



**Hewlett Packard**  
Enterprise

## **HPE ProLiant DL160 Gen10 Server Maintenance and Service Guide**

Part Number: 30-55EBA638-008

Published: March 2023

Edition: 8

# HPE ProLiant DL160 Gen10 Server Maintenance and Service Guide

## Abstract

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

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## Revision history

Part number	Publication date	Edition	Summary of changes
30-55EBA638-008	March 2023	8	<ul style="list-style-type: none"> <li>Added the <a href="#">Server data backup</a> topic.</li> <li>Updated the <a href="#">Removing and replacing the 4 LFF drive backplane</a> topic.</li> <li>Replaced the <i>Diagnostic tools</i> chapter with the task-based <a href="#">Configuration resources</a> chapter.</li> </ul>
30-55EBA638-007	January 2022	7	<ul style="list-style-type: none"> <li>Updated the <a href="#">Safety consideration</a> and its subtopics.</li> <li>Updated following component replacement topics: <ul style="list-style-type: none"> <li><a href="#">Quick-release bezel ears</a></li> <li><a href="#">Flexible Slot power supply</a></li> <li><a href="#">Front I/O cable assembly</a></li> <li><a href="#">Drive backplane replacement</a></li> <li><a href="#">System board assembly replacement</a></li> </ul> </li> <li>In the <a href="#">Front panel components</a>: <ul style="list-style-type: none"> <li>Updated the table for the four-bay LFF hot-plug drive model.</li> <li>Updated the image and table for the eight-bay SFF hot-plug drive model.</li> </ul> </li> <li>Added the following topics: <ul style="list-style-type: none"> <li><a href="#">Server UID LED</a></li> <li><a href="#">Using the UID button to view the Server Health Summary</a></li> </ul> </li> <li>In the <a href="#">PCIe expansion slot definitions</a>, added Ethernet card support for the PCIe expansion slot 1.</li> </ul>

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## 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 contact the Hewlett Packard Enterprise Support Center and a technician will help you over the telephone or by electronic means. Hewlett Packard Enterprise specifies in the materials shipped with a replacement CSR part whether a defective part must be returned to Hewlett Packard Enterprise. In cases where it is required to return the defective part to Hewlett Packard Enterprise, you must ship the defective part back to Hewlett Packard Enterprise within a defined period of time, normally five (5) business days. The defective part must be returned with the associated documentation in the provided shipping material. Failure to return the defective part may result in Hewlett Packard Enterprise billing you for the replacement. With a customer self repair, Hewlett Packard Enterprise will pay all shipping and part return costs and determine the courier/carrier to be used.

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

### Parts only warranty service

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

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

### Réparation par le client (CSR)

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

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

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

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

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

## Service de garantie "pièces seules"

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

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

## Riparazione da parte del cliente

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

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

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

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

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

## Servizio di garanzia per i soli componenti

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

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

## Customer Self Repair

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

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

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

CSR-Teile werden abhängig von der Verfügbarkeit und vom Lieferziel am folgenden Geschäftstag geliefert. Für bestimmte Standorte ist eine Lieferung am selben Tag oder innerhalb von vier Stunden gegen einen Aufpreis verfügbar. Wenn Sie Hilfe benötigen, können Sie das Hewlett Packard Enterprise Support Center anrufen und sich von einem Mitarbeiter per Telefon helfen lassen. Den Materialien von Hewlett Packard Enterprise, die mit einem CSR-Ersatzteil geliefert werden, können Sie entnehmen, ob das defekte Teil an Hewlett Packard Enterprise zurückgeschickt werden muss. Wenn es erforderlich ist, das defekte Teil an Hewlett Packard Enterprise zurückzuschicken, müssen Sie dies innerhalb eines vorgegebenen Zeitraums tun, in der Regel innerhalb von fünf (5) Geschäftstagen. Das defekte Teil muss mit

der zugehörigen Dokumentation in der Verpackung zurückgeschickt werden, die im Lieferumfang enthalten ist. Wenn Sie das defekte Teil nicht zurückschicken, kann Hewlett Packard Enterprise Ihnen das Ersatzteil in Rechnung stellen. Im Falle von Customer Self Repair kommt Hewlett Packard Enterprise für alle Kosten für die Lieferung und Rücksendung auf und bestimmt den Kurier-/Frachtdienst.

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

### Parts-only Warranty Service (Garantieservice ausschließlich für Teile)

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

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

### Reparaciones del propio cliente

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

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

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

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

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

### Servicio de garantía exclusivo de componentes

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

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

### Customer Self Repair

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

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

worden gebracht, afhankelijk van het type garanteservice voor het product.

**OPMERKING:** Sommige Hewlett Packard Enterprise onderdelen zijn niet ontwikkeld voor reparatie door de klant. In verband met de garantievoorzieningen 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.

### Garanteservice "Parts Only"

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

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

### Reparo feito pelo cliente

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

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

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

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

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

### Serviço de garantia apenas para peças

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

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



# カスタマーセルフリペア

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

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

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

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

## 部品のみ保証サービス

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

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



# 客户自行维修

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

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

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

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

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

## 仅部件保修服务

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

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

# 客戶自行維修

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

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

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

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

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

## 僅限零件的保固服務

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

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

# 고객 셀프 수리

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

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

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

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

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

## 부품 제공 보증 서비스

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

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.

## Illustrated parts catalog

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

### Subtopics

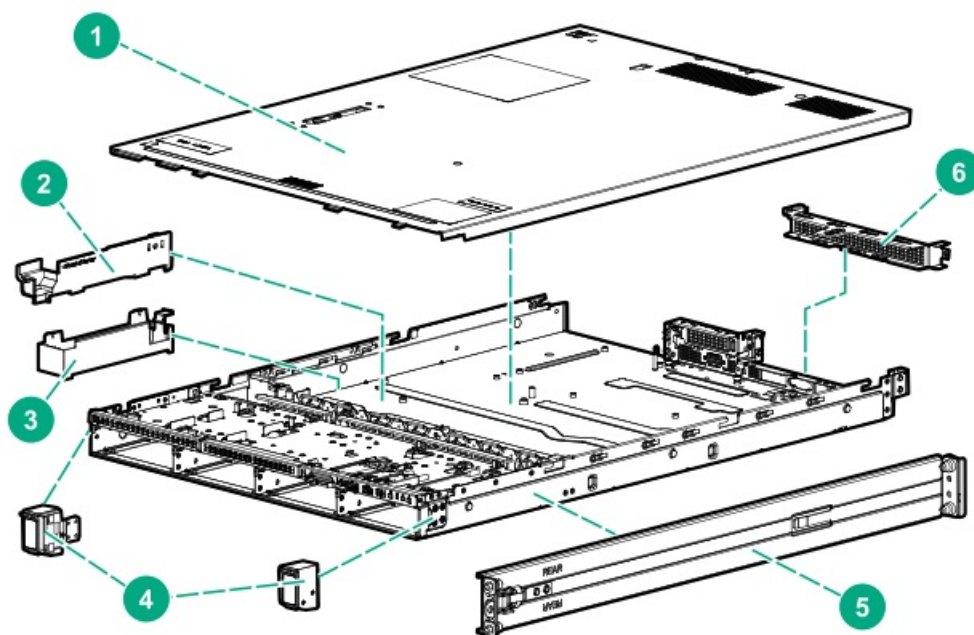
[Mechanical components](#)

[System components](#)

## Mechanical components

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

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



Item	Description
1	<a href="#">Access panel spare part</a>
2	<a href="#">DIMM guard spare kit</a>
3	<a href="#">Energy pack holder and fan blank spare kit</a> <sup>1</sup>
4	<a href="#">Quick-release bezel ears spare part</a>
5	<a href="#">Rack rail spare part</a>
6	<a href="#">Primary riser blank spare part</a>
7	<a href="#">Front bezel spare part</a> <sup>2</sup>
8	<a href="#">Miscellaneous blank spare parts</a> <sup>2</sup>

<sup>1</sup> Fan blank is not shown.

<sup>2</sup> Not shown

## Subtopics

[Access panel spare part](#)

[DIMM guard spare kit](#)

[Energy pack holder and fan blank spare kit](#)

[Quick-release bezel ears spare part](#)

[Rack rail spare part](#)

[Miscellaneous blank spare parts](#)

[Front bezel spare part](#)

## Access panel spare part

Customer self repair: Mandatory

Description	Spare part number
Access panel	878528-001

## DIMM guard spare kit

Customer self repair: Mandatory

Description	Spare part number
<ul style="list-style-type: none"><li>Left DIMM guard</li><li>Right DIMM guard</li></ul>	878529-001

For more information on the removal and replacement procedures, see [Removing and replacing the DIMM guards](#).

## Energy pack holder and fan blank spare kit

Customer self repair: Mandatory

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

For more information on the removal and replacement procedures, see following:

- [Removing and replacing the energy pack and holder](#)
- [Removing and replacing a fan blank](#)

## Quick-release bezel ears spare part

Customer self repair: Mandatory

Description	Spare part number
Quick-release bezel ears	878531-001

For more information on the removal and replacement procedures, see [Removing and replacing the quick-release bezel ears](#).



## Rack rail spare part

Customer self repair: **Mandatory**

Description	Spare part number
SFF Easy Install Rail kit	875544-001

## Miscellaneous blank spare parts

Customer self repair: **Mandatory**

Description	Spare part number
Primary riser blank	878532-001
Optical drive cage blank <sup>1</sup>	878533-001
Universal media bay blank	878534-001
Power supply blank	775423-001
SFF drive blank	670033-001
LFF drive blank	827363-001

<sup>1</sup> This blank is for the optical drive cage in SFF chassis.

For more information on the removal and replacement procedures on drive blank replacement, see [Removing and replacing a drive blank](#).

## Front bezel spare part

Customer self repair: **Mandatory**

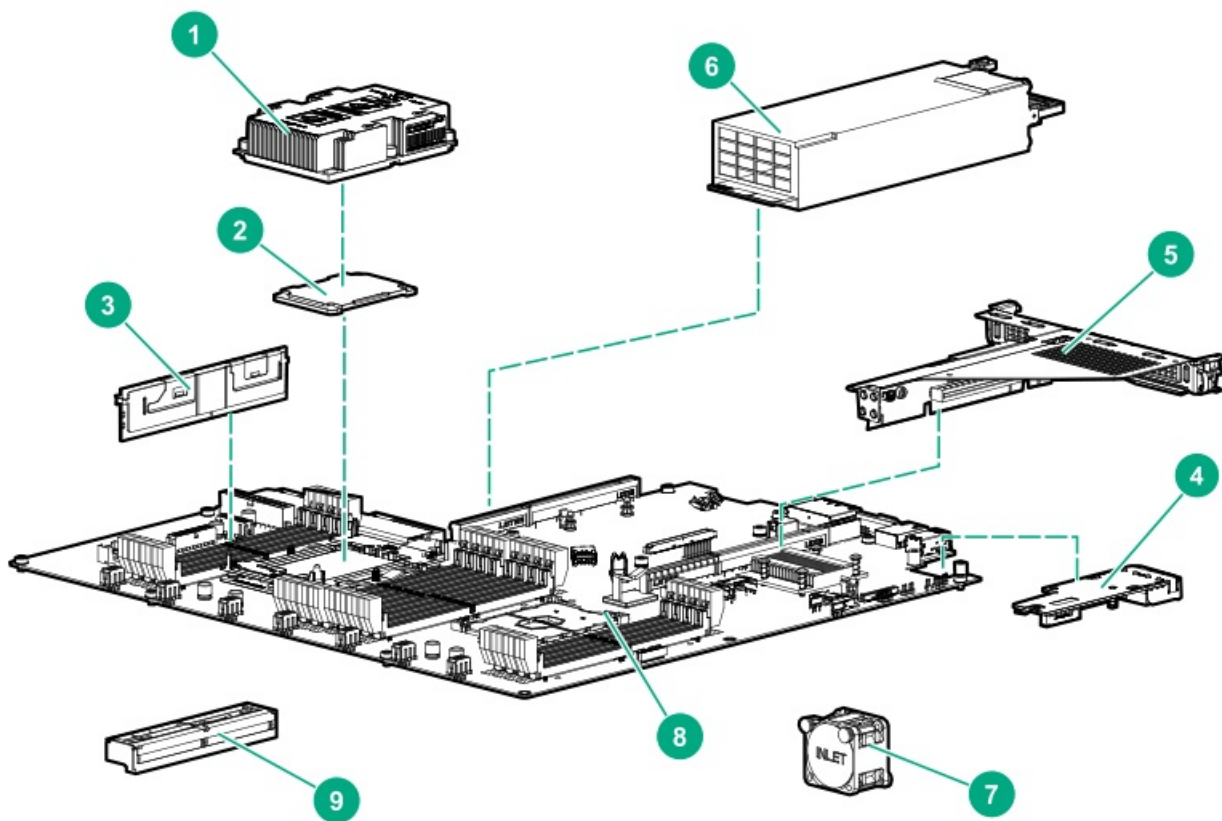
Description	Spare part number
Front bezel	875561-001

For more information on the removal and replacement procedures, see [Removing and replacing the front bezel](#).

## System components

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

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



Item	Description
1	<a href="#">Heatsink spare part</a>
2	<ul style="list-style-type: none"> <li>• <a href="#">First-generation Intel Xeon Scalable Processor spare parts</a></li> <li>• <a href="#">Second-generation Intel Xeon Scalable Processor spare parts</a></li> </ul>
3	<a href="#">DIMM spare parts</a>
4	<a href="#">Media Module adapter spare parts</a>
5	<a href="#">Riser board spare parts</a>
6	<a href="#">Power supply spare parts</a>
7	<a href="#">Fan spare part</a>
8	<a href="#">System board assembly spare part</a>
9	<a href="#">Energy pack spare parts</a>
10	<a href="#">Drive backplane spare parts</a> <sup>1</sup>
11	<a href="#">Serial port cable spare part</a> <sup>1</sup>
12	<a href="#">Chassis intrusion detection switch spare part</a> <sup>1</sup>
13	<a href="#">HPE Trusted Platform Module 2.0 spare part</a> <sup>1</sup>
14	<a href="#">Front I/O cable spare parts</a> <sup>1</sup>
15	<a href="#">System battery spare part</a> <sup>1</sup>
16	<a href="#">Drive cable spare parts</a> <sup>1</sup>

## Subtopics

[Heatsink spare part](#)

[First-generation Intel Xeon Scalable Processor spare parts](#)

[Second-generation Intel Xeon Scalable Processor spare parts](#)

[DIMM spare parts](#)

[Media Module adapter spare parts](#)

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[System battery spare part](#)

[Drive backplane spare parts](#)

[Serial port cable spare part](#)

[Chassis intrusion detection switch spare part](#)

[HPE Trusted Platform Module 2.0 spare part](#)

[Front I/O cable spare parts](#)

[Drive cable spare parts](#)

## Heatsink spare part

[Customer self repair: No](#)

Description	Spare part number
Heatsink	878536-001

## First-generation Intel Xeon Scalable Processor spare parts

[Customer self repair: No](#)



Description	Spare part number
<b>Intel Xeon Bronze processor family</b>	—
Intel Xeon Bronze 3104, 1.70 GHz, 6C, 85 W	875709-001
Intel Xeon Bronze 3106, 1.70 GHz, 8C, 85 W	875710-001
<b>Intel Xeon Silver processor family</b>	—
Intel Xeon Silver 4108, 1.80 GHz, 8C, 85 W	875712-001
Intel Xeon Silver 4110, 2.10 GHz, 8C, 85 W	875711-001
Intel Xeon Silver 4112, 2.60 GHz, 4C, 85 W	875714-001
Intel Xeon Silver 4114, 2.20 GHz, 10C, 85 W	875713-001
Intel Xeon Silver 4116, 2.10 GHz, 12C, 85 W	875716-001
<b>Intel Xeon Gold processor family</b>	—
Intel Xeon Gold 5115, 2.40 GHz, 10C, 85 W	875715-001
Intel Xeon Gold 5118, 2.30 GHz, 12C, 105 W	875717-001
Intel Xeon Gold 5120, 2.20 GHz, 14C, 105 W	875718-001
Intel Xeon Gold 5122, 3.60 GHz, 4C, 105 W	875719-001
Intel Xeon Gold 6126, 2.60 GHz, 12C, 125 W	875720-001
Intel Xeon Gold 6128, 3.40 GHz, 6C, 115 W	875721-001
Intel Xeon Gold 6130, 2.10 GHz, 16C, 125 W	874736-001
Intel Xeon Gold 6132, 2.60 GHz, 14C, 140 W	875722-001
Intel Xeon Gold 6134, 3.20 GHz, 8C, 130 W	875723-001
Intel Xeon Gold 6136, 3.00 GHz, 12C, 150 W	875724-001
Intel Xeon Gold 6138, 2.00 GHz, 20C, 125 W	874735-001
Intel Xeon Gold 6140, 2.30 GHz, 18C, 140 W	874734-001
Intel Xeon Gold 6142, 2.60 GHz, 16C, 150 W	874733-001
Intel Xeon Gold 6148, 2.40 GHz, 20C, 150 W	874732-001
Intel Xeon Gold 6152, 2.10 GHz, 22C, 140 W	874730-001
<b>Intel Xeon Platinum processor family</b>	—
Intel Xeon Platinum 8160, 2.10 GHz, 24C, 150 W	874729-001
Intel Xeon Platinum 8164, 2.10 GHz, 26C, 150 W	875729-001

## Second-generation Intel Xeon Scalable Processor spare parts

Customer self repair: No

Description	Spare part number
<b>Intel Xeon Bronze processor family</b>	—
Intel Xeon Bronze 3204, 1.90 GHz, 6C, 85 W	P11604-001
<b>Intel Xeon Bronze "R" processor family <sup>1</sup></b>	—

Description	Spare part number
Intel Xeon Bronze 3206R, 1.90 GHz, 8C, 85 W	P19248-001
<b>Intel Xeon Silver processor family</b>	—
Intel Xeon Silver 4208, 2.10 GHz, 8C, 85 W	P11605-001
Intel Xeon Silver 4210, 2.20 GHz, 10C, 85 W	P11606-001
Intel Xeon Silver 4214, 2.20 GHz, 12C, 85 W	P11607-001
Intel Xeon Silver 4215, 2.50 GHz, 8C, 85 W	P11608-001
Intel Xeon Silver 4216, 2.10 GHz, 16C, 100 W	P11609-001
<b>Intel Xeon Silver "R" processor family <sup>1</sup></b>	—
Intel Xeon Silver 4210R, 2.40 GHz, 10C, 100 W	P19246-001
Intel Xeon Silver 4214R, 2.40 GHz, 12C, 100 W	P19245-001
Intel Xeon Silver 4215R, 3.20 GHz, 8C, 130 W	P25089-001
<b>Intel Xeon Gold processor family</b>	—
Intel Xeon Gold 5215, 2.50 GHz, 10C, 85 W	P11610-001
Intel Xeon Gold 5217, 3.00 GHz, 8C, 115 W	P11611-001
Intel Xeon Gold 5218, 2.30 GHz, 16C, 125 W	P11612-001
Intel Xeon Gold 5220, 2.20 GHz, 18C, 125 W	P11613-001
Intel Xeon Gold 5222, 3.80 GHz, 4C, 105 W	P11632-001
Intel Xeon Gold 6226, 2.70 GHz, 12C, 125 W	P12008-001
Intel Xeon Gold 6230, 2.10 GHz, 20C, 125 W	P11614-001
Intel Xeon Gold 6234, 3.30 GHz, 8C, 130 W	P12009-001
Intel Xeon Gold 6238, 2.10 GHz, 22C, 140 W	P12010-001
Intel Xeon Gold 6240, 2.60 GHz, 18C, 150 W	P11615-001
Intel Xeon Gold 6242, 2.80 GHz, 16C, 150 W	P11616-001
Intel Xeon Gold 6244, 3.60 GHz, 8C, 150 W	P11617-001
Intel Xeon Gold 6248, 2.50 GHz, 20C, 150 W	P11618-001
Intel Xeon Gold 6252, 2.10 GHz, 24C, 150 W	P11619-001
<b>Intel Xeon Gold "R" processor family <sup>1</sup></b>	—
Intel Xeon Gold 5218R, 2.10 GHz, 20C, 125 W	P25090-001
Intel Xeon Gold 5220R, 2.20 GHz, 24C, 150 W	P19241-001
Intel Xeon Gold 6226R, 2.90 GHz, 16C, 150 W	P25094-001
Intel Xeon Gold 6230R, 2.10 GHz, 26C, 150 W	P25095-001
<b>Intel Xeon Gold processor family for 1P configurations</b>	—
Intel Xeon Gold 6208U, 2.90 GHz, 16C, 150 W	P25102-001
Intel Xeon Gold 6209U, 2.10 GHz, 20C, 125 W	P11644-001
Intel Xeon Gold 6210U, 2.50 GHz, 20C, 150 W	P11642-001
<b>Intel Xeon Platinum processor family</b>	—
Intel Xeon Platinum 8253, 2.20 GHz, 16C, 125 W	P12011-001
Intel Xeon Platinum 8256, 3.80 GHz, 4C, 105 W	P12012-001

<sup>1</sup> Refreshed processor models

## DIMM spare parts

Customer self repair: **Mandatory**

Description	Spare part number
<b>2666 MT/s DIMMs</b>	—
8 GB, single-rank x8 PC4-2666V-R	850879-001
16 GB, single-rank x4 PC4-2666V-R	850880-001
16 GB, dual-rank x8 PC4-2666V-R	868846-001
32 GB, dual-rank x4 PC4-2666V-R	850881-001
64 GB, quad-rank x4 PC4-2666V-L	850882-001
<b>2933 MT/s DIMMs</b>	—
8 GB, single-rank x8 PC4-2933Y-R	P06186-001
16 GB, single-rank x4 PC4-2933Y-R	P06187-001
16 GB, dual-rank x8 PC4-2933Y-R	P06188-001
32 GB, dual-rank x4 PC4-2933Y-R	P06189-001
64 GB, dual-rank x4 PC4-2933Y-R	P06192-001
64 GB, quad-rank x4 PC4-2933Y-L	P06190-001

For more information on the removal and replacement procedures, see [Removing and replacing a DIMM](#).

## Media Module adapter spare parts

Customer self repair: **Optional**

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

For more information on the removal and replacement procedures, see [Removing and replacing the Media Module adapter](#).

## Riser board spare parts

Customer self repair: **Optional**

Description	Spare part number
Primary riser board, x16 x8	878538-001
Primary riser board x8/FlexibleLOM	878539-001
Secondary riser board, x16	878540-001

## Power supply spare parts

Customer self repair: **Mandatory**

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

For more information on the removal and replacement procedures, see [Removing and replacing a power supply](#).

## Fan spare part

Customer self repair: **Mandatory**

Description	Spare part number
Fan	878537-001

For more information on the removal and replacement procedures, see [Removing and replacing a fan](#).

## System board assembly spare part

Customer self repair: **Optional**

Description	Spare part number
System board assembly for the first-generation Intel Xeon Scalable Processors includes:	878512-001
<ul style="list-style-type: none"> <li>System board assembly</li> <li>System board handle tool</li> </ul>	
System board assembly for the first-generation and second-generation Intel Xeon Scalable Processors includes:	P11709-001
<ul style="list-style-type: none"> <li>System board assembly</li> <li>System board handle tool</li> </ul>	

For more information on the removal and replacement procedures, see [System board assembly replacement](#).

## Energy pack spare parts

Customer self repair: **Mandatory**

Description	Spare part number
HPE Smart Storage Hybrid Capacitor, 145 mm cable	P07473-001
HPE Smart Storage Battery 96 W, 145 mm cable	878643-001

For more information on the removal and replacement procedures, see [Removing and replacing the energy pack and holder](#).

## System battery spare part

Customer self repair: **Mandatory**

Description	Spare part number
3.3-V lithium battery coin (CR2032)	319603-001

For more information on the removal and replacement procedures, see [Removing and replacing the system battery](#).

## Drive backplane spare parts

Customer self repair: **Optional**

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

For more information on the removal and replacement procedures, see [Drive backplane replacement](#).

## Serial port cable spare part

Customer self repair: **Mandatory**

Description	Spare part number
Serial port cable	879778-001

For more information on the removal and replacement procedures, see [Removing and replacing the serial port](#).

## Chassis intrusion detection switch spare part

Customer self repair: **Mandatory**

Description	Spare part number
Chassis intrusion detection switch	875570-001

For more information on the removal and replacement procedures, see [Removing and replacing the chassis intrusion detection switch](#).

## HPE Trusted Platform Module 2.0 spare part

Customer self repair: **No**

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

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

For more information, see [HPE Trusted Platform Module 2.0 Gen10 Option](#).

## Front I/O cable spare parts

#### Customer self repair: Optional

Description	Spare part number
Front I/O cable kit, includes:	878787-001
<ul style="list-style-type: none"><li>• Front I/O cable</li><li>• Ambient temperature sensor cable</li><li>• USB 3.0 cable</li></ul>	
iLO service port cable	878346-001

For more information on the removal and replacement procedures, see [Front I/O assembly replacement](#).

## Drive cable spare parts

#### Customer self repair: Mandatory

Description	Spare part number
4 LFF front I/O cable assembly	878541-001
4 LFF backplane to Smart Array controller Mini-SAS cable	878758-001
4 LFF embedded SATA to backplane Mini-SAS cable	878327-001
8 SFF Mini-SAS cable kit, includes:	878328-001
<ul style="list-style-type: none"><li>• 8 SFF backplane to embedded SATA Mini-SAS cable</li><li>• 8 SFF backplane to Smart Array controller Mini-SAS cable</li></ul>	
2 SFF SAS/SATA Mini-SAS cable kit, includes:	878329-001
<ul style="list-style-type: none"><li>• 2 SFF SAS/SATA backplane to embedded SATA Mini-SAS cable</li><li>• 2 SFF SAS/SATA backplane to Smart Array controller Mini-SAS cable</li></ul>	
2 SFF backplane power cable	875566-001
4 LFF/8 SFF drive backplane power cable	878332-001
M.2 SATA long cable for slot 3	878639-001
M.2 SATA short cable for slot 1 or slot 2	878760-001
8 SFF optical drive cable assembly	878344-001
4 LFF optical drive cable assembly	878324-001

## Removal and replacement procedures

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

#### Subtopics

##### Safety considerations

## Preparation procedures

Removing and replacing the front bezel

Removing and replacing a drive blank

Removing and replacing a hot-plug drive

Removing and replacing the quick-release bezel ears

Flexible Slot power supply replacement

Removing and replacing a fan

Removing and replacing a fan blank

Drive backplane replacement

Removing and replacing the optical drive

DIMM-processor compatibility

Removing and replacing the DIMM guards

Removing and replacing the FlexibleLOM adapter

Removing and replacing the Media Module adapter

Removing and replacing an expansion card

Removing and replacing a storage controller

Removing and replacing an M.2 SSD

Removing and replacing the energy pack and holder

Front I/O assembly replacement

Removing and replacing the chassis intrusion detection switch

Removing and replacing the serial port

System battery replacement

System board assembly replacement

HPE Trusted Platform Module 2.0 Gen10 Option

## Safety considerations

Before performing service procedures, review all the safety information.

### Subtopics

Electrostatic discharge

Symbols on equipment

Rack warnings and cautions

Server warnings and cautions



## 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  $\pm 10$  percent resistance in the ground cords. To provide proper ground, wear the strap snug against the skin.
  - Use heel straps, toe straps, or boot straps at standing workstations. Wear the straps on both feet when standing on conductive floors or dissipating floor mats.
  - Use conductive field service tools.
  - Use a portable field service kit with a folding static-dissipating work mat.

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

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

## Symbols on equipment

The following symbols may be placed on equipment to indicate the presence of potentially hazardous conditions:



This symbol in conjunction with any of the following symbols indicates the presence of a potential hazard. The potential for injury exists if warnings are not observed. Consult your documentation for specific details.

該符號與以下任意符號組合使用，指示存在潛在的危險。如果不遵守警告，可能會造成人身傷害。詳細信息請參閱相關文檔。



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



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**WARNING:**

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

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此符號表明存在危險電路或觸電的危險。所有維修工作應由具有相關資格的人員來完成。

警告：為了減少觸電造成人身傷害的危險，請不要打開此外殼。所有維護、升級和維修工作都應由具有相關資格的人員來完成。



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



**WARNING:**

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

此符號表明存在觸電的危險。在這一區域內沒有用戶可以現場維修的部件。一定不要打開。警告：為了減少觸電造成人身傷害的危險，請不要打開此外殼。



This symbol on an RJ-45 receptacle indicates a Network Interface Connection.



**WARNING:**

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

RJ-45 插孔上的該符號指示網絡接口連接。

警告：為了減少觸電、火災或設備損壞的危險，不要將電話或電信連接設備插入此插孔。



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



**WARNING:**

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

此符號表明表面或組件過熱。如果觸摸此表面，可能會造成人身傷害。警告：為了減少因組件過熱而造成人身傷害的危險，應等到表面降溫後再觸摸。



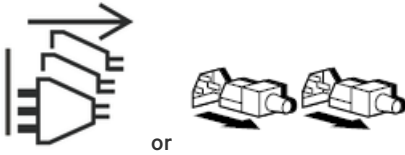
This symbol indicates the presence of a moving fan blade. If the spinning blades are contacted, the potential for injury exists.



**WARNING:**

Hazardous moving parts. Keep away from moving fan blades. To reduce the risk of injury from a hot component, allow the surface to cool before touching.

此符號表明存在運動風扇葉片的危險。如果觸摸旋轉葉片，可能會造成人身傷害。警告：危險的運動部件。請遠離運動風扇刀片。為減少被高溫組件燙傷的危險，應在表面冷卻之後再接觸。



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



**WARNING:**

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

電源或系統上的這些符號表明設備由多個電源供電。

警告：為了減少觸電造成人身傷害的危險，應拔下所有電源線插頭，完全斷開系統的電源。



Weight in kg.

Weight in lb.

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



**WARNING:**

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

此符號表明組件的重量超出了建議值，一個人無法安全取放。

警告：為了減少人身傷害或設備損壞的危險，應遵守當地有關人工取放物品的職業保健與安全規定及準則。



A discharge of static electricity from a finger or other conductor may damage system boards or other static-sensitive devices. To prevent damage, observe antistatic precautions.

手指或其它導體所釋放的靜電可能損壞主板或其它對靜電敏感的設備。為防止發生損壞，請遵守防靜電預防措施。



This symbol indicates the presence of a laser device in the product that may exceed Class 1 limits. Refer to the product documentation for more information.

此符號表明在可能會超出 1 類限制的產品中存在激光設備。有關詳細信息，請參閱產品文檔。



This symbol indicates the presence of moving parts inside the product that may present a pinch point if improperly contacted.



**WARNING:**

Hazardous moving parts. Do not insert any tools or any part of your body into the product while it is operating or in any openings.

## Rack warnings and cautions



**WARNING:**

When all components are removed, the server weighs 10.00 kg (22.03 lb). When all components are installed, the server can weigh up to 16.00 kg (35.27 lb).

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



**WARNING:**

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

- Observe local occupational health and safety requirements and guidelines for manual material handling.
- Get help to lift and stabilize the product during installation or removal, especially when the product is not fastened to the rails. The server weighs more than 10.00 kg (22.03 lb), so at least two people must lift the server into the together. An additional person may be required to help align the server if the server is installed higher than chest level.
- Use caution when installing the server in or removing the server from the .
- Adequately stabilized the before extending a component outside the . Extend only one component at a time. A may become unstable if more than one component is extended.
- Do not stack anything on top of rail-mounted component or use it as a work surface when extended from the rack.



**WARNING:**

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

- The rack has anti-tip measures in place. Such measures include floor-bolting, anti-tip feet, ballast, or a combination as specified by the rack manufacturer and applicable codes.
- The leveling jacks (feet) are extended to the floor.
- The full weight of the rack rests on the leveling jacks (feet).
- The stabilizing feet are attached to the rack if it is a single-rack installation.
- The racks are coupled together in multiple rack installations.



**WARNING:**

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

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

**CAUTION:**

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

**CAUTION:**

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

- You must fully understand the static and dynamic load carrying capacity of the and be sure that it can accommodate the weight of the server.
- Be sure sufficient clearance exists for cabling, installation and removal of the server, and movement of the rack doors.

## Server warnings and cautions

**WARNING:**

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



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

**WARNING:**

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

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

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

**CAUTION:**

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

**CAUTION:**

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

**CAUTION:**

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



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

# Preparation procedures

## Prerequisites

Before powering down the server for an upgrade, maintenance, or service procedure, perform a backup of critical server data.

## About this task

To access components and perform certain upgrade, maintenance, or service procedure, you must perform one or more of the procedures described in this section.

## Subtopics

Server data backup

Power down the server

Extend the server from the rack

Opening the cable management arm

Remove the server from the rack

Removing the front bezel

Remove the access panel

Removing the primary PCI riser blank

Removing the primary PCI riser cage

Removing the secondary PCI riser cage

Removing the universal media bay blank

Enable the enhanced cooling function

## Server data backup

To avoid data loss, make sure to back up all server data before installing or removing a hardware option, performing a server maintenance, or a troubleshooting procedure.

Server data in this context refers to information that may be required to return the system to a normal operating environment after completing a hardware maintenance or troubleshooting procedure. This information may include:

- User data files
- User account names and passwords
- Application settings and passwords
- Component drivers and firmware
- TPM recovery key/password
- BIOS configuration settings—Use the backup and restore function in UEFI System Utilities. For more information, see the UEFI user guide (<https://www.hpe.com/info/UEFI-manuals>).
  - Custom default system settings
  - Security passwords including those required for power-on and BIOS admin access, persistent memory, and Server Configuration Lock (for HPE Trusted Supply Chain servers)

- Server serial number and the product ID
- iLO-related data—Use the iLO backup and restore function. For more information, see the iLO user guide (<https://www.hpe.com/support/ilo5>).
  - iLO license
  - Customer iLO user name, password, and DNS name
  - iLO configuration settings
- For servers managed by HPE GreenLake for Compute Ops Management, make sure that you have your HPE GreenLake account ID. For more information, see [HPE GreenLake for Compute Ops Management Getting Started Guide](#).

## 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 activates a controlled shutdown of applications and the OS before the server enters standby mode. It can also activate a shutdown behavior governed by an OS configuration or policy.
- Press and hold the Power On/Standby button for more than 4 seconds to force the server to enter standby mode.  
This method forces the server to enter standby mode without properly exiting applications and the OS. If an application stops responding, you can use this method to force a shutdown.
- Use a virtual power button selection through iLO 5.  
This method initiates a controlled remote shutdown of applications and the OS before the server enters standby mode.

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

## Extend the server from the rack

### Prerequisites

Before you perform this procedure, review the:

- [Rack warnings and cautions](#)
- [Server warnings and cautions](#)

### About this task

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

### Procedure

1. [Power down the server](#).
2. Disconnect all peripheral cables and power cords.
3. Loosen the front panel thumbscrews.

**WARNING:**

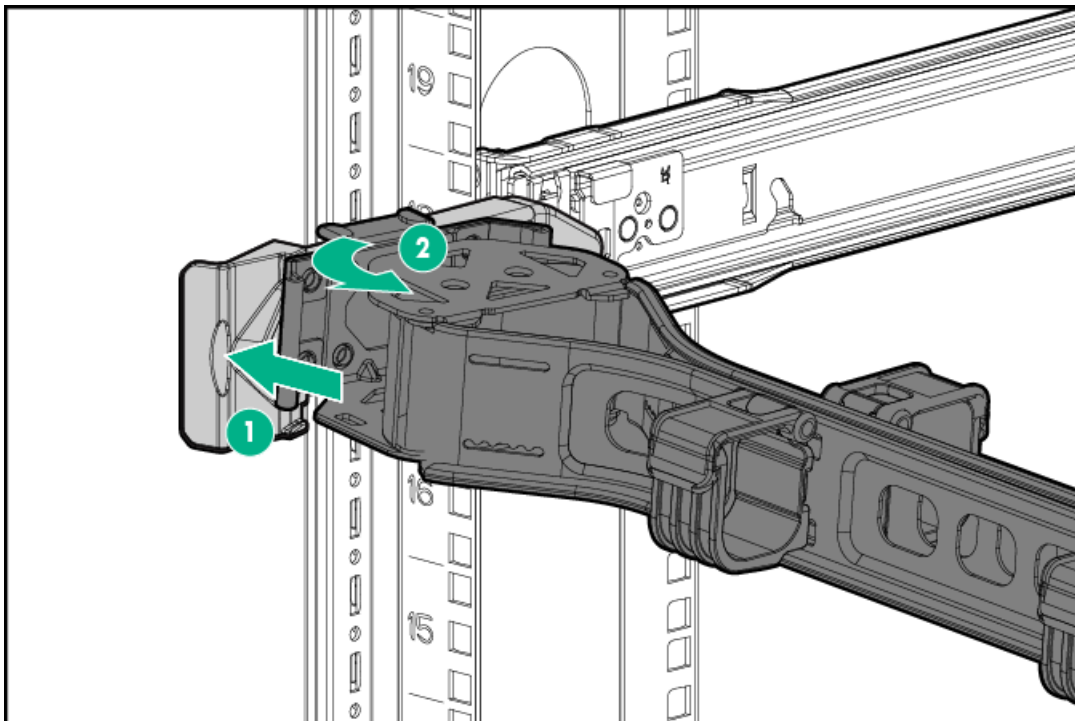
To reduce the risk of personal injury, be careful when pressing the server rail-release latches and sliding the server into the rack. The sliding rails could pinch your fingers.

4. Extend the server on the rack rails until the server rail-release latches engage.
5. After the installation or maintenance procedure, slide the server into the rack:
  - a. Slide the server fully into the rack.
  - b. Secure the server by tightening the thumbscrews.
6. Connect the peripheral cables and power cords.

## Opening the cable management arm

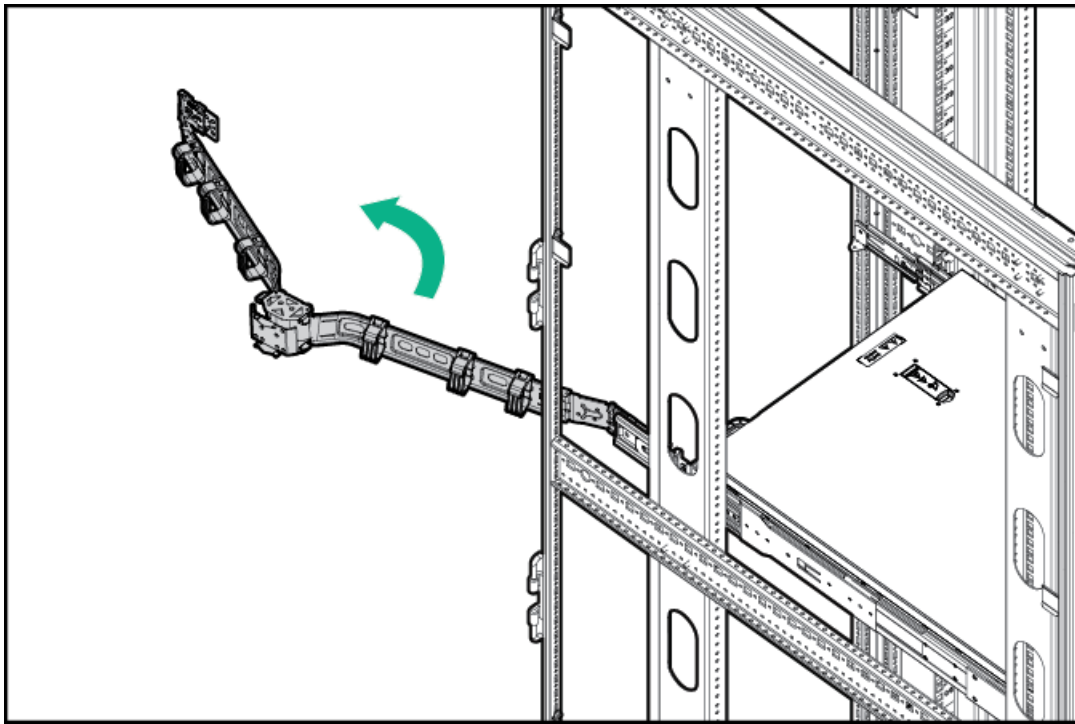
To access the server rear panel:

1. Release the cable management arm.



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





## Remove the server from the rack

### Prerequisites

Before you perform this procedure, review the:

- [Rack warnings and cautions](#)
- [Server warnings and cautions](#)

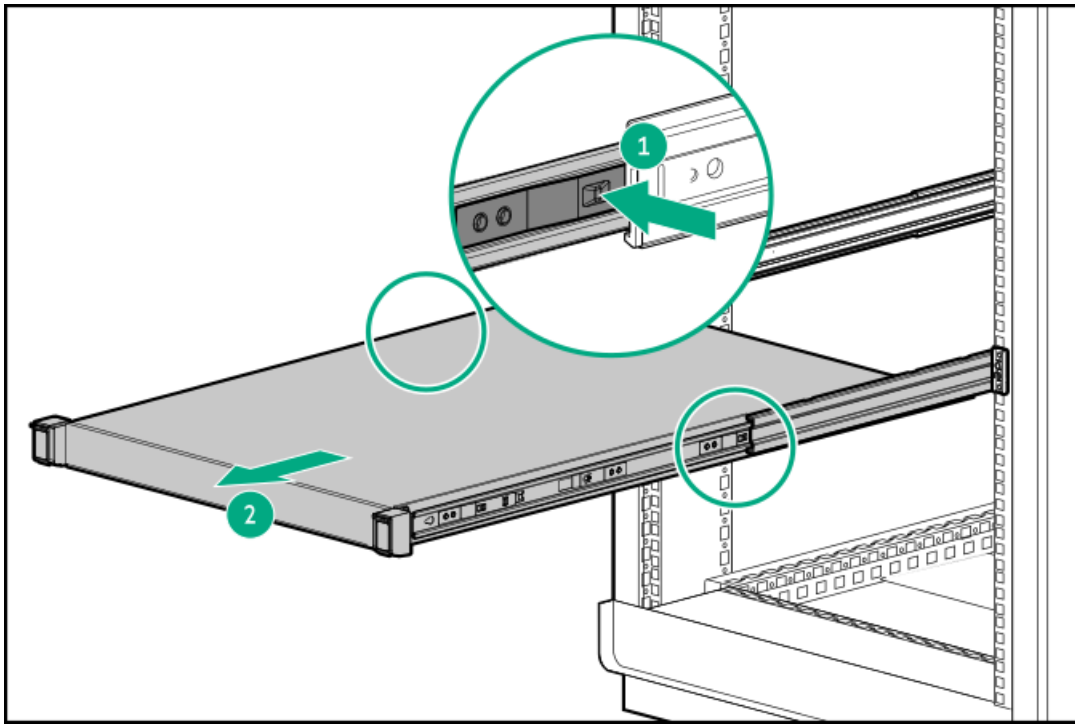
### About this task



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

### Procedure

1. [Power down the server.](#)
2. [Release the cable management arm.](#)
3. Disconnect the cabling from the rear panel.
4. [Extend the server from the rack.](#)
5. Remove the server from the rack:

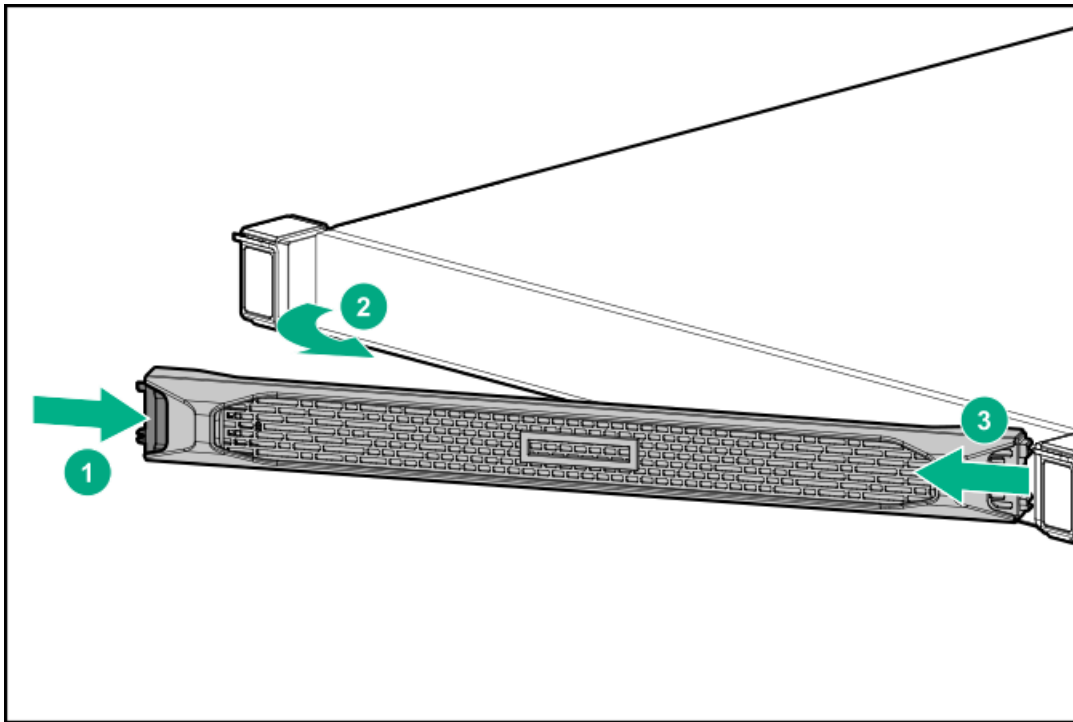


6. Place the server on a sturdy, level surface.

## Removing the front bezel

### Procedure

1. If installed, unlock and remove the Kensington security lock.  
For more information, see the lock documentation.
2. Remove the front bezel.



## Remove the access panel

### About this task



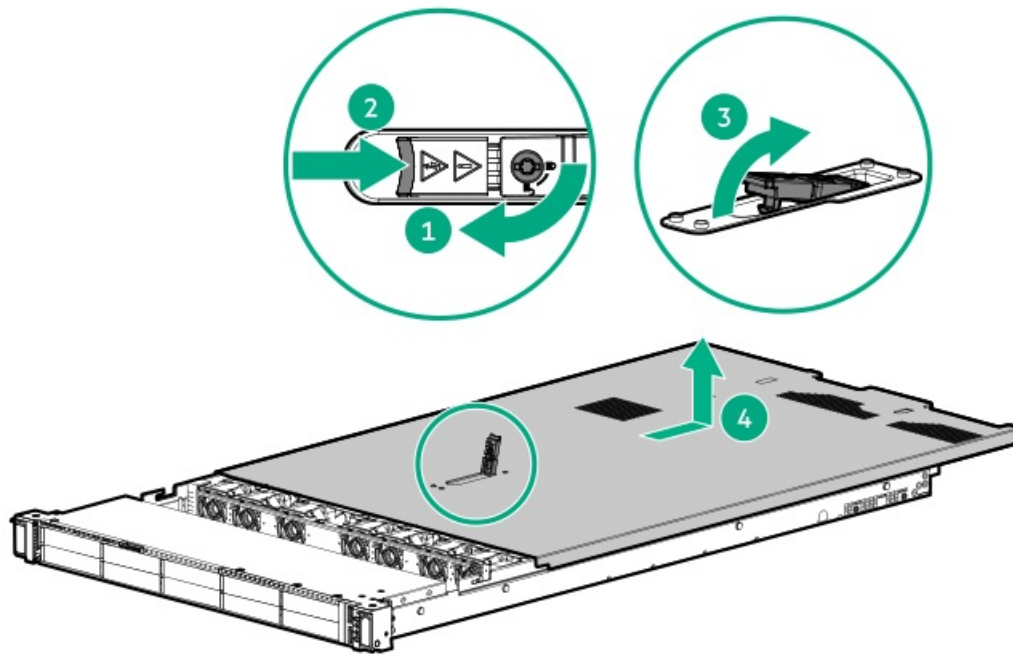
**WARNING:** To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.



**CAUTION:** Do not operate the 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.

### Procedure

1. Power down the server.
2. Extend the server from the rack.
3. Open or unlock the locking latch, slide the access panel to the rear of the chassis, and remove the access panel.



## Removing the primary PCI riser blank

### Prerequisites

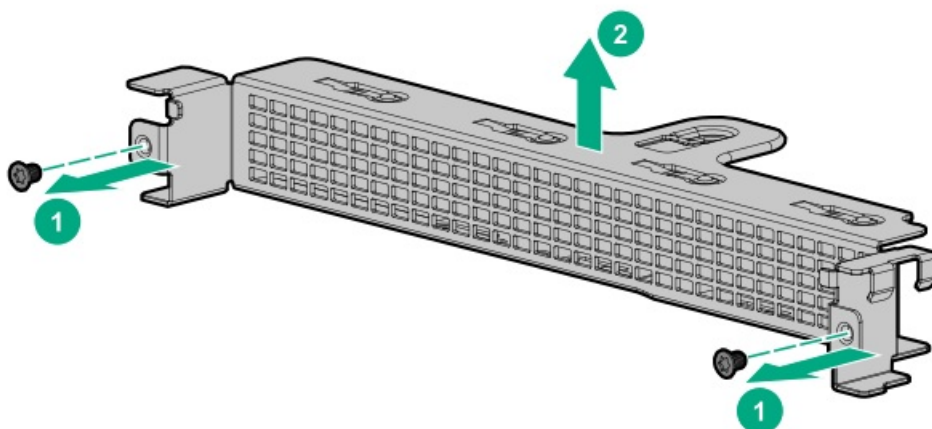
Before you perform this procedure, make sure that you have a T-10 Torx screwdriver available.



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

### Procedure

1. Back up all server data.
2. If installed, remove the bezel.
3. Power down the server.
4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Do one of the following:
  - Extend the server from the rack.
  - Remove the server from the rack.
6. Remove the access panel.
7. Remove the primary PCI riser blank:



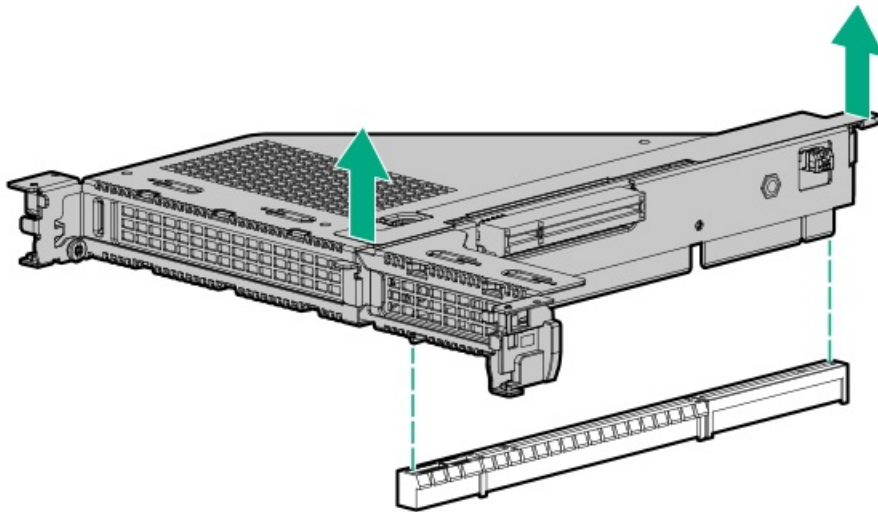
## Removing the primary PCI riser cage

### About this task

- 
- CAUTION:** To prevent damage to the server or expansion boards, power down the server and remove all AC power cords before removing or installing the PCI riser cage.
- 
- CAUTION:** To prevent improper cooling and thermal damage, do not operate the server unless all bays are populated with either a component or a blank.
- 

### Procedure

1. Back up all server data.
2. If installed, remove the bezel.
3. Power down the server.
4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Do one of the following:
  - Extend the server from the rack.
  - Remove the server from the rack.
6. Remove the access panel.
7. Remove the PCI riser cage.



## Removing the secondary PCI riser cage

### Procedure

1. Observe the following alerts:

---

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

---

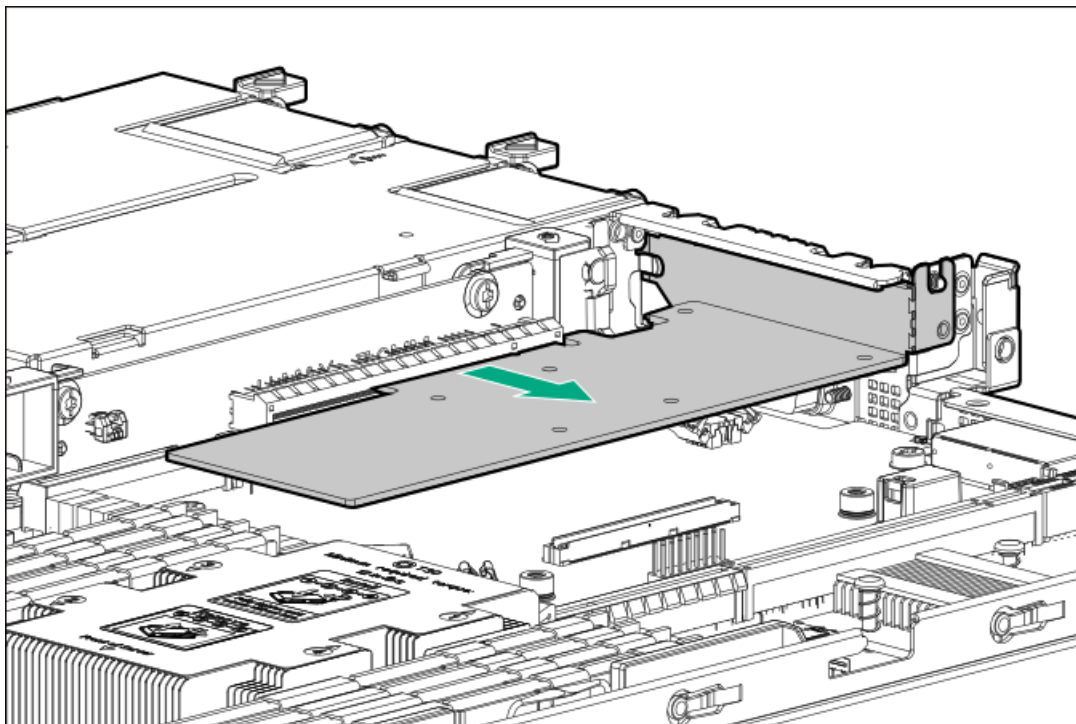
---

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

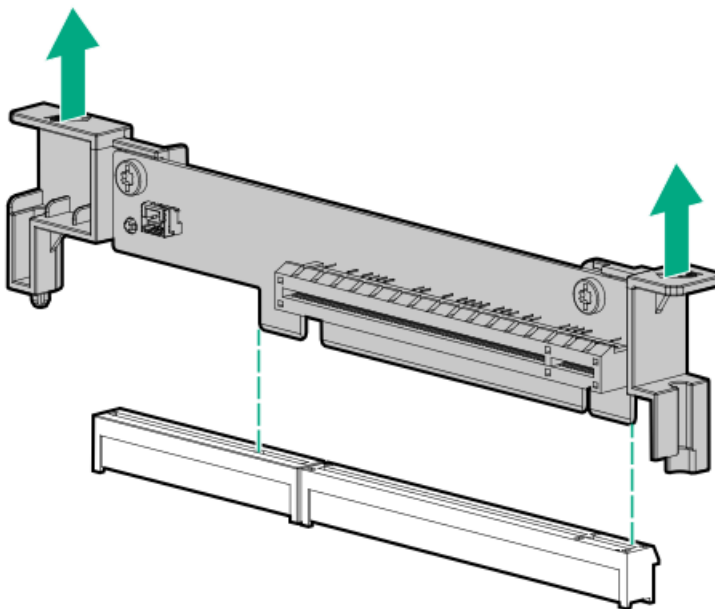
---

2. Back up all server data.
3. If installed, remove the bezel.
4. Power down the server.
5. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
6. Do one of the following:
  - Extend the server from the rack.
  - Remove the server from the rack.
7. Remove the access panel.
8. Do one of the following:
  - Remove the primary PCI riser blank.
  - Remove the primary PCI riser cage.

9. Disconnect any cables connected to the PCI riser cage.
10. Remove any expansion boards installed in the PCI riser cage.



11. Remove the PCI riser cage.



## Removing the universal media bay blank

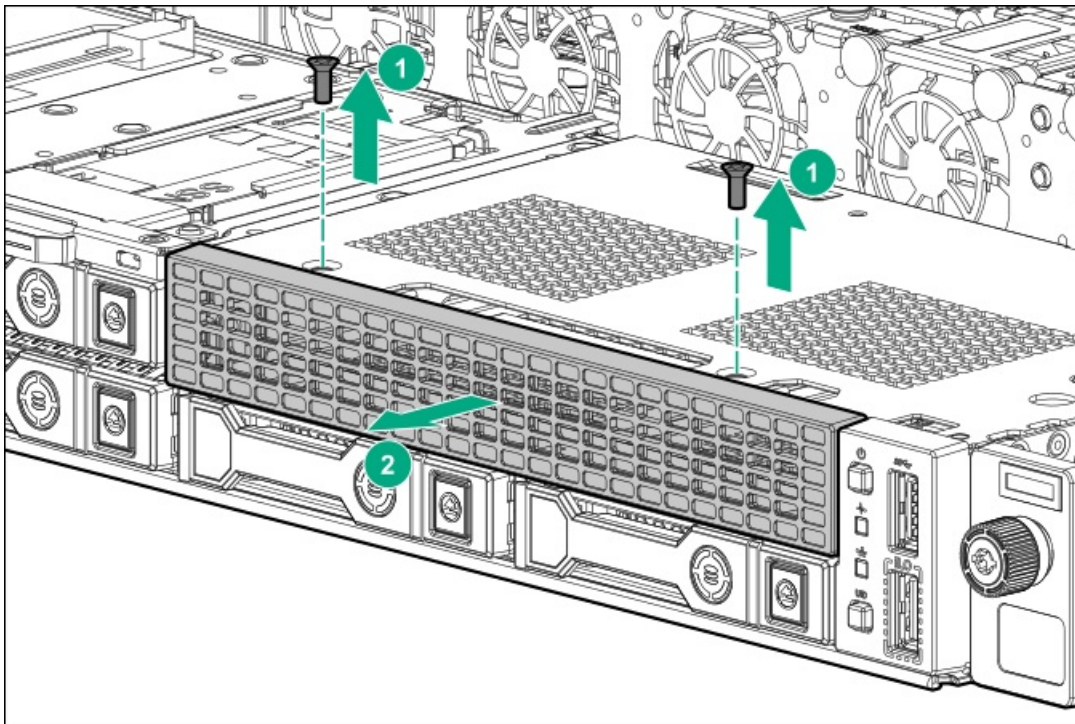
### Prerequisites



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

#### Procedure

1. Back up all server data.
2. If installed, remove the front bezel.
3. Power down the server.
4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Do one of the following:
  - Extend the server from the rack.
  - Remove the server from the rack.
7. Remove the access panel.
8. Remove the universal media bay blank.



## Enable the enhanced cooling function

#### About this task

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

#### Procedure

1. From the System Utilities screen, select System Configuration > BIOS/Platform Configuration (RBSU) > Advanced Options > Fan and Thermal Options > Thermal Configuration.



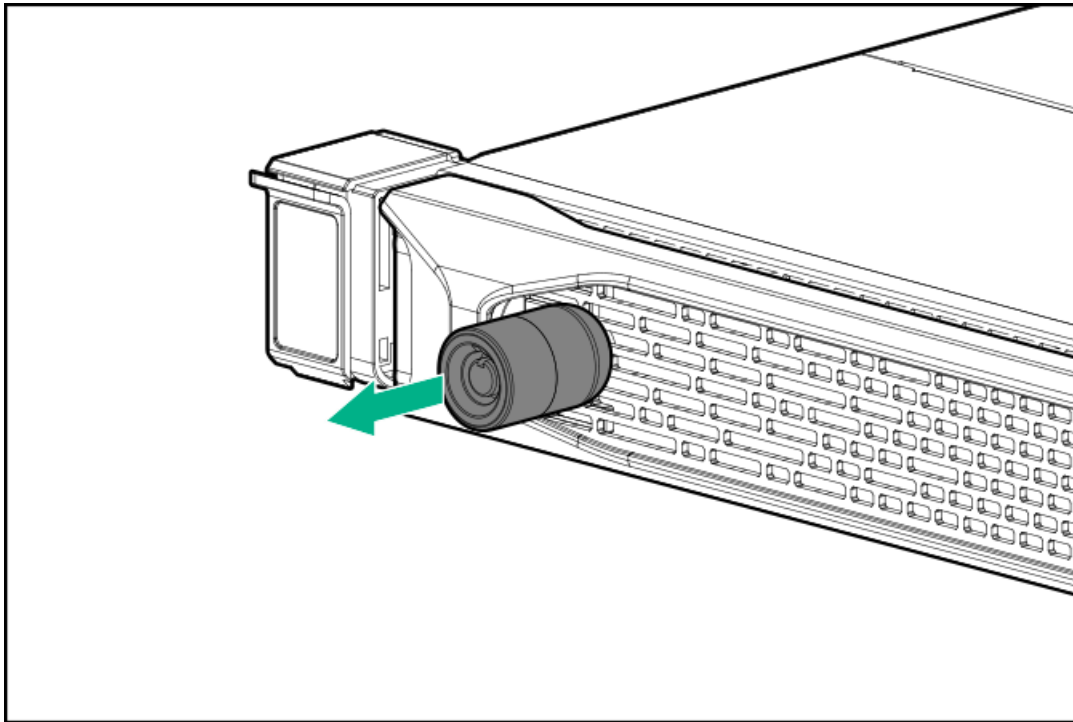
2. Select Enhanced CPU Cooling.
3. Save your setting.

## Removing and replacing the front bezel

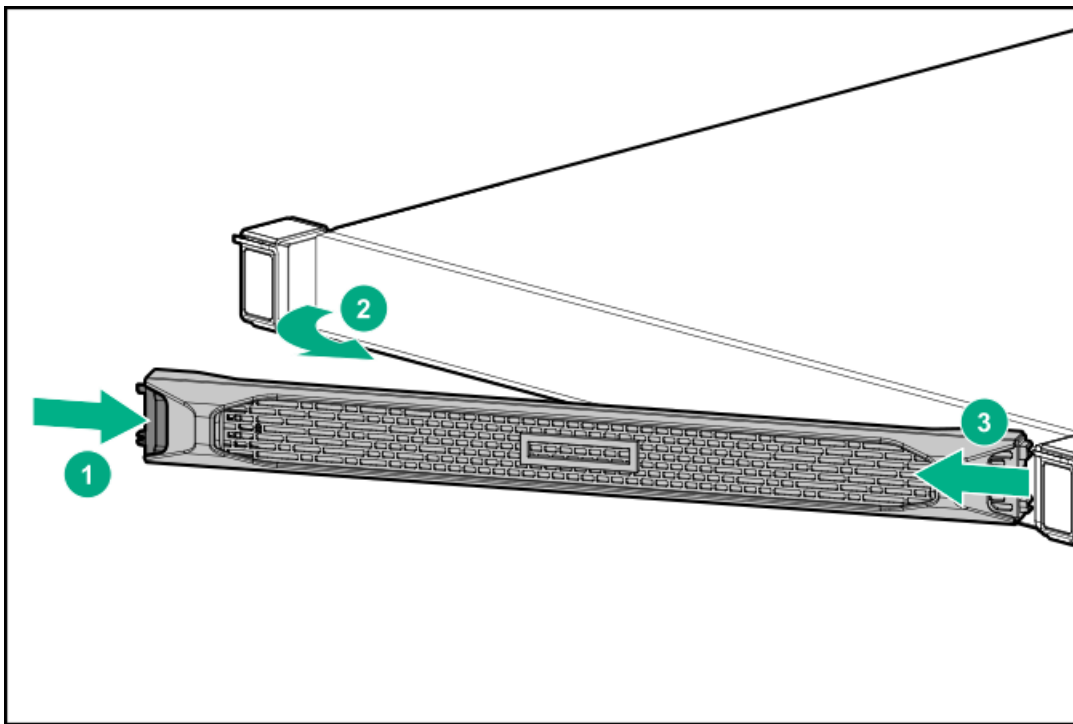
### Procedure

1. If installed, remove the Kensington security lock.

For more information, see the lock documentation.



2. Press the bezel release latch (callout 1), and then pivot the bezel open (callout 2).
3. Release the right side of the bezel from the front panel.



#### Results

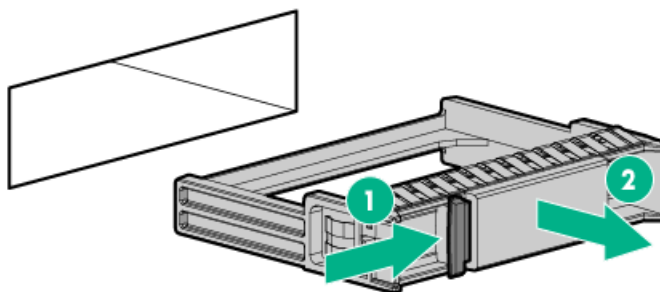
To replace the component, reverse the removal procedure.

## Removing and replacing a drive blank

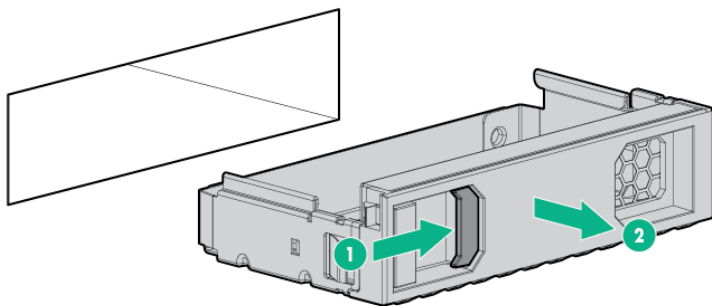
#### About this task

Remove the components as indicated.

- SFF drive blank



- Low-profile LFF drive blank



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

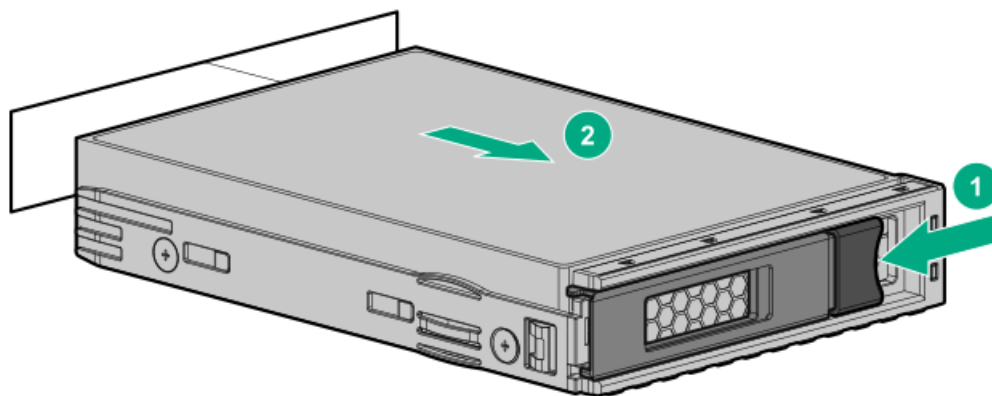
## Removing and replacing a hot-plug drive

### About this task

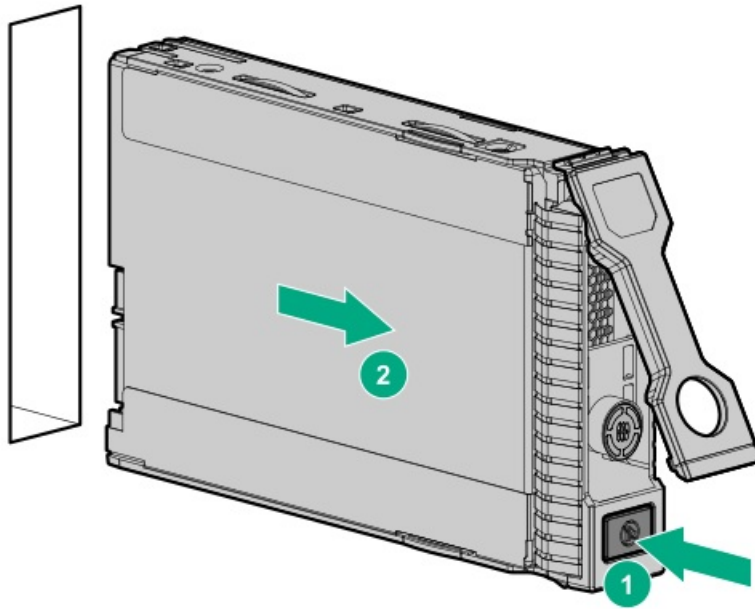
**CAUTION:** To prevent improper cooling and thermal damage, do not operate the server unless all bays are populated with either a component or a blank.

### Procedure

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



- SFF



#### Results

To replace the component, reverse the removal procedure.

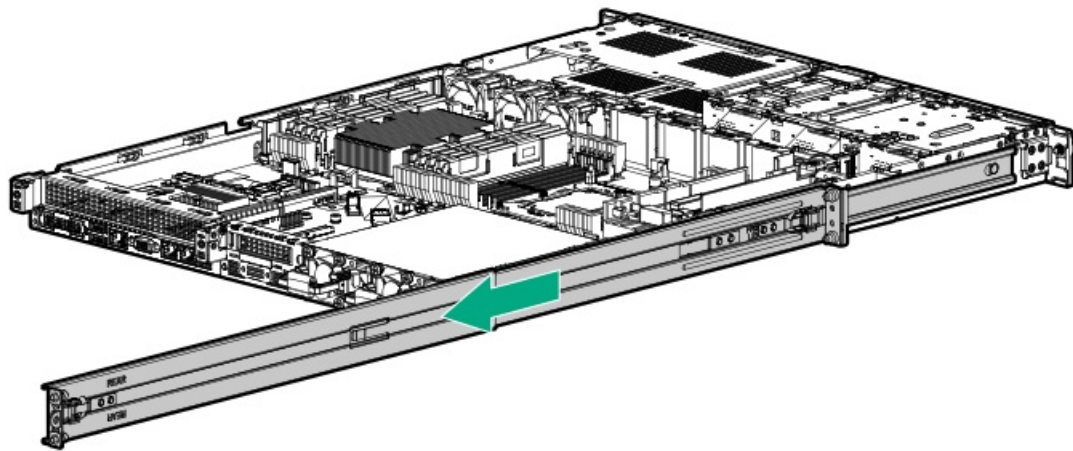
## Removing and replacing the quick-release bezel ears

#### Prerequisites

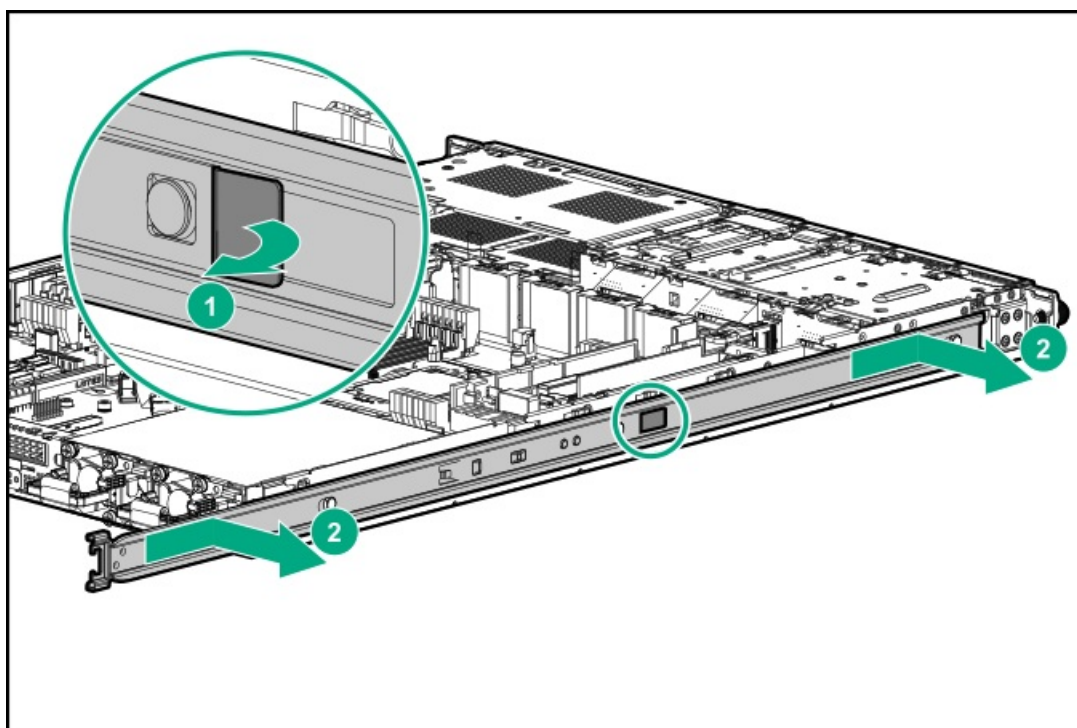
Before you perform this procedure, make sure that you have a T-10 Torx screwdriver available.

#### Procedure

1. If installed, remove the bezel.
2. Power down the server.
3. Remove the server from the rack.
4. Remove all rails.
  - a. Extend the left outer rail from the server.



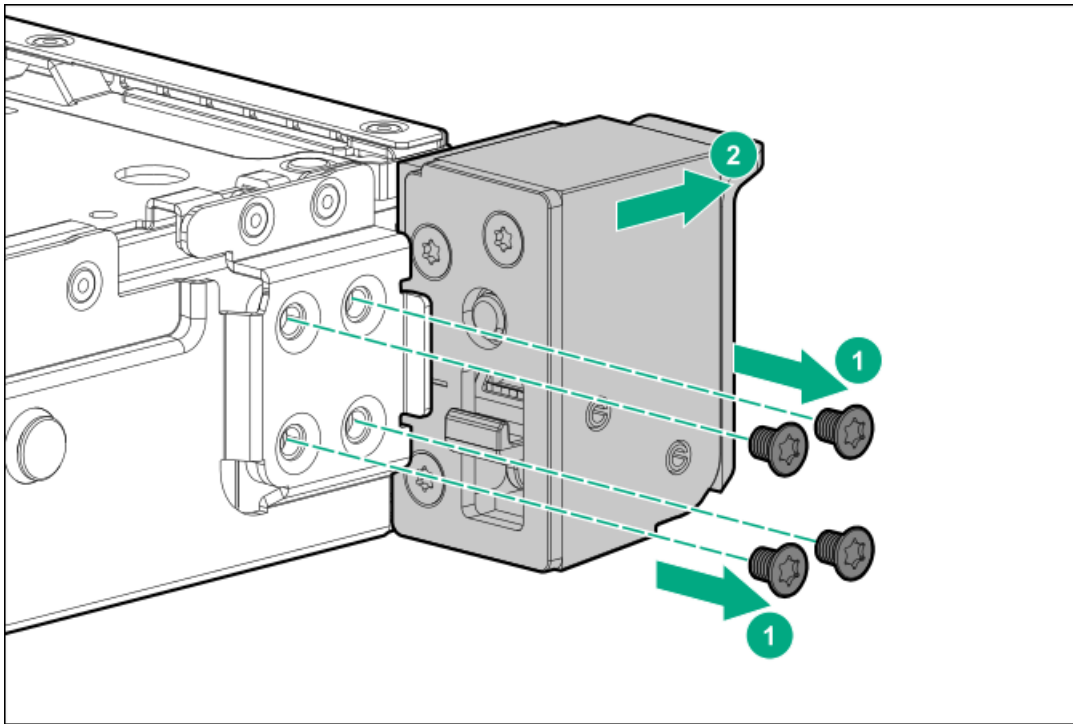
- b. Remove the left inner rail from the server.



- c. Repeat step a and b for removing the right outer and inner rails.

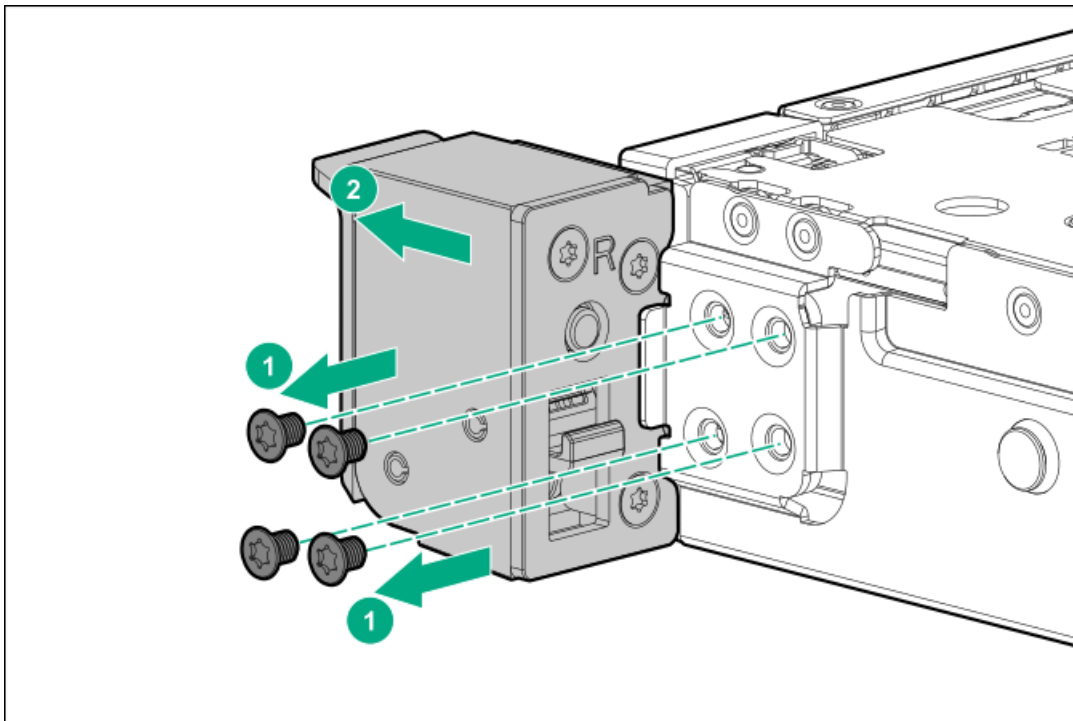
5. Remove the screws and detach the left bezel ear.

Retain all screws for future use.



6. Remove the screws and detach right bezel ear.

Retain all screws for future use.



#### Results

To replace the component, reverse the removal procedure.

## Flexible Slot power supply replacement

Depending on the configuration and the regional location where the server was purchased, the server can be configured with one of the

supported [Power supply specifications](#).

## Subtopics

[Power supply warnings and cautions](#)

[DC power supply warnings and cautions](#)

[Removing and replacing a Flexible Slot power supply](#)

## Power supply warnings and cautions



### **WARNING:**

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

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



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



**CAUTION:** Mixing different types of power supplies in the same server might:

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

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

## DC power supply warnings and cautions



**WARNING:** To reduce the risk of electric shock, be sure that the cable grounding kit is properly installed and connected to a suitable protective earth terminal before connecting the power source to the .



**CAUTION:** This equipment is designed to permit the connection of the earthed conductor of the DC supply circuit to the earthing conductor at the equipment. If this connection is made, all the following must be met:

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

# Removing and replacing a Flexible Slot power supply

## Prerequisites

- Before replacing a power supply, review the following:
  - [Power supply warnings and cautions](#)
  - [DC power supply warnings and cautions](#)
- If you are replacing a DC power supply, make sure that you have a Phillips No.1 screwdriver available.

## About this task



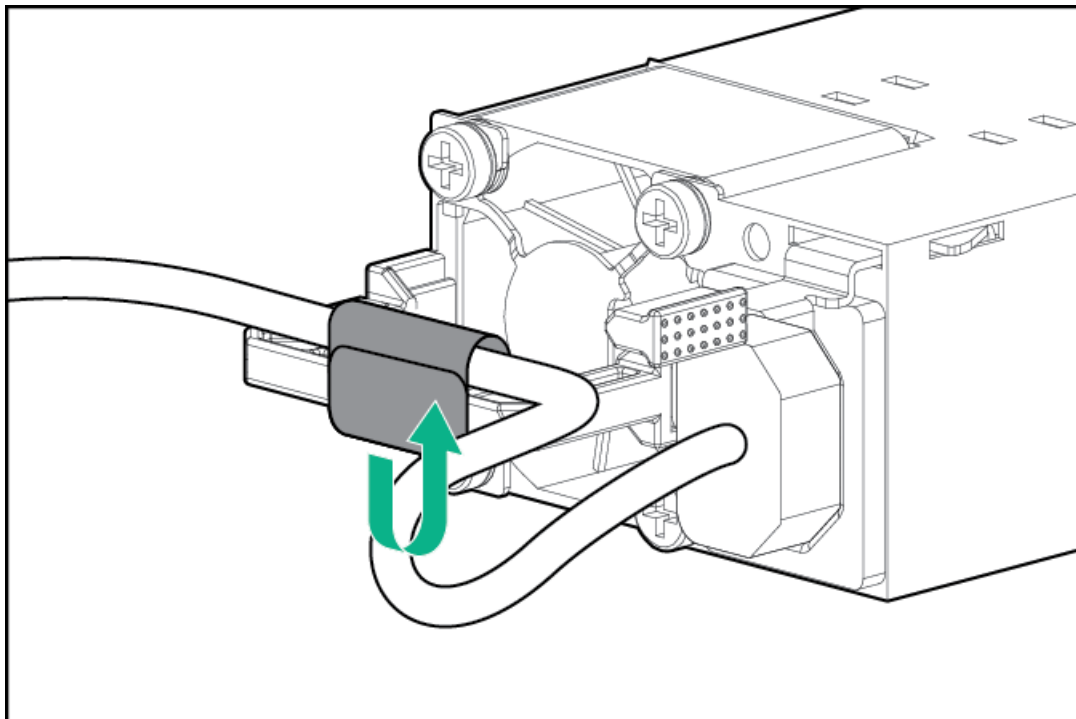
**WARNING:** To reduce the risk of personal injury from hot surfaces, allow the power supply or power supply blank to cool before touching it.



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

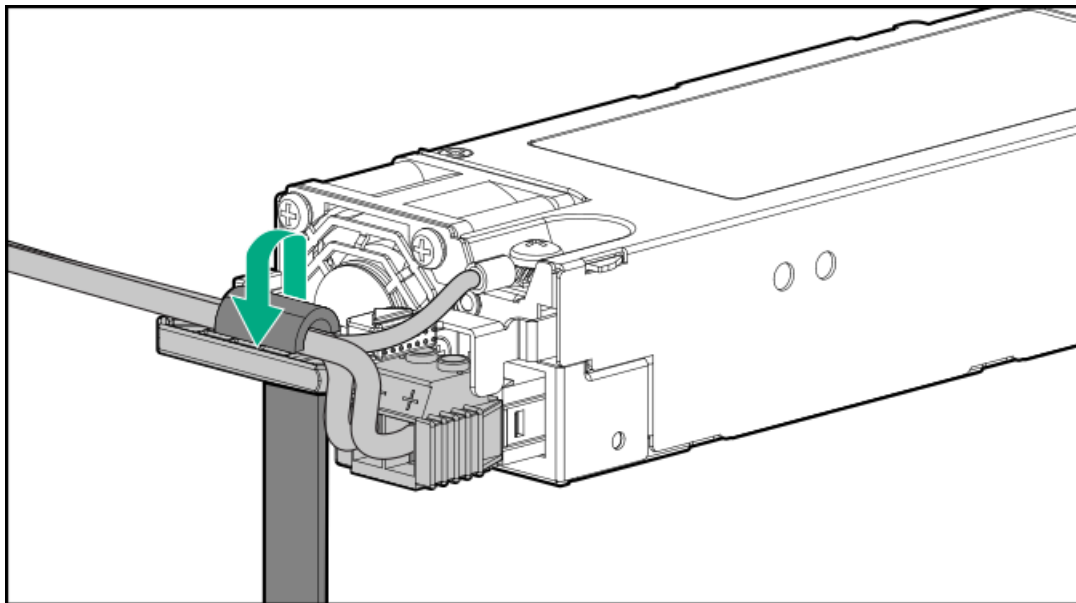
## Procedure

1. If the server is using a single power supply only, remove all power from the server:
  - a. Back up all server data.
  - b. If installed, [remove the front bezel](#).
  - c. [Power down the server](#).
2. If installed, [open the cable management arm](#).
3. Release the power cords, wires, and cables from the strain relief strap.
  - AC power supply



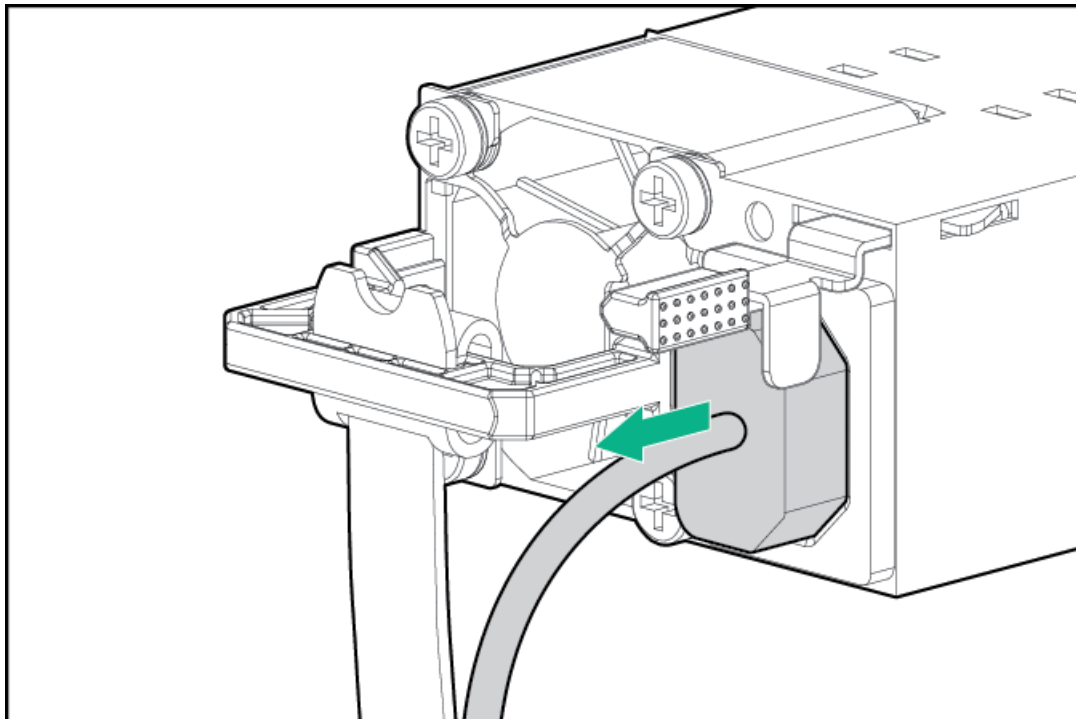
- DC power supply



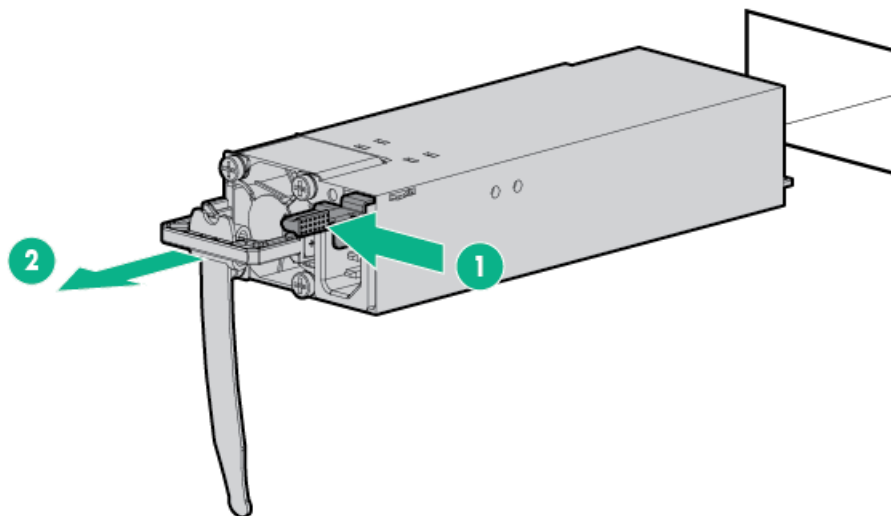


4. For an AC power supply, do the following:

- a. Disconnect the power cord from the power supply.

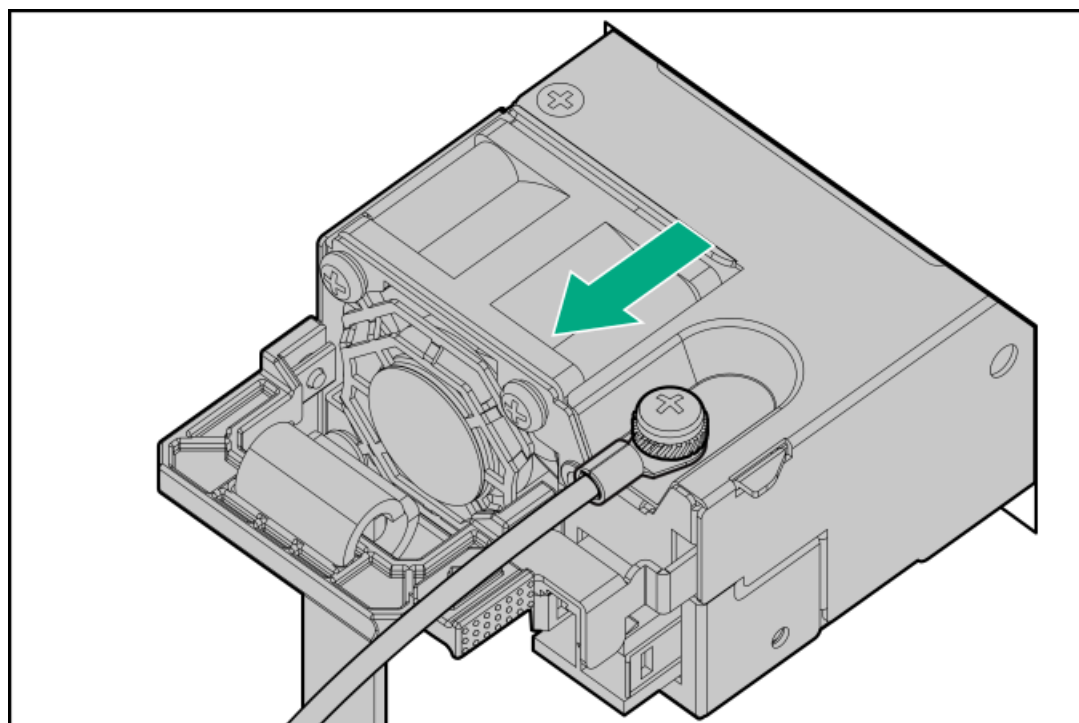


- b. Remove the power supply.

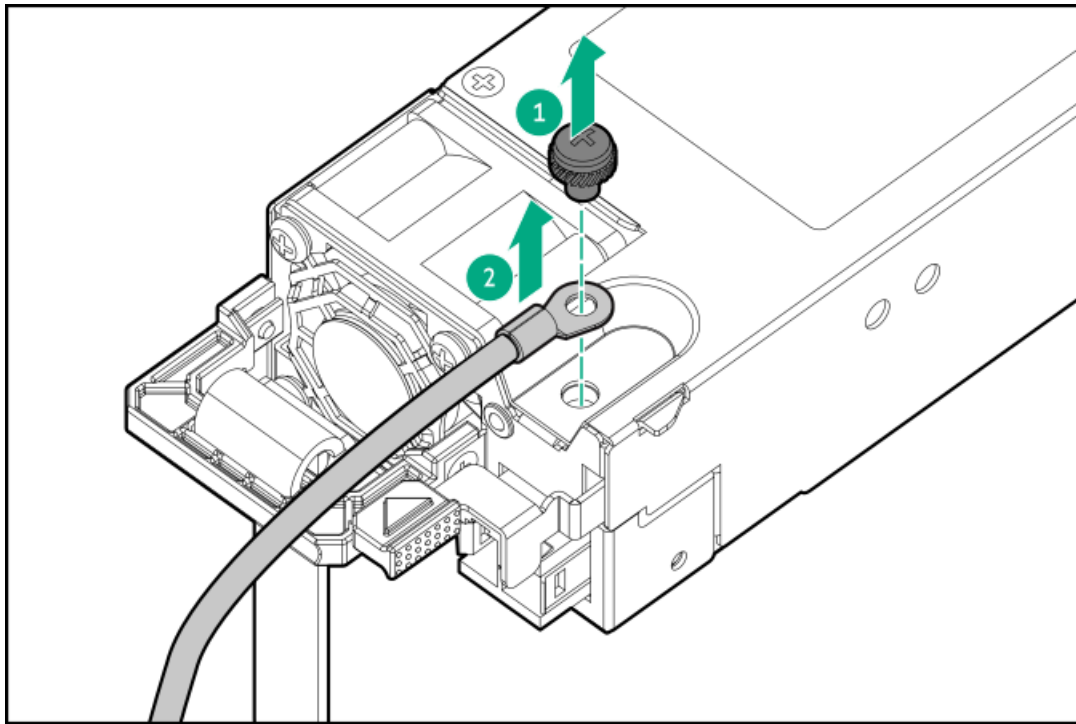


5. For a DC power supply, do the following:

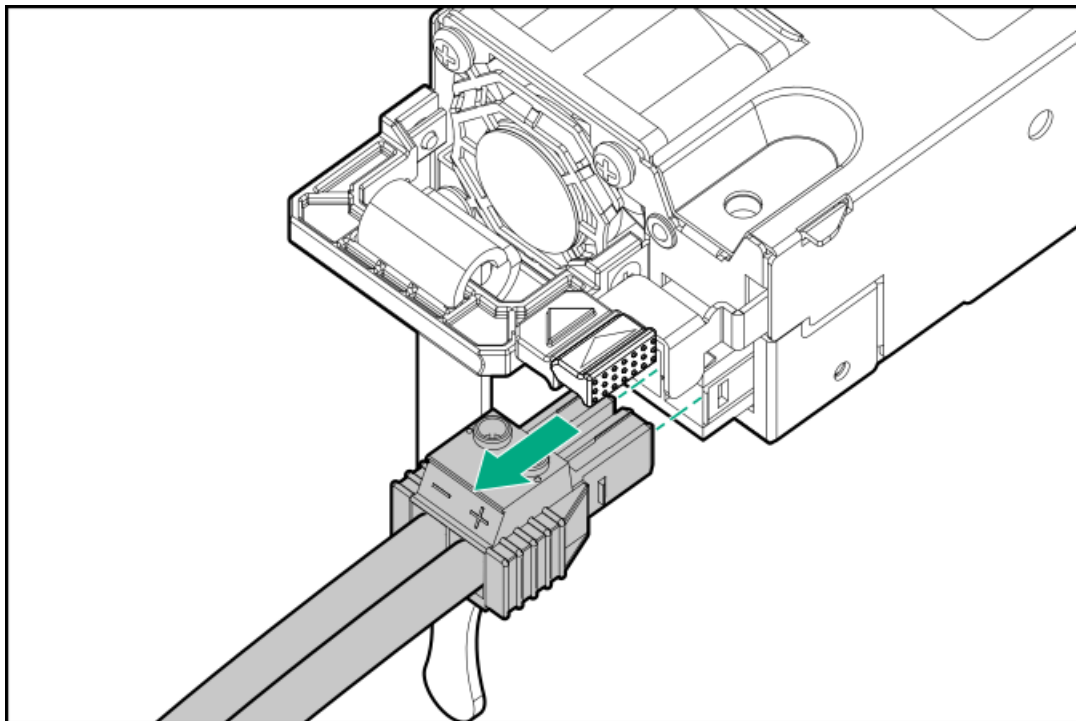
- a. Slide the power supply out of the bay just enough to access the ground cable screw.



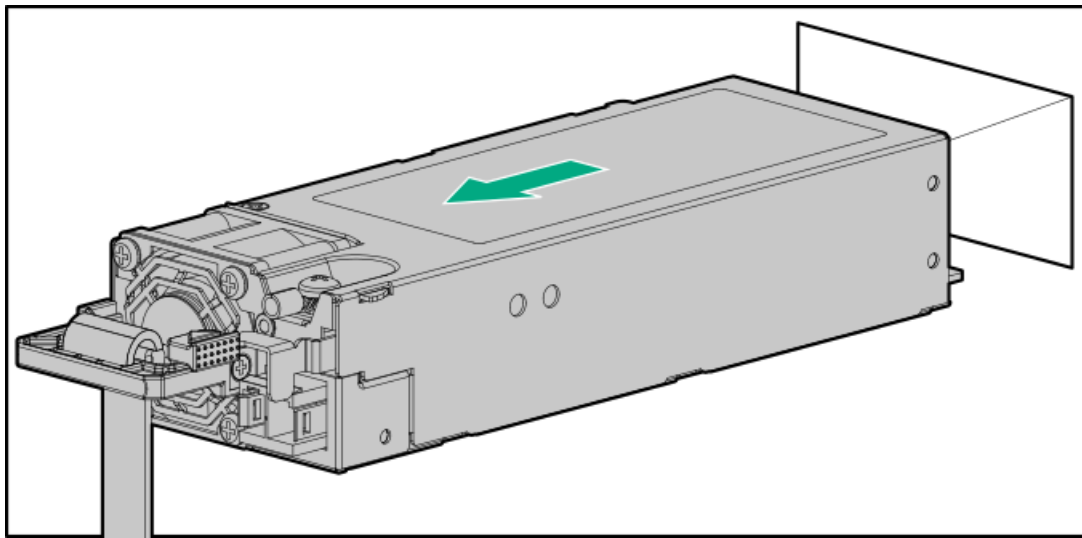
- b. Remove the ground (earthed) cable from the power supply.



c. Remove the terminal block connector from the power supply.



d. Remove the power supply.



### Results

To replace the component, reverse the removal procedure.

## Removing and replacing a fan

### About this task

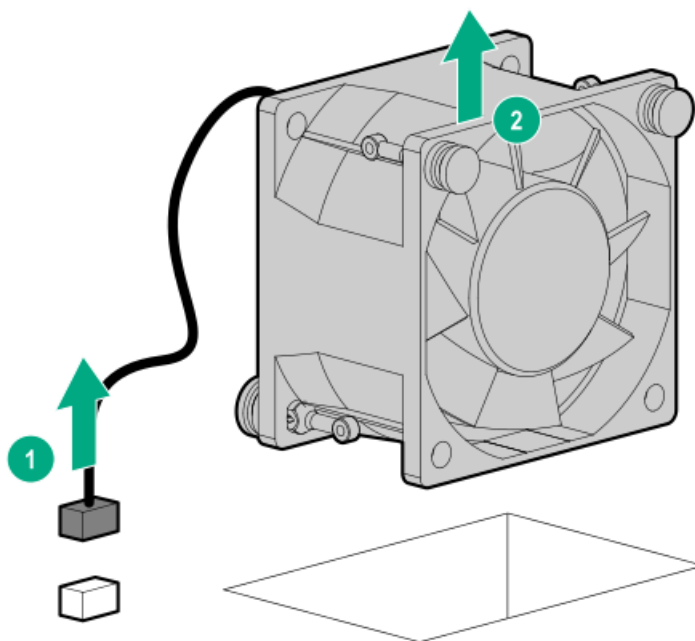


#### CAUTION:

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

### Procedure

1. Power down the server.
2. Extend the server from the rack.
3. Remove the access panel.
4. Remove the fan.



---

**CAUTION:** The fan does not have a fan guard. Special attention is needed when removing or installing the fan to prevent finger injury.

---

#### Results

To replace the component, reverse the removal procedure.

## Removing and replacing a fan blank

#### About this task

---

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

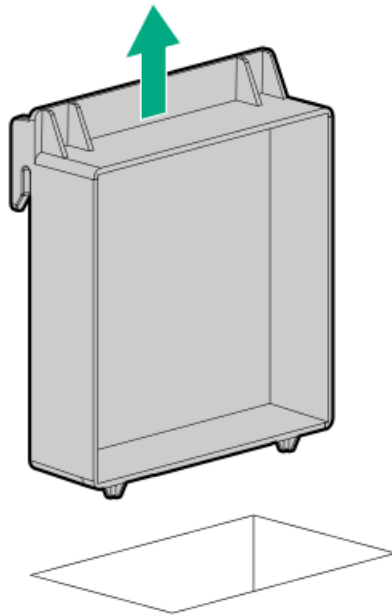
---

#### Procedure

1. Back up all server data.
2. If installed, remove the front bezel.
3. Power down the server.
4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Do one of the following:
  - Extend the server from the rack.
  - Remove the server from the rack.

7. Remove the access panel.

8. Remove the fan blank.



#### Results

To replace the component, reverse the removal procedure.

## Drive backplane replacement

### Subtopics

[Removing and replacing the 4 LFF drive backplane](#)

[Removing and replacing the 8 SFF drive backplane](#)

[Removing and replacing the 2 SFF drive backplane](#)

## Removing and replacing the 4 LFF drive backplane

### About this task

**CAUTION:**

Before replacing a DIMM, backplane, expansion card, riser board, or other similar PCA components due to a perceived hardware error, make sure first that the component is firmly seated in the slot.

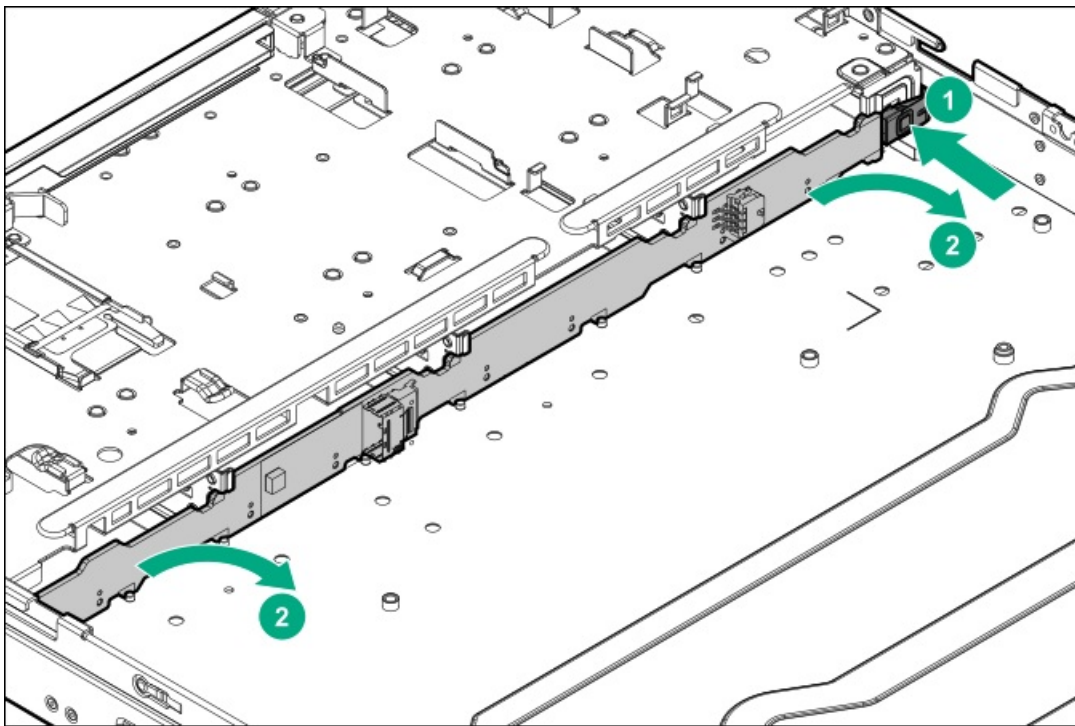
When installing the replacement component:

- Observe antistatic precautions.
- Handle the PCA only along the edges.
- Do not touch the components and connectors on the PCA.
- Do not bend or flex the PCA.

---

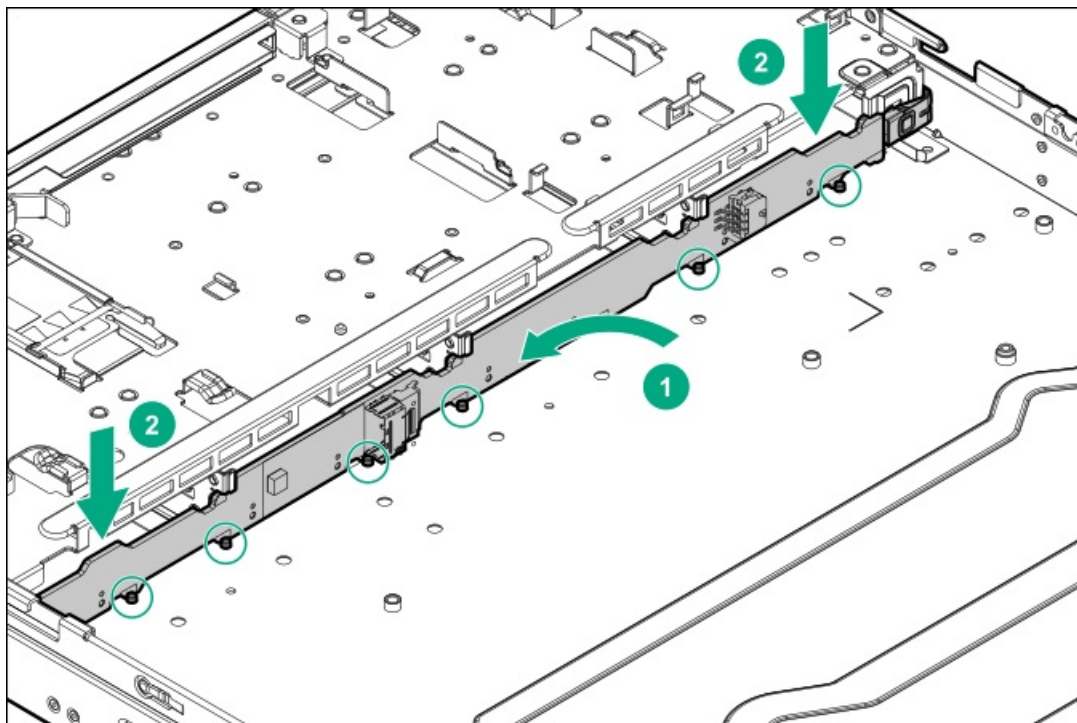
**Procedure**

1. If installed, remove the bezel.
2. Power down the server.
3. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
4. Do one of the following:
  - Extend the server from the rack.
  - Remove the server from the rack.
5. Remove the access panel.
6. Remove all LFF drives.
7. Disconnect all cables from the 4 LFF drive backplane.
8. Remove the 4 LFF drive backplane:
  - a. Press and hold the release latch (callout 1).
  - b. Hold the drive backplane at the ends and detach it from the drive cage (callout 2).



9. To install the new 4 LFF drive backplane:

- a. Position the backplane on the drive cage using the spools on the base of the chassis for alignment (callout 1).
- b. To make sure the backplane is fully seated in the drive cage, carefully press down on the backplane (callout 2).



10. Perform the rest of the post-installation steps.

## Removing and replacing the 8 SFF drive backplane

About this task



**CAUTION:**

Before replacing a DIMM, backplane, expansion card, riser board, or other similar PCA components due to a perceived hardware error, make sure first that the component is firmly seated in the slot.

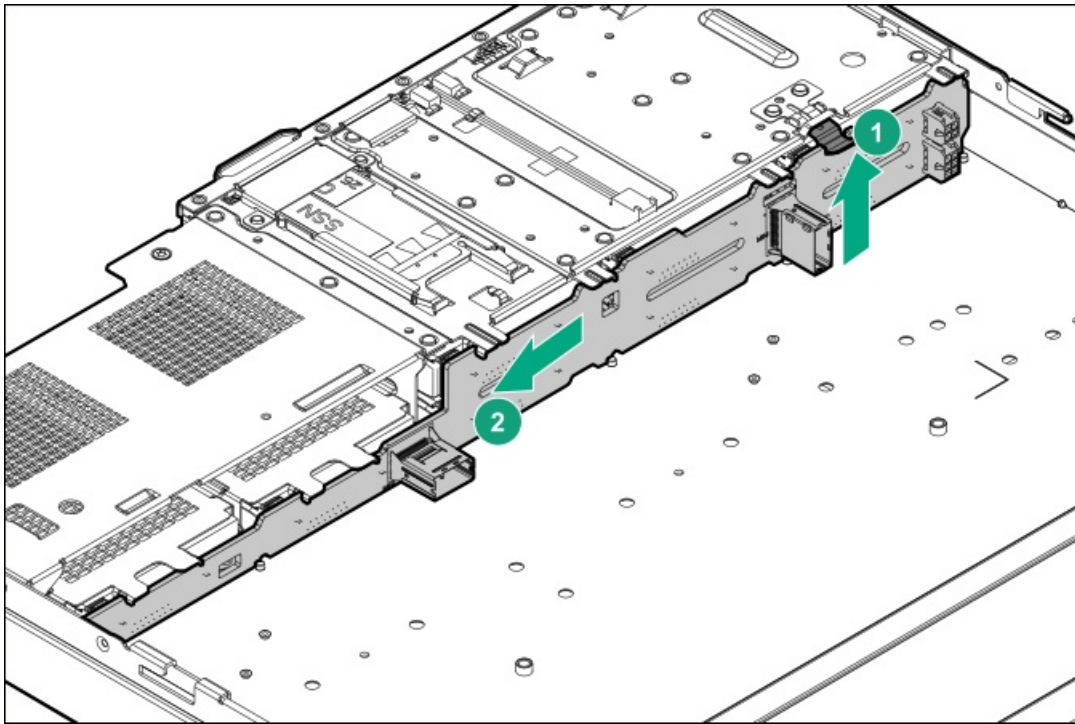
When installing the replacement component:

- Observe antistatic precautions.
- Handle the PCA only along the edges.
- Do not touch the components and connectors on the PCA.
- Do not bend or flex the PCA.

---

**Procedure**

1. If installed, remove the bezel.
2. Power down the server.
3. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
4. Do one of the following:
  - Extend the server from the rack.
  - Remove the server from the rack.
5. Remove the access panel.
6. Remove all SFF drives.
7. Disconnect all cables from 8 SFF drive backplane.
8. Remove the 8 SFF drive backplane:
  - a. Pull up and hold the release latch (callout 1).
  - b. Detach the drive backplane from drive cage (callout 2).



## Results

To replace the component, reverse the removal procedure.

# Removing and replacing the 2 SFF drive backplane

## Prerequisites

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

## About this task



### CAUTION:

Before replacing a DIMM, backplane, expansion card, riser board, or other similar PCA components due to a perceived hardware error, make sure first that the component is firmly seated in the slot.

When installing the replacement component:

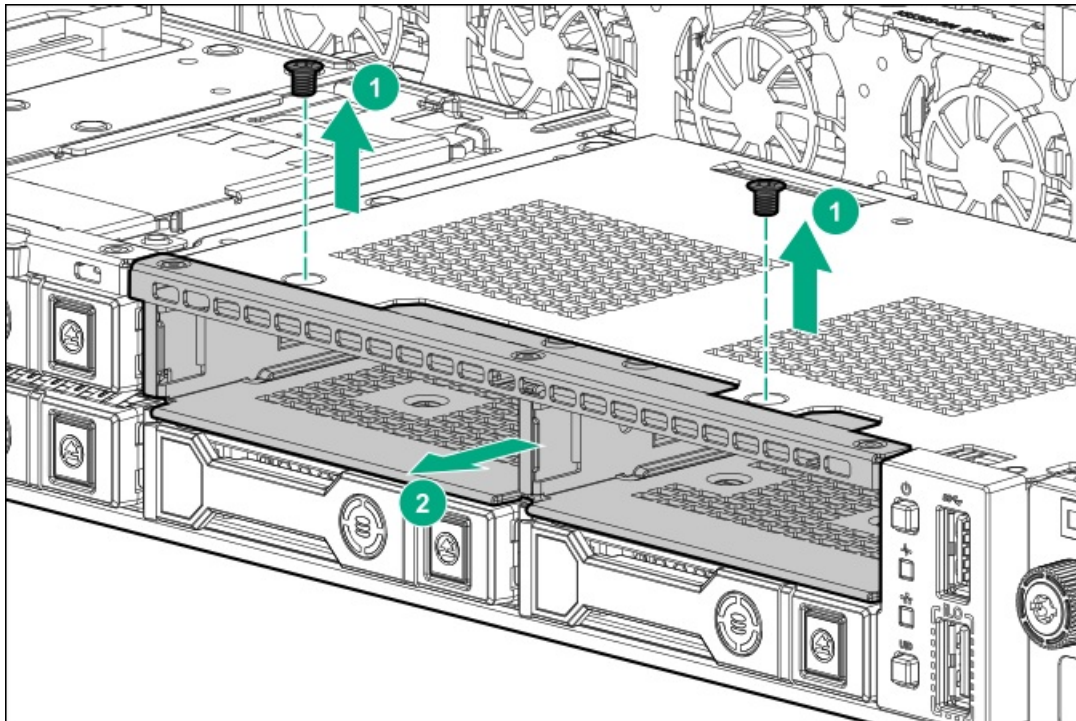
- Observe antistatic precautions.
- Handle the PCA only along the edges.
- Do not touch the components and connectors on the PCA.
- Do not bend or flex the PCA.

## Procedure

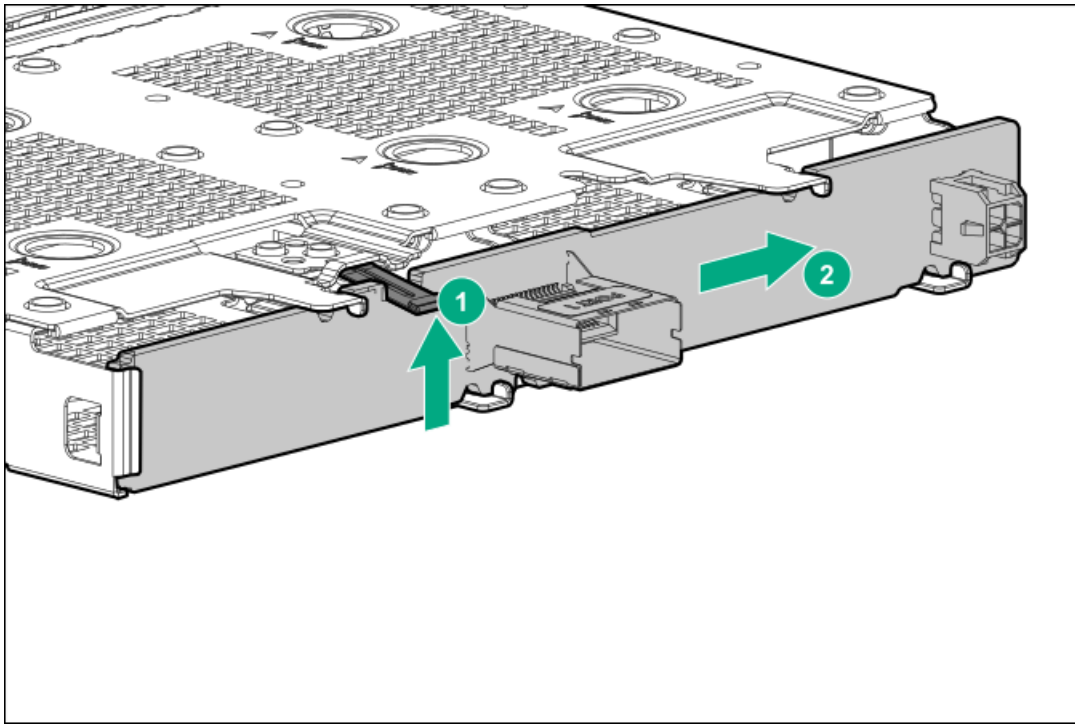
1. If installed, remove the bezel.
2. Power down the server.
3. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
4. Do one of the following:

- Extend the server from the rack.
  - Remove the server from the rack.
5. Remove the access panel.
  6. Remove all SFF drives.
  7. Disconnect all cables from the 2 SFF drive backplane.
  8. Remove the 2 SFF drive cage.

Retain screws for future use.



9. Remove the 2 SFF drive backplane:
  - a. Pull up and hold the release latch (callout 1).
  - b. Detach the drive backplane from drive cage (callout 2).



## Results

To replace the component, reverse the removal procedure.

## Removing and replacing the optical drive

### Prerequisites

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

### About this task



#### CAUTION:

A discharge of static electricity from a finger or other conductor might damage system boards or other static-sensitive devices. To prevent damage, observe [antistatic precautions](#).



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

### Procedure

1. Back up all server data.
2. If installed, [remove the front bezel](#).
3. [Power down the server](#).
4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Do one of the following:
  - [Extend the server from the rack](#).

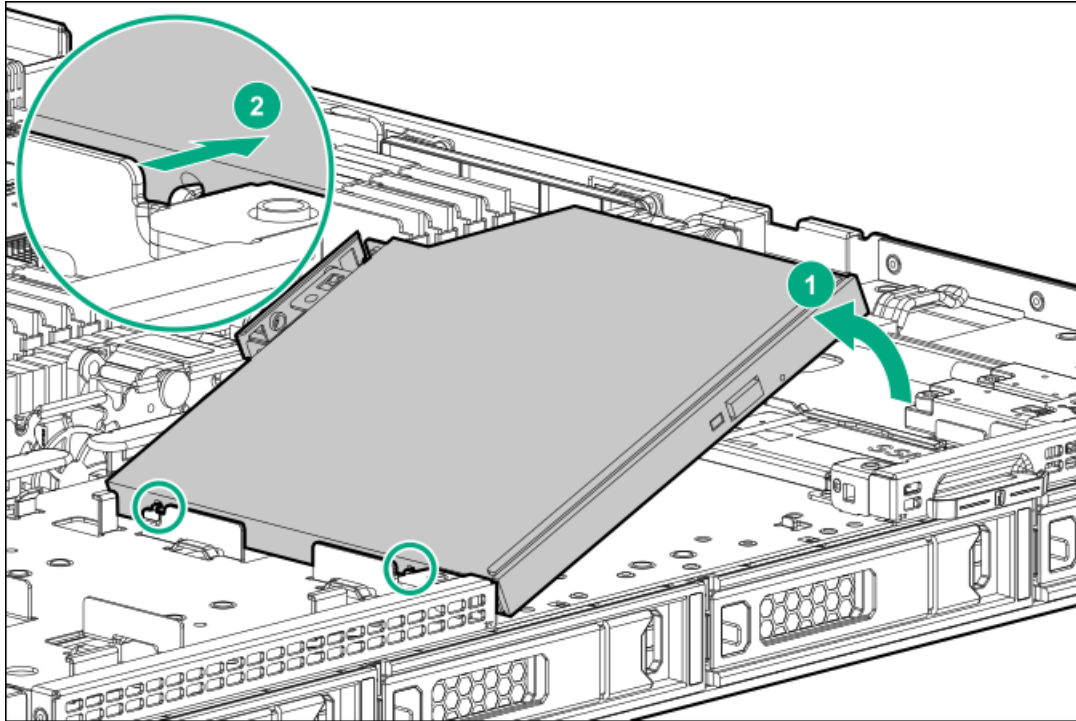
- Remove the server from the rack.

7. Remove the access panel.

8. Disconnect the power and SATA cables from the optical drive.

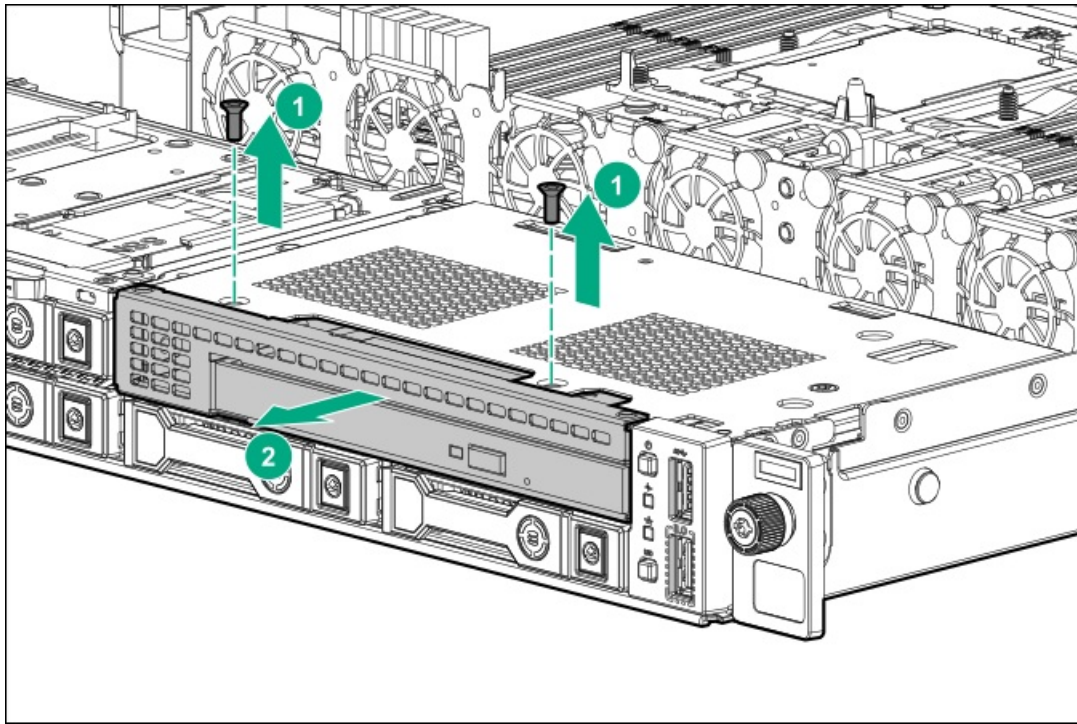
9. To remove the optical drive from the LFF chassis:

- Lift right side of the optical drive.
- Detach the optical drive from the chassis.

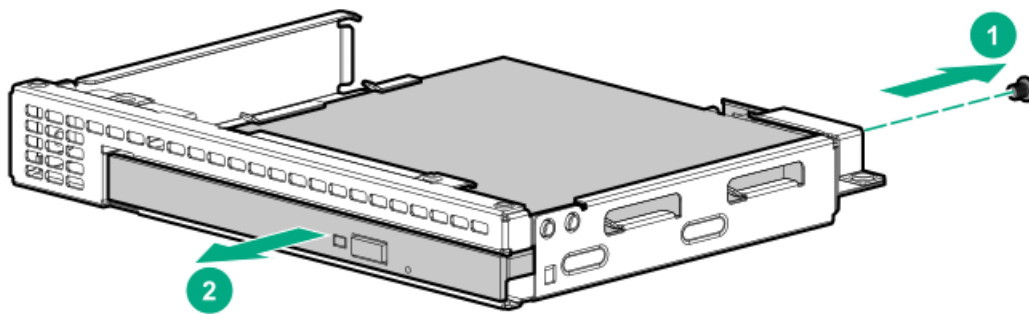


10. To remove the optical drive from the SFF chassis:

- Remove the optical drive cage from the SFF chassis.



b. Remove the optical drive.



## Results

To replace the component, reverse the removal procedure.

## DIMM-processor compatibility

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

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

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

## Subtopics

### Removing and replacing a DIMM

## Removing and replacing a DIMM

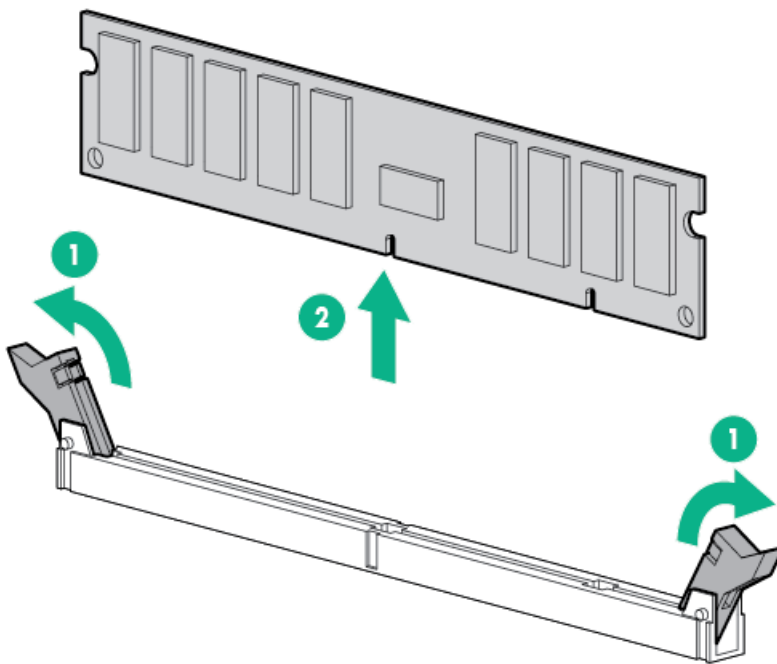
## Removing and replacing a DIMM

### Prerequisites

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

### Procedure

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



### Results

To replace the component, reverse the removal procedure.

## Removing and replacing the DIMM guards

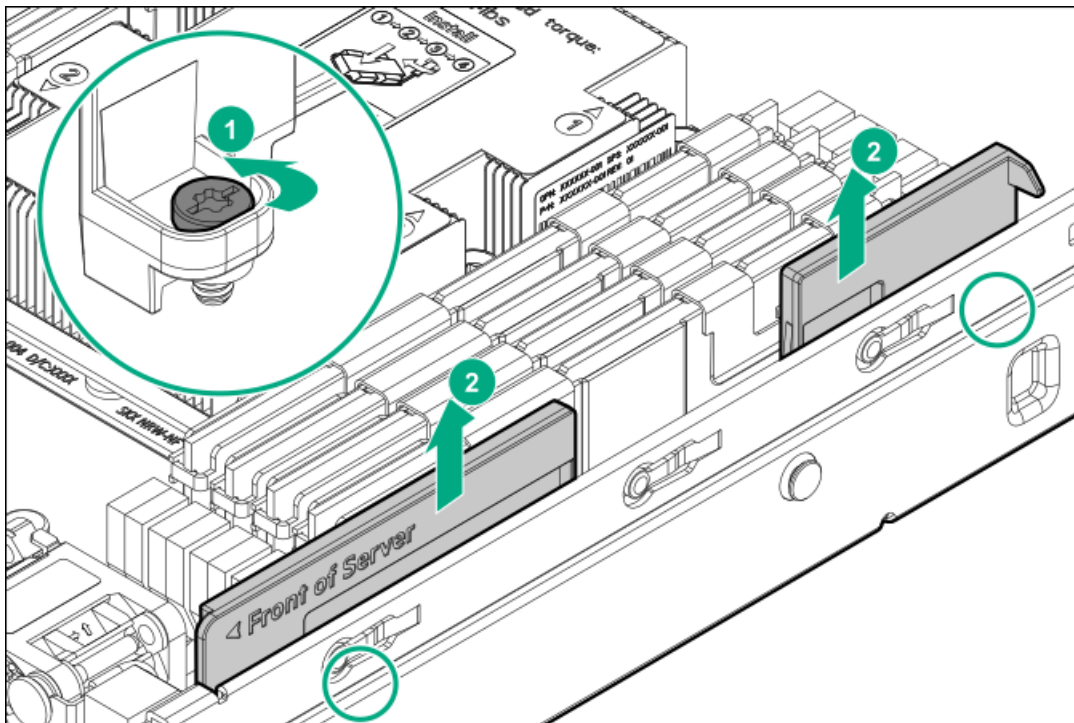
### Prerequisites

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

### Procedure

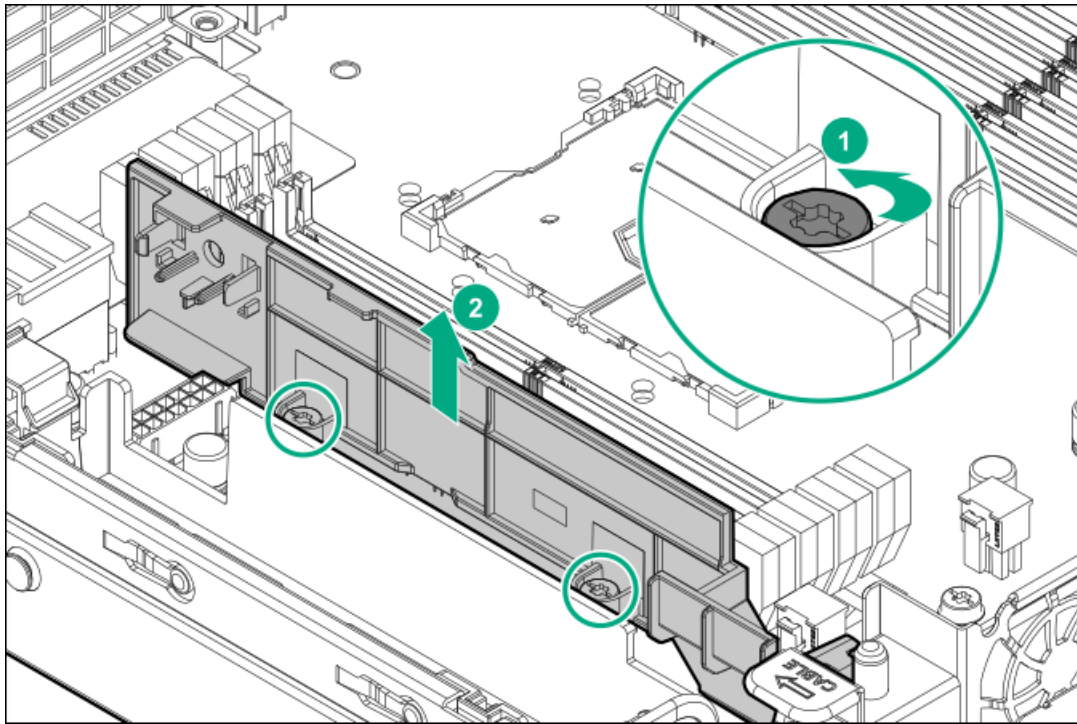


1. If installed, remove the bezel.
2. Power down the server.
3. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
4. Do one of the following:
  - a. Extend the server from the rack.
  - b. Remove the server from the rack.
5.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



7. To replace the left DIMM guard, do the following:
  - a. If installed, remove the chassis intrusion detection switch.
  - b. Remove the left DIMM guard.





## Results

To replace the component, reverse the removal procedure.

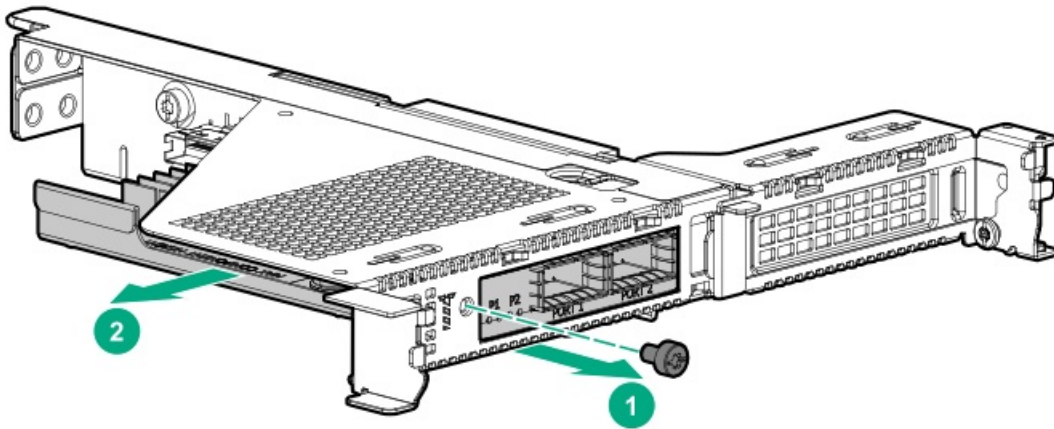
# Removing and replacing the FlexibleLOM adapter

## Prerequisites

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

## Procedure

1. Back up all server data.
2. If installed, remove the front bezel.
3. Power down the server.
4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Do one of the following:
  - Extend the server from the rack.
  - Remove the server from the rack.
7. Remove the access panel.
8. If necessary, disconnect any internal cables connected to the system board.
9. Remove the primary PCI riser cage.
10. Remove the FlexibleLOM adapter.



## Results

To replace the component, reverse the removal procedure.

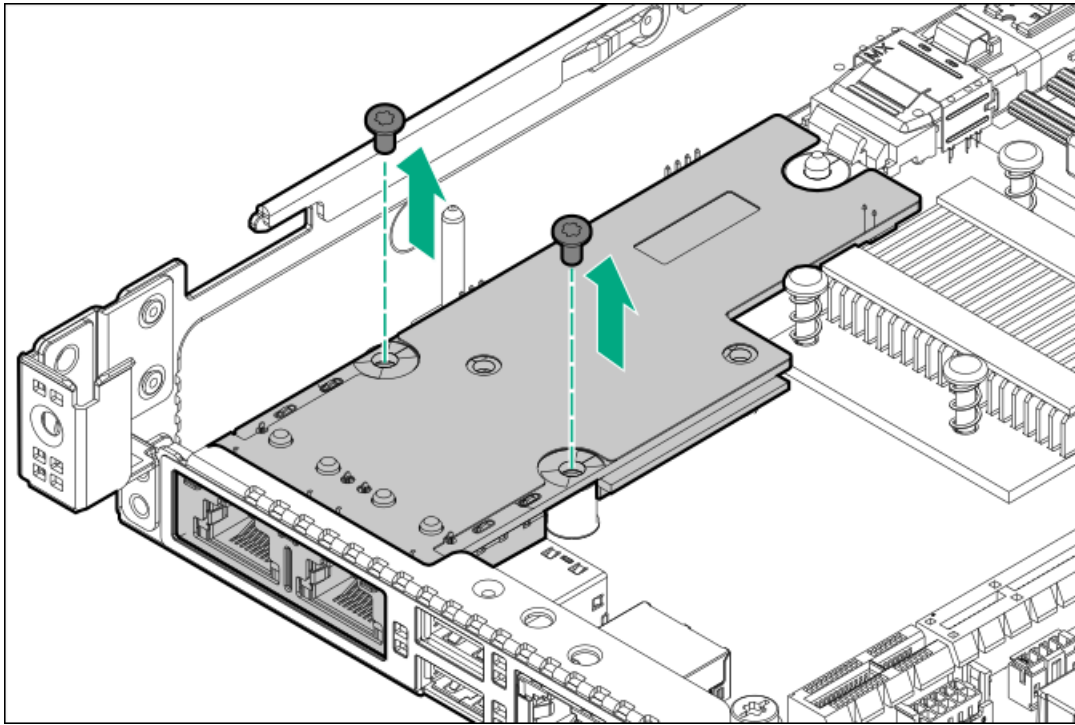
# Removing and replacing the Media Module adapter

## Prerequisites

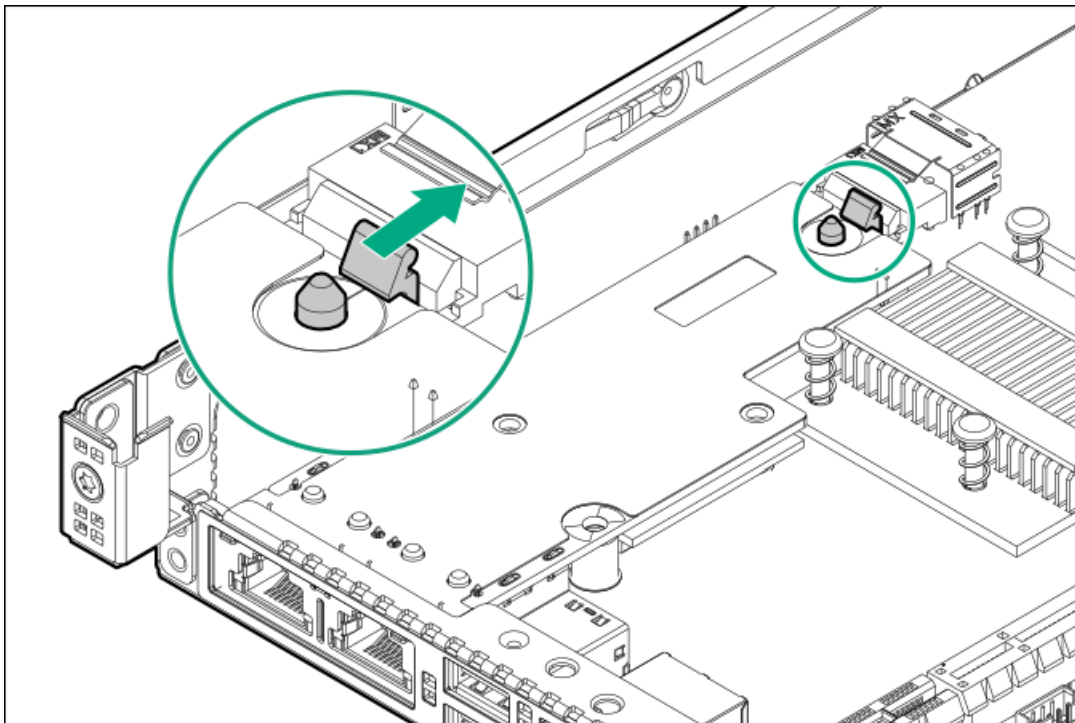
Before you perform this procedure, make sure that you have a T-15 Torx screwdriver available.

## Procedure

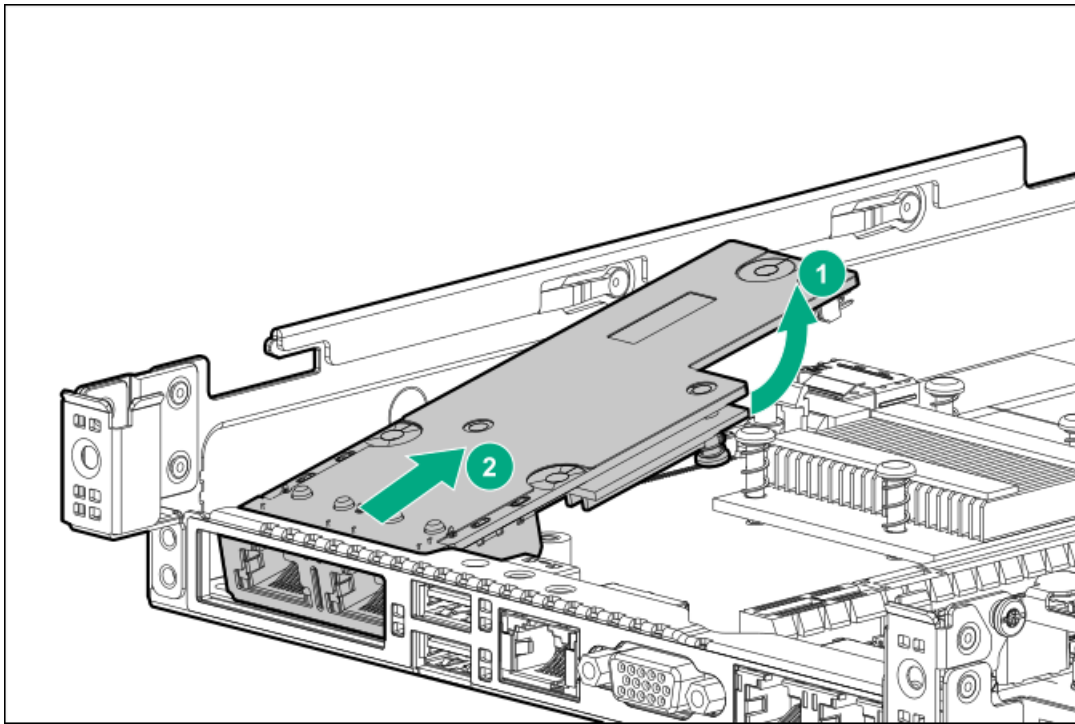
1. Back up all server data.
2. If installed, remove the front bezel.
3. Power down the server.
4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Do one of the following:
  - Extend the server from the rack.
  - Remove the server from the rack.
7. Remove the access panel.
8. Remove the primary PCI riser cage.
9. Remove the Media Module adapter screws.



10. Pull back the plastic retaining latch.



11. Remove the Media Module adapter.



## Results

To replace the component, reverse the removal procedure.

# Removing and replacing an expansion card

## About this task



### CAUTION:

A discharge of static electricity from a finger or other conductor might damage system boards or other static-sensitive devices. To prevent damage, observe [antistatic precautions](#).



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



### CAUTION:

Before replacing a DIMM, backplane, expansion card, riser board, or other similar PCA components due to a perceived hardware error, make sure first that the component is firmly seated in the slot.

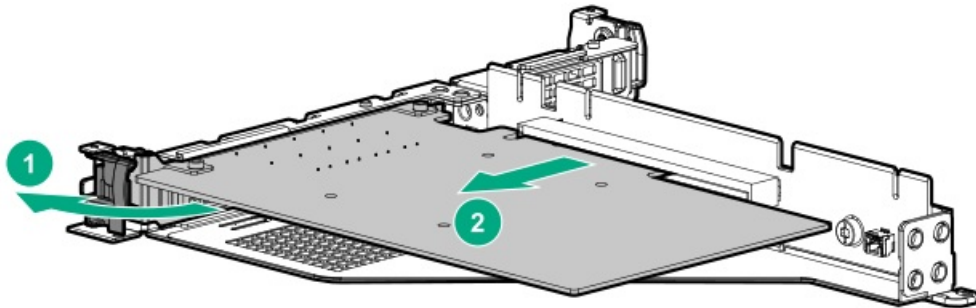
When installing the replacement component:

- Observe [antistatic precautions](#).
- Handle the PCA only along the edges.
- Do not touch the components and connectors on the PCA.
- Do not bend or flex the PCA.

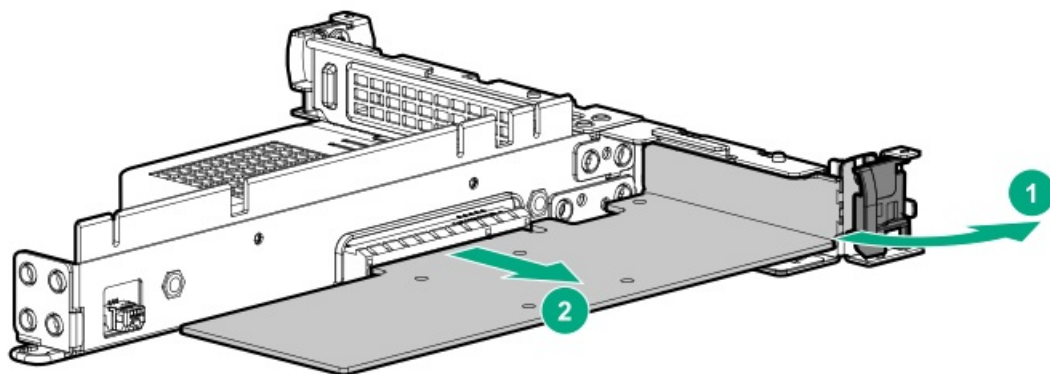
## Procedure

1. If installed, [remove the front bezel](#).
2. [Power down the server](#).
3. Remove all power:

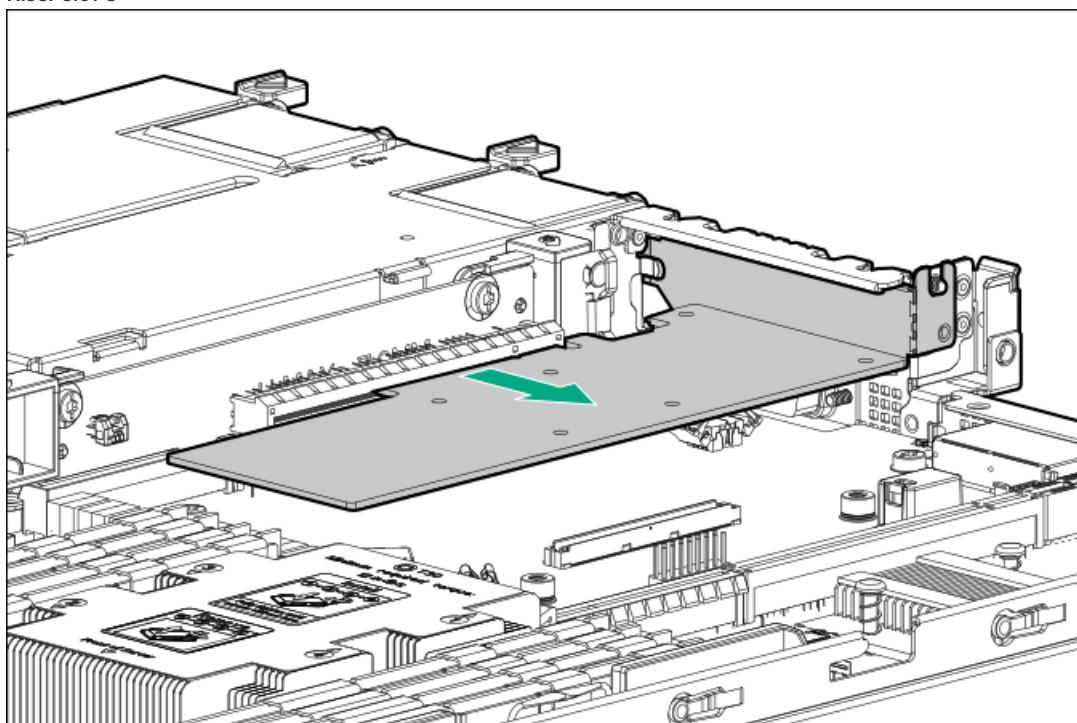
- a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
4. Do one of the following:
- Extend the server from the rack.
  - Remove the server from the rack.
5. Remove the access panel.
6. Disconnect any internal cables that are connected to the expansion card.
7. Remove the primary PCI riser cage.
8. Remove the expansion card.
- Riser slot 1



- Riser slot 2



- Riser slot 3



## Results

To replace the component, reverse the removal procedure.

## Removing and replacing a storage controller

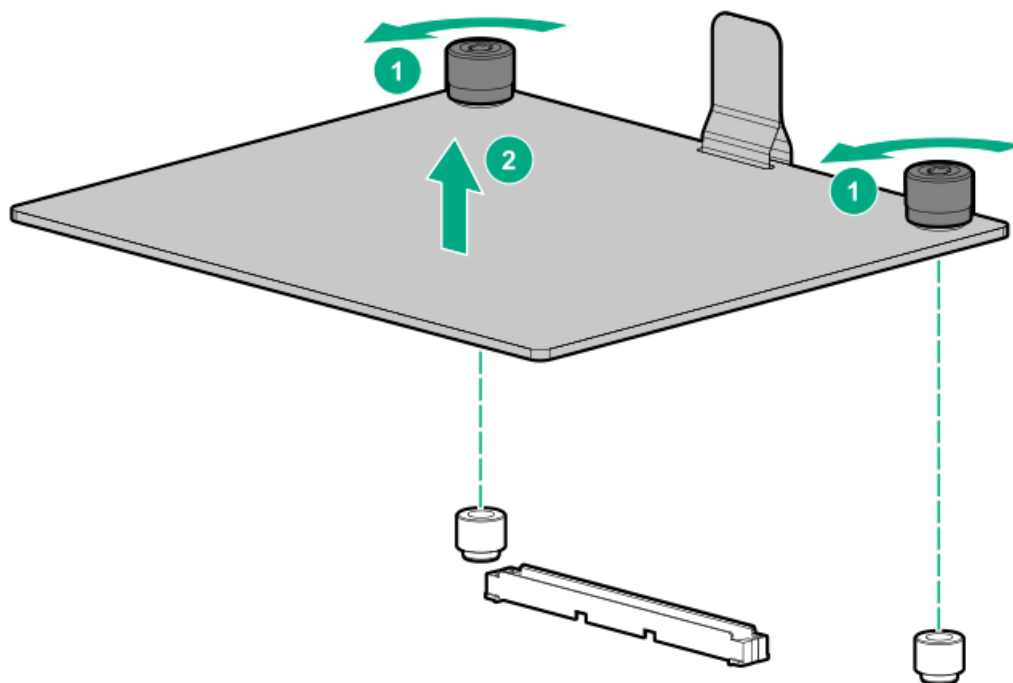
### Prerequisites

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

### Procedure

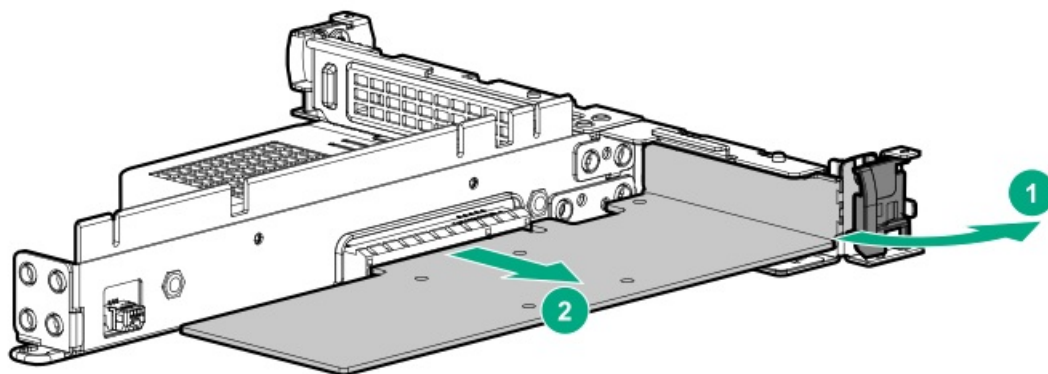
1. If installed, remove the bezel.
2. Power down the server.
3. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
4. Do one of the following:
  - a. Extend the server from the rack.
  - b. Remove the server from the rack.
5.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

Note the port numbers before disconnecting the cables.
8. Remove the controller.
  - Smart Array type-a modular controller



- Smart Array PCIe plug-in controller





## Results

To replace the component, reverse the removal procedure.

## Removing and replacing an M.2 SSD

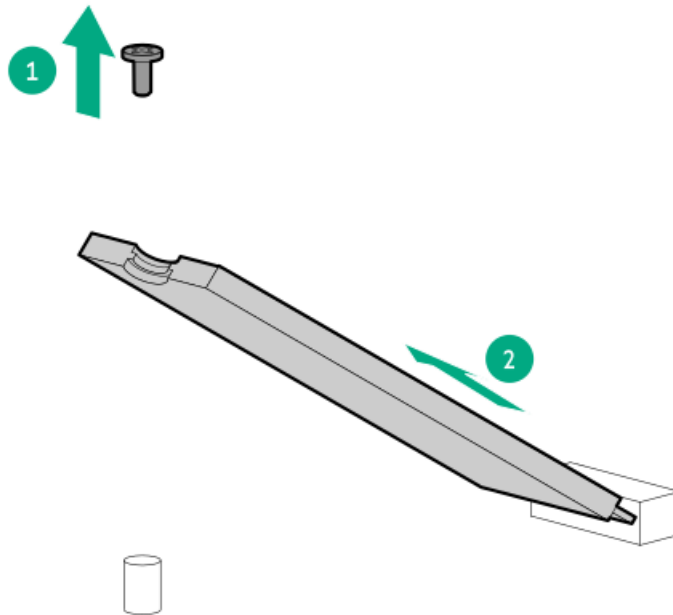
### Prerequisites

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

### Procedure

1. Back up all server data.
2. If installed, remove the front bezel.
3. Power down the server.
4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Do one of the following:
  - Extend the server from the rack.
  - Remove the server from the rack.
7. Remove the access panel.
8. Remove the primary PCI riser cage.
9. Remove the M.2 SSD enablement board.
10. Remove the M.2 SSD.





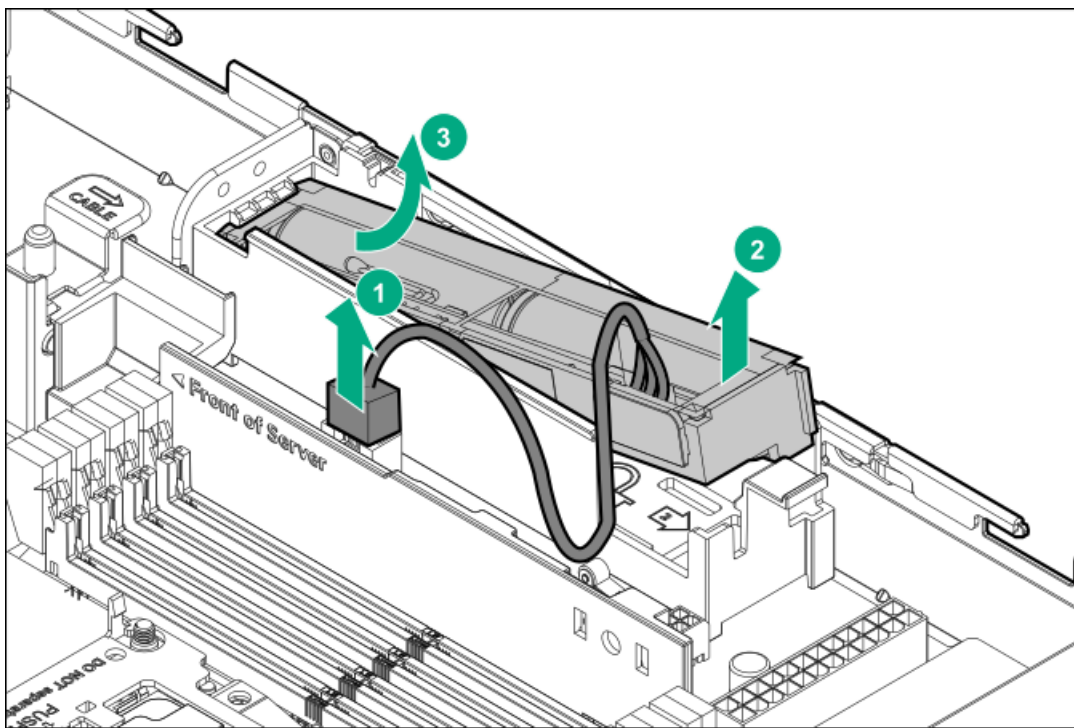
### Results

To replace the component, reverse the removal procedure.

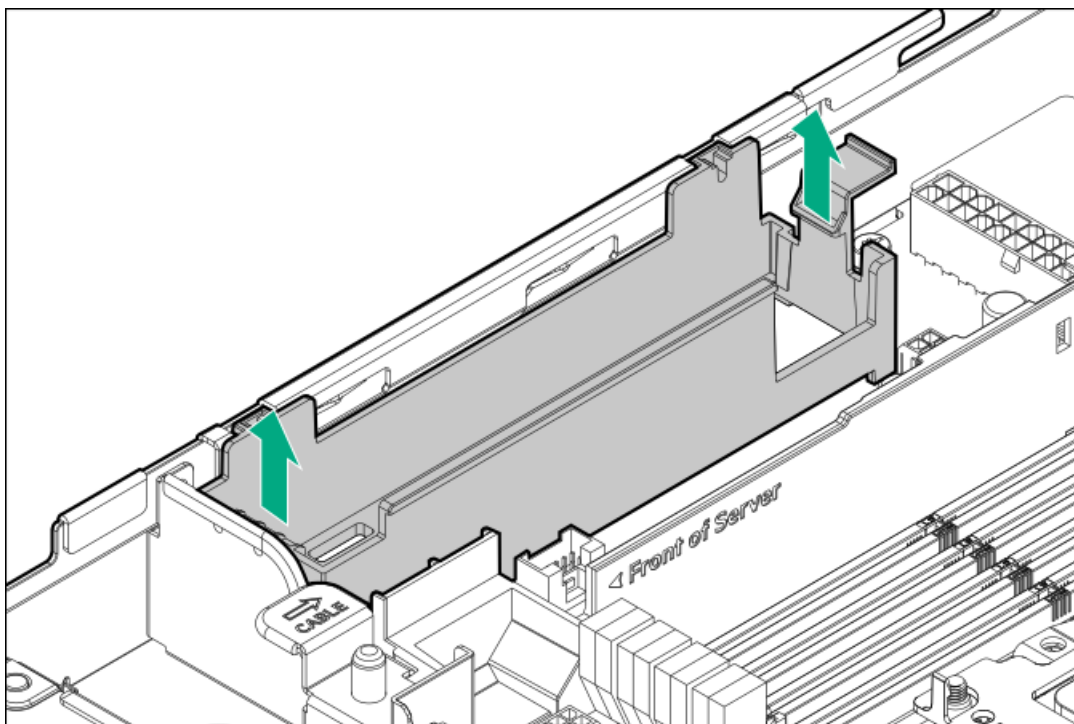
## Removing and replacing the energy pack and holder

### Procedure

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



7. If replacing the energy pack holder, remove it from the server.



#### Results

To replace the component, reverse the removal procedure.

## Front I/O assembly replacement

### Subtopics

## Removing and replacing the LFF front I/O assembly

### Prerequisites

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

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

### About this task



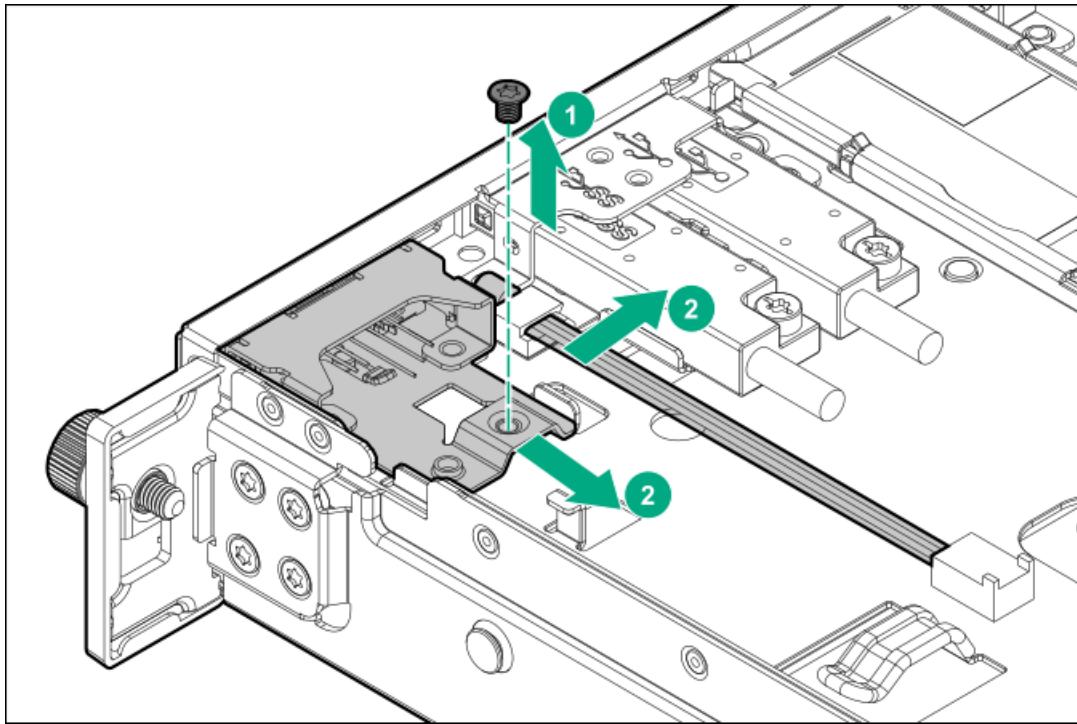
#### CAUTION:

A discharge of static electricity from a finger or other conductor might damage system boards or other static-sensitive devices. To prevent damage, observe [antistatic precautions](#).

### Procedure

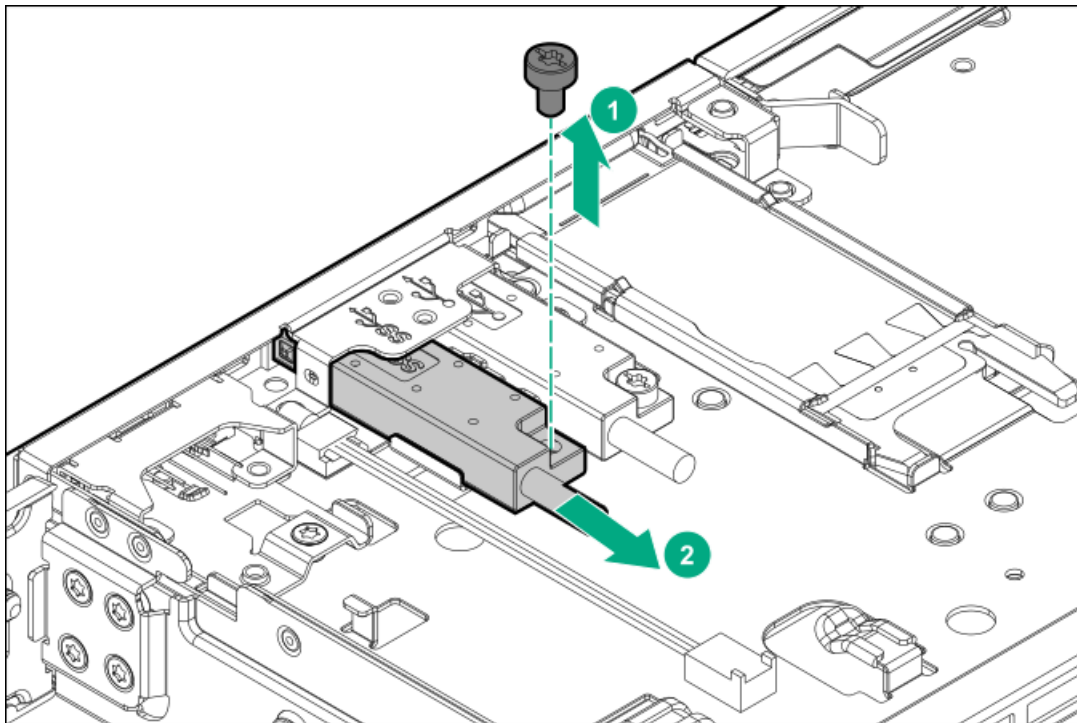
1. Back up all server data.
2. If installed, [remove the front bezel](#).
3. [Power down the server](#).
4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Do one of the following:
  - [Extend the server from the rack](#).
  - [Remove the server from the rack](#).
7. [Remove the access panel](#).
8. Disconnect all following cables from the system board:
  - [Front I/O and ambient temperature sensor cable](#)
  - [USB 3.0 cable](#)
  - [iLO service port cable](#)
9. Remove the front I/O assembly, do the following:
  - a. Remove the front I/O screw (callout 1).
  - b. Remove the front I/O and ambient temperature sensor cable (callout 2).

Retain the screw for future use.



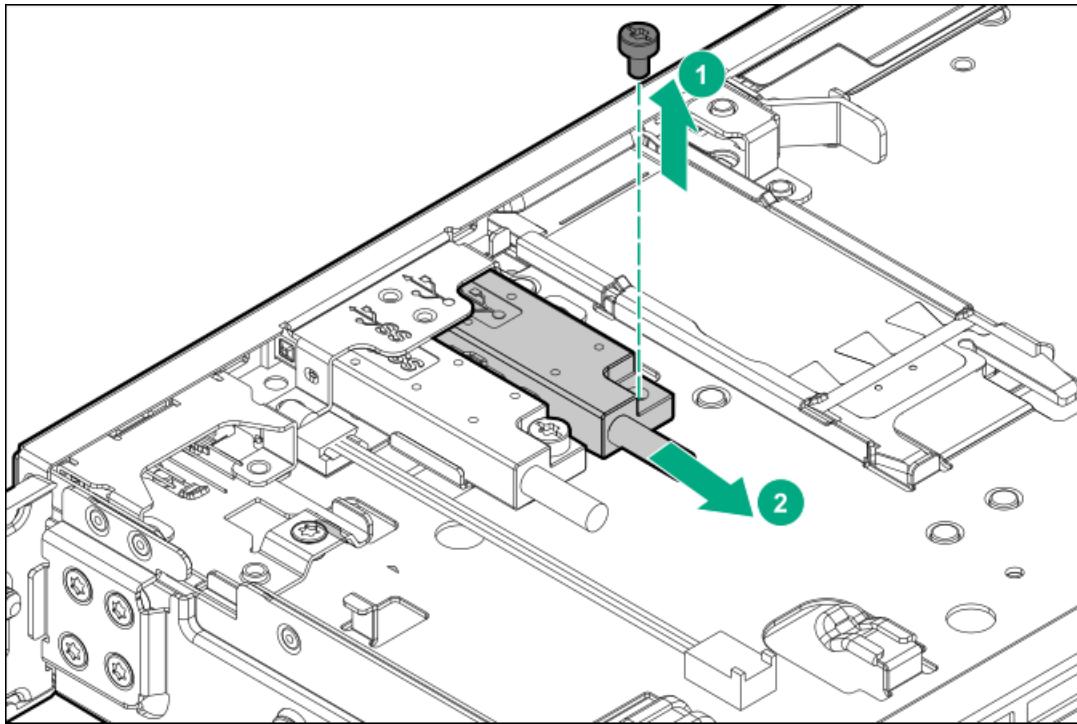
c. Remove USB 3.0 cable.

Retain the screw for future use.



d. Remove the iLO service port cable.

Retain the screw for future use.



## Results

To replace the component, reverse the removal procedure.

# Removing and replacing the SFF front I/O assembly

## Prerequisites

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

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

## About this task



### CAUTION:

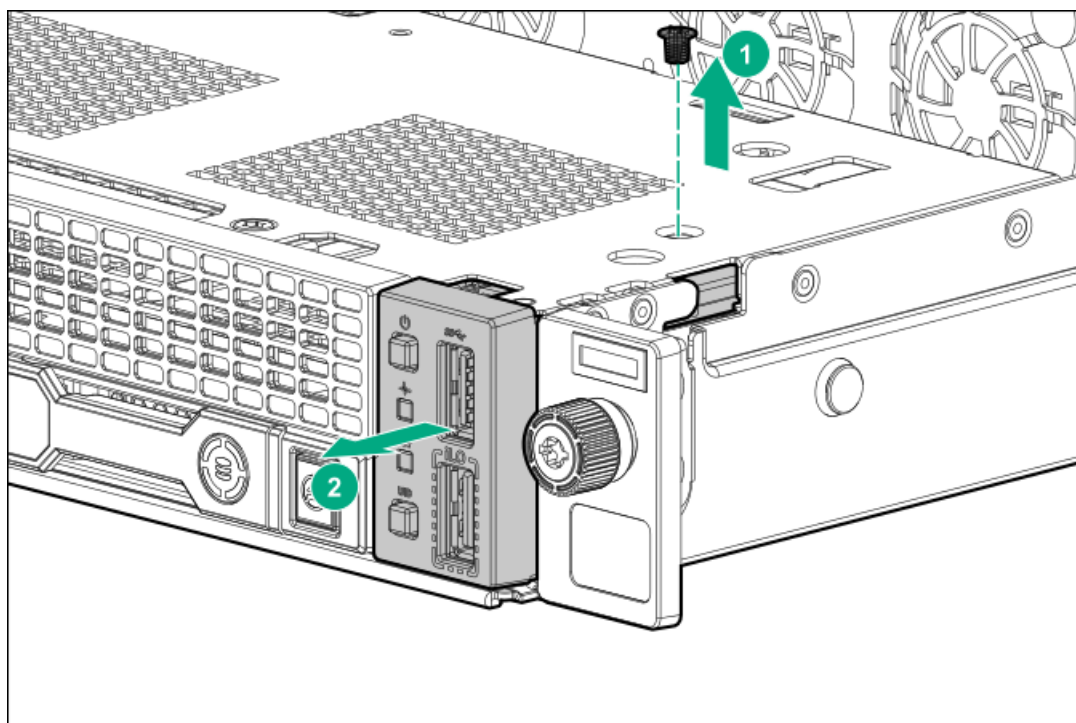
A discharge of static electricity from a finger or other conductor might damage system boards or other static-sensitive devices. To prevent damage, observe [antistatic precautions](#).

## Procedure

1. Back up all server data.
2. If installed, [remove the front bezel](#).
3. [Power down the server](#).
4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Do one of the following:

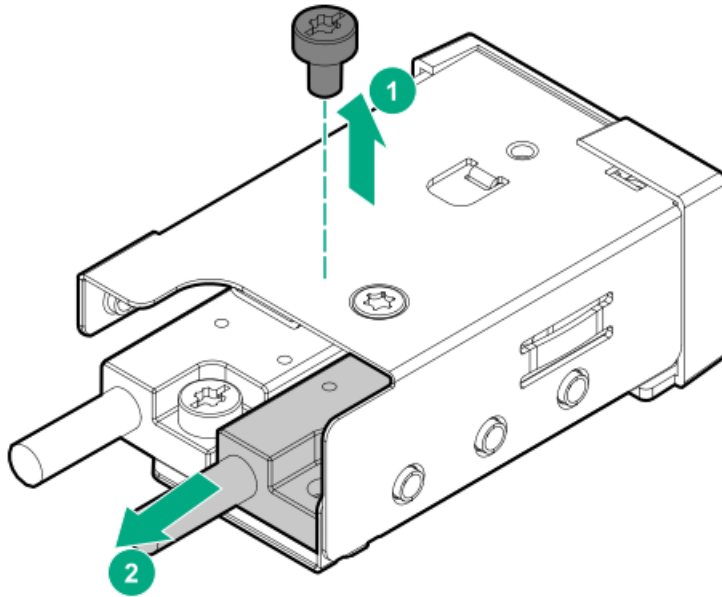
- Extend the server from the rack.
  - Remove the server from the rack.
7. Remove the access panel.
  8. Disconnect all following cables from the system board:
    - Front I/O and ambient temperature sensor cable
    - USB 3.0 cable
    - iLO service port cable
  9. Remove the front I/O assembly.

Retain the screw for future use.



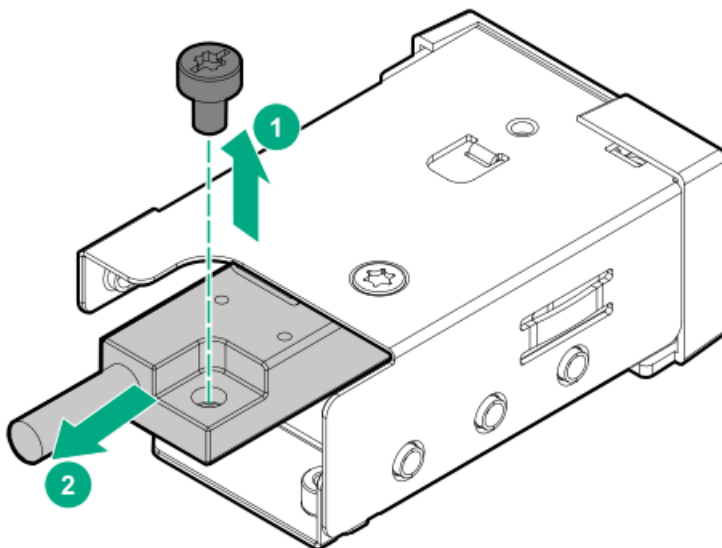
10. Remove the iLO service port cable.

Retain the screw for future use.



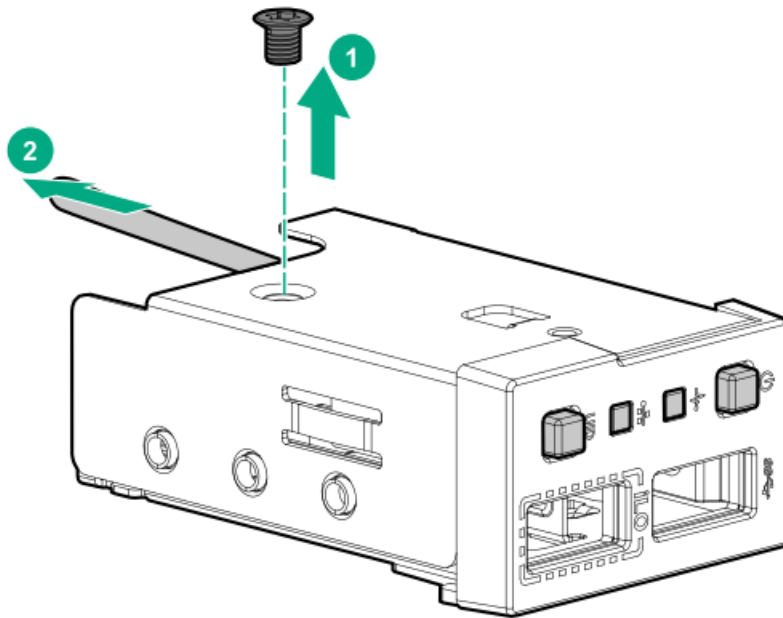
11. Remove the USB 3.0 cable.

Retain the screw for future use.



12. Remove the front I/O and ambient temperature sensor cable.

Retain the screw for future use.



## Results

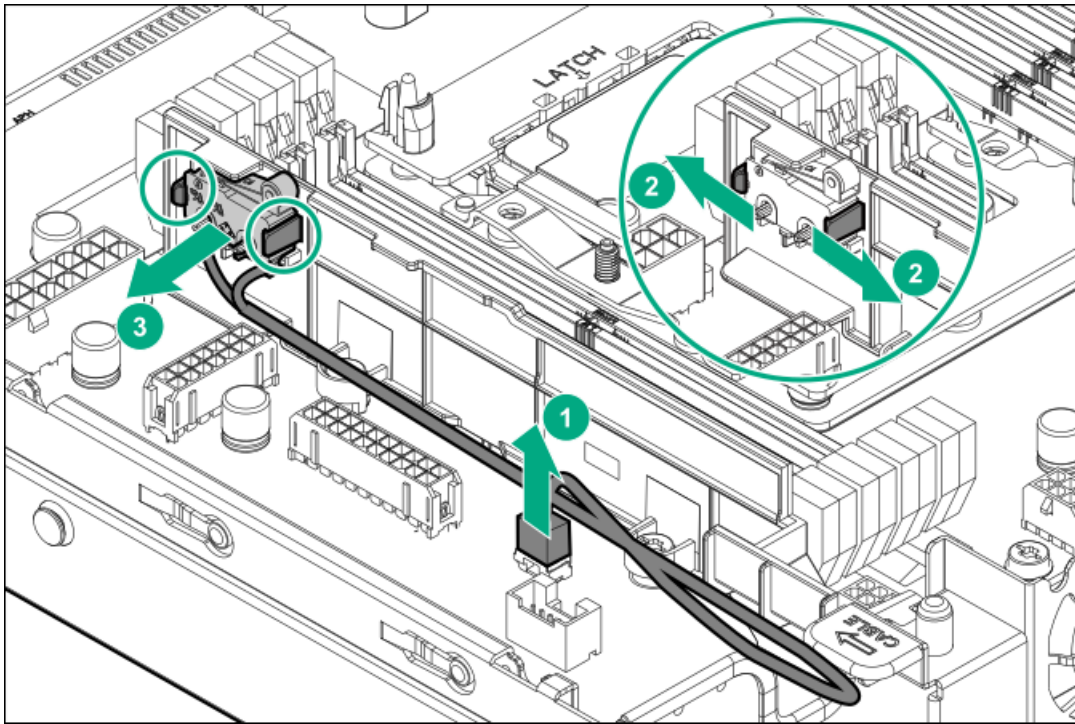
To replace the component, reverse the removal procedure.

## Removing and replacing the chassis intrusion detection switch

### Procedure

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





## Results

To replace the component, reverse the removal procedure.

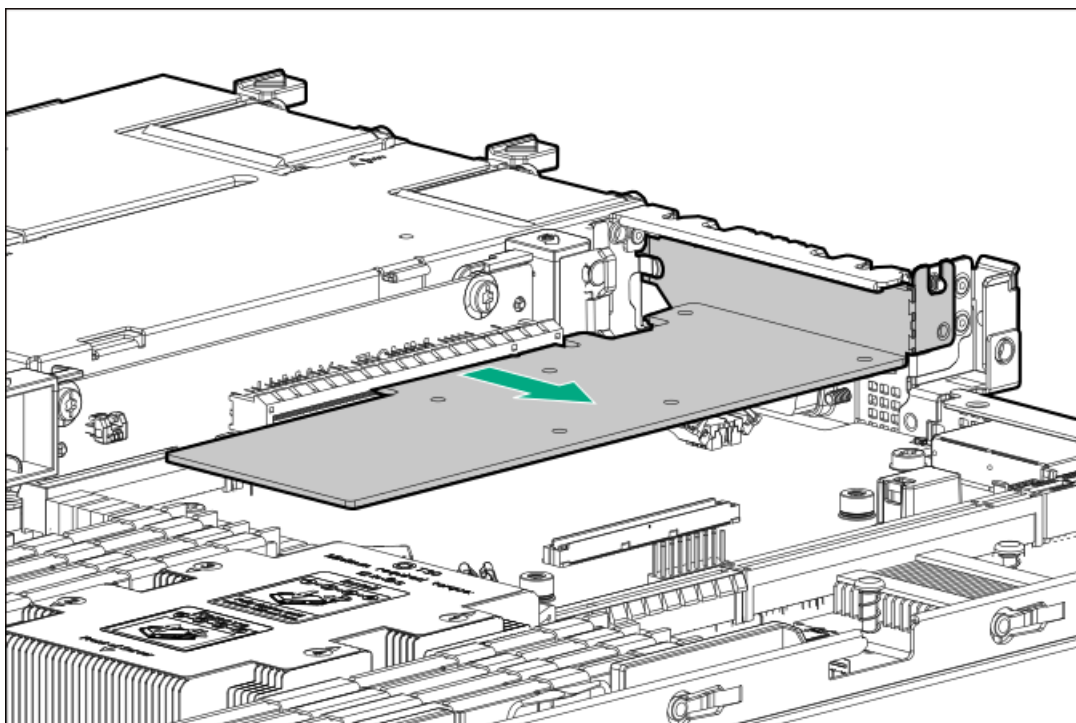
## Removing and replacing the serial port

### Prerequisites

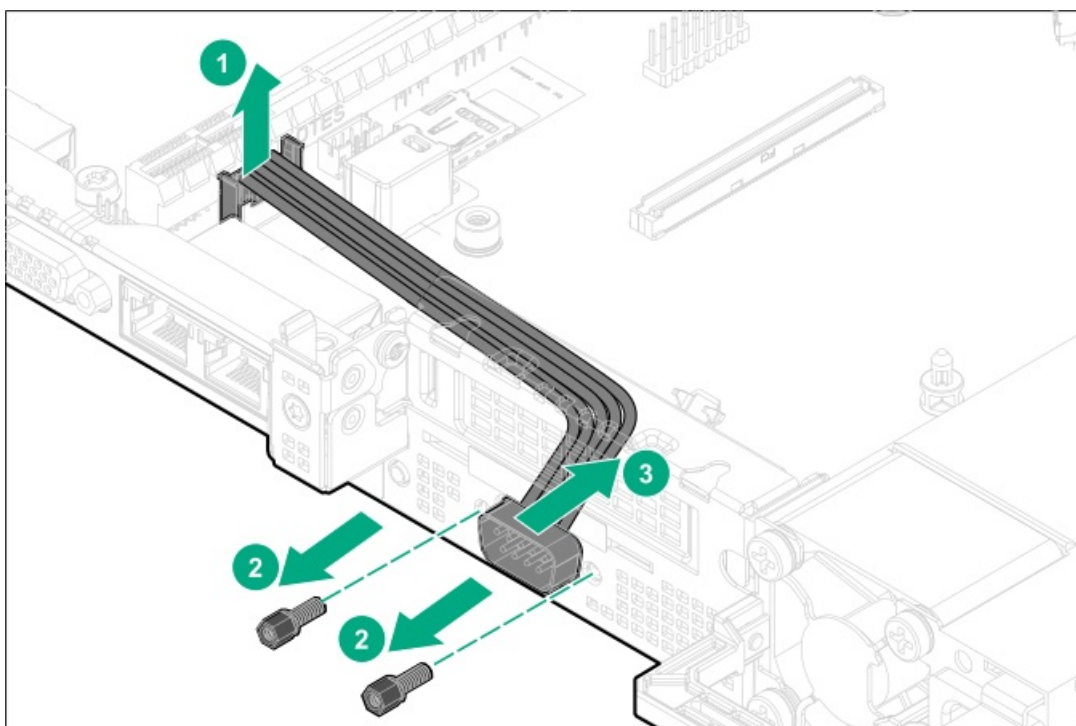
Before you perform this procedure, make sure that you have a hex nut screwdriver available.

### Procedure

1. Back up all server data.
2. If installed, remove the front bezel.
3. Power down the server.
4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Do one of the following:
  - Extend the server from the rack.
  - Remove the server from the rack.
7. Remove the access panel.
8. Remove the primary PCI riser cage.
9. If installed, remove the expansion board from slot 3.



10. Remove the screws and then disconnect the cable.



11. Remove the serial port.

#### Results

To replace the component, reverse the removal procedure.

## System battery replacement

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

## Subtopics

### [System battery information](#)

### [Removing and replacing the system battery](#)

## System battery information

The server contains an internal lithium manganese dioxide, a vanadium pentoxide, or an alkaline battery that provides power to the real-time clock.



#### **WARNING:**

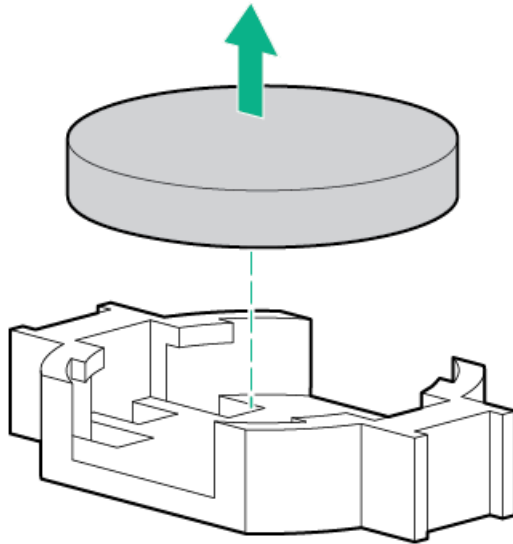
If this battery is not properly handled, a risk of the fire and burns exists. To reduce the risk of personal injury:

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

## Removing and replacing the system battery

### Procedure

1. Back up all server data.
2. If installed, [remove the front bezel](#).
3. [Power down the server](#).
4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Do one of the following:
  - [Extend the server from the rack](#).
  - [Remove the server from the rack](#).
7. [Remove the access panel](#).
8. [Locate the battery](#).
9. Remove the battery.



10. To replace the component, reverse the removal procedure.

11. Properly dispose of the old battery.

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

## System board assembly replacement

### Subtopics

[Removing the system board assembly](#)

[Replacing the system board assembly](#)

[Re-entering the server serial number and product ID](#)

## Removing the system board assembly

### Prerequisites

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

- T-10 Torx screwdriver
- T-15 Torx screwdriver
- T-30 Torx screwdriver
- System board handle tool

### About this task

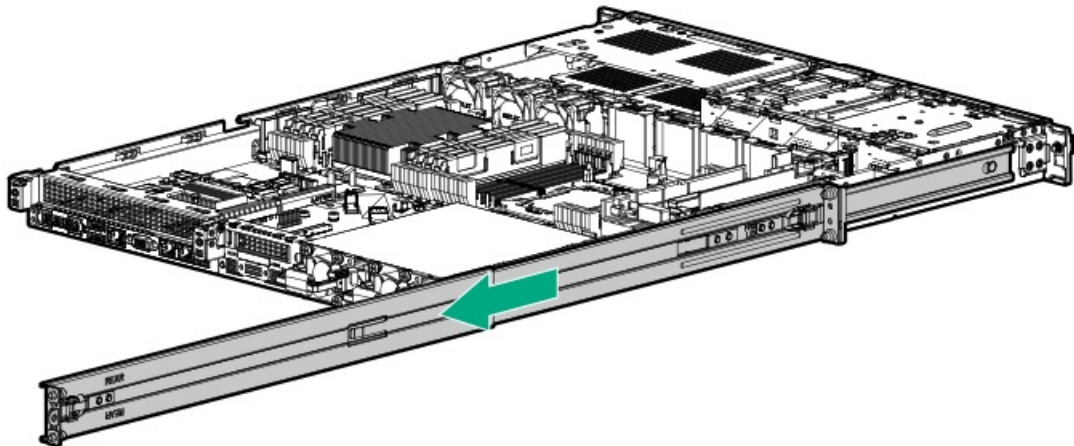


#### CAUTION:

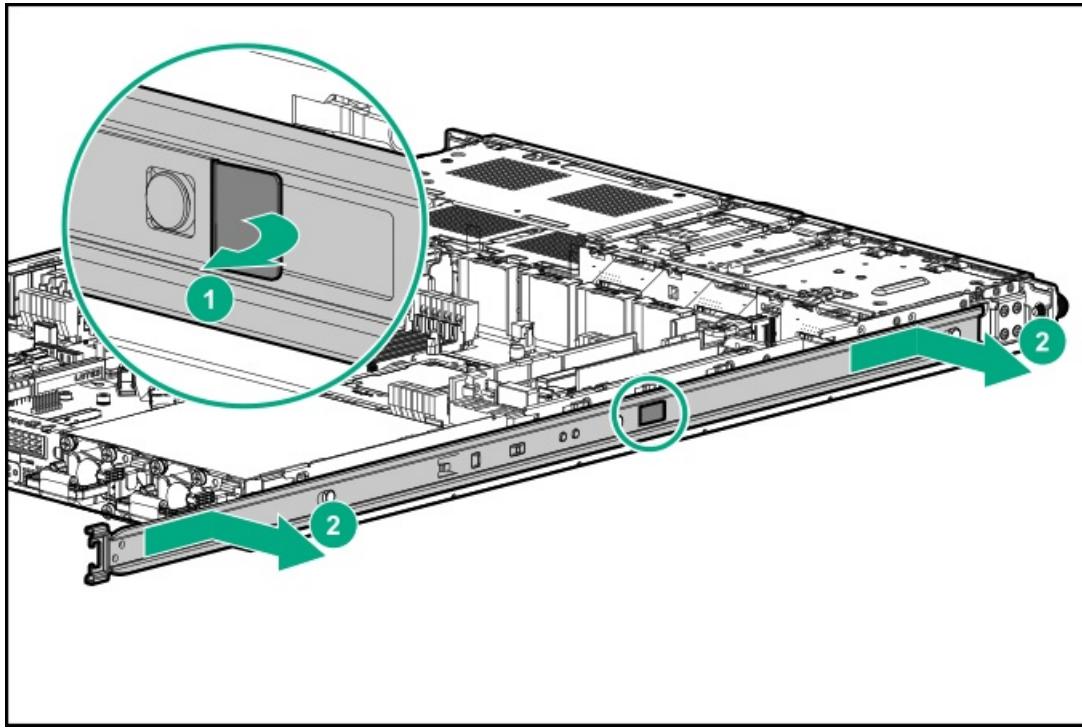
A discharge of static electricity from a finger or other conductor might damage system boards or other static-sensitive devices. To prevent damage, observe [antistatic precautions](#).

## Procedure

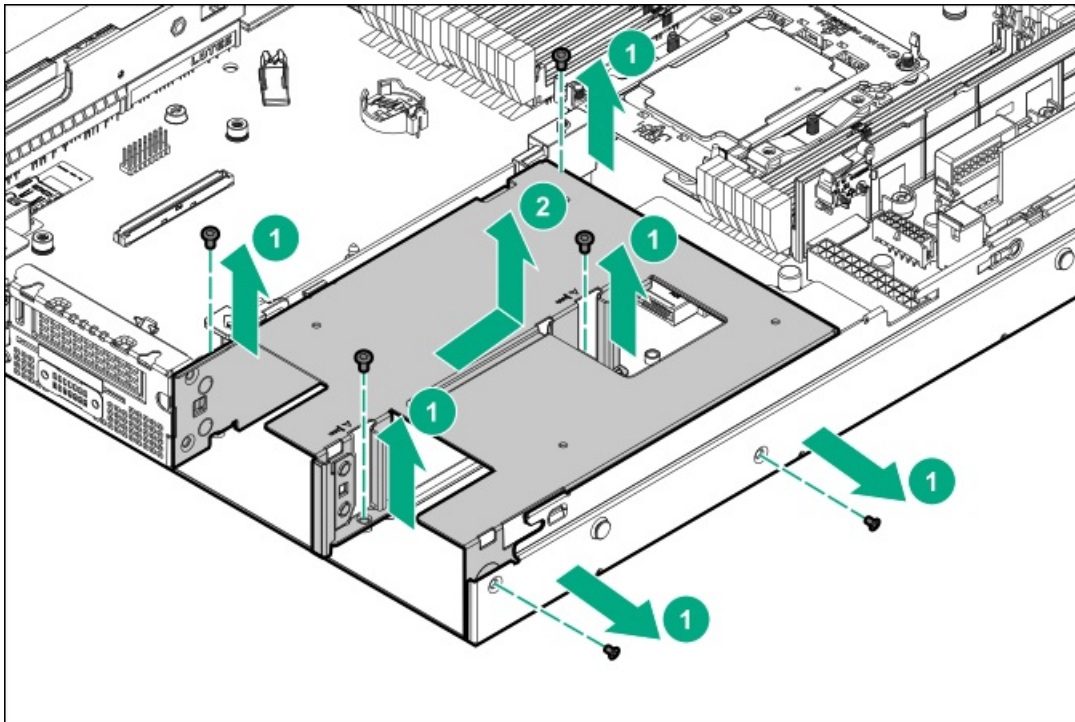
1. Back up all server data.
2. If installed, remove the front bezel.
3. Power down the server.
4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Do one of the following:
  - Extend the server from the rack.
  - Remove the server from the rack.
7. Remove the access panel.
8. Do one of the following:
  - Remove the primary PCI riser blank.
  - Remove the primary PCI riser cage.
9. If installed, remove the secondary PCI riser cage.
10. If installed, remove these server options from the system board:
  - Type-a modular controller
  - Media Module
  - Serial port
  - Energy pack and holder
11. Disconnect all cables connected to the system board.
12. Remove the rail.
  - a. Extend the rail.



- b. Remove the rail from the server.



13. Remove all power supplies.
14. Remove the power supply cage.



15. Remove all DIMMs.
16. Disconnect the chassis intrusion detection switch cable and remove the DIMM guards.
17. Observe the following cautions.

---

 **CAUTION:** Loosen each nut or screw in the order indicated. Otherwise, damage might occur to components.

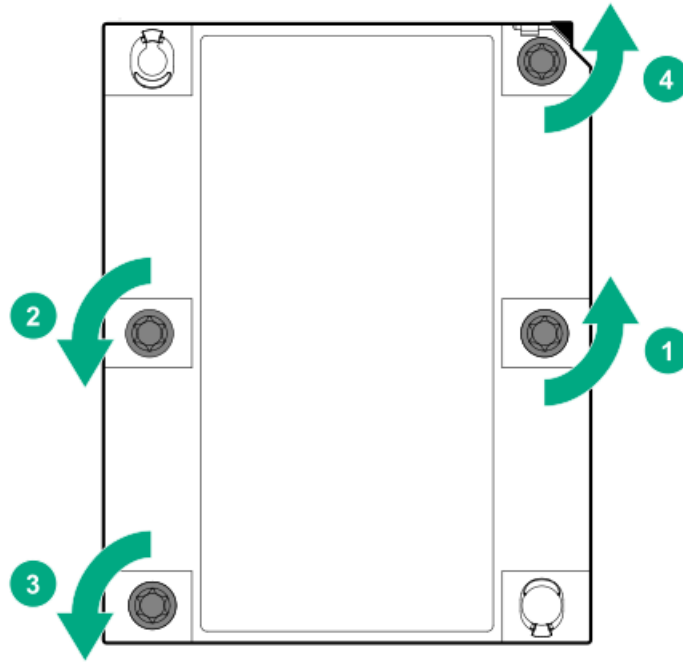
---



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

18. Remove the processor heatsink assembly:

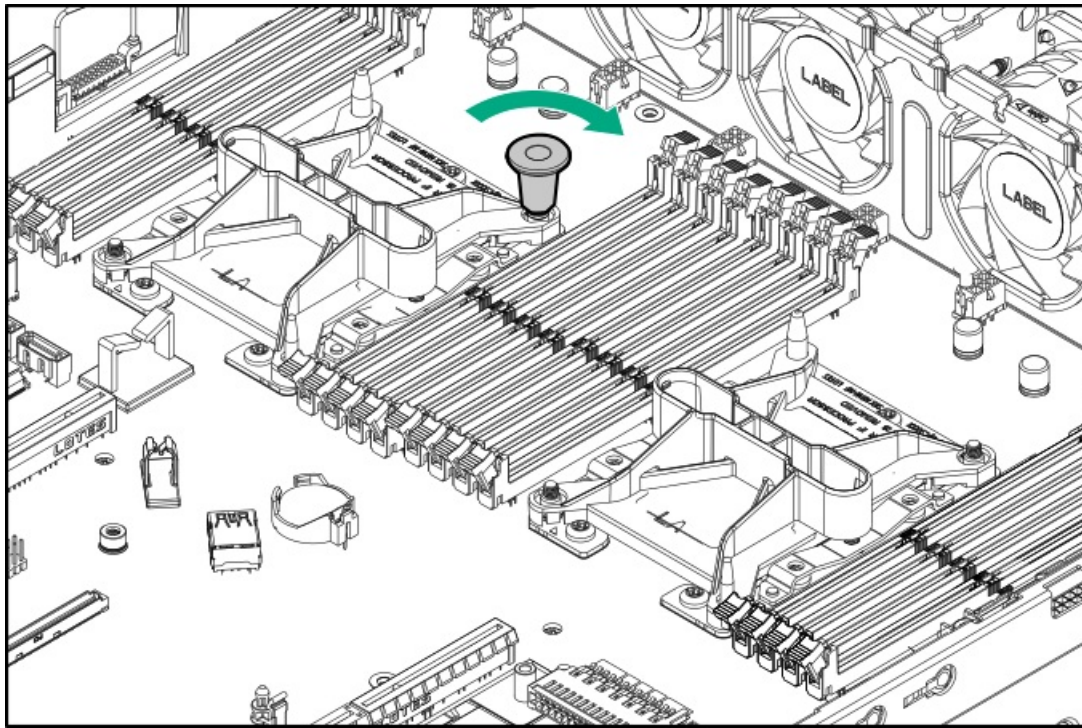
- a. Allow the heatsink to cool.
- b. Loosen the heatsink nuts in the order specified by the label on the heatsink.



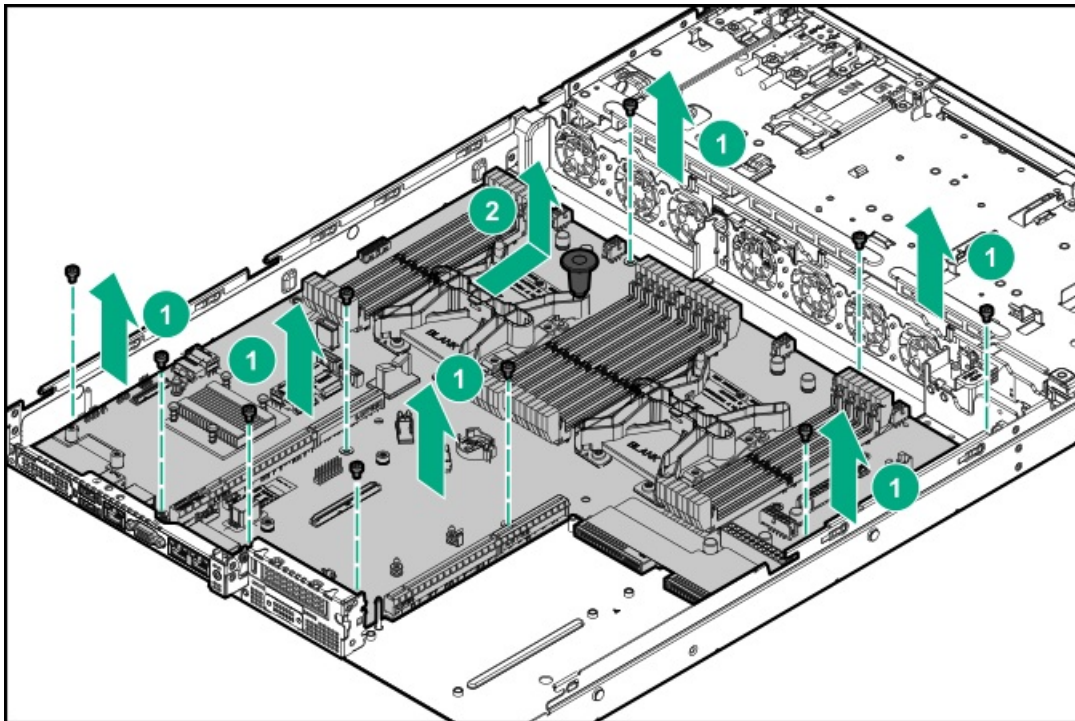
- c. Lift the processor heatsink assembly and move it away from the system board.
- d. Turn the assembly over and place it on a work surface with the processor facing up.

19. Remove the system board assembly:

- a. Install the system board handle tool.



- b. Remove the screws from the system board.
- c. Hold the handle tool to lift the system board assembly.



- 20. Remove the handle from the failed system board.

## Replacing the system board assembly

### Prerequisites

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



- T-10 Torx screwdriver
- T-15 Torx screwdriver
- T-30 Torx screwdriver
- System board handle tool

#### About this task

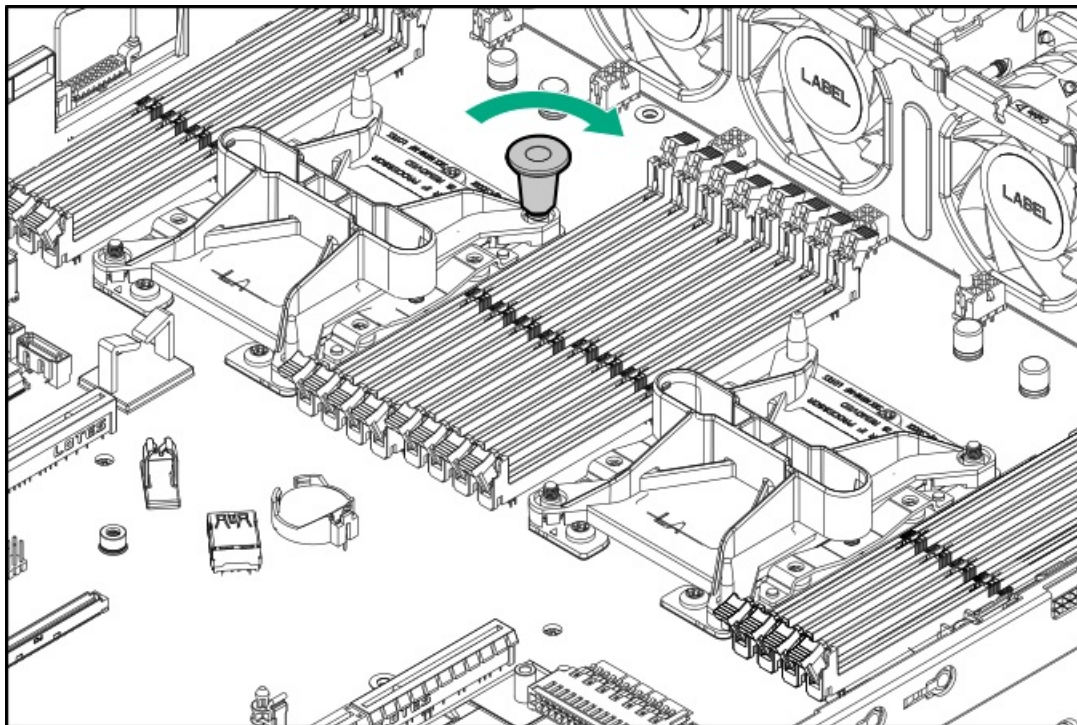


#### CAUTION:

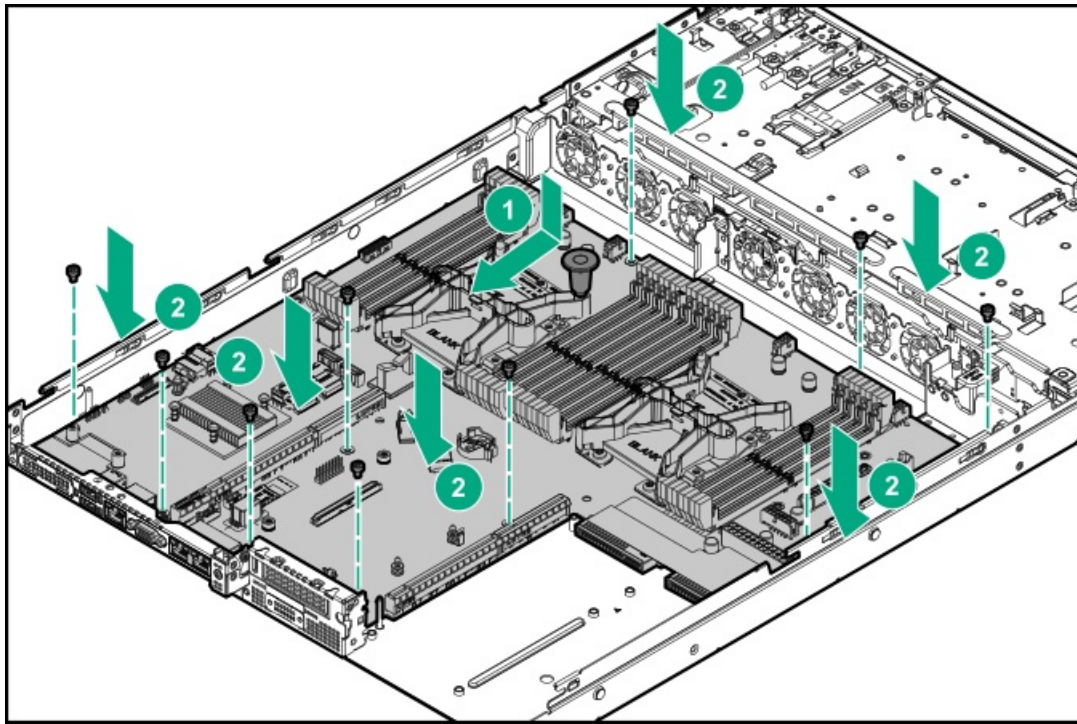
A discharge of static electricity from a finger or other conductor might damage system boards or other static-sensitive devices. To prevent damage, observe antistatic precautions.

#### Procedure

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

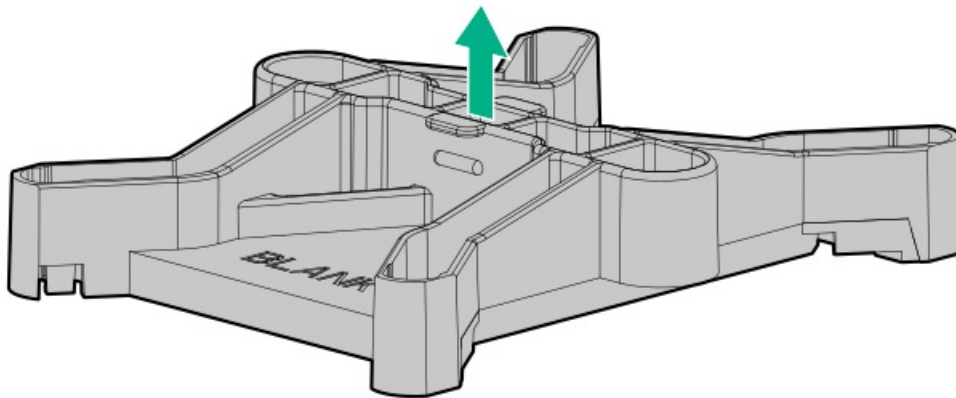


- b. Hold the handle tool to insert the ports into the rear panel, and then install the system board assembly on the chassis.
- c. Install the screws on the system board.



2. Remove the processor heatsink dust cover.

Reinstall the dust cover on failed system board.

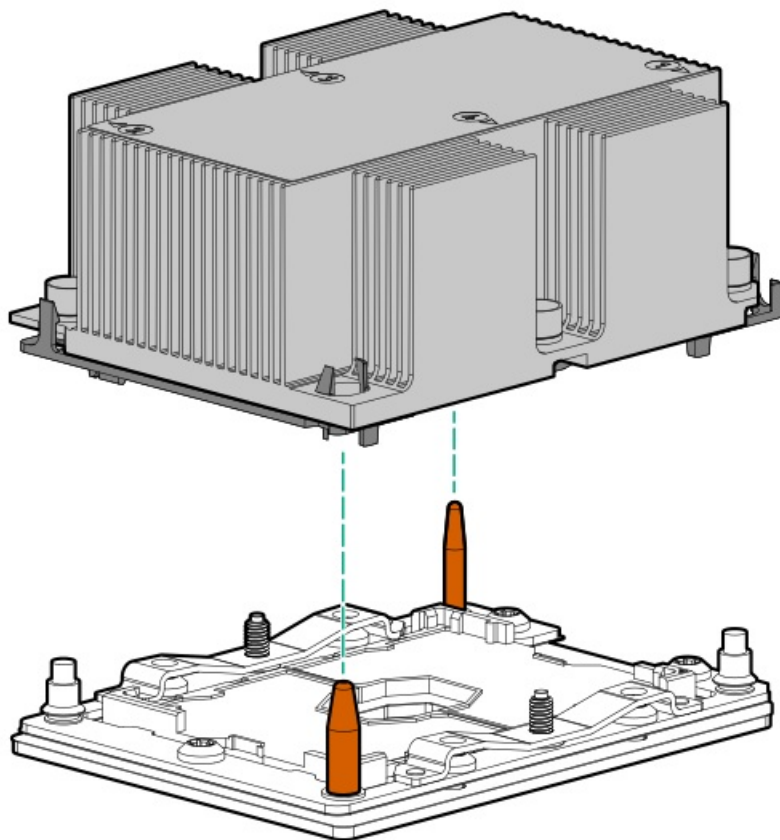


3. Install the processor heatsink assembly:

- a. Locate and align the Pin 1 indicator on the processor frame and the socket.
- b. Align the processor heatsink assembly with the heatsink alignment posts and gently lower it down until it sits evenly on the socket.

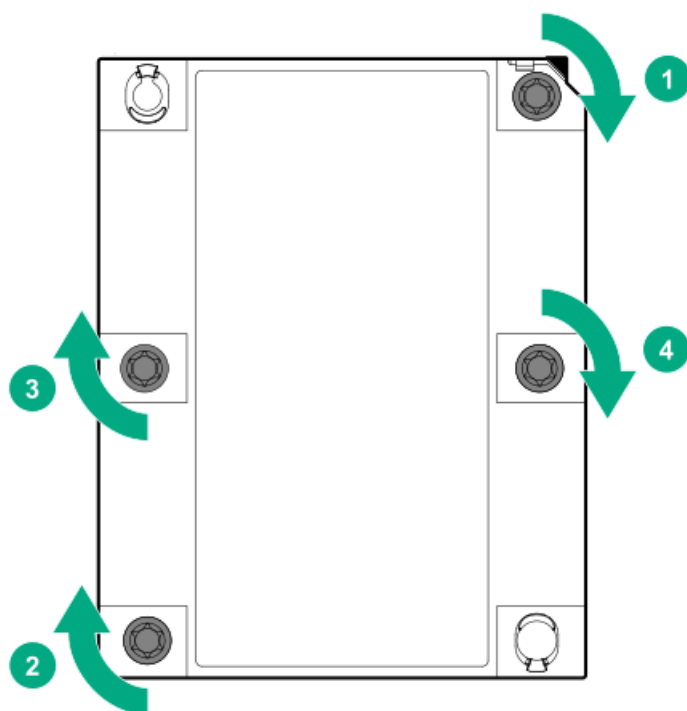
The heatsink alignment posts are keyed. The processor will only install one way.

A standard heatsink is shown, your heatsink might look different.



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

- c. Using a T-30 Torx screwdriver, tighten the nuts until they stop.



- 4. Install the redundant hot-plug power supply cage.

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

## Re-entering the server serial number and product ID

### About this task

After replacing the system board, re-enter the system serial number and product ID, and configure the date and time settings.

### Procedure

1. Access the UEFI System Utilities. During POST, press **F9**.
2. From the System Utilities screen, select System Configuration > BIOS/Platform Configuration (RBSU) > Advanced Options > Advanced Service Options.
3. Select Serial Number, and then press **Enter**.

The following warning appears:

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

4. Click OK.
5. Type the serial number, and then press **Enter**.
6. Select Product ID, and then press **Enter**.

The following warning appears:

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

7. Type the product ID, and then press **Enter**.
8. From the System Utilities screen, select System Configuration > BIOS/Platform Configuration (RBSU) > Date and Time.
9. Configure the date and time settings:
  - Date (mm-dd-yyyy)—Enter the date in a month-day-year (mm-dd-yyyy) format.

- Time (hh:mm:ss)—Enter the time in a 24-hour format (hh:mm:ss) format.
- Hour Format—Select either a 12- or 24-hours format. (This menu is supported in Gen10 Plus and later servers.)
- Time Format
  - Coordinated Universal Time (UTC) —Calculates the time stored in the hardware real-time clock (RTC) from the associated Time Zone setting.
  - Local Time—Removes the use of the Time Zone setting. This option is useful for addressing interaction issues in Windows operating systems set in legacy BIOS boot mode.
  - Time Zone—Select the time zone for the system.
  - Daylight Savings Time—Select whether to enable DST in the system time setting.

10. To confirm and save the settings, press **F12**.

The server automatically reboots.

## Results

The installation is complete.

## HPE Trusted Platform Module 2.0 Gen10 Option

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



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

If you suspect a TPM board failure, leave the TPM installed and remove the system board ( [Removing the system board assembly](#) ). Contact a Hewlett Packard Enterprise authorized service provider for a replacement system board and TPM board.

## Troubleshooting

### Subtopics

[NMI functionality](#)

[Troubleshooting resources](#)

## NMI functionality

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

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

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

## Troubleshooting resources

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

- Troubleshooting Guide for HPE ProLiant Gen10 and Gen10 Plus servers provides procedures for resolving common problems and comprehensive courses of action for fault isolation and identification, issue resolution, and software maintenance.
- Integrated Management Log Messages and Troubleshooting Guide for HPE ProLiant Gen10 and Gen10 Plus servers and HPE Synergy provides IML messages and associated troubleshooting information to resolve critical and cautionary IML events.

To access troubleshooting resources for your product, see the [Hewlett Packard Enterprise website](https://www.hpe.com/enterprise-website).

## Configuration resources

Use the following resources to find documentation for configuring and managing your server.

- Some utilities might not apply to your server. For information about server compatibility with the products listed in this chapter, see the product QuickSpecs (<https://www.hpe.com/servers/dl160-gen10>).
- Products ordered from HPE Factory Express might have already been configured with some or all the configurations in this chapter. To determine if any additional setup is required, see your HPE Factory Express order.
- For the most recent changes, feature enhancements, and bug fixes, see the latest product release notes.

### Subtopics

[Updating firmware or system ROM](#)

[Configuring the server](#)

[Configuring storage controllers](#)

[Deploying an OS](#)

[Configuring security](#)

[Optimizing the server](#)

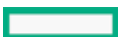
[Server management](#)

[Managing Linux-based high performance compute clusters](#)

## Updating firmware or system ROM

To	Use
Download service packs	<ul style="list-style-type: none"> <li>• HPE Service Pack for ProLiant (SPP) <ul style="list-style-type: none"> <li><a href="https://www.hpe.com/servers/spp/download">https://www.hpe.com/servers/spp/download</a></li> </ul> </li> <li>• HPE Synergy software releases and HPE Synergy Service Packs (SSPs) <ul style="list-style-type: none"> <li><a href="https://www.hpe.com/info/synergy-sw-release-information">https://www.hpe.com/info/synergy-sw-release-information</a></li> </ul> </li> </ul>
Deploy service packs to a single server	Smart Update Manager (SUM) <ul style="list-style-type: none"> <li><a href="https://www.hpe.com/info/sum-docs">https://www.hpe.com/info/sum-docs</a></li> </ul>
Deploy service packs to multiple servers	HPE OneView <ul style="list-style-type: none"> <li><a href="https://www.hpe.com/support/oneview-docs">https://www.hpe.com/support/oneview-docs</a></li> </ul>
<ul style="list-style-type: none"> <li>• Enable policy-based management of server or server group firmware for distributed server infrastructure</li> <li>• Monitor server compliance with a configured firmware baseline</li> <li>• Receive automatic iLO firmware updates</li> <li>• Receive baseline update alerts</li> </ul>	HPE GreenLake for Compute Ops Management <ul style="list-style-type: none"> <li><a href="https://www.hpe.com/info/com-docs">https://www.hpe.com/info/com-docs</a></li> </ul>

## Configuring the server



To configure	Use
Single server (GUI)	<ul style="list-style-type: none"> <li>Intelligent Provisioning <a href="https://www.hpe.com/info/intelligentprovisioning/docs">https://www.hpe.com/info/intelligentprovisioning/docs</a></li> <li>iLO remote console or web interface <a href="https://www.hpe.com/support/ilo5">https://www.hpe.com/support/ilo5</a></li> <li>UEFI System Utilities <a href="https://www.hpe.com/info/UEFI-manuals">https://www.hpe.com/info/UEFI-manuals</a></li> <li>HPE GreenLake for Compute Ops Management <a href="https://www.hpe.com/info/com-docs">https://www.hpe.com/info/com-docs</a></li> </ul>
Single server (scripting)	<ul style="list-style-type: none"> <li>RESTful Interface Tool <a href="https://www.hpe.com/support/restfulinterface/docs">https://www.hpe.com/support/restfulinterface/docs</a></li> <li>Python iLO Redfish Library (python-iloest-library) <a href="https://github.com/HewlettPackard/python-iloest-library">https://github.com/HewlettPackard/python-iloest-library</a></li> <li>Scripting Tools for Windows Powershell <a href="https://www.hpe.com/info/powershell/docs">https://www.hpe.com/info/powershell/docs</a></li> <li>iLO RESTful API <a href="https://hewlettpackard.github.io/ilo-rest-api-docs/">https://hewlettpackard.github.io/ilo-rest-api-docs/</a></li> <li>HPE GreenLake for Compute Ops Management API <a href="https://developer.greenlake.hpe.com/">https://developer.greenlake.hpe.com/</a></li> </ul>
Multiple servers (either UI or scripting)	<ul style="list-style-type: none"> <li>HPE OneView <sup>1</sup> <a href="https://www.hpe.com/support/oneview-docs">https://www.hpe.com/support/oneview-docs</a></li> <li>HPE GreenLake for Compute Ops Management <a href="https://www.hpe.com/info/com-docs">https://www.hpe.com/info/com-docs</a> <ul style="list-style-type: none"> <li><b>Server settings:</b> Define server-specific parameters such as firmware baselines, and then apply them to server groups.</li> <li><b>Server groups:</b> Organize servers into custom-defined sets with associated server settings, and then apply group-specific policies to create a consistent configuration across the servers in the group.</li> </ul> </li> </ul>

<sup>1</sup> For servers running HPE OneView, do not use another tool, such as iLO, to delete or change certain settings. For more information about using HPE OneView and iLO to manage the same server, see the iLO user guide at <https://www.hpe.com/support/ilo5>.

## Configuring storage controllers



Controller type	Documentation
SR controllers	—
Gen10 Plus	HPE SR Gen10 Plus Controller User Guide <a href="https://www.hpe.com/info/SR-Gen10Plus-UG">https://www.hpe.com/info/SR-Gen10Plus-UG</a>
Gen10	HPE Smart Array SR Controller Gen10 User Guide <a href="https://www.hpe.com/support/SR-Gen10-UG">https://www.hpe.com/support/SR-Gen10-UG</a>
Cross-generation SR guides	<ul style="list-style-type: none"> <li>HPE SR Storage Administrator User Guide <a href="https://www.hpe.com/support/SSA-UG">https://www.hpe.com/support/SSA-UG</a></li> <li>HPE SR Storage Administrator CLI User Guide <a href="https://www.hpe.com/support/SSA-UG">https://www.hpe.com/support/SSA-UG</a></li> </ul>
MR controllers	—
Gen10 Plus	HPE MR Gen10 Plus Controller User Guide <a href="https://www.hpe.com/info/MR-Gen10Plus-UG">https://www.hpe.com/info/MR-Gen10Plus-UG</a>
Cross-generation MR guides	HPE MR Storage Administrator User Guide <a href="https://www.hpe.com/support/MRSA">https://www.hpe.com/support/MRSA</a> HPE MR StorCLI User Guide
Software RAID	—
HPE Smart Array S100i SR Gen10 Software RAID	HPE Smart Array SR Controller Gen10 User Guide <a href="https://www.hpe.com/support/SR-Gen10-UG">https://www.hpe.com/support/SR-Gen10-UG</a>

## Deploying an OS

For a list of supported operating systems, see the HPE Servers Support & Certification Matrices:

<https://www.hpe.com/support/Servers-Certification-Matrices>

To	See
Configure the server to boot from a SAN	HPE Boot from SAN Configuration Guide <a href="https://www.hpe.com/info/boot-from-san-config-guide">https://www.hpe.com/info/boot-from-san-config-guide</a>
Configure the server to boot from a PXE server	UEFI System Utilities User Guide for HPE ProLiant Gen10, ProLiant Gen10 Plus Servers and HPE Synergy <a href="https://www.hpe.com/support/UEFIGen10-UG-en">https://www.hpe.com/support/UEFIGen10-UG-en</a>
Deploy an OS using iLO virtual media	iLO user guide <a href="https://www.hpe.com/support/ilo5">https://www.hpe.com/support/ilo5</a>
Deploy an OS using Intelligent Provisioning	Intelligent Provisioning user guide <a href="https://www.hpe.com/info/intelligentprovisioning/docs">https://www.hpe.com/info/intelligentprovisioning/docs</a>

## Configuring security

To	See
Implement server security best practices.	<ul style="list-style-type: none"> <li>HPE Gen10, Gen10 Plus, and Gen11 Security Reference Guide <a href="https://www.hpe.com/info/server-security-reference-en">https://www.hpe.com/info/server-security-reference-en</a></li> <li>HPE iLO 5 Security Technology Brief <a href="https://www.hpe.com/support/ilo5-security-en">https://www.hpe.com/support/ilo5-security-en</a></li> </ul>
Configure and use the Server Configuration Lock feature on HPE Trusted Supply Chain servers and other servers that have the Configuration Lock feature enabled.	Server Configuration Lock User Guide for HPE ProLiant Gen10, Gen10 Plus, and Gen11 servers and HPE Synergy <a href="https://www.hpe.com/info/server-config-lock-UG-en">https://www.hpe.com/info/server-config-lock-UG-en</a>

## Optimizing the server

To	See
Optimize server performance through management and tuning features.	HPE Server Performance Management and Tuning Guide <a href="https://www.hpe.com/info/server-performance-management-tuning-en">https://www.hpe.com/info/server-performance-management-tuning-en</a>
Obtain recommendations for resolving incorrect settings.	HPE InfoSight for Servers User Guide <a href="https://www.hpe.com/support/InfoSight-for-Servers-UG-en">https://www.hpe.com/support/InfoSight-for-Servers-UG-en</a>

## Server management

To monitor	See
Single server	HPE iLO <a href="https://www.hpe.com/support/ilo5">https://www.hpe.com/support/ilo5</a>
Multiple servers	HPE OneView <a href="https://www.hpe.com/support/oneview-docs">https://www.hpe.com/support/oneview-docs</a>
Single or multiple servers	HPE GreenLake for Compute Ops Management <a href="https://www.hpe.com/info/com-docs">https://www.hpe.com/info/com-docs</a>

## Managing Linux-based high performance compute clusters

To	Use
Provision, manage, and monitor clusters.	HPE Performance Cluster Manager <a href="https://www.hpe.com/support/hpcm_manuals">https://www.hpe.com/support/hpcm_manuals</a>
Optimize your applications.	HPE Performance Analysis Tools <a href="https://www.hpe.com/info/perftools">https://www.hpe.com/info/perftools</a>
Optimize software library for low latency and high bandwidth, both on-node and off-node, for point-to-point and collective communications.	HPE Cray Programming Environment User Guide <a href="https://www.hpe.com/info/cray-pe-user-guides">https://www.hpe.com/info/cray-pe-user-guides</a>

## Component identification

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

### Subtopics

[Front panel components](#)

[Front panel LEDs and buttons](#)

[Rear panel components](#)

[Rear panel LEDs](#)

[PCIe expansion slot definitions](#)

[PCIe slot description](#)

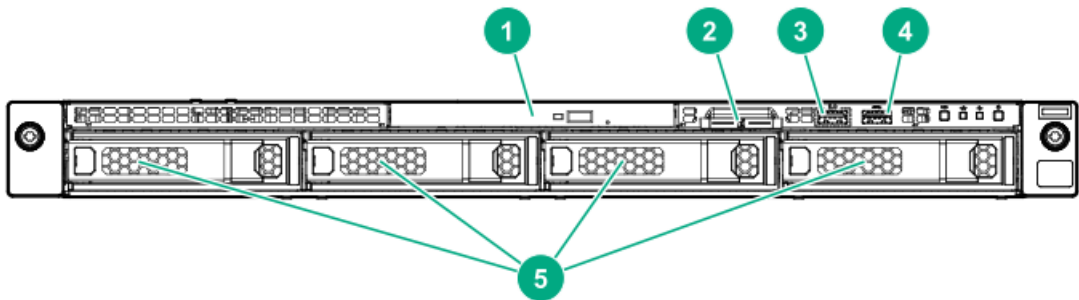
[System board components](#)

[Drive bay numbering](#)

[Drive LEDs and buttons](#)

Front panel components

Four-bay LFF hot-plug drive model

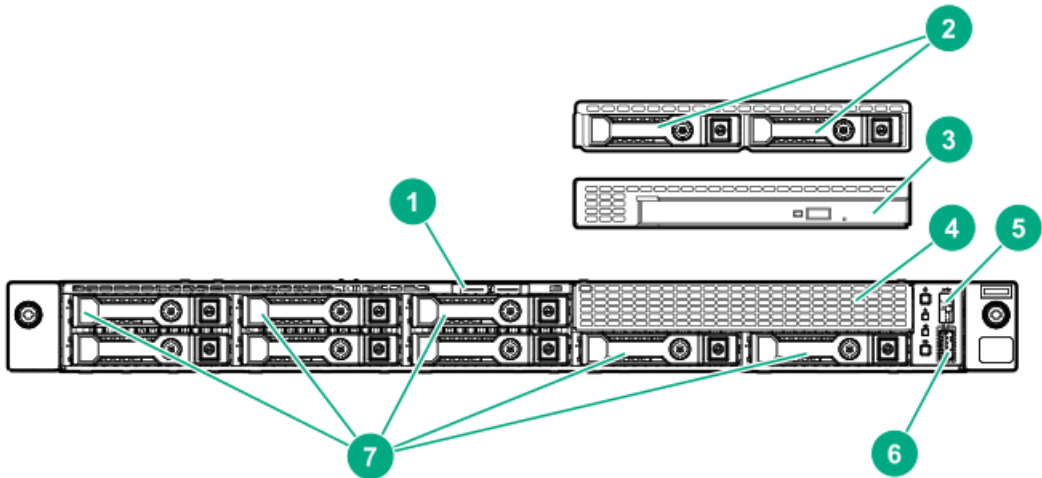


Item	Description
1	Optical drive (optional)
2	Serial number/iLO information pull tab <sup>1</sup>
3	<u>iLO service port</u>
4	USB 3.0 port
5	4 LFF hot-plug drives <sup>2</sup>

<sup>1</sup> The serial number/iLO information pull tab is double-sided. One side shows the server serial number and the customer asset tag label. The other side shows the default iLO account information.

<sup>2</sup> This server supports LFF SAS and SATA drives.

Eight-bay SFF hot-plug drive model



Item	Description
1	Serial number/iLO information pull tab <sup>1</sup>
2	2 SFF hot-plug drives (optional) <sup>2</sup>
3	Optical drive (optional)
4	Media bay blank <sup>3</sup>
5	USB 3.0 port
6	<u>iLO service port</u>
7	8 SFF hot-plug drives <sup>2</sup>

- <sup>1</sup> The serial number/iLO information pull tab is double-sided. One side shows the server serial number and the customer asset tag label. The other side shows the default iLO account information.
- <sup>2</sup> This server supports SFF SAS and SATA drives.
- <sup>3</sup> The media bay supports the optical drive cage or the 2 SFF drive cage option.

## Subtopics

### iLO Service Port

## iLO Service Port

When you have physical access to a server, you can use the Service Port to do the following:

- Download the Active Health System Log to a supported USB flash drive.

When you use this feature, the connected USB flash drive is not accessible by the host operating system.

- Connect a client (such as a laptop) with a supported USB to Ethernet adapter to access the following:
  - iLO web interface
  - Remote console
  - iLO RESTful API
  - CLI

When you use the iLO Service Port:

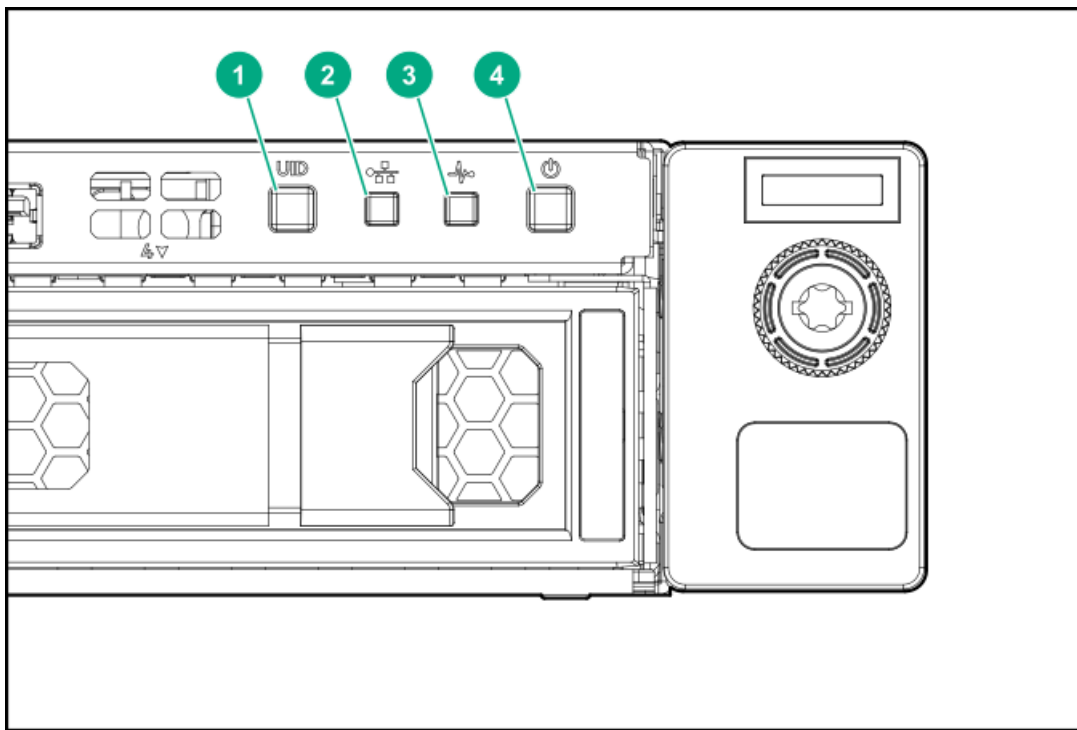
- Actions are logged in the iLO event log.
- The server UID flashes to indicate the Service Port status.

You can also retrieve the Service Port status by using a REST client and the iLO RESTful API.

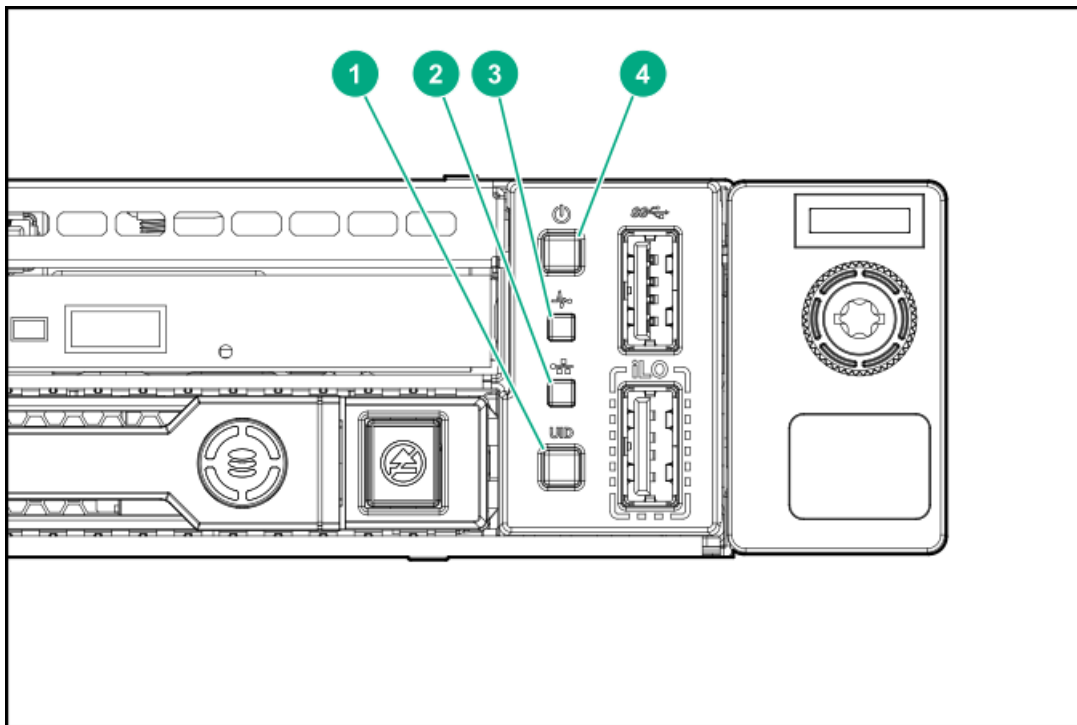
- You cannot use the Service Port to boot any device within the server, or the server itself.
- You cannot access the server by connecting to the Service Port.
- You cannot access the connected device from the server.

## Front panel LEDs and buttons

### Four-bay LFF hot-plug drive model



Eight-bay SFF hot-plug drive model



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

<sup>1</sup> When all LEDs flash simultaneously, a power fault has occurred. For more information, see [Front panel LED power fault codes](#).

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

<sup>3</sup> Facility power is not present, power cord is not attached, no power supplies are installed, or power supply failure has occurred.

## Subtopics

### [Server UID LED](#)

#### [Using the UID button to view the Server Health Summary](#)

#### [Front panel LED power fault codes](#)

## Server UID LED

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

## Using the UID button to view the Server Health Summary

### Prerequisites

- An external monitor is connected.
- In the iLO web interface, the Show Server Health on External Monitor feature is enabled on the Access Settings page.

### About this task

Use the UID button to display the iLO Server Health Summary screen on an external monitor. This function works when the server is powered on or off. Use this feature for troubleshooting if the server will not start up.



**CAUTION:** Press and release the UID button. Holding it down at any time for more than five seconds initiates a graceful iLO reboot or a hardware iLO reboot. Data loss or NVRAM corruption might occur during a hardware iLO reboot.

### Procedure

1. Press and release the UID button.

The Server Health Summary screen is displayed on the external monitor. For more information, see the iLO troubleshooting guide:

<https://www.hpe.com/support/ilo5>

2. Press the UID button again to close the Server Health Summary screen.

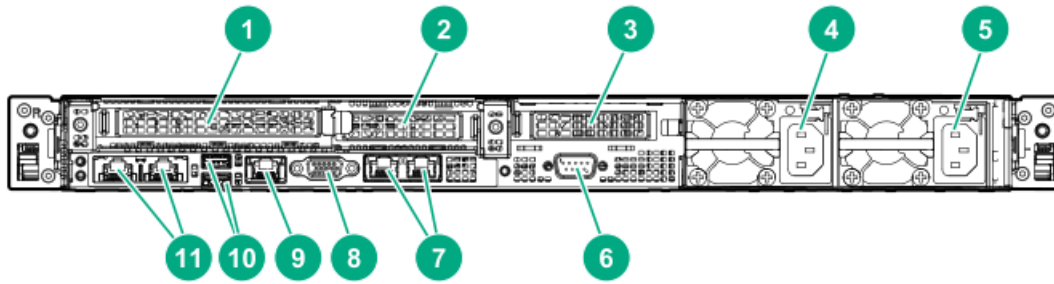
## Front panel LED power fault codes

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

Subsystem	LED behavior
System board	1 flash
Processor	2 flashes
Memory	3 flashes
Riser board PCIe slots	4 flashes
FlexibleLOM	5 flashes
Storage controller	6 flashes
System board PCIe slots	7 flashes
Power backplane	8 flashes
Storage backplane	9 flashes
Power supply	10 flashes
PCIe expansion cards installed in riser board	11 flashes
Chassis	12 flashes
GPU card	13 flashes

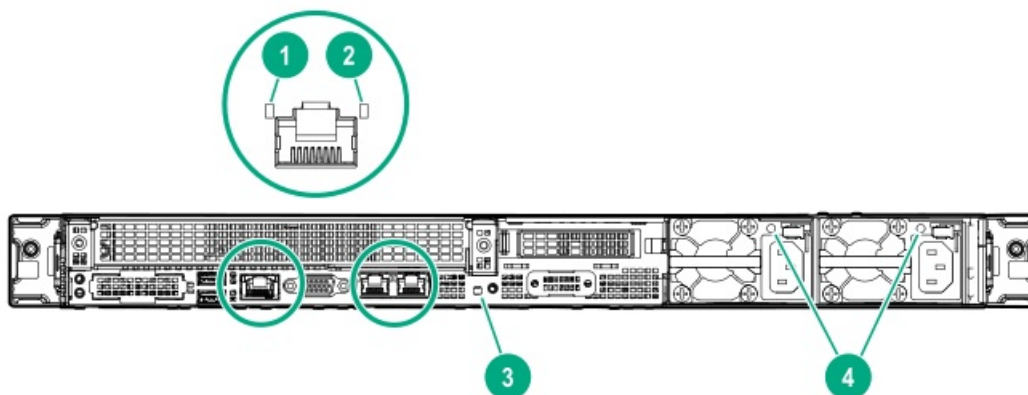
## Rear panel components





Item	Description
1	PCIe slot 1 or FlexibleLOM adapter (optional)
2	PCIe slot 2
3	PCIe slot 3 (secondary riser for processor 2, optional)
4	Flexible Slot power supply 2 (hot-plug, optional)
5	Flexible Slot power supply 1 (hot-plug)
6	Serial port (optional)
7	NIC ports 1-2 (1Gb)
8	VGA port
9	iLO Management Port
10	USB 3.0 ports
11	Media Module adapter (optional NIC ports 3-4)

## Rear panel LEDs



Item	LED	Status	Definition
1	NIC link	Solid green	Network link
		Off	No network link
2	NIC status	Solid green	Linked to network
		Flashing green	Network active
		Off	No network activity
3	UID	Solid blue	Activated
		Flashing blue	<ul style="list-style-type: none"> <li>1 flash per second = Remote management or firmware upgrade in progress</li> <li>4 flashes per second = iLO manual reboot sequence initiated</li> <li>8 flashes per second = iLO manual reboot sequence in progress</li> </ul>
		Off	Deactivated
		Off	Deactivated
4	Power supply	Solid green	Normal
		Off	One or more of the following conditions exists: <ul style="list-style-type: none"> <li>Power is unavailable</li> <li>Power supply failure</li> <li>Power supply is in standby mode</li> <li>Power supply error</li> </ul>

## PCIe expansion slot definitions

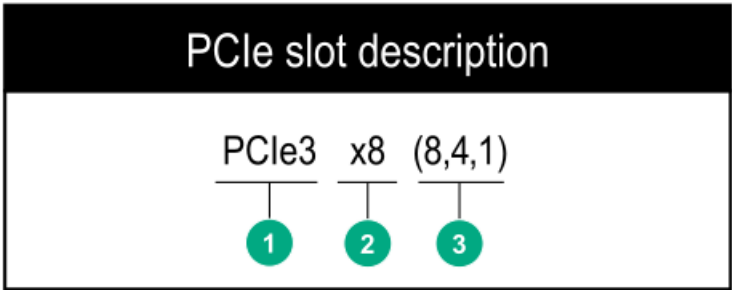
Slot number	Slot type	Supported form factor	Connector link width	Negotiable link width	Supported expansion card
1	PCIe 3.0	<ul style="list-style-type: none"> <li>Full-height, half-length</li> <li>Half-height, half-length (low-profile)</li> </ul>	x16	16, 8, 4, 1	<ul style="list-style-type: none"> <li>Four-port 1 Gb Ethernet adapter <sup>1</sup></li> <li>Ethernet adapter (10 Gb or above) <sup>2</sup></li> <li>M.2 SSD enablement card</li> </ul>
	FlexibleLOM	<ul style="list-style-type: none"> <li>Full-height, half-length</li> <li>Half-height, half-length (low-profile)</li> </ul>	x8		FlexibleLOM adapter
2	PCIe 3.0	Half-height, half-length (low-profile)	x8	8, 4, 1	<ul style="list-style-type: none"> <li>Ethernet adapter (10 Gb or above) <sup>2</sup></li> <li>Smart Array type-p controller</li> <li>M.2 SSD enablement card</li> </ul>
3	PCIe 3.0	Half-height, half-length (low-profile)	x16	16, 8, 4, 1	<ul style="list-style-type: none"> <li>Four-port 1 Gb Ethernet adapter <sup>1</sup></li> <li>Ethernet adapter (10 Gb or above) <sup>2</sup></li> <li>M.2 SSD enablement card</li> </ul>

- 1

This server supports up to two four-port 1 Gb Ethernet adapters.
- 2

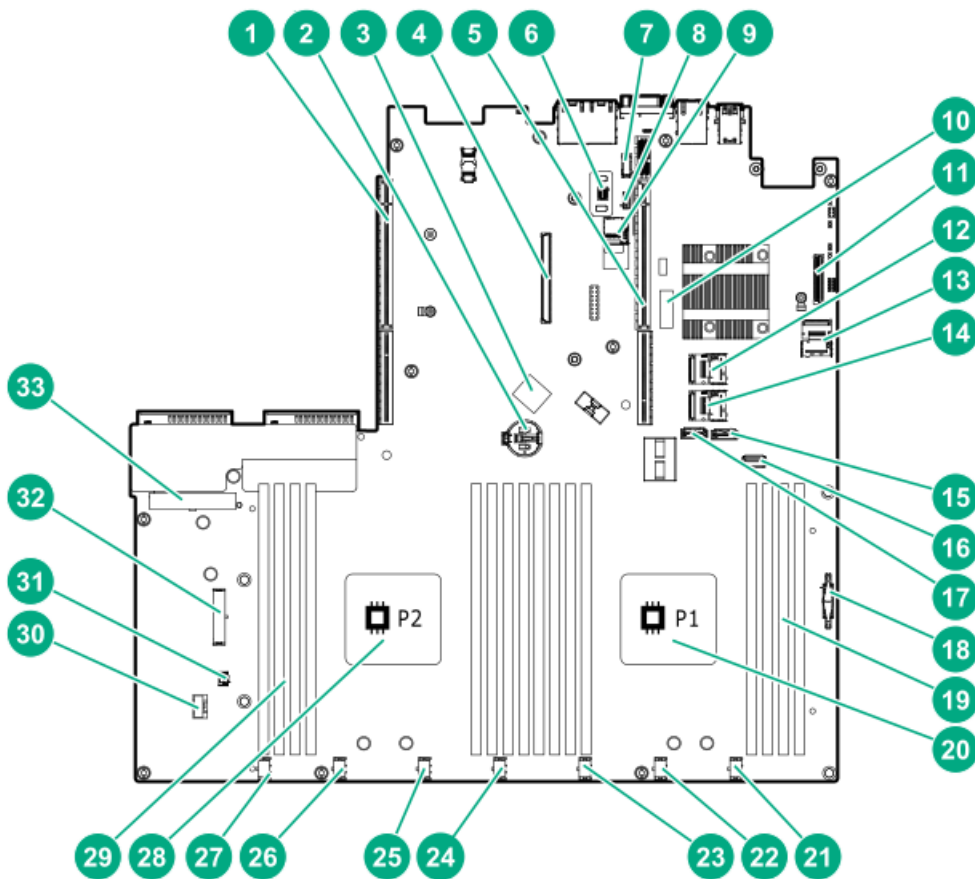
This server supports one 10 Gb or faster Ethernet adapter.

PCIe slot description



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

System board components



Item	Description
1	Secondary PCIe riser connector for processor 2
2	System battery
3	Internal USB 3.0 port
4	Smart Array modular controller connector
5	Primary PCIe riser connector for processor 1
6	TPM connector
7	Serial port connector
8	iLO Service Port connector
9	microSD card slot <sup>1</sup>
10	<u>System maintenance switch</u>
11	Media Module connector
12	Mini SAS Port 1
13	Mini SAS Port 2
14	Mini SAS Port 3
15	SATA Port 4
16	Front USB 3.0 connector
17	SATA Port 5
18	Front I/O cable connector
19	DIMM slots for processor 1
20	Processor 1
21	Fan connector 7
22	Fan connector 6
23	Fan connector 5
24	Fan connector 4
25	Fan connector 3
26	Fan connector 2
27	Fan connector 1
28	Processor 2
29	DIMM slots for processor 2
30	Energy pack connector
31	Chassis intrusion detection switch connector
32	Drive backplane power connector
33	Non-hot-plug power supply connector

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

## Subtopics

[System maintenance switch descriptions](#)

[DIMM label identification](#)

## System maintenance switch descriptions

Position	Default	Function
S1 <sup>1</sup>	Off	<ul style="list-style-type: none"> <li>Off—iLO 5 security is enabled.</li> <li>On—iLO 5 security is disabled.</li> </ul>
S2	Off	Reserved
S3	Off	Reserved
S4	Off	Reserved
S5 <sup>1</sup>	Off	<ul style="list-style-type: none"> <li>Off—Power-on password is enabled.</li> <li>On—Power-on password is disabled.</li> </ul>
S6 <sup>1, 2, 3</sup>	Off	<ul style="list-style-type: none"> <li>Off—No function</li> <li>On—Restore default manufacturing settings</li> </ul>
S7	Off	Reserved
S8	Off	Reserved
S9	Off	Reserved
S10	Off	Reserved
S11	Off	Reserved
S12	Off	Reserved

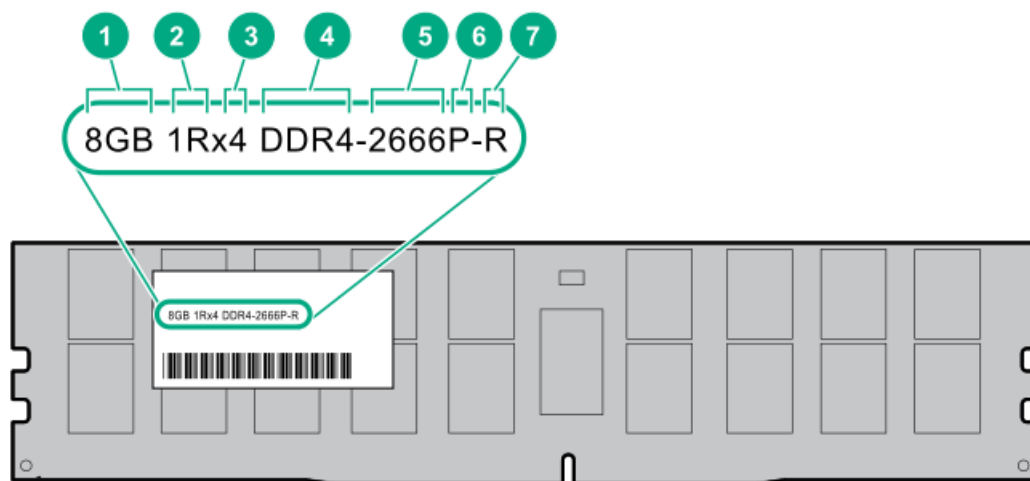
<sup>1</sup> To access the redundant ROM, set S1, S5, and S6 to On.

<sup>2</sup> 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.

<sup>3</sup> 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 [Configuring the server](#).

## DIMM label identification

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

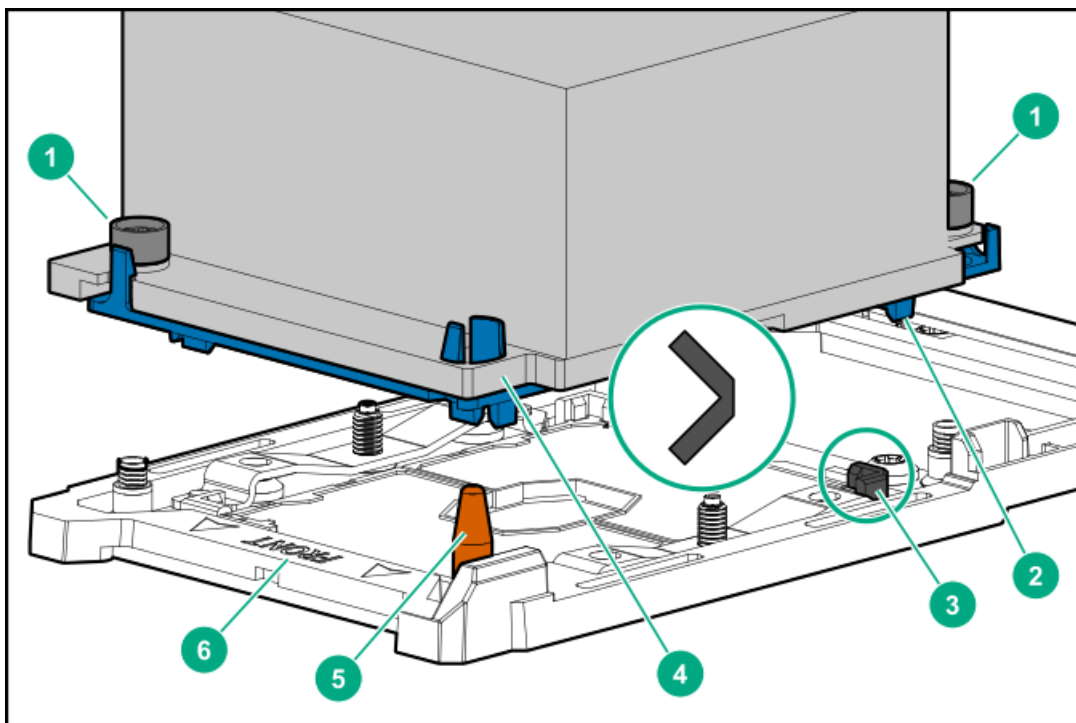


Item	Description	Example
1	Capacity	8 GB
		16 GB
		32 GB
		64 GB
		128 GB
2	Rank	1R = Single rank
		2R = Dual rank
		4R = Quad rank
		8R = Octal rank
3	Data width on DRAM	x4 = 4-bit
		x8 = 8-bit
		x16 = 16-bit
4	Memory generation	PC4 = DDR4
5	Maximum memory speed	2133 MT/s
		2400 MT/s
		2666 MT/s
		2933 MT/s
6	CAS latency	P = CAS 15-15-15
		T = CAS 17-17-17
		U = CAS 20-18-18
		V = CAS 19-19-19 (for RDIMM, LRDIMM)
		V = CAS 22-19-19 (for 3DS TSV LRDIMM)
		Y = CAS 21-21-21 (for RDIMM, LRDIMM)
		Y = CAS 24-21-21 (for 3DS TSV LRDIMM)
7	DIMM type	R = RDIMM (registered)
		L = LRDIMM (load reduced)
		E = Unbuffered ECC (UDIMM)

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

## Processor, heatsink, and socket components





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

<sup>1</sup> Symbol also on the processor and frame.

## Drive bay numbering

### CAUTION:

When a server is purchased without any drive installed, some drive bays might be empty while other drive bays might be populated with drive blanks. To maintain proper system cooling, do not operate the server without a drive or a drive blank installed.

### Subtopics

[Four-bay LFF drive model](#)

[Eight-bay SFF drive model with optical drive](#)

[Eight-bay SFF drive model with two-bay SFF drive option](#)

## Four-bay LFF drive model



## Eight-bay SFF drive model with optical drive



## Eight-bay SFF drive model with two-bay SFF drive option

Drives are assigned to box 1 (green) and optional box 2 (orange).



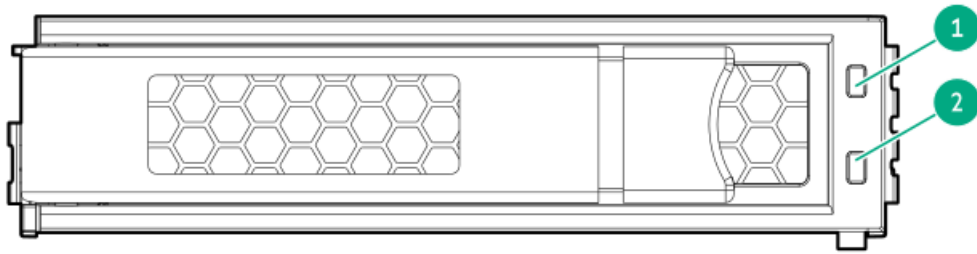
## Drive LEDs and buttons

### Subtopics

[LFF low-profile drive LED definitions](#)

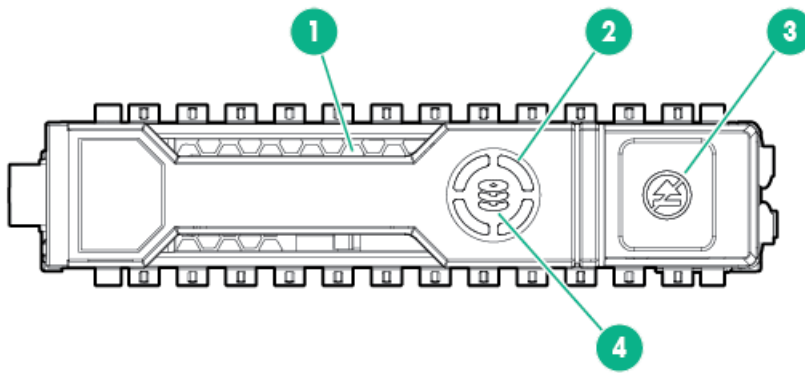
[Smart Carrier \(SC\) drive LED definitions](#)

## LFF low-profile drive LED definitions



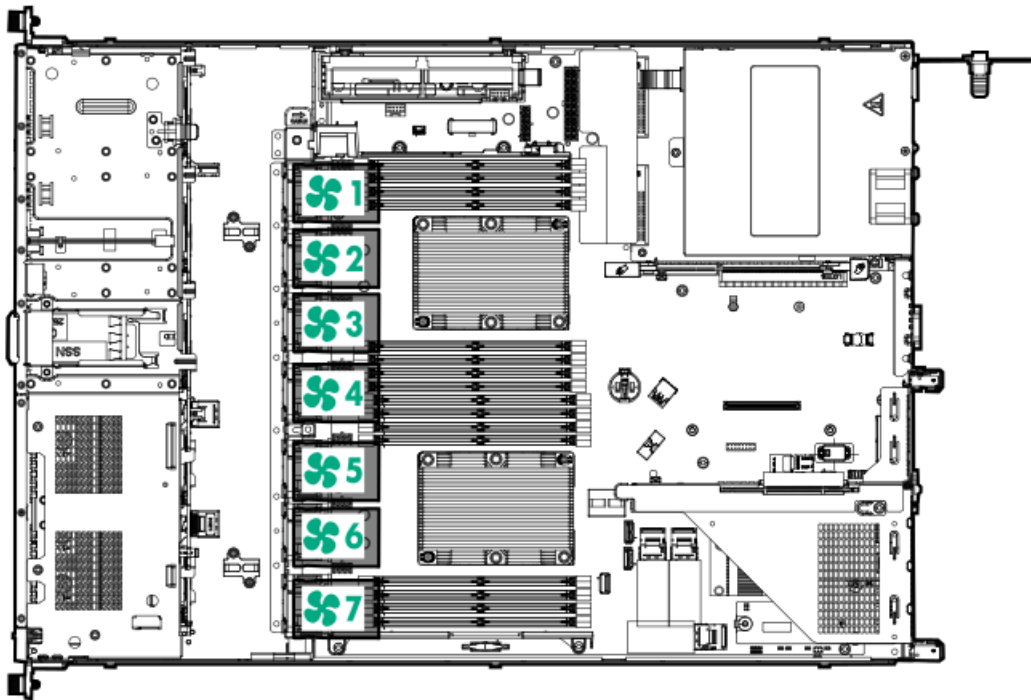
Item	LED	Status	Definition
1	Fault/Locate	Solid amber	The drive has failed, is unsupported, or is invalid.
		Solid blue	The drive is operating normally and being identified by a management application.
		Flashing amber/blue (1 flash per second)	The drive has failed, or a predictive failure alert has been received for this drive. The drive has also been identified by a management application.
		Flashing amber (1 flash per second)	A predictive failure alert has been received for this drive. Replace the drive as soon as possible.
2	Online/Activity	Solid green	The drive is online and has no activity.
		Flashing green (4 flashes per second)	The drive is operating normally and has activity.
		Flashing green (one flash per second)	The drive is doing one of the following: <ul style="list-style-type: none"> <li>• Rebuilding</li> <li>• Performing a RAID migration</li> <li>• Performing a strip size migration</li> <li>• Performing a capacity expansion</li> <li>• Performing a logical drive extension</li> <li>• Erasing</li> <li>• Spare part activation</li> </ul>
		Off	The drive is not configured by a RAID controller or a spare drive.

## Smart Carrier (SC) drive LED definitions



Item	LED	Status	Definition
1	Locate	Solid blue	The drive is being identified by a host application.
		Flashing blue	The drive carrier firmware is being updated or requires an update.
2	Activity ring	Rotating green	Drive activity
		Off	No drive activity
3	Do not remove	Solid white	Do not remove the drive. Removing the drive causes one or more of the logical drives to fail.
		Off	Removing the drive does not cause a logical drive to fail.
4	Drive status	Solid green	The drive is a member of one or more logical drives.
		Flashing green	The drive is doing one of the following: <ul style="list-style-type: none"> <li>Rebuilding</li> <li>Performing a RAID migration</li> <li>Performing a strip size migration</li> <li>Performing a capacity expansion</li> <li>Performing a logical drive extension</li> <li>Erasing</li> <li>Spare part activation</li> </ul>
		Flashing amber/green	The drive is a member of one or more logical drives and predicts the drive will fail.
		Flashing amber	The drive is not configured and predicts the drive will fail.
		Solid amber	The drive has failed.
		Off	The drive is not configured by a RAID controller or a spare drive.

## Fan locations



## Cabling

This chapter includes cabling guidelines and diagrams for internal component cabling.

### Subtopics

[Cabling guidelines](#)

[Four-bay LFF drive model cabling](#)

[Eight-bay SFF drive model cabling](#)

[M.2 SATA SSD cabling](#)

[Controller backup power cabling](#)

[Serial port cabling](#)

[Energy pack cabling](#)

[Chassis intrusion detection switch cabling](#)

## Cabling guidelines

The cabling diagrams in this chapter used different colors to better differentiate one cable from another for illustration clarity. Most of the system cables are actually black.

Observe the following guidelines when working with system cables.

### Before connecting cables

- Note the port labels on the PCA components. Not all these components are used by all systems:
  - System board ports

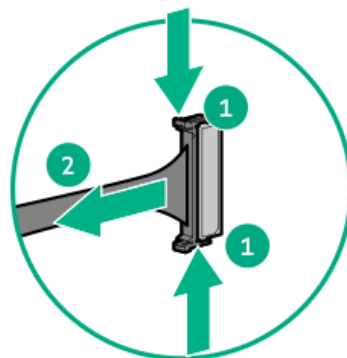
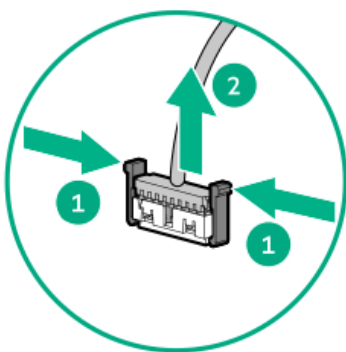
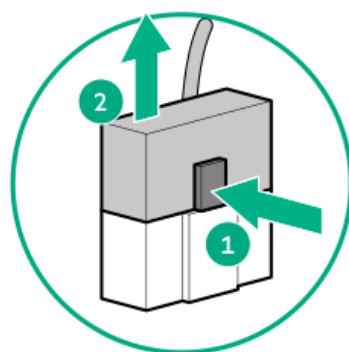
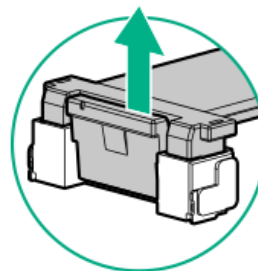
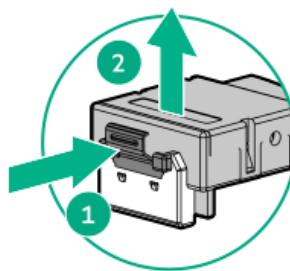
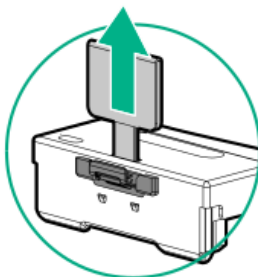
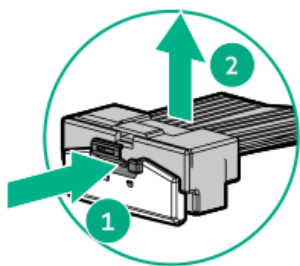
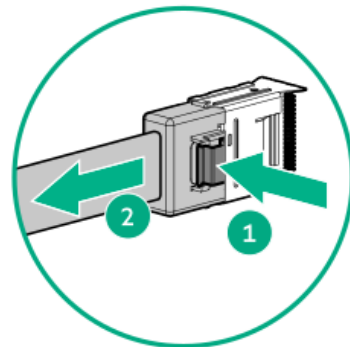
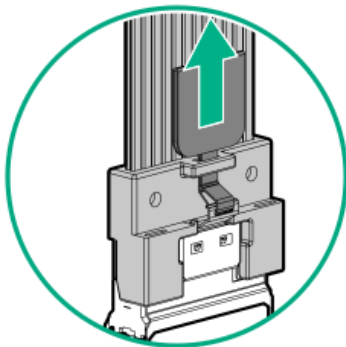
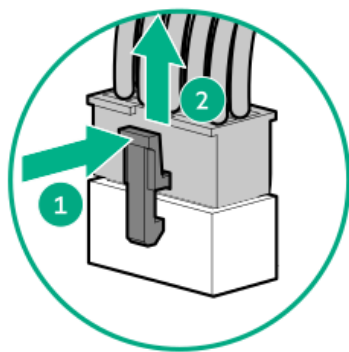
- Drive and power supply backplane ports
- Expansion card ports (controllers, adapters, expanders, risers, and similar boards)
- Note the label near each cable connector. This label indicates the destination port for the cable connector.
- Some data cables are prebent. Do not unbend or manipulate the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

#### **When connecting cables**

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

#### **When disconnecting cables**

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



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

## Four-bay LFF drive model cabling

### Subtopics

[Four-bay LFF drive backplane cabling](#)

[Optical drive cabling](#)

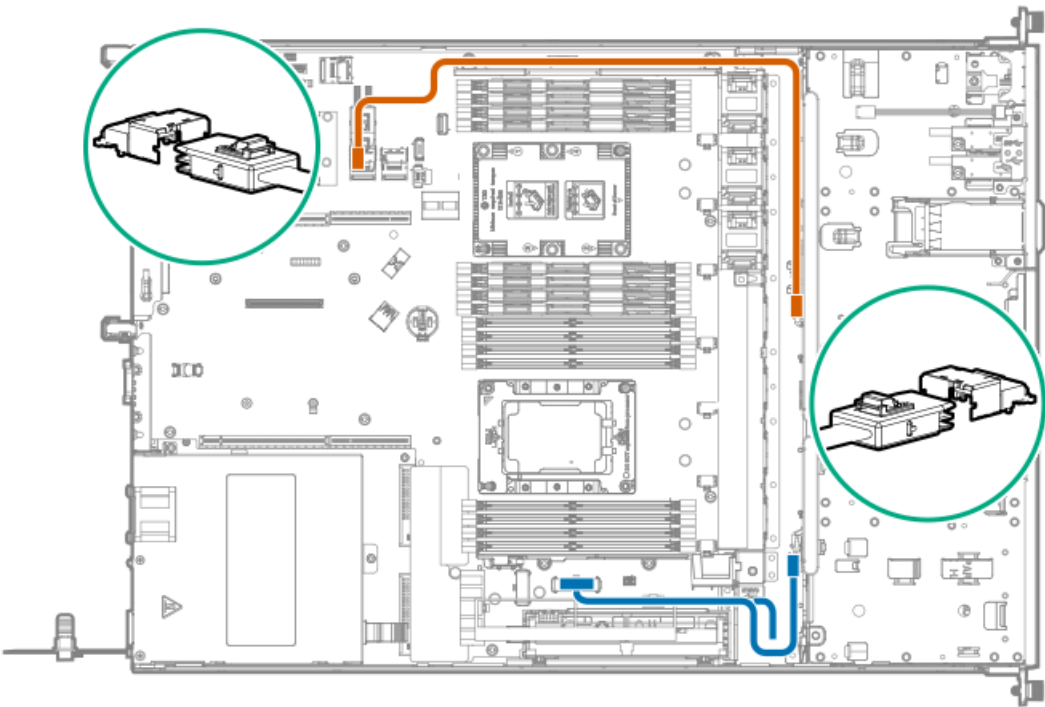
[Front I/O and thermal ambient sensor cabling](#)

[USB 3.0 cabling](#)

[iLO Service Port cabling](#)

# Four-bay LFF drive backplane cabling

Connected to the system board

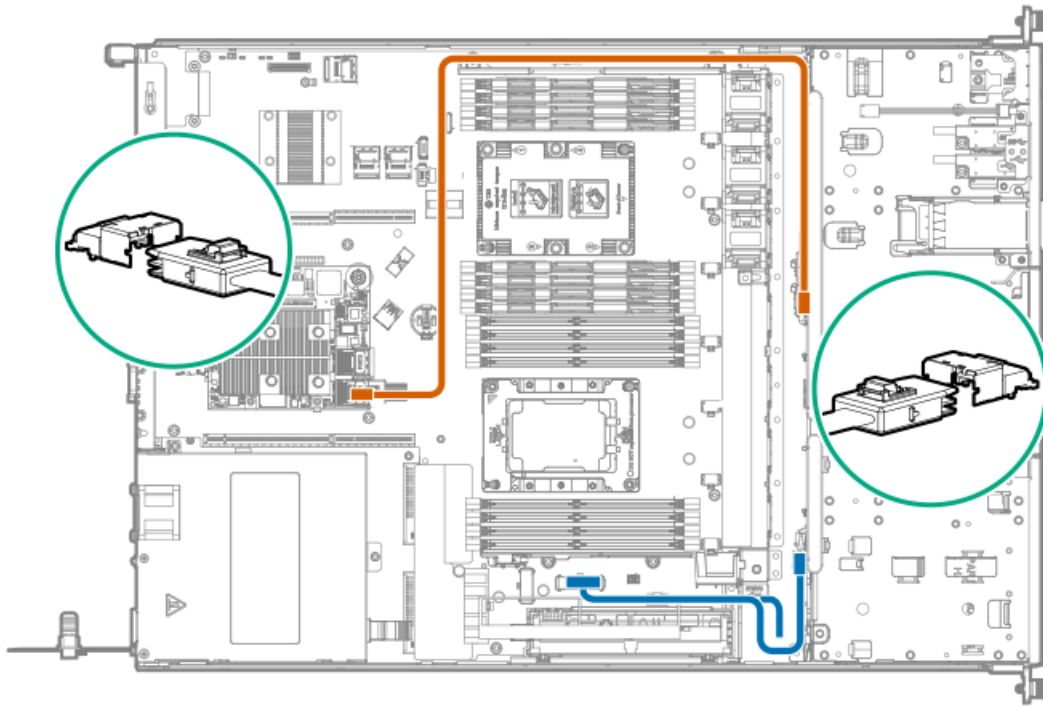


## Cable Color Description

Orange	Mini-SAS cable
Blue	Drive backplane power cable

Connected to a type-a modular Smart Array controller

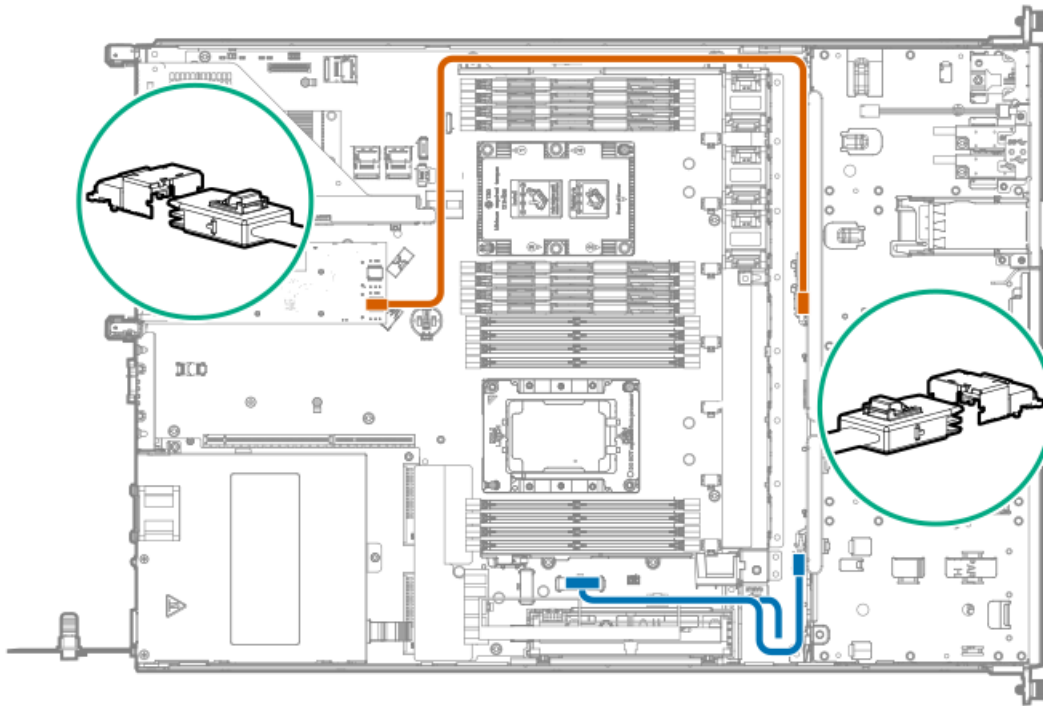




**Cable Color Description**

Orange	Mini-SAS cable
Blue	Drive backplane power cable

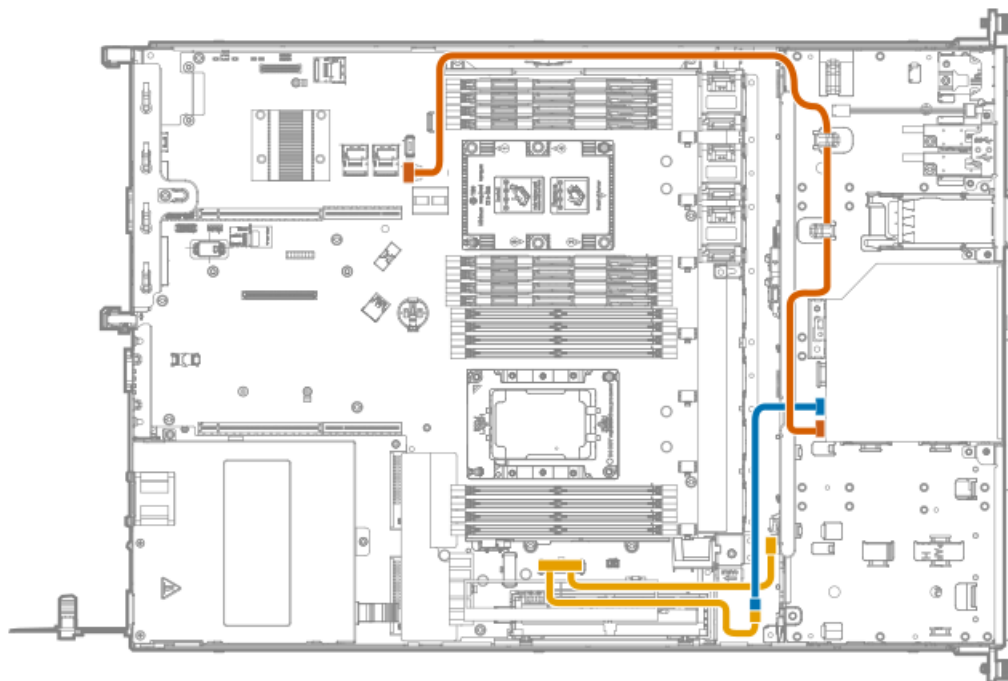
Connected to a type-p plug-in Smart Array controller



#### Cable Color Description

Orange	Mini-SAS cable
Blue	Drive backplane power cable

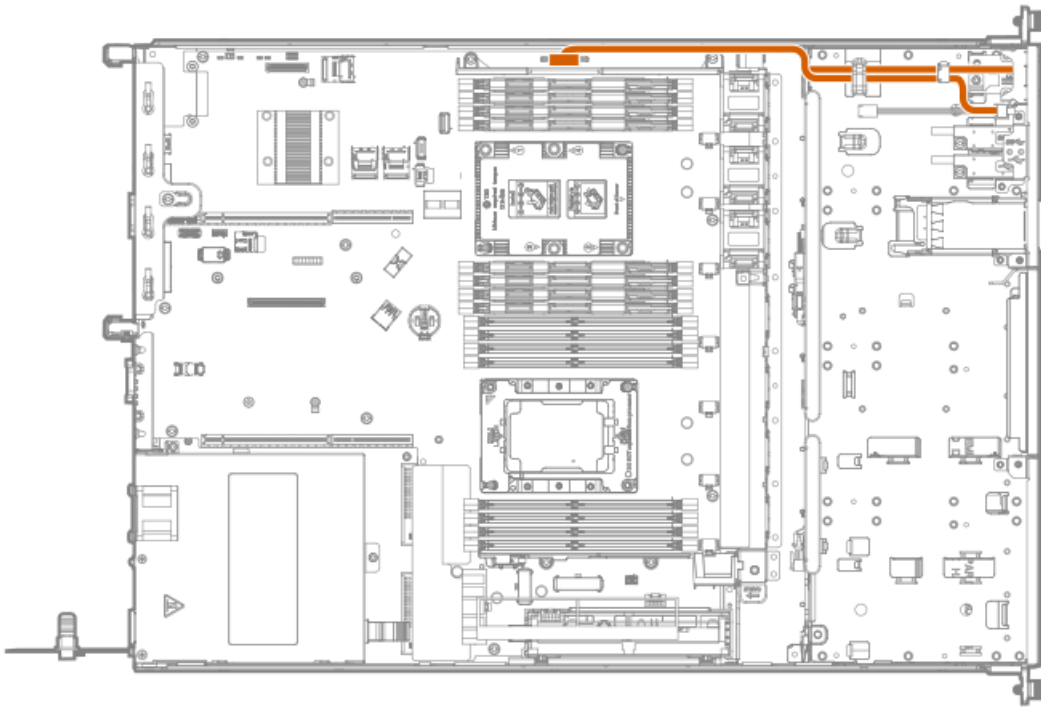
## Optical drive cabling



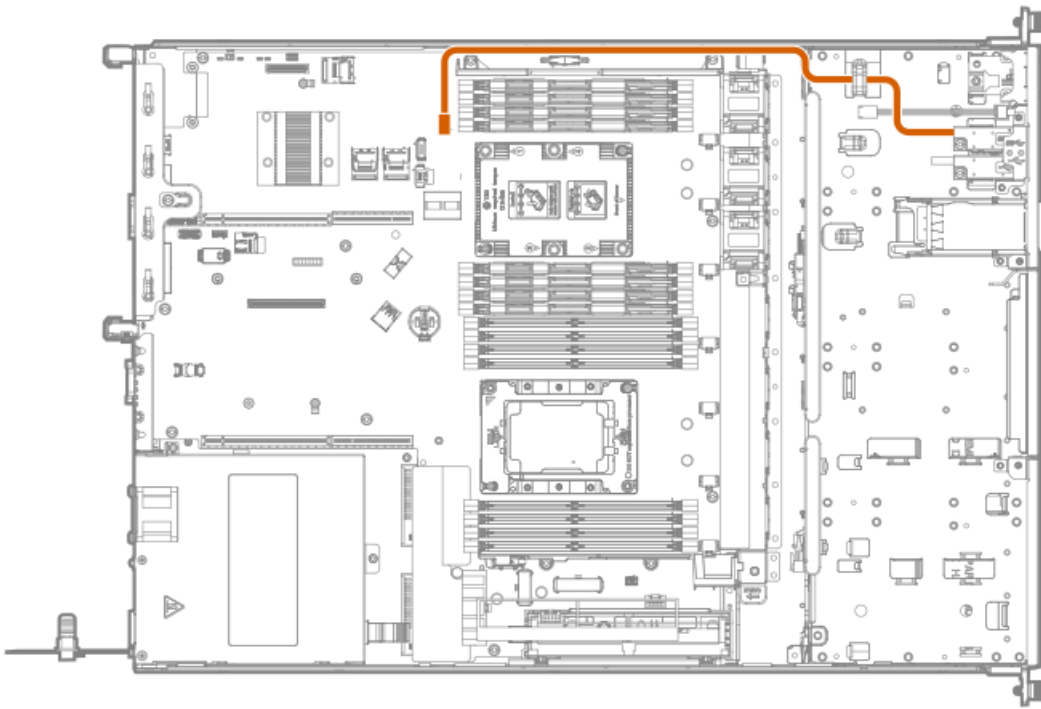
#### Cable Color Description

Orange	Optical drive SATA cable
Blue	Optical drive power cable
Gold	Drive backplane power cable

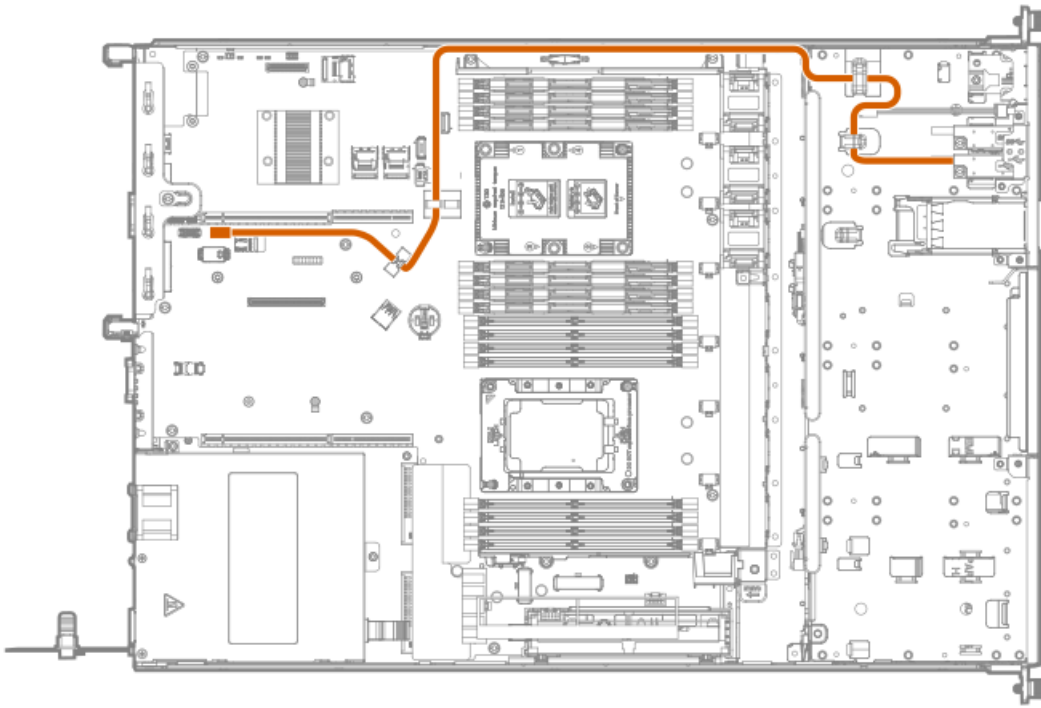
## Front I/O and thermal ambient sensor cabling



USB 3.0 cabling



iLO Service Port cabling



## Eight-bay SFF drive model cabling

### Subtopics

[Eight-bay SFF drive backplane cabling](#)

[Two-bay SFF SAS/SATA drive cage cabling](#)

[Optical drive cabling](#)

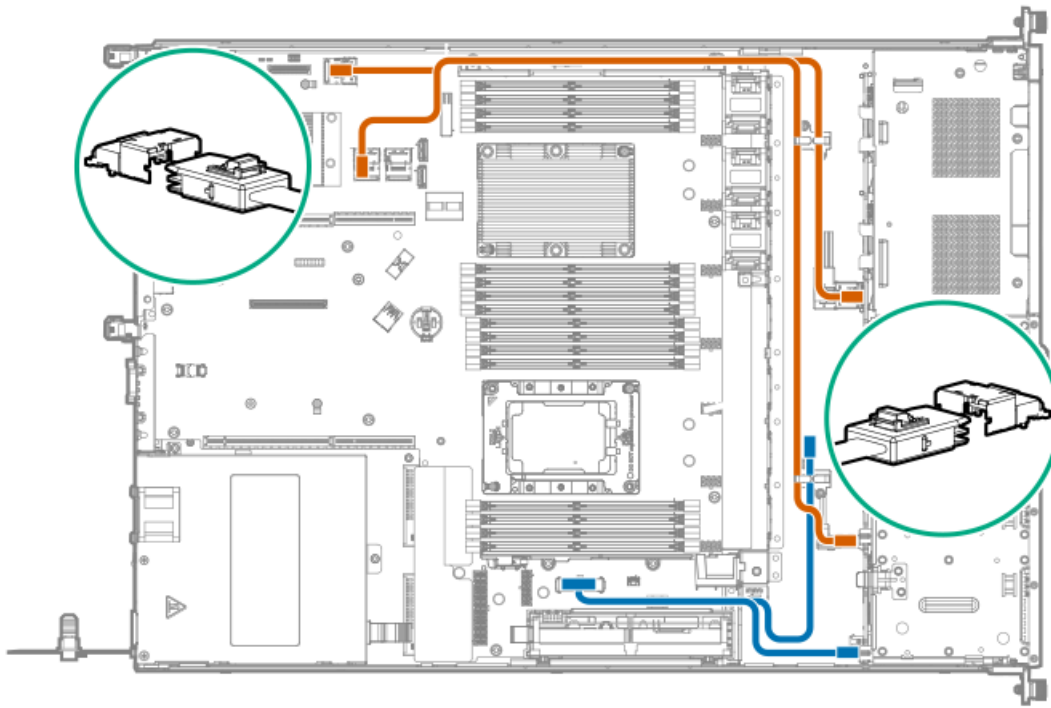
[Front I/O and thermal ambient sensor cabling](#)

[USB 3.0 cabling](#)

[iLO Service Port cabling](#)

## Eight-bay SFF drive backplane cabling

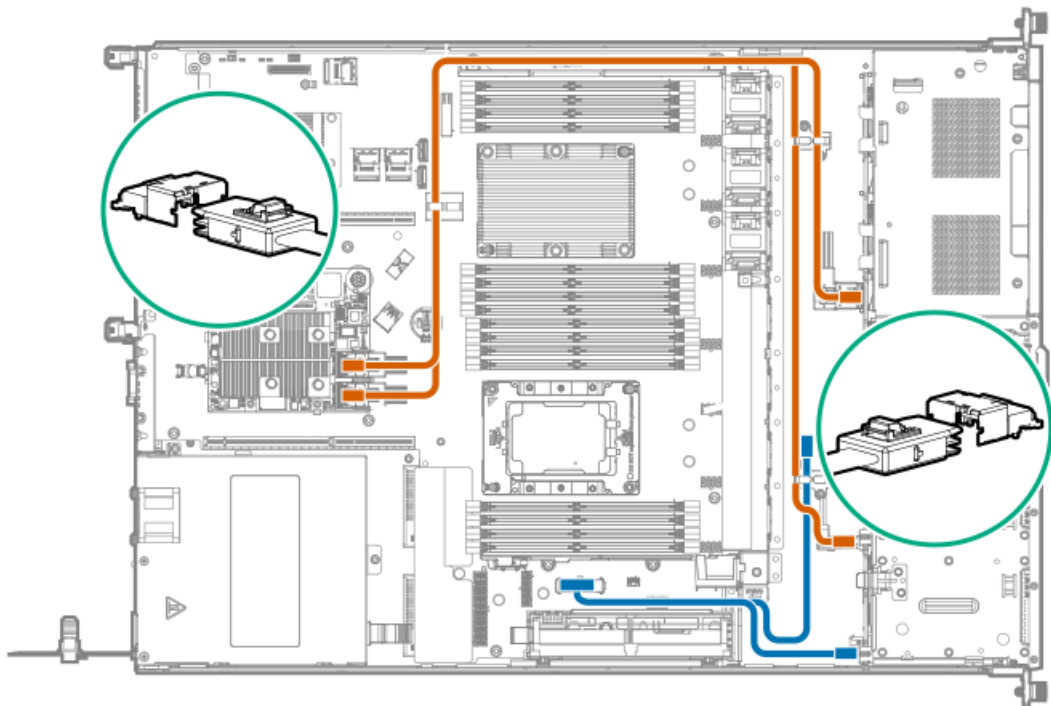
Connected to the system board



#### Cable Color Description

Orange	Mini-SAS cable
Blue	Drive backplane power cable

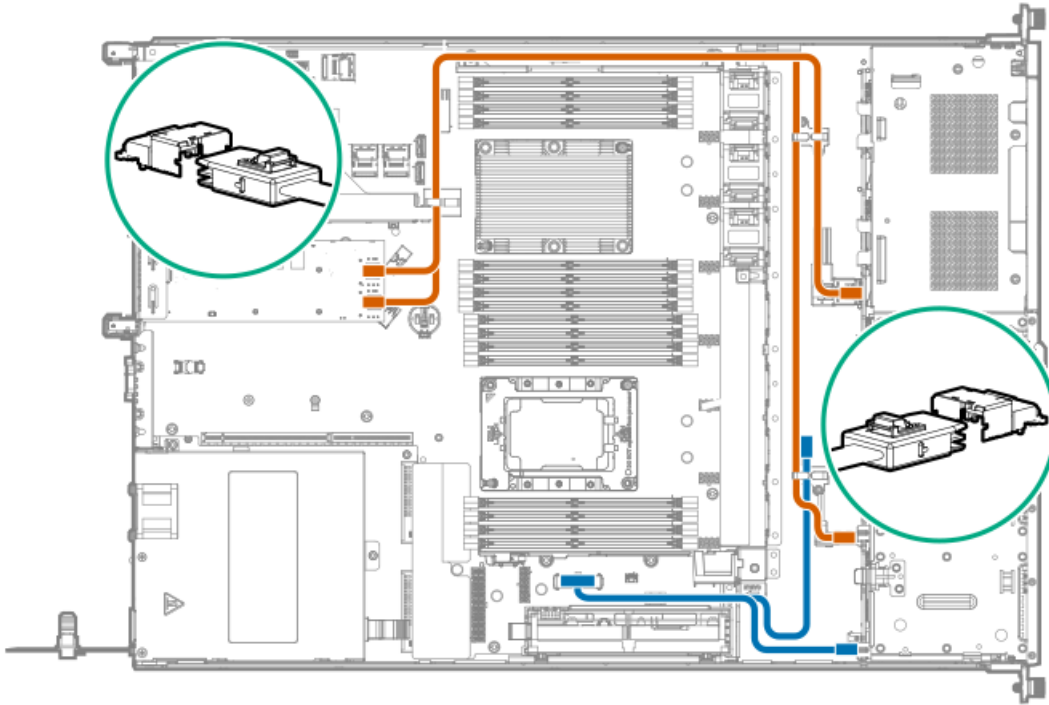
Connected to a type-a modular Smart Array controller



#### Cable Color Description

Orange	Mini-SAS cable
Blue	Drive backplane power cable

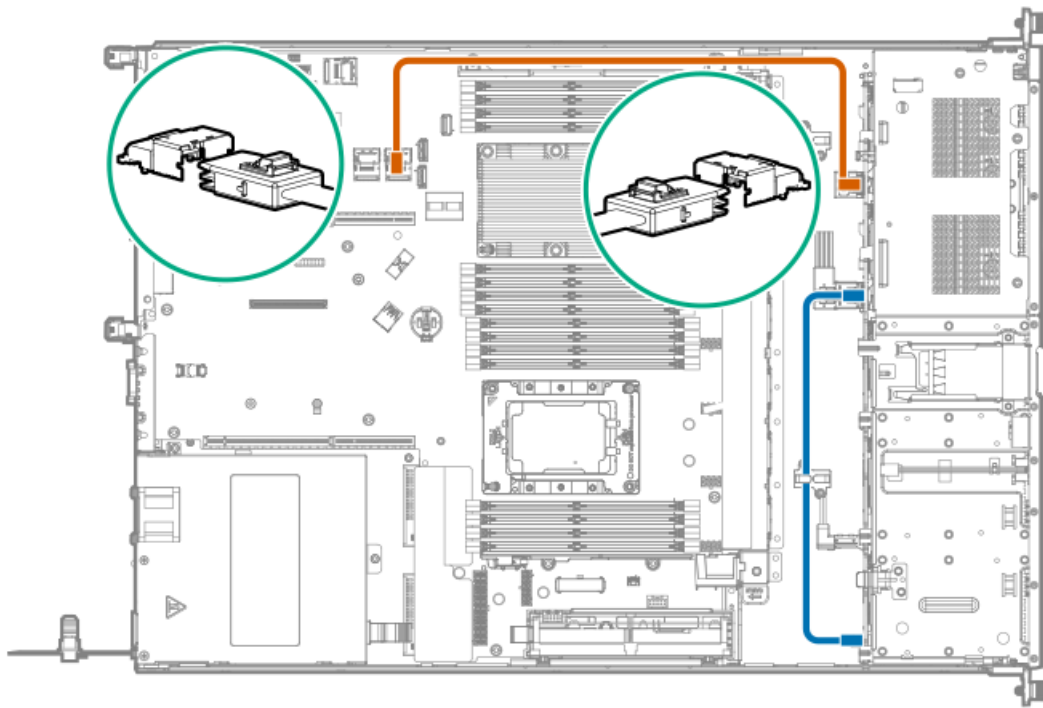
Connected to a type-p plug-in Smart Array controller



#### Cable Color Description

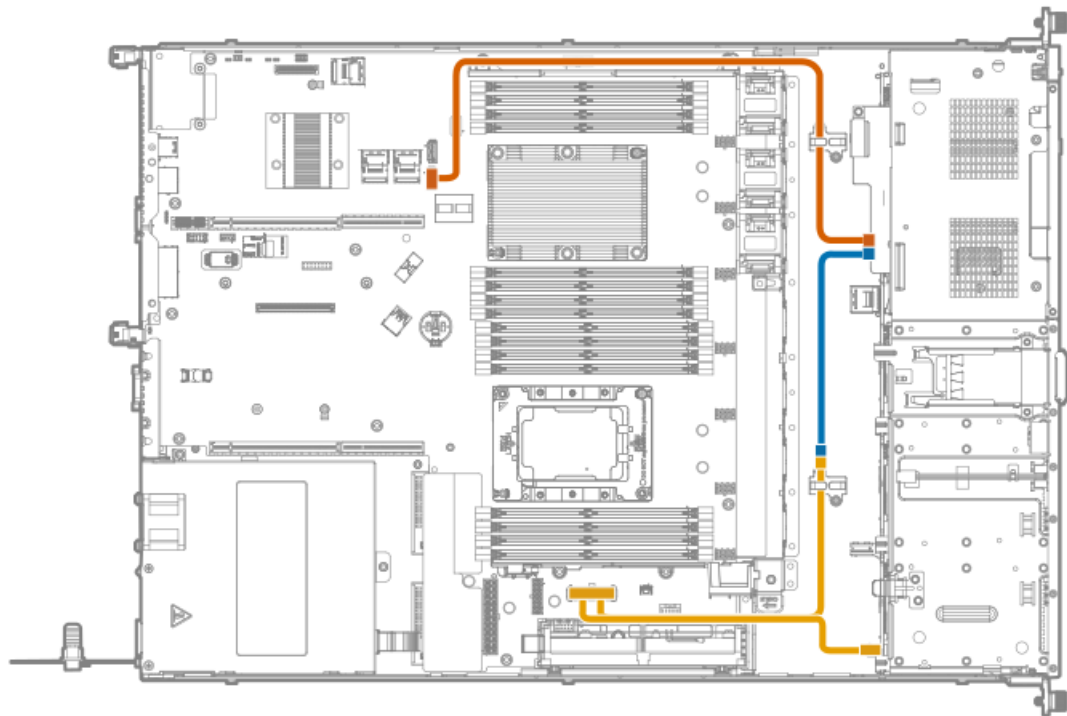
Orange	Mini-SAS cable
Blue	Drive backplane power cable

### Two-bay SFF SAS/SATA drive cage cabling



Cable Color	Description
Orange	2 SFF SAS/SATA cable
Blue	2 SFF to 8 SFF backplane power cable

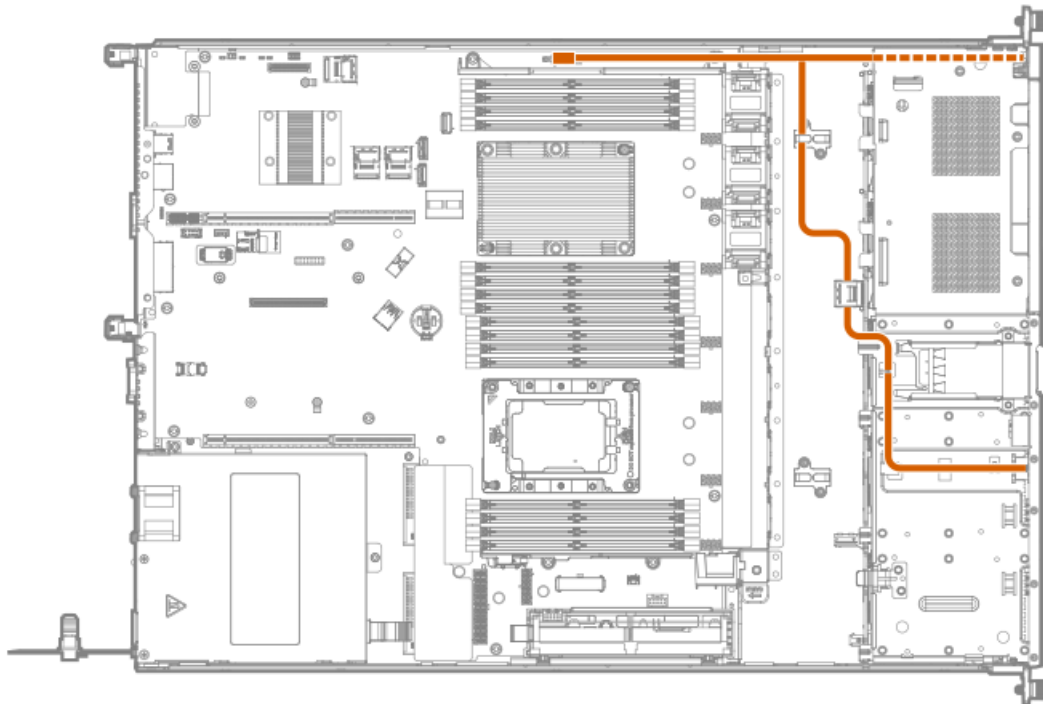
### Optical drive cabling



#### Cable Color Description

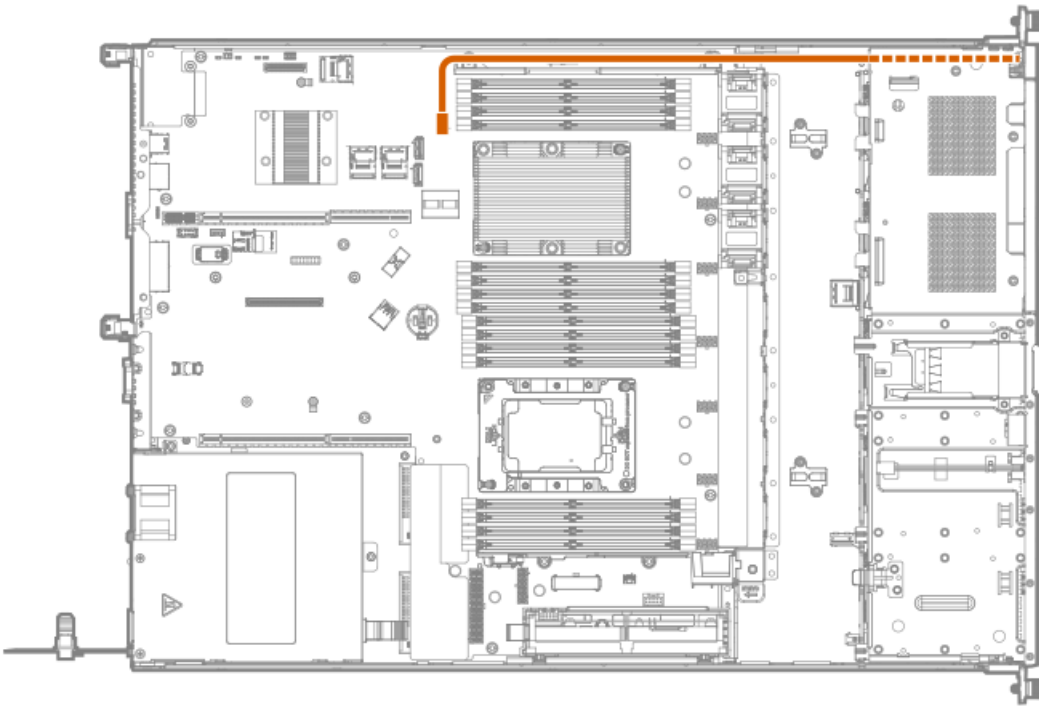
Orange	Optical drive SATA cable
Blue	Optical drive power cable
Gold	Drive backplane power cable

### Front I/O and thermal ambient sensor cabling

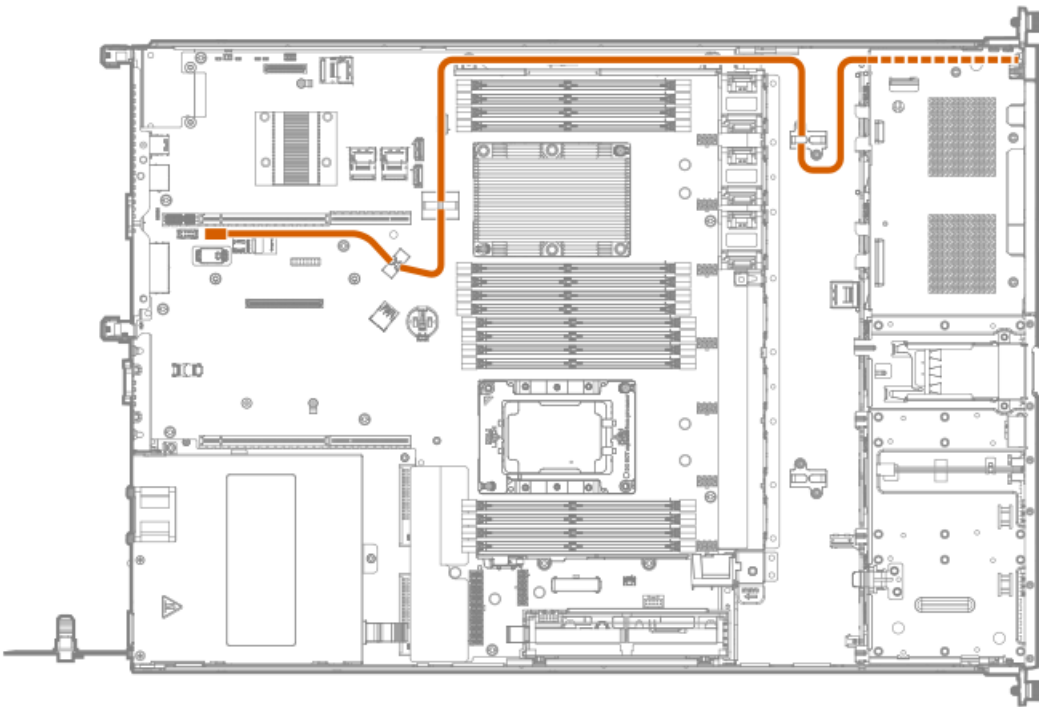


### USB 3.0 cabling





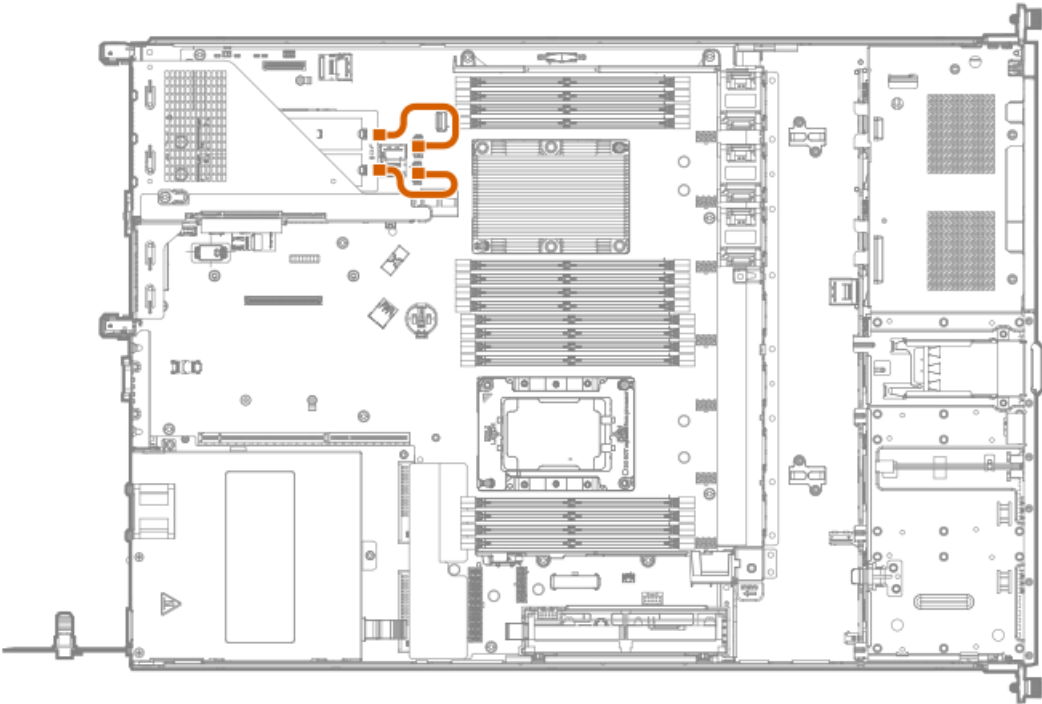
### iLO Service Port cabling



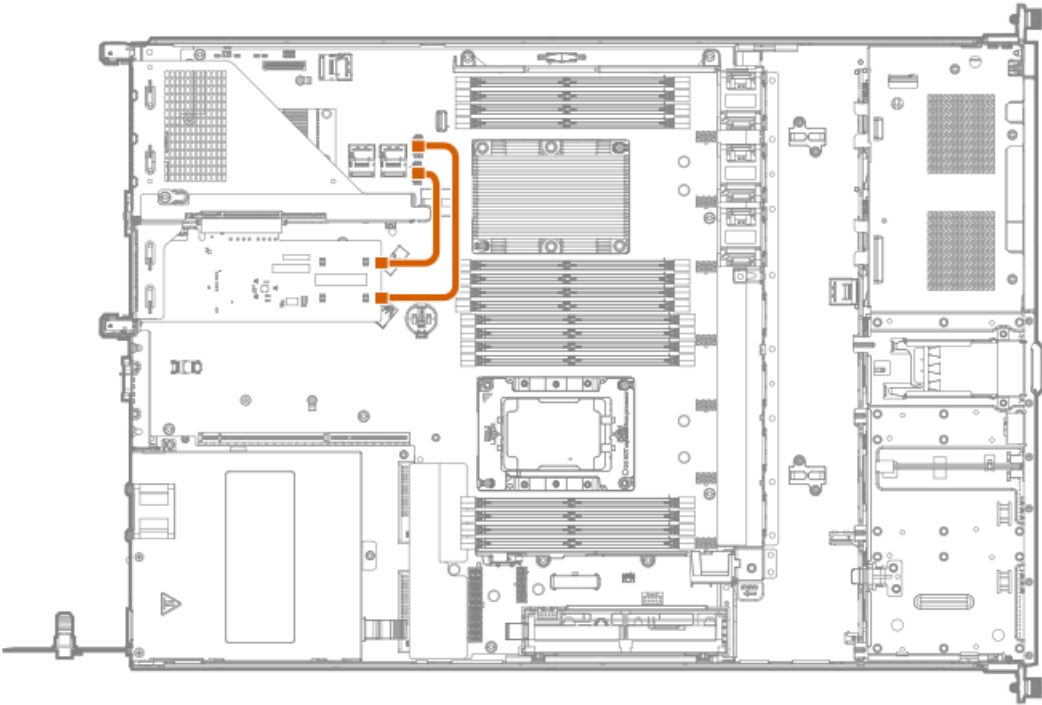
### M.2 SATA SSD cabling

40mm SATA cables are for slot 1. 180mm SATA cables are for slot 2 and 3.

Slot 1

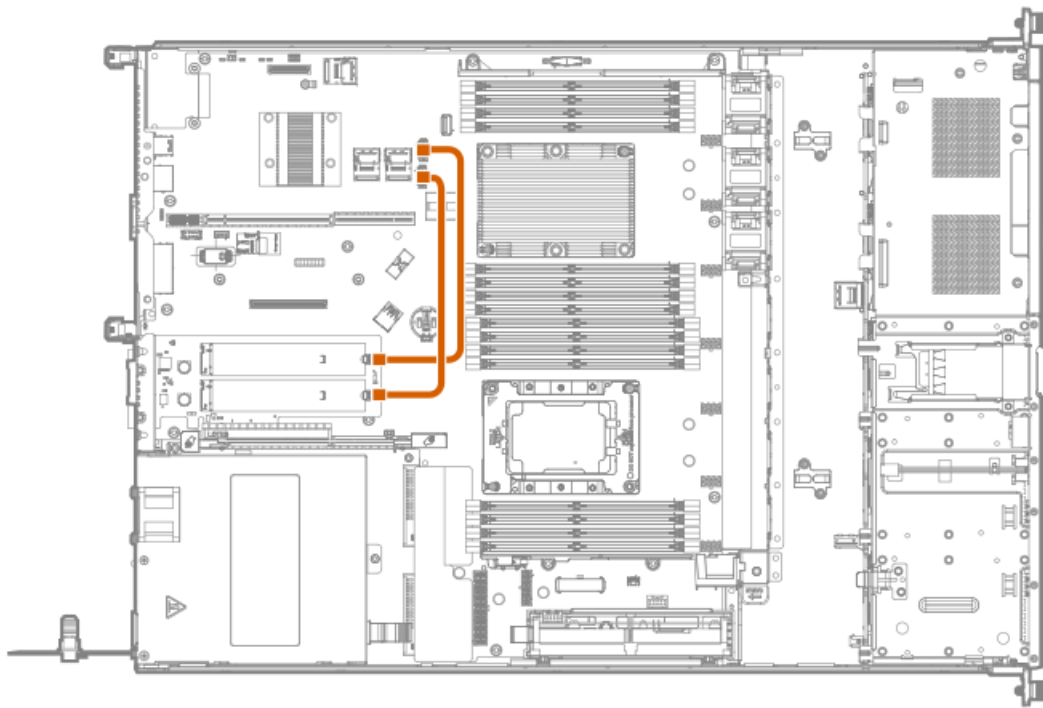


Slot 2

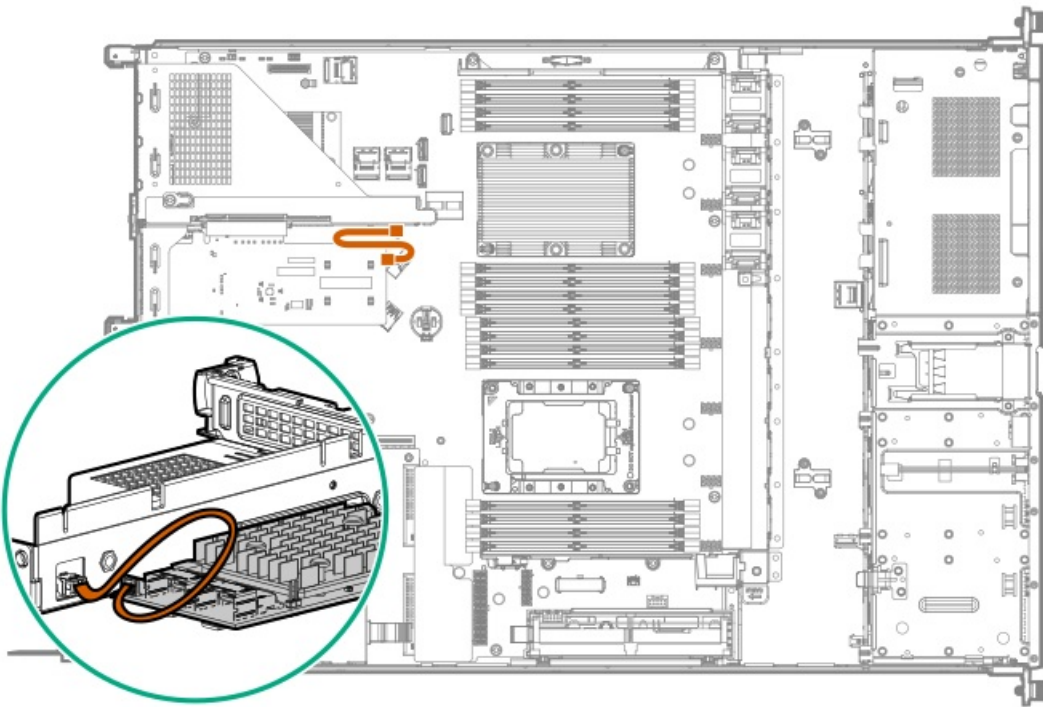


Slot 3

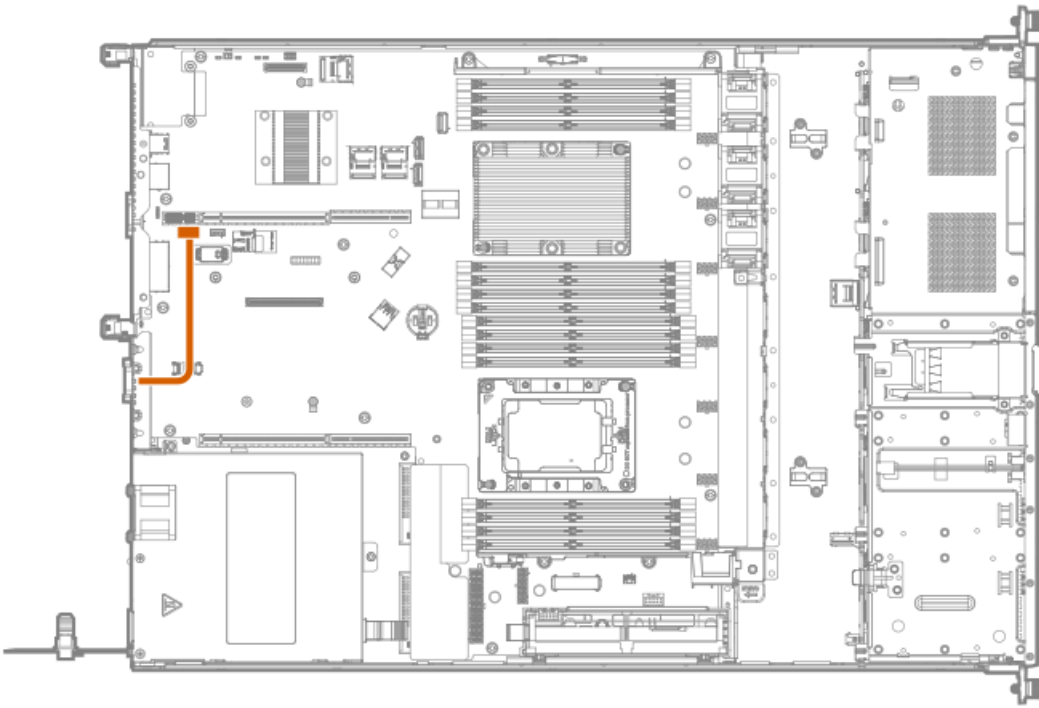




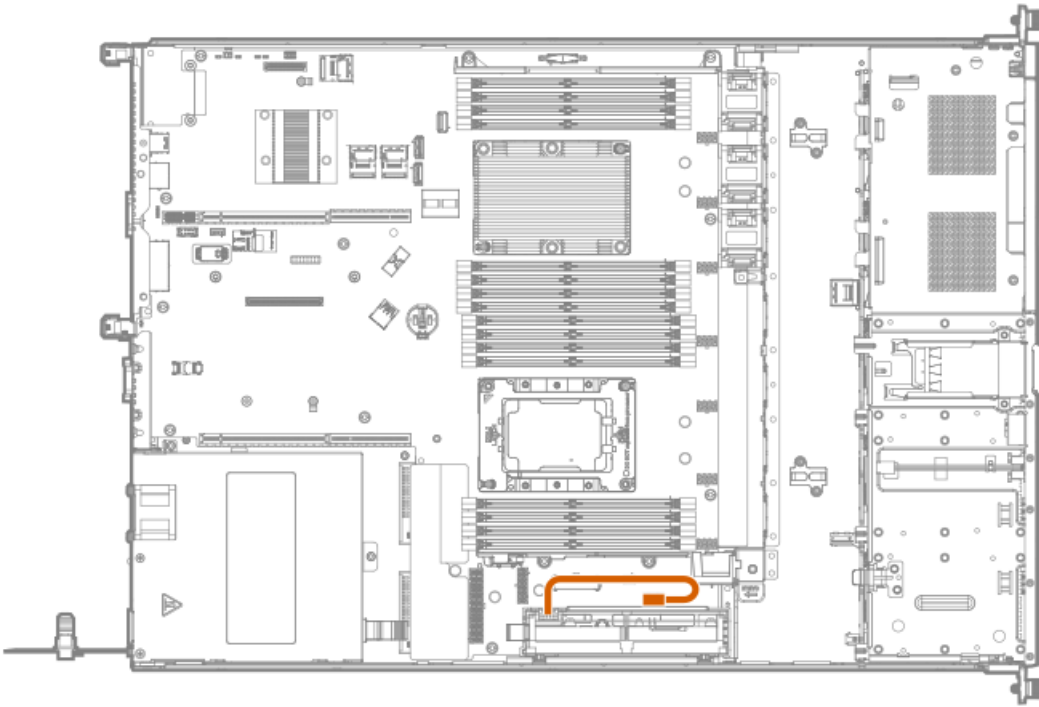
Controller backup power cabling



Serial port cabling

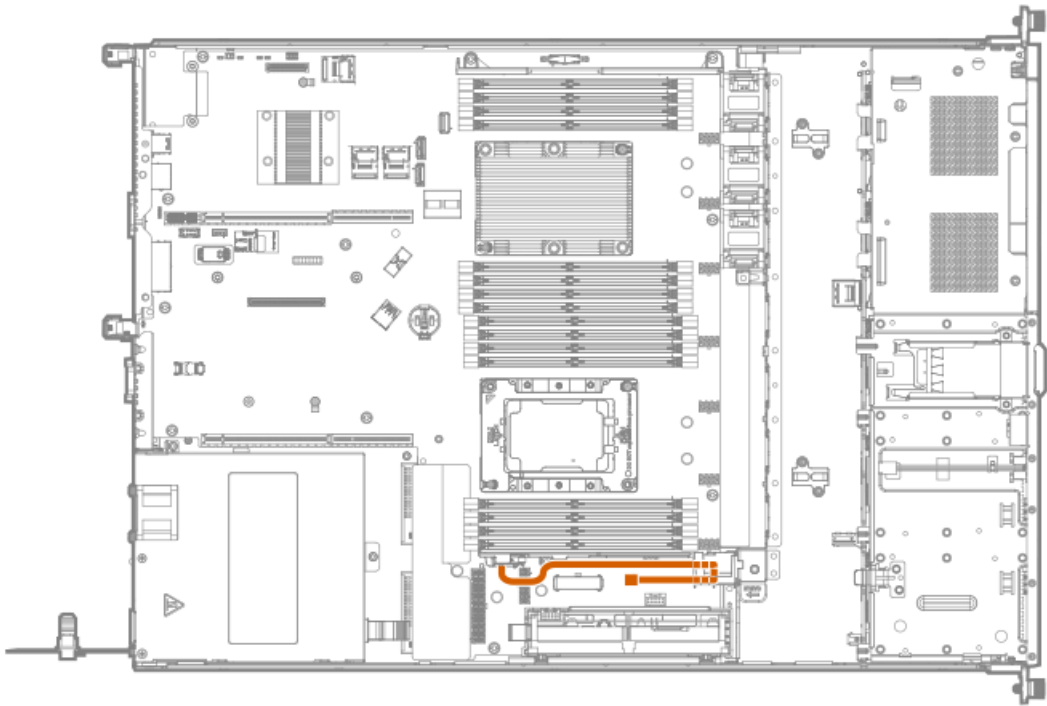


Energy pack cabling



Chassis intrusion detection switch cabling





## Specifications

### Subtopics

[Environmental specifications](#)

[Mechanical specifications](#)

[Power supply specifications](#)

## Environmental specifications

Specification	Value
Temperature range <sup>1</sup>	—
Operating	10°C to 35°C (50°F to 95°F)
Nonoperating	-30°C to 60°C (-22°F to 140°F)
Relative humidity (noncondensing)	—
Operating	Minimum to be the higher (more moisture) of -12°C (10.4°F) dew point or 8% relative humidity Maximum to be 24°C (75.2°F) dew point or 90% relative humidity
Nonoperating	5% to 95% 38.7°C (101.7°F), maximum wet bulb temperature

<sup>1</sup> All temperature ratings shown are for sea level. An altitude derating of 1.0°C per 304.8 m (1.8°F per 1000 ft) to 3048 m (10,000 ft) is applicable. No direct sunlight allowed. Maximum rate of change is 20°C per hour (36°F per hour). The upper limit and rate of change might be limited by the type and number of options installed.

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

- 5°C to 10°C (41°F to 50°F) and 35°C to 40°C (95°F to 104°F) at sea level with an altitude derating of 1.0°C per every 175 m (1.8°F per every 574 ft) above 900 m (2953 ft) to a maximum of 3048 m (10,000 ft).
- 40°C to 45°C (104°F to 113°F) at sea level with an altitude derating of 1.0°C per every 125 m (1.8°F per every 410 ft) above 900 m (2953 ft) to a maximum of 3048 m (10,000 ft).

The approved hardware configurations for this system are listed on the [Hewlett Packard Enterprise website](#).

## Mechanical specifications

Specification	Value
<b>Dimensions</b>	—
Height	4.29 cm (1.69 in)
Depth	61.50 cm (24.21 in)
Width	43.46 cm (17.11 in)
<b>Weight, approximate values</b>	—
Minimum	10.00 kg (22.03 lb)
Maximum	16.00 kg (35.27 lb)

## Power supply specifications

Depending on the installed options and the regional location where the server was purchased, the server can be configured with one of the following power supplies. For detailed power supply specifications, see the QuickSpecs on the [Hewlett Packard Enterprise website](#).

### Subtopics

[HPE 500 W Flex Slot Platinum Hot-plug Low Halogen Power Supply](#)

[HPE 800 W Flex Slot Platinum Hot-plug Low Halogen Power Supply](#)

[HPE 800 W Flex Slot Titanium Hot-plug Low Halogen Power Supply](#)

[HPE 800 W Flex Slot Universal Hot-plug Low Halogen Power Supply](#)

[HPE 800W Flex Slot -48VDC Hot Plug Low Halogen Power Supply](#)

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

Specification	Value
<b>Input requirements</b>	—
Rated input voltage	100 VAC to 240 VAC 240 VDC for China only
Rated input frequency	50 Hz to 60 Hz Not applicable to 240 VDC
Rated input current	5.8 A at 100 VAC 2.8 A at 200 VAC 2.4 A at 240 VDC for China only
Maximum rated input power	580 W at 100 VAC 560 W at 200 VAC 558 W at 240 VDC for China only
BTUs per hour	1999 at 100 VAC 1912 at 200 VAC 1904 at 240 VDC for China only
<b>Power supply output</b>	—
Rated steady-state power	500 W at 100 VAC to 127 VAC input 500 W at 100 VAC to 240 VAC input 500 W at 240 VDC input for China only
Maximum peak power	500 W at 100 VAC to 127 VAC input 500 W at 100 VAC to 240 VAC input 500 W at 240 VDC input for China only

## HPE 800 W Flex Slot Platinum Hot-plug Low Halogen Power Supply

Specification	Value
<b>Input requirements</b>	—
Rated input voltage	100 VAC to 127 VAC 200 VAC to 240 VAC 240 VDC for China only
Rated input frequency	50 Hz to 60 Hz Not applicable to 240 VDC
Rated input current	9.1 A at 100 VAC 4.4 A at 200 VAC 3.6 A at 240 VDC for China only
Maximum rated input power	899 W at 100 VAC 867 W at 200 VAC 864 W at 240 VDC for China only
BTUs per hour	3067 at 100 VAC 2958 at 200 VAC 2949 at 240 VAC for China only
<b>Power supply output</b>	—
Rated steady-state power	800 W at 100 VAC to 127 VAC input 800 W at 100 VAC to 240 VAC input 800 W at 240 VDC input for China only
Maximum peak power	800 W at 100 VAC to 127 VAC input 800 W at 100 VAC to 240 VAC input 800 W at 240 VDC input for China only

## HPE 800 W Flex Slot Titanium Hot-plug Low Halogen Power Supply



Specification	Value
<b>Input requirements</b>	—
Rated input voltage	200 VAC to 240 VAC 240 VDC for China only
Rated input frequency	50 Hz to 60 Hz Not applicable to 240 VDC
Rated input current	4.35 A at 200 VAC 3.62 A at 240 VAC 3.62 A at 240 VDC for China only
Maximum rated input power	851 W at 200 VAC 848 W at 240 VAC 848 W at 240 VDC for China only
BTUs per hour	2905 at 200 VAC 2893 at 240 VAC 2893 at 240 VDC for China only
<b>Power supply output</b>	—
Rated steady-state power	800 W at 200 VAC to 240 VAC input 800 W at 240 VDC input for China only
Maximum peak power	800 W at 200 VAC to 240 VAC input 800 W at 240 VDC input for China only

## HPE 800 W Flex Slot Universal Hot-plug Low Halogen Power Supply

Specification	Value
<b>Input requirements</b>	—
Rated input voltage	200 VAC to 277 VAC 380 VDC
Rated input frequency	50 Hz to 60 Hz
Rated input current	4.4 A at 200 VAC 3.8 A at 230 VAC 2.3 A at 380 VDC
Maximum rated input power	869 W at 200 VAC 865 W at 230 VAC 861 W at 277 VAC 863 W at 380 VDC
BTUs per hour	2964 at 200 VAC 2951 at 230 VAC 2936 at 277 VAC 2943 at 380 VDC
<b>Power supply output</b>	—
Rated steady-state power	800 W at 200 VAC to 277 VAC input
Maximum peak power	800 W at 200 VAC to 277 VAC input

## HPE 800W Flex Slot -48VDC Hot Plug Low Halogen Power Supply



Specification	Value
<b>Input requirements</b>	
Rated input voltage	-40 VDC to -72 VDC
	-48 VDC nominal input
Rated input current	24 A at -40 VDC input
	19 A at -48 VDC input, nominal input
	12.4 A at -72 VDC input
Rated input power (W)	874 W at -40 VDC input
	865 W at -48 VDC input, nominal input
	854 W at -72 VDC input
Rated input power (BTUs per hour)	2,983 at -40 VDC input
	2,951 at -48 VDC input, nominal input
	2,912 at -72 VDC input
<b>Power supply output</b>	
Rated steady-state power (W)	800 W at -40 VDC to -72 VDC
Maximum peak power (W)	800 W at -40 VDC to -72 VDC
Maximum peak power	800 W at 200 VAC to 277 VAC input
	800 W at 380 VDC input



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

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



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

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

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

## Websites

## General websites

Single Point of Connectivity Knowledge (SPOCK) Storage compatibility matrix

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

Product white papers and analyst reports

<https://www.hpe.com/us/en/resource-library>

For additional websites, see [Support and other resources](#).

## Product websites

HPE ProLiant DL160 Gen10 Server product page

<https://www.hpe.com/servers/dl160-gen10>

HPE ProLiant DL160 Gen10 Server user documents

<https://www.hpe.com/info/dl160gen10-docs>

# Support and other resources

## Subtopics

[Accessing Hewlett Packard Enterprise Support](#)

[Accessing updates](#)

[Remote support](#)

[Warranty information](#)

[Regulatory information](#)

[Documentation feedback](#)

## Accessing Hewlett Packard Enterprise Support

- For live assistance, go to the Contact Hewlett Packard Enterprise Worldwide website:  
<https://www.hpe.com/info/assistance>
- To access documentation and support services, go to the Hewlett Packard Enterprise Support Center website:  
<https://www.hpe.com/support/hpesc>

## Information to collect

- Technical support registration number (if applicable)
- Product name, model or version, and serial number
- Operating system name and version
- Firmware version
- Error messages
- Product-specific reports and logs
- Add-on products or components

- Third-party products or components

## Accessing updates

- Some software products provide a mechanism for accessing software updates through the product interface. Review your product documentation to identify the recommended software update method.

- To download product updates:

Hewlett Packard Enterprise Support Center

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

Hewlett Packard Enterprise Support Center: Software downloads

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

My HPE Software Center

<https://www.hpe.com/software/hpesoftwarecenter>

- To subscribe to eNewsletters and alerts:

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

- To view and update your entitlements, and to link your contracts and warranties with your profile, go to the Hewlett Packard Enterprise Support Center More Information on Access to Support Materials page:

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



### IMPORTANT:

Access to some updates might require product entitlement when accessed through the Hewlett Packard Enterprise Support Center. You must have an HPE Onepass set up with relevant entitlements.

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## 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 initiates a fast and accurate resolution based on the service level of your product. 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.

HPE Get Connected

<https://www.hpe.com/services/getconnected>

HPE Pointnext Tech Care

<https://www.hpe.com/services/techcare>

HPE Complete Care

<https://www.hpe.com/services/completecure>

## Warranty information

To view the warranty information for your product, see the links provided below:

HPE ProLiant and IA-32 Servers and Options

<https://www.hpe.com/support/ProLiantServers-Warranties>

HPE Enterprise and Cloudline Servers

<https://www.hpe.com/support/EnterpriseServers-Warranties>

HPE Storage Products

<https://www.hpe.com/support/Storage-Warranties>

HPE Networking Products

<https://www.hpe.com/support/Networking-Warranties>

## Regulatory information

To view the regulatory information for your product, view the Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products, available at the Hewlett Packard Enterprise Support Center:

<https://www.hpe.com/support/Safety-Compliance-EnterpriseProducts>

### Additional regulatory information

Hewlett Packard Enterprise is committed to providing our customers with information about the chemical substances in our products as needed to comply with legal requirements such as REACH (Regulation EC No 1907/2006 of the European Parliament and the Council). A chemical information report for this product can be found at:

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

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

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

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

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

## Documentation feedback

Hewlett Packard Enterprise is committed to providing documentation that meets your needs. To help us improve the documentation, use the Feedback button and icons (located at the bottom of an opened document) on the Hewlett Packard Enterprise Support Center portal (<https://www.hpe.com/support/hpesc>) to send any errors, suggestions, or comments. All document information is captured by the process.