Hewlett Packard Enterprise

HPE ProLiant XL190r Gen10 Server Maintenance and Service Guide

Abstract

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

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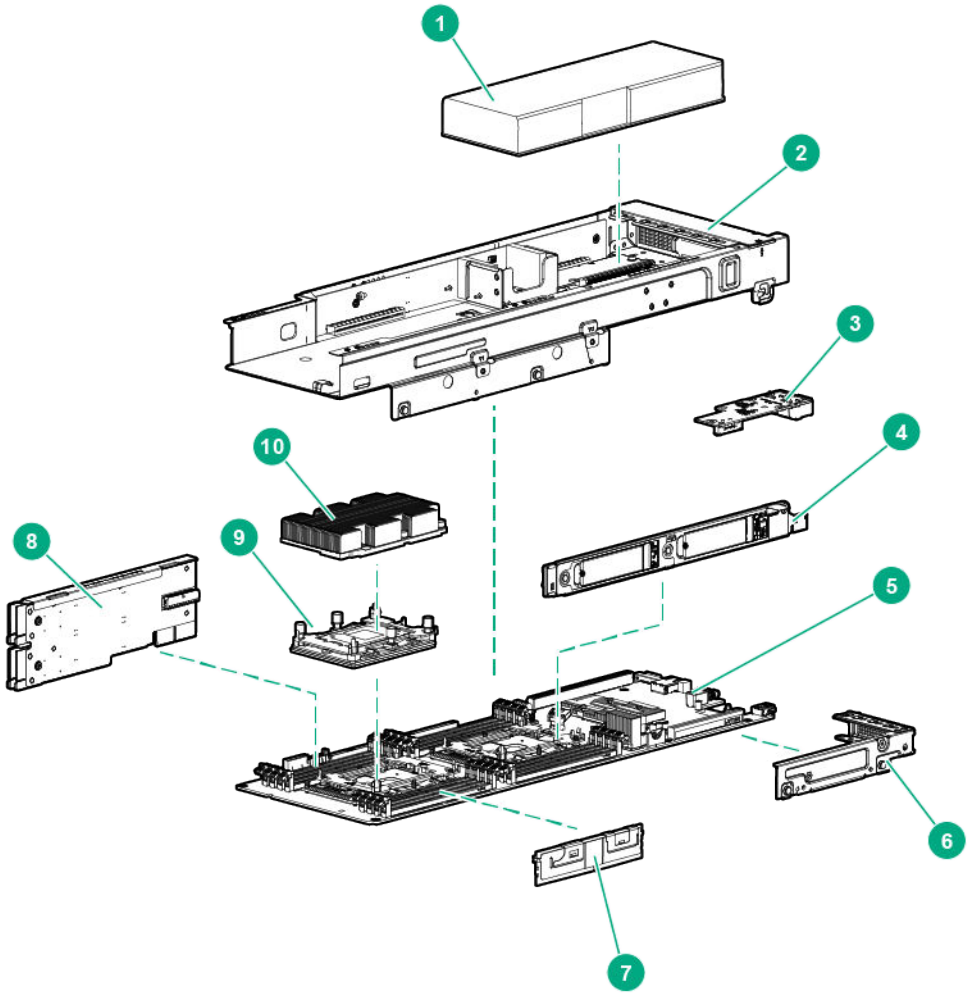
Hewlett Packard Enterprise continually improves and changes product parts. For complete and current supported parts information, see the **Hewlett Packard Enterprise PartSurfer website**.



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14	**Cable spare parts**[1]

[1] *Not shown*

Bayonet board spare parts

Customer self repair on page 89: **optional**

Description	Spare part number
2U bayonet large board	879862-001
Bayonet small board	879845-001

Secondary PCI riser cage spare parts

Customer self repair on page 89: **optional**

Description	Spare part number
PCIe extension board for slot 3	879864-001
2U riser board for processor 2	879863-001
2U FlexibleLOM riser board	879861-001

Primary PCI riser cage spare parts

Customer self repair on page 89: **optional**

Description	Spare part number
Left low-profile riser board	879846-001

Media Module spare parts

Customer self repair on page 89: **optional**

Description	Spare part number
Media Module Eth 10Gb 2p 568FLR-MMT Adptr	879847-001
Media Module Eth 1Gb 2p 368FLR-MMT Adptr	872161-001
Media Module Eth 10Gb 2p 568FLR-MMSFP+ Adptr	872162-001

Fabric processor enablement board spare parts

Customer self repair on page 89: **optional**

Description	Spare part number
Fabric processor enablement board	879850-001

M.2 SSD riser spare parts

Customer self repair on page 89: **optional**

Description	Spare part number
M.2 SSD riser	879849-001

DIMM spare parts

Customer self repair on page 89: **mandatory**

Description	Spare part number
8GB, 1Gx8, PC4-2666V-R	850879-001
16GB, 2Gx4, PC4-2666V-R	850880-001
32GB, 2Gx4, PC4-2666V-R	850881-001
64GB, 2Gx4, PC4-2666V-L	850882-001
16GB, 1Gx8, PC4-2666V-R	868846-001
8GB, 512Mx8, PC4-2666V-R	878490-001

Smart Array controller spare parts

Customer self repair on page 89: **optional**

Description	Spare part number
HPE Smart Array E208i-p Controller	836266-001
HPE Smart Array E208e-p Controller	836267-001
HPE Smart Array P408i-p Controller	836269-001
HPE Smart Array P408e-p Controller	836270-001

GPU accelerator spare parts

Customer self repair on page 89: **optional**

Description	Spare part number
NVIDIA Tesla M10 Quad GPU Module	870046-001
NVIDIA Tesla P40 24 GB GPU Module	872323-001
NVIDIA Tesla V100 16 GB GPU Module	876908-001
NVIDIA Tesla P100 16 GB GPU Module	868585-001
NVIDIA Tesla P100 12 GB GPU Module	877646-001

Battery spare parts

Customer self repair on page 89: **mandatory**

Description	Spare part number
System battery	319603-001

Heatsink spare parts

Customer self repair on page 89: **no**

Description	Spare part number
Heatsink for processor 1 (42 fins)	879851-001
Heatsink for processor 2 (16 fins)	879852-001

Processor spare parts

Customer self repair on page 89: **no**

Description	Spare part number
1.7 GHz Intel Xeon-B 3106 processor (85W)	875710-001
1.8 GHz Intel Xeon-S 4108 processor (85W)	875712-001
2.0 GHz Intel Xeon-S 4109T processor (70W)	880185-001
2.1 GHz Intel Xeon-S 4110 processor (85W)	875711-001
2.2 GHz Intel Xeon-S 4114 processor (85W)	875713-001
2.1 GHz Intel Xeon-S 4116 processor (85W)	875716-001
2.4 GHz Intel Xeon-G 5115 processor (85W)	878082-001
2.3 GHz Intel Xeon-G 5118 processor (105W)	875717-001
2.2 GHz Intel Xeon-G 5120 processor (105W)	875718-001
3.6 GHz Intel Xeon-G 5122 processor (85W)	875719-001
2.6 GHz Intel Xeon-G 6126 processor (125W)	875720-001
2.6 GHz Intel Xeon-G 6126F processor (135W) (for processor 1 only)	878097-001
3.4 GHz Intel Xeon-G 6128 processor (115W)	875721-001
2.1 GHz Intel Xeon-G 6130 processor (125W)	874736-001
2.1 GHz Intel Xeon-G 6130F processor (135W) (for processor 1 only)	878096-001
2.6 GHz Intel Xeon-G 6132 processor (140W)	875722-001
3.2 GHz Intel Xeon-G 6134 processor (130W)	875723-001
3.0 GHz Intel Xeon-G 6136 processor (150W)	875724-001
2.0 GHz Intel Xeon-G 6138 processor (125W)	874735-001
2.0 GHz Intel Xeon-G 6138F processor (135W) (for processor 1 only)	878095-001
2.3 GHz Intel Xeon-G 6140 processor (140W)	874734-001
2.6 GHz Intel Xeon-G 6142 processor (150W)	874733-001
2.4 GHz Intel Xeon-G 6148 processor (150W)	874732-001

Table Continued

Description	Spare part number
2.1 GHz Intel Xeon-G 6152 processor (140W)	874730-001
2.0 GHz Intel Xeon-P 8153 processor (125W)	875728-001
3.6 GHz Intel Xeon-P 8156 processor (105W)	875732-001
3.0 GHz Intel Xeon-P 8158 processor (150W)	875733-001
2.1 GHz Intel Xeon-P 8160 processor (150W)	874729-001
2.0 GHz Intel Xeon-P 8164 processor (150W)	875729-001

System board spare parts

Customer self repair on page 89: **optional**

Description	Spare part number
System board	879847-001

HPE Trusted Platform Module 2.0 spare parts

Customer self repair on page 89: **no**

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

Cable spare parts

Customer self repair on page 89: **optional**

Description	Spare part number
2U riser board for processor 2 short NVMe cable	879833-001
Secondary PCI riser NVMe cable kit for servers installed in Apollo r2600 Gen10 Chassis and Apollo r2800 Gen10 Chassis with 16 NVMe Includes: • 1U FlexibleLOM riser board NVMe cable • 1U right riser board for processor 2 short NVMe cable • 2U FlexibleLOM riser board short NVMe cable	879838-001
r2600/r2800 Gen10 Chassis power cable and server NVMe cable kit Includes: • r2600/r2800 Gen10 Chassis power cable for server 1 and server 2 • 1U right riser board for processor 2 long NVMe cable • 2U FlexibleLOM riser board long NVMe cable	879840-001

Table Continued

Description	Spare part number
Fabric enablement board cable kit Includes: • Fabric processor enablement board to processor 1 cable • Fabric processor enablement board to system board cable	P01290-001
GPU accelerator power cable kit Includes: • 8-pin power cable for NVIDIA Tesla M10 Quad GPUs • 8-pin power cable for NVIDIA Tesla P40/P100/V100 GPUs	879859-001
2U server storage cable kit Includes: • 2U server S100i SATA cable assembly • Slot 1 2U server E208i-p/P408i-p Mini-SAS cable • Slot 2 2U server E208i-p/P408i-p Mini-SAS cable	879860-001

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

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

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

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

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

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

Required tools

The following tools might be required to perform some procedures:

- T-10/T-15/T-30 Torx screwdriver
- HPE Insight Diagnostics software

Safety considerations

Before performing service procedures, review all the safety information.

Electrostatic discharge

Be aware of the precautions you must follow when setting up the system or handling components. A discharge of static electricity from a finger or other conductor may damage system boards or other static-sensitive devices. This type of damage may reduce the life expectancy of the system or component.

To prevent electrostatic damage:

- Avoid hand contact by transporting and storing products in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.
- Place parts on a grounded surface before removing them from their containers.
- Avoid touching pins, leads, or circuitry.
- Always be properly grounded when touching a static-sensitive component or assembly. Use one or more of the following methods when handling or installing electrostatic-sensitive parts:
  - Use a wrist strap connected by a ground cord to a grounded workstation or computer chassis. Wrist straps are flexible straps with a minimum of 1 megohm ±10 percent resistance in the ground cords. To provide proper ground, wear the strap snug against the skin.
  - Use heel straps, toe straps, or boot straps at standing workstations. Wear the straps on both feet when standing on conductive floors or dissipating floor mats.
  - Use conductive field service tools.
  - Use a portable field service kit with a folding static-dissipating work mat.

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

For more information on static electricity or assistance with product installation, contact an authorized reseller.

Server warnings and cautions

WARNING:

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

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

WARNING:

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

WARNING:

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

CAUTION:

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

CAUTION:

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

Rack warnings

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

- The leveling jacks are extended to the floor.
- The full weight of the rack rests on the leveling jacks.
- The stabilizing feet are attached to the rack if it is a single-rack installation.
- The racks are coupled together in multiple-rack installations.
- Only one component is extended at a time. A rack may become unstable if more than one component is extended for any reason.

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

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

WARNING:

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

WARNING:

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

Preparation procedures

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

- **Power down the server**.
- **Remove the server tray blank**.
- **Remove the server from the chassis**.
- **Remove the bayonet board**.
- **Remove the secondary PCI riser cage**.
- **Remove the secondary PCI riser support brackets**.
- **Remove the primary PCI riser cage**.
- **Remove the primary PCI riser blank**.

Power down the server

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

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

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

- Press and release the Power On/Standby button.

  This method initiates a controlled shutdown of applications and the OS before the server enters standby mode.
- Press and hold the Power On/Standby button for more than 4 seconds to force the server to enter standby mode.

  This method forces the server to enter standby mode without properly exiting applications and the OS. If an application stops responding, you can use this method to force a shutdown.
- Use a virtual power button selection through iLO.

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

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

Removing the server from the chassis

CAUTION:

Before powering down the server, perform a backup of critical server data and programs. Removing the server while the Do not remove LED is on may result in data loss or corruption. The server can be safely removed from the chassis only after the Do not remove LED is off.

CAUTION:

To avoid damage to the server, always support the bottom of the server when removing it from the chassis.

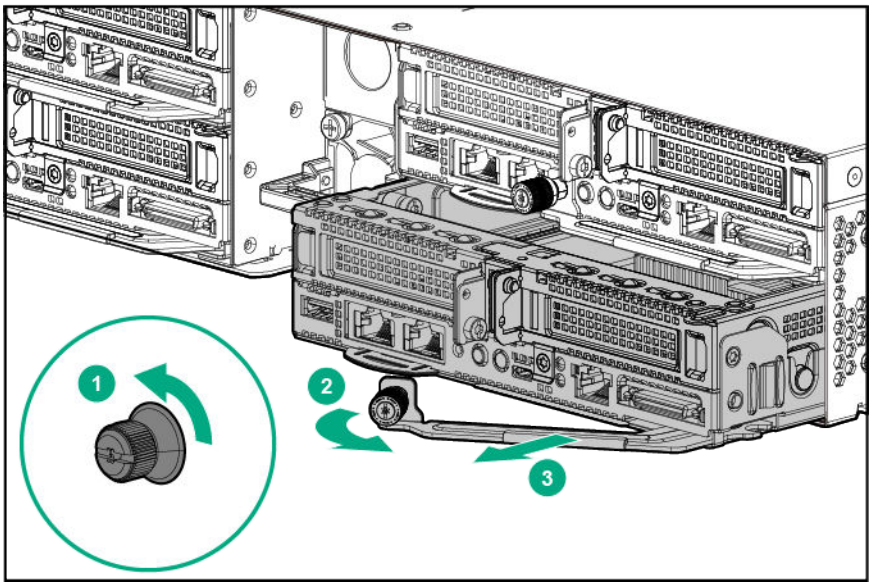
CAUTION:

To ensure proper thermal cooling, all server tray slots must be populated with servers or server tray blanks.

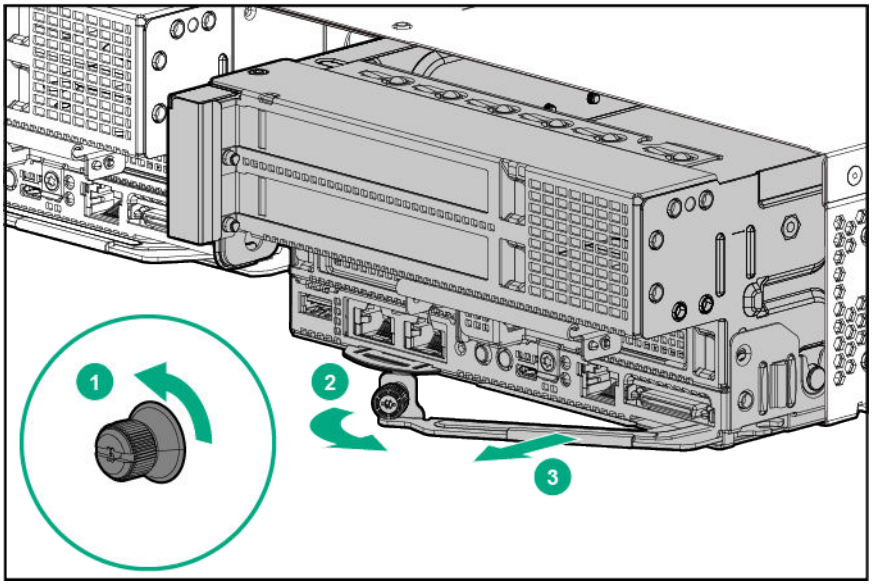
Procedure

1. Back up all server data.
2. **Power down the server**.
3. Disconnect all peripheral cables from the server.
4. Remove the server from the chassis.
   a. Loosen the thumbscrew.
   b. Open the locking lever.
   c. Slide out the server.

1U server



2U server



CAUTION:

To avoid damage to the device, do not use the removal handle to carry the server.

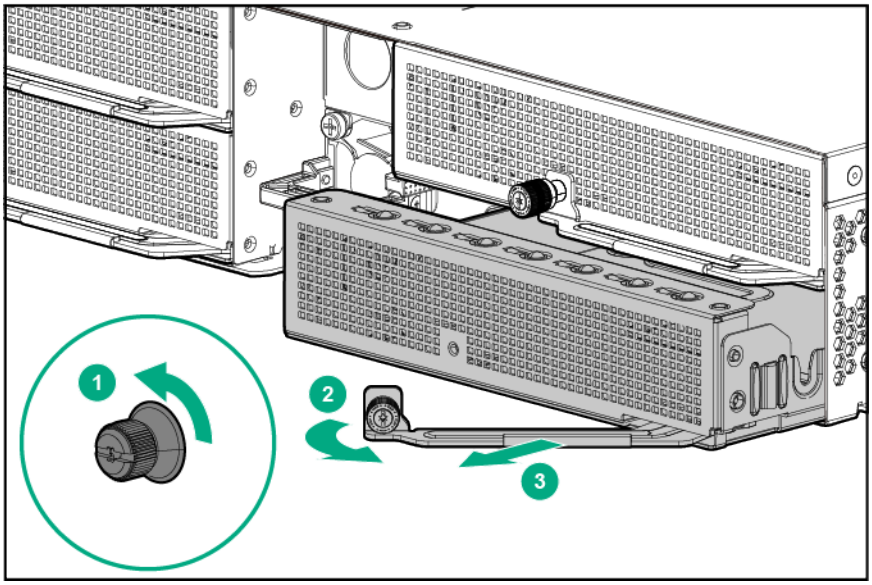
Removing the server tray blank

CAUTION:

To ensure proper thermal cooling, all server tray slots must be populated with servers or server tray blanks.

Procedure

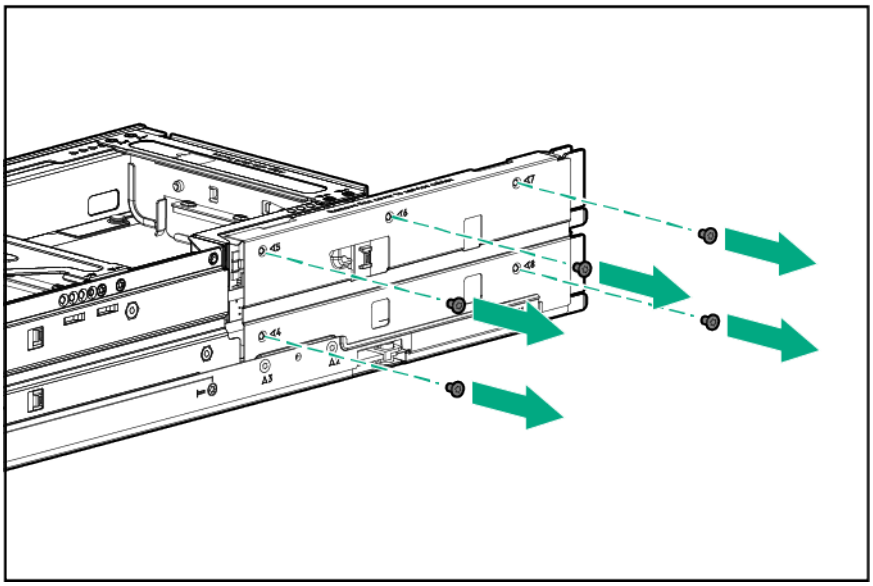
Remove the server tray blank.



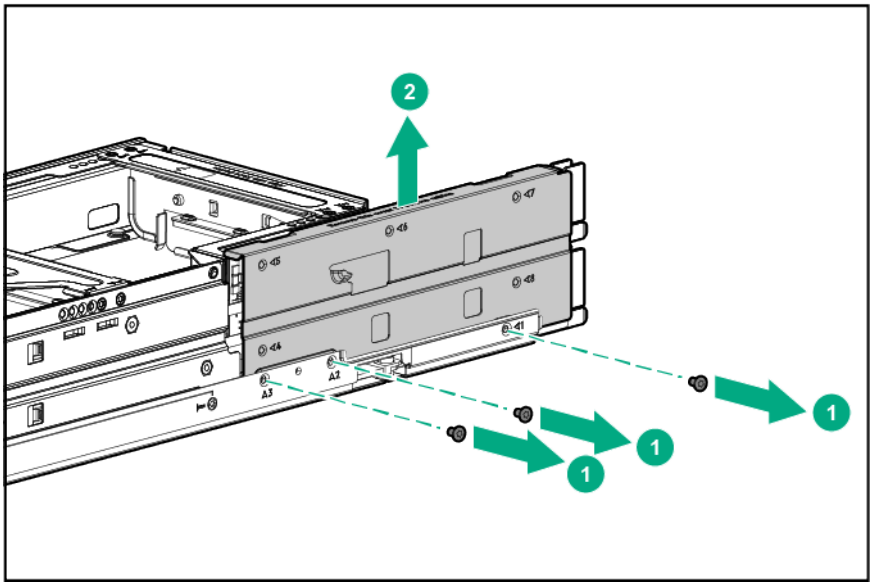
Removing the bayonet board

Procedure

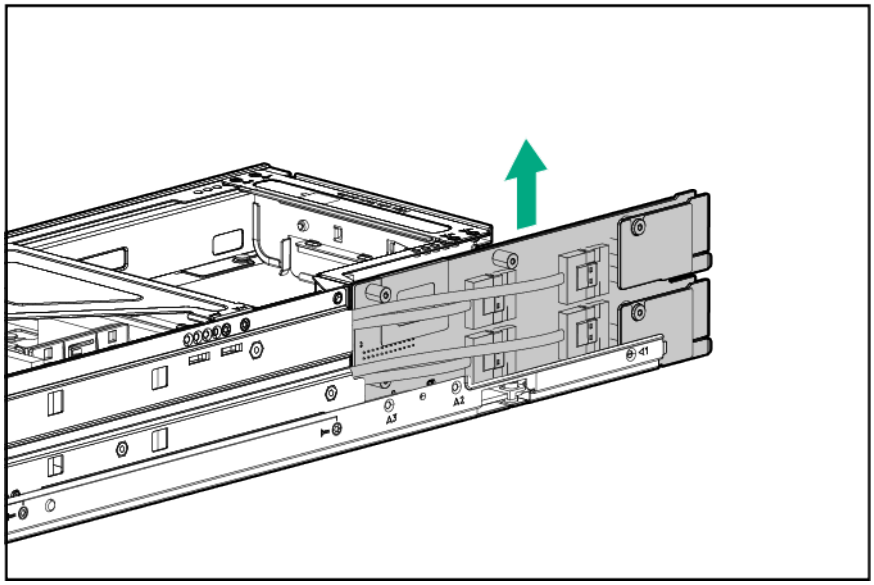
1. Back up all server data.
2. **Power down the server**.
3. **Remove the server from the chassis**.
4. Remove the bayonet board.
   a. Remove the top five screws from the cover.



   b. Remove the bottom three screws and lift the cover.



   c. Gently lift up the bayonet board and disconnect the cables.



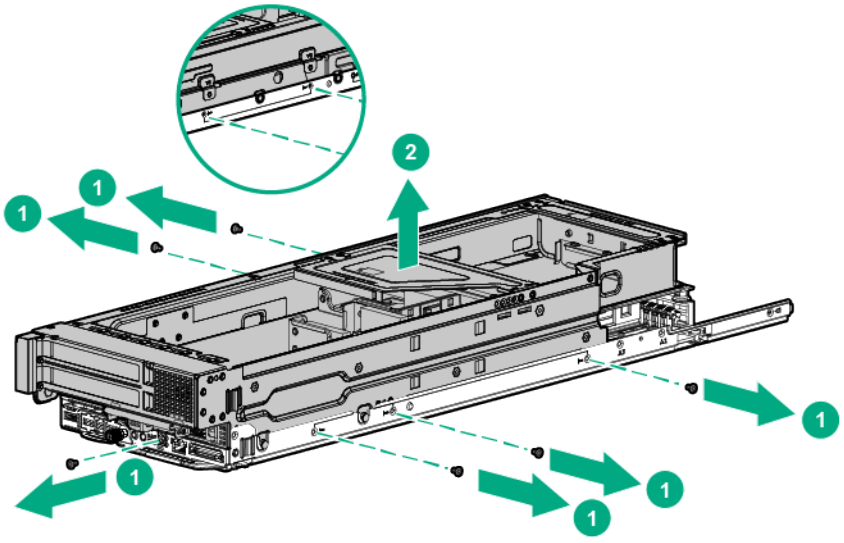
Removing the secondary PCI riser cage

CAUTION:

To prevent improper cooling and thermal damage, do not operate the server unless either riser blanks or riser cages are installed.

Procedure

1. Back up all server data.
2. **Power down the server**.
3. **Remove the server from the chassis**.
4. **Remove the bayonet board**.
5. Remove the secondary PCI riser cage.



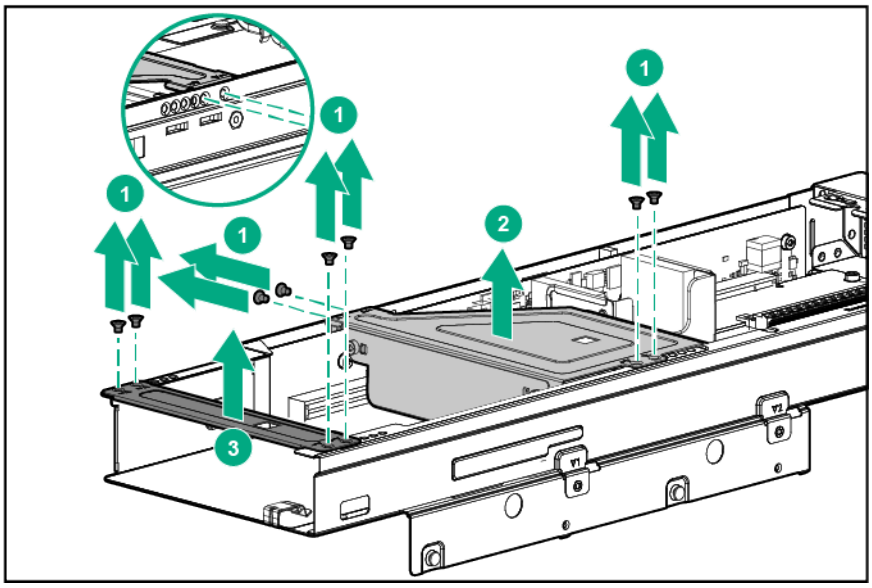
Removing the secondary PCI riser support brackets

CAUTION:

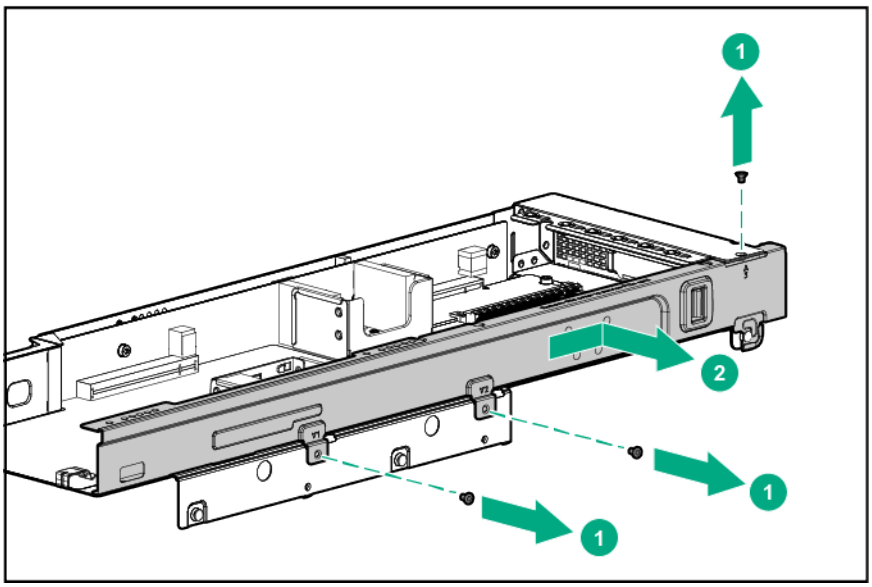
To prevent improper cooling and thermal damage, do not operate the server unless the correct thermal support brackets are installed. For more information, see **Identifying thermal support brackets for slot 3 and slot 4**.

Procedure

1. Back up all server data.
2. **Power down the server**.
3. **Remove the server from the chassis**.
4. Remove the center and rear brackets.



5. Remove the side bracket.



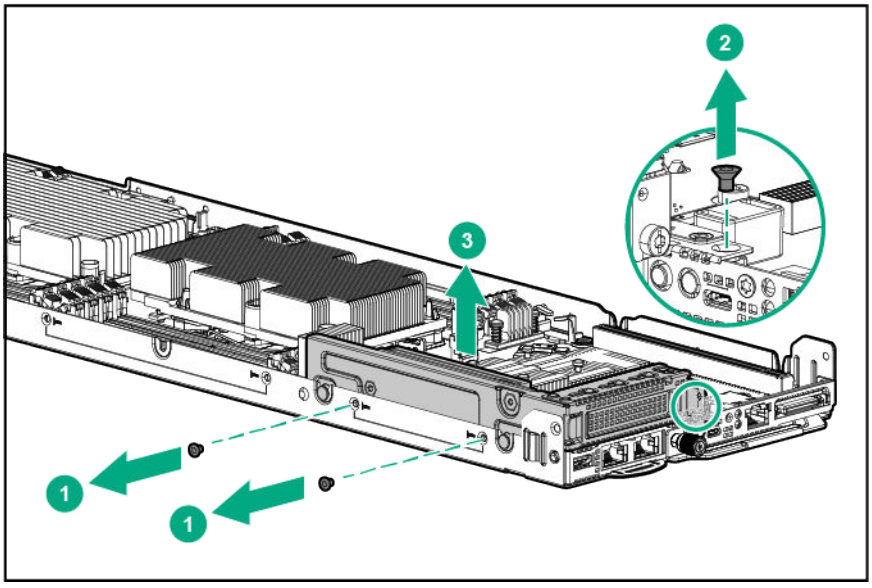
Removing the primary PCI riser cage

CAUTION:

To prevent improper cooling and thermal damage, do not operate the server unless either riser blanks or riser cages are installed.

Procedure

1. Back up all server data.
2. **Power down the server**.
3. **Remove the server from the chassis**.
4. **Remove the bayonet board**.
5. **Remove the secondary PCI riser cage**.
6. Remove the primary PCI riser cage.



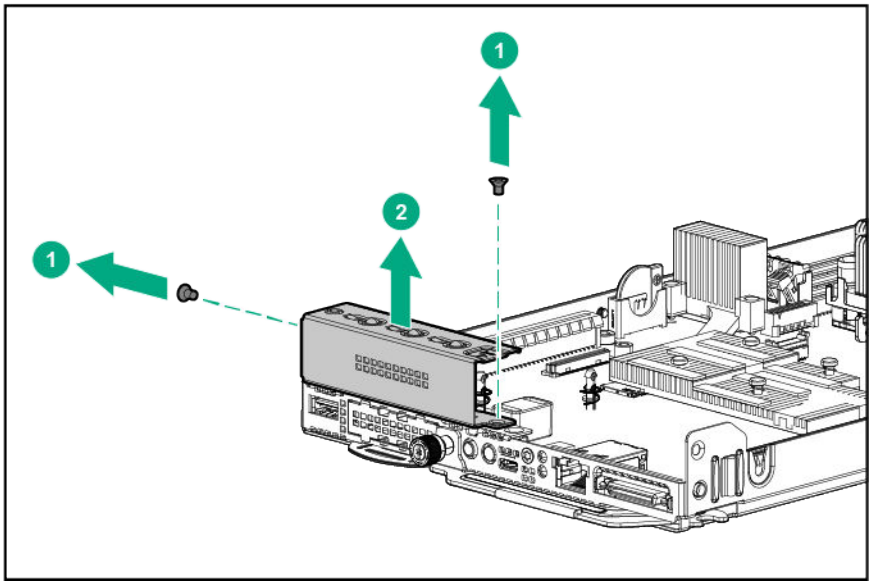
Removing the primary PCI riser blank

CAUTION:

To prevent improper cooling and thermal damage, do not operate the server unless either riser blanks or riser cages are installed.

Procedure

1. Back up all server data.
2. **Power down the server**.
3. **Remove the server from the chassis**.
4. **Remove the bayonet board**.
5. **Remove the secondary PCI riser cage**.
6. Remove the primary PCI riser blank.



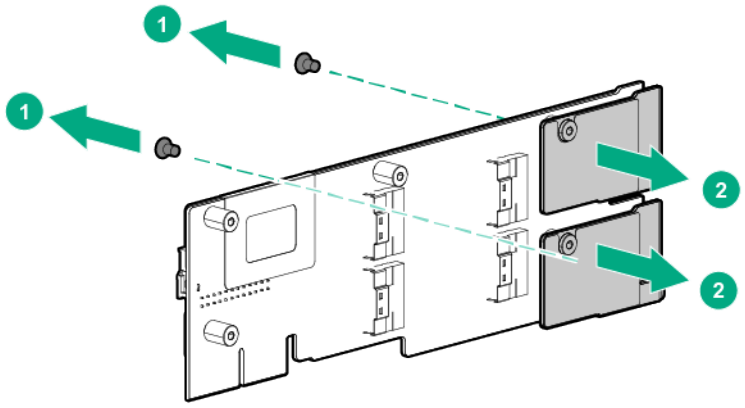
Removing and replacing the bayonet board

CAUTION:

Before replacing the component due to a perceived hardware error, make sure first that the component is firmly seated in the slot. Do not bend or flex circuit boards when re-seating components.

Procedure

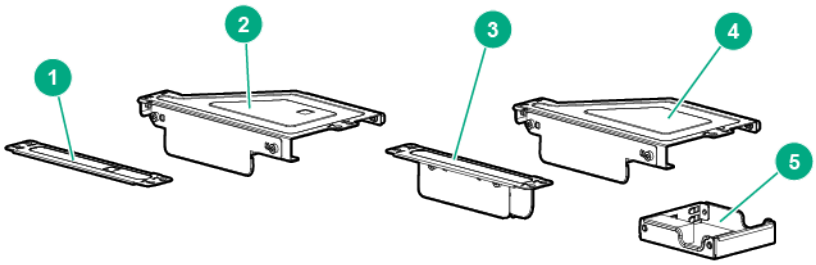
1. Back up all server data.
2. **Power down the server**.
3. **Remove the server from the chassis**.
4. **Remove the bayonet board**.
5. Separate the bayonet small boards from the 2U bayonet large board.



To replace the component, reverse the removal procedure.

Removing and replacing a low-profile PCIe expansion board or GPU accelerator

Identifying thermal support brackets for slot 3 and slot 4



Item	Description
1	Dual-width GPU rear bracket
2	Dual-width GPU center bracket
3	Rear bracket for low-profile and single-width PCIe expansion boards
4	Rear bracket for low-profile and single-width PCIe expansion boards
5	Low-profile PCIe expansion board side bracket for slot 4

Removing a low-profile PCIe expansion board

Determine if there are thermal requirements for the component. For more information, see **Temperature requirements**.

Depending on the chassis configuration and the component being installed in the server, it might be necessary to limit the number of drives installed in the chassis. For more information, see **List of components with temperature requirements in the HPE ProLiant XL190r Gen10 Server**.

CAUTION:

Before replacing the component due to a perceived hardware error, make sure first that the component is firmly seated in the slot. Do not bend or flex circuit boards when re-seating components.

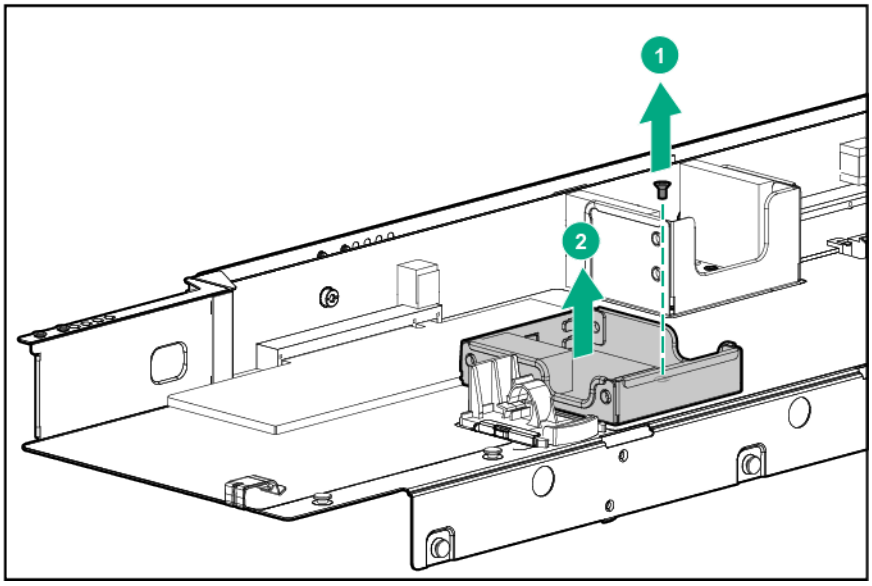
CAUTION:

To prevent improper cooling and thermal damage, do not operate the server unless the correct thermal support brackets are installed. For more information, see **Identifying thermal support brackets for slot 3 and slot 4**.

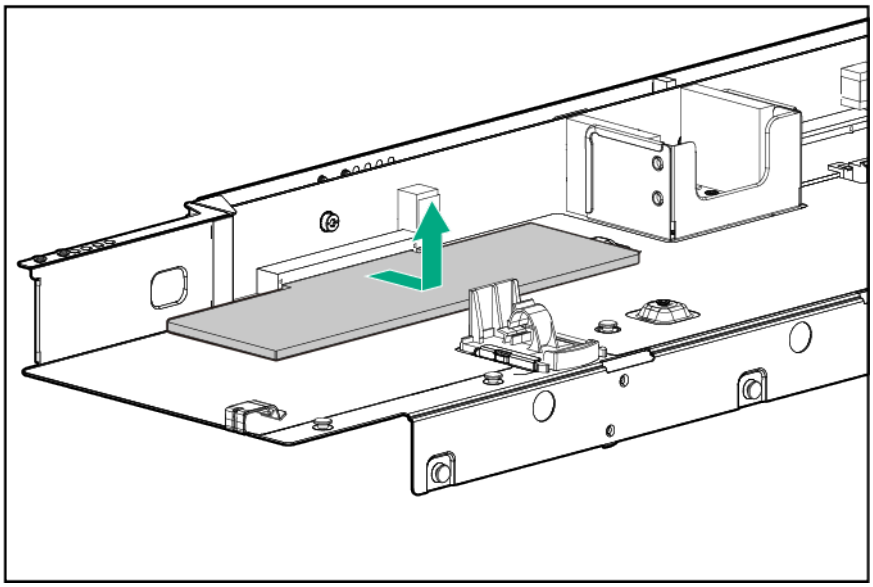
Procedure

1. Back up all server data.
2. **Power down the server**.
3. **Remove the server from the chassis**.
4. **Remove the bayonet board**.
5. **Remove the secondary PCI riser cage**.

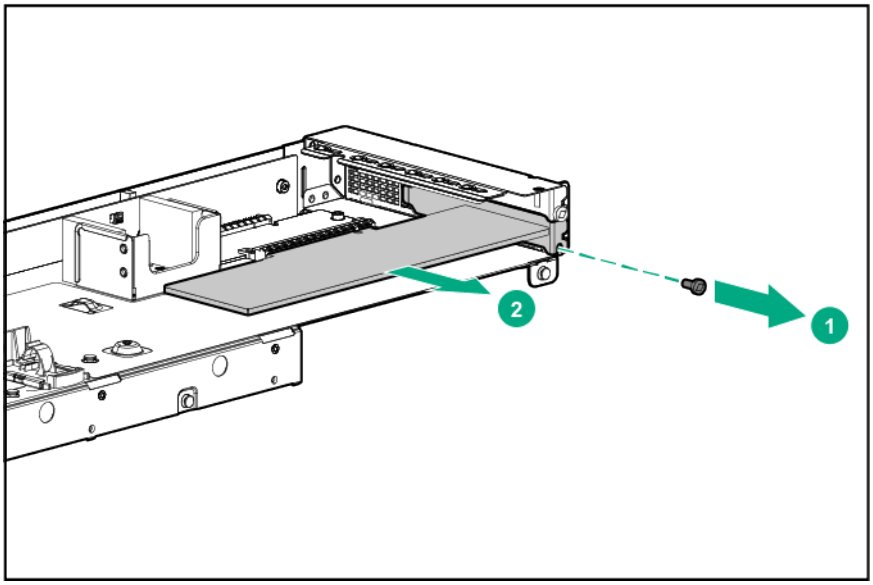
6. If replacing the expansion board installed in slot 1, **remove the primary PCI riser cage**.
7. If replacing an expansion board installed in slot 3 or slot 4, **remove the center, rear, and side support brackets**.
8. If replacing an expansion board installed in slot 4, remove the low-profile PCIe card side bracket.



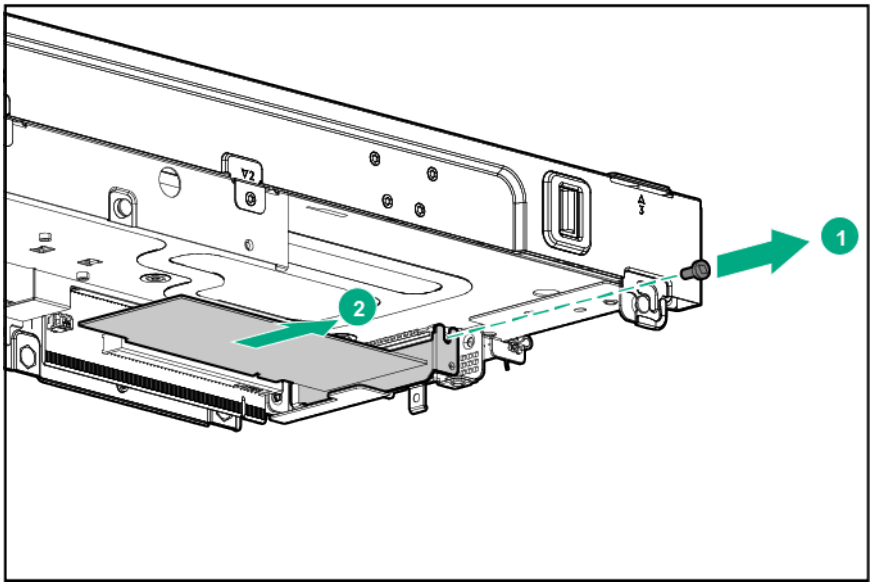
9. Disconnect any cables connecting the expansion board to the riser board.
10. Remove the expansion board and disconnect all cables.
    - Slot 4



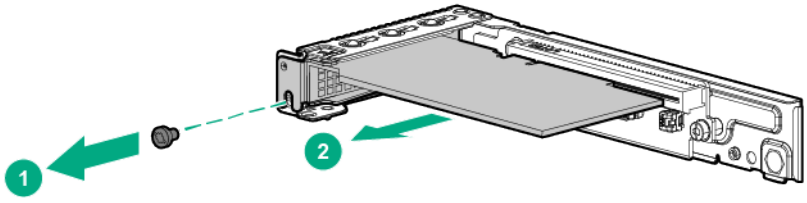
    - Slot 3



- Slot 2

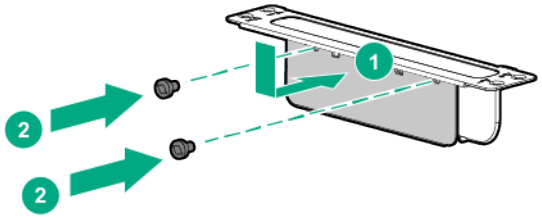


- Slot 1

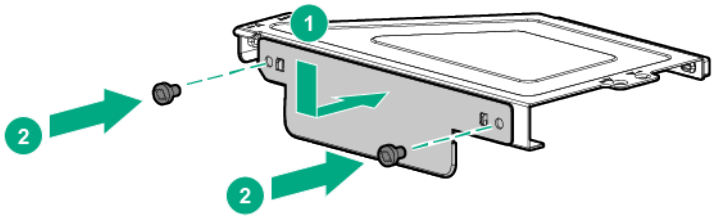


11. If you intend to leave slot 4 empty, install the air block brackets.

- Rear support bracket

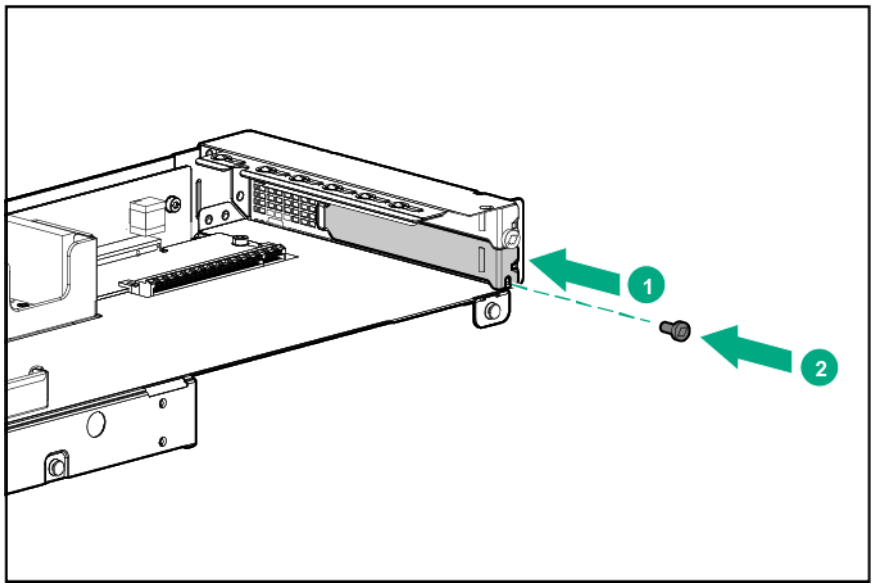


- Center support bracket

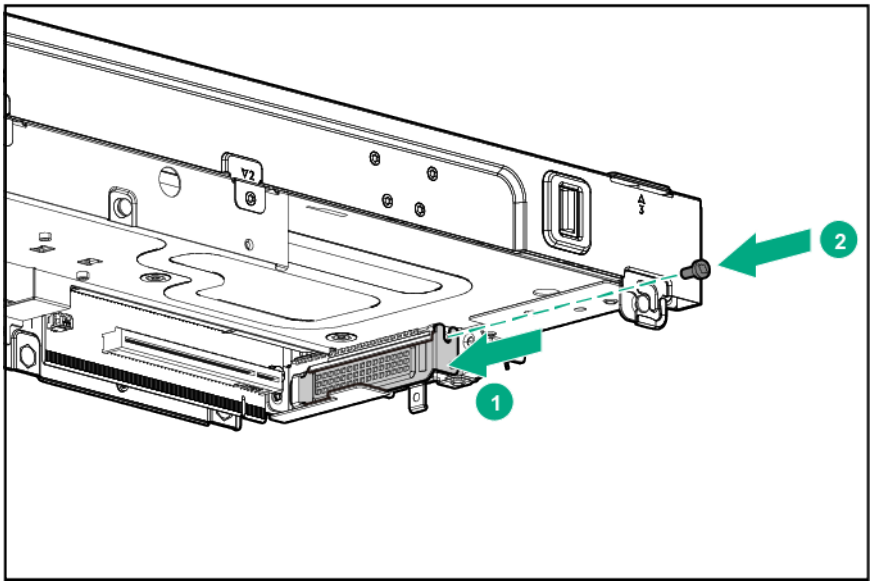


12. If a failed expansion board has been removed from slot 3, slot 2, or slot 1, and if you intend to leave the slot empty, install the expansion slot cover.

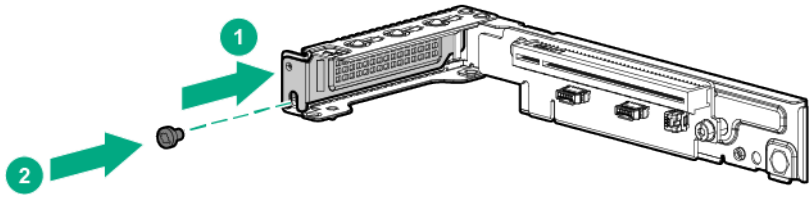
- Slot 3



- Slot 2



- Slot 1



To replace the component, reverse the removal procedure.

Removing the GPU power cable and GPU accelerator

Determine if there are thermal requirements for the component. For more information, see **Temperature requirements**.

Depending on the chassis configuration and the component being installed in the server, it might be necessary to limit the number of drives installed in the chassis. For more information, see **List of components with temperature requirements in the HPE ProLiant XL190r Gen10 Server**.

CAUTION:

Before replacing the component due to a perceived hardware error, make sure first that the component is firmly seated in the slot. Do not bend or flex circuit boards when re-seating components.

CAUTION:

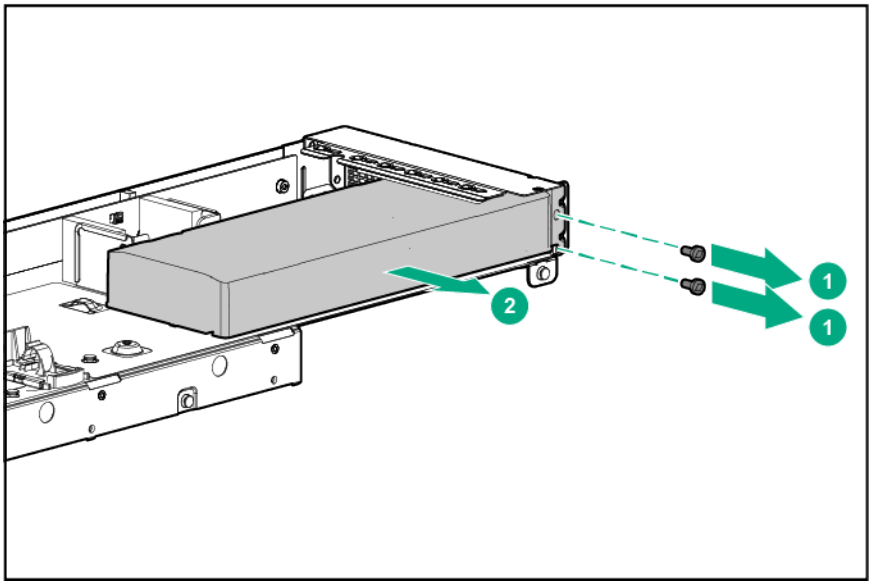
To prevent improper cooling and thermal damage, do not operate the server unless the correct thermal support brackets are installed. For more information, see **Identifying thermal support brackets for slot 3 and slot 4**.

IMPORTANT:

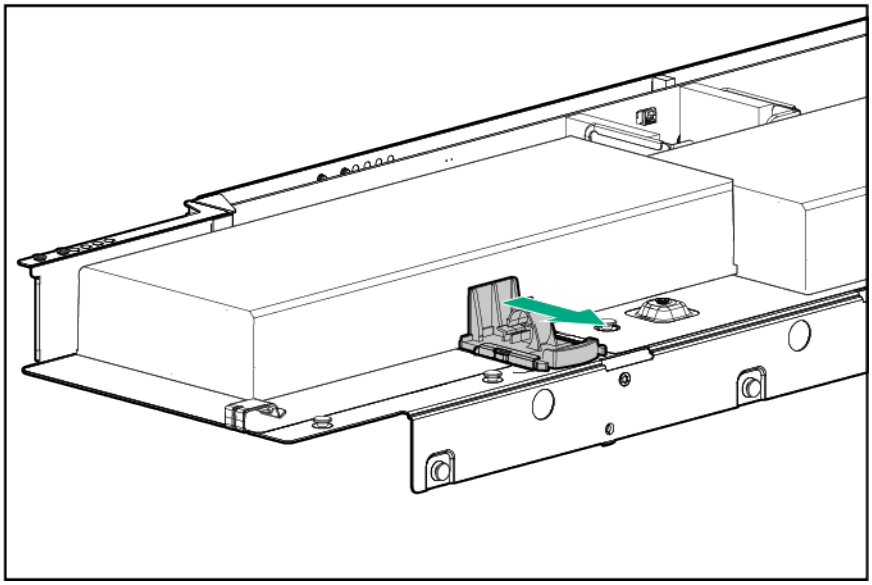
Depending on the GPU accelerator model, it might be necessary to install drive blanks or thermal bezel blanks in specific drive bays in the chassis. For more information, see **Drive blank and thermal bezel blank installation guidelines for the HPE ProLiant XL190r Gen10 Server**.

Procedure

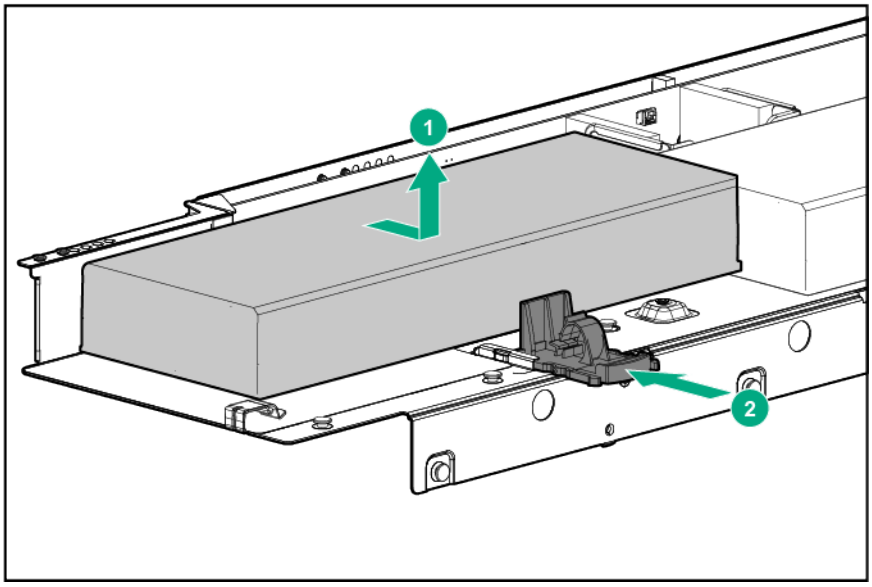
1. Back up all server data.
2. **Power down the server**.
3. **Remove the server from the chassis**.
4. If replacing the GPU power cable, **remove the bayonet board and disconnect the cable**.
5. If replacing the GPU accelerator, **remove the center, rear, and side support brackets**.
6. Disconnect the power cable.
7. Remove the GPU accelerator from slot 3.



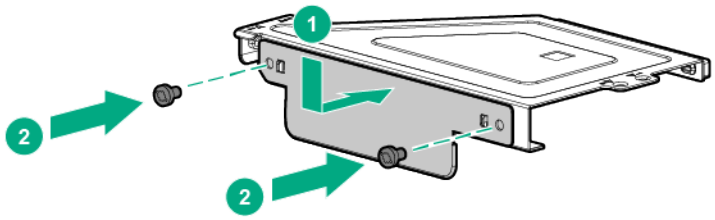
8. Remove the GPU accelerator from slot 4.
   a. Open the plastic retaining latch.



b. Remove the GPU accelerator from slot 4.



9. If you intend to leave slot 4 empty, install the air block bracket.



10. If replacing GPU accelerator 1, remove the existing rear support bracket from the new GPU accelerator. Keep this bracket to install it onto the failed GPU accelerator.
11. If replacing GPU accelerator 2, remove the existing front and rear support brackets from the new GPU accelerator. Keep these brackets to install them onto the failed GPU accelerator.

To replace the component, reverse the removal procedure.

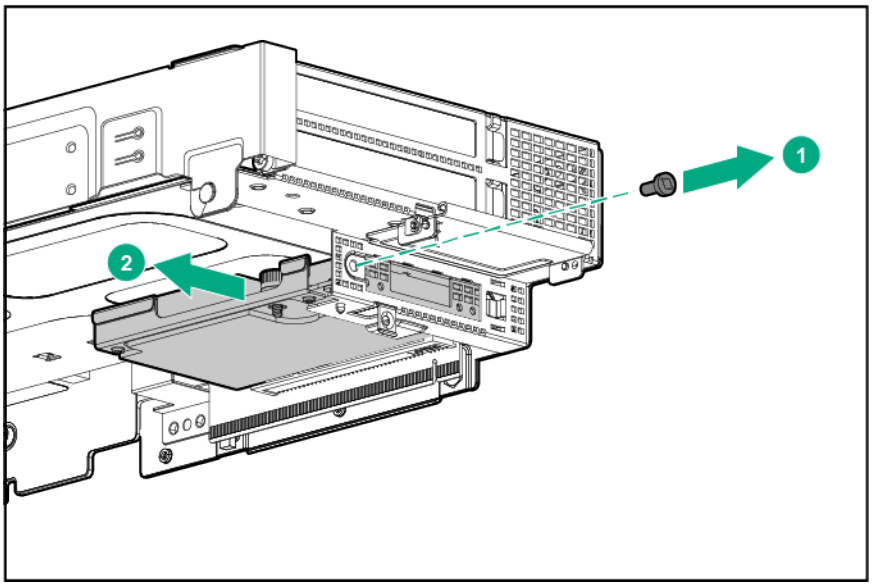
Removing and replacing the FlexibleLOM

CAUTION:

Before replacing the component due to a perceived hardware error, make sure first that the component is firmly seated in the slot. Do not bend or flex circuit boards when re-seating components.

Procedure

1. Back up all server data.
2. **Power down the server**.
3. **Remove the server from the chassis**.
4. **Remove the bayonet board**.
5. **Remove the secondary PCI riser cage**.
6. Remove the FlexibleLOM.



To replace the component, reverse the removal procedure.

Removing and replacing the left low-profile riser board

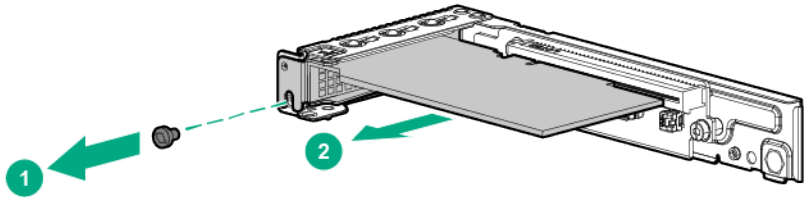
CAUTION:

Before replacing the component due to a perceived hardware error, make sure first that the component is firmly seated in the slot. Do not bend or flex circuit boards when re-seating components.

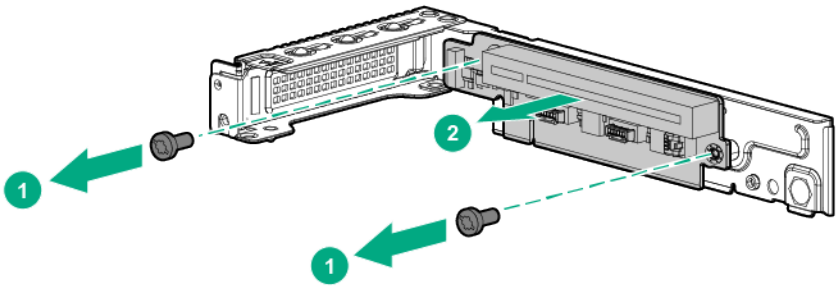
Procedure

1. **Power down the server**.
2. **Remove the server from the chassis**.

3. If replacing the expansion board installed in slot 1 or slot 2, do the following:
   a. **Remove the bayonet board**.
   b. **Remove the secondary PCI riser cage**.
4. **Remove the primary PCI riser cage**.
5. Disconnect any cables connecting the expansion board to the riser board.
6. Remove the expansion board from slot 1.



7. Remove the riser board.



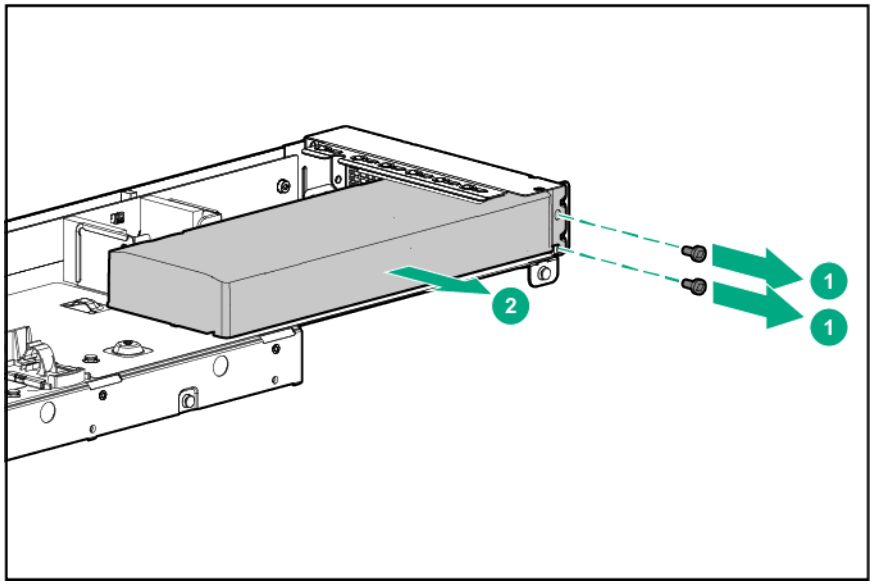
To replace the component, reverse the removal procedure.

Removing and replacing the PCIe extension board for slot 3

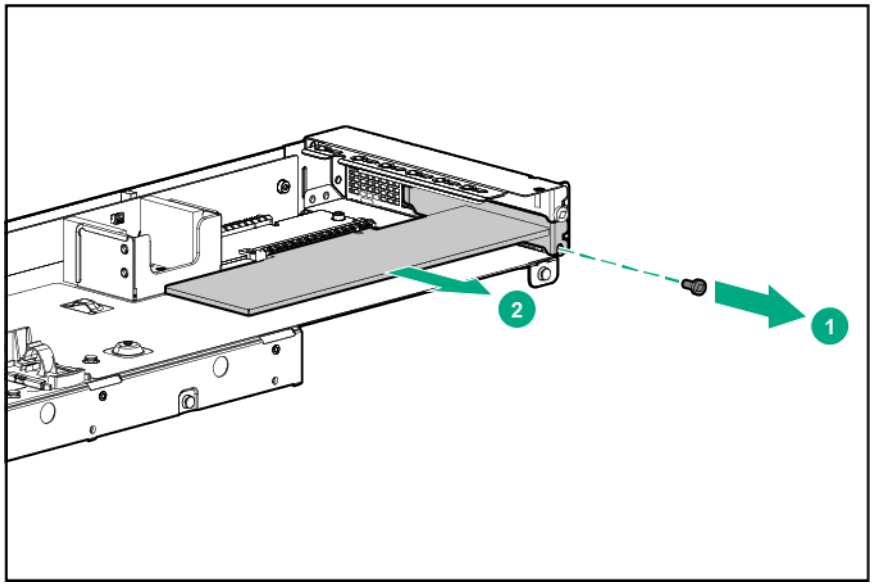
Procedure

1. Back up all server data.
2. **Power down the server**.
3. **Remove the server from the chassis**.
4. **Remove the center, rear, and side support brackets**.
5. Remove the GPU accelerator or PCIe expansion board from slot 3.

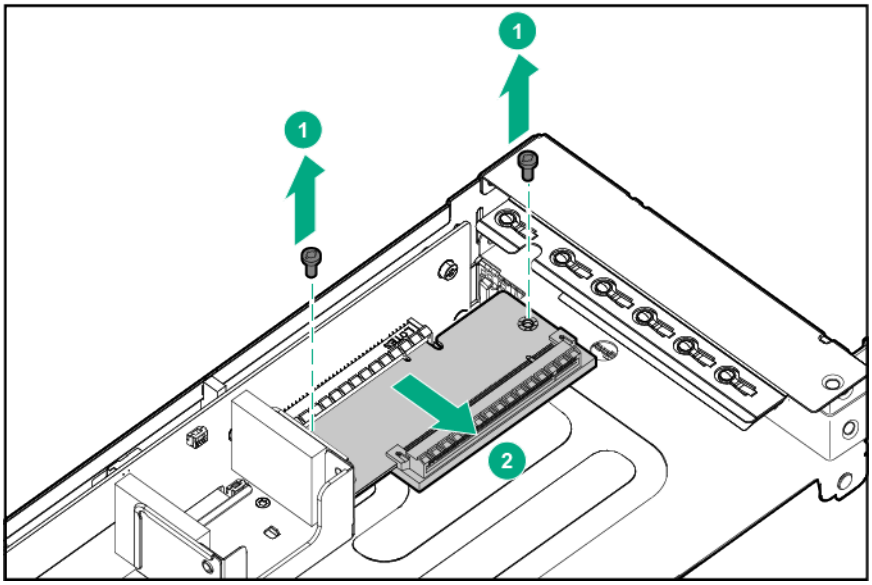
- Full-width GPU accelerator



- Low-profile PCIe expansion board



6. Remove the PCIe extension board for slot 3.



To replace the component, reverse the removal procedure.

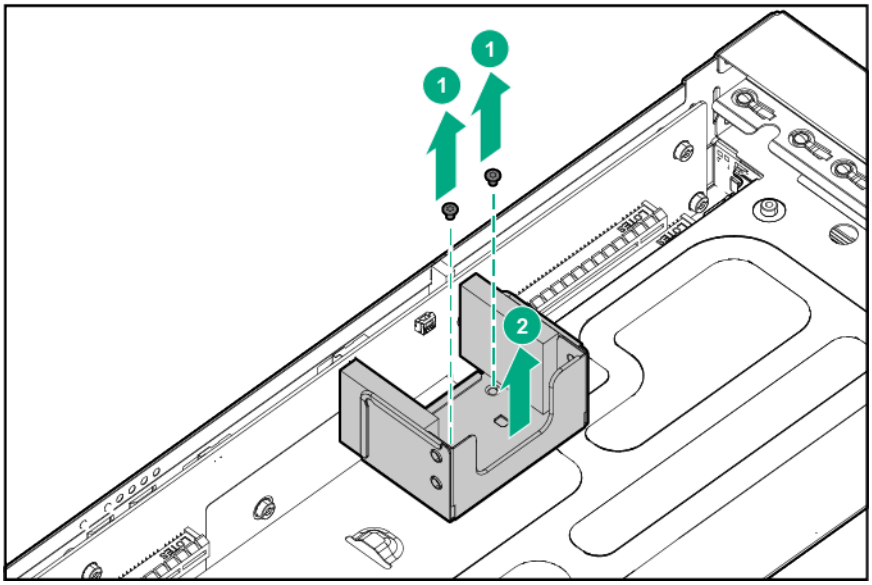
Removing and replacing the 2U riser board

CAUTION:

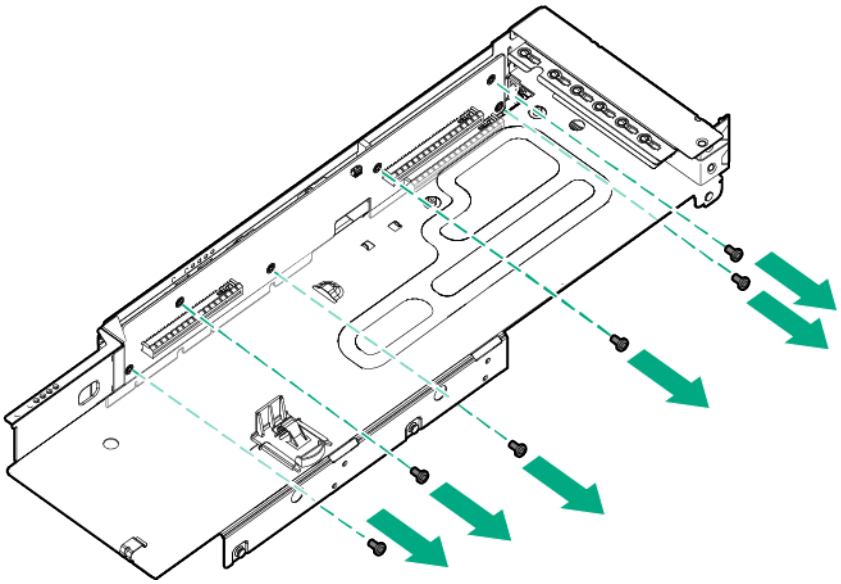
Before replacing the component due to a perceived hardware error, make sure first that the component is firmly seated in the slot. Do not bend or flex circuit boards when re-seating components.

Procedure

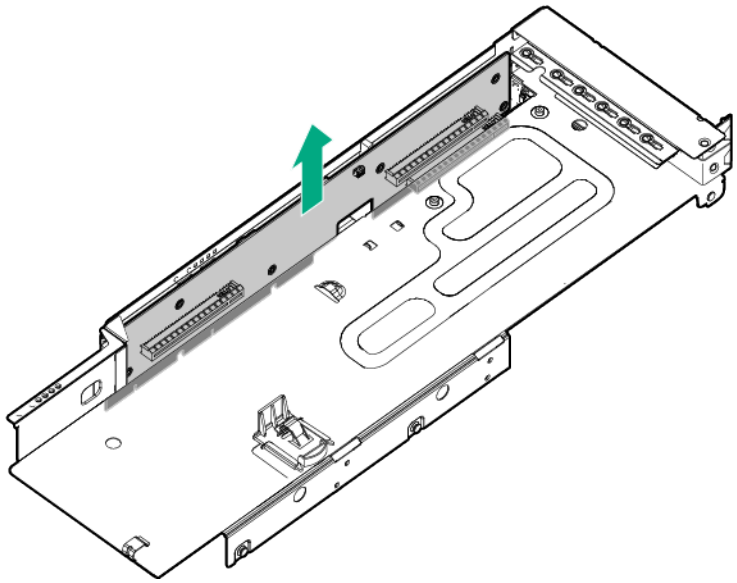
1. Back up all server data.
2. **Power down the server**.
3. **Remove the server from the chassis**.
4. **Remove the bayonet board**.
5. **Remove the secondary PCI riser cage**.
6. **Remove the center, rear, and side support brackets**.
7. Remove all GPU accelerators and low-profile PCIe expansion boards.
   - **Removing a low-profile PCIe expansion board**.
   - **Removing the GPU power cable and GPU accelerator**.
8. **Remove the PCIe extension board for slot 3**.
9. Remove the air blocker from the 2U riser.



10. Remove the six screws securing the riser board to the riser cage.



11. Remove the riser board from the riser cage and disconnect all NVMe cables.



To replace the component, reverse the removal procedure.

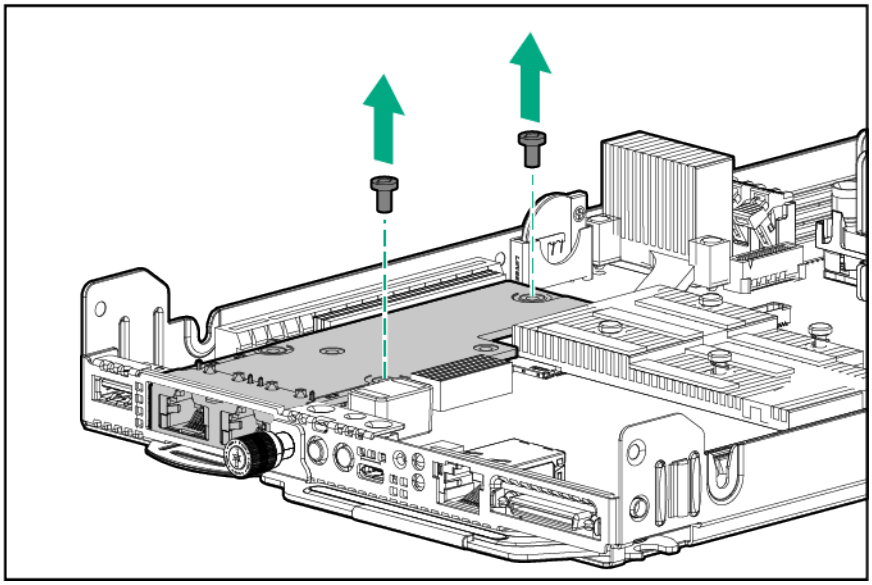
Removing and replacing the Media Module

CAUTION:

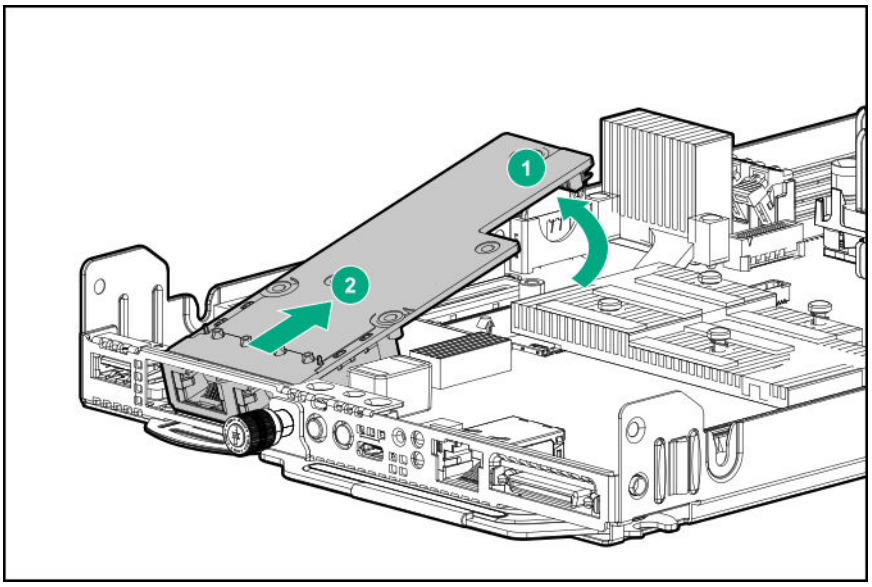
Before replacing the component due to a perceived hardware error, make sure first that the component is firmly seated in the slot. Do not bend or flex circuit boards when re-seating components.

Procedure

1. Back up all server data.
2. **Power down the server**.
3. **Remove the server from the chassis**.
4. **Remove the bayonet board**.
5. **Remove the secondary PCI riser cage**.
6. Do one of the following:
   - **Remove the primary PCI riser blank**.
   - **Remove the primary PCI riser cage**.
7. Remove the two T-15 screws securing the Media Module.



8. Remove the Media Module.



To replace the component, reverse the removal procedure.

Removing and replacing the M.2 SSD riser

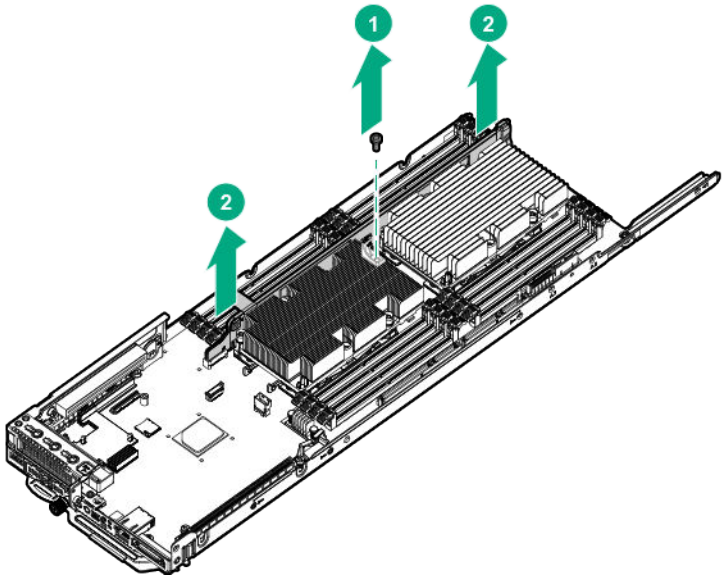
CAUTION:

Before replacing the component due to a perceived hardware error, make sure first that the component is firmly seated in the slot. Do not bend or flex circuit boards when re-seating components.

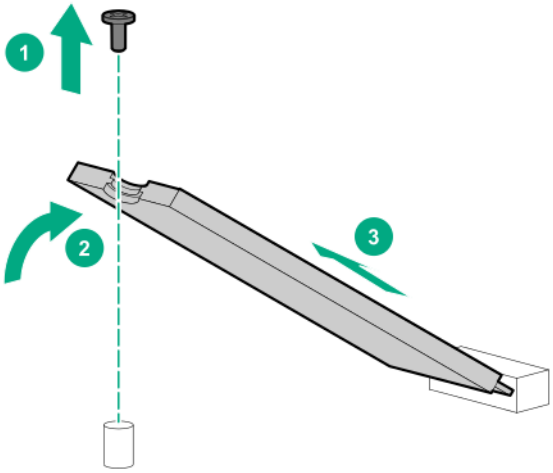
Procedure

1. Back up all server data.
2. **Power down the server**.
3. **Remove the server from the chassis**.
4. **Remove the bayonet board**.
5. **Remove the secondary PCI riser cage**.

6. Remove the M.2 SSD riser.



7. Remove all SSD modules.



To replace the component, reverse the removal procedure.

Removing and replacing a DIMM

CAUTION:

Before replacing the component due to a perceived hardware error, make sure first that the component is firmly seated in the slot. Do not bend or flex circuit boards when re-seating components.

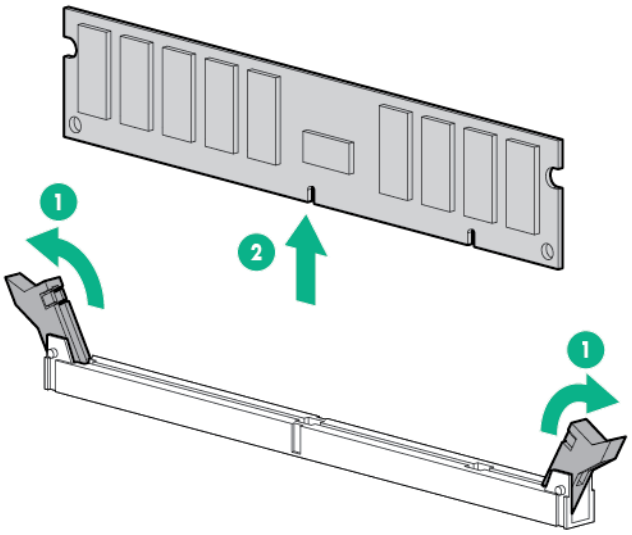
Prerequisites

Before replacing memory, read the memory configuration and population guidelines in the server user guide.

Procedure

1. **Power down the server**.
2. **Remove the server from the chassis**.

3. **Remove the bayonet board**.
4. **Remove the secondary PCI riser cage**.
5. Remove the DIMM.



To replace the component, reverse the removal procedure.

Removing and replacing a processor heatsink assembly

Procedure

1. Observe the following alerts:

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

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

To download firmware and view installation instructions, see the **Hewlett Packard Enterprise Support Center website**.

CAUTION:
To prevent possible server malfunction and damage to the equipment, multiprocessor configurations must contain processors with the same part number.

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

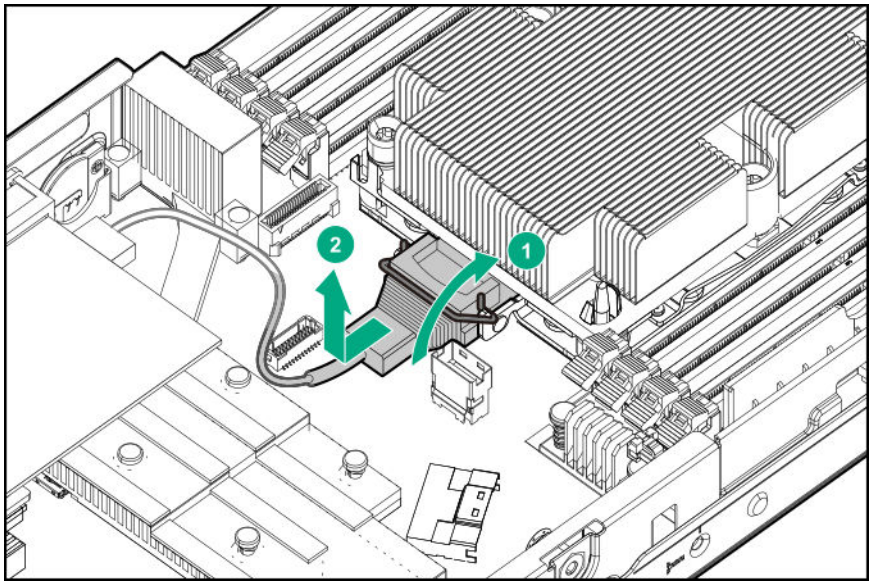
CAUTION:
When handling the heatsink, always hold it along the top and bottom of the fins. Holding it from the sides can damage the fins.

CAUTION:
Observe the label on the heatsink. Tightening or loosening the screws in the wrong order can damage the heatsink.

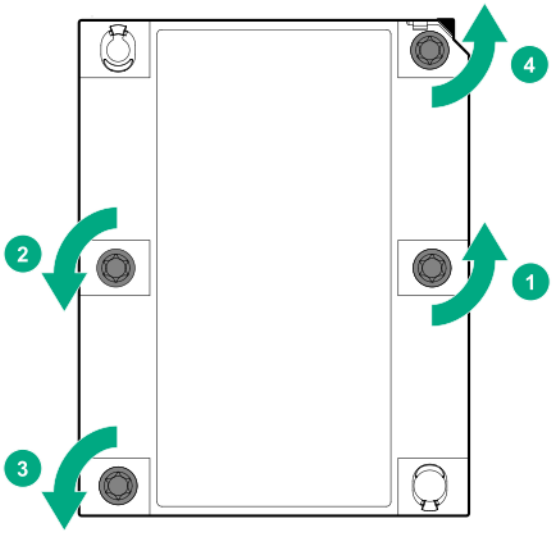
NOTE:

Heatsink processor assemblies specified for processor 1 and 2 are not interchangable. Be sure to note the appropriate orientation on the heatsink label.

2. **Power down the server**.
3. **Remove the server from the chassis**.
4. **Remove the bayonet board**.
5. **Remove the secondary PCI riser cage**.
6. If replacing a fabric processor, disconnect the cable from processor 1.



7. Remove the processor heatsink assembly:
   a. Allow the heatsink to cool.
   b. Loosen the heatsink nuts in the order specified by the label on the heatsink.



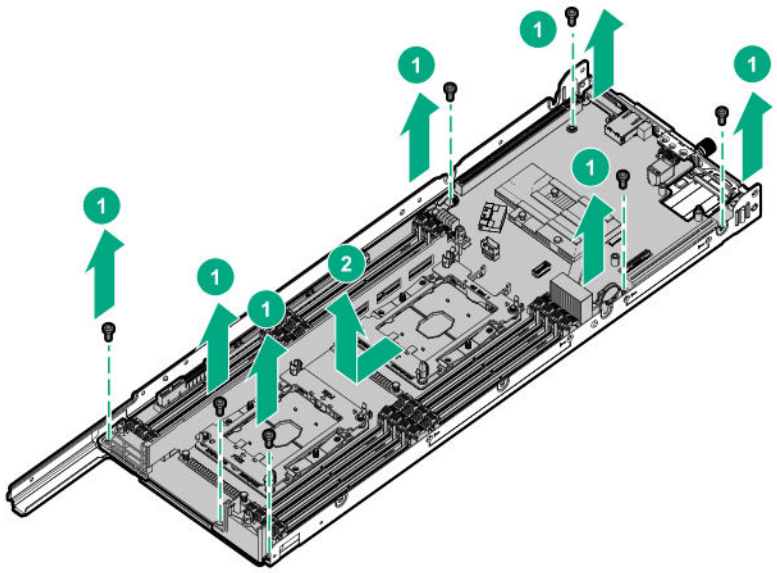
c. Lift the processor heatsink assembly and move it away from the system board.
d. Turn the assembly over and place it on a work surface with the processor facing up.
e. Install the dust cover.

To replace the component, reverse the removal procedure.

Removing and replacing the system board

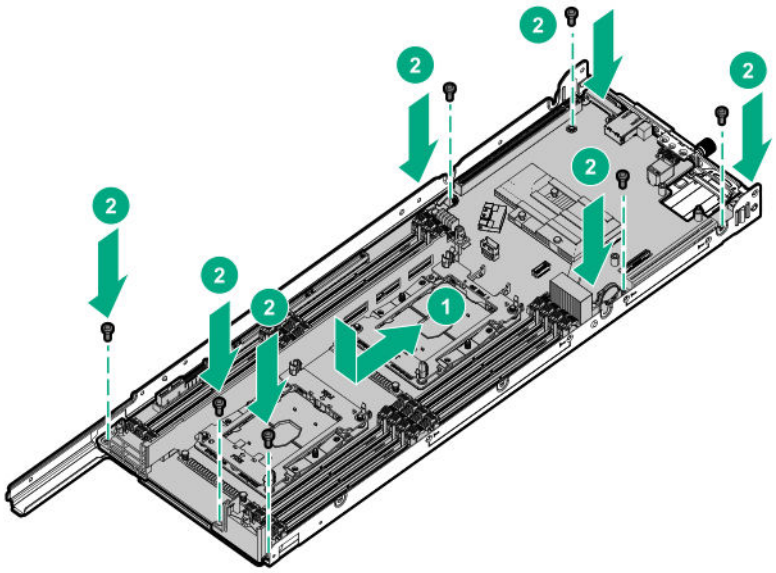
Procedure

1. **Power down the server**.
2. **Remove the server from the chassis**.
3. **Remove the bayonet board**.
4. **Remove the secondary PCI riser cage**.
5. Do one of the following:
   - **Remove the primary PCI riser blank**.
   - **Remove the primary PCI riser cage**
6. **Remove the Media Module**.
7. **If installed, remove the M.2 SSD riser**.
8. Take note of port numbers and cables connections to risers and the system board.
9. Disconnect and remove all cables that are connected to the system board.
10. **Remove all DIMMs**.
11. **Remove the processor heatsink assembly**.
12. Remove the system board.



To replace the component:

1. Install the spare system board.



2. Install all components removed from the failed system board.
3. Power up the server.

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

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

   The serial number should only be modified by qualified service personnel. This value should always match the serial number located on the chassis.
4. To clear the warning, press the **Enter** key.
5. Enter the serial number and press the **Enter** key.
6. Select Product ID. The following warning appears:

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

7. Enter the product ID and press the **Enter** key.
8. To confirm exiting System Utilities, press the **F10** key.
9. The server automatically reboots.

Removing and replacing the system battery

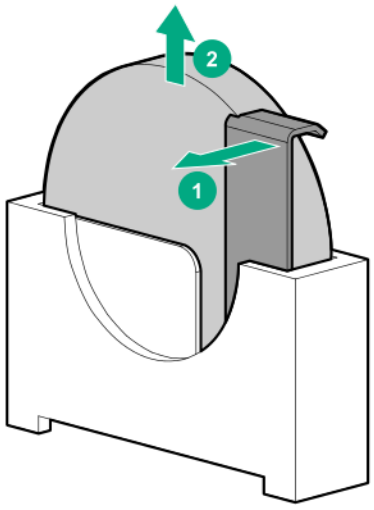
The system battery provides power to the real-time clock. If the server no longer automatically displays the correct date and time, you might need to replace the system battery.

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**.
3. **Remove the server from the chassis**.
4. **Remove the bayonet board**.
5. **Remove the secondary PCI riser cage**.
6. If installed, **remove the primary PCI riser cage**.
7. **Locate the battery**.
8. Remove the battery.



9. To replace the component, reverse the removal procedure.
10. Properly dispose of the old battery.

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

HPE Trusted Platform Module 2.0 Gen10 Option

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

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

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

Troubleshooting

NMI functionality

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

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

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

For more information, see the **Hewlett Packard Enterprise website**.

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 Gen 10 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 pre-boot 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, Apollo systems, and HPE Synergy compute modules. Intelligent Provisioning simplifies server setup, providing a reliable and consistent way to deploy servers.

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.

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.

In addition to accessing Intelligent Provisioning by pressing F10 from the POST screen, you can also access Intelligent Provisioning from the iLO web browser user interface using Always On. You can access Always On without having to reboot 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 pre-loaded with firmware and drivers, you should update the firmware upon initial setup to ensure you have the latest versions. 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

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.

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.

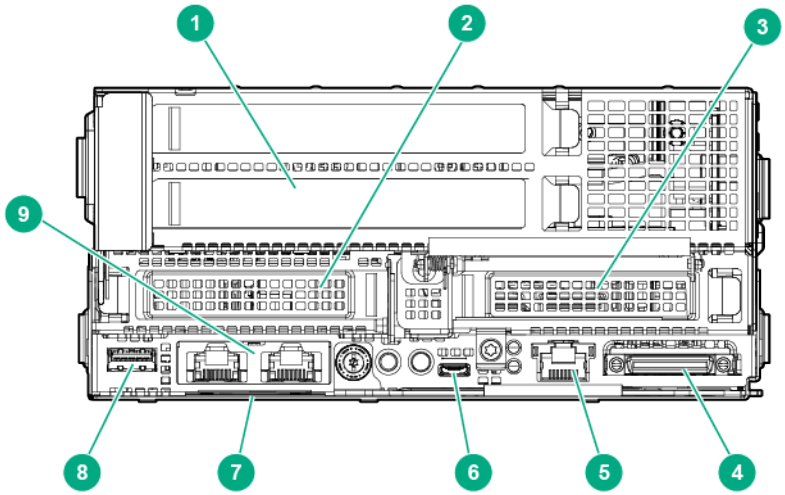
  Using one of multiple methods, you can run HPE SSA before launching the host operating system. In offline mode, users can configure or maintain detected and supported devices, such as optional Smart Array controllers and integrated Smart Array controllers. Some HPE SSA features are only available in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

Rear panel components

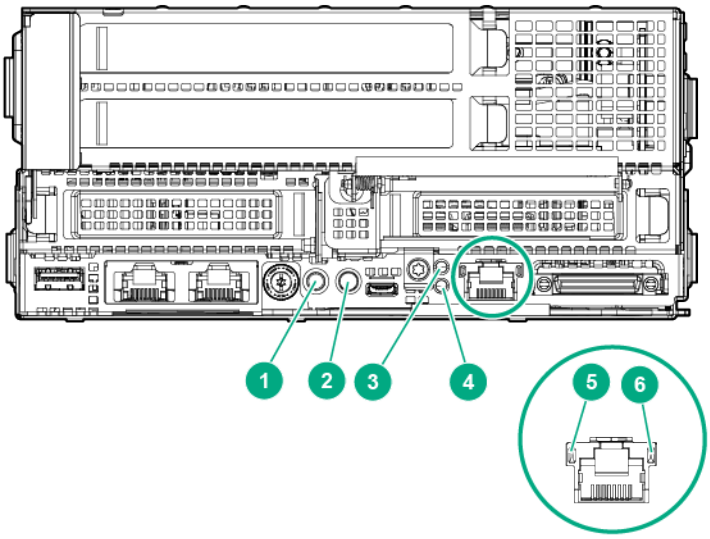


Item	Description
1	Slot 3 PCIe3 x16 (16, 8, 4, 1)
2	Slot 1 PCIe3 x16 (16, 8, 4, 1)
3	Slot 2 PCIe3 x16 (16, 8, 4, 1) or FlexibleLOM
4	SUV connector[1]
5	iLO Management Port[2]
6	iLO Service Port
7	Server serial number and iLO label pull tab
8	USB 3.0 port
9	Media Module (optional - NIC ports)

[1] *If all server tray slots in the chassis are populated with servers, connect a SUV cable for maintenance purposes only.*

[2] *If the RCM module is installed on the chassis, the iLO Management Port will be automatically disabled. For more information, see the chassis user guide.*

Rear panel LEDs and buttons



Item	Description	Status
1	Power button/LED[1]	Solid green = System on Flashing green = Performing power on sequence Solid amber = System in standby Off = No power present[2]
2	UID button/LED[1]	Solid blue = Activated • 1 flash per second = Remote management or firmware upgrade in progress • 4 flashes per second = iLO manual soft reboot sequence initiated • 8 flashes per second = iLO manual hard reboot sequence in progress Off = Deactivated
3	Do not remove LED	Flashing white = Do not remove the server. Removing the server may terminate the current operation and cause data loss. Off = The server can be removed.
4	Health LED[1]	Solid green = Normal Flashing green = iLO rebooting Flashing amber = System degraded Flashing red = System critical[3]

Table Continued

Item	Description	Status
5	NIC link LED[1]	Green = Linked to network Off = No network connection
6	NIC activity LED[1]	Green or flashing green = Network activity Off = No network activity

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

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

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

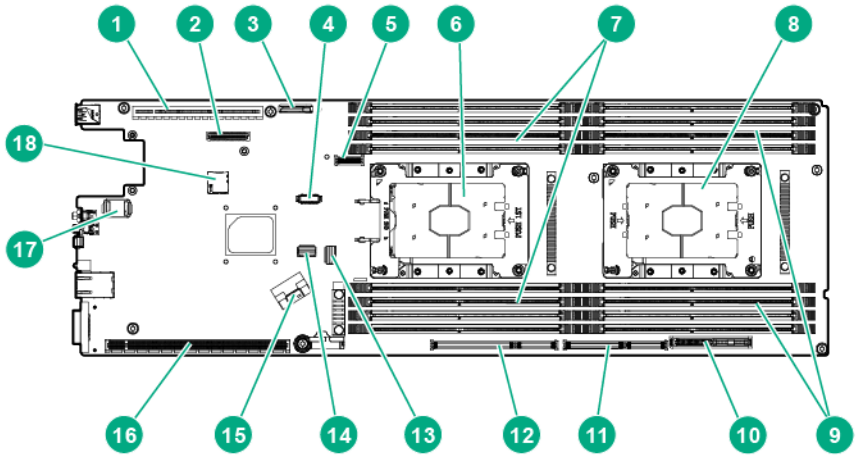
Power fault LEDs

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

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

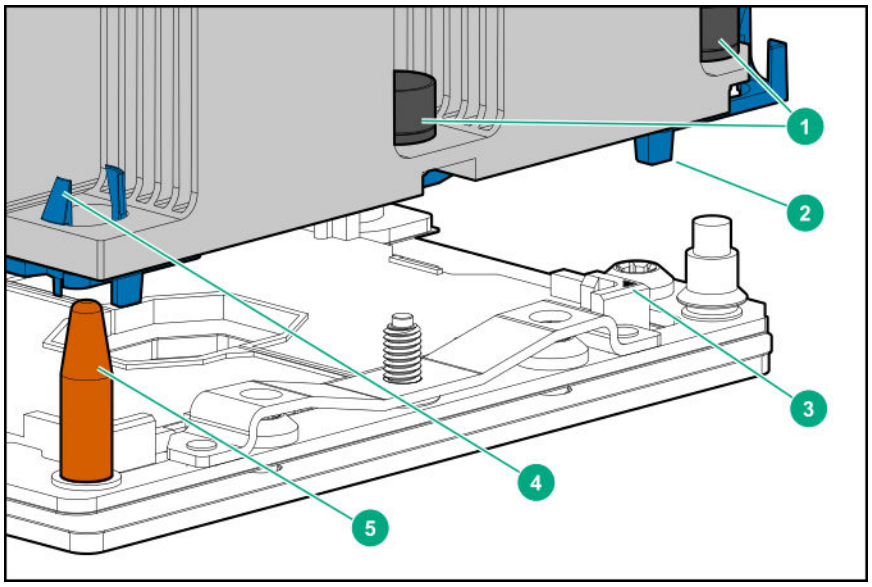
System board components

NOTE: HPE ProLiant XL170r and XL190r Gen10 Servers share the same system board.



Item	Description
1	Primary riser slot 1
2	Media Module connector
3	System battery
4	Fabric carrier sideband signal connector
5	M.2 SSD riser connector
6	Processor 1
7	DIMMs for processor 1
8	Processor 2
9	DIMMs for processor 2
10	Bayonet board slot
11	Secondary riser slot 4
12	Secondary riser slot 3
13	Slimline SATA x4 connector
14	System maintenance switch
15	Slimline SATA x8 connector
16	Secondary riser slot 2
17	TPM connector
18	microSD slot

Processor, heatsink, and socket components



Item	Description
1	Heatsink nuts
2	Processor frame
3	Pin 1 indicator[1]
4	Heatsink latch
5	Alignment post

[1] Symbol also on the processor and frame.

System maintenance switch descriptions

Position	Default	Function
S1 [1]	Off	Off = iLO security is enabled. On = iLO security is disabled.
S2	—	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]	Off	Off = No function On = Restore default manufacturing settings

Table Continued

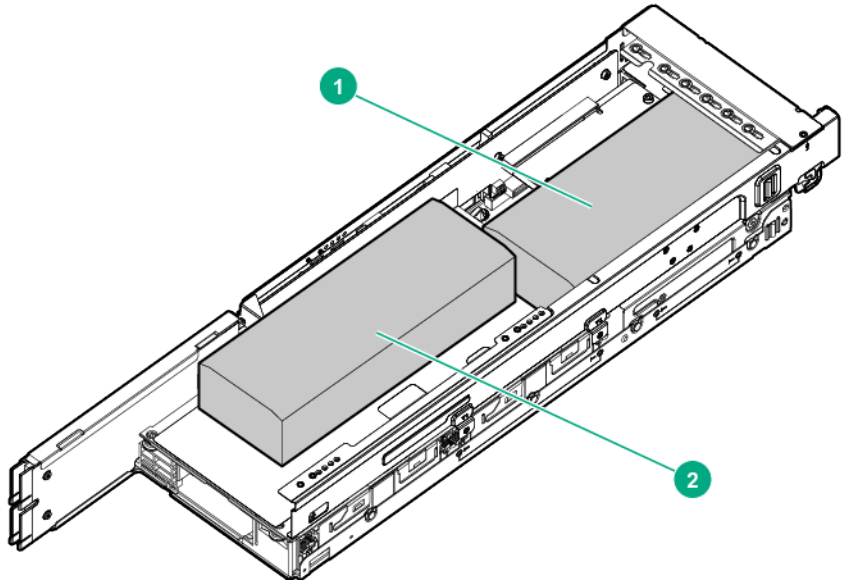
Position	Default	Function
S7	—	Reserved
S8	—	Reserved
S9	—	Reserved
S10	—	Reserved
S11	—	Reserved
S12	—	Reserved

[1]You can access the redundant ROM by setting 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.

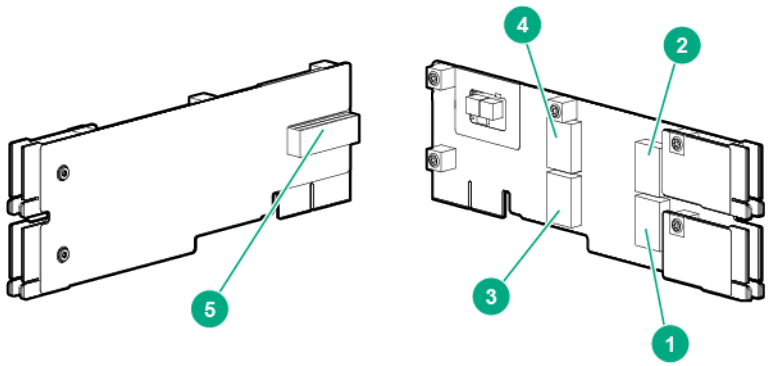
When the system maintenance switch position 6 is set to the On position and Secure Boot is enabled, some configurations cannot be restored. For more information, see Secure Boot configuration.

GPU accelerator numbering



Item	Description
1	GPU 1
2	GPU 2

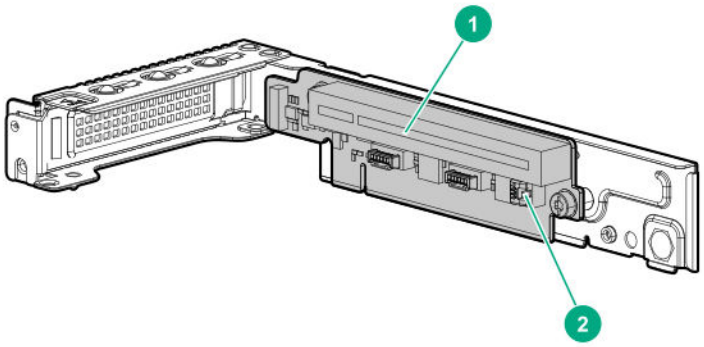
Bayonet board components



Item	Description
1	Port 1
2	Port 2
3	Port 3
4	Port 4
5	GPU power connecter

PCIe riser board slot definitions

Primary riser components

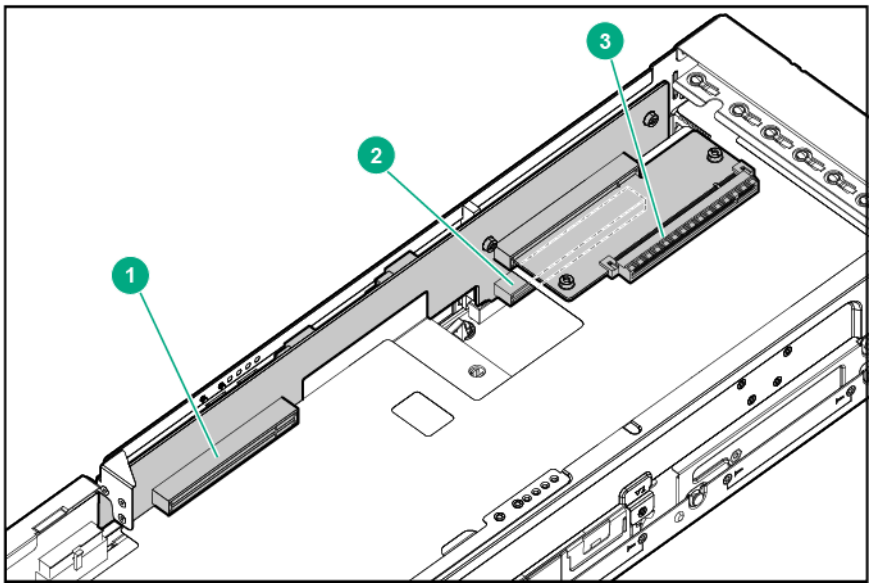


Item	Form factor	Slot number	Description
1	Storage controller or low-profile PCIe NIC card	1	PCIe3 x16 (16, 8, 4, 1) for Processor 1
2	—	—	Storage backup power connector

2U FlexibleLOM riser components

NOTE:

The HPE XL190r 16NVMe Gen10 FLOM Riser Kit (PN 874849-B21) is only for use in servers that are installed in the HPE Apollo r2800 Gen10 Chassis with 16 NVMe. For more information, see Cabling.

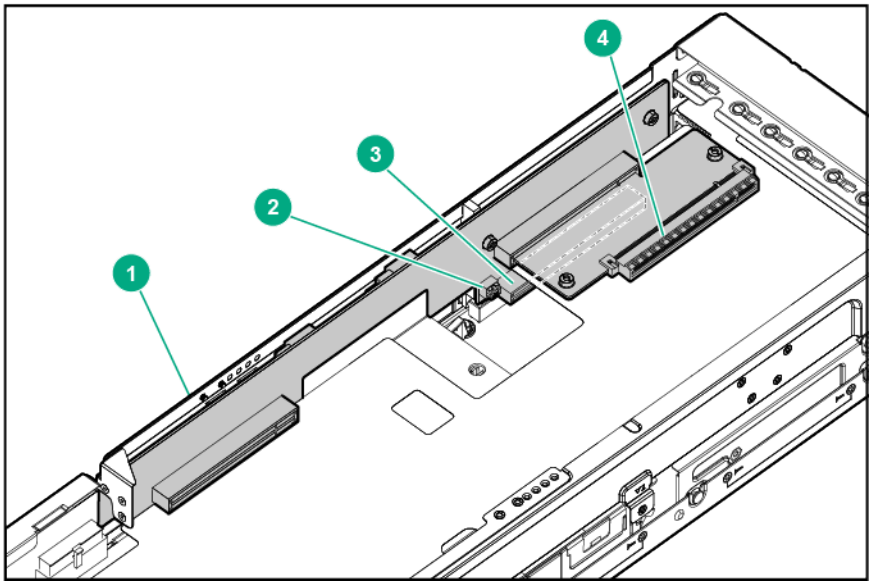


Item	Form factor	Slot number	Description
1	GPU accelerator or PCIe accelerator	4	PCIe3 x16 (16, 8, 4, 1) for Processor 2
2	FlexibleLOM	FlexibleLOM slot	PCIe3 x16 for Processor 1
3	GPU accelerator, PCIe accelerator or low-profile NIC card	3	PCIe3 x16 (16, 8, 4, 1) for Processor 1
4	Slimline SAS cable for NVMe support	—	Port 1*
5	Slimline SAS cable for NVMe support	—	Port 2*
6	Slimline SAS cable for NVMe support	—	Port 3*
7	Slimline SAS cable for NVMe support	—	Port 4*

* Not shown

2U secondary riser for processor 2 components

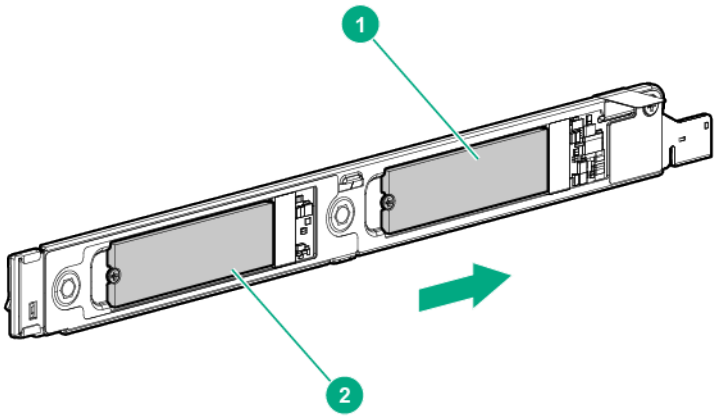
2U secondary riser for processor 2 components



Item	Form factor	Slot number	Description
1	GPU accelerator or PCIe accelerator	4	PCIe3 x16 (16, 8, 4, 1) for Processor 2
2	—	—	Storage backup power connector
3	Storage controller or low-profile NIC card	2	PCIe3 x16 (16, 8, 4, 1) for Processor 2
4	GPU accelerator, PCIe accelerator, or low-profile NIC card	3	PCIe3 x16 (16, 8, 4, 1) for Processor 2
5	Slimline SAS cable for NVMe support	—	Port 1*
6	Slimline SAS cable for NVMe support	—	Port 2*

* Not shown

M.2 SSD riser bay numbering



Item	Description
1	Bay 7
2	Bay 8

The arrow points toward the server tray handle.

Cabling

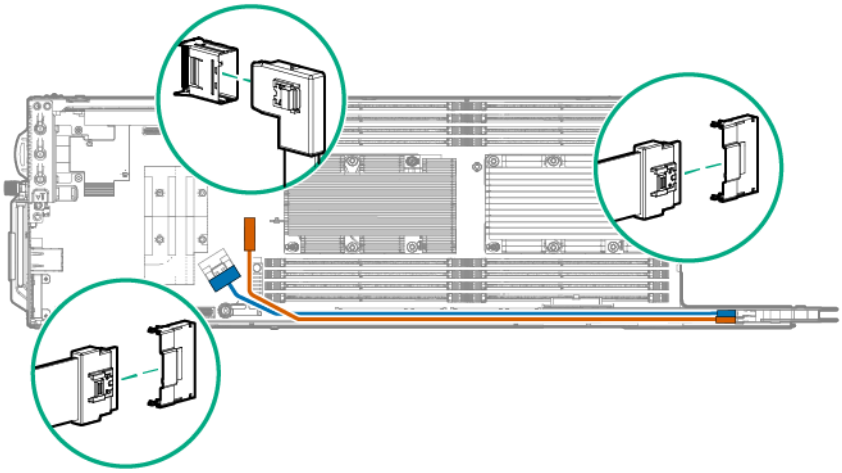
Cabling overview

This section provides guidelines that help you make informed decisions about cabling the server and hardware options to optimize performance.

CAUTION:
When routing cables, always be sure that the cables are not in a position where they can be pinched or crimped.

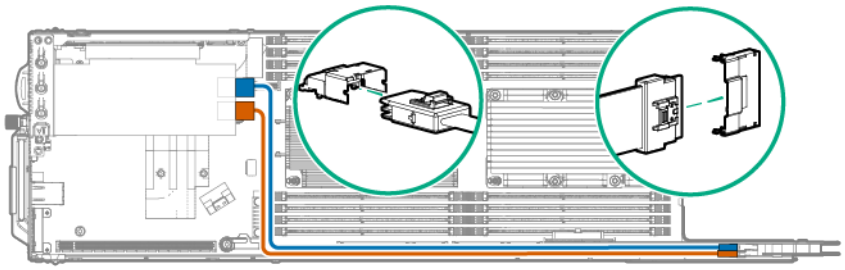
Storage cabling

S100i SATA controller

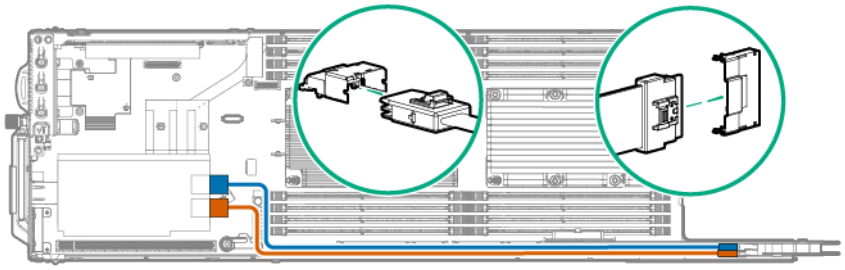


Type-p plug-in Smart Array Controller

- Slot 1

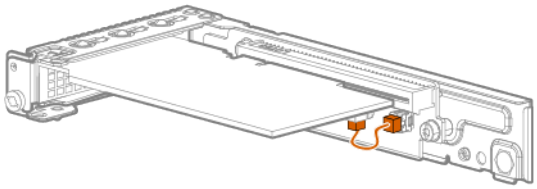


- Slot 2

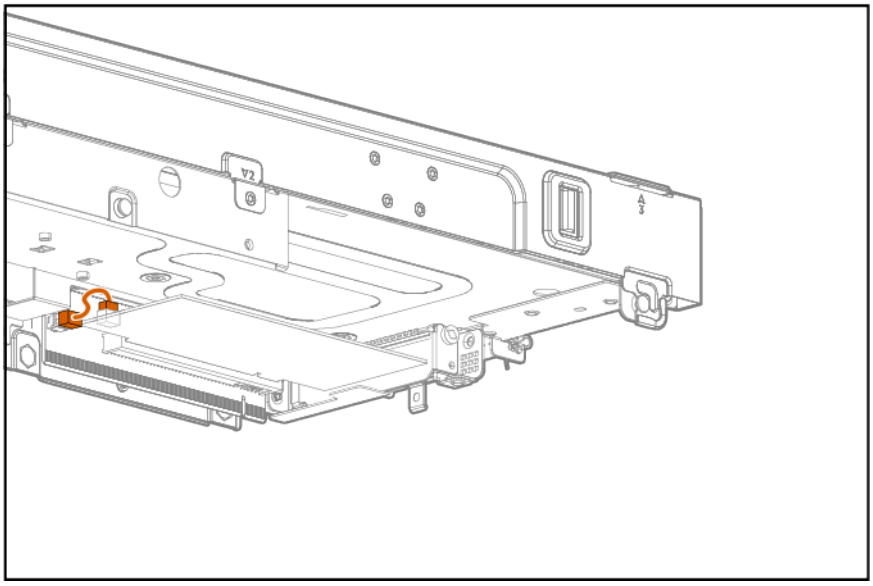


Smart Array cache backup power cable

- Slot 1

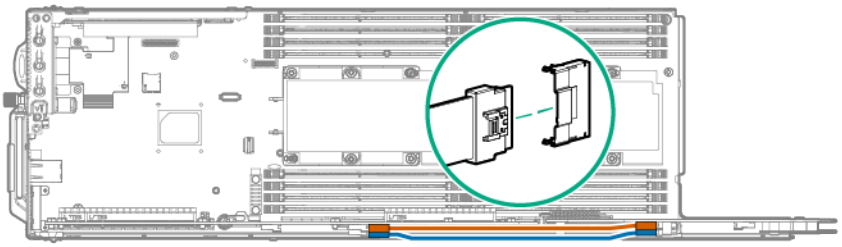


- Slot 2



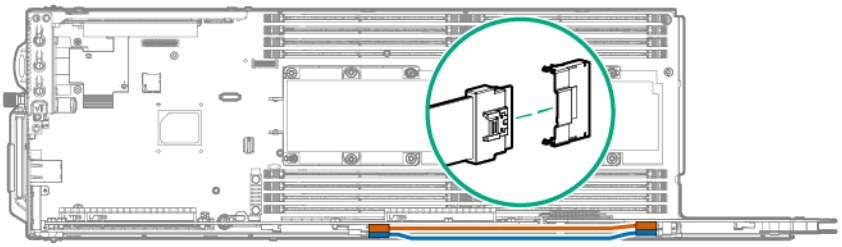
Secondary PCI riser NVMe cabling

2U secondary riser for processor 2

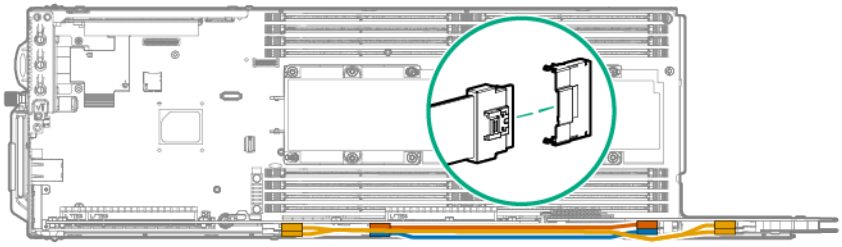


2U FlexibleLOM riser

Installed in HPE Apollo r2200 Gen10 Chassis and HPE Apollo r2600 Gen10 Chassis

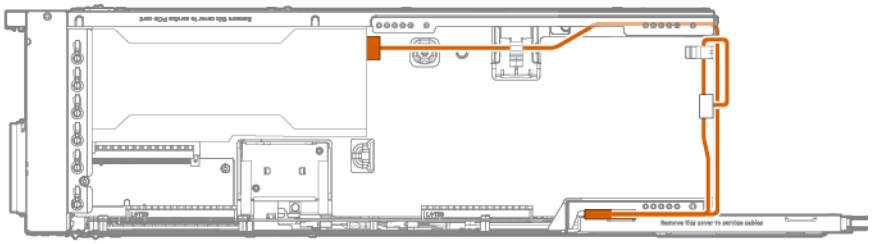


Installed in HPE Apollo r2800 Gen10 Chassis with 16 NVMe

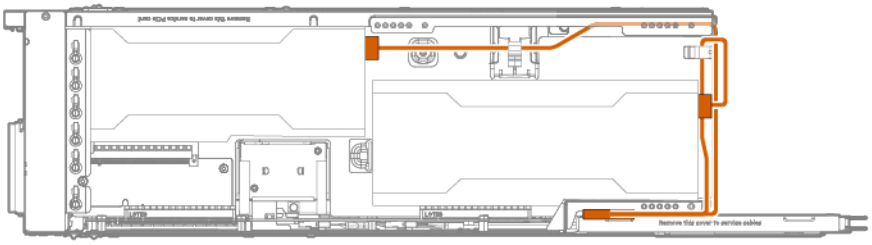


GPU accelerator cabling

One GPU accelerator



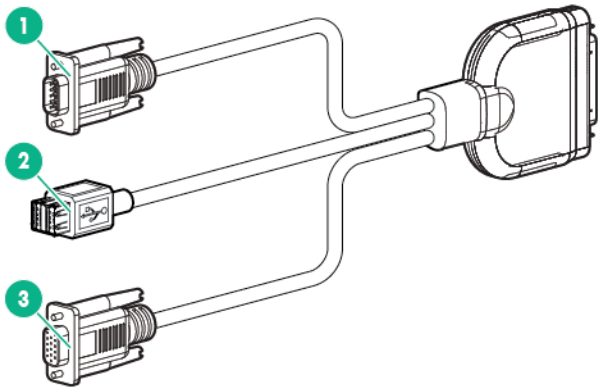
Two GPU accelerators



SUV cable connectors

CAUTION:
Before disconnecting the SUV cable from the connector, always squeeze the release buttons on the sides of the connector. Failure to do so can result in damage to the equipment.

NOTE: If all server tray slots in the chassis are populated with servers, connect a SUV cable for maintenance purposes only.



Item	Connector	Description
1	Serial	For trained personnel to connect a null modem serial cable and perform advanced diagnostic procedures
2	USB [1]	For connecting up to two USB 2.0 devices
3	Video	For connecting a video monitor

[1] *The USB connectors on the SUV cable do not support devices that require greater than a 500mA power source.*

Specifications

Environmental specifications

Specification	Value
Temperature range[1]	—
Operating	10°C to 35°C (50°F to 95°F)
Non-operating	-30°C to 60°C (-22°F to 140°F)
Relative humidity (noncondensing)	—
Operating	8% to 90% 28°C (82.4°F), maximum wet bulb temperature
Non-operating	5% to 95% 38.7°C (101.7°F), maximum wet bulb temperature

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

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

- 5°C to 10°C (41°F to 50°F) and 35°C to 40°C (95°F to 104°F) at sea level with an altitude derating of 1.0°C per every 175 m (1.8°F per every 574 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft).
- 40°C to 45°C (104°F to 113°F) at sea level with an altitude derating of 1.0°C per every 125 m (1.8°F per every 410 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft).

Mechanical specifications

Specifications	Value
Dimensions	—
Height	8.43 cm (3.32 in)
Depth	69.47 cm (27.36 in)
Width	18.45 cm (7.27 in)
Weight (approximate values)	—
Weight (maximum)	8.00 kg (17.64 lb)
Weight (minimum)	5.10 kg (11.24 lb)

Hot-plug power supply calculations

For hot-plug power supply specifications and calculators to determine electrical and heat loading for the server, see the Hewlett Packard Enterprise Power Advisor website (**http://www.hpe.com/info/poweradvisor/online**).

Temperature requirements for the HPE ProLiant XL190r Gen10 Server

To ensure continued safe and reliable equipment operation, install or position the rack in a well-ventilated, climate-controlled environment.

The operating temperature inside the rack is always higher than the room temperature and is dependent on the configuration of equipment in the rack. Check the TMRA for each piece of equipment before installation.

CAUTION:

To reduce the risk of damage to the equipment when installing third-party options:

- Do not permit optional equipment to impede airflow around the server or to increase the internal rack temperature beyond the maximum allowable limits.
- Do not exceed the manufacturer's TMRA.

Thermal limitations for different options installed in the servers may differ depending on the chassis configuration. For more information about product features, specifications, options, configurations, and compatibility, see the product QuickSpecs on the **Hewlett Packard Enterprise website**.

Determine if there are temperature requirements for the component. For more information, see **List of components with temperature requirements in the HPE ProLiant XL190r Gen10 Server**.

If necessary, populate drive bays in the chassis with drive blanks. For more information, see **Drive blank and thermal bezel blank installation guidelines for the HPE ProLiant XL190r Gen10 Server**.

List of components with temperature requirements in the HPE ProLiant XL190r Gen10 Server

The maximum inlet ambient temperature for most components installed in the server is 35°C (95°F). Some components, however, are subject to thermal limitations depending on the chassis model and the fan configuration. If two or more components with temperature requirements are installed in the server, observe the lowest maximum inlet ambient temperature.

Processors

Description	Chassis configuration	Number of LFF/SFF/NVMe drives that correspond to the server	Maximum inlet ambient temperature
Processor with a TDP (thermal design power) of 150 W	Apollo r2200 Gen10 Chassis	5 to 6 drives	25°C (77°F)
	Apollo r2200 Gen10 Chassis	0 to 4 drives[1]	30°C (86°F)
	Apollo r2600 Gen10 Chassis	0 to 12 drives	30°C (86°F)
Processor with a TDP (thermal design power) of between 115 W and 140 W	Apollo r2200 Gen10 Chassis	5 to 6 drives	30°C (86°F)
	Apollo r2200 Gen10 Chassis	0 to 4 drives[1]	35°C (95°F)

[1] *If the component is installed in server 1, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 1-2 and 2-2. Similarly, if the component is installed in server 3, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 3-2 and 4-2. For more information, see* **Drive blank and thermal bezel blank installation guidelines for the HPE ProLiant XL190r Gen10 Server**.

Storage controllers

Description	Chassis configuration	Number of LFF/SFF/ NVMe drives that correspond to the server	Maximum inlet ambient temperature
HPE Smart Array P408i-p Controller	Apollo r2200 Chassis	5 to 6	22°C (71.6°F)
	Apollo r2200 Chassis	0 to 4 drives[1]	30°C (86°F)
	Apollo r2600 Gen10 Chassis	0 to 12 drives	30°C (86°F)
HPE Smart Array P408e-p Controller	Apollo r2200 Gen10 Chassis	5 to 6 drives	25°C (77°F)
	Apollo r2200 Gen10 Chassis	0 to 4 drives[1]	30°C (86°F)
	Apollo r2600 Gen10 Chassis	0 to 12 drives	30°C (86°F)
	Apollo r2800 Gen10 Chassis with 16 NVMe	0 to 8 drives	30°C (86°F)
HPE Smart Array E208i-p Controller	Apollo r2200 Gen10 Chassis	5 to 6 drives	30°C (86°F)
	Apollo r2200 Gen10 Chassis	0 to 4 drives[1]	35°C (95°F)
HPE Smart Array E208e-p Controller	Apollo r2200 Gen10 Chassis	5 to 6 drives	28°C (82.4°F)
	Apollo r2200 Gen10 Chassis	0 to 4 drives[1]	35°C (95°F)
Fibre channel host bus adapter	Apollo r2200 Gen10 Chassis	5 to 6	This configuration is not supported.
	Apollo r2200 Gen10 Chassis	0 to 4 drives[1]	28°C (82.4°F)
	Apollo r2600 Gen10 Chassis	0 to 12 drives	28°C (82.4°F)
	Apollo r2800 Gen10 Chassis with 16 NVMe	0 to 8 drives	28°C (82.4°F)
Converged network adaptor	Apollo r2200 Gen10 Chassis	5 to 6 drives	Using an optical cable: not supported. Using an copper cable: 30 ° C (86 ° F)

Table Continued

Description	Chassis configuration	Number of LFF/SFF/ NVMe drives that correspond to the server	Maximum inlet ambient temperature
	Apollo r2200 Gen10 Chassis	0 to 4 drives[1]	Using an optical cable: 28 ° C (82.4 ° F) Using a copper cable: 35°C (95°F)
	Apollo r2600 Gen10 Chassis	0 to 12 drives	Using an optical cable: 28 ° C (82.4 ° F) Using a copper cable: 35°C (95°F)
	Apollo r2800 Gen10 Chassis with 16 NVMe	0 to 8 drives	Using an optical cable: 28 ° C (82.4 ° F) Using a copper cable: 35°C (95°F)

[1] *If the component is installed in server 1, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 1-2 and 2-2. Similarly, if the component is installed in server 3, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 3-2 and 4-2. For more information, see* **Drive blank and thermal bezel blank installation guidelines for the HPE ProLiant XL190r Gen10 Server**.

PCIe NIC cards

Description	Chassis configuration	Number of LFF/SFF/ NVMe drives that correspond to the server	Maximum inlet ambient temperature
NIC cards with SFP+ or SFP28 transceivers	Apollo r2200 Gen10 Chassis	5 to 6 drives	Using an optical cable: not supported. Using an copper cable: 30 ° C (86 ° F)
	Apollo r2200 Gen10 Chassis	0 to 4 drives[1]	Using an optical cable: 28 ° C (82.4 ° F) Using a copper cable: 35°C (95°F)
	Apollo r2600 Gen10 Chassis	0 to 12 drives	Using an optical cable: 28 ° C (82.4 ° F) Using a copper cable: 35°C (95°F)
	Apollo r2800 Gen10 Chassis with 16 NVMe	0 to 8 drives	Using an optical cable: 28 ° C (82.4 ° F) Using a copper cable: 35°C (95°F)

[1] *If the component is installed in server 1, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 1-2 and 2-2. Similarly, if the component is installed in server 3, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 3-2 and 4-2. For more information, see* **Drive blank and thermal bezel blank installation guidelines for the HPE ProLiant XL190r Gen10 Server**.

FlexibleLOM adapters

Description	Chassis configuration	Number of LFF/SFF/ NVMe drives that correspond to the server	Maximum inlet ambient temperature
FlexibleLOM adaptors with SFP+ or SFP28 transceivers	Apollo r2200 Gen10 Chassis	5 to 6 drives	Using an optical cable: not supported. Using an copper cable: 30 ° C (86 ° F)
	Apollo r2200 Gen10 Chassis	0 to 4 drives[1]	Using an optical cable: 28 ° C (82.4 ° F) Using a copper cable: 35°C (95°F)
	Apollo r2600 Gen10 Chassis	0 to 12 drives	Using an optical cable: 28 ° C (82.4 ° F) Using a copper cable: 35°C (95°F)
	Apollo r2800 Gen10 Chassis with 16 NVMe	0 to 8 drives	Using an optical cable: 28 ° C (82.4 ° F) Using a copper cable: 35°C (95°F)

[1] *If the component is installed in server 1, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 1-2 and 2-2. Similarly, if the component is installed in server 3, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 3-2 and 4-2. For more information, see* **Drive blank and thermal bezel blank installation guidelines for the HPE ProLiant XL190r Gen10 Server**.

Media Modules

Description	Chassis configuration	Number of LFF/SFF/ NVMe drives that correspond to the server	Maximum inlet ambient temperature
Media Module Eth 10Gb 2p 568FLR-MMSFP+ Adptr	Apollo r2200 Gen10 Chassis	5 to 6 drives	30°C (86°F)
	Apollo r2200 Gen10 Chassis	0 to 4 drives[1]	35°C (95°F)
Media Module Eth 10Gb 2p 568FLR-MMT Adptr	Apollo r2200 Gen10 Chassis	5 to 6 drives	30°C (86°F)
	Apollo r2200 Gen10 Chassis	0 to 4 drives[1]	35°C (95°F)

[1] *If the component is installed in server 1, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 1-2 and 2-2. Similarly, if the component is installed in server 3, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 3-2 and 4-2. For more information, see* **Drive blank and thermal bezel blank installation guidelines for the HPE ProLiant XL190r Gen10 Server**.

InfiniBand adapters

Description	Chassis configuration	Number of LFF/SFF/NVMe drives that correspond to the server	Maximum inlet ambient temperature
InfiniBand adapters	Apollo r2200 Gen10 Chassis	5 to 6 drives	Using an optical cable: not supported. Using an copper cable: 28 ° C (82.4 ° F)
	Apollo r2200 Gen10 Chassis	0 to 4 drives[1]	Using an optical cable: 25 ° C (77 ° F) Using a copper cable: 35°C (95°F)
	Apollo r2600 Gen10 Chassis	0 to 12 drives	Using an optical cable: 22 ° C (71.6 ° F) Using a copper cable: 35°C (95°F)
	Apollo r2800 Gen10 Chassis with 16 NVMe	0 to 8 drives	Using an optical cable: 22 ° C (71.6 ° F) Using a copper cable: 35°C (95°F)

[1] *If the component is installed in server 1, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 1-2 and 2-2. Similarly, if the component is installed in server 3, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 3-2 and 4-2. For more information, see* **Drive blank and thermal bezel blank installation guidelines for the HPE ProLiant XL190r Gen10 Server**.

PCIe accelerators

Description	Chassis configuration	Number of LFF/SFF/NVMe drives that correspond to the server	Maximum inlet ambient temperature
PCIe accelerators	Apollo r2200 Gen10 Chassis	5 to 6 drives	30°C (86°F)
	Using a copper cable: 35°C (95°F)	0 to 4 drives[1]	35°C (95°F)

[1] *If the component is installed in server 1, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 1-2 and 2-2. Similarly, if the component is installed in server 3, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 3-2 and 4-2. For more information, see* **Drive blank and thermal bezel blank installation guidelines for the HPE ProLiant XL190r Gen10 Server**.

GPU accelerators

Description	Chassis configuration	Fan configuration	Number of LFF/SFF/NVMe drives that correspond to the server	Maximum inlet ambient temperature
NVIDIA Tesla M10 Quad GPU	Apollo r2200 Gen10 Chassis	Both redundant (8 fans) and non-redundant (4 fans)	5 to 6 drives	22°C (71.6°F)
	Apollo r2200 Gen10 Chassis	Both redundant (8 fans) and non-redundant (4 fans)	0 to 4 drives[1]	35°C (95°F)
NVIDIA Tesla P40 GPU	Apollo r2200 Gen10 Chassis	Both redundant (8 fans) and non-redundant (4 fans)	5 to 6 drives	This configuration is not supported
	Apollo r2200 Gen10 Chassis	Both redundant (8 fans) and non-redundant (4 fans)	0 to 4 drives[2]	25°C (77°F)
	Apollo r2600 Gen10 Chassis	Both redundant (8 fans) and non-redundant (4 fans)	0 to 12 drives	25°C (77°F)
	Apollo r2800 Gen10 Chassis with 16 NVMe	Non-redundant (4 fans)	0 to 8 drives	25°C (77°F)
	Apollo r2800 Gen10 Chassis with 16 NVMe	Redundant (8 fans)	0 to 8 drives	28°C (82.4°F)
NVIDIA Tesla P100 GPU[3]	Apollo r2200 Gen10 Chassis	Both redundant (8 fans) and non-redundant (4 fans)	0 to 3 drives	25°C (77°F)
	Apollo r2600 Gen10 Chassis	Both redundant (8 fans) and non-redundant (4 fans)	0 to 6 drives (mix of SFF and NVMe drives)	22°C (71.6°F)
	Apollo r2600 Gen10 Chassis	Both redundant (8 fans) and non-redundant (4 fans)	0 to 6 drives (SFF SmartDrives only)	25°C (77°F)
	Apollo r2800 Gen10 Chassis with 16 NVMe	Both redundant (8 fans) and non-redundant (4 fans)	0 to 8 drives	22°C (71.6°F)
NVIDIA Tesla V100 GPU[3]	Apollo r2200 Gen10 Chassis	Non-redundant (4 fans)	0 to 3 drives	25°C (77°F)
	Apollo r2200 Gen10 Chassis	Redundant (8 fans)	0 to 3 drives	22°C (71.6°F)

Table Continued

Description	Chassis configuration	Fan configuration	Number of LFF/SFF/NVMe drives that correspond to the server	Maximum inlet ambient temperature
	Apollo r2600 Gen10 Chassis	Both redundant (8 fans) and non-redundant (4 fans)	0 to 6 drives	22°C (71.6°F)
	Apollo r2800 Gen10 Chassis with 16 NVMe	Non-redundant (4 fans)	5 to 8 drives	This configuration is not supported.
	Apollo r2800 Gen10 Chassis with 16 NVMe	Non-redundant (4 fans)[4]	0 to 4 drives	22°C (71.6°F)
	Apollo r2800 Gen10 Chassis with 16 NVMe	Redundant (8 fans)	0 to 8 drives	22°C (71.6°F)

[1] *If NVIDIA Tesla M10 Quad GPUs are installed in the server, and if the server is installed in the Apollo r2200 Gen10 Chassis, the maximum inlet ambient temperature can be increased by installing drive blanks in specific drive bays. For more information, see* **Drive blank and thermal bezel blank installation guidelines for the HPE ProLiant XL190r Gen10 Server**.

[2] *If NVIDIA Tesla P40 GPUs are installed in the server, and if the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in specific drive bays. For more information, see* **Drive blank and thermal bezel blank installation guidelines for the HPE ProLiant XL190r Gen10 Server**.

[3] *To ensure proper thermal cooling when NVIDIA Tesla P100 GPUs or NVIDIA Tesla V100 GPUs are installed in the server, and if the server is installed in the Apollo r2200 Gen10 Chassis or the Apollo r2600 Gen10 Chassis, thermal bezel blanks must be installed in specific drive bays. For more information, see* **Drive blank and thermal bezel blank installation guidelines for the HPE ProLiant XL190r Gen10 Server**.

[4] *To ensure proper thermal cooling when NVIDIA Tesla V100 GPUs are installed in the server, and if the server is installed in a Apollo r2800 Gen10 Chassis with 16 NVMe in a non-redundant fan configuration (four fan modules), drive blanks must be installed in specific drive bays. For more information, see* **Drive blank and thermal bezel blank installation guidelines for the HPE ProLiant XL190r Gen10 Server**.

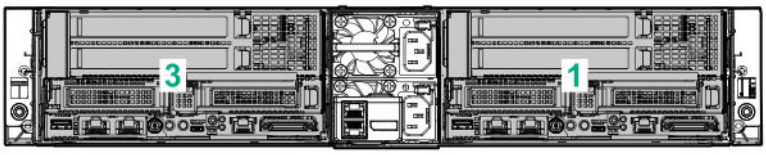
Drive blank and thermal bezel blank installation guidelines for the HPE ProLiant XL190r Gen10 Server

Depending on the chassis configuration and the component being installed in the server, it might be necessary to limit the number of drives installed in the chassis.

For more information, see **List of components with temperature requirements in the HPE ProLiant XL190r Gen10 Server**.

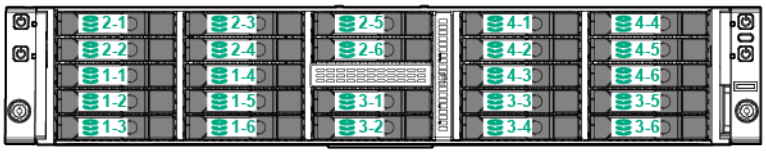
Procedure

1. Note the server number.

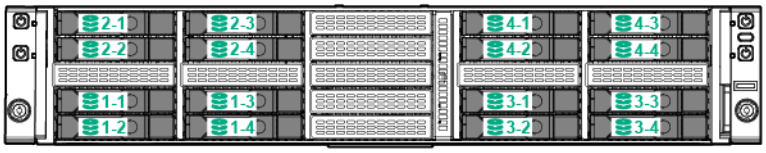


2. Note the drive bays that correspond to the server.
   - HPE Apollo r2200 Gen10 Chassis

   - HPE Apollo r2600 Gen10 Chassis



   - HPE Apollo r2800 Gen10 Chassis with 16 NVMe



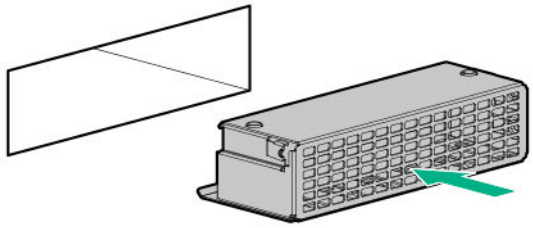
3. Before installing the NVIDIA Tesla P100 GPU or NVIDIA Tesla V100 GPU in the server, and if the server will be installed in the HPE Apollo r2200 Gen10 Chassis or the HPE Apollo r2600 Gen10 Chassis, install the thermal bezel blanks into the correct drive bays:
   a. Observe the LFF and SFF thermal bezel blank installation guidelines:

Chassis	Server number	Thermal bezel blank type	Drive bays
HPE Apollo r2200 Gen10 Chassis	1	LFF	2-1, 2-2, 2-3
HPE Apollo r2200 Gen10 Chassis	3	LFF	4-1, 4-2, 4-3
HPE Apollo r2600 Gen10 Chassis	1	SFF	2-1, 2-2, 2-3, 2-4, 2-5, 2-6
HPE Apollo r2600 Gen10 Chassis	3	SFF	4-1, 4-2, 4-3, 4-4, 4-5, 4-6

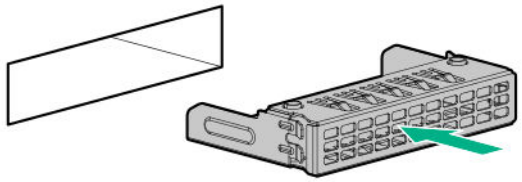
b. Remove the drives and drive blanks.

c. Install the thermal bezel blanks into the correct drive bays.

- LFF thermal bezel blank



- SFF thermal bezel blank



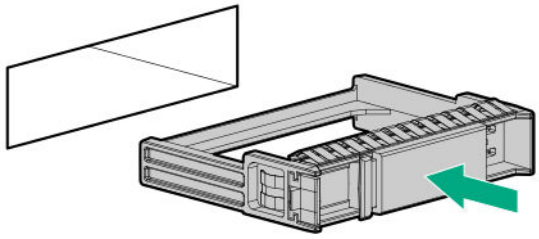
4. Before installing the NVIDIA Tesla V100 GPU in the server, and if the server will be installed in the Apollo r2800 Gen10 Chassis with 16 NVMe in a non-redundant fan configuration (four fan modules), install the drive blanks into the correct drive bays:

a. Observe the SFF drive blank installation guidelines:

Chassis	Fan configuration	Server number	Drive blank type	Drive bays
HPE Apollo r2800 Gen10 Chassis with 16 NVMe	Non-redundant (four fans)	1	SFF	2-1, 2-2, 2-3, 2-4
HPE Apollo r2800 Gen10 Chassis with 16 NVMe	Non-redundant (four fans)	3	SFF	4-1, 4-2, 4-3, 4-4

b. Remove the drives.

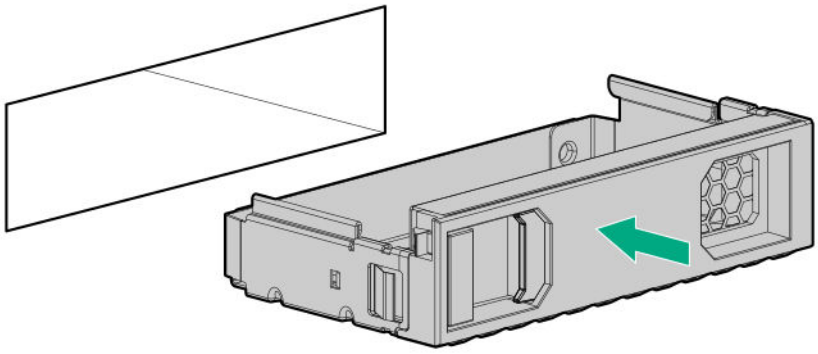
c. Install the drive blanks.



5. Before installing the NVIDIA Tesla P40 GPU in the server, and if the server will be installed in the Apollo r2200 Gen10 Chassis, install the drive blanks into the correct drive bays:
   a. Observe the LFF drive blank installation guidelines:

Chassis	Server number	Drive blank type	Drive bays
HPE Apollo r2200 Gen10 Chassis	1	LFF	1-2, 2-2
HPE Apollo r2200 Gen10 Chassis	3	LFF	3-2, 4-2

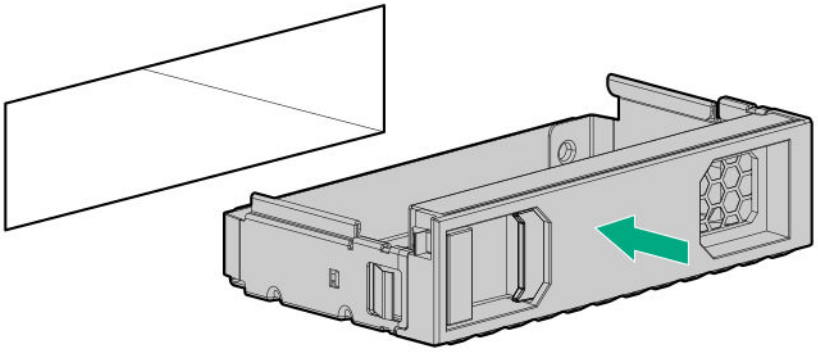
   b. Remove the drives.
   c. Install the drive blanks.



6. Before installing the NVIDIA Tesla M10 Quad GPU in the server, and if the server will be installed in the Apollo r2200 Gen10 Chassis, install drive blanks to increase the maximum inlet ambient temperature.
   a. Observe the LFF drive blank installation guidelines:

Chassis	Server number	Drive blank type	Drive bays
HPE Apollo r2200 Gen10 Chassis	1	LFF	1-2, 2-2
HPE Apollo r2200 Gen10 Chassis	3	LFF	3-2, 4-2

   b. Remove the drives.
   c. Install the drive blanks.



7. Before installing any other components, determine if drive blanks or thermal bezel blanks must be installed in specific drive bays. For more information, see **List of components with temperature requirements in the HPE ProLiant XL190r Gen10 Server** or see the see the product QuickSpecs on the **Hewlett Packard Enterprise website**.

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:

  http://www.hpe.com/assistance
- To access documentation and support services, go to the Hewlett Packard Enterprise Support Center website:

  http://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

  www.hpe.com/support/hpesc

  Hewlett Packard Enterprise Support Center: Software downloads

  www.hpe.com/support/downloads

  Software Depot

  www.hpe.com/support/softwaredepot
- To subscribe to eNewsletters and alerts:

  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:

  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

www.hpe.com/services/getconnected

HPE Proactive Care services

www.hpe.com/services/proactivecare

HPE Proactive Care service: Supported products list

www.hpe.com/services/proactivecaresupportedproducts

HPE Proactive Care advanced service: Supported products list

www.hpe.com/services/proactivecareadvancedsupportedproducts

Proactive Care customer information

Proactive Care central

www.hpe.com/services/proactivecarecentral

Proactive Care service activation

www.hpe.com/services/proactivecarecentralgetstarted

Warranty information

To view the warranty for your product or to view the *Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products* reference document, go to the Enterprise Safety and Compliance website:

www.hpe.com/support/Safety-Compliance-EnterpriseProducts

Additional warranty information

HPE ProLiant and x86 Servers and Options

www.hpe.com/support/ProLiantServers-Warranties

HPE Enterprise 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

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Acronyms and abbreviations

AHCI

Advanced Host Controller Interface

CSR

Customer Self Repair

DDR

double data rate

GPU

graphics processing unit

HP SUM

HP Smart Update Manager

HPE APM

HPE Advanced Power Manager

HPE SSA

HPE Smart Storage Administrator

IEC

International Electrotechnical Commission

iLO

Integrated Lights-Out

IML

Integrated Management Log

ISO

International Organization for Standardization

LFF

large form factor

LOM

LAN on Motherboard

LRDIMM

load reduced dual in-line memory module

NIC

network interface controller

NMI

nonmaskable interrupt

NVRAM

nonvolatile memory

PCIe

Peripheral Component Interconnect Express

PDU

power distribution unit

POST

Power-On Self-Test

RBSU

ROM-Based Setup Utility

RCM

Rack control management

RDIMM

registered dual in-line memory module

RDP

Remote Desktop Protocol

RoHS

Restriction of Hazardous Substances

SAS

serial attached SCSI

SATA

serial ATA

SFF

small form factor

SPP

Service Pack for ProLiant

SUV

serial, USB, video

TMRA

recommended ambient operating temperature

TPM

Trusted Platform Module

UEFI

Unified Extensible Firmware Interface

UID

unit identification

USB

universal serial bus