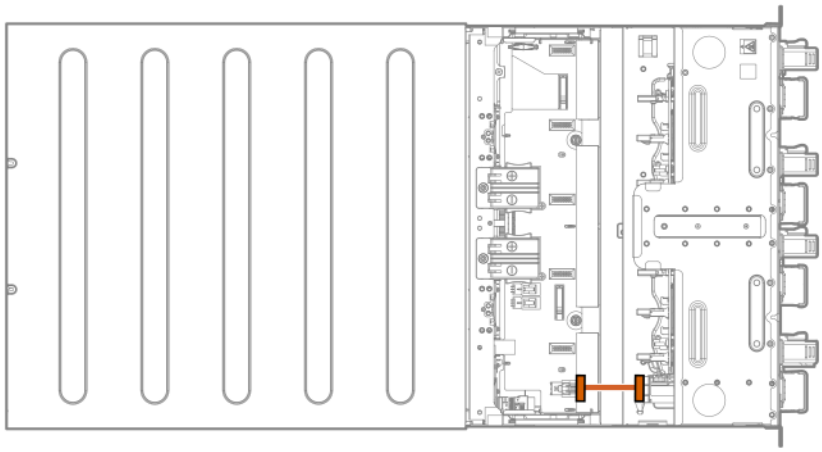


GPU module power cabling



HPE Smart Storage Battery cabling

CAUTION: Route the HPE Smart Storage Battery cable directly from the power distribution board to the battery on the drive bay shelf. Do not route the cable on the slot underneath the drive bay shelf.



Specifications

Chassis mechanical specifications

Specification	Value
Height	175.8 mm (6.92 in)
Depth	850.3 mm (33.47 in)
Width	440 mm (17.32 in)
Maximum system weight	58.97 kg (130 lbs)

Power supply specifications

For more information and detailed specifications, see the power supply datasheet on the **Artesyn website**.

Specification	Value
Input (nominal voltage range)	100 VAC to 120 VAC 200 VAC to 240 VAC 240 VDC
Power factor correction	Active
Output power	2220 W maximum continuous
Outputs	
Nominal output voltage	12 V and 12 V standby: 12.00
Voltage regulation	12 V and 12 V standby: +- 5%
Minimum operating current	12 V: 1 A 12 V standby: 0.1 A
Maximum operating current	12 V: • 183 A/high line • 100 A/low line 12 V standby: 3. 5A

Electrostatic discharge

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.

Grounding methods to prevent electrostatic discharge

Several methods are used for grounding. Use one or more of the following methods when handling or installing electrostatic-sensitive parts:

- Use a wrist strap connected by a ground cord to a grounded workstation or computer chassis. Wrist straps are flexible straps with a minimum of 1 megohm ±10 percent resistance in the ground cords. To provide proper ground, wear the strap snug against the skin.
- Use heel straps, toe straps, or boot straps at standing workstations. Wear the straps on both feet when standing on conductive floors or dissipating floor mats.
- Use conductive field service tools.
- Use a portable field service kit with a folding static-dissipating work mat.

If you do not have any of the suggested equipment for proper grounding, have an authorized reseller install the part.

For more information on static electricity or assistance with product installation, contact the **Hewlett Packard Enterprise Support Center**.

Websites

General websites

Hewlett Packard Enterprise Information Library

www.hpe.com/info/EIL

Single Point of Connectivity Knowledge (SPOCK) Storage compatibility matrix

www.hpe.com/storage/spock

Storage white papers and analyst reports

www.hpe.com/storage/whitepapers

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

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

  Software Depot

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

- 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 or go to the CSR website:

http://www.hpe.com/support/selfrepair

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

www.hpe.com/support/ProLiantServers-Warranties

HPE Enterprise and Cloudline Servers

www.hpe.com/support/EnterpriseServers-Warranties

HPE Storage Products

www.hpe.com/support/Storage-Warranties

HPE Networking Products

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:

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:

www.hpe.com/info/reach

For Hewlett Packard Enterprise product environmental and safety information and compliance data, including RoHS and REACH, see:

www.hpe.com/info/ecodata

For Hewlett Packard Enterprise environmental information, including company programs, product recycling, and energy efficiency, see:

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.