



Hewlett Packard
Enterprise

HPE ProLiant DL345 Gen11 Server Service and Maintenance Guide

Part Number: 30-56141432-002
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HPE ProLiant DL345 Gen11 Server Service and Maintenance 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 and 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
30-56141432-002	April 2023	2	<ul style="list-style-type: none">• Added new spares in the following topics:<ul style="list-style-type: none">◦ <u>E3.S drive blank</u>◦ <u>DIMM spare parts</u>◦ <u>Drive backplane spare parts</u>◦ <u>Processor spare part</u>◦ <u>Drive cable spare parts</u>• Added E3.S drive-related contents in the following topics:<ul style="list-style-type: none">◦ Added E3.S drive blank removal procedure in <u>Removing and replacing a drive blank</u>.◦ Added E3.S drive removal procedure in <u>Removing and replacing a hot-plug SAS, SATA or NVMe drive</u>.◦ <u>EDSFF SSD LED definition</u>◦ <u>36 E3.S drive bay numbering</u>◦ 36 E3.S x2 direct attach cabling in <u>Front drive storage controller cabling</u>.◦ 36 E3.S x2 drive power cabling in <u>Front drive power cabling</u>.• Added new supported LFF drive backplane in <u>LFF drive bay numbering</u>.• Added new supported SFF drive backplane in <u>SFF drive bay numbering</u>.• Added <u>8 SFF x4 NVMe direct attach cabling</u>.• Added <u>8/16 SFF x2 NVMe storage controller cabling: SR932i-p storage controller in the primary riser</u>.

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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'imballaggio 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 garantievoorzwaarden 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となります。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](#)

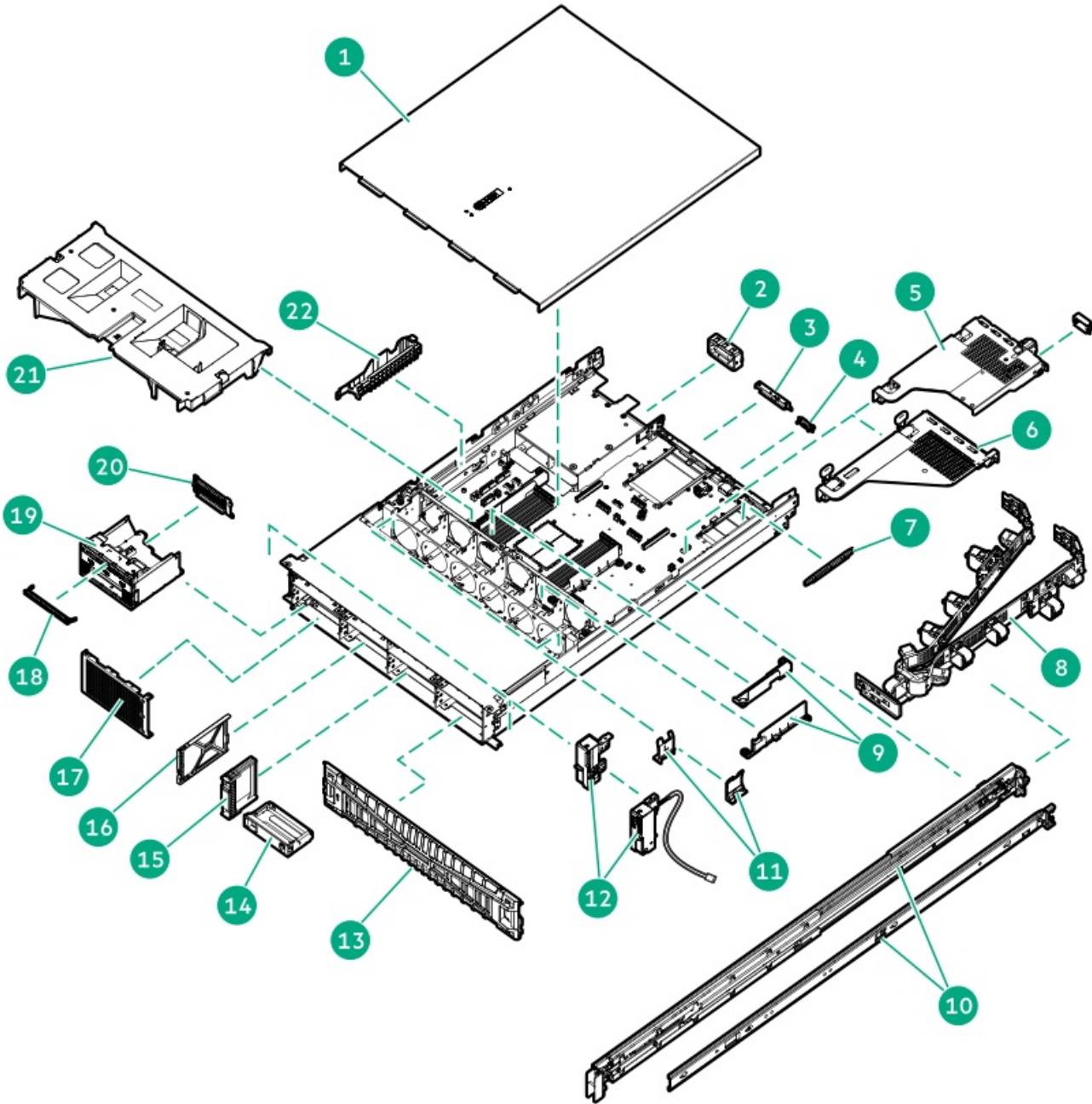
[System components](#)

[Server options](#)

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:

The exploded diagram below shows an LFF chassis. Some of the components might be for SFF chassis only. This is reflected in the component name.



Item	Description
1	Access panel spare part
2	Power supply blank spare part
3	OCP slot blank
4	Serial port blank spare part
5	Boot device security cover on the NS204i-u + secondary low-profile riser cage
6	One-slot primary/secondary riser cage spare part
7	Left OCP Slot 21 rail spare part
8	Cable management arm spare parts
9	DIMM guards spare part
10	Rack rail spare part
11	Cable guards spare part
12	Chassis ears spare part
13	Front bezel spare part
14	LFF drive blank
15	SFF drive blank
16	E3.S drive blank
17	SFF drive box blank spare part
18	Optional drive blank spare part
19	Universal media bay cage spare part
20	Front 2 SFF drive blank spare part
21	Air baffle spare part
22	Energy pack holder spare part

Subtopics

[Access panel spare part](#)

[Miscellaneous blank spare parts](#)

[One-slot primary/secondary riser cage spare part](#)

[Left OCP Slot 21 rail spare part](#)

[Cable management arm spare parts](#)

[DIMM guards spare part](#)

[Rack rails spare part](#)

[Cable guards spare part](#)

[Chassis ears spare part](#)

[Front bezel spare part](#)

[Drive blank spare parts](#)

[Universal media bay cage spare part](#)

[Air baffle spare part](#)

Access panel spare part

Customer self repair: Mandatory

Description	Spare part number
Access panel	P58682-001

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

Miscellaneous blank spare parts

Customer self repair: Mandatory

Description	Spare part number
Miscellaneous blank kit, includes: <ul style="list-style-type: none">• Boot device security cover on the NS204i-u + secondary low-profile riser cage• OCP slot blank	P56489-001 ¹
Front 2 SFF stacked drive blank	P00729-001 ¹
Optical drive blank	707300-001
LFF drive box 1 blank	P24101-001 ¹
SFF drive box blank	875069-001 ¹
Serial port blank	P52444-001
Power supply blank	879518-001 ¹

¹ This is a miscellaneous blank spare kit; only the component blanks listed in this table are used in this server.

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

- [Removing the boot device security cover on the NS204i-u + low-profile riser cage](#)
- [Removing and replacing an OCP slot blank](#)
- [Removing and replacing the universal media bay 2 SFF drive blank](#)
- [Removing and replacing the optical drive blank](#)
- [Removing and replacing the LFF drive box 1 blank](#)
- [Removing and replacing the SFF drive box blank](#)
- [Removing and replacing the serial port blank](#)
- [Removing and replacing the power supply blank](#)

One-slot primary/secondary riser cage spare part

Customer self repair: Mandatory

Description	Spare part number
One-slot primary/secondary riser cage	P52459-001

For more information on the removal and replacement procedures, see [Removing and replacing the one-slot primary/secondary riser cage](#).

Left OCP Slot 21 rail spare part

Customer self repair: Mandatory

Description	Spare part number
Left OCP Slot 21 rail	P52474-001

For more information on the removal and replacement procedures, see [Removing and replacing the left OCP Slot 21 rail](#).

Cable management arm spare parts

Customer self repair: Mandatory

Description	Spare part number
Cable management arm for friction rack rail #2	P24100-001

For more information on the removal and replacement procedures, see [Removing and replacing the cable management arm](#).

DIMM guards spare part

Customer self repair: Mandatory

Description	Spare part number
DIMM guards (left and right)	P59128-001

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

Rack rails spare part

Customer self repair: Mandatory

Description	Spare part number
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Friction rack rail #2 (left and right)	P59490-001
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For more information on the removal and replacement procedures, see [Removing and replacing the rack rails](#).

Cable guards spare part

Customer self repair: Mandatory

Description	Spare part number
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Cable guards (left and right)	P59127-001
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For more information on the removal and replacement procedures, see [Removing and replacing a cable guard](#).

Chassis ears spare part

Customer self repair: Mandatory

Description	Spare part number
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Right chassis ear assembly—This spare part includes the chassis ear with the front I/O and USB cable.	P56501-001
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Left chassis ear	P58207-001
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For more information on the removal and replacement procedures, see:

- [Removing and replacing the right chassis ear assembly](#)
- [Removing and replacing the left chassis ear](#)

Front bezel spare part

Customer self repair: Mandatory

Description	Spare part number
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Front bezel	P58208-001
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For more information on the removal and replacement procedures, see [Removing and replacing the front bezel](#).

Drive blank spare parts

Customer self repair: Mandatory

Description	Spare part number
LFF drive blank	827363-001
SFF drive blank	670033-001
E3.S drive blank	P52488-001

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

Universal media bay cage spare part

Customer self repair: Mandatory

Description	Spare part number
Universal media bay cage	881696-001

For more information on the removal and replacement procedures, see [Removing and replacing the universal media bay cage](#).

Air baffle spare part

Customer self repair: Mandatory

Description	Spare part number
Air baffle	P59126-001

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

Energy pack holder spare part

Customer self repair: Mandatory

Description	Spare part number
Energy pack holder	P52800-001 ¹

¹ This is a miscellaneous component spare kit; only the energy pack holder listed in this table are used in this server.

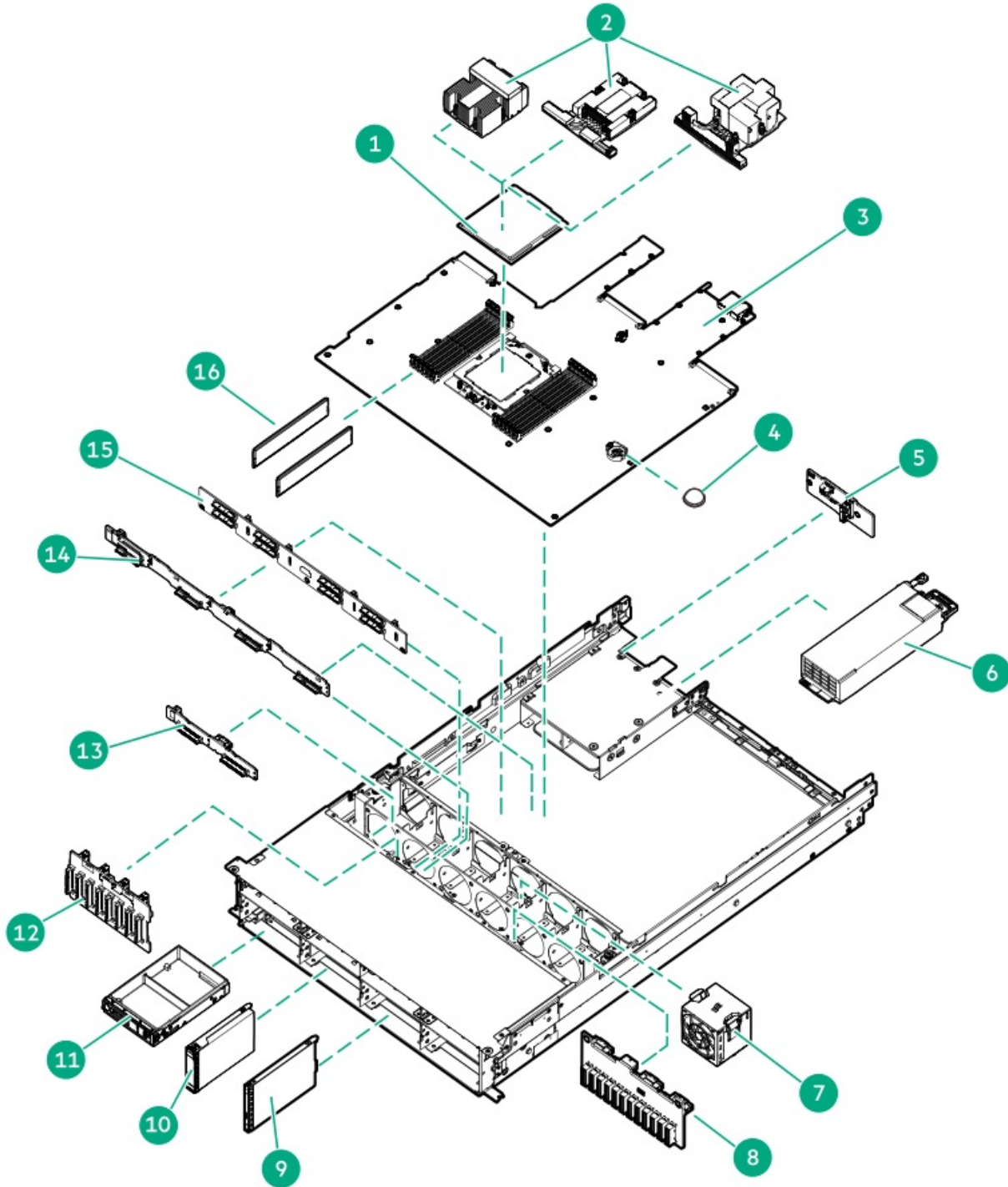
For more information on the removal and replacement procedures, see [Removing and replacing the energy pack holder](#).

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>

The exploded diagram below shows an LFF chassis. Some of the components might be for SFF chassis only. This is reflected in the component name.



Item	Description
1	Processor spare parts
2	Heatsink spare parts
3	System board assembly spare part
4	System battery spare part
5	2 SFF stacked drive backplane spare part
6	Power supply spare parts
7	Fan spare part
8	12 E3.S drive backplane spare part
9	E3.S drive For more information on the removal and replacement procedures, see Removing and replacing a hot-plug drive .
10	SFF drive For more information on the removal and replacement procedures, see Removing and replacing a hot-plug drive .
11	LFF drive For more information on the removal and replacement procedures, see Removing and replacing a hot-plug drive .
12	Front 8 SFF drive backplane spare part
13	2 SFF side-by-side drive backplane spare part
14	4 LFF drive backplane spare part
15	8 SFF midplane drive backplane spare part
16	DIMM spare parts
17	Drive cable spare parts ¹

¹ Now Shown

Subtopics

[Processor spare parts](#)

[Heatsink spare parts](#)

[System board assembly spare part](#)

[System battery spare part](#)

[Drive backplane spare parts](#)

[Power supply spare parts](#)

[Fan spare parts](#)

[DIMM spare parts](#)

[Drive cable spare parts](#)

Processor spare parts

Customer self repair: Optional

Description	Spare part number
AMD EPYC 9124, 3.0G, 16C, 200 W	P54064-001
AMD EPYC 9174F, 4.1G, 16C, 320 W	P54060-001
AMD EPYC 9224, 2.5G, 24C, 200 W	P58633-001
AMD EPYC 9254, 2.9G, 24C, 200 W	P54069-001
AMD EPYC 9274F, 4.05G, 24C, 320 W	P54073-001
AMD EPYC 9334, 2.7G, 32C, 210 W	P54074-001
AMD EPYC 9354P, 3.25G, 32C, 280 W	P54066-001
AMD EPYC 9374F, 3.85G, 32C, 320 W	P54072-001
AMD EPYC 9454P, 2.75G, 48C, 290 W	P54071-001
AMD EPYC 9474F, 3.6G, 48C, 360 W	P54068-001
AMD EPYC 9534, 2.45G, 64C, 280 W	P54061-001
AMD EPYC 9554P, 3.1G, 64C, 360 W	P54065-001
AMD EPYC 9634, 2.25G, 84C, 290 W	P54067-001
AMD EPYC 9654P, 2.4G, 96C, 360 W	P54059-001

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

Heatsink spare parts

Customer self repair: Optional

Description	Spare part number
Standard heatsink	P60415-001
Midplane cage heatsink	P59965-001
High performance heatsink	P60414-001

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

System board assembly spare part

Customer self repair: Optional

Description	Spare part number
System board assembly includes:	P60373-001
• System board	
• Metal subpan	

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

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: Mandatory

Description	Spare part number
8 SFF 24G x1 U.3 NVMe / SAS / SATA UBM3 BC	P39781-001
8 SFF 24G x1 U.3 NVMe / SAS / SATA UBM6 BC	P62070-001
8 SFF 24G x4 U.3 NVMe / SAS / SATA UBM3 BC	P39780-001
8 SFF 24F x4 U.3 NVMe / SAS / SATA UBM6 BC	P62065-001
12 E3.S 32G x4 NVMe UBM5 EC	P53217-001
2 SFF 24G x4 U.3 NVMe / SAS / SATA UBM3 BC (stacked)	P39782-001
2 SFF 24G x4 U.3 NVMe / SAS / SATA UBM6 BC (stacked)	P62069-001
2 SFF 24G x4 U.3 NVMe / SAS / SATA UBM3 BC (side-by-side)	P39783-001
2 SFF 24G x4 U.3 NVMe / SAS / SATA UBM6 BC (side-by-side)	P62071-001
4 LFF 12G x1 SAS / SATA UBM2 LP	P40451-001
4 LFF 12G x1 SAS / SATA UBM6 LP	P62075-001
8 SFF 24G x1 SAS / SATA UBM3 BC (midplane)	P39784-001
8 SFF 24G x4 U.3 NVMe / SAS / SATA UBM3 BC (midplane)	P40452-001

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

- [Removing and replacing the 8 SFF drive backplane](#)
- [Removing and replacing the front 4 LFF drive backplane](#)
- [Removing and replacing the 12 E3.S drive backplane](#)
- [Removing and replacing the front 2 SFF side-by-side drive backplane](#)
- [Removing and replacing the front 2 SFF stacked drive backplane](#)
- [Removing and replacing the rear 2 SFF drive backplane](#)
- [Removing and replacing the rear 4 LFF drive backplane](#)
- [Removing and replacing the midplane drive backplane](#)

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	P39385-001
HPE 1600 W Flex Slot Platinum Hot-plug Low Halogen Power Supply	P39384-001
HPE 1600 W Flex Slot -48 VDC Hot-plug Power Supply	P18510-001

For more information on the removal and replacement procedures, see [Flexible Slot power supply replacement](#).

Fan spare parts

Customer self repair: Mandatory

Description	Spare part number
Standard fan	P59812-001
High performance fan	P52434-001

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

DIMM spare parts

Customer self repair: Mandatory

Description	Spare part number
16 GB, single-rank x8 PC5-4800B-R	P56150-001
32 GB, single-rank x4 PC5-4800B-R	P56151-001
32 GB, dual-rank x8 PC5-4800B-R	P56152-001
64 GB, dual-rank x4 PC5-4800B-R	P56153-001
128 GB, quad-rank x4 PC5-4800B-R	P56154-001
256 GB, octal-rank x4 PC5-4800B-R	P56155-001

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

Drive cable spare parts

Customer self repair: Mandatory

Description	Cable PN	Spare PN
8 LFF Box 2 and Box 3 drive cable for system board connection	P58865-001	P60389-001
4 LFF Box 1 and midplane drive box 7 drive cable for system board connection	P57187-001	P60393-001
Rear 4 LFF Box 8 drive cable for system board connection	P57184-001	P60395-001
8 SFF Box 2 drive cable for system board connection	P57194-001	P60391-001 ¹
SFF Box 2 drive power cable	P58023-001	
8 SFF Box 3 drive cable spare for system board connection	P57196-001	P60382-001
8 SFF x2 NVMe direct attach cable from Box 1 ports 1-4 to NVMe ports 7A-8A	P57224-001	P60400-001
8 SFF x2 NVMe direct attach cable from Box 2 ports 1-4 to NVMe/SATA ports 1A-2A	P57222-001	P60401-001
8 SFF x2 NVMe direct attach cable from Box 3 ports 1-4 to NVMe port 3A-4A	P57220-001	P60402-001
8 SFF x4 NVMe direct attach cable from Box 3 ports 1-2 to NVMe ports 3A-4A	P57205-001	P60407-001
8 SFF x4 NVMe direct attach cable from Box 3 ports 3-4 to NVMe port 9A and NVMe/SATA port 1B	P57215-001	P60406-001
8 LFF Box 2 and Box 3 SAS/SATA drive cable for type-o controller	P58101-001	P61272-001
8 LFF Box 2 and Box 3 drive cable for type-p controller	P58063-001	P60390-001
4 LFF Box 1 and midplane drive box 7 SAS/SATA drive cable for type-p controller	P57188-001	P60392-001
8 SFF Box 1 SAS/SATA drive cable for type-o controller	P58016-001	P61306-001
8 SFF Box 1 SAS/SATA drive cable for type-p controller	P58019-001	P61302-001
8 SFF Box 2 SAS/SATA drive cable for type-p controller	P58020-001	P61304-001
8 SFF Box 3 SAS/SATA drive cable for type-p controller	P58018-001	P61305-001
8 SFF Box 1 x2 NVMe drive cable for type-o controller: from Box 1 port 1/2 to type-o controller port 1	P58076-001	P61291-001
8 SFF Box 1 x2 NVMe drive cable for type-o controller: from Box 1 port 3/4 to type-o controller port 2	P58075-001	P61292-001
8 SFF Box 1 x2 NVMe drive cable for type-p controller	P58124-001	P61286-001
8 SFF Box 2 x2 NVMe drive cable for type-p controller	P58123-001	P61289-001
8 SFF Box 3 x2 NVMe drive cable for type-p controller	P58127-001	P61290-001
8 SFF Box 1 x4 NVMe drive cable for type-p controller	P58114-001	P61278-001

Description	Cable PN	Spare PN
8 SFF Box 2 x4 NVMe drive cable for type-p controller	P58122-001	P61280-001
8 SFF Box 3 x4 NVMe drive cable for type-p controller	P58120-001	P61281-001
Front 2 SFF side-by-side/ 2 SFF stacked drive cable for type-o storage controller	P58145-001	P61325-001 ²
8 SFF midplane x2 NVMe drive direct attach cable from Box 7 port 3 and port 4 to NVMe port 9A	P59467-001	P60387-001
8 SFF midplane x2 NVMe drive direct attach cable from Box 7 port 1 and port 2 to NVMe/SATA port 9A	P57207-001	
8 SFF midplane Box 7 SAS x1 NVMe drive cable for type-p controller	P58089-001	P61321-001 ²
8 SFF midplane Box 7 x4 NVMe drive cable for type-p controller in the primary riser	P58095-001	P61276-001
8 SFF midplane Box 7 x4 NVMe drive cable for type-p controller in the secondary riser	P58094-001	P61277-001
Rear 4 LFF Box 8 x1 SAS drive cable for type-o controller	P58098-001	P61331-001 ²
Rear 4 LFF Box 8 x1 SAS drive cable for type-p controller cable	P57183-001	P60396-001
Rear 2 SFF stacked drive cable for type-o controller	P58149-001	P61323-001 ²
4 LFF Box 3 drive power cable	P58867-001	P60419-001 ¹
4 LFF Box 2 / 2 SFF side-by-side drive power cable	P58036-001	
4 LFF Box 1 LFF drive power cable	P58035-001	
4 LFF midplane drive power cable	P57182-001	P60383-001
Rear 4 LFF drive power cable	P57185-001	
8 SFF midplane SAS/NVMe x1 drive power cable	P57177-001	P60388-001
8 SFF midplane NVMe x4 drive power cable	P57201-001	
SFF Box 3 drive power cable	P57209-001	P60421-001 ²
Drive power cable for front 8 SFF box 1 or front 2 SFF stacked drive	P57198-001	P60384-001
Rear 2 SFF stacked drive power cable	P57178-001	
12 E3.S x2 NVMe direct attach cable from Box 2 ports 3-4 and 5-6 to NVMe/SATA ports 1A-2A	P59120-001	P60399-001
12 E3.S x2 NVMe direct attach cable from Box 1 ports 1-2, 3-4 and 5-6 to NVMe ports 8A-6A	P59121-001	P60398-001
12 E3.S x2 NVMe direct attach cable from Box 3 ports 1-2, 3-4 and 5-6 to NVMe ports 3A, 4A, and 6A	P59118-001	P60397-001
12 E3.S x2 NVMe direct attach cable from Box 2 ports 1-2 to NVMe port 5A	P59094-001	P60386-001
12 E3.S Box 1 drive power cable	P59122-001	
12 E3.S Boxes 2-3 drive power cable	P58822-001	P60418-001

¹ This is a miscellaneous cable spare kit; only the cables listed in this table are used in this server.

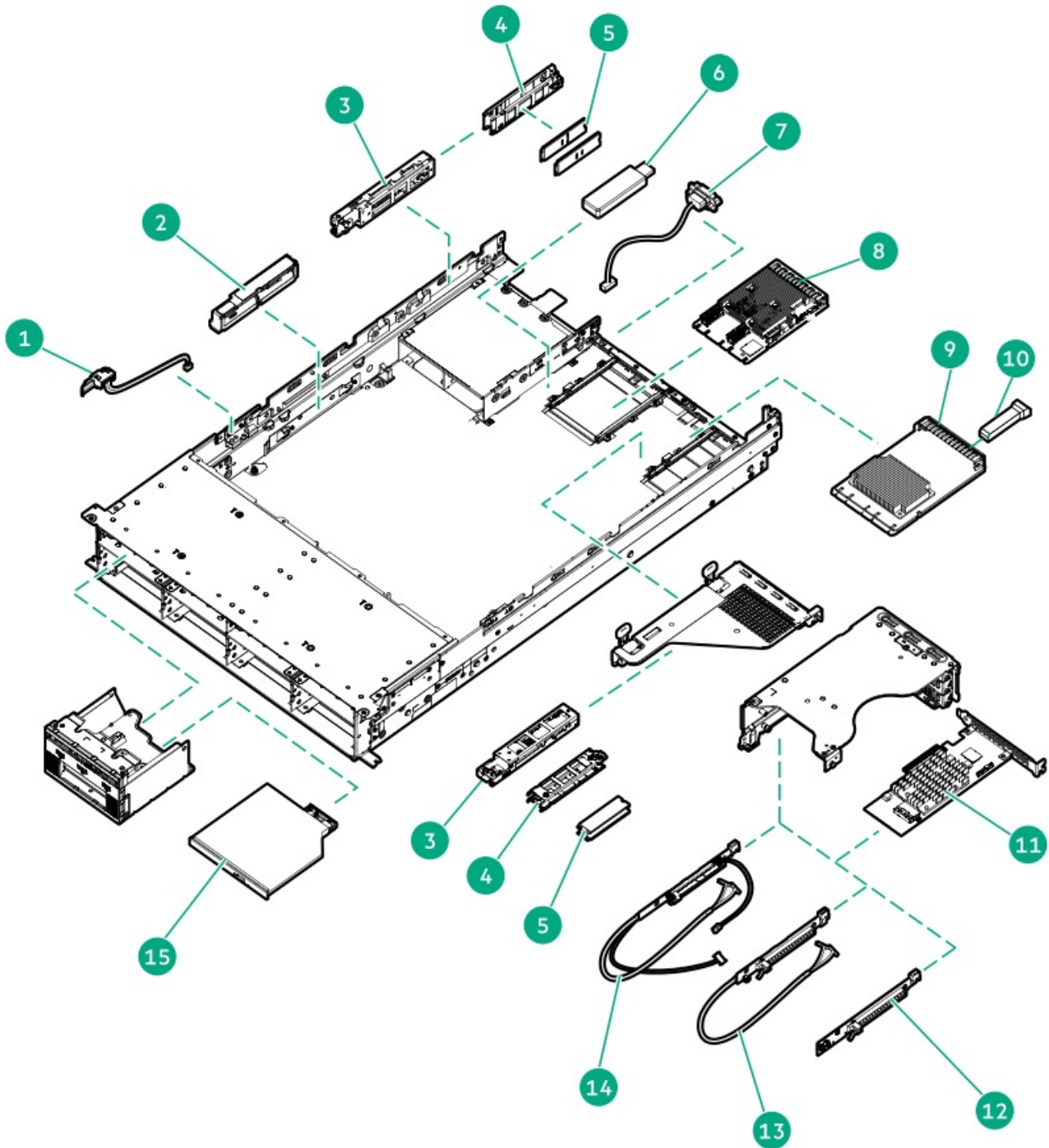
² This is a miscellaneous cable spare kit; only the cable listed in this table is used in this server.

Server options

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

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

The exploded diagram below shows an LFF chassis. Some of the components might be for SFF chassis only. This is reflected in the component name.



Item	Description
1	Chassis intrusion detection switch spare part
2	Energy pack spare parts
3	HPE NS204i-u Boot Device spare parts
4	M.2 SSD carrier spare part
5	M.2 SSD spare part For more information on the removal and replacement procedures, see: <ul style="list-style-type: none"> • Removing and replacing a boot device drive with a security cover installed • Removing and replacing a boot device drive without a security cover installed
6	Internal USB device spare part For more information on the removal and replacement procedures, see Removing and replacing an internal USB device .
7	Serial port cable spare part
8	HPE SR and MR type-o storage controller spare parts
9	OCP NIC 3.0 adapter spare part For more information on the removal and replacement procedures, see:
10	Transceiver spare part For more information on the removal and replacement procedures, see Removing and replacing a transceiver .
11	HPE SR and MR type-p PCIe plug-in storage controller spare parts
12	PCIe5 x16 base riser
13	Stacking riser
14	Free-height riser
15	Optical drive spare part For more information on the removal and replacement procedures, see Optical drive replacement .
16	Universal media bay cable spare part ¹
17	OCP bandwidth upgrade cable spare part ¹

¹ Not shown.

Subtopics

[Chassis intrusion detection switch spare part](#)

[Energy pack spare parts](#)

[HPE NS204i-u Boot Device spare parts](#)

[Serial port cable spare part](#)

[Storage controller spare parts](#)

[Riser board spare parts](#)

[Universal media bay cable spare part](#)

[OCP bandwidth upgrade cable spare part](#)

Chassis intrusion detection switch spare part

Customer self repair: Mandatory

Description	Spare part number
Chassis intrusion detection switch	P54901-001

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

Energy pack spare parts

Customer self repair: Mandatory

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

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

HPE NS204i-u Boot Device spare parts

Customer self repair: Mandatory

Description	Spare part number
Boot device cage assembly	P51341-001
M.2 SSD carrier	P59777-001
480 GB NVMe x4 RI M.2 22110 SSD	P41538-001
Boot device SlimSAS and power cables ¹	P56479-001

¹ This is a miscellaneous cable spare kit; only the cables listed in this table are used in this server.

For more information on the removal and replacement procedures, see [HPE NS204i Boot Device replacement](#)

Serial port cable spare part

Customer self repair: Mandatory

Description	Spare part number
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Serial port cable	P57842-001
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For more information on the removal and replacement procedures, see [Removing and replacing the serial port](#).

Storage controller spare parts

Customer self repair: Mandatory

Description	Spare part number
HPE Gen11 type-o controllers	
HPE MR216i-o Gen11 controller	P47954-001
HPE MR408i-o Gen11 controller	P58543-001
HPE MR416i-o Gen11 controller	P47952-001
HPE Gen11 type-p controllers	
HPE MR216i-p Gen11 controller	P47953-001
HPE MR416i-p Gen11 controller	P47951-001
HPE SR932i-p Gen11 controller	P47623-001
HPE Gen10 type-p controller	
HPE Smart Array E208e-p SR Gen10 Controller	836267-001

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

- [Removing and replacing a type-o storage controller](#)
- [Removing and replacing a type-p storage controller](#)

Riser board spare parts

Customer self repair: Mandatory

Description	Spare part number
PCIe5 x16 base riser	P59443-001
PCIe5 x16 low-profile riser	P60408-001

Customer self repair: Optional

Description	Spare part number
Primary free-height riser (riser PN: P50364-001)	P60423-001
Primary/secondary stacking riser (riser PN: P50365-001)	P60422-001
Primary stacking riser (riser PN: P51472-001)	P60861-001

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

- [Removing and replacing the PCIe x16 base riser](#)
- [Removing and replacing the PCIe x16 low-profile riser](#)
- [Removing and replacing the PCIe x16 base riser from three-slot riser cage](#)
- [Removing and replacing the free-height riser](#)
- [Removing and replacing the stacking riser](#)

Universal media bay cable spare part

Customer self repair: Mandatory

Description	Spare part number
Universal media bay DisplayPort cable spare kit, includes: <ul style="list-style-type: none">• LFF universal media bay DisplayPort cable• SFF universal media bay USB 2.0/DisplayPort Y-cable	875095-001
Universal media bay cable spare kit, includes: <ul style="list-style-type: none">• LFF universal media bay optical drive SATA-power cable• SFF universal media bay USB 3.2 Gen 1 port cable	P60385-001

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

- [Removing and replacing the LFF universal media bay DisplayPort cable](#)
- [Removing and replacing the SFF universal media bay USB 2.0/DisplayPort Y-cable](#)
- [Removing and replacing the SFF universal media bay USB 3.2 Gen 1 port cable](#)

OCP bandwidth upgrade cable spare part

Customer self repair: Mandatory

Description	Spare part number
OCP bandwidth upgrade cable	P58491-001

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 the access panel

Removing and replacing the air baffle

Removing and replacing the SFF drive box blank

Removing and replacing the LFF drive box 1 blank

Flexible Slot power supply replacement

Removing and replacing a hot-plug SAS, SATA or NVMe drive

Removing and replacing the cable management arm

Removing and replacing a DIMM

Removing and replacing a power supply blank

Removing and replacing the drive blank

Removing and replacing a fan

Removing and replacing a cable guard

Removing and replacing the serial port

Removing and replacing the serial port blank

Removing and replacing the energy pack holder

Removing and replacing the energy pack

Removing and replacing the optical drive blank

Removing and replacing the front 2 SFF stacked drive blank

Removing and replacing the universal media bay cage

Removing and replacing the SFF universal media bay USB 2.0/DisplayPort Y-cable

Removing and replacing the SFF universal media bay USB 3.2 Gen 1 port cable

Removing and replacing the LFF universal media bay DisplayPort cable

Removing and replacing the one-slot primary/secondary riser cage

Removing and replacing the right chassis ear assembly

Removing and replacing the left chassis ear

Removing and replacing a DIMM guard

Transceiver replacement

Expansion card replacement

Removing and replacing a type-o storage controller

Removing and replacing an OCP slot blank

Removing and replacing the rack rails

Removing and replacing the left OCP Slot 21 rail

[Riser board replacement](#)

[Optical drive replacement](#)

[Drive backplane replacement](#)

[Removing and replacing the OCP NIC 3.0 adapter](#)

[Removing and replacing the chassis intrusion detection switch](#)

[Removing and replacing the internal USB device](#)

[Removing the boot device security cover from the NS204i-u + secondary low-profile riser cage](#)

[HPE NS204i Boot Device replacement](#)

[Heatsink replacement](#)

[Processor replacement](#)

[System board assembly replacement](#)

[System battery replacement](#)

Safety considerations

Before performing service procedures, review all the safety information.

- [Electrostatic discharge](#)
- [Symbols on equipment](#)
- [Rack warnings and cautions](#)
- [Server warnings and cautions](#)

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.



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.

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。



or



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 16.12 kg (35.53 lb). When all components are installed, the server can weigh up to 35.67 kg (78.63 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 16.12 kg (35.53 lb), so at least two people must lift the server into the rack together. An additional person may be required to help align the server if the server is installed higher than chest level.
- Use caution when installing the server in or removing the server from the rack.
- Adequately stabilize the rack before extending a component outside the rack. Extend only one component at a time. A rack may become unstable if more than one component is extended.
- Do not stack anything on top of rail-mounted component or use it as a work surface when extended from the rack.

**WARNING:**

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

- The leveling jacks are extended to the floor.
- The full weight of the rack rests on the leveling jacks.
- The stabilizing feet are attached to the rack if it is a single-rack installation.
- The racks are coupled together in multiple-rack installations.

**WARNING:**

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

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

**CAUTION:**

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

**CAUTION:**

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

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

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](#)

[Open the cable management arm](#)

[Extend the server out of the rack](#)

Remove the server from the rack

Remove the midplane drive cage

Remove the fan cage

Remove the midwall bracket

Remove the LFF drive backplane bracket

Remove the rear 4 LFF drive cage

Remove the riser cage

Power up the server

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/ilo6>).
 - 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:

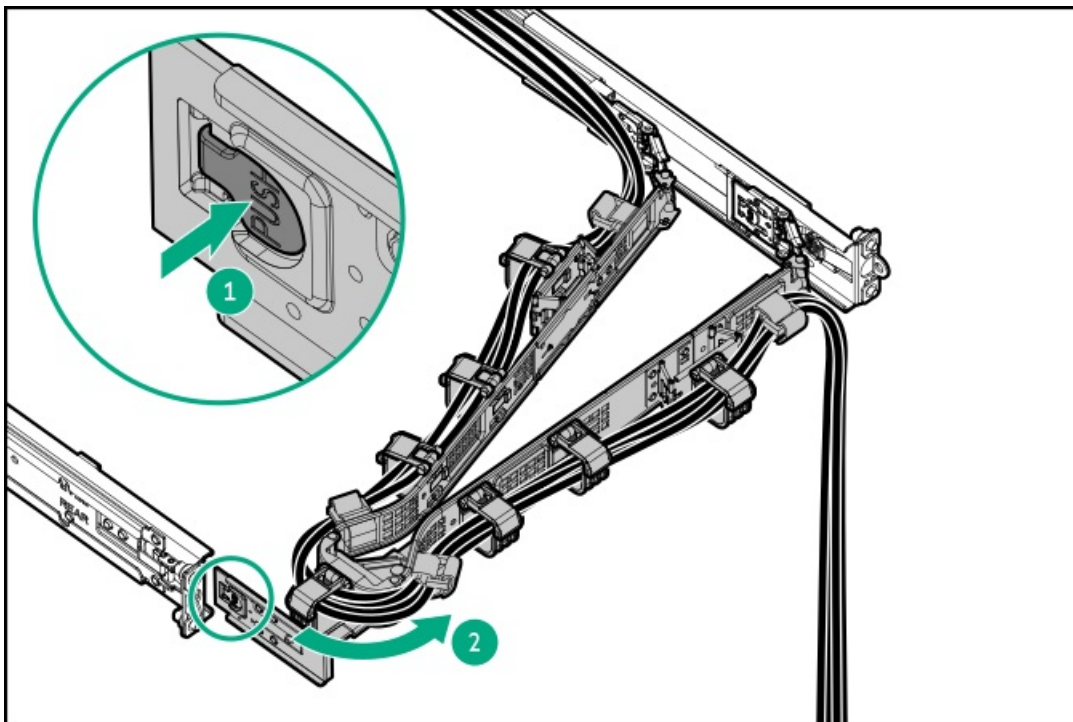
- Press and release the Power On/Standby button.
This method activates a controlled shutdown of applications and the OS before the server enters standby mode. It can also activate a shutdown behavior governed by an OS configuration or policy.
- Press and hold the Power On/Standby button for more than 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 6.
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.

Open the cable management arm

Procedure

1. Press and hold the blue **PUSH** button on the retention bracket.
2. Swing the arm away from the rear panel.



Extend the server out of the rack

Prerequisites

- Before you perform this procedure, review the [Rack warnings and cautions](#).

- T-25 Torx screwdriver—This tool is required if the shipping screws located inside the chassis ears are secured.

About this task

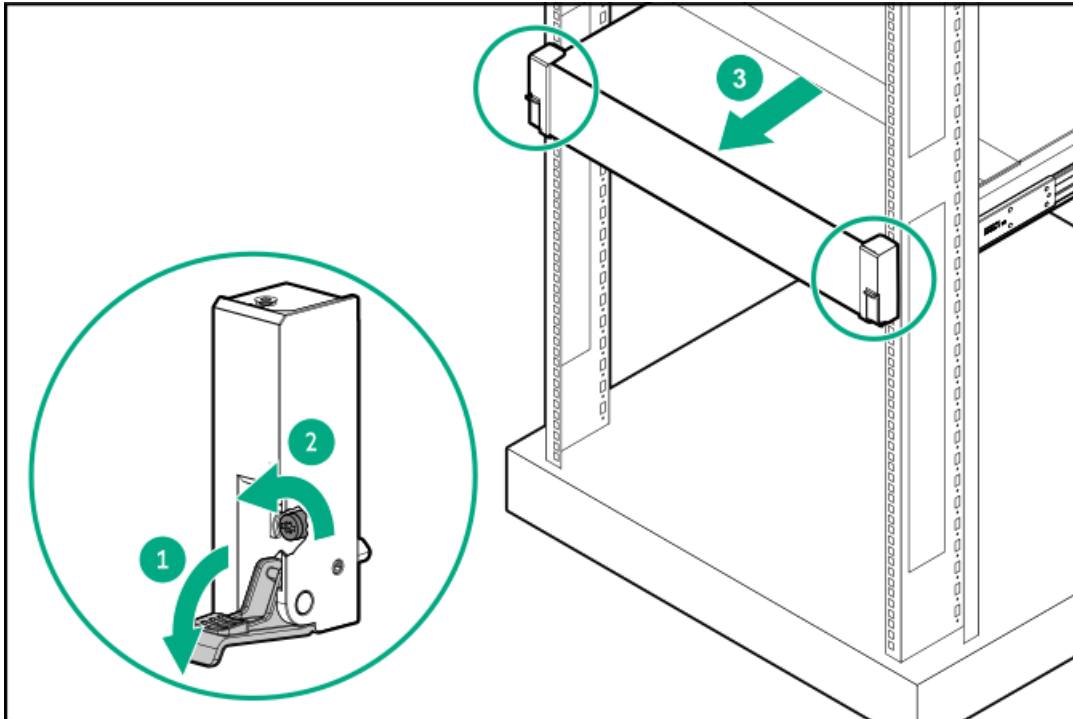



WARNING:

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

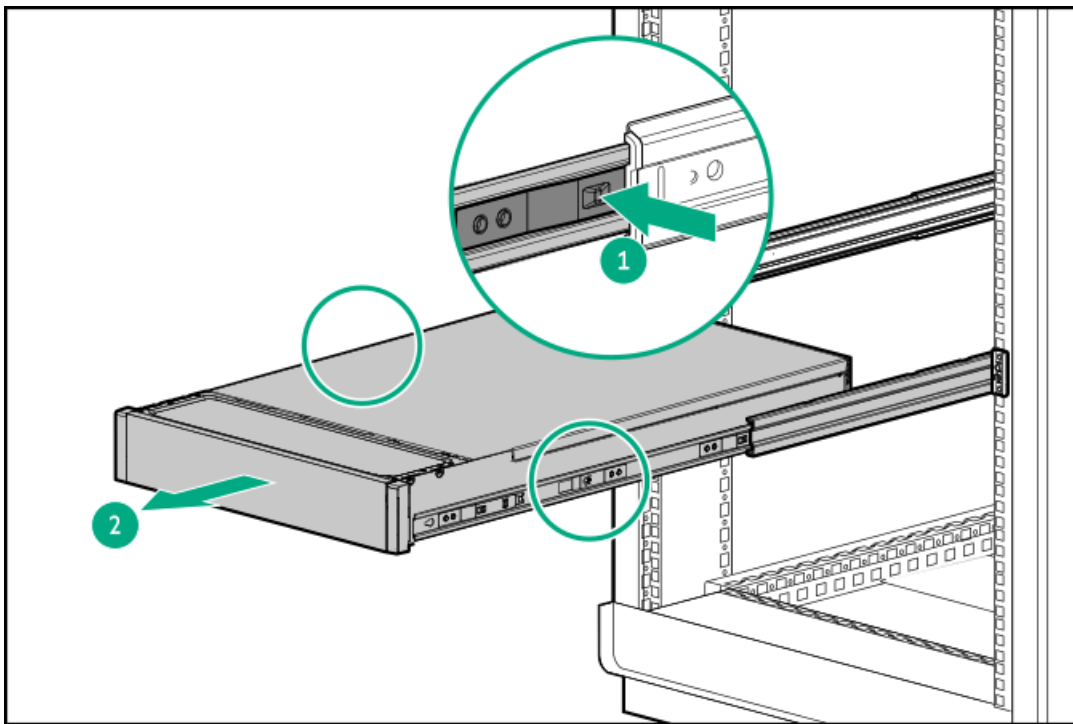
Procedure

1. If needed, loosen the shipping screws, and then use the chassis ear latches to slide the server out of the rack until the rail-release latches are engaged.



2.  **WARNING:**
To reduce the risk of personal injury, be careful when pressing the server rail-release latches. The inner rails could pinch your fingers.

Press and hold the rear-end rail-release latches (callout 1), and then slide the server out of the rack until it is fully extended (callout 2).



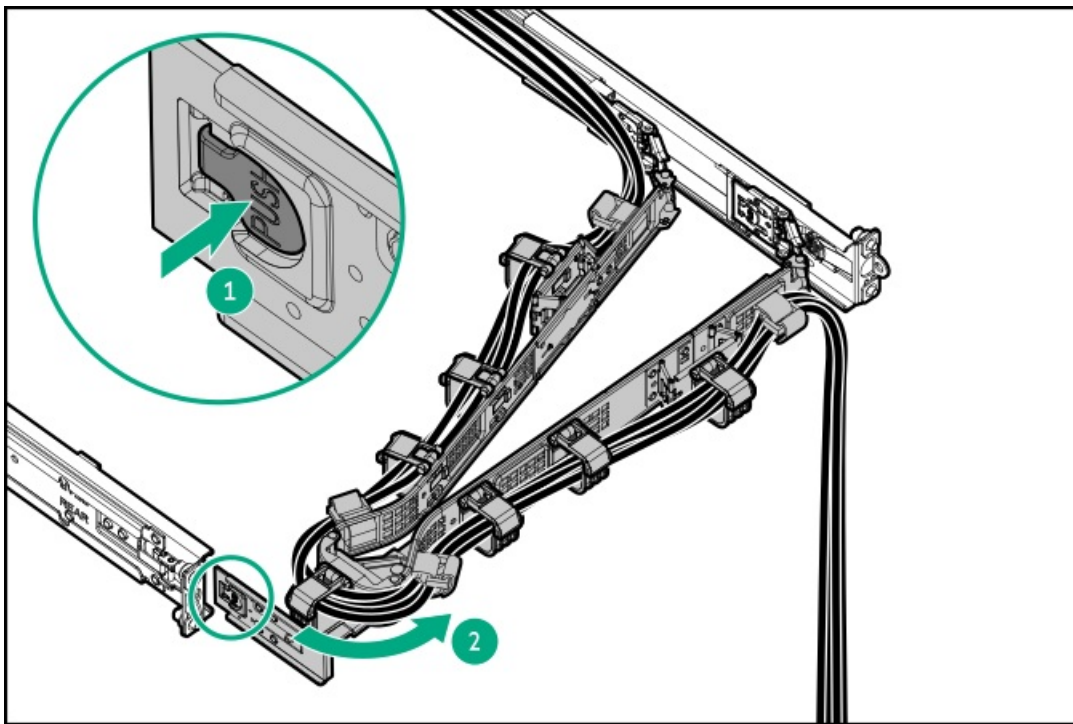
Remove the server from the rack

Prerequisites


- Get help to lift and stabilize the server during removal from the rack. **If the server is installed higher than chest level, an additional person might be required to help remove the server:** One person to support the server weight, and the other to slide the server out of the rack.
- Before you perform this procedure, review the:
 - [Rack warnings and cautions](#)
 - [Server warnings and cautions](#)
- A fully populated server is heavy. Hewlett Packard Enterprise recommends removing the external server components before removing the server from the rack.
- Before you perform this procedure, make sure that you have a T-25 Torx screwdriver available.

Procedure

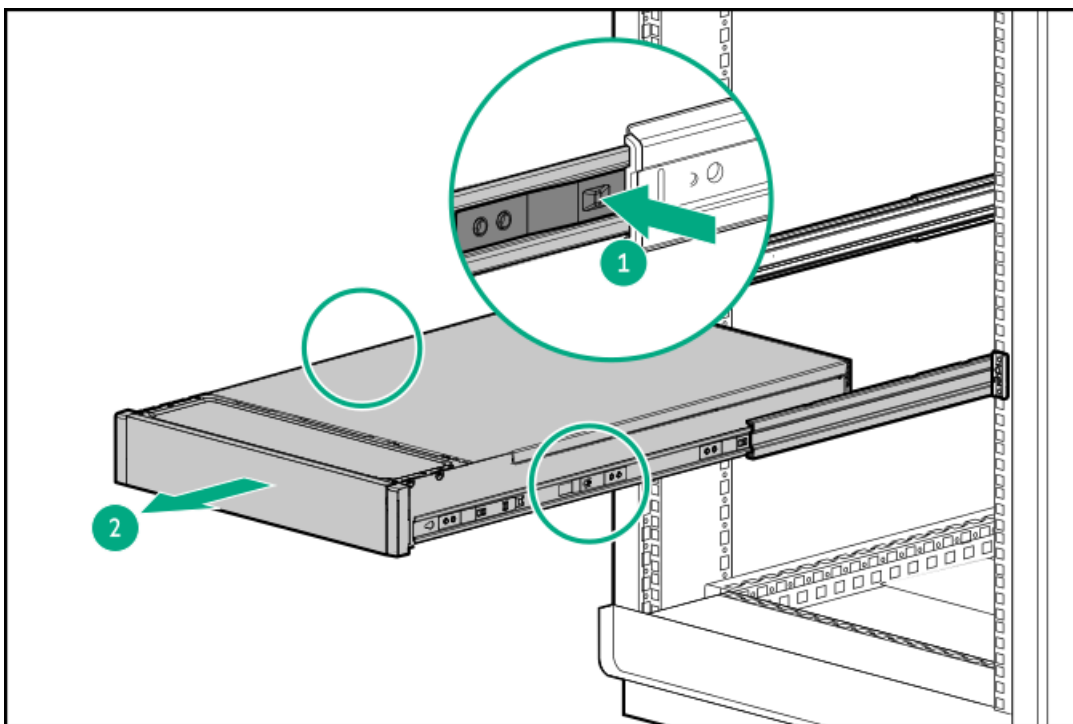
1. [Power down the server.](#)
2. If installed, open the cable management arm.



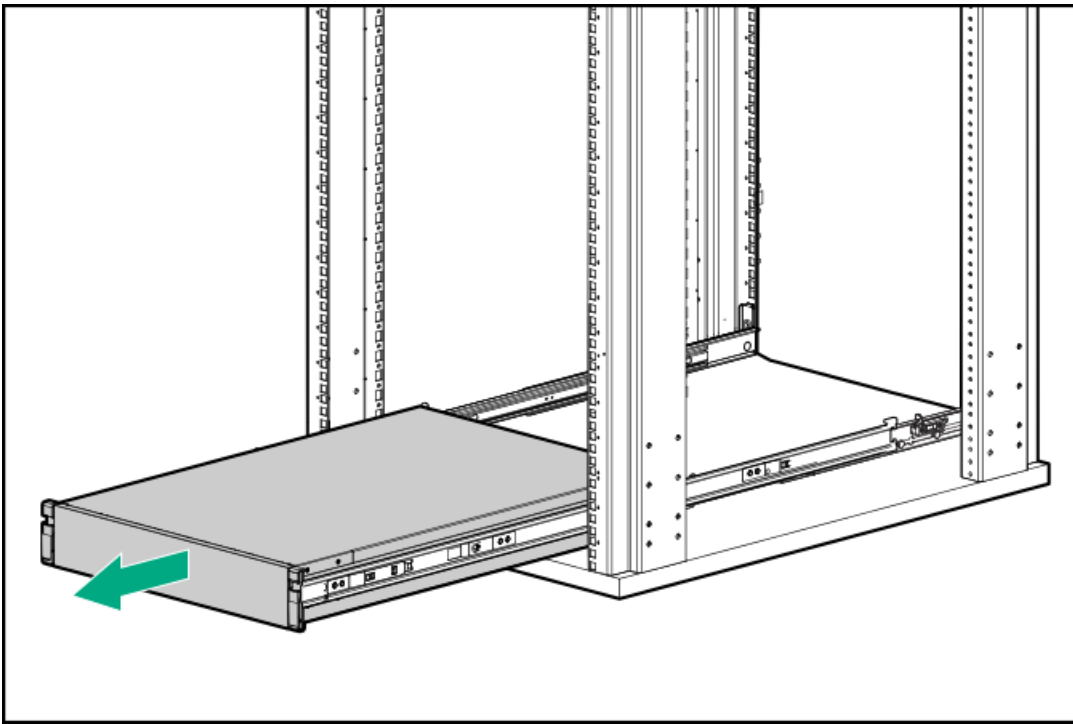
3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.

-
5.  **WARNING:**
To reduce the risk of personal injury, be careful when pressing the server rail-release latches. The inner rails could pinch your fingers.
-

Press and hold the rear-end rail-release latches (callout 1), and then slide the server out of the rack until it is fully extended (callout 2).



6. Slide the server completely out of the rack.



7. Place the server on a flat, level work surface.

Subtopics

[Rail identification markers](#)

[Rack mounting interfaces](#)

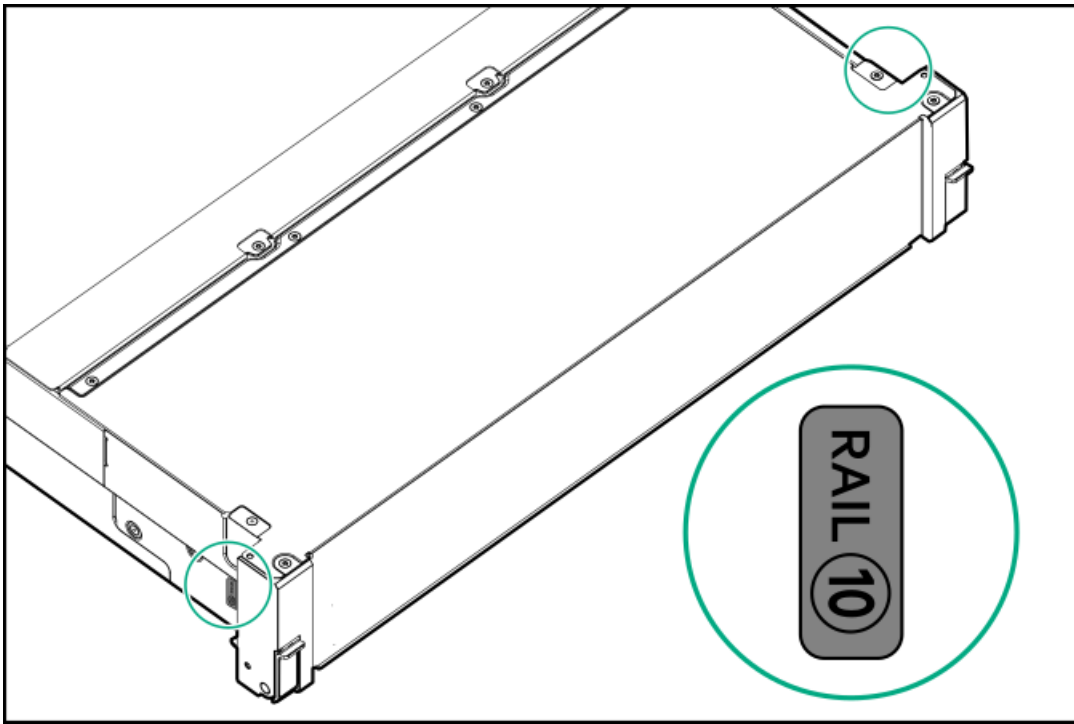
Rail identification markers

The rack rail option support is dependent on these two factors:

- The height and weight of the chassis as determined by the front- and rear-end server configurations.
- The depth of the chassis as measured from the edge of the front panel (without the front bezel) to the edge of the rear panel.

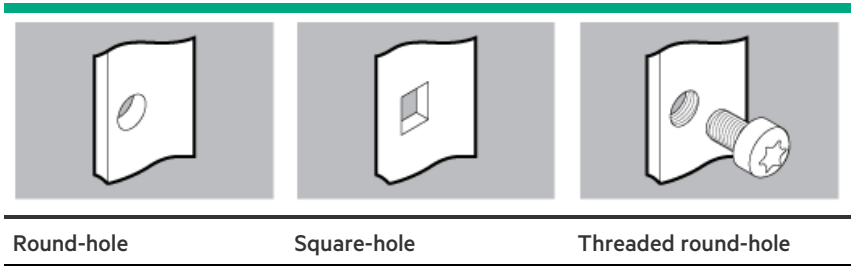
To ensure compatibility between the rack rails and the server, verify that the rail number labels on the chassis match the ones stamped on the rails.

- Rail number labels on the chassis



Rack mounting interfaces

The rack rails can be installed in a rack that has the following mounting interfaces:

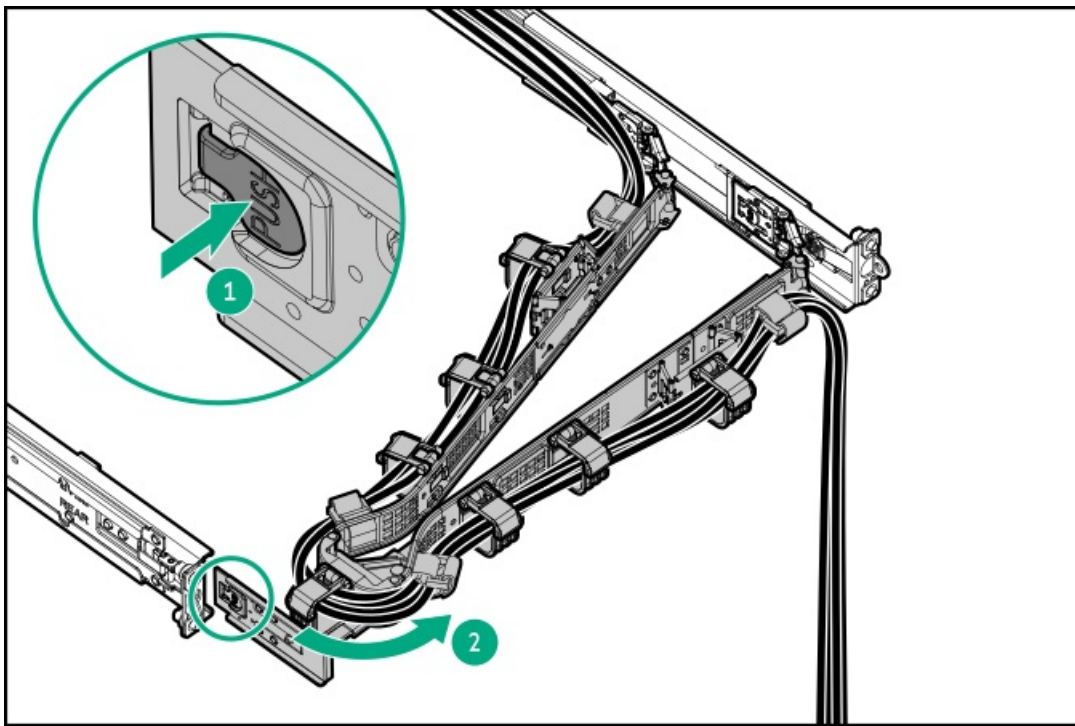


The illustrations used in this procedure show an icon on the upper right corner of the image. This icon indicates the type of mounting interface for which the action illustrated in the image is valid.

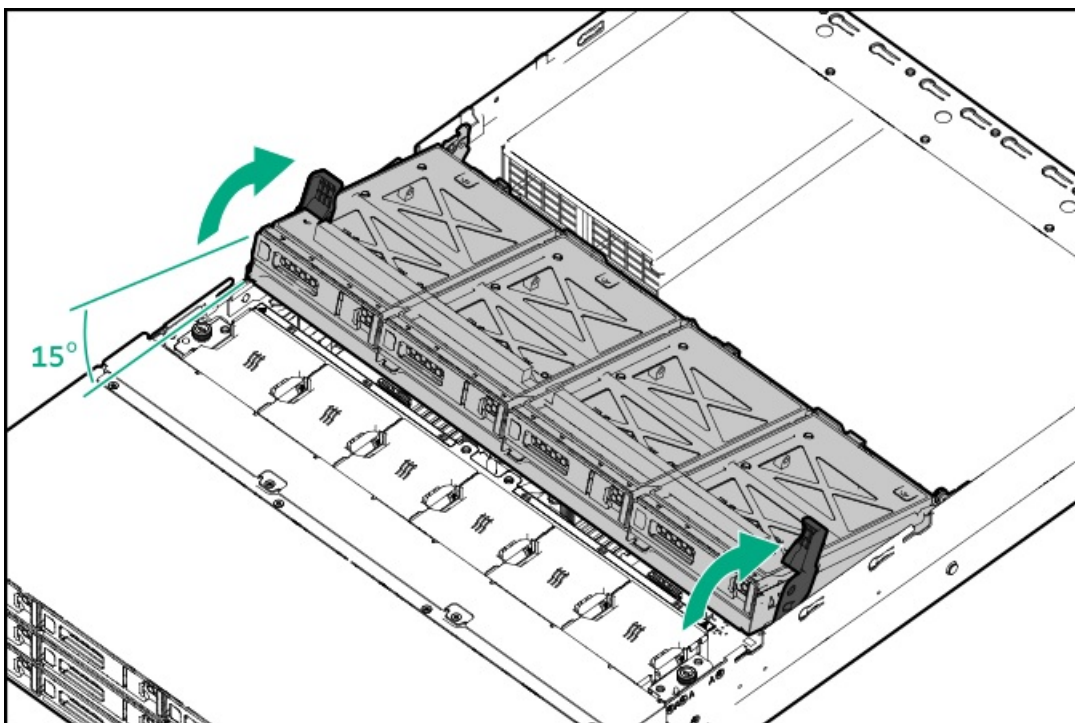
Remove the midplane drive cage

Procedure

1. Power down the server.
2. If installed, open the cable management arm.

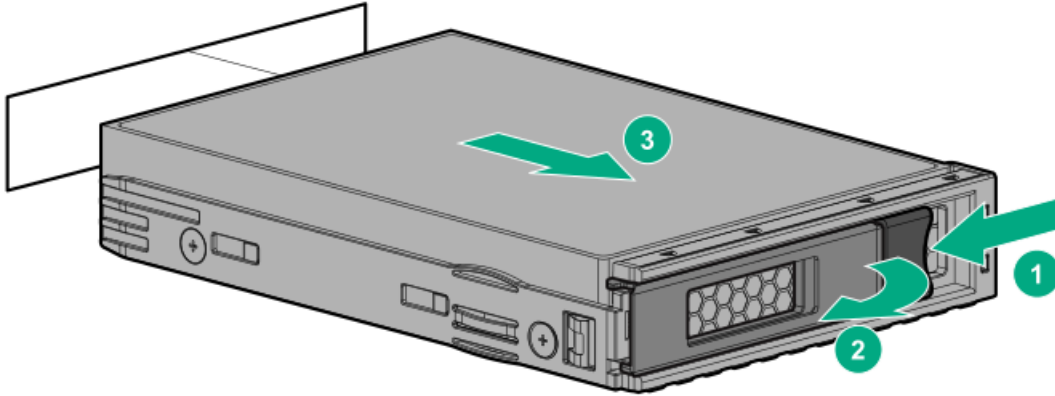


3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Remove the server from the rack.
6. Place the server on a flat, level work surface.
7. Remove the access panel.
8. Disconnect all midplane drive backplane cables.
9. Open the drive cage latches to lift the front side of the cage to about 15° angle.

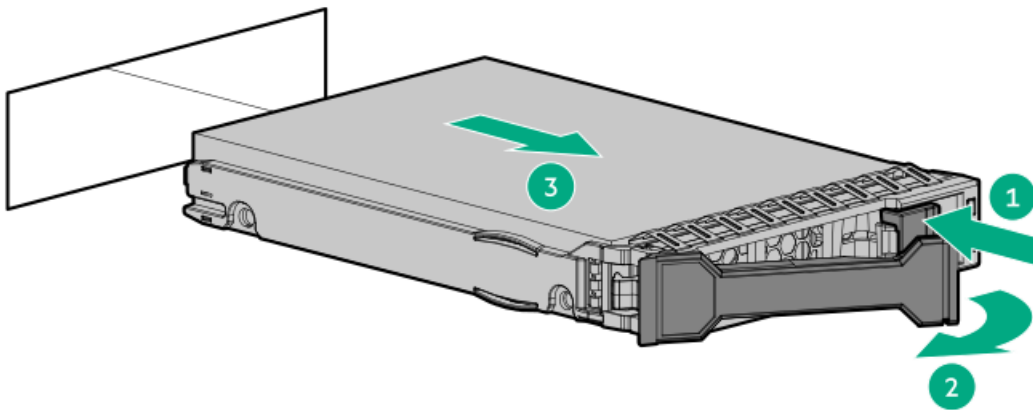


10. Remove all midplane drives.

- LFF drive

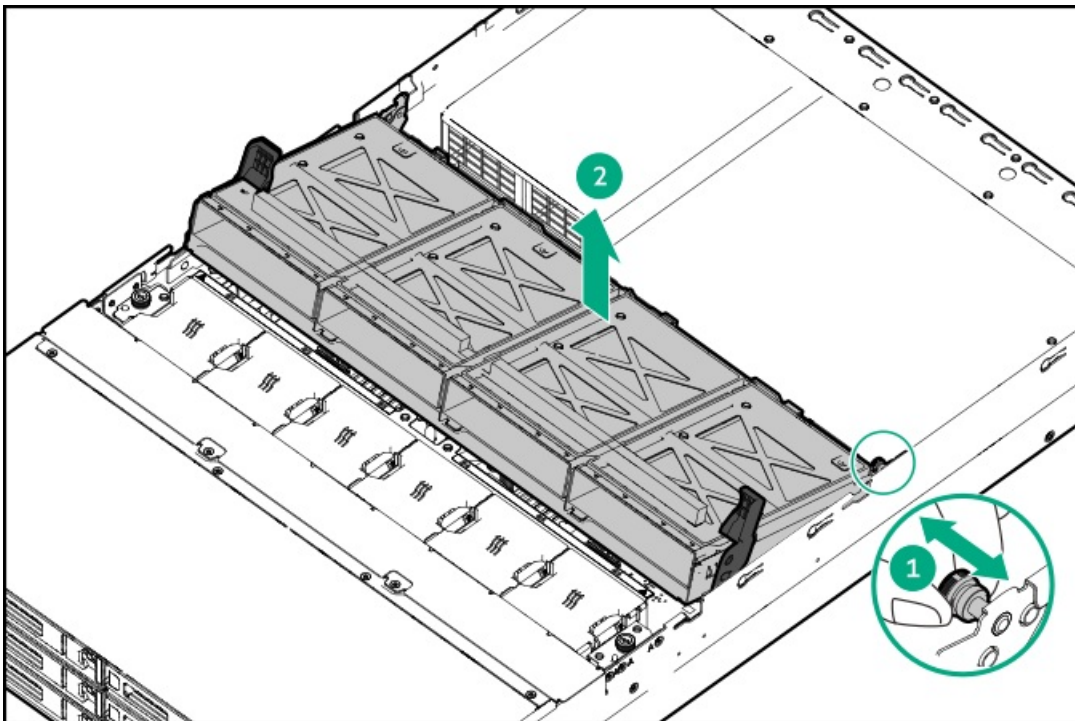


- SFF drive



11. Remove the midplane drive cage:

- a. Pull the plunger pin on the rear right side of the drive cage (callout 1).
- b. Use the drive cage latches to lift the cage out of the server (callout 2).



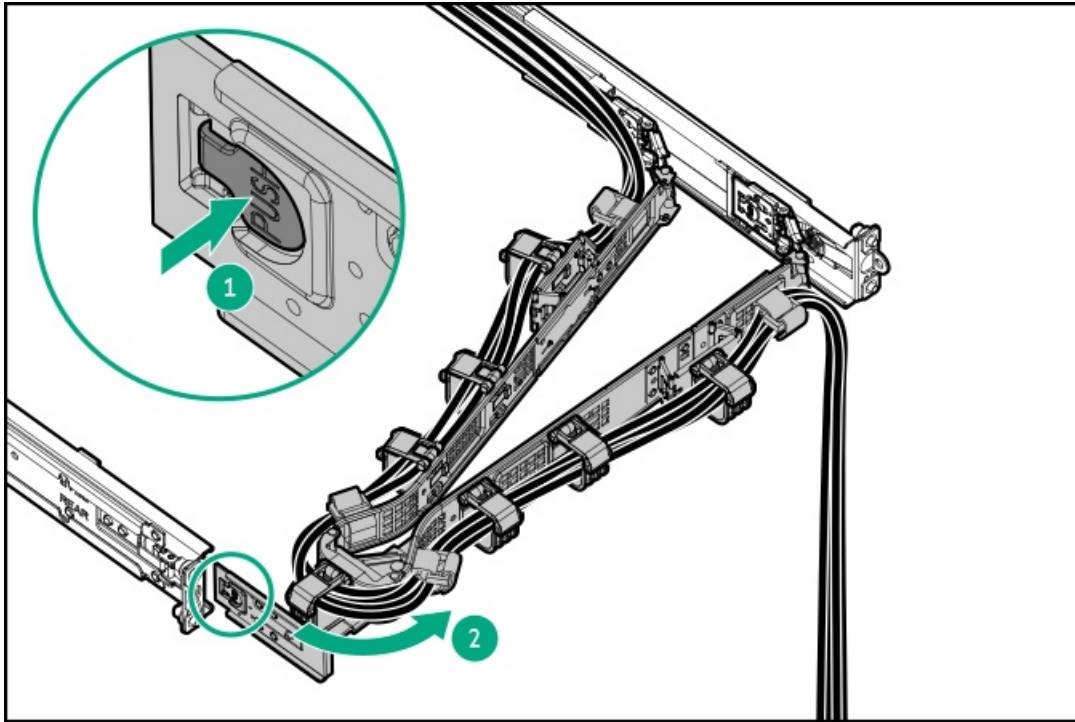
Remove the fan cage

Prerequisites

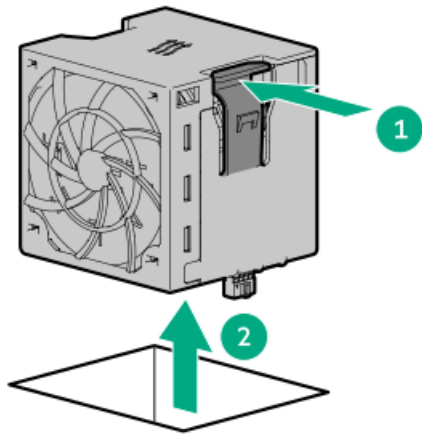
Before you perform this procedure, make sure that you have a T-15 Torx screwdriver available.

Procedure

1. Power down the server.
2. If installed, open the cable management arm.

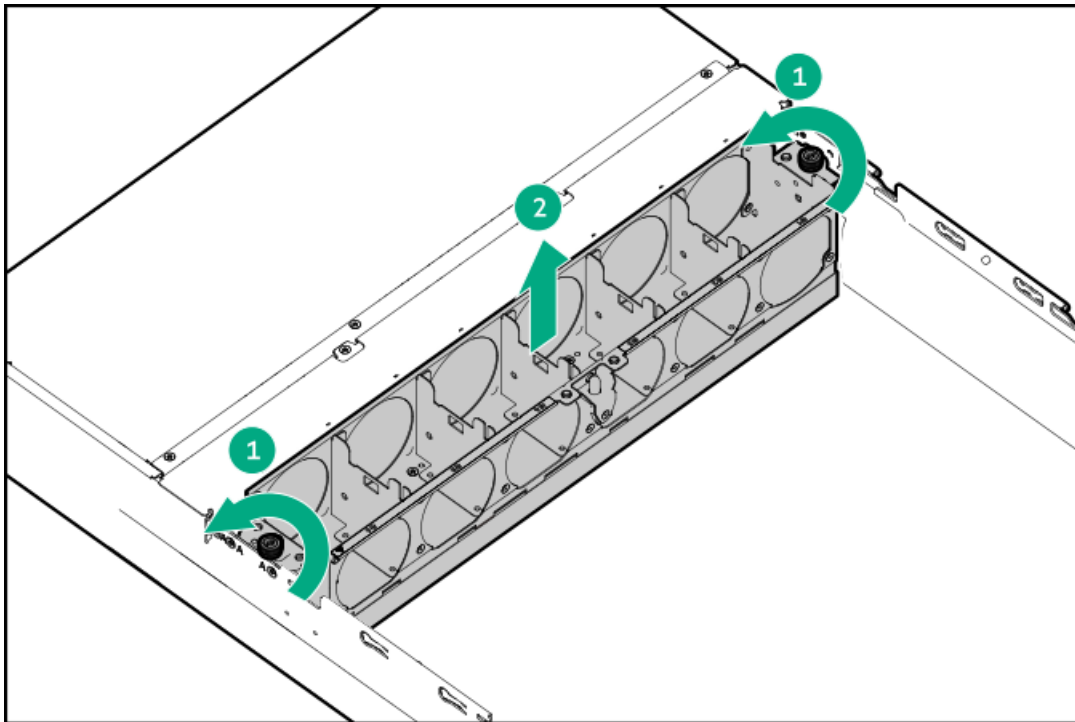


3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Remove the server from the rack.
6. Place the server on a flat, level work surface.
7. Remove the access panel.
8. Remove the existing fans:
 - a. Press and hold the latch (callout 1).
 - b. Lift the fan from the fan cage (callout 2).



9. Remove the fan cage:

- a. Loosen the captive screws (callout 1).
- b. Lift the fan cage away from the chassis (callout 2).



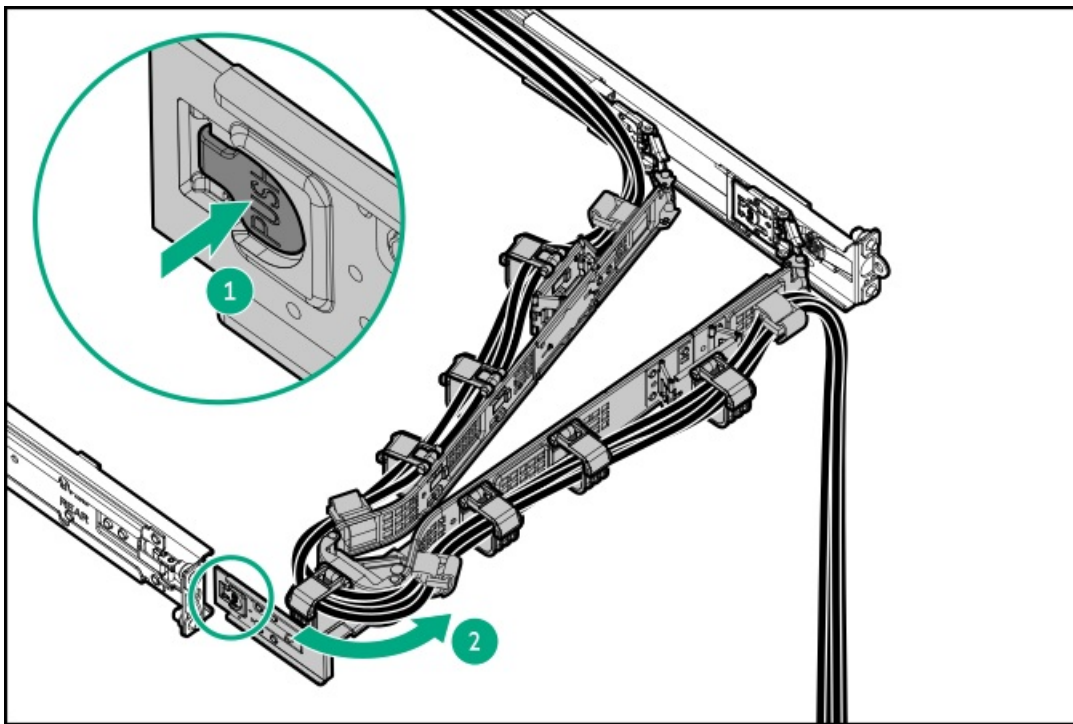
Remove the midwall bracket

Prerequisites

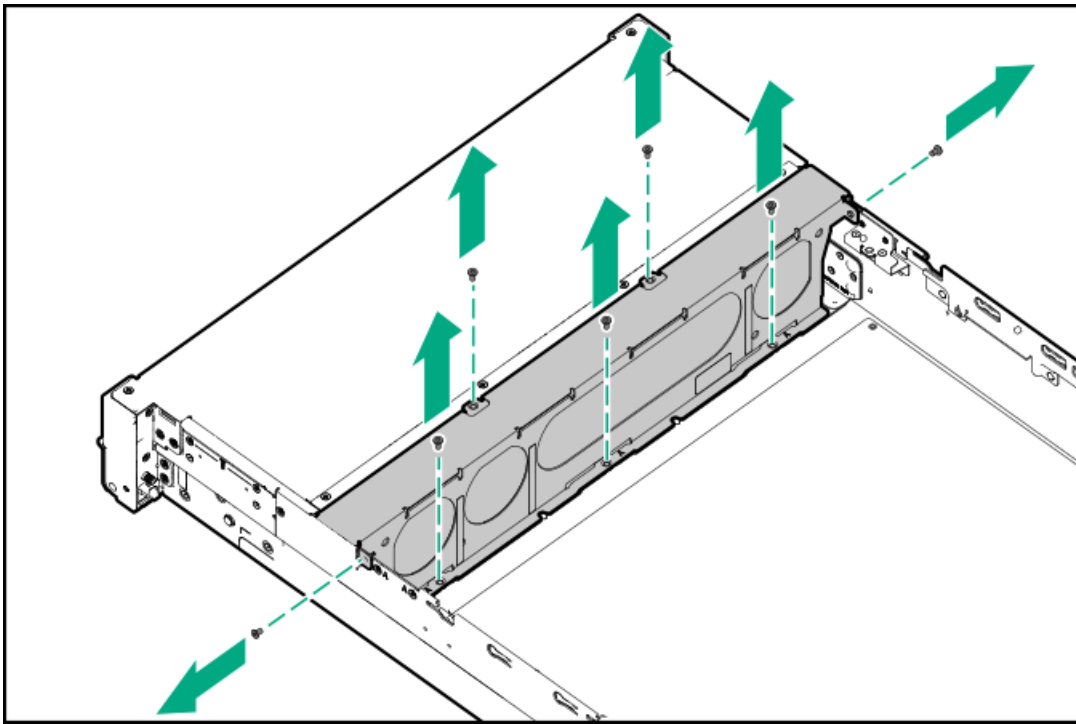
Before you perform this procedure, make sure that you have a T-10 Torx screwdriver available.

Procedure

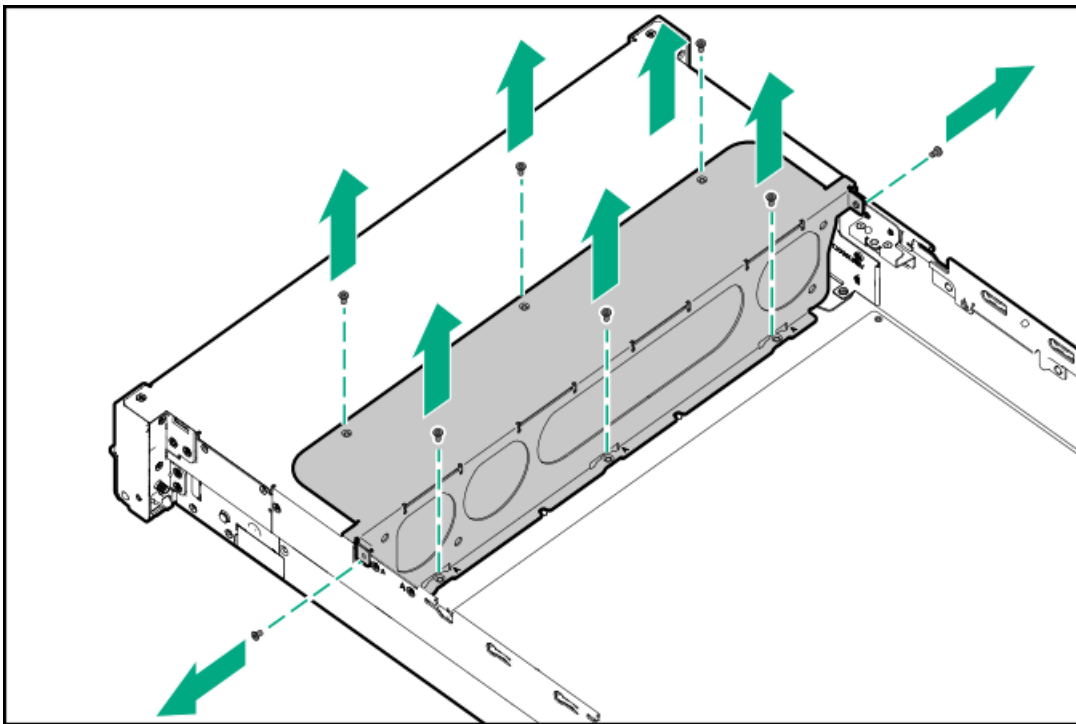
1. Power down the server.
2. If installed, open the cable management arm.



3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Remove the server from the rack.
6. Place the server on a flat, level work surface.
7. Remove the access panel.
8. Remove the fan cage.
9. Remove the midwall bracket screws.
 - LFF chassis



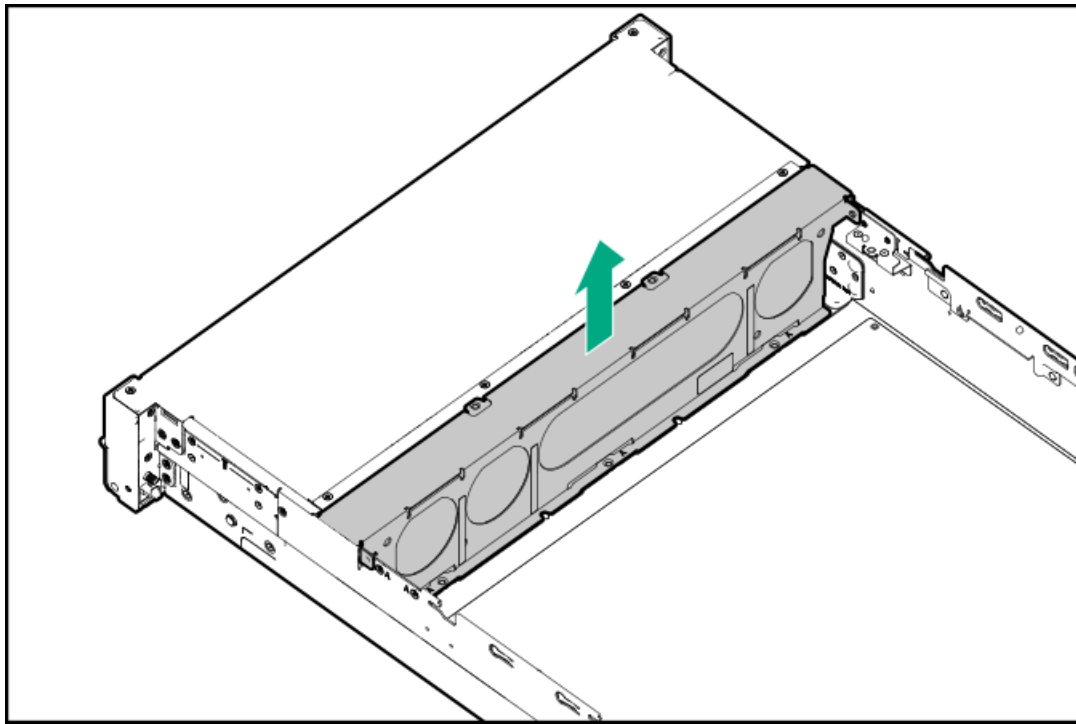
- SFF chassis



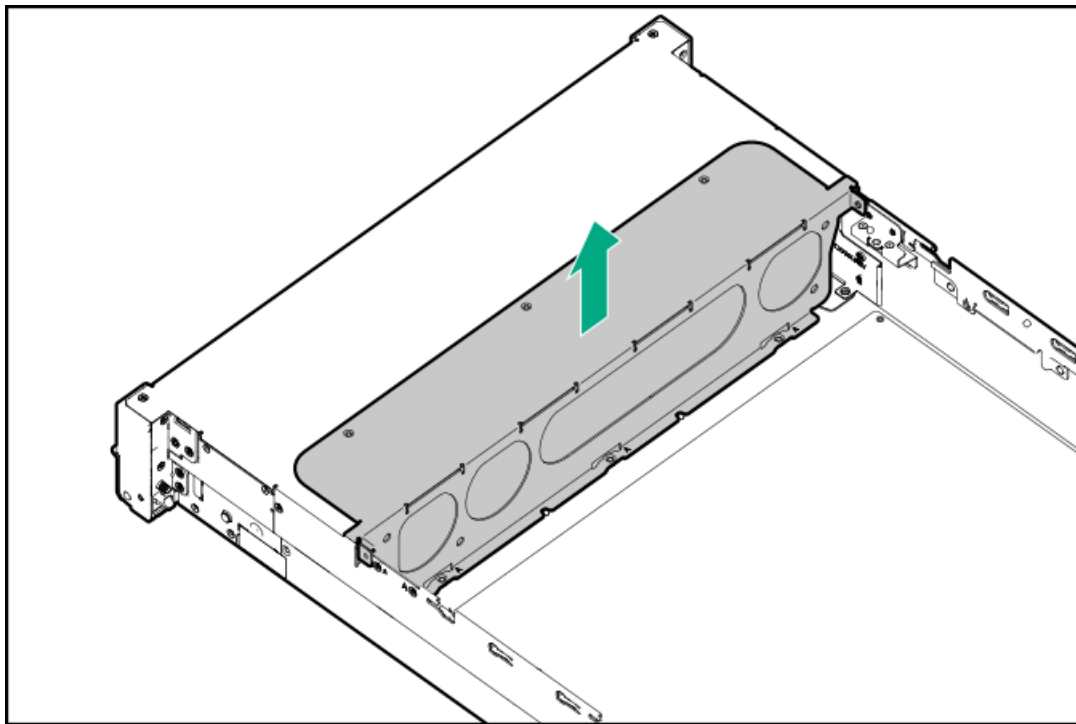
10. Lift the midwall bracket away from the chassis.

- LFF chassis





- SFF chassis



Remove the LFF drive backplane bracket

Prerequisites

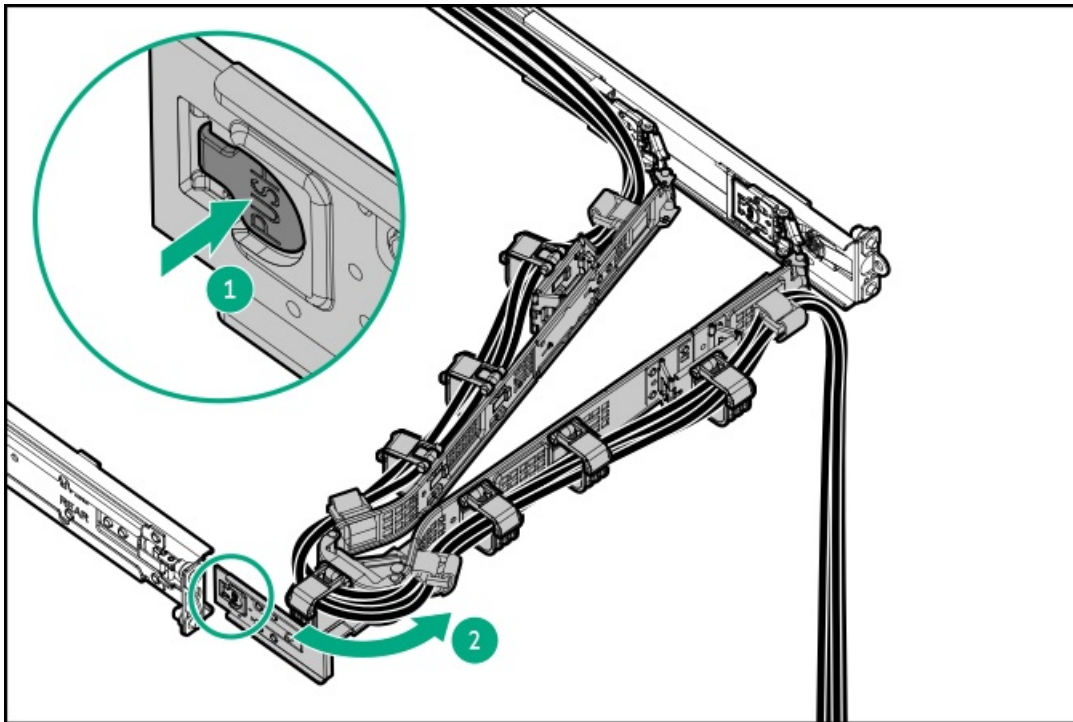
Before you perform this procedure, make sure that you have a T-10 Torx screwdriver available.

About this task

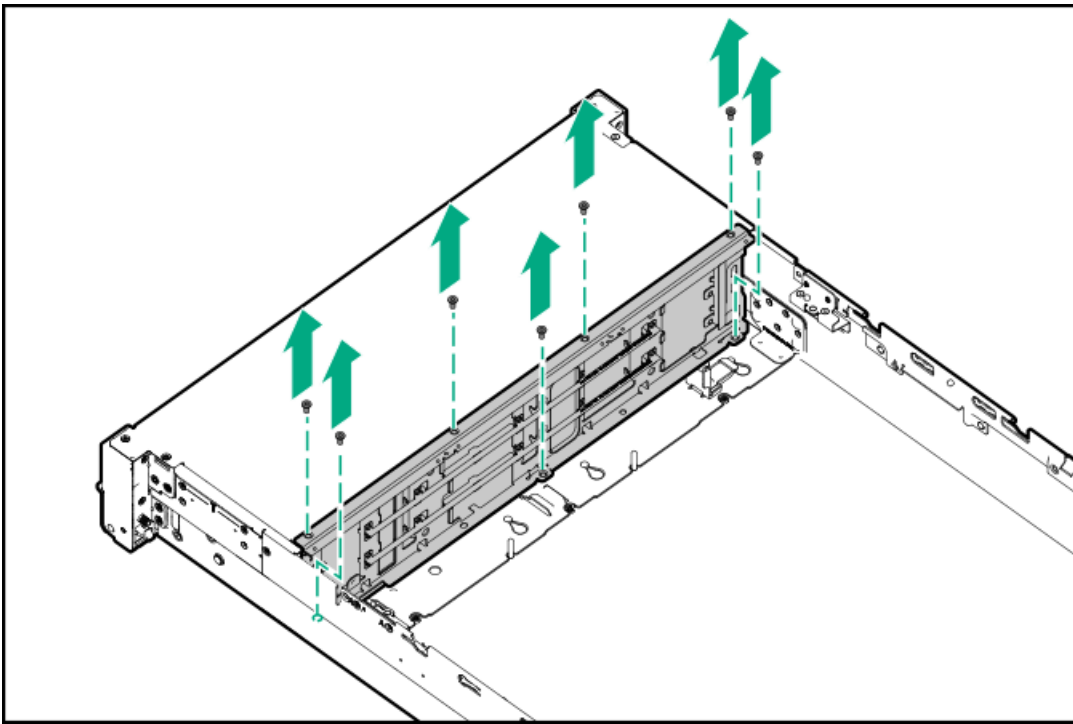
The drive backplane bracket is only present in LFF drive configurations.

Procedure

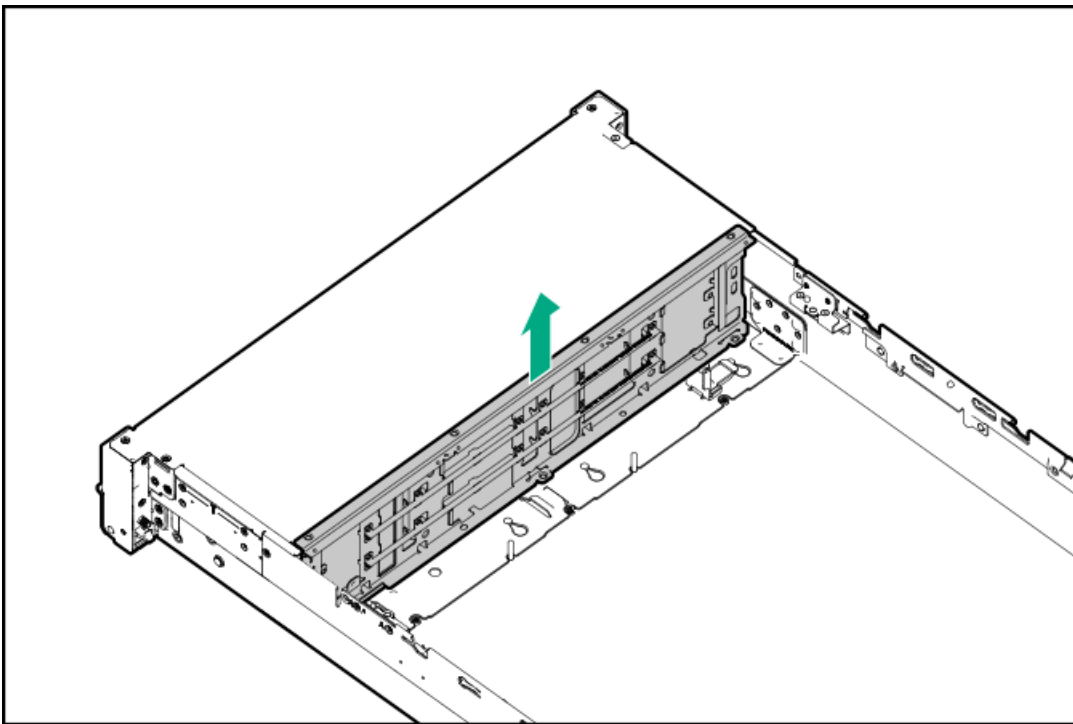
1. Power down the server.
2. If installed, open the cable management arm.



3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Remove the server from the rack .
6. Place the server on a flat, level work surface.
7. Remove the access panel.
8. Remove the fan cage.
9. Remove the midwall bracket.
10. Disconnect all cables from the drive backplanes.
11. Remove the drive backplane bracket screws.



12. Remove the drive backplane bracket from the server.



Remove the rear 4 LFF drive cage

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.

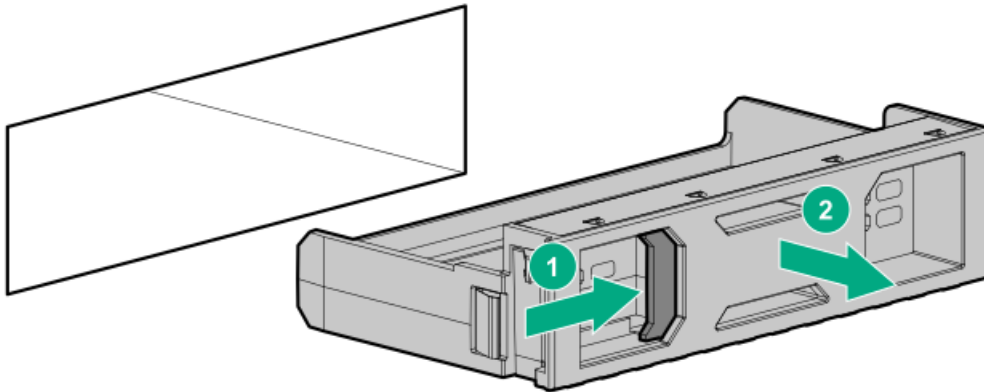


CAUTION: To prevent improper cooling and thermal damage, do not operate the server unless all bays are populated with either a component or a blank.

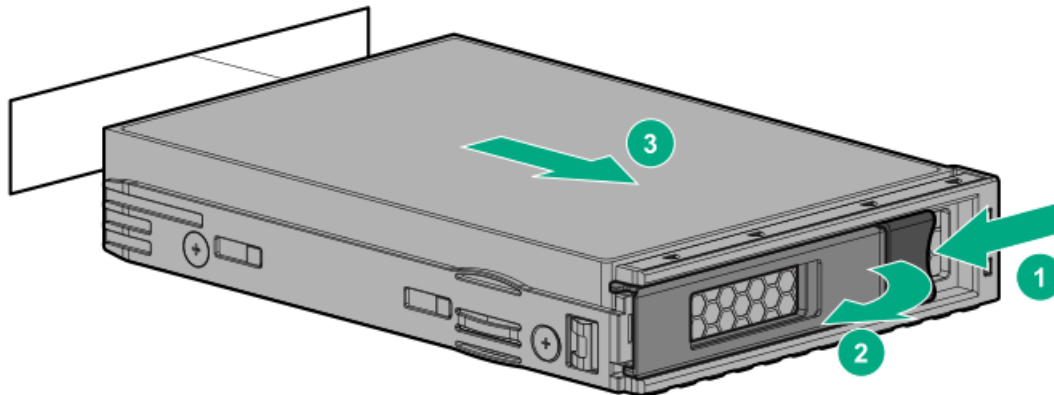
Procedure

1. Remove all drives or drive blanks.

- Drive blank

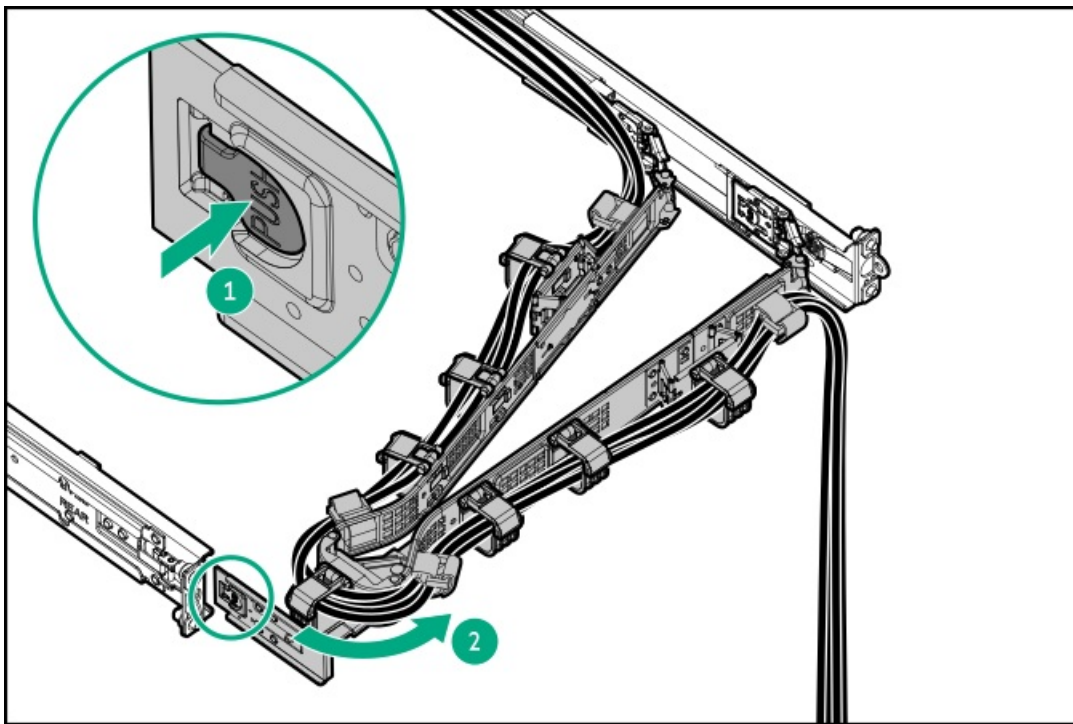


- Drive

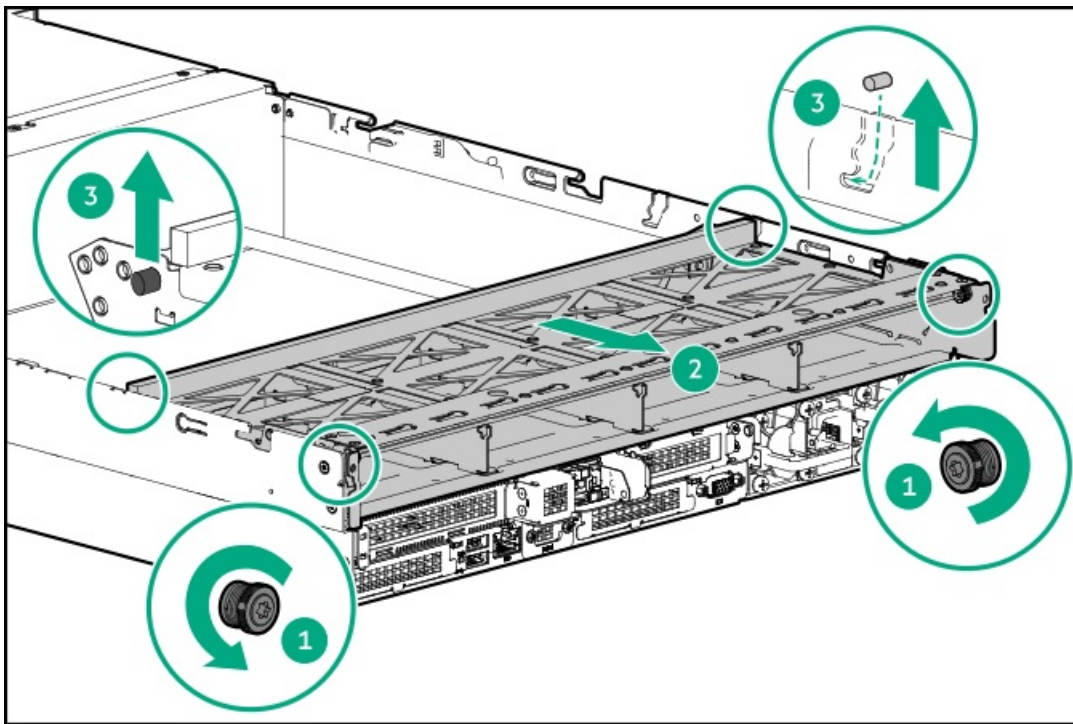


2. Power down the server.

3. If installed, open the cable management arm.



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. Remove the server from the rack.
7. Place the server on a flat, level work surface.
8. Remove the access panel.
9. Disconnect all cables from the rear 4 LFF drive cage.
10. Remove the rear 4 LFF drive cage:
 - a. Loosen the captive screws (callout 1), and then pull the rear 4 LFF drive cage into place (callout 2).
 - b. Lift the rear 4 LFF drive cage (callout 3).



Remove the riser cage

Prerequisites

If removing the three-slot riser cage, make sure that you have a T-15 Torx screwdriver available.

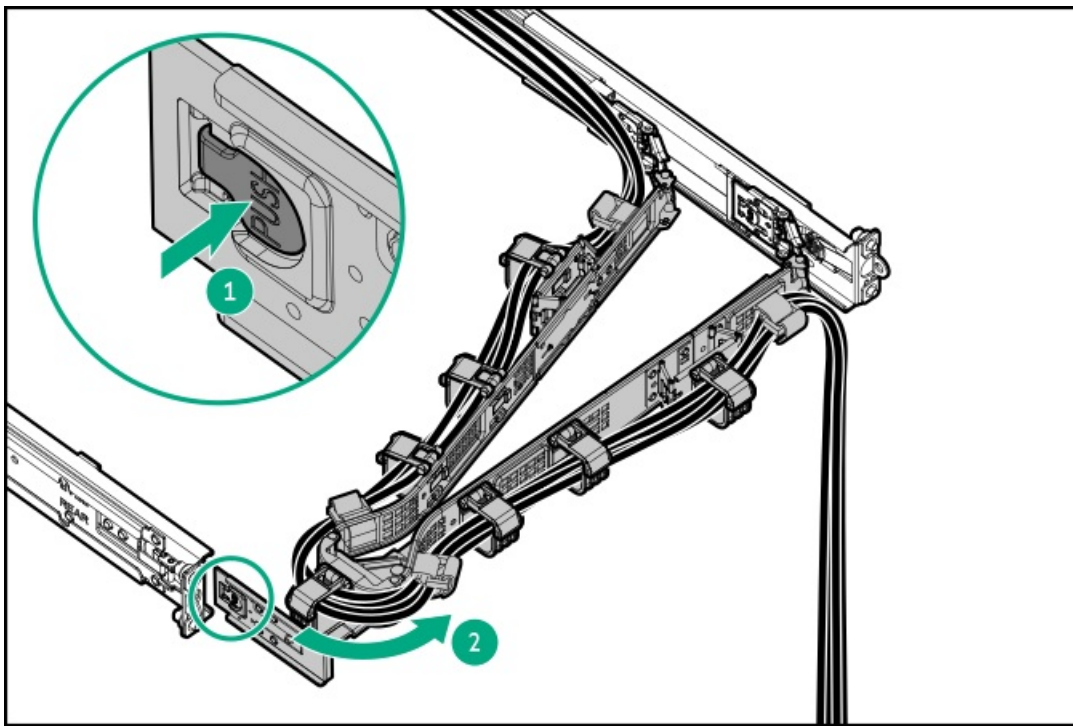
About this task



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

Procedure

1. Power down the server.
2. If installed, open the cable management arm.



3. Remove all power:

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

4. Disconnect all peripheral cables from the server.

5. Remove the server from the rack.

6. Place the server on a flat, level work surface.

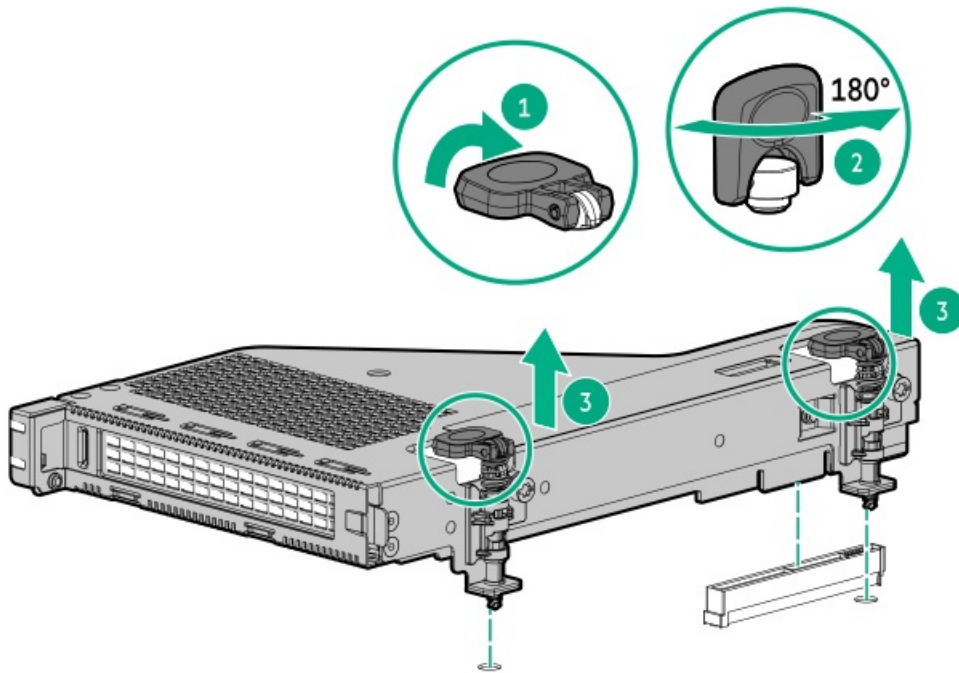
7. Remove the access panel.

8. If the server is in the rear 4 LFF drive configuration, remove the rear 4 LFF drive cage.

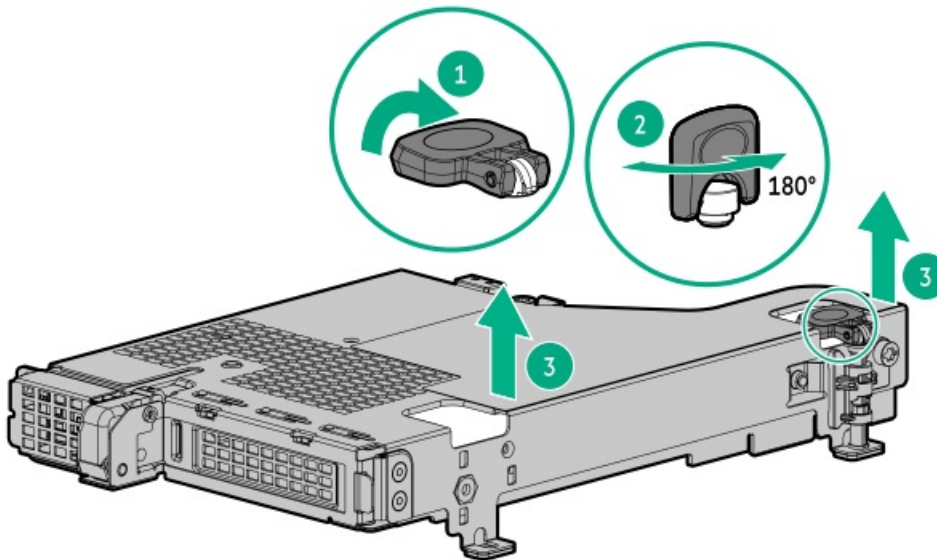
9. If an expansion card with internal cables is installed on the riser, disconnect the cables from the card.

10. Remove the one-slot riser cage:

- a. Release the half-turn spring latch (callouts 1 and 2).
- b. Lift the riser cage off the system board (callout 3).
 - One-slot primary/secondary riser cage



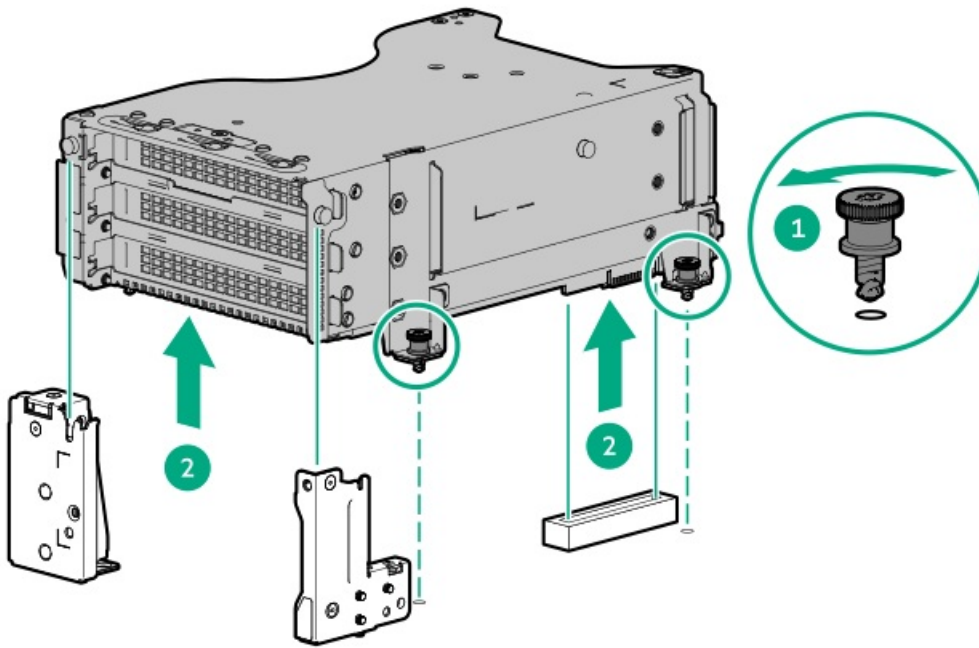
- NS204i-u + secondary low-profile riser cage



11. Remove the three-slot riser cage:

- Loosen the captive screws (callouts 1).
- Lift the riser cage off the system board (callout 2).





Power up the server

About this task

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

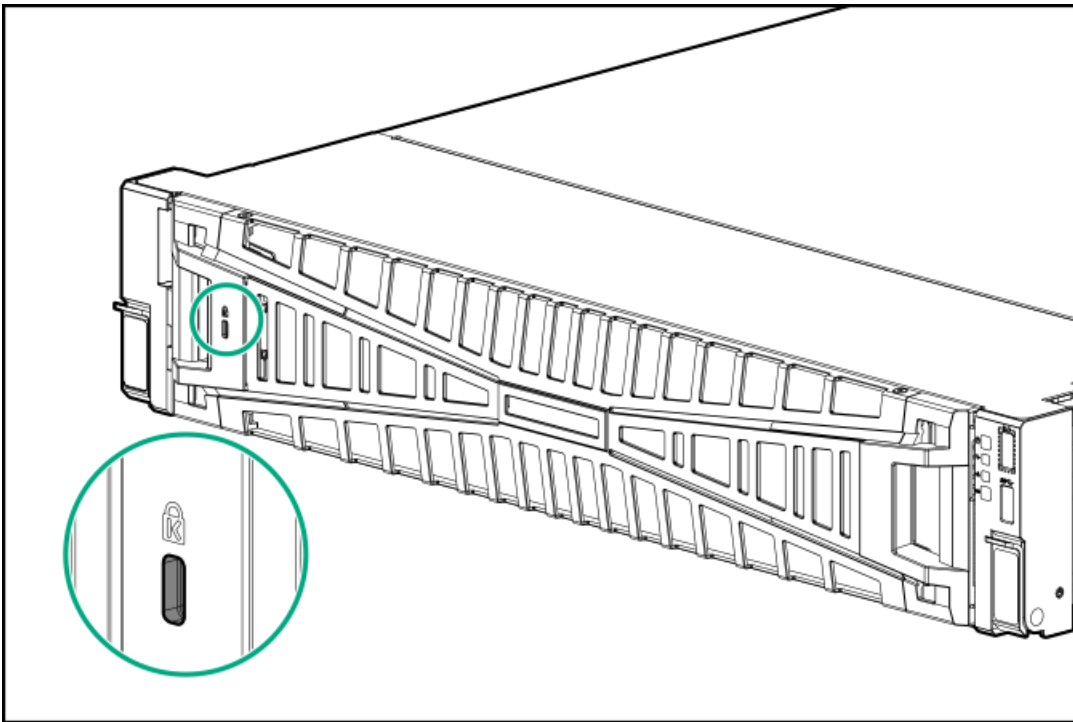
- Press the Power On/Standby button.
- Use the virtual power button through iLO 6.

Removing and replacing the front bezel

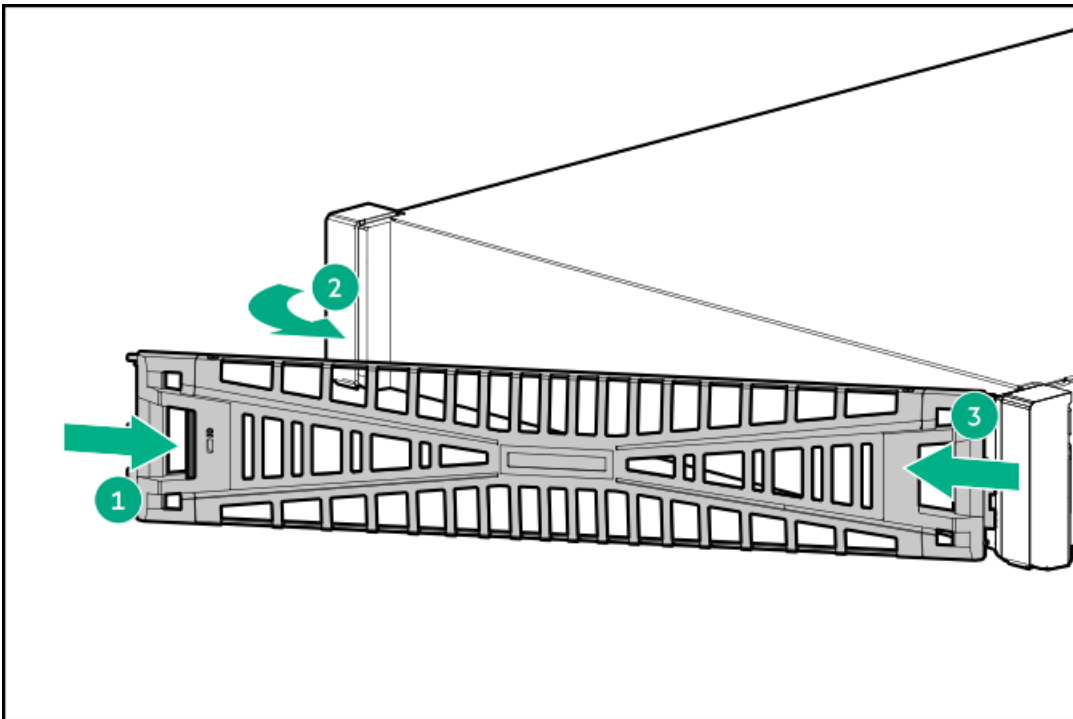
Procedure

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 (callout 3).



Results

To replace the component, reverse the removal procedure.

Removing and replacing the access panel

Prerequisites



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

About this task

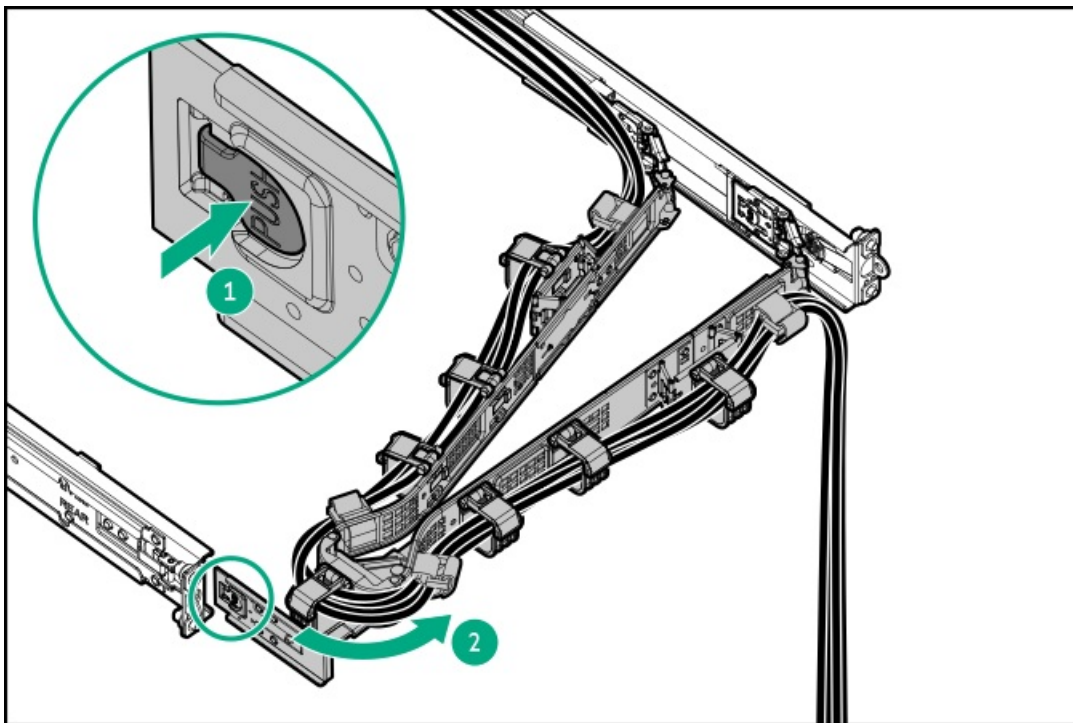
⚠ WARNING: To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

⚠ CAUTION:
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:
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.

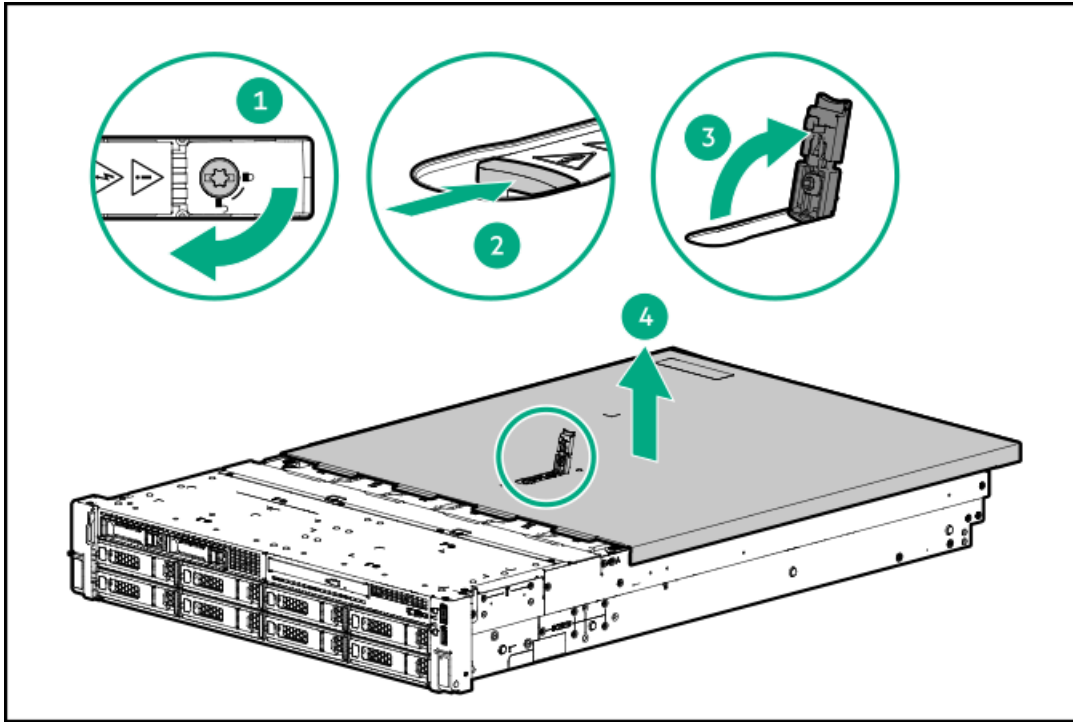
Procedure

1. Power down the server.
2. If installed, open the cable management arm.



3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Do one of the following:
 - Extend the server out of the rack.
 - Remove the server from the rack.
6. Remove the access panel:
 - a. If necessary, unlock the access panel latch (callout 1).

- b. To disengage the access panel from the chassis, press the release button and pull up the latch (callouts 2 and 3).
- c. Lift the access panel (callout 4).



Results

To replace the component, reverse the removal procedure.

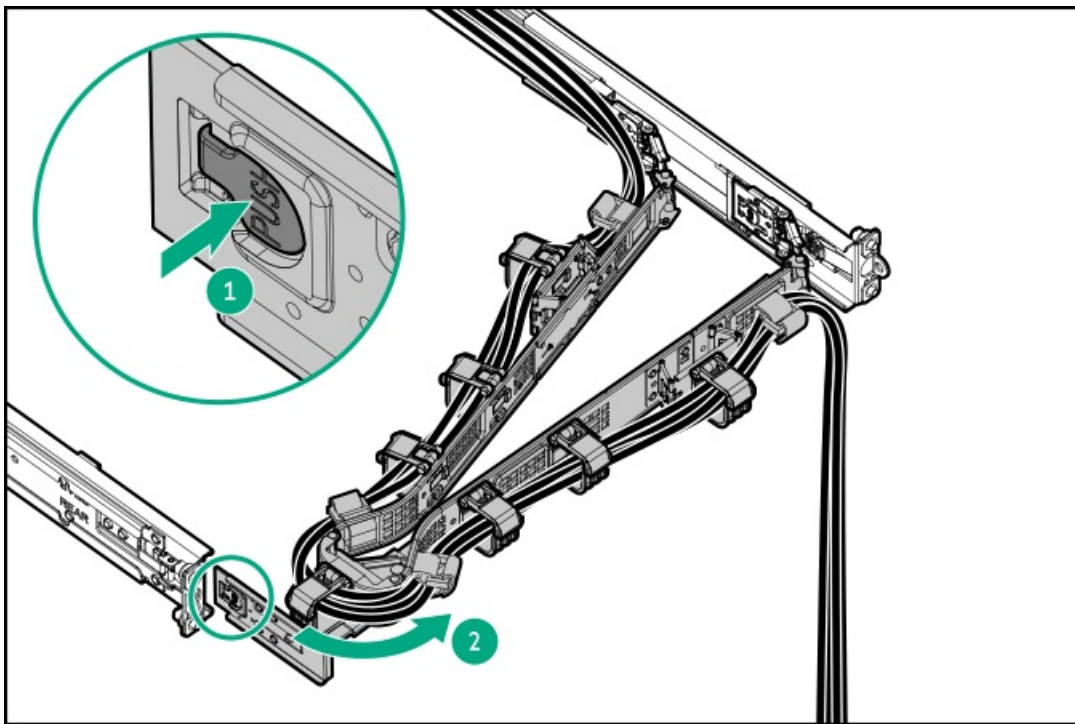
Removing and replacing the air baffle

About this task

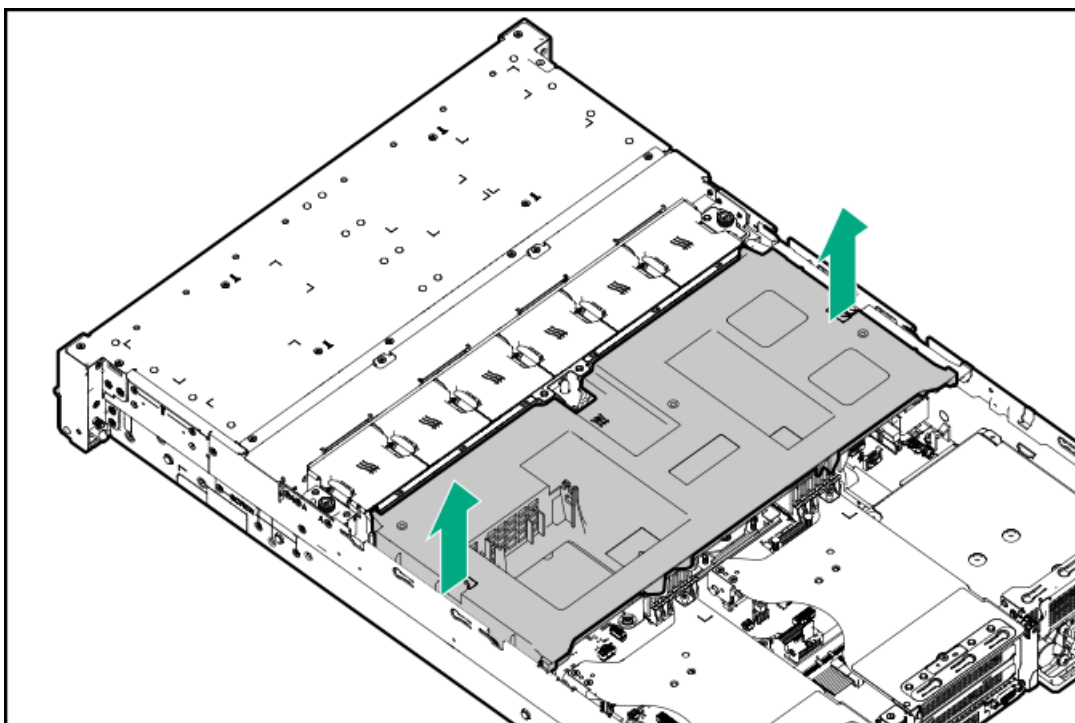
CAUTION: For proper cooling, do not operate the server without the access panel, baffles, expansion slot covers, or blanks installed. If the server supports hot-plug components, minimize the amount of time the access panel is open.

Procedure

1. Power down the server.
2. If installed, open the cable management arm.



3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Do one of the following:
 - Extend the server from the rack.
 - Remove the server from the rack.
6. Remove the access panel
7. Use the blue finger hooks to lift the air baffle away from the chassis. .



Results

To replace the component, reverse the removal procedure.

Removing and replacing the SFF drive box blank

Prerequisites

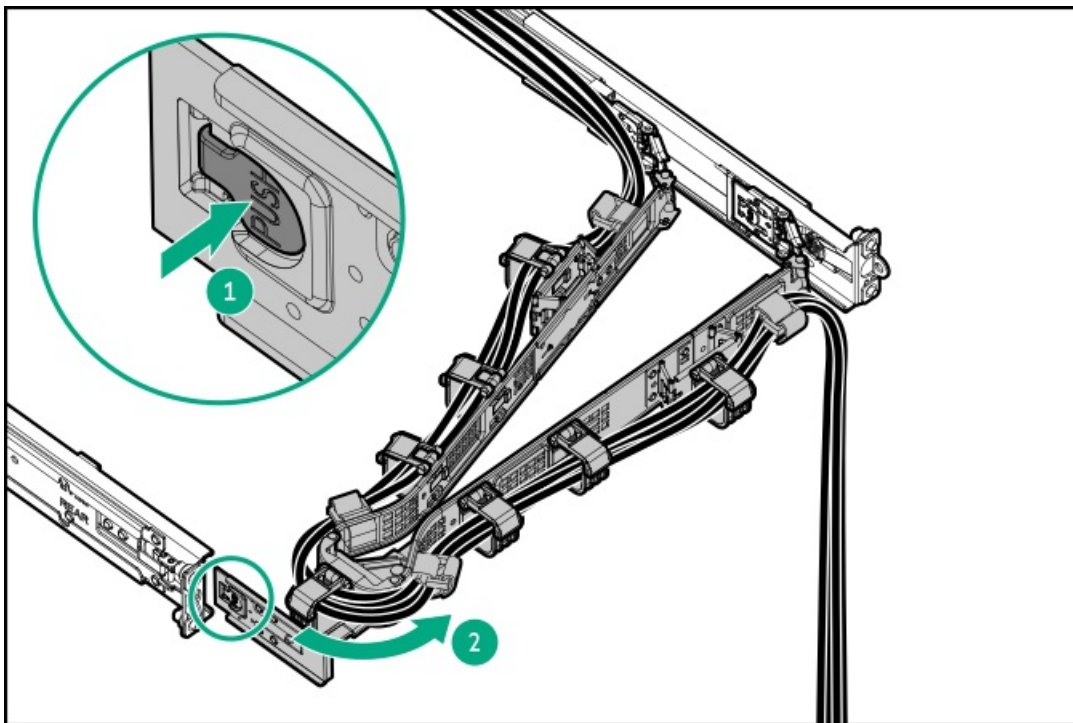
Before you perform this procedure, make sure that you have a T-15 Torx screwdriver available.

About this task

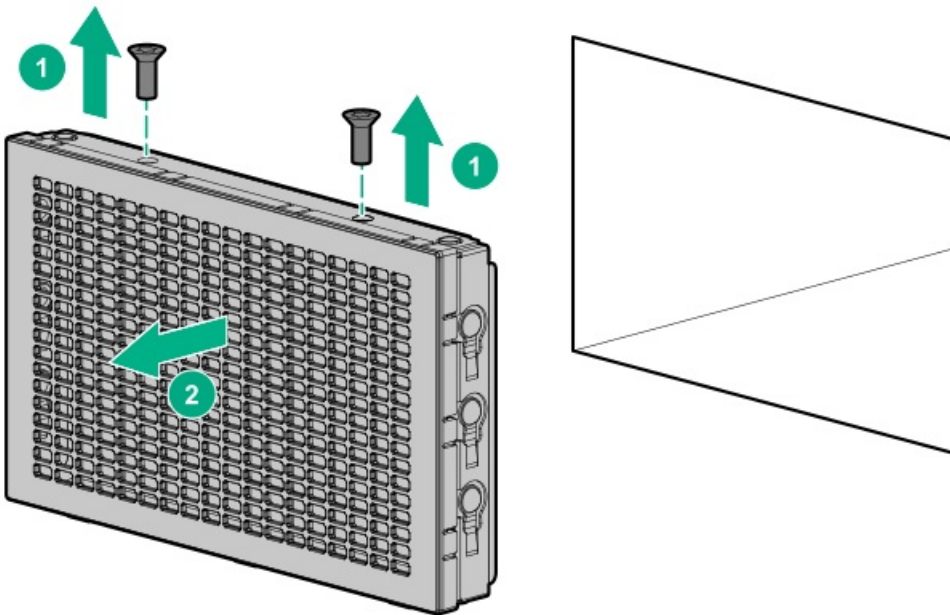
CAUTION: To prevent improper cooling and thermal damage, do not operate the server unless all bays are populated with either a component or a blank.

Procedure

1. If installed, remove the front bezel.
2. Power down the server.
3. If installed, open the cable management arm.



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. Remove the drive box blank:
 - a. Remove the drive box blank screws (callout 1).
 - b. Remove the drive box blank (callout 2).



Results

To replace the component, reverse the removal procedure.

Removing and replacing the LFF drive box 1 blank

Prerequisites

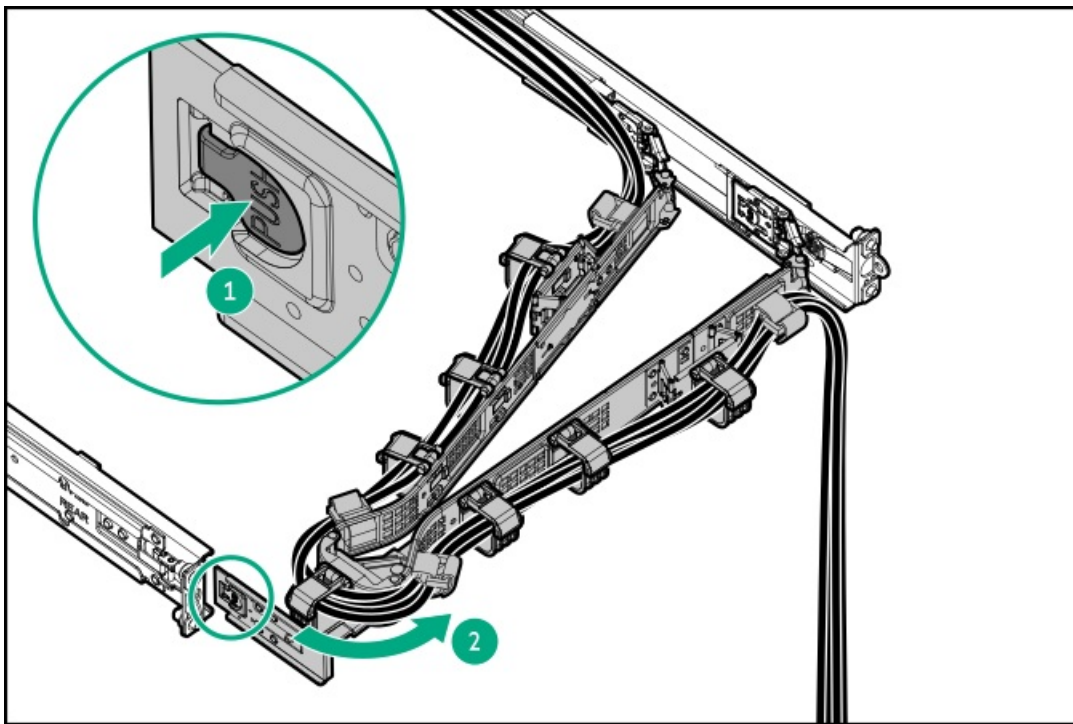
Before you perform this procedure, make sure that you have a spudger or any small prying tool available.

About this task

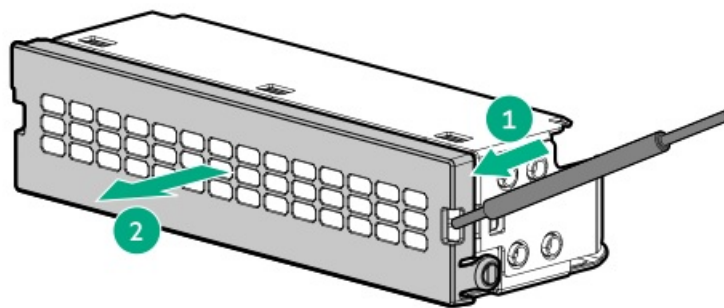
CAUTION: To prevent improper cooling and thermal damage, do not operate the server unless all bays are populated with either a component or a blank.

Procedure

1. If installed, remove the front bezel.
2. Power down the server.
3. If installed, open the cable management arm.



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. Use a plastic spudger to pry one side of the blank from the chassis.



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 rack.



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.2 screwdriver available.
 - Identify the wire color and corresponding wire slots on the DC power supply:

Wire color	Description	Wire slot
Red	Positive return wire	RTN
Black	Negative input wire	-48V
Green + yellow	Ground wire	Ground

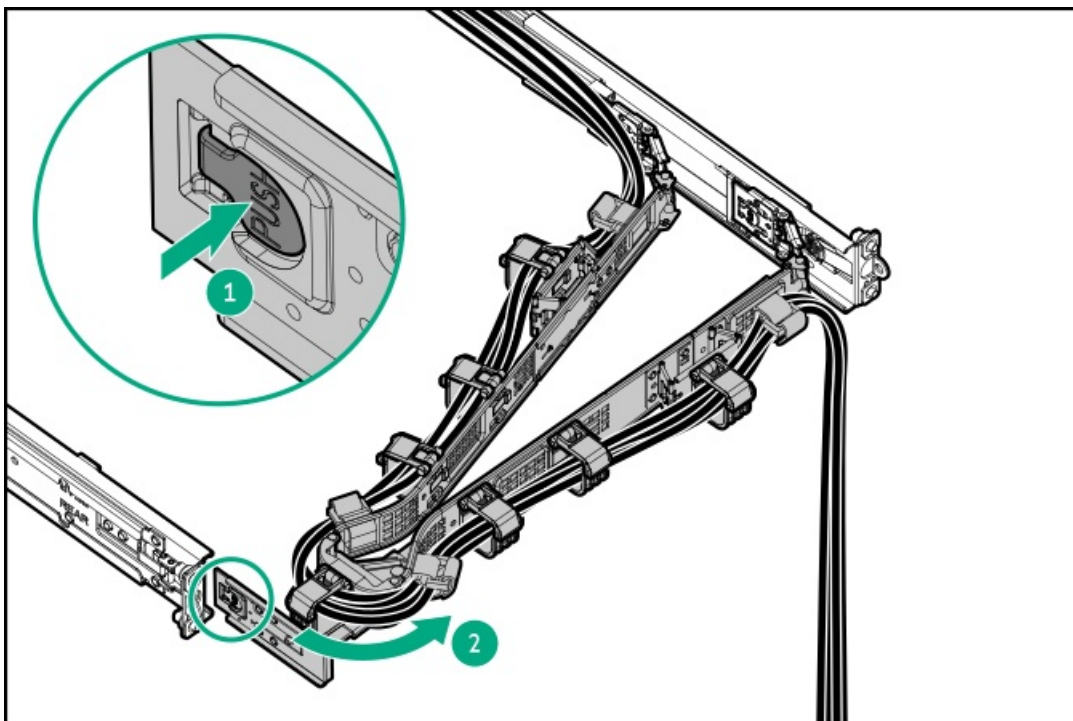
About this task

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

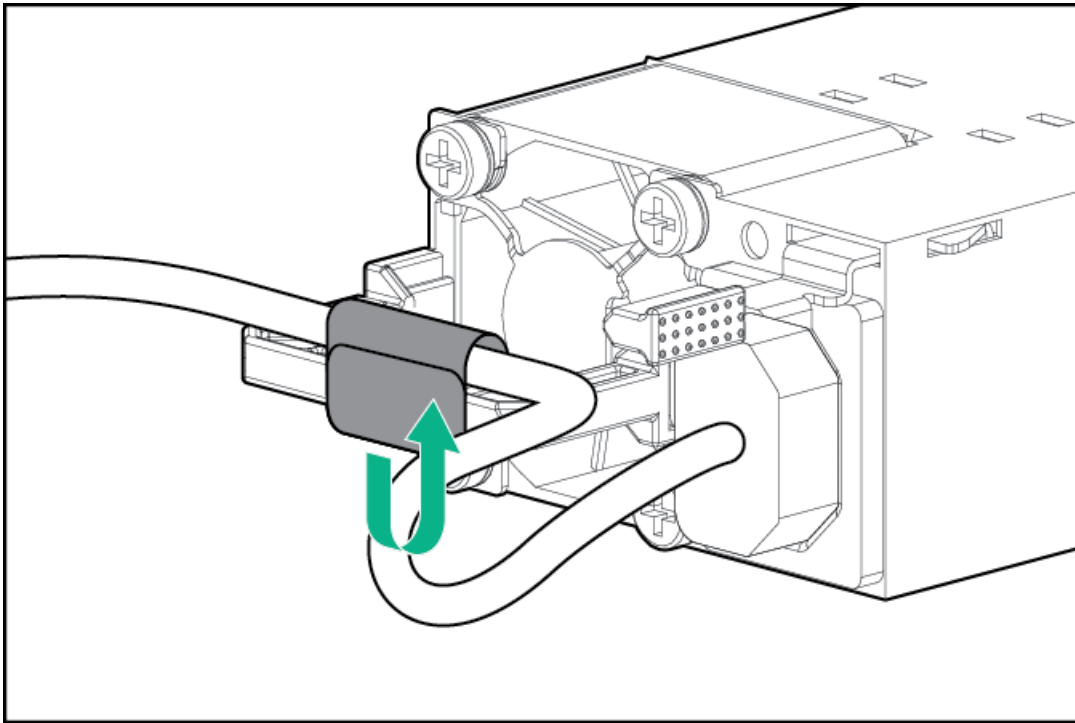
CAUTION: To prevent improper cooling and thermal damage, do not operate the server unless all bays are populated with either a component or a blank.

Procedure

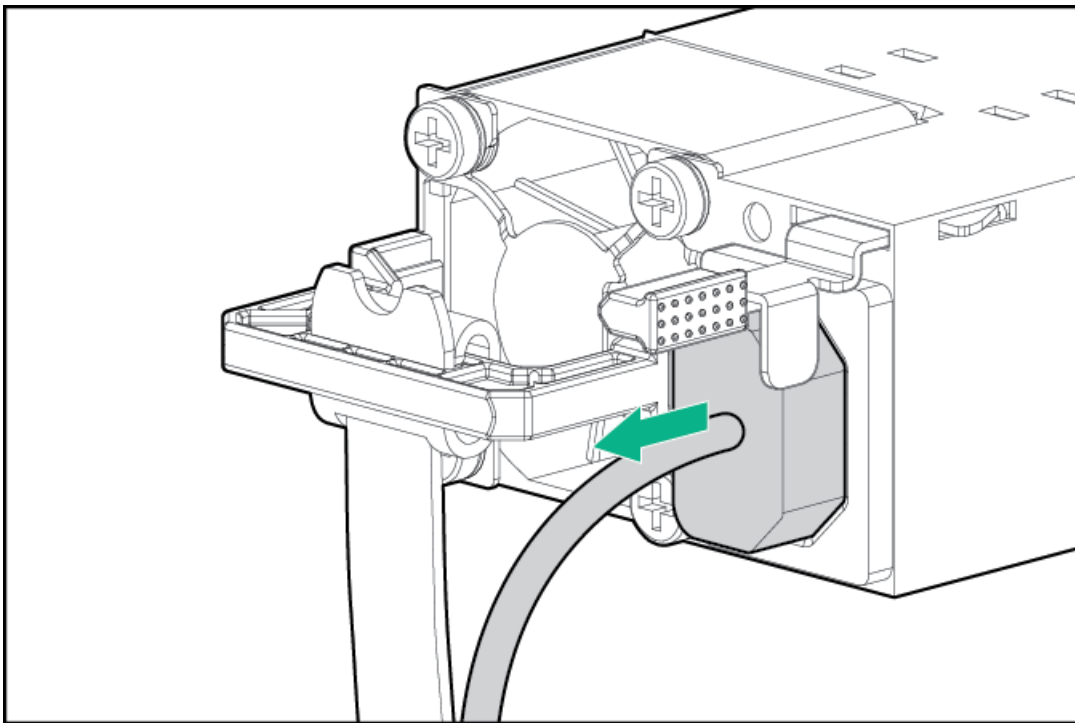
1. [Power down the server.](#)
2. If installed, open the cable management arm.



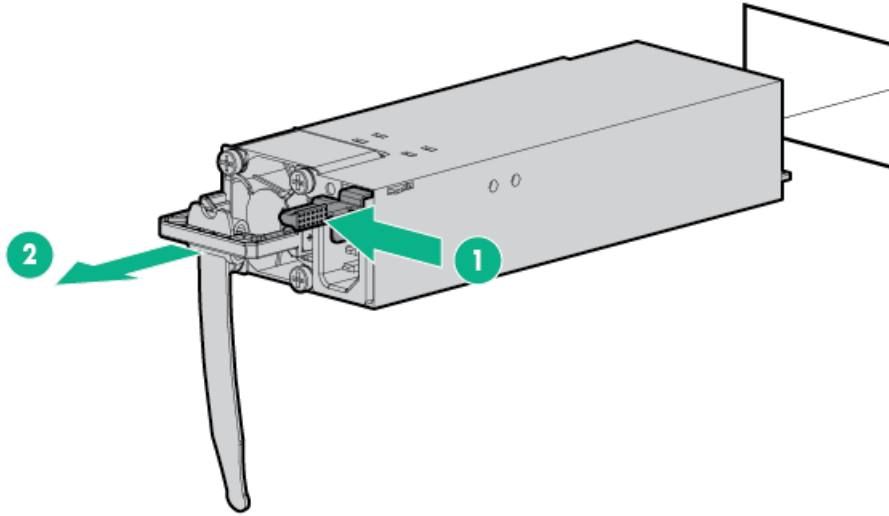
3. To remove an AC power supply, do the following:
 - a. Release the power cords, wires, and cables from the strain relief strap.



b. Disconnect the power cord from the power supply.

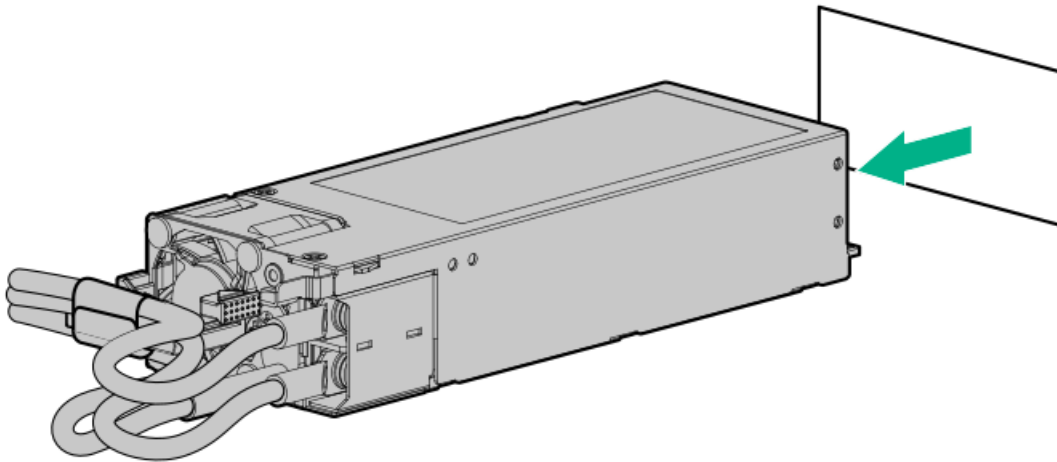


c. Remove the power supply.

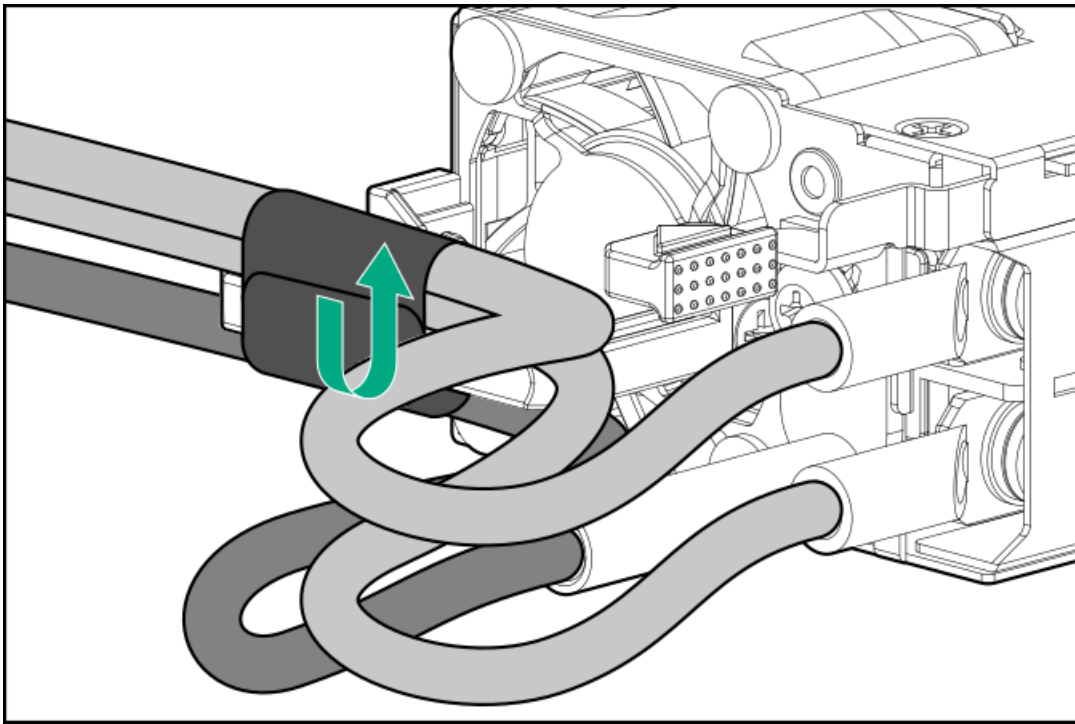


4. To remove the DC power supply, do the following:

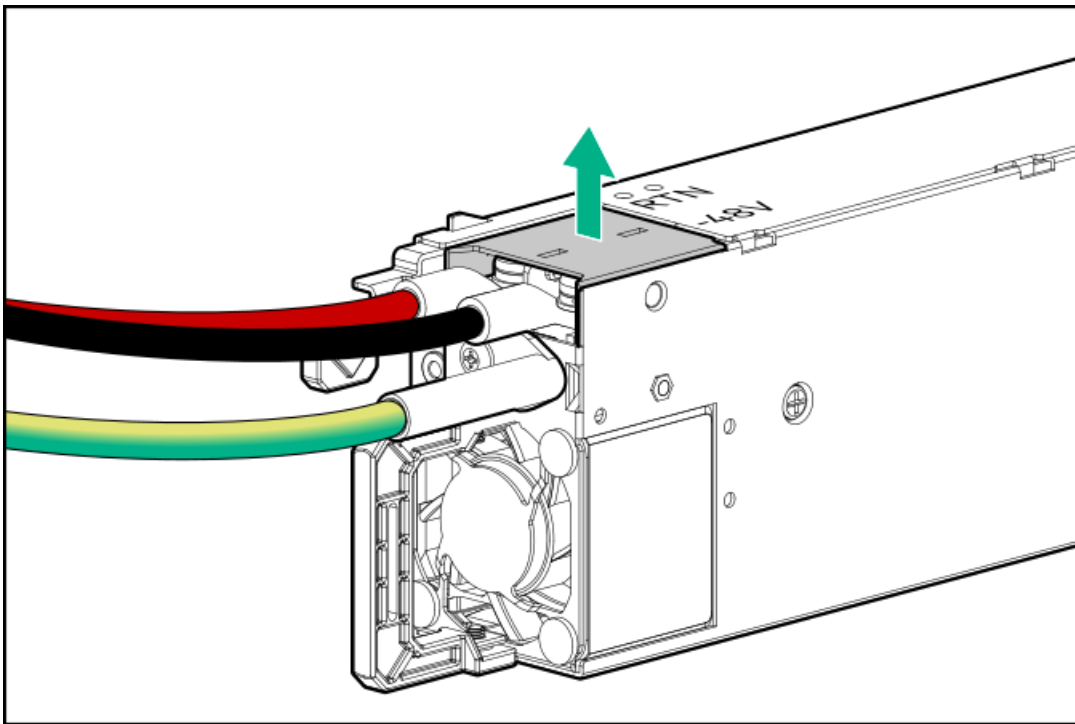
- a. Remove the power supply.



- b. Release the ground, positive return, and negative input wires from the strain relief strap.

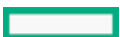


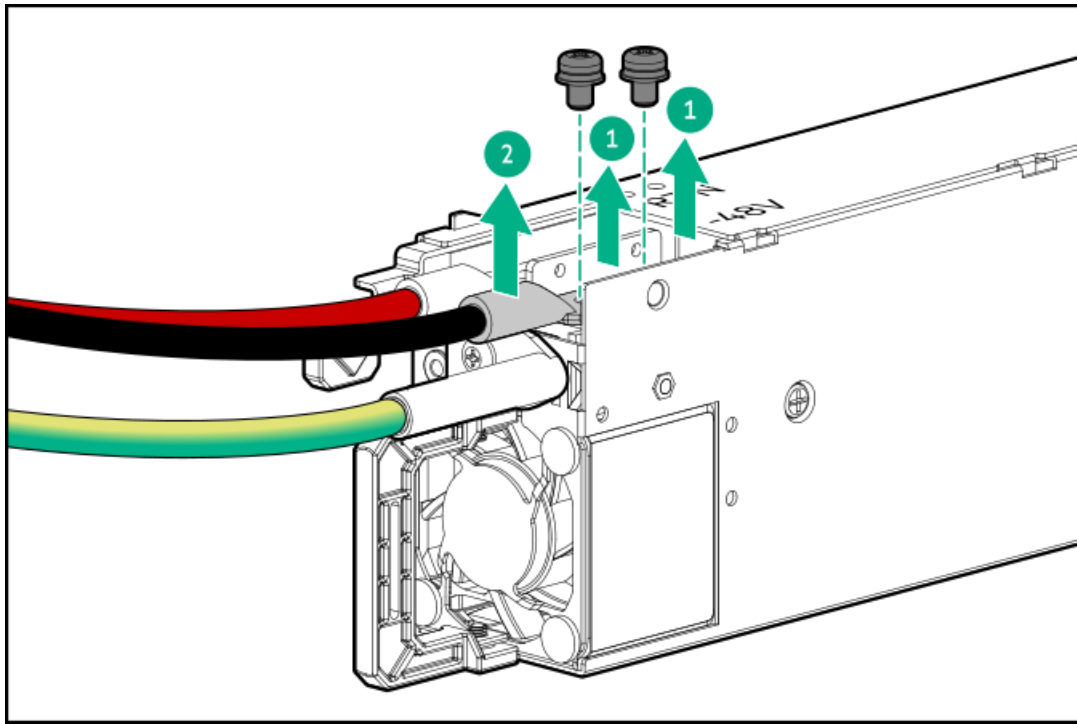
c. Remove the protective cover from the power supply.



d. Remove the negative input wire (black) from the -48V slot on the DC power supply.

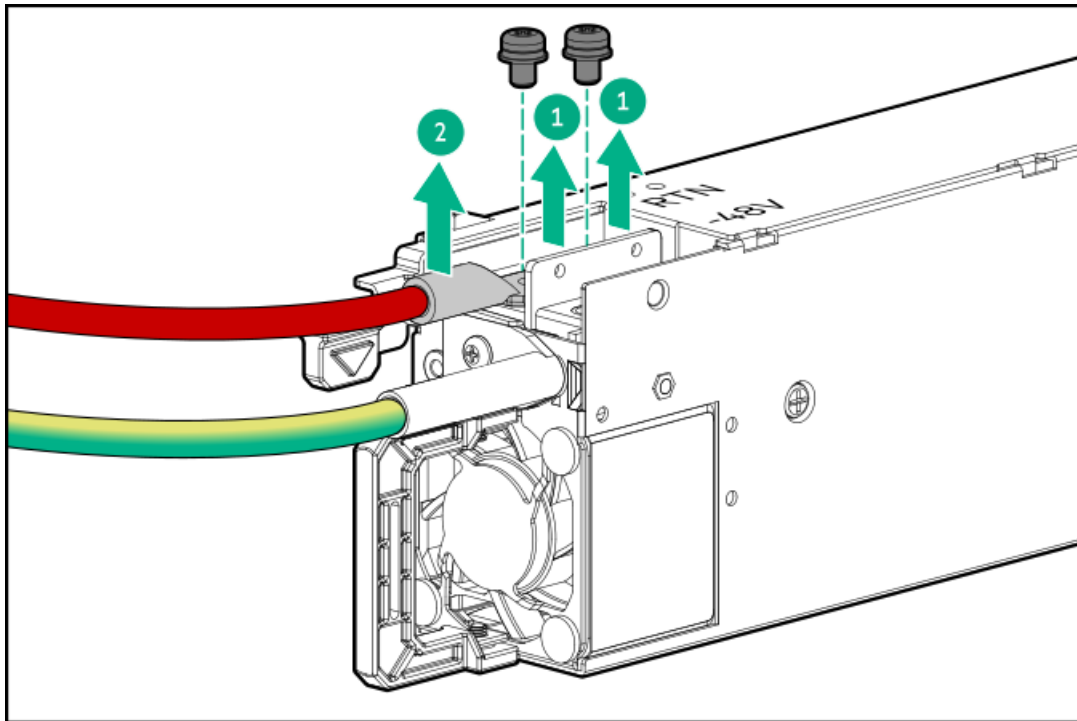
Retain the screws and wire. These screws will be used to secure the wire on the new DC power supply spare.





- e. Remove the positive return wire (red) from the RTN slot on the DC power supply.

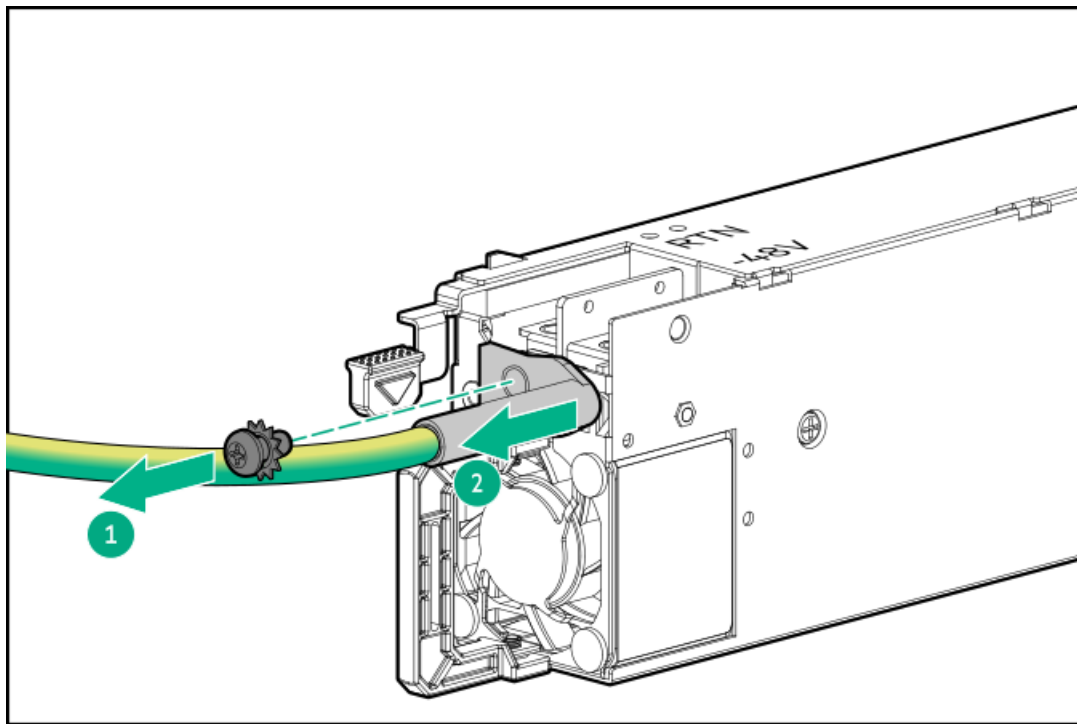
Retain the screws and wire. These screws will be used to secure the wire on the new DC power supply spare.



- f. Remove the ground wire (green and yellow) from the DC power supply.

Retain the screw and wire. This screw will be used to secure the wire on the new DC power supply spare.





Results

To replace the component, reverse the removal procedure.

Removing and replacing a hot-plug SAS, SATA or NVMe drive

About this task



CAUTION:

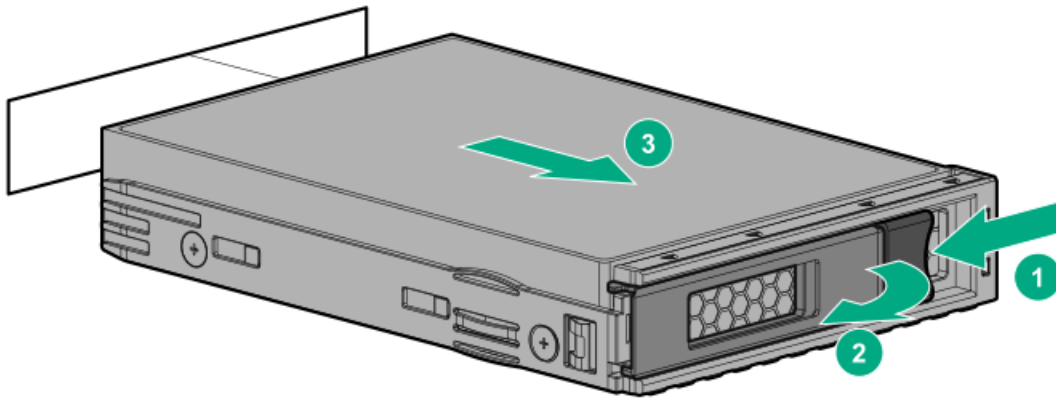
A discharge of static electricity from a finger or other conductor might damage system boards or other static-sensitive devices. To prevent damage, observe [antistatic precautions](#).



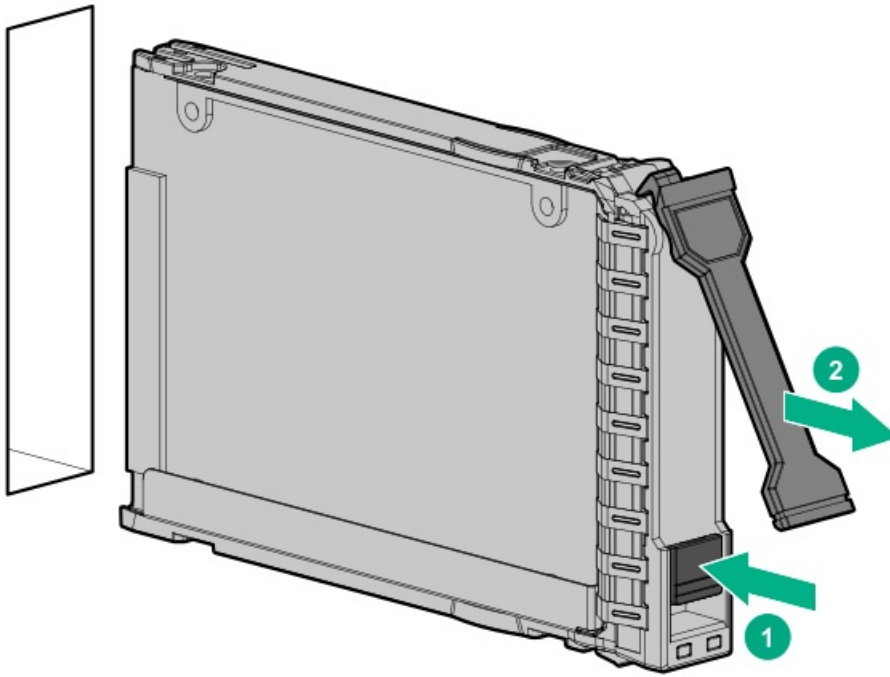
CAUTION: To prevent improper cooling and thermal damage, do not operate the server unless all bays are populated with either a component or a blank.

Procedure

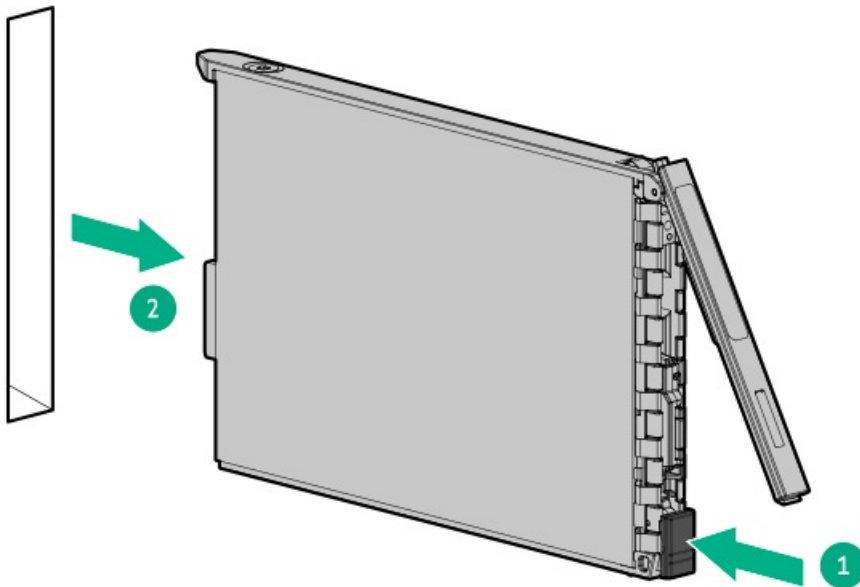
1. Back up all server data.
2. If installed, [remove the front bezel](#).
3. [Observe the drive LED status](#) and determine if the drive can be removed.
4. Remove the drive.
 - LFF drive



- SFF drive



- E3.S drive



Results

To replace the component, reverse the removal procedure.

Removing and replacing the cable management arm

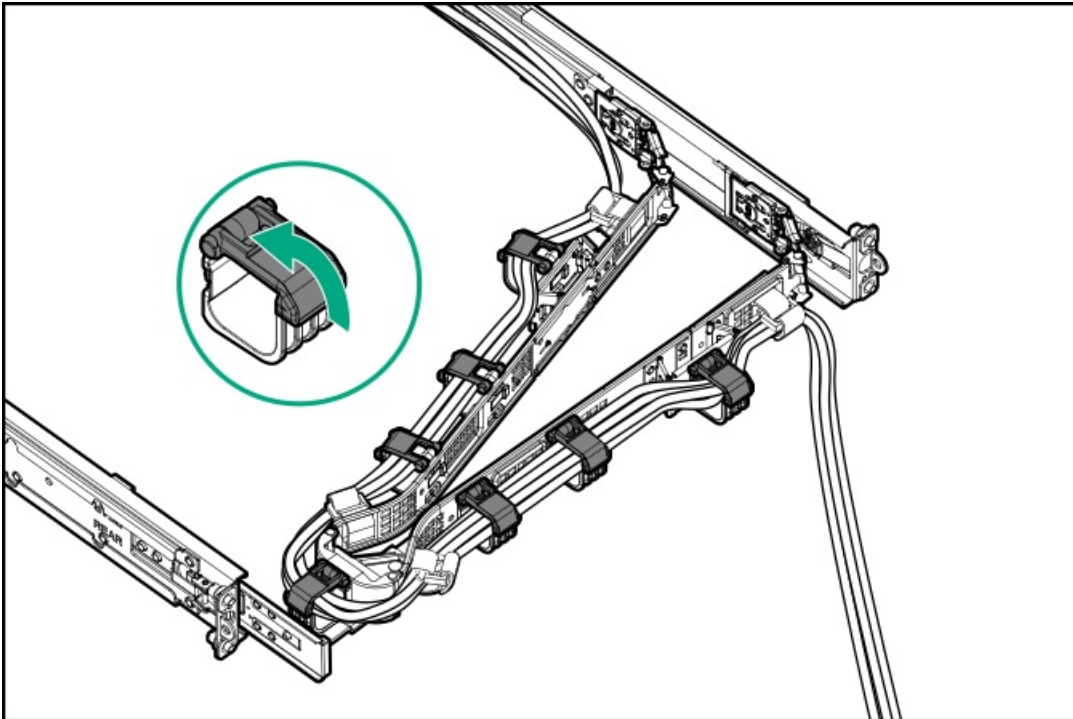
About this task

CAUTION:

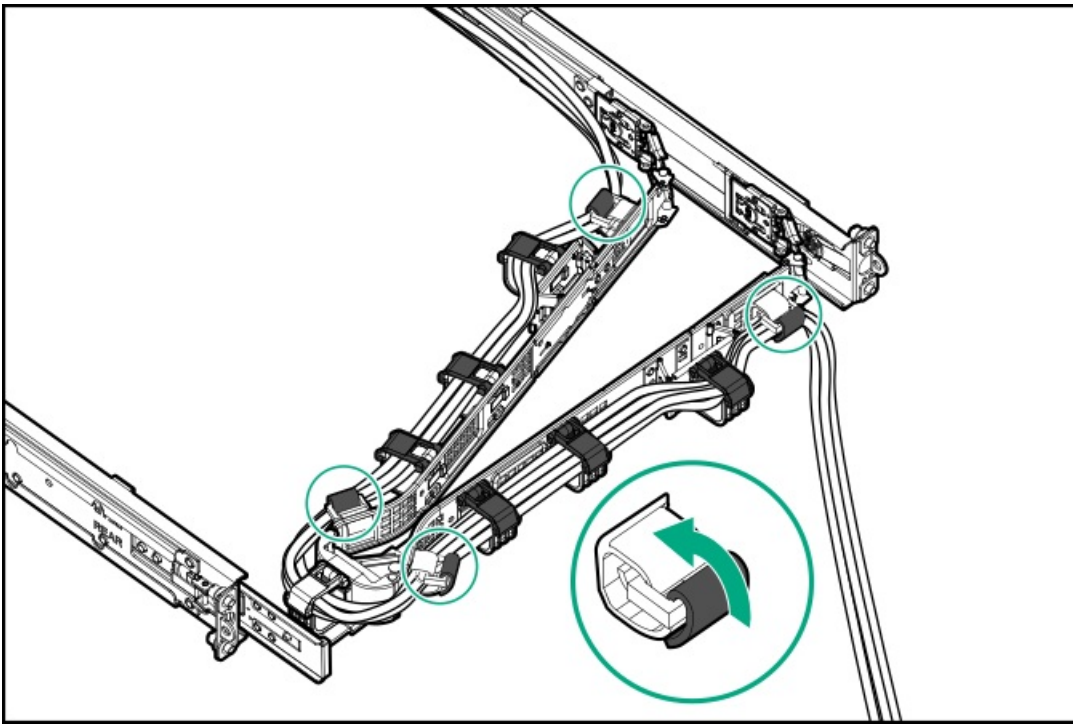
Support the CMA during the removal and replacement procedures. Do not allow the CMA to hang by its own weight during the procedure.

Procedure

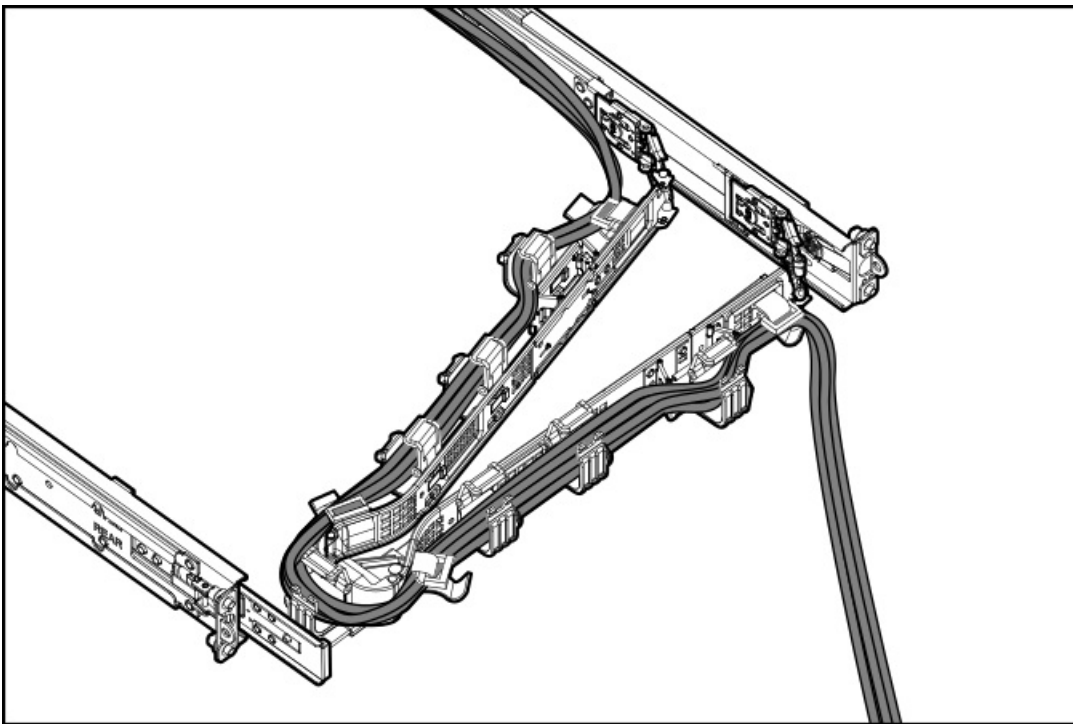
1. Open the cable clamps.



2. (Optional) If your CMA has cable straps, unwrap the straps.

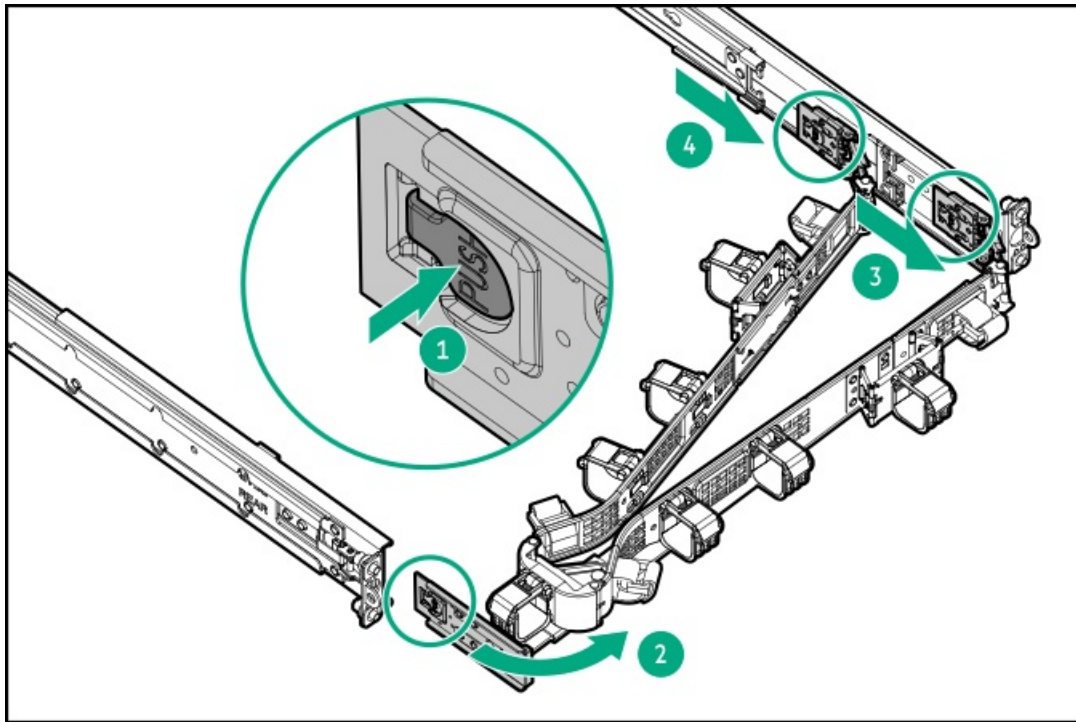


3. Remove the peripheral cables and power cords from the CMA.



4. Remove the cable management arm:

- a. Press and hold the blue **PUSH** button on the retention bracket (callout 1).
- b. Swing the arm away from the mounting rail (callout 2).
- c. Press and hold the blue **PUSH** buttons on the outer and inner tabs and detach from the rack rails (callouts 3 and 4).



Results

To replace the component, reverse the removal procedure.

Removing and replacing a DIMM

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:

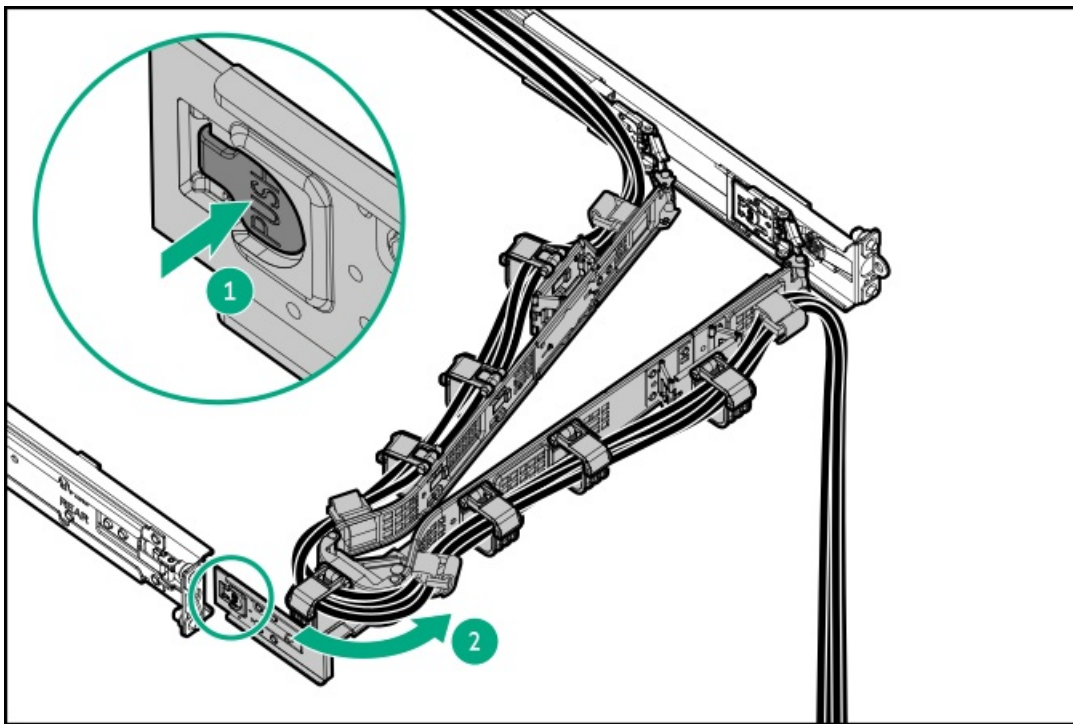
Before replacing a DIMM, backplane, expansion card, riser board, or other similar PCA components due to a perceived hardware error, make sure first that the component is firmly seated in the slot.

When installing the replacement component:

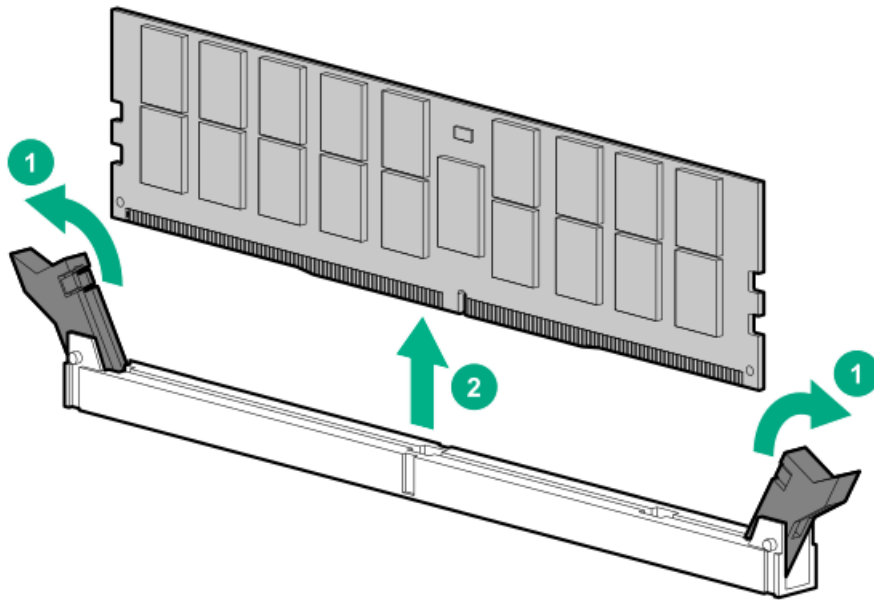
- Observe [antistatic precautions](#).
- Handle the PCA only along the edges.
- Do not touch the components and connectors on the PCA.
- Do not bend or flex the PCA.

Procedure

1. Back up all server data.
2. [Power down the server](#).
3. If installed, open the cable management arm.



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. Remove the server from the rack.
7. Place the server on a flat, level work surface.
8. Remove the access panel.
9. Do one of the following:
 - a. Remove the air baffle.
 - b. Remove the midplane drive cage.
10. Remove the DIMM.
 - a. Open the DIMM slot latches (callout 1).
 - b. Lift the DIMM out of the slot (callout 2).



Results

To replace the component, reverse the removal procedure.

Removing and replacing a power supply blank

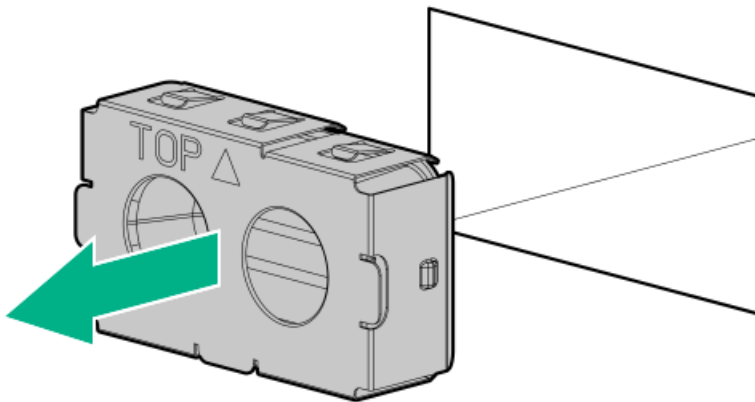
About this task

WARNING: To reduce the risk of personal injury from hot surfaces, allow the power supply, power supply blank, or dual slot power supply adapter 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.

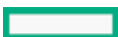
Procedure

Remove the power supply blank from the bay.



Results

To replace the component, reverse the removal procedure.



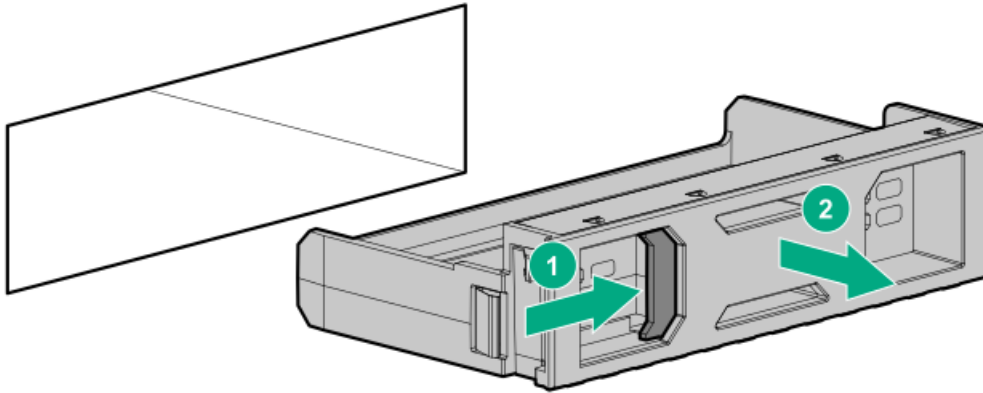
Removing and replacing the drive blank

About this task

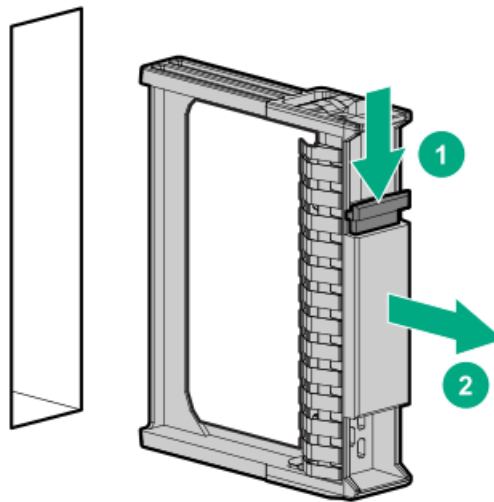
CAUTION: To prevent improper cooling and thermal damage, do not operate the server unless all bays are populated with either a component or a blank.

Procedure

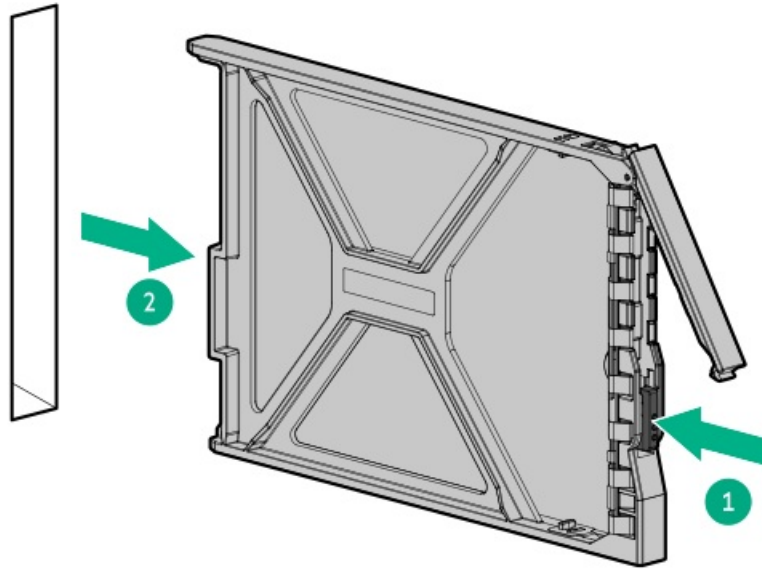
1. If installed, remove the front bezel.
2. Remove the drive blank.
 - LFF drive blank



- SFF drive blank



- E3.S drive blank



Results

To replace the component, reverse the removal procedure.

Removing and replacing a fan

About this task

CAUTION: To maintain proper system cooling, do not operate the server for long period with the access panel open or removed. Operating the server in this manner results in an improper system airflow. For internal hot-plug component procedures, complete the procedure within 60 seconds. Failure to do so can cause the system temperature to increase and trip the safety threshold. When this happens:

- The health LED flashes amber.
- The operating system gracefully shuts down.

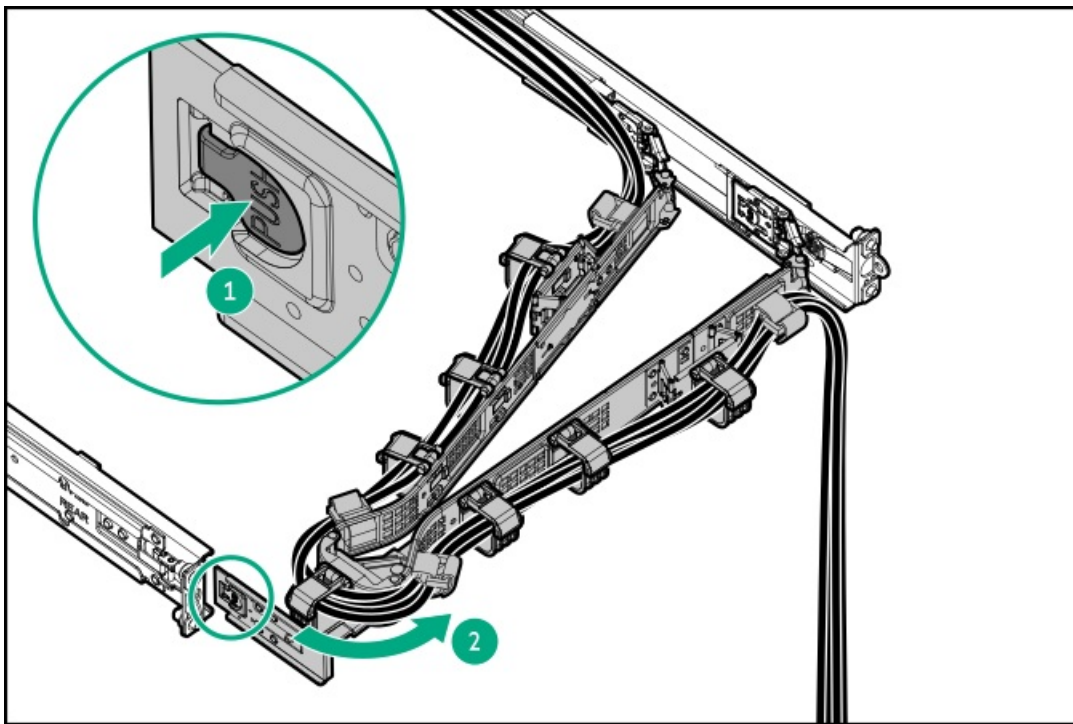
CAUTION: To prevent improper cooling and thermal damage, do not operate the server unless all bays are populated with either a component or a blank.

IMPORTANT:

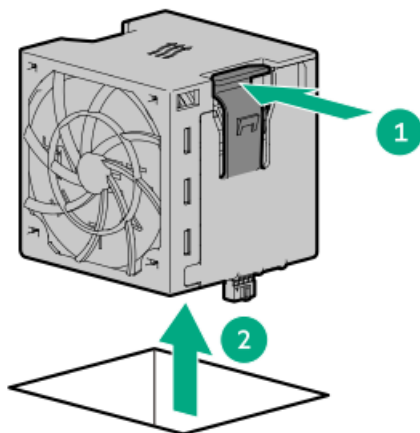
The fan setup can either be standard, single-rotor fans or high-performance, dual-rotor fans. Do not mix fan types in the same server.

Procedure

1. If installed, open the cable management arm.



2. Extend the server from the rack.
3. Remove the access panel.
4. Remove the fan:
 - a. Press and hold the latch (callout 1).
 - b. Lift the fan from the fan cage (callout 2).



Results

To replace the component, reverse the removal procedure.

Removing and replacing a cable guard

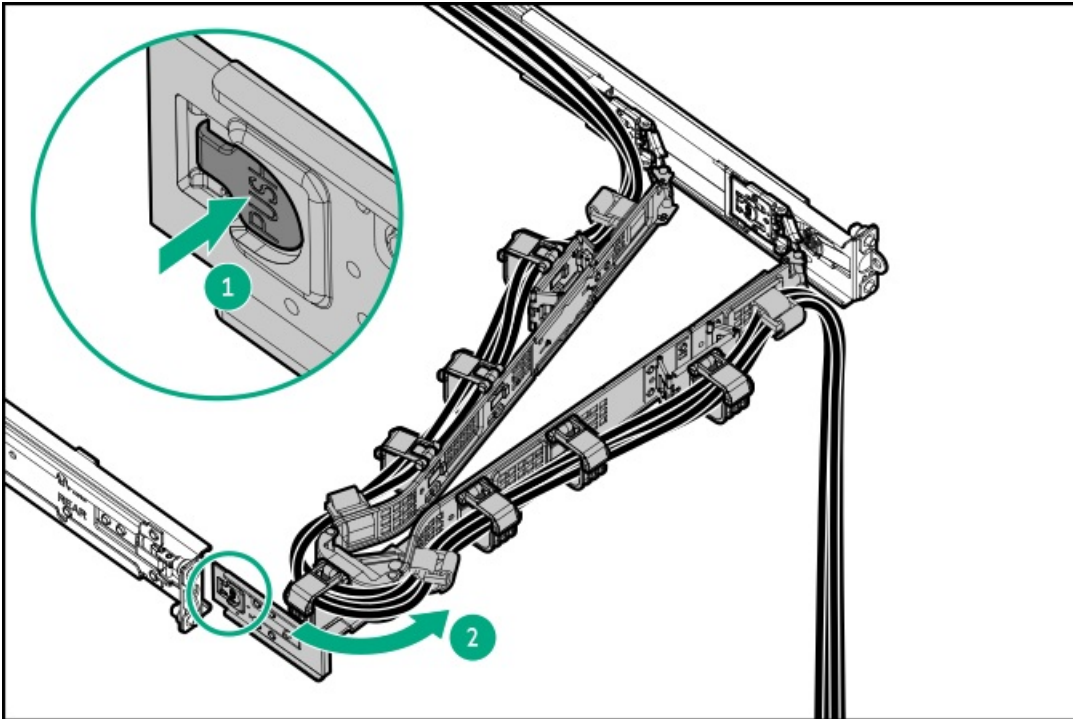
Prerequisites

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

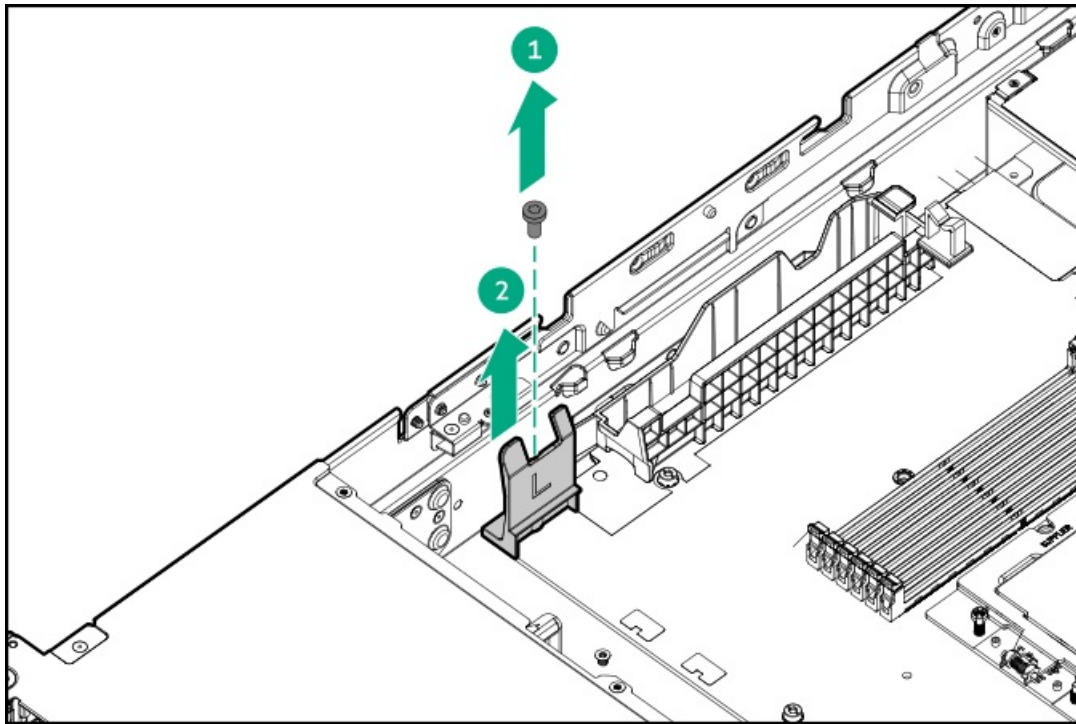
Procedure



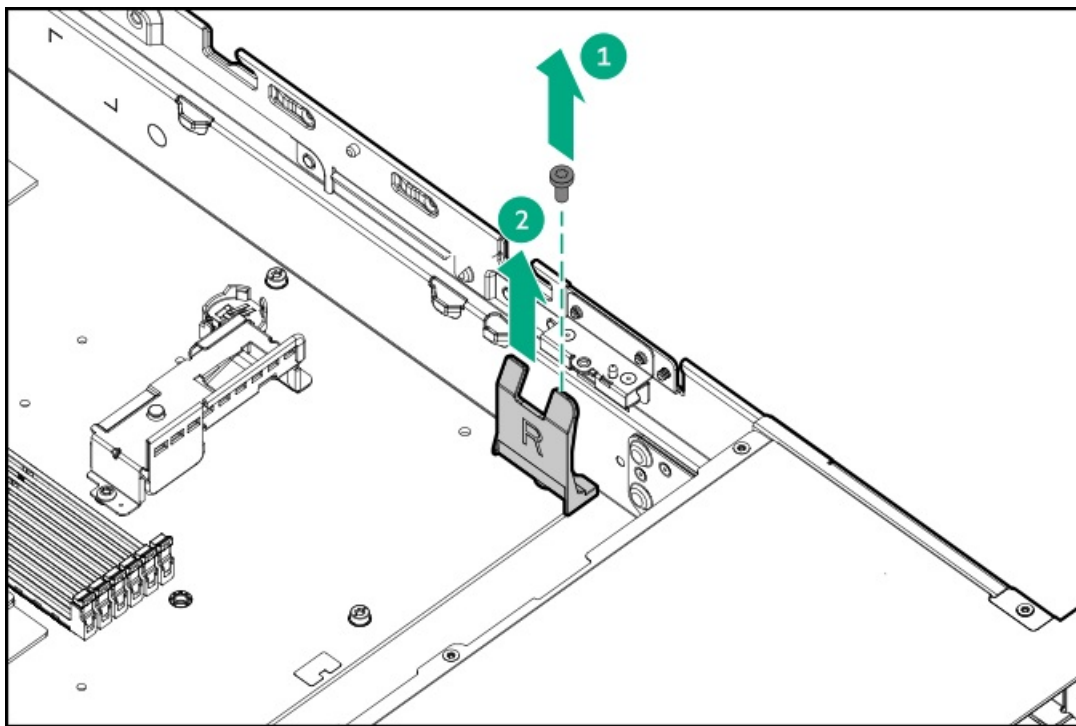
1. Power down the server.
2. If installed, open the cable management arm.



3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Remove the server from the rack.
6. Place the server on a flat, level work surface.
7. Remove the access panel.
8. Remove the fan cage.
9. Remove the cable guards.
 - Left



- Right



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 screwdriver available.

About this task

⚠ CAUTION:

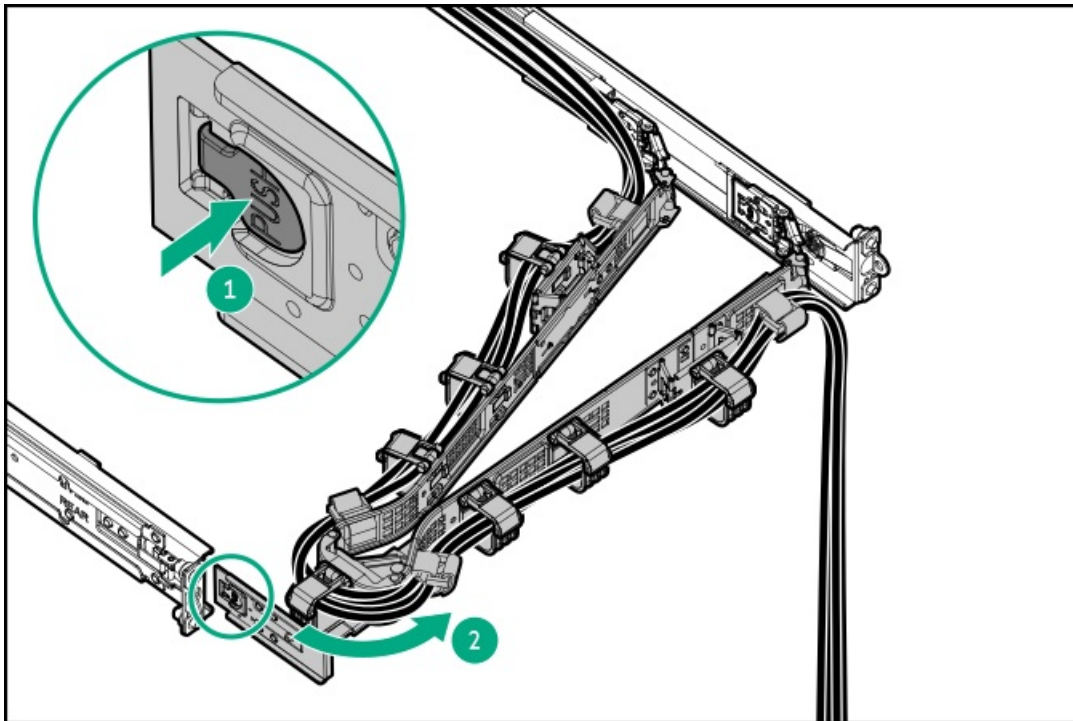
A discharge of static electricity from a finger or other conductor might damage system boards or other static-sensitive devices. To prevent damage, observe [antistatic precautions](#).

⚠ CAUTION:

The port blank provides EMI shielding and helps maintain proper thermal status inside the server. Do not operate the server when a port blank is removed without the corresponding I/O port option installed.

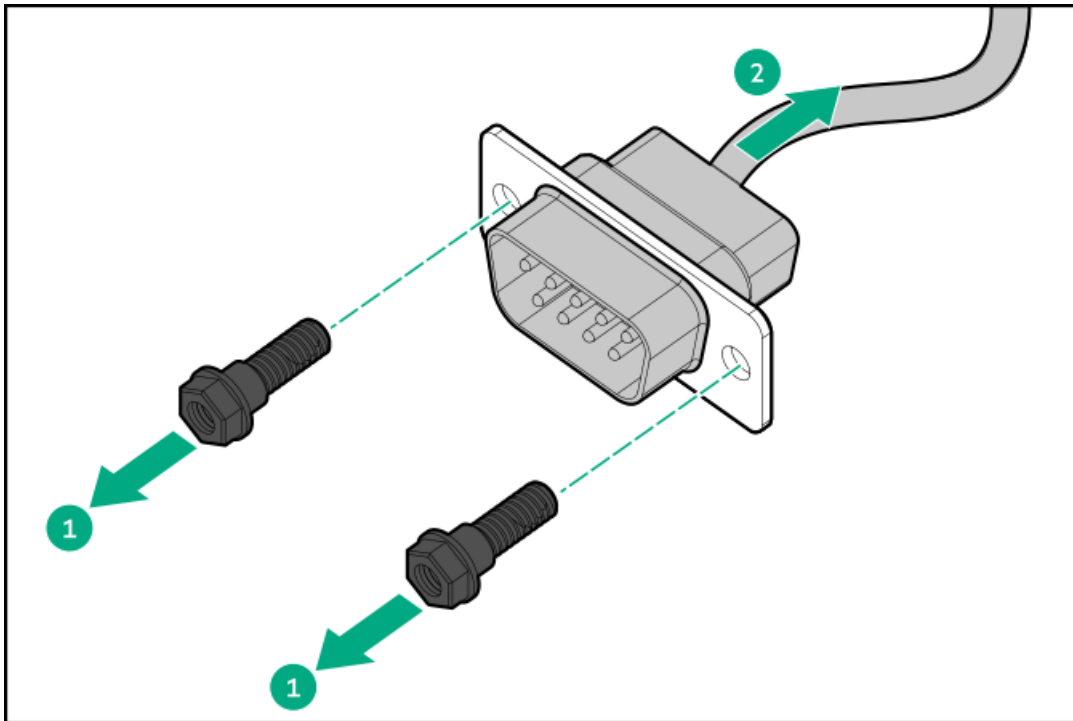
Procedure

1. Back up all server data.
2. [Power down the server](#).
3. If installed, open the cable management arm.



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. [Remove the server from the rack](#).
7. Place the server on a flat, level work surface.
8. [Remove the access panel](#).
9. If the server is in the rear 4 LFF drive configuration, [remove the rear 4 LFF drive cage](#).
10. [Remove the secondary riser cage](#).
11. [Disconnect the serial port from the system board](#).
12. Remove the serial port:

- a. Remove the hex screws (callout 1).
Retain screws for future use.
- b. Detach the serial port from the rear panel (callout 2).



Results

To replace the component, reverse the removal procedure.

Removing and replacing the serial port blank

Prerequisites

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

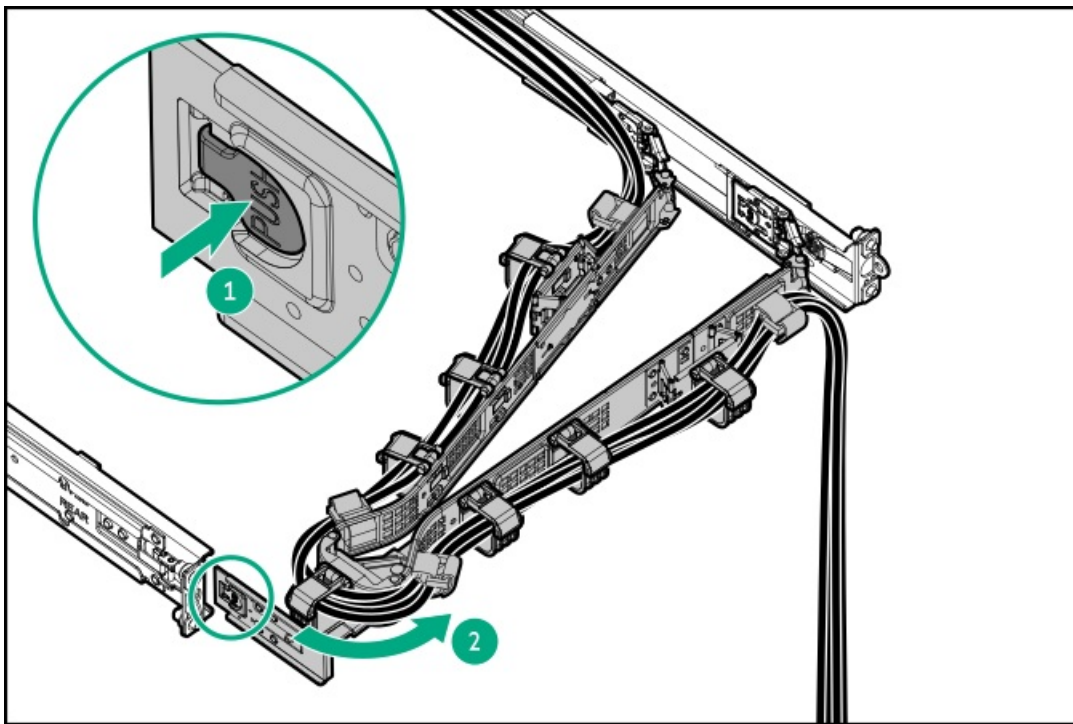
About this task

⚠ CAUTION:

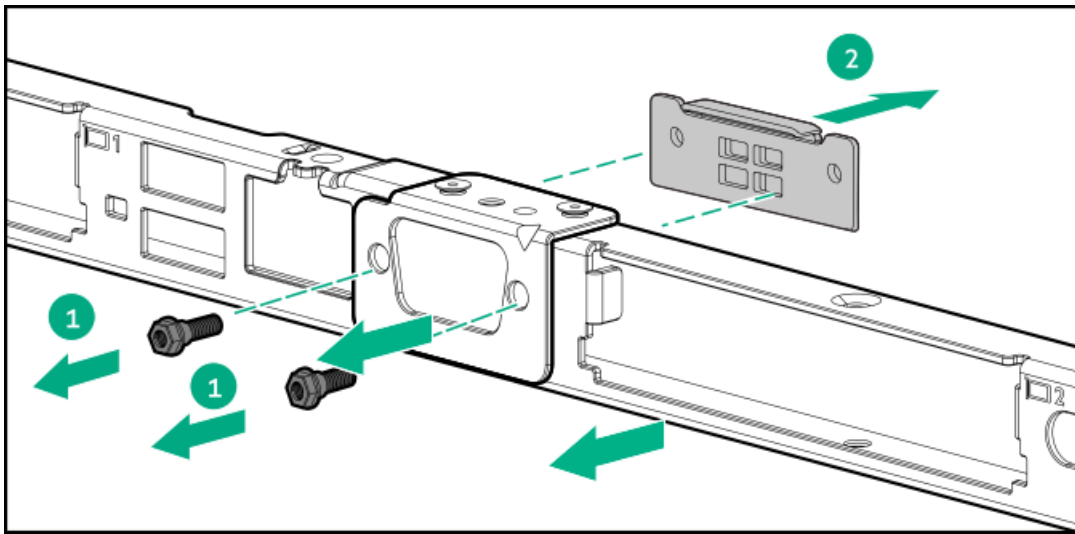
The port blank provides EMI shielding and helps maintain proper thermal status inside the server. Do not operate the server when a port blank is removed without the corresponding I/O port option installed.

Procedure

1. Power down the server.
2. If installed, open the cable management arm.



3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Remove the server from the rack.
6. Place the server on a flat, level work surface.
7. Remove the access panel.
8. Do one of the following:
 - a. Remove the air baffle.
 - b. Remove the midplane drive cage.
9. If the server is in the rear 4 LFF drive configuration, remove the rear 4 LFF drive cage.
10. Remove the secondary riser cage.
11. Remove the serial port blank.



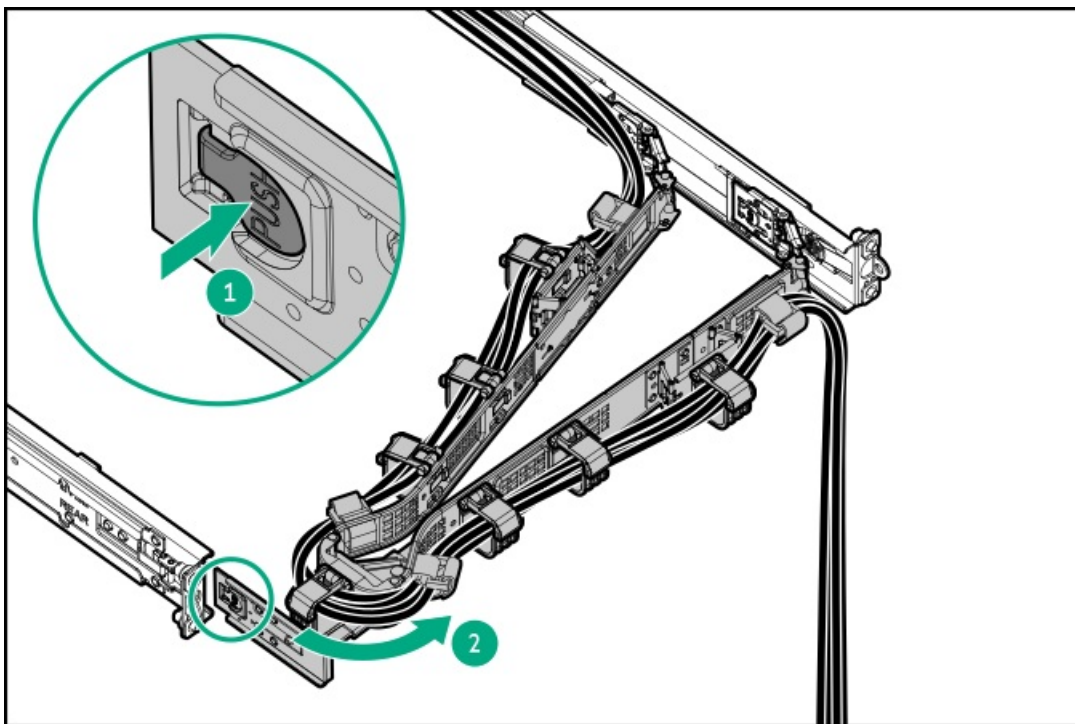
Results

To replace the component, reverse the removal procedure.

Removing and replacing the energy pack holder

Procedure

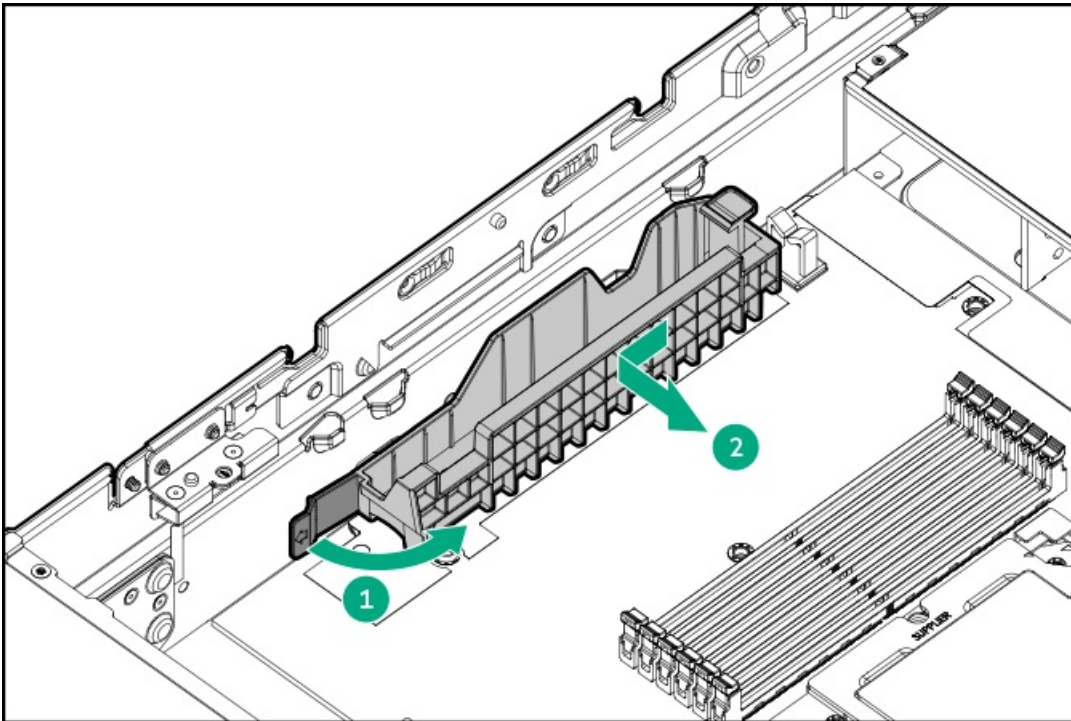
1. Power down the server.
2. If installed, open the cable management arm.



3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.



4. Disconnect all peripheral cables from the server.
5. Remove the server from the rack.
6. Place the server on a flat, level work surface.
7. Remove the access panel.
8. Do one of the following:
 - a. Remove the air baffle.
 - b. Remove the midplane drive cage.
9. Remove the energy pack holder:
 - a. Pull and hold the release latch on the holder (callout 1).
 - b. Pull the holder towards the front panel to disengage from chassis (callout 2).



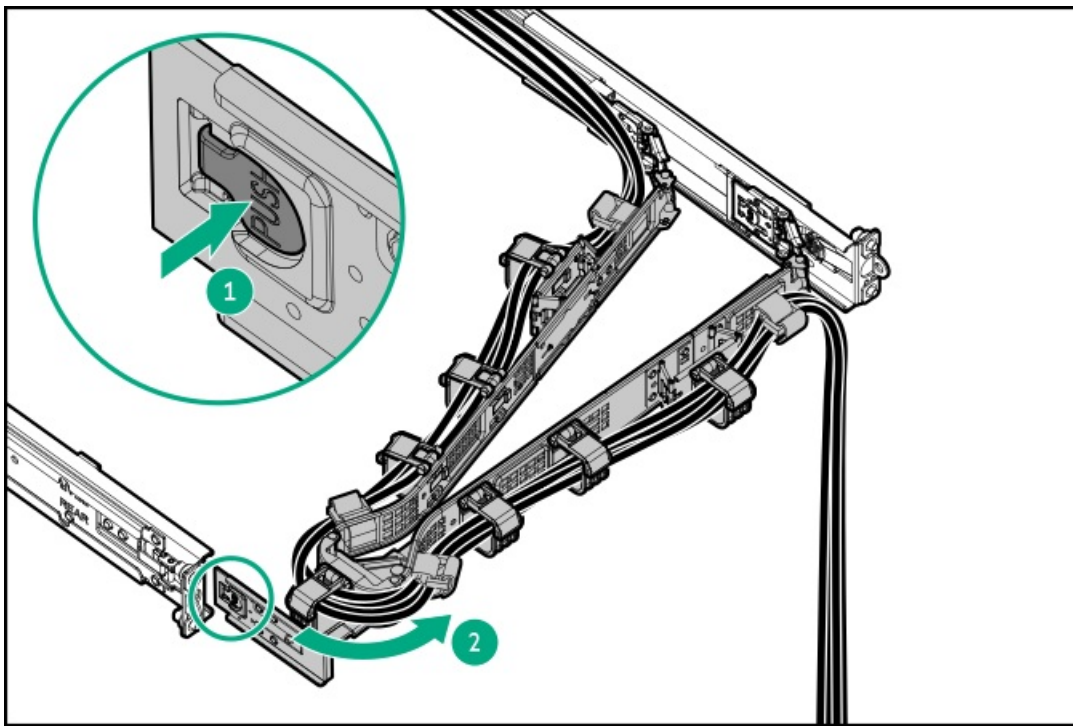
Results

To replace the component, reverse the removal procedure.

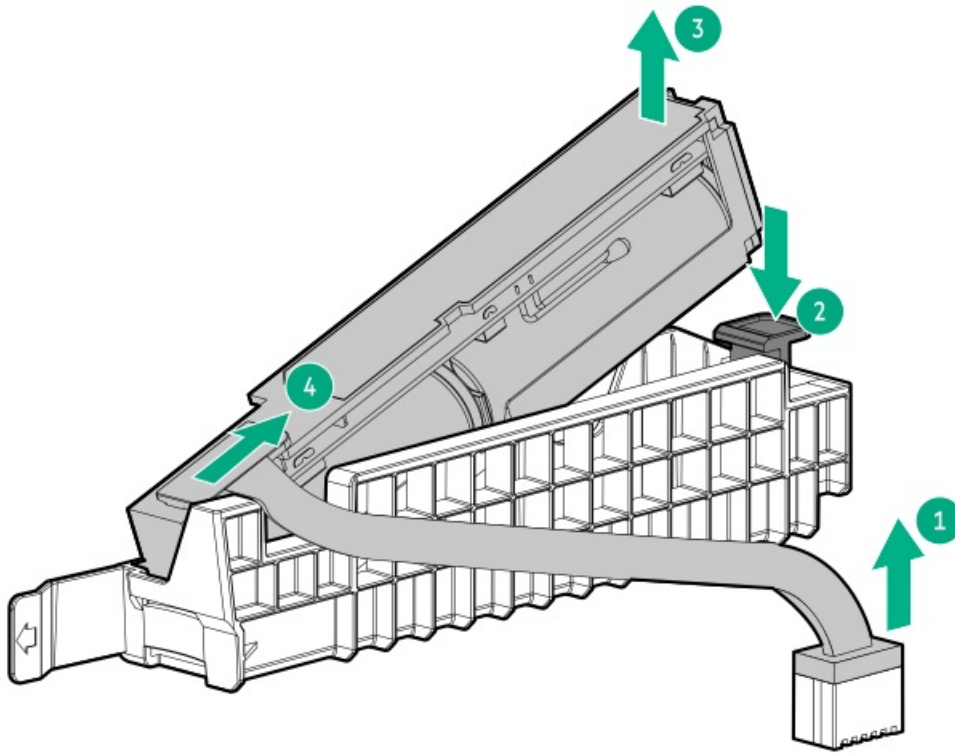
Removing and replacing the energy pack

Procedure

1. Power down the server.
2. If installed, open the cable management arm.



3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Remove the server from the rack.
6. Place the server on a flat, level work surface.
7. Remove the access panel.
8. Do one of the following:
 - a. Remove the air baffle.
 - b. Remove the midplane drive cage.
9. To remove the energy pack from the holder, do the following:
 - a. Disconnect the cable (callout 1).
 - b. Press and hold the release latch (callout 2).
 - c. Lift one end of the energy pack and release it from the holder (callouts 3 and 4).



Results

To replace the component, reverse the removal procedure.

Removing and replacing the optical drive blank

Prerequisites

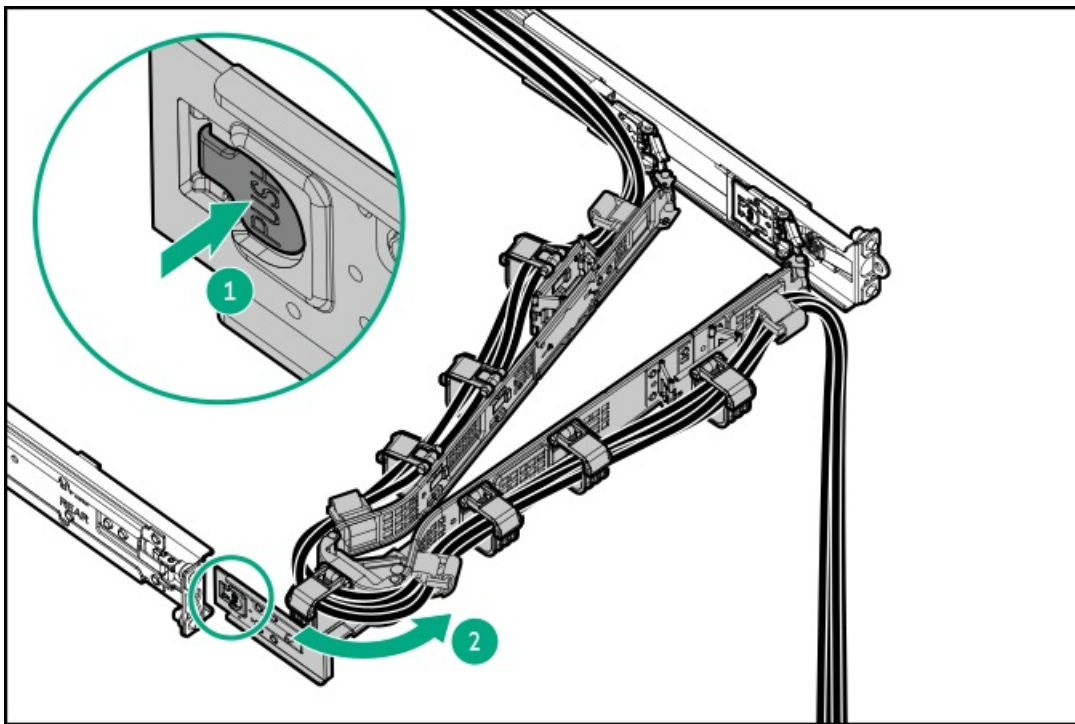
Before you perform this procedure, make sure that you have a spudger or any small prying tool available.

About this task

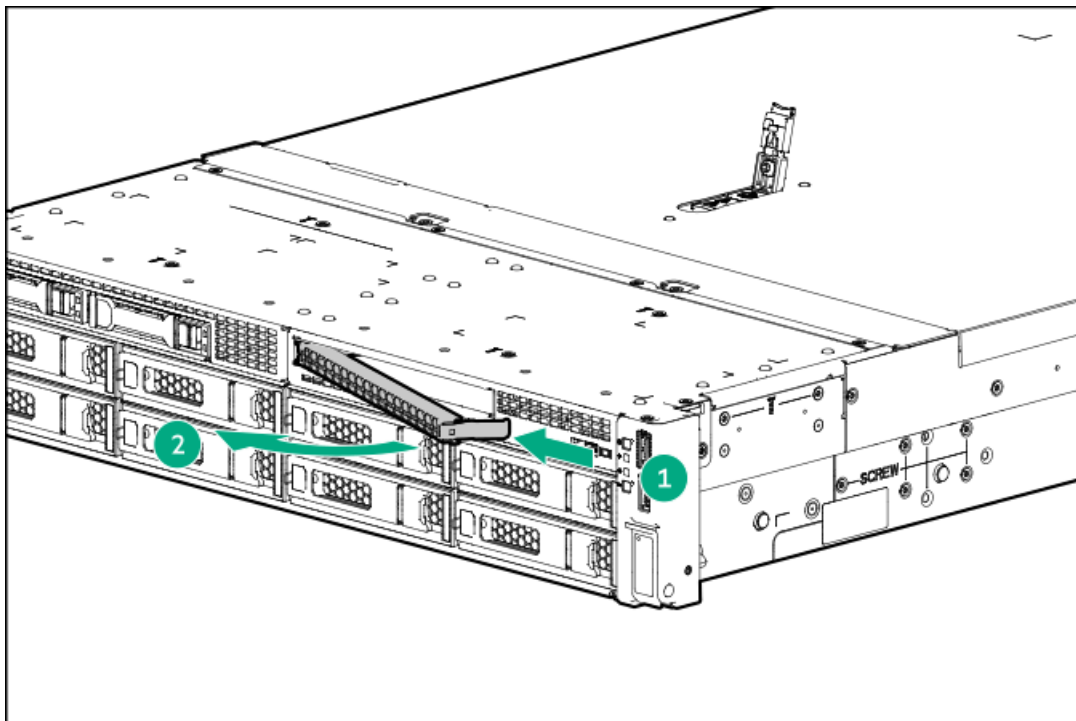
CAUTION: To prevent improper cooling and thermal damage, do not operate the server unless all bays are populated with either a component or a blank.

Procedure

1. If installed, remove the front bezel.
2. Power down the server.
3. If installed, open the cable management arm.

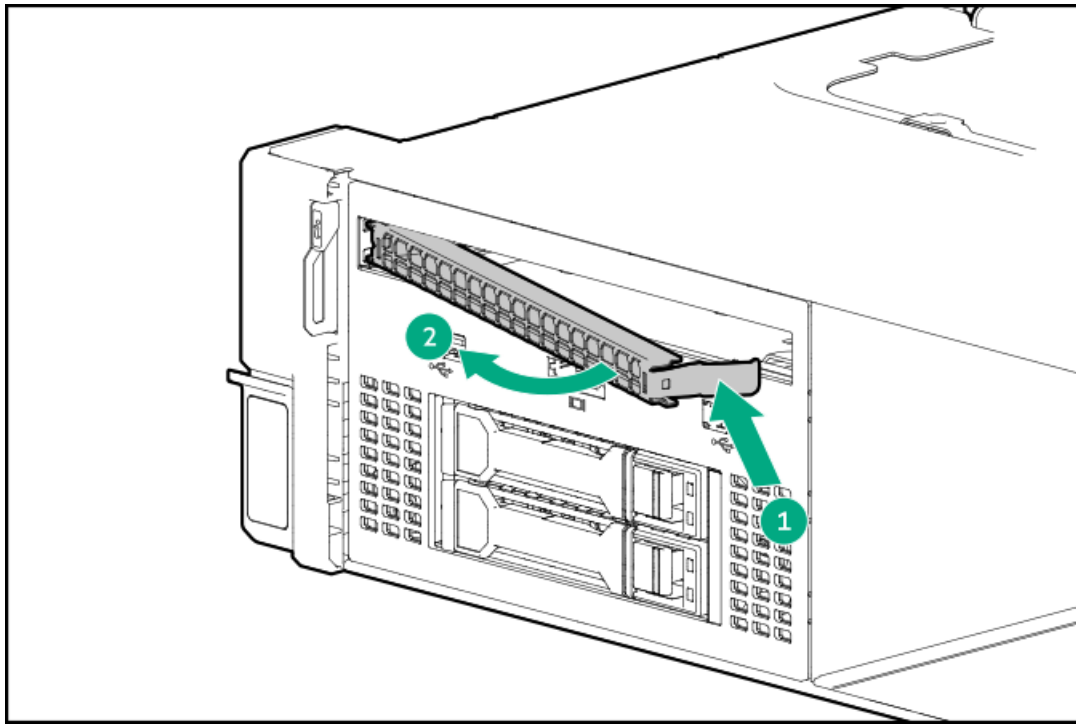


4. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Remove the optical drive blank.
 - LFF universal media bay



- SFF universal media bay





Results

To replace the component, reverse the removal procedure.

Removing and replacing the front 2 SFF stacked drive blank

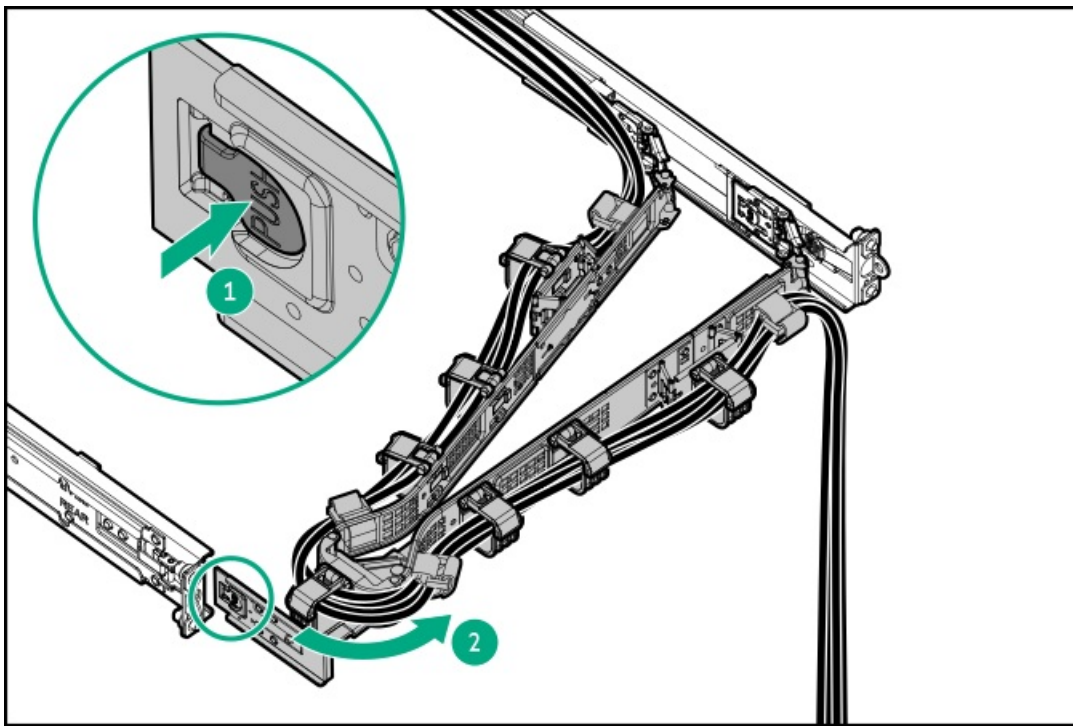
Prerequisites

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

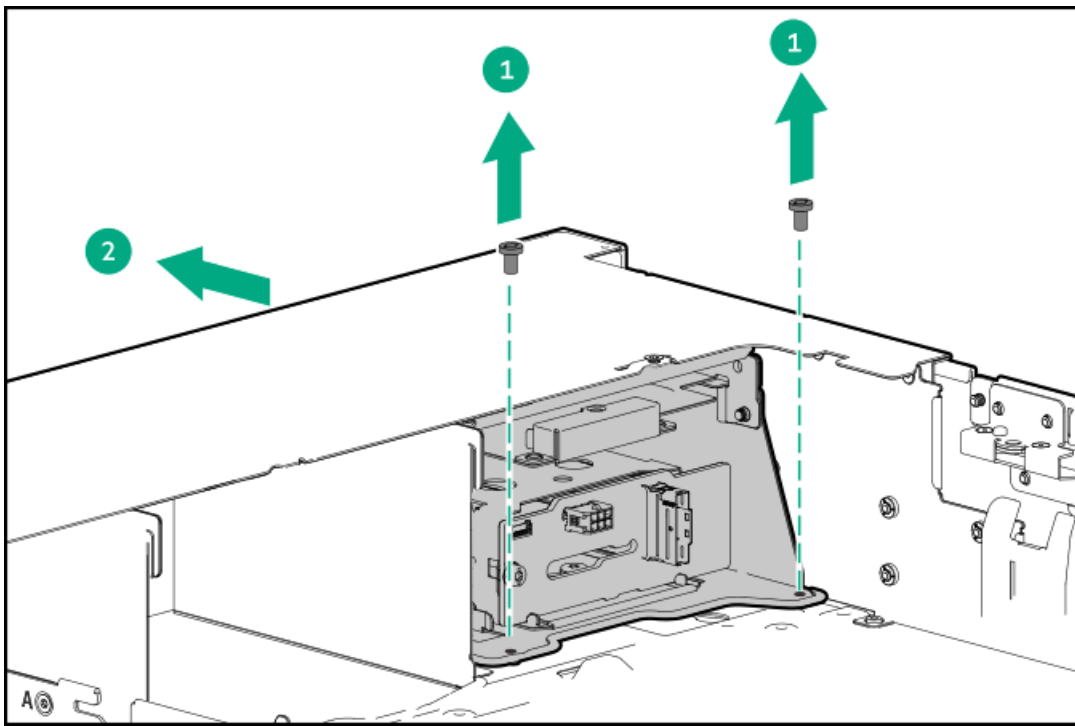
- T-10 Torx screwdriver
- T-15 Torx screwdriver

Procedure

1. Back up all server data.
2. If installed, remove the front bezel.
3. Power down the server.
4. If installed, open the cable management arm.

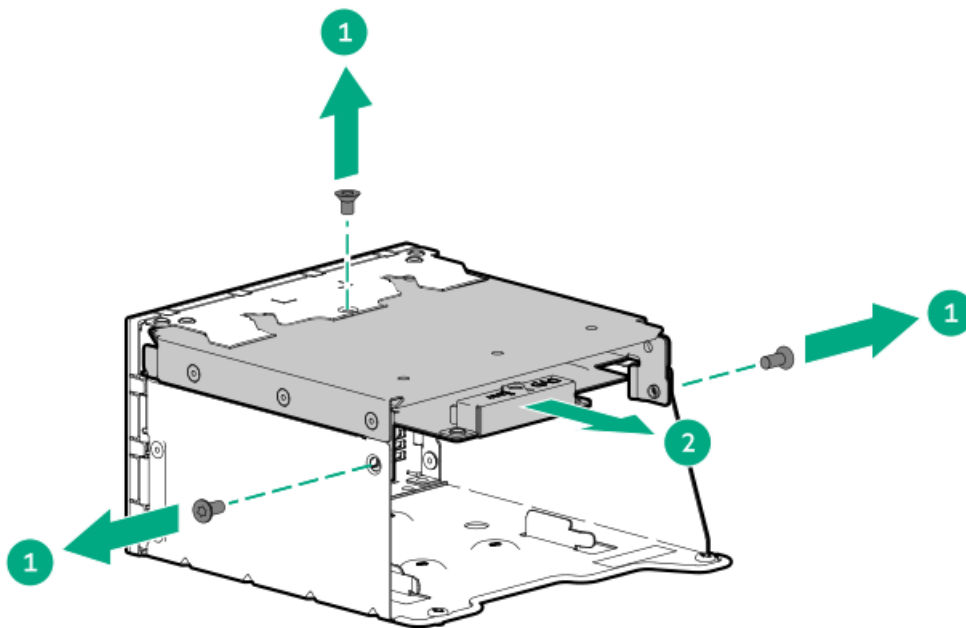


5. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
6. Disconnect all peripheral cables from the server.
7. Remove the server from the rack.
8. Place the server on a flat, level work surface.
9. Remove the access panel.
10. Do one of the following:
 - a. Remove the air baffle.
 - b. Remove the midplane drive cage.
11. Remove the fan cage.
12. Remove the midwall bracket.
13. Remove the universal media bay:
 - a. Remove the universal media bay screws (callout 1).
 - b. Remove the universal media bay from the server (callout 2).



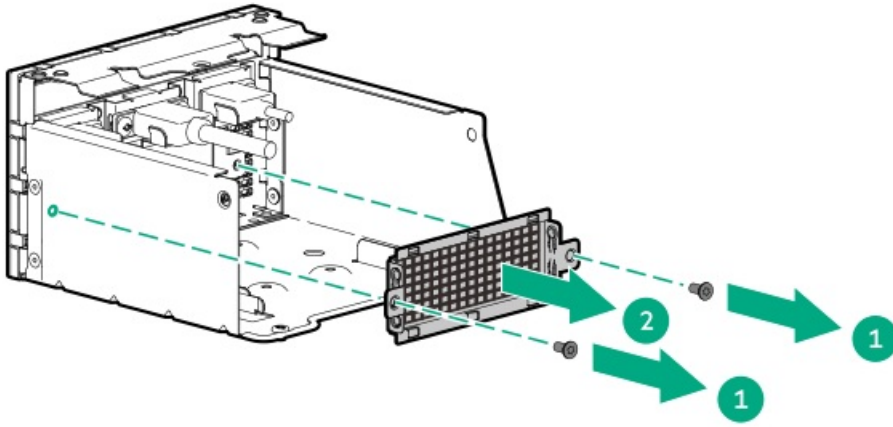
14. Remove the optical drive tray:

- a. Remove the optical drive tray screws (callout 1).
- b. Remove the optical drive tray from universal media bay (callout 2).



15. Remove the 2 SFF drive blank:

- a. Remove the blank screws (callout 1).
- b. Remove the drive blank from universal media bay (callout 2).



Results

To replace the component, reverse the removal procedure.

Removing and replacing the universal media bay cage

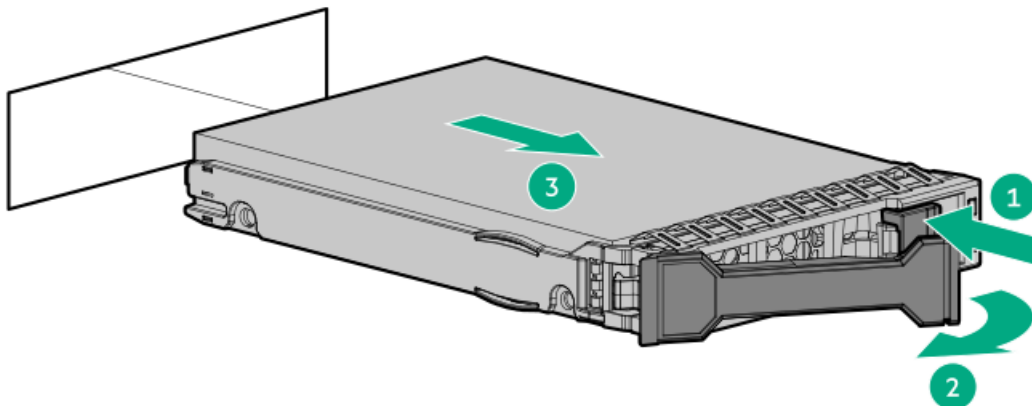
Prerequisites

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

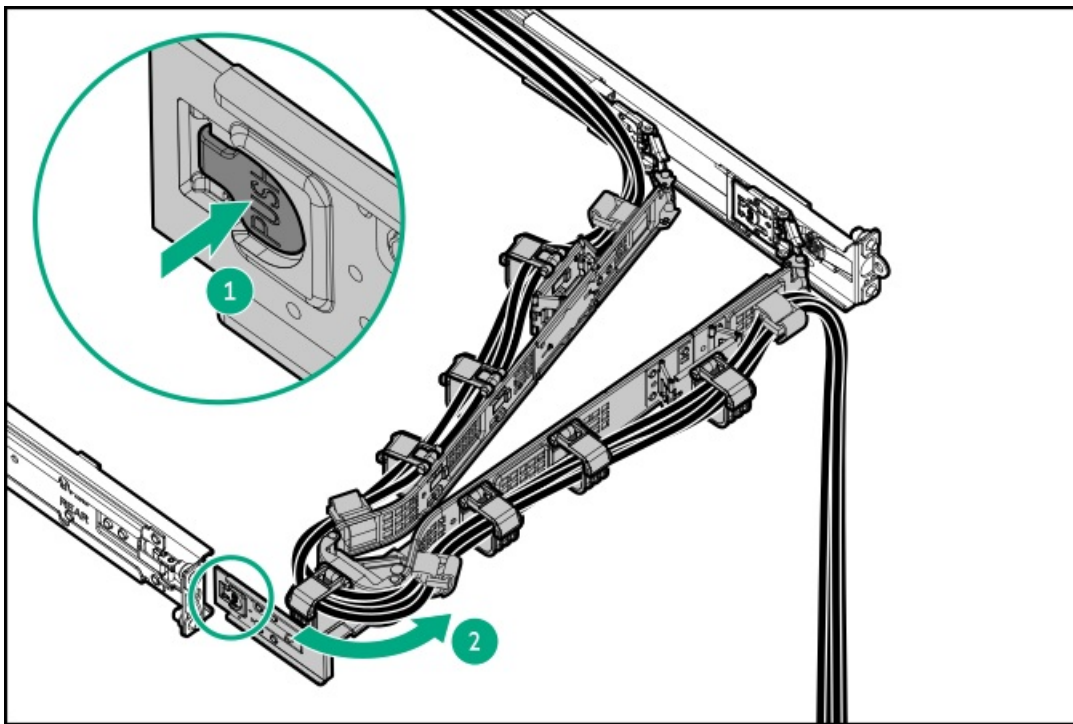
- T-10 Torx screwdriver
- T-15 Torx screwdriver

Procedure

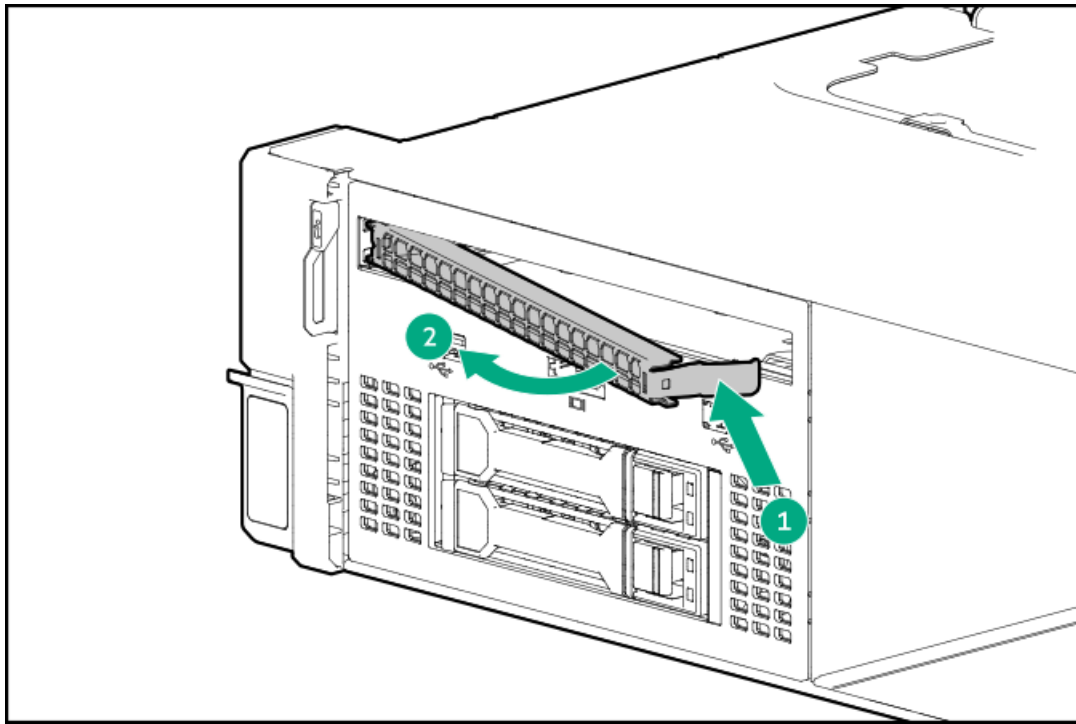
1. Back up all server data.
2. If installed, remove the front bezel.
3. If installed, remove all drives from the 2 SFF stacked drive cage.



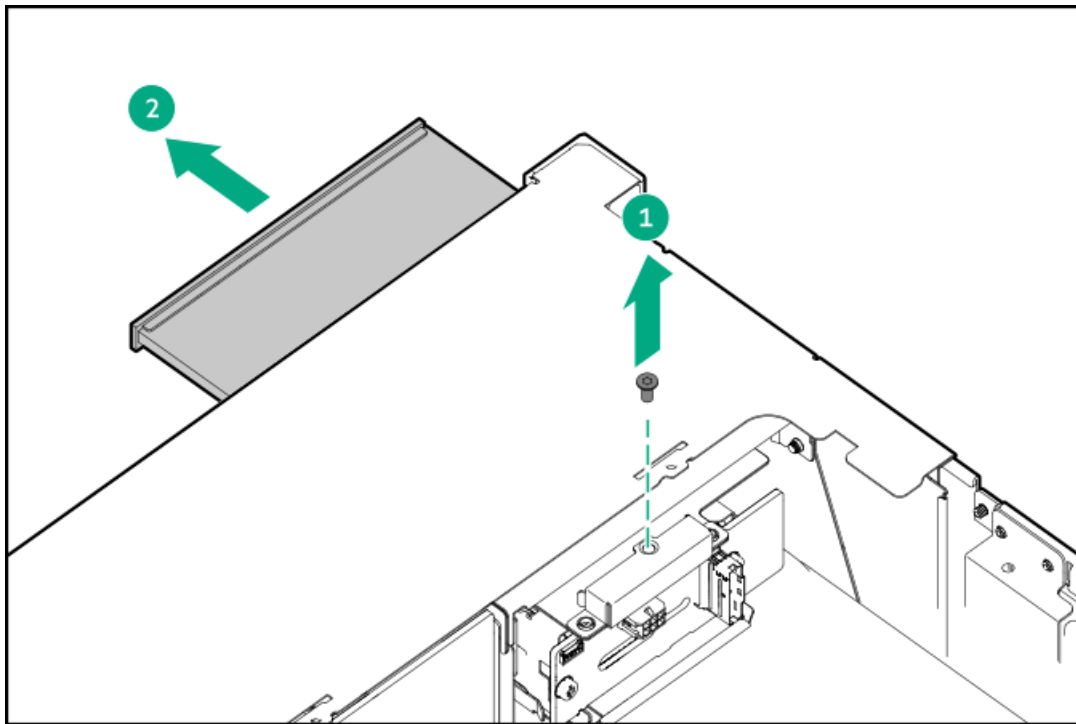
4. Power down the server.
5. If installed, open the cable management arm.



6. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
7. Disconnect all peripheral cables from the server.
8. Remove the server from the rack.
9. Place the server on a flat, level work surface.
10. Remove the access panel.
11. Do one of the following:
 - a. Remove the air baffle.
 - b. Remove the midplane drive cage.
12. Remove the fan cage.
13. Remove the midwall bracket.
14. Do one of the following:
 - Remove the optical drive blank



- Remove the optical drive



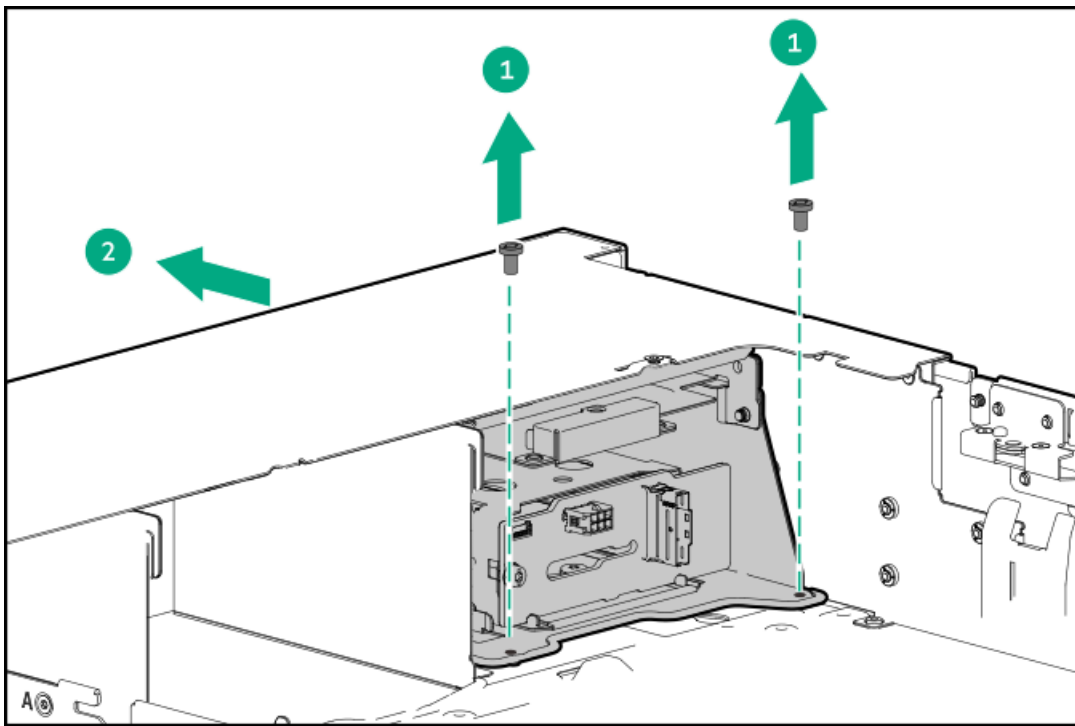
15. Disconnect the following cables from the system board:

- [USB 2.0/DisplayPort Y-cable](#)
- [USB 3.2 Gen 1 port cable](#)

16. [Disconnect all cables from the 2 SFF stacked drive backplane .](#)

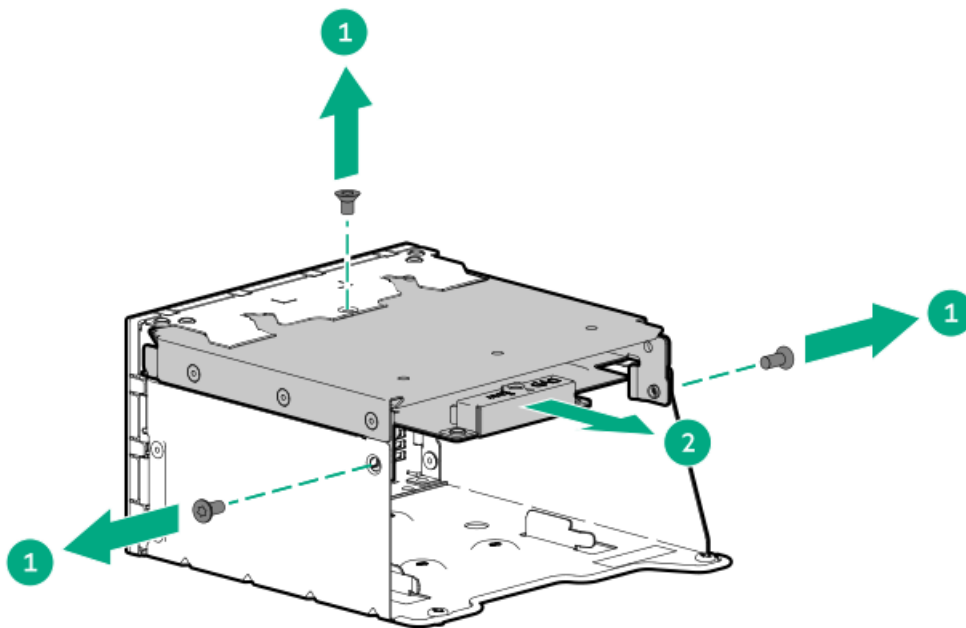
17. Remove the universal media bay:

- a. Remove the universal media bay screws (callout 1).
- b. Remove the universal media bay from the server (callout 2).



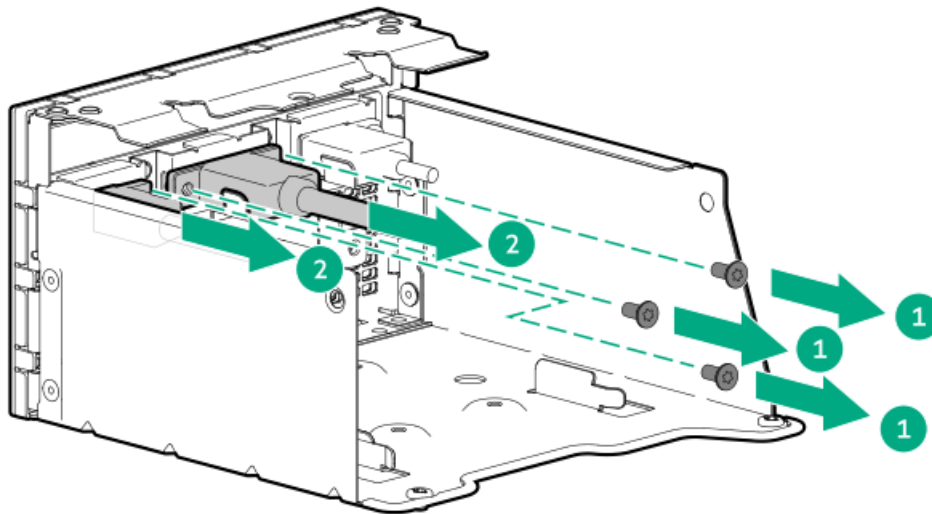
18. Remove the optical drive tray:

- a. Remove the optical drive tray screws (callout 1).
- b. Remove the optical drive tray from universal media bay (callout 2).

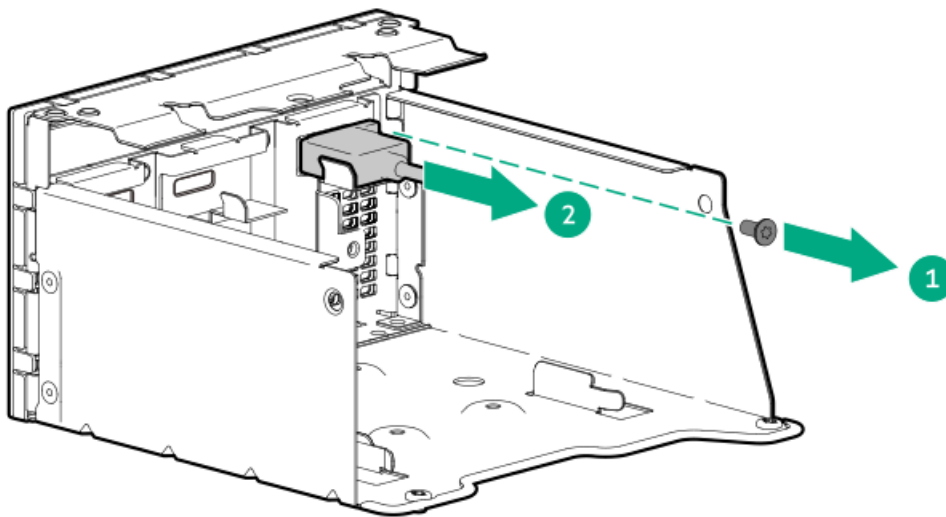


19. Remove the USB 2.0 / DisplayPort Y-cable from the SFF universal media bay.



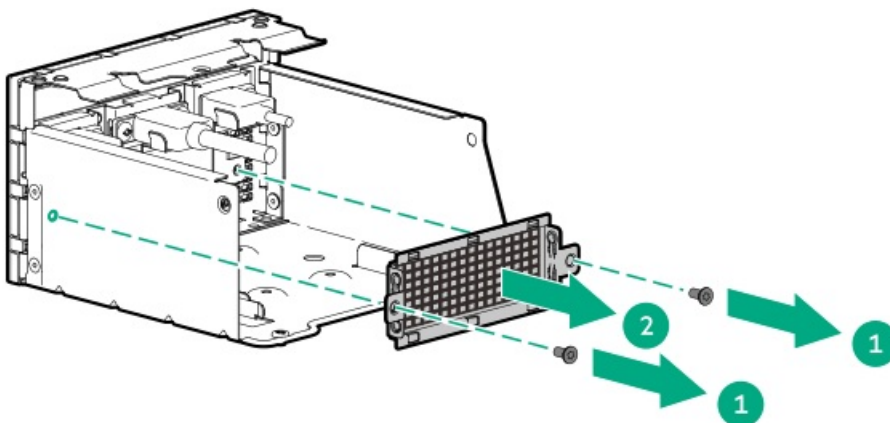


20. Remove the USB 3.2 Gen 1 port cable from the SFF universal media bay.

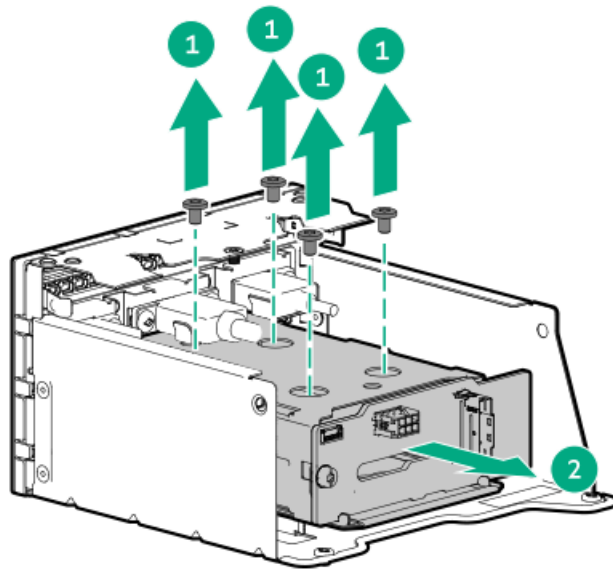


21. Remove the 2 SFF drive blank:

- a. Remove the blank screws (callout 1).
- b. Remove the drive blank from universal media bay (callout 2).



22. If installed, remove the 2 SFF stacked drive cage.



Results

To replace the component, reverse the removal procedure.

Removing and replacing the SFF universal media bay USB 2.0/DisplayPort Y-cable

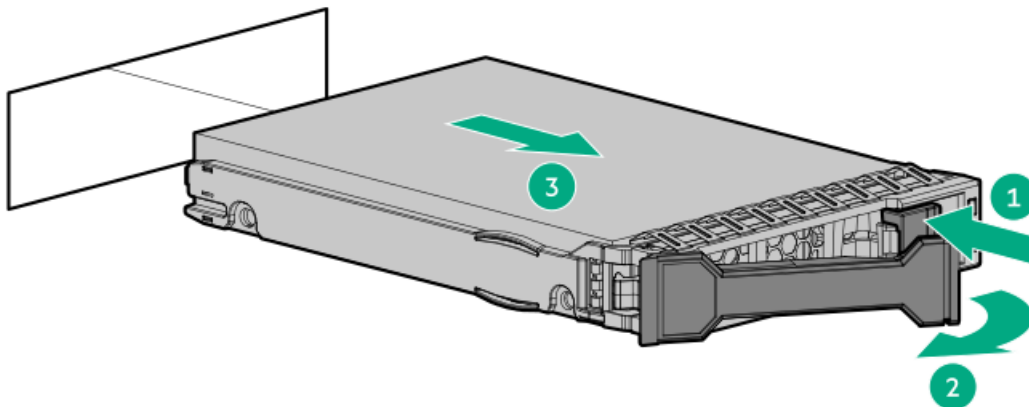
Prerequisites

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

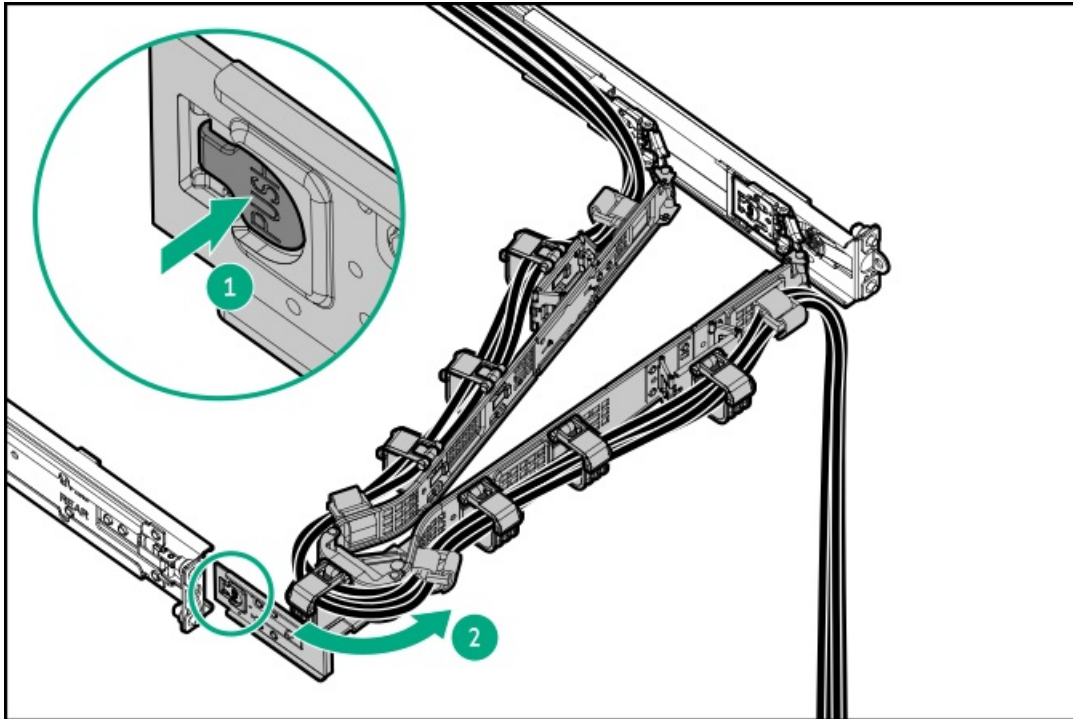
- T-10 Torx screwdriver
- T-15 Torx screwdriver

Procedure

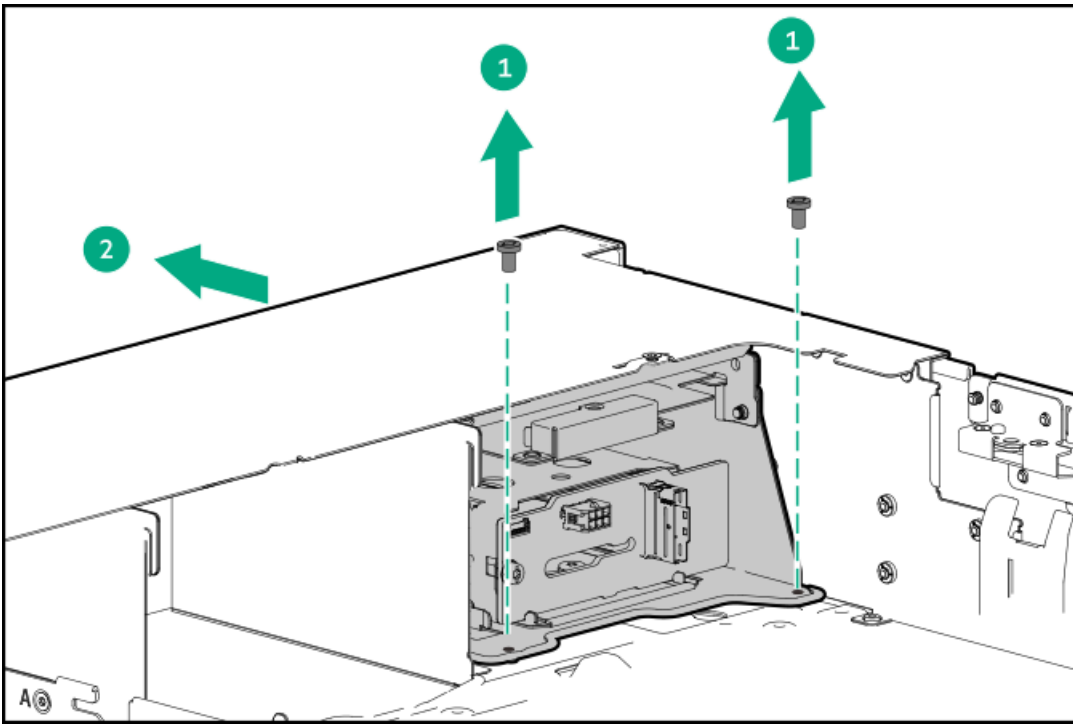
1. Back up all server data.
2. If installed, remove the front bezel.
3. If installed, remove all drives from the 2 SFF stacked drive cage.



4. Power down the server.
5. If installed, open the cable management arm.

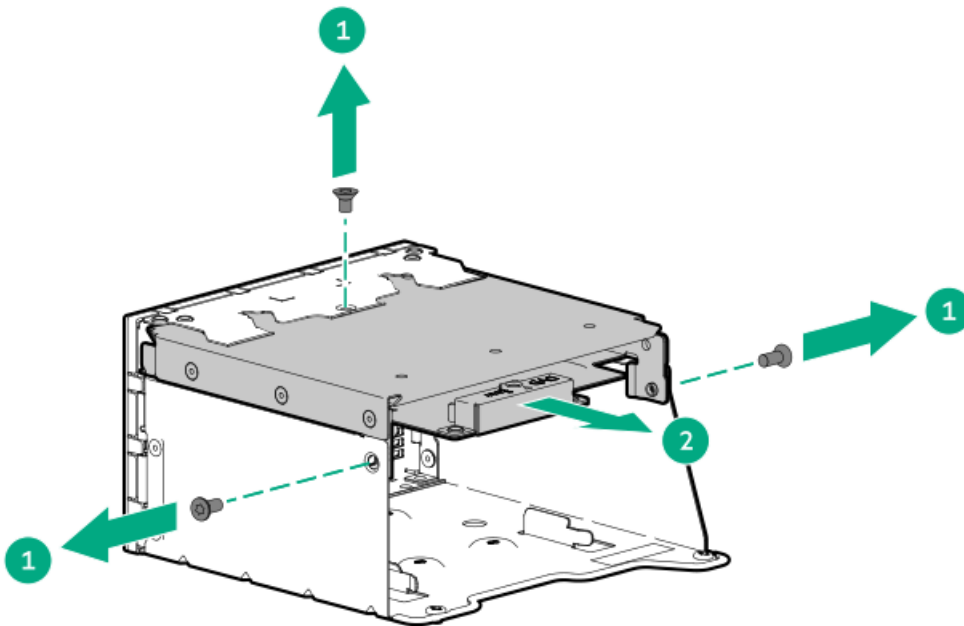


6. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
7. Disconnect all peripheral cables from the server.
8. Remove the server from the rack.
9. Place the server on a flat, level work surface.
10. Remove the access panel.
11. Do one of the following:
 - a. Remove the air baffle.
 - b. Remove the midplane drive cage.
12. Remove the fan cage.
13. Remove the midwall bracket.
14. Remove the universal media bay:
 - a. Remove the universal media bay screws (callout 1).
 - b. Remove the universal media bay from the server (callout 2).

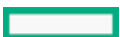


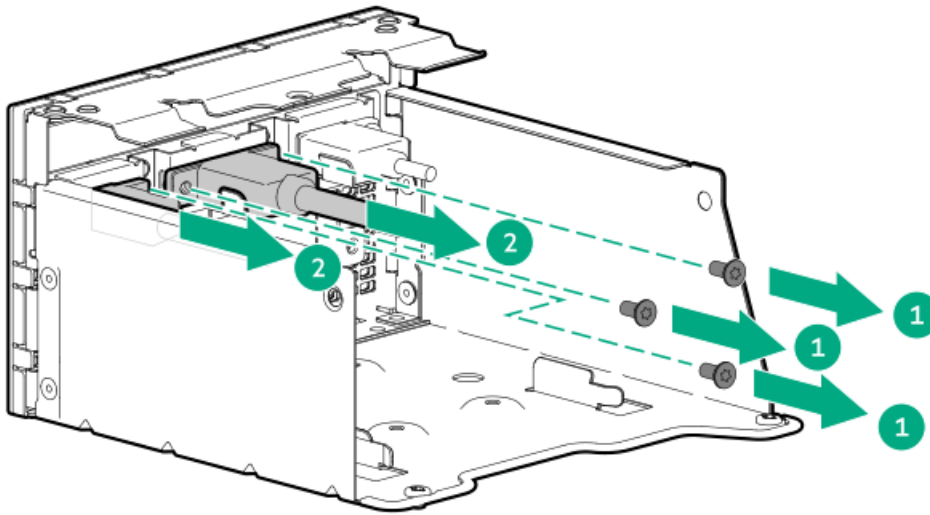
15. Remove the optical drive tray:

- a. Remove the optical drive tray screws (callout 1).
- b. Remove the optical drive tray from universal media bay (callout 2).



16. Remove the USB 2.0 / DisplayPort Y-cable from the SFF universal media bay.





Results

To replace the component, reverse the removal procedure.

Removing and replacing the SFF universal media bay USB 3.2 Gen 1 port cable

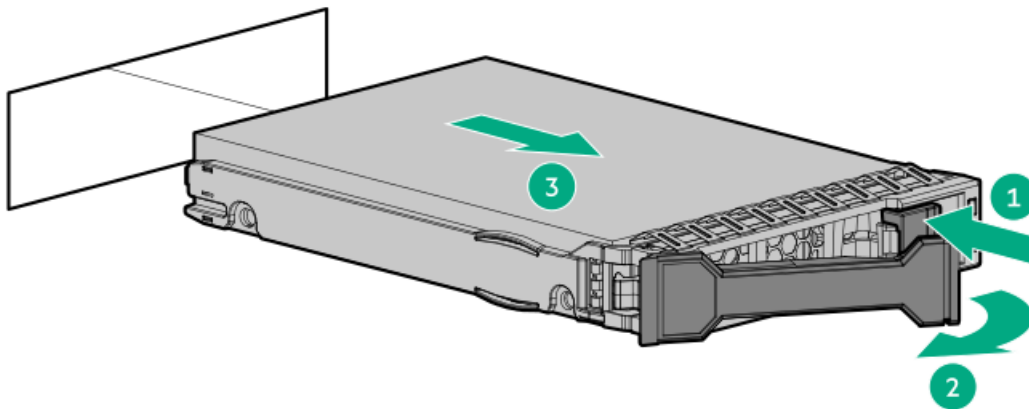
Prerequisites

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

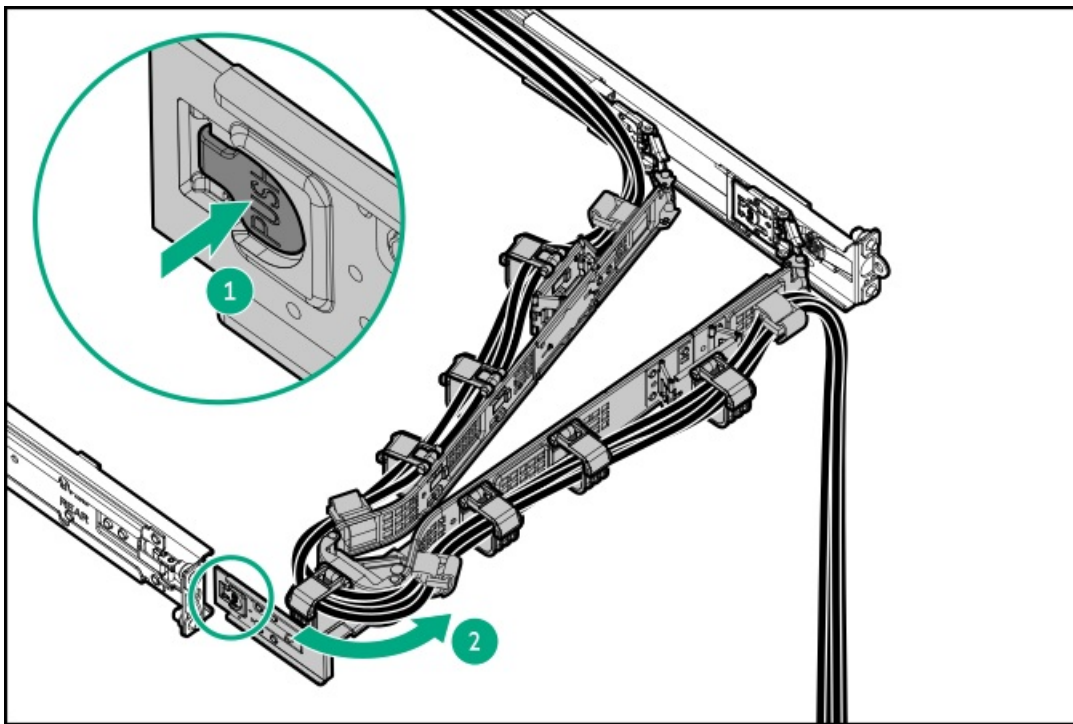
- T-10 Torx screwdriver
- T-15 Torx screwdriver

Procedure

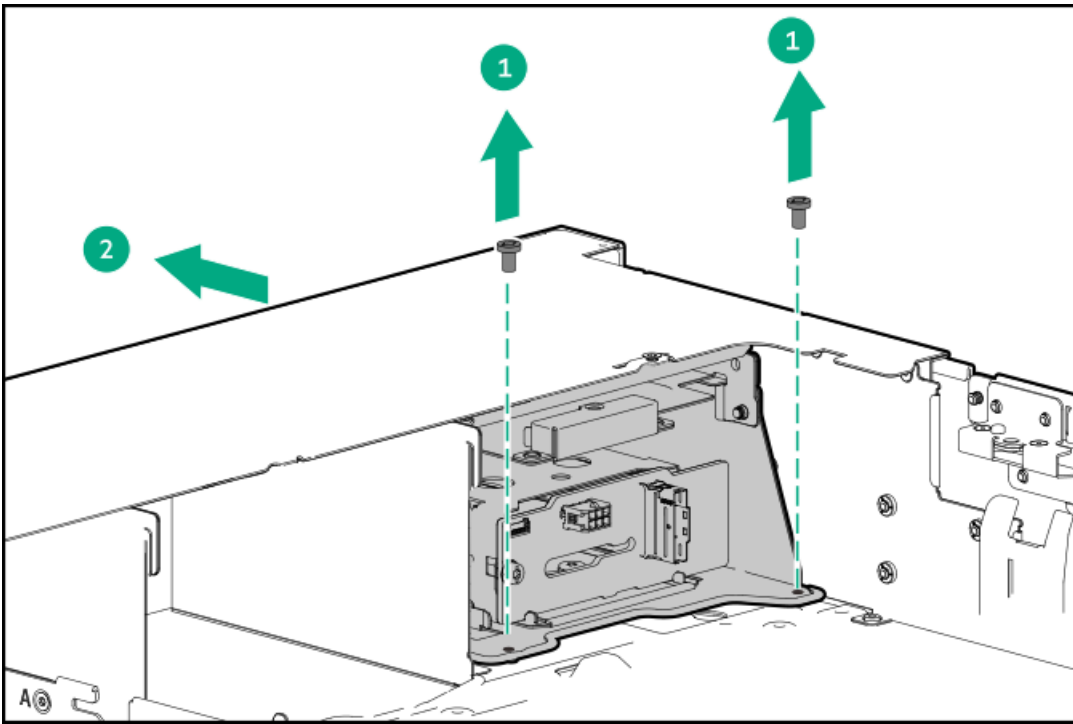
1. Back up all server data.
2. If installed, remove the front bezel.
3. If installed, remove all drives from the 2 SFF stacked drive cage.



4. Power down the server.
5. If installed, open the cable management arm.

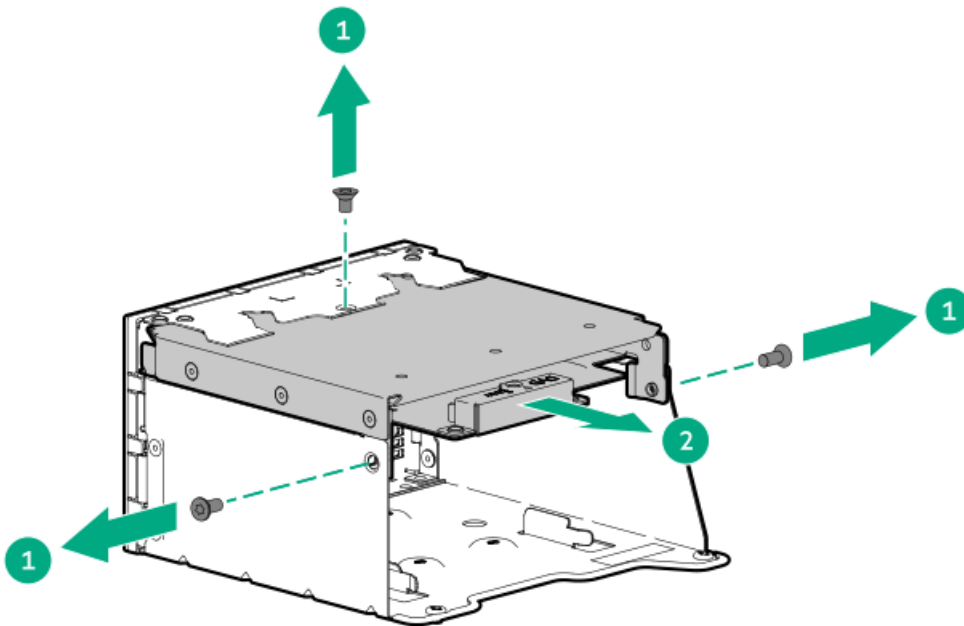


6. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
7. Disconnect all peripheral cables from the server.
8. Remove the server from the rack.
9. Place the server on a flat, level work surface.
10. Remove the access panel.
11. Do one of the following:
 - a. Remove the air baffle.
 - b. Remove the midplane drive cage.
12. Remove the fan cage.
13. Remove the midwall bracket.
14. Remove the universal media bay:
 - a. Remove the universal media bay screws (callout 1).
 - b. Remove the universal media bay from the server (callout 2).



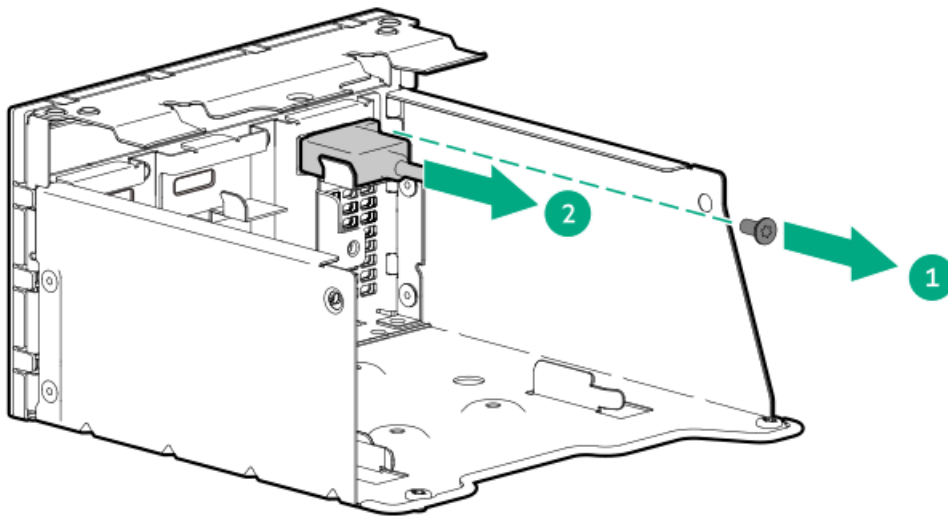
15. Remove the optical drive tray:

- a. Remove the optical drive tray screws (callout 1).
- b. Remove the optical drive tray from universal media bay (callout 2).



16. Remove the USB 3.2 Gen 1 port cable from the SFF universal media bay.





Results

To replace the component, reverse the removal procedure.

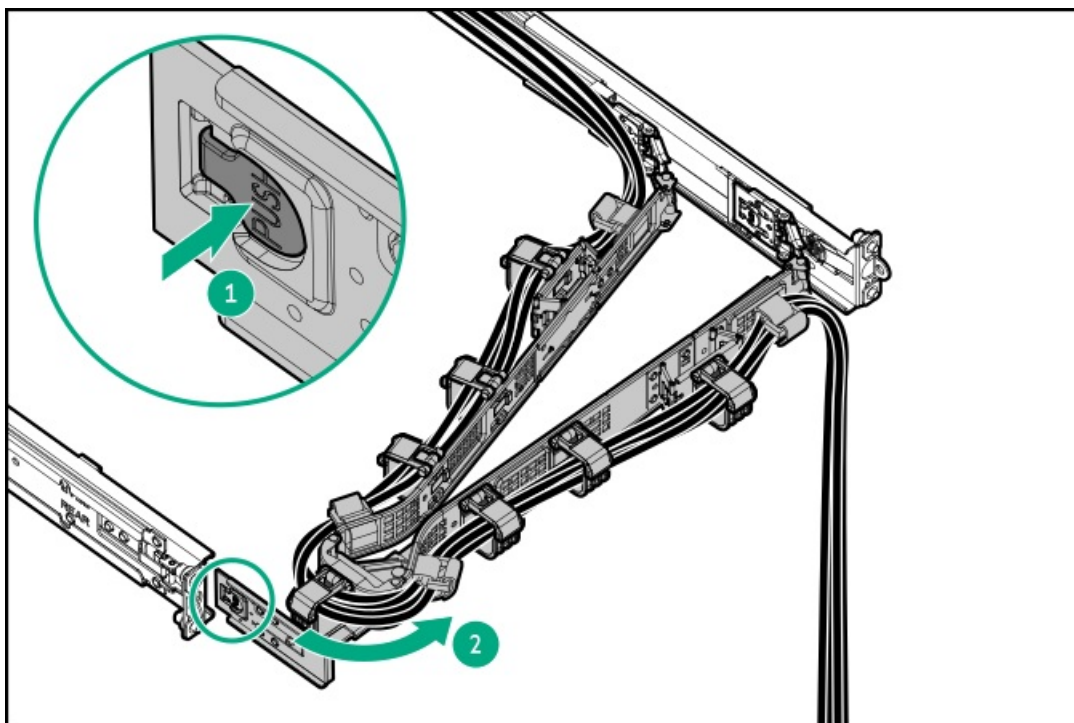
Removing and replacing the LFF universal media bay DisplayPort cable

Prerequisites

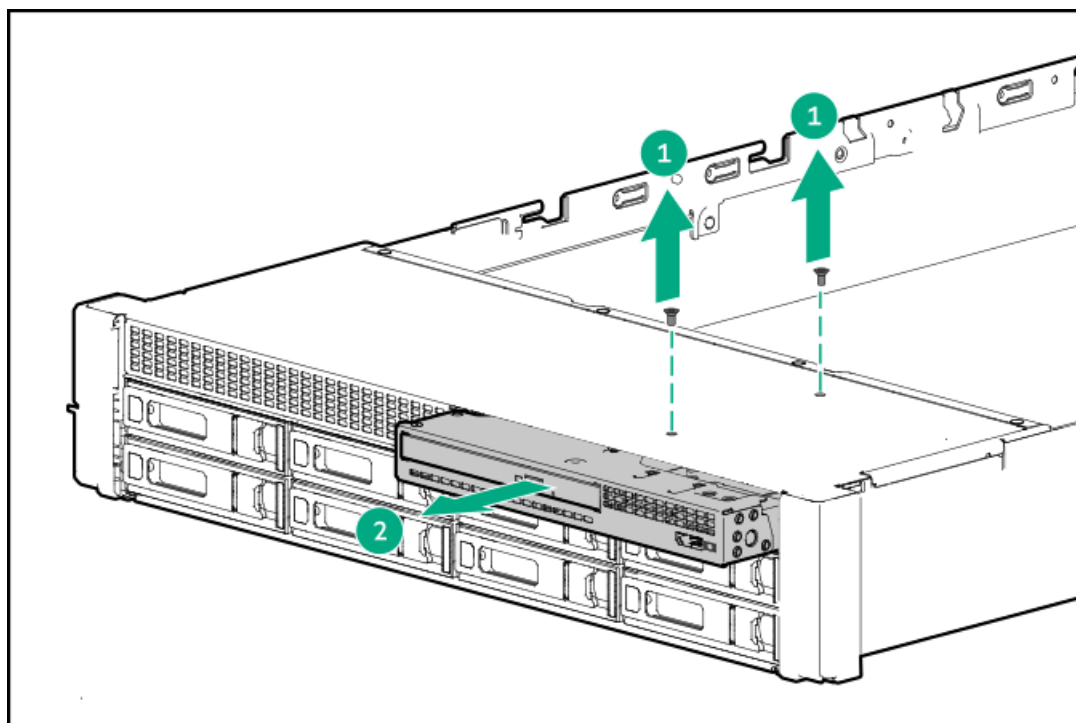
Before you perform this procedure, make sure that you have a T-10 Torx screwdriver available.

Procedure

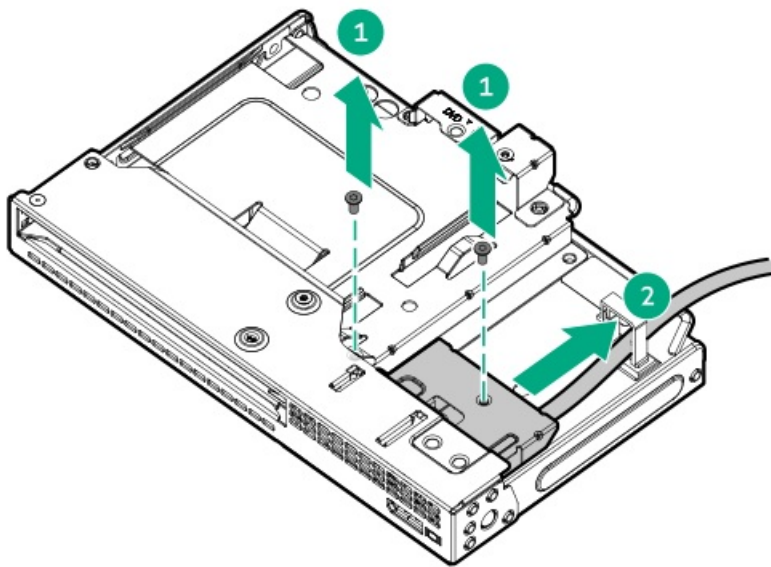
1. If installed, remove the front bezel.
2. Power down the server.
3. If installed, open the cable management arm.



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. Remove the server from the rack.
7. Place the server on a flat, level work surface.
8. Remove the access panel.
9. Do one of the following:
 - a. Remove the air baffle.
 - b. Remove the midplane drive cage.
10. Remove the fan cage.
11. Remove the midwall bracket.
12. Remove the drive backplane bracket.
13. Disconnect the SATA-power Y-cable from the optical drive.
14. Disconnect the DisplayPort cable from the system board.
15. Remove the universal media bay:
 - a. Remove the universal media bay screws (callout 1).
 - b. Remove the universal media bay from the server (callout 2)



16. Remove the DisplayPort cable from the LFF universal media bay.



Results

To replace the component, reverse the removal procedure.

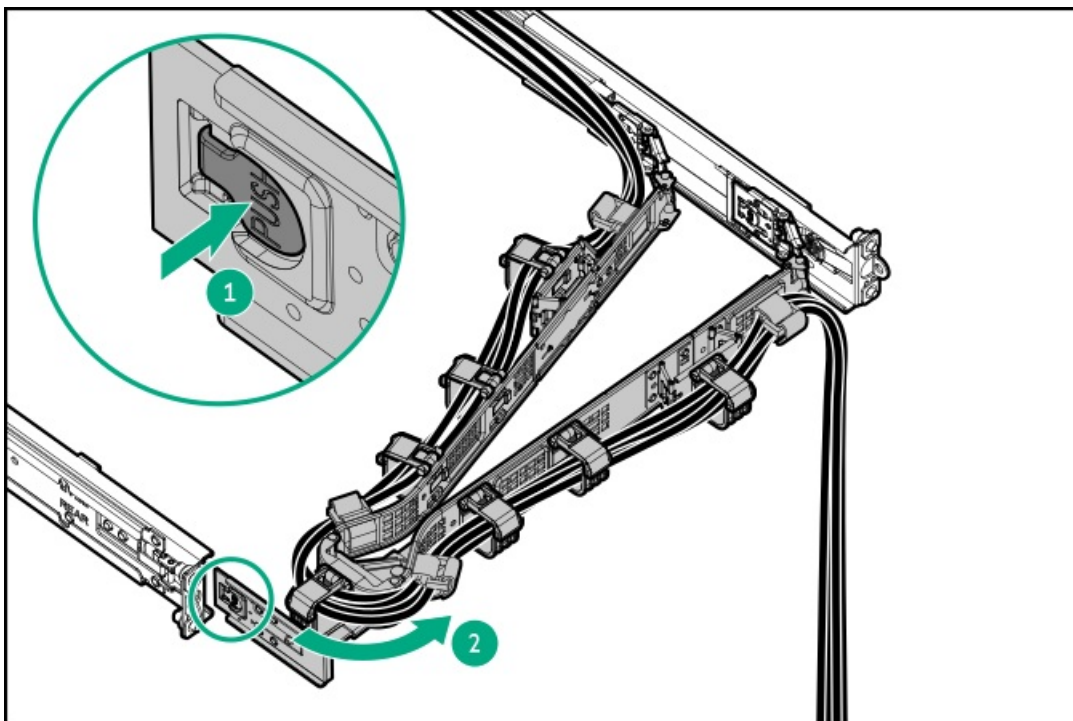
Removing and replacing the one-slot primary/secondary riser cage

Prerequisites

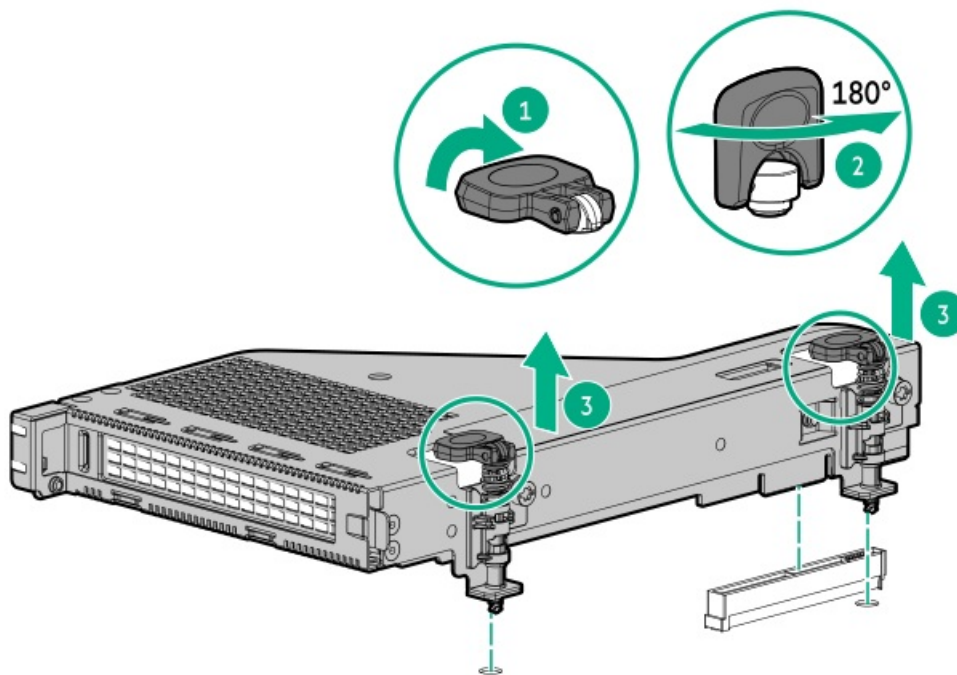
Before you perform this procedure, make sure that you have a T-15 Torx screwdriver available.

Procedure

1. Power down the server.
2. If installed, open the cable management arm.

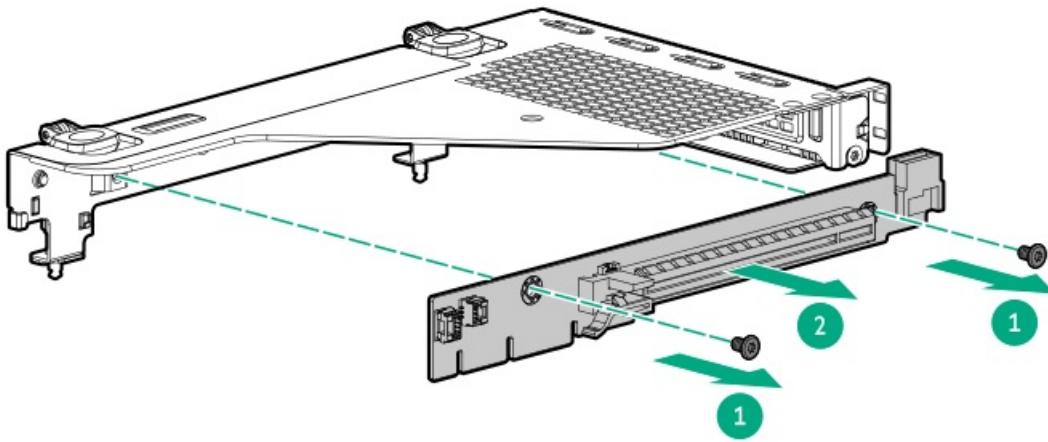


3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Remove the server from the rack.
6. Place the server on a flat, level work surface.
7. Remove the access panel.
8. Do one of the following:
 - a. Remove the air baffle.
 - b. Remove the midplane drive cage.
9. Remove the rear 4 LFF drive cage.
10. Remove the riser cage:
 - a. Release the half-turn spring latch (callouts 1 and 2).
 - b. Lift the riser cage off the system board (callout 3).



11. If installed, remove the expansion card.
12. Remove the riser board.

Retain all screws. These screws will be used to secure the new riser board spare.



Results

To replace the component, reverse the removal procedure.

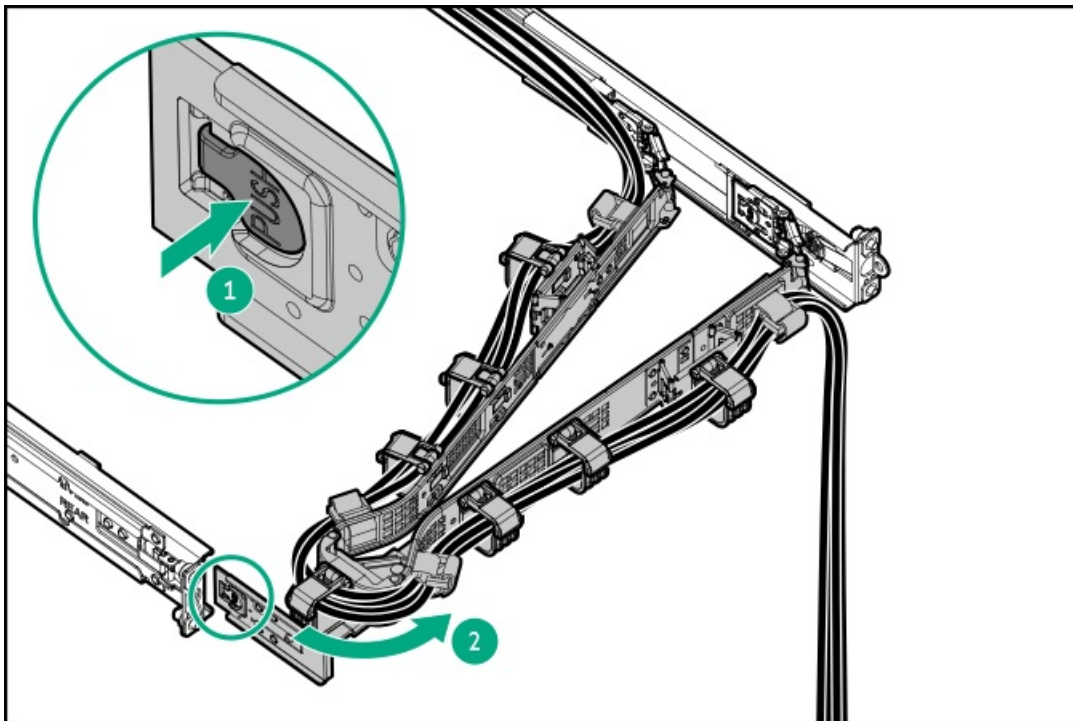
Removing and replacing the right chassis ear assembly

Prerequisites

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

Procedure

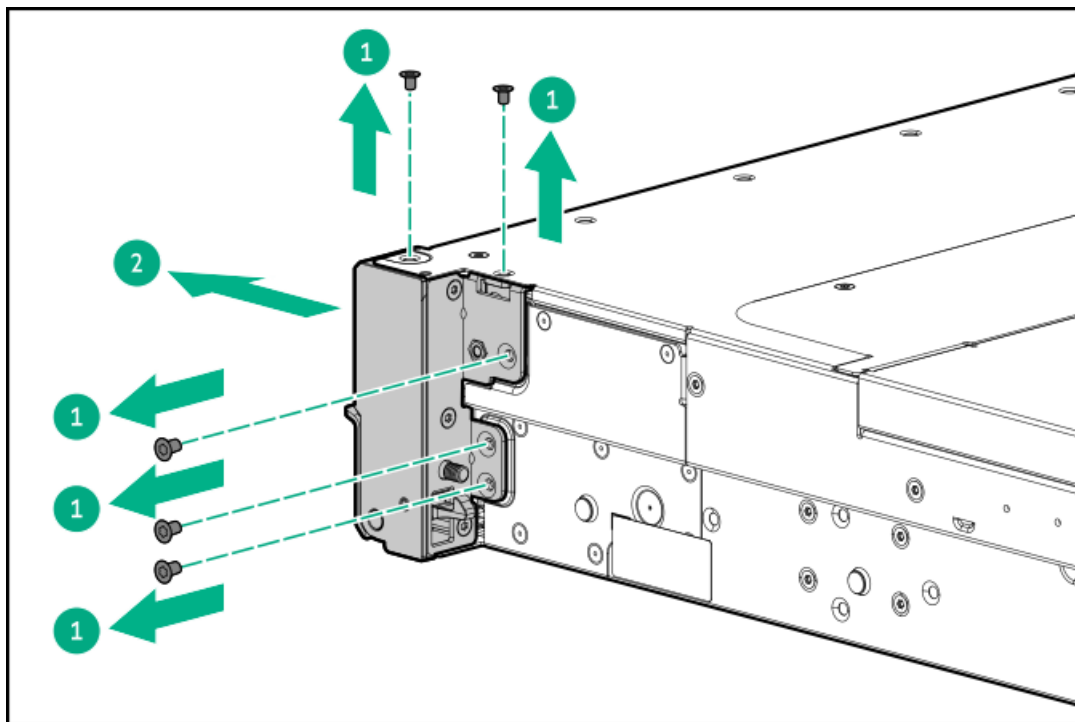
1. Power down the server.
2. If installed, open the cable management arm.



3. Remove all power:
 - a. Disconnect each power cord from the power source.



- b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Remove the server from the rack.
6. Place the server on a flat, level work surface.
7. Remove the access panel.
8. Do one of the following:
 - a. Remove the air baffle.
 - b. Remove the midplane drive cage.
9. If installed, remove the cable guards.
10. Remove the fan cage.
11. Disconnect the front I/O and USB cable from the system board.
12. Remove the right chassis ear assembly:
 - a. Remove front right chassis ear screws (callouts 1).
Retain all screws for future use.
 - b. Pull the right chassis ear and front I/O and USB cable (callout 2).



Results

To replace the component, reverse the removal procedure.

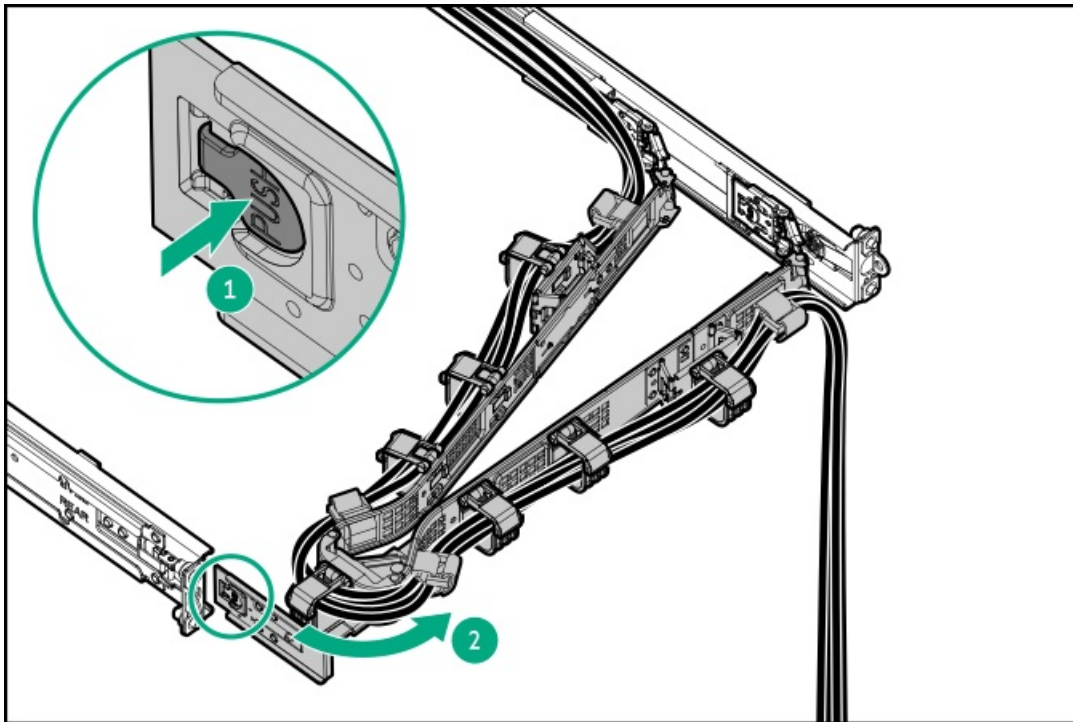
Removing and replacing the left chassis ear

Prerequisites

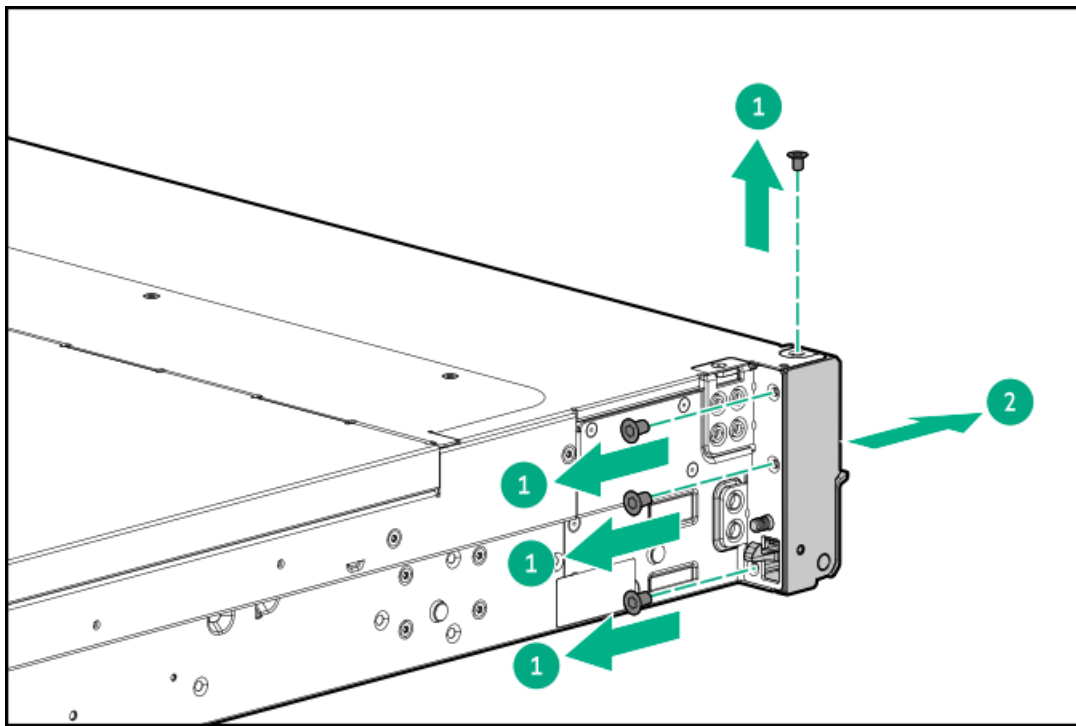
Before you perform this procedure, make sure that you have a T-10 Torx screwdriver available.

Procedure

1. Power down the server.
2. If installed, open the cable management arm.



3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Do one of the following:
 - Extend the server from the rack.
 - Remove the server from the rack.
6. Remove the left chassis ear:
 - a. Remove left chassis ear screws (callouts 1).
Retain all screws for future use.
 - b. Detach the left chassis ear (callout 2).



Results

To replace the component, reverse the removal procedure.

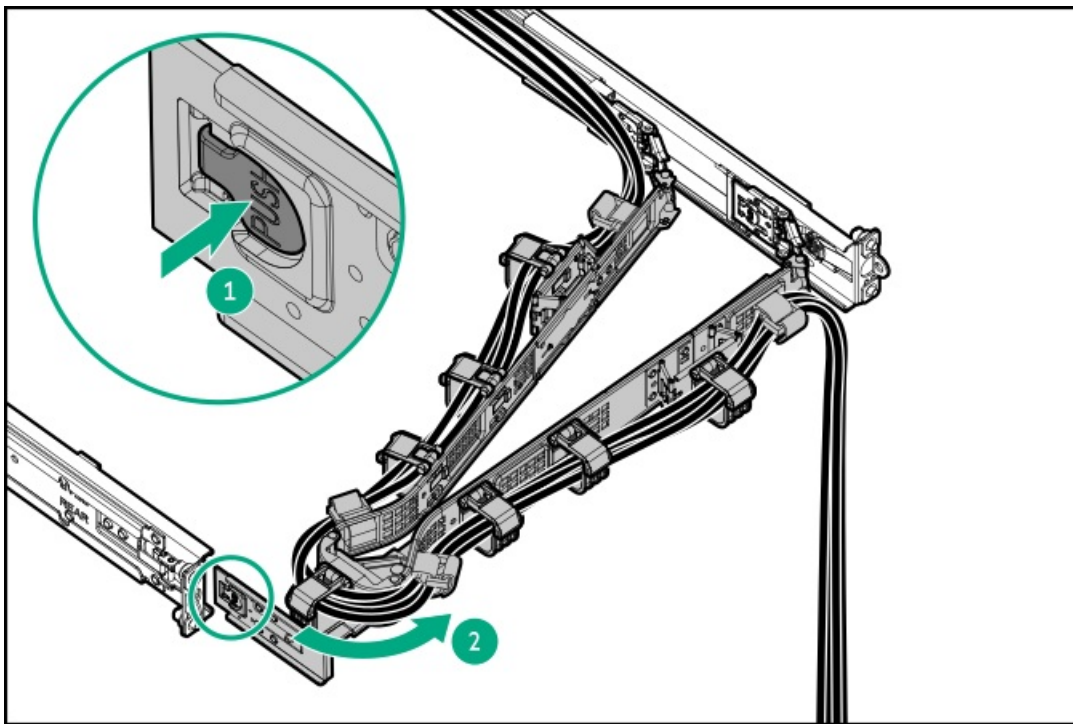
Removing and replacing a DIMM guard

Prerequisites

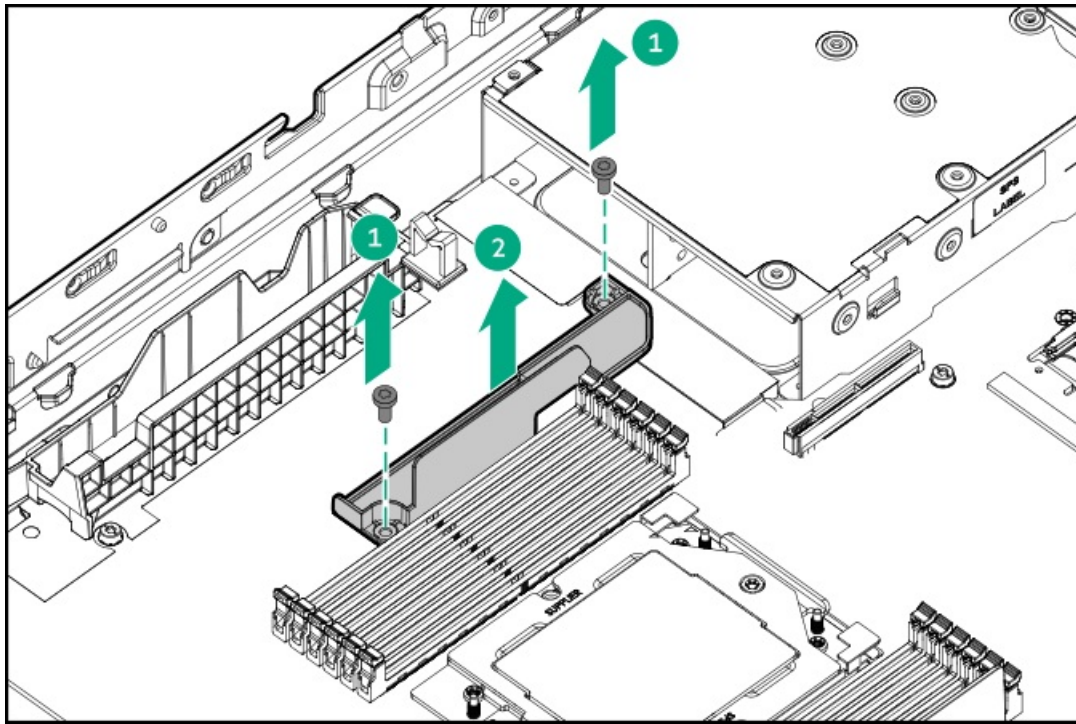
Before you perform this procedure, make sure that you have a T-15 Torx screwdriver available.

Procedure

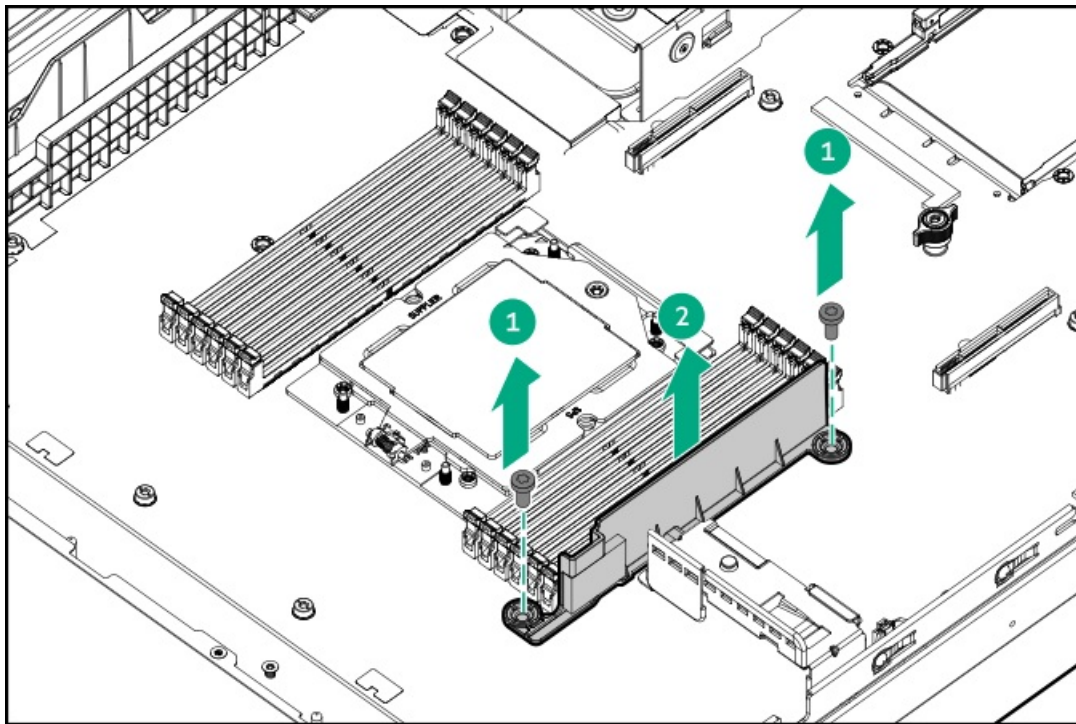
1. Power down the server.
2. If installed, open the cable management arm.



3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Remove the server from the rack.
6. Place the server on a flat, level work surface.
7. Remove the access panel.
8. Do one of the following:
 - a. Remove the air baffle.
 - b. Remove the midplane drive cage.
9. Remove the DIMM guard.
 - Left



- Right



Results

To replace the component, reverse the removal procedure.

Transceiver replacement

- [Transceiver warnings and cautions](#)
- [Removing and replacing a transceiver](#)

Subtopics

[Transceiver warnings and cautions](#)

[Removing and replacing a transceiver](#)

Transceiver warnings and cautions



WARNING:

Fiber-optic transceivers and fiber-optic cables connected to transceivers emit laser light that can damage your eyes. To avoid eye injuries, avoid direct eye exposure to the beam from the fiber-optic transceiver or into the ends of fiber-optic cables when they are powered-up.



CAUTION:

The presence of dust in transceiver ports can cause poor cable connectivity. To prevent dust from entering, install a dust plug in an unused transceiver port.



CAUTION:

Supported transceivers can be hot-swapped—removed and installed while the server is powered-on. However, to prevent potential damage to the transceiver or the fiber-optic cable, disconnect the cable from the transceiver before hot-swapping it.



CAUTION:

Do not remove and install transceivers more often than is necessary. Doing so can shorten the useful life of the transceiver.



IMPORTANT:

When you replace a transceiver with another of a different type, the server might retain selected port-specific configuration settings that were configured for the replaced transceiver. Be sure to validate or reconfigure port settings as required.

Removing and replacing a transceiver

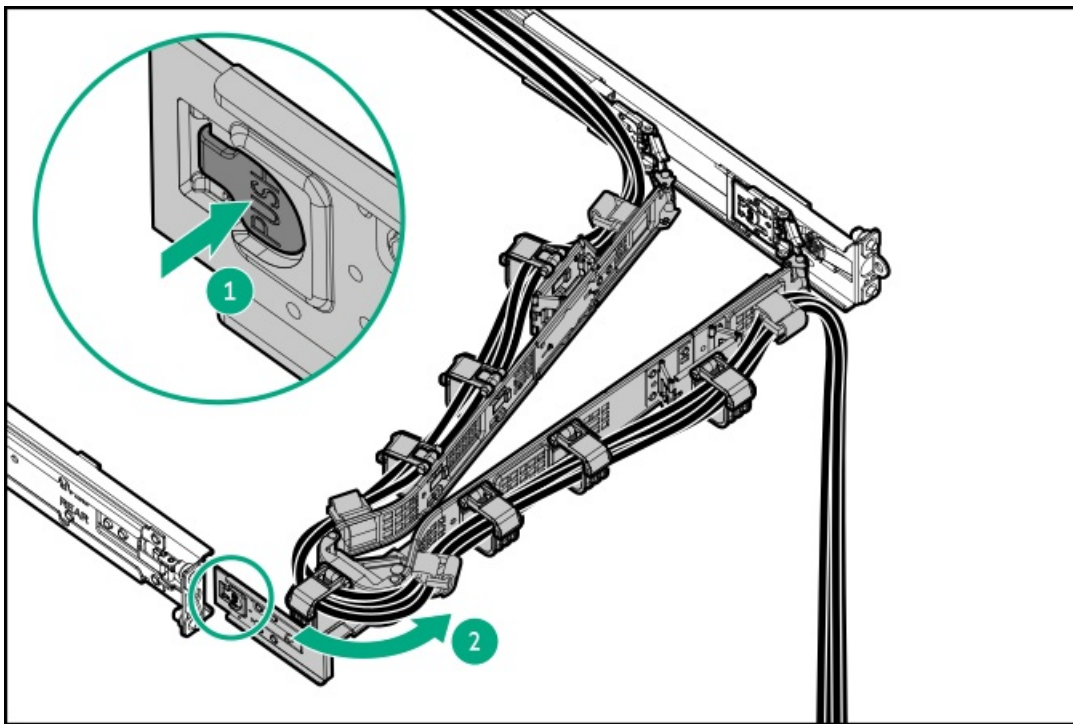
Prerequisites

Before replacing a transceiver, review the following:

- [Transceiver warnings and cautions](#)
- Transceiver documentation for specific operational and cabling requirements

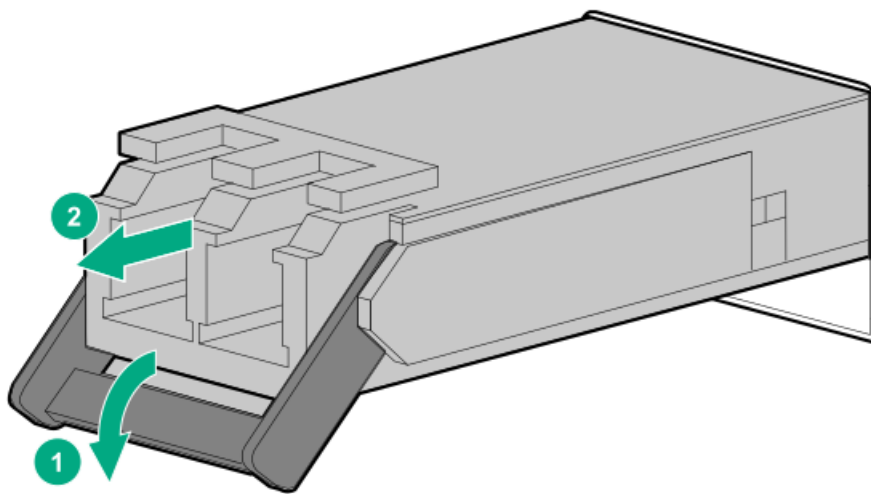
Procedure

1. If installed, open the cable management arm.



2. Disconnect the network cable from the transceiver.
3. Slide the transceiver out of the network adapter port.

See the transceiver documentation for model-specific release mechanism for removing the transceiver.



Results

To replace the component, reverse the removal procedure.

Expansion card replacement

Subtopics

[Removing and replacing an expansion card from PCIe5 x16 base riser](#)

[Removing and replacing an expansion card from PCIe5 x16 low-profile riser](#)

Removing and replacing an expansion card from PCIe5 x16 base riser

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 PCI slots have either a riser slot blank or an expansion card installed.



CAUTION:

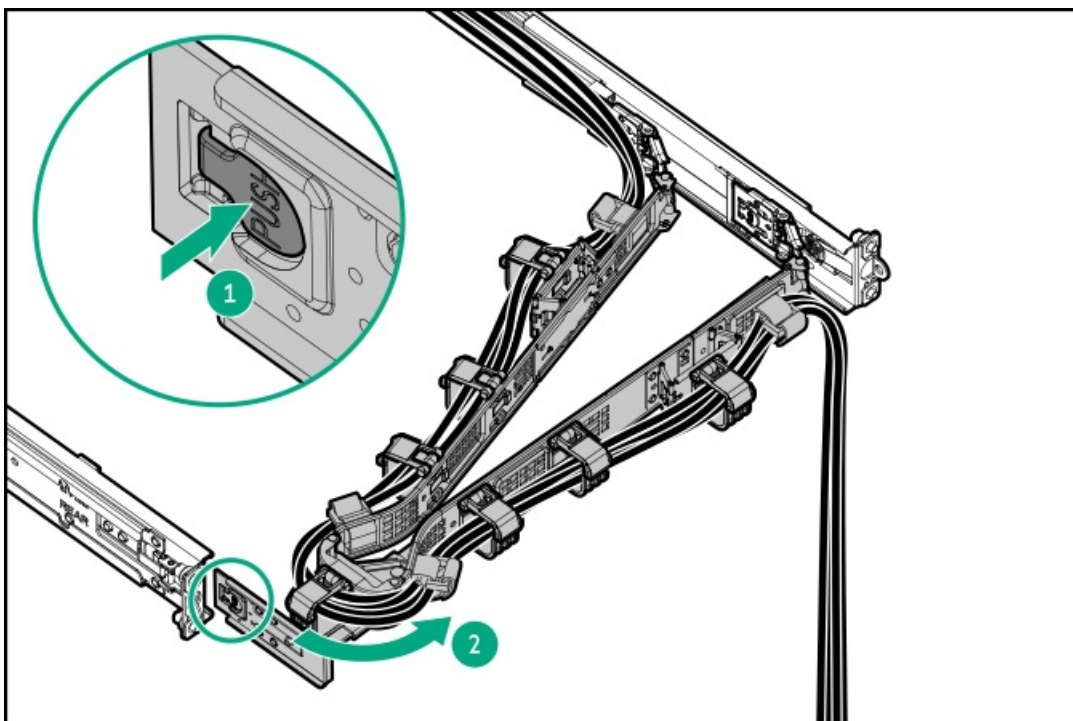
Before replacing a DIMM, backplane, expansion card, riser board, or other similar PCA components due to a perceived hardware error, make sure first that the component is firmly seated in the slot.

When installing the replacement component:

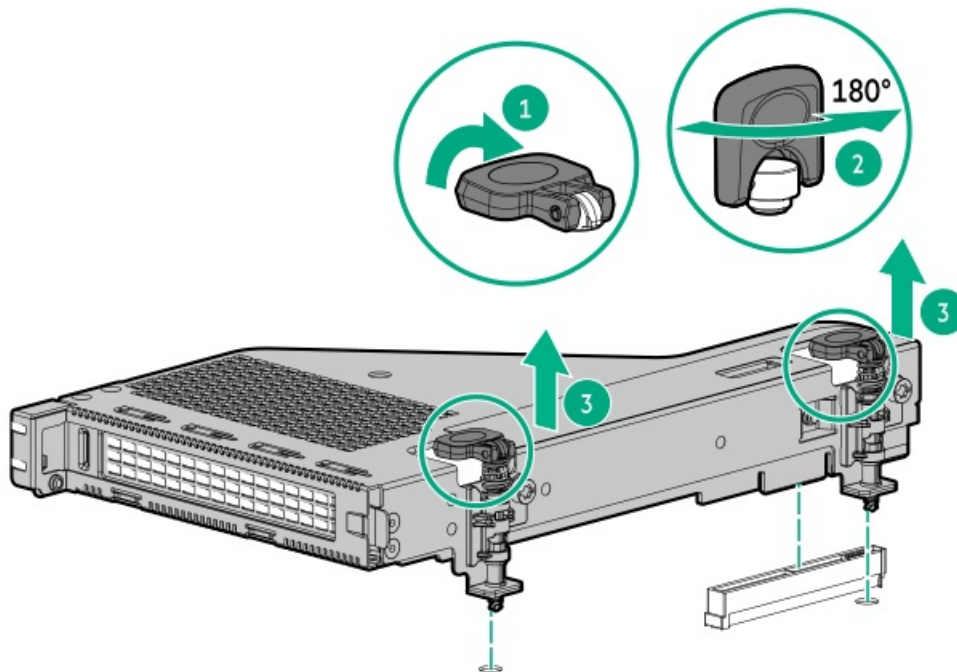
- Observe antistatic precautions.
- Handle the PCA only along the edges.
- Do not touch the components and connectors on the PCA.
- Do not bend or flex the PCA.

Procedure

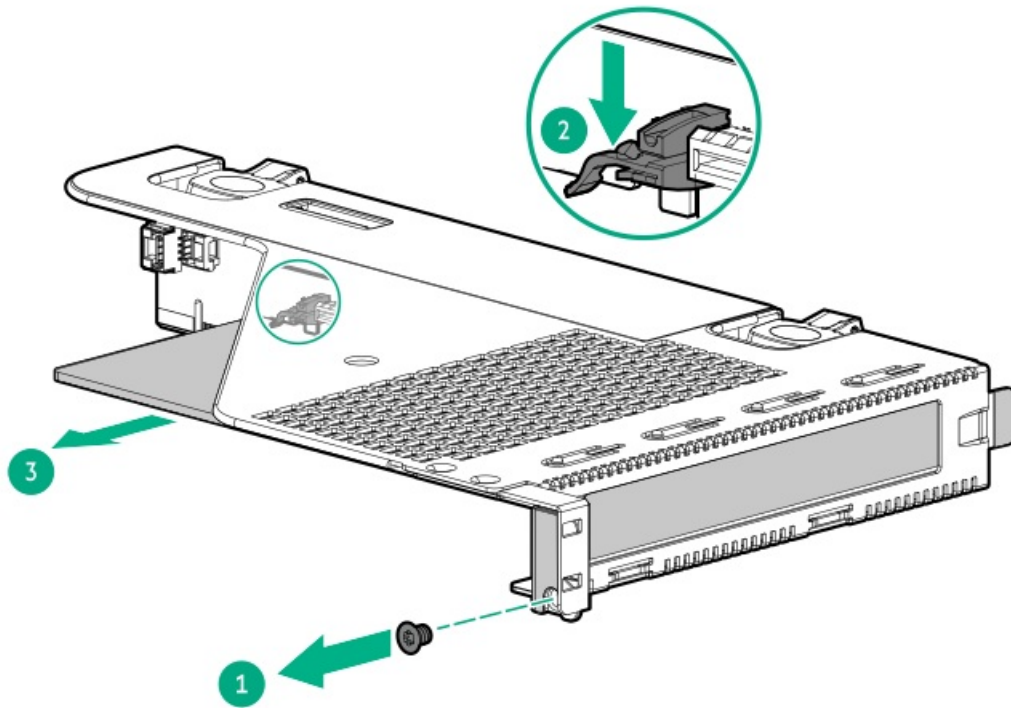
1. Power down the server.
2. If installed, open the cable management arm.



3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Remove the server from the rack.
6. Place the server on a flat, level work surface.
7. Remove the access panel.
8. Remove the rear 4 LFF drive cage.
9. Disconnect any internal cables that are connected to the expansion card.
10. Remove the riser cage:
 - a. Release the half-turn spring latch (callouts 1 and 2).
 - b. Lift the riser cage off the system board (callout 3).



11. If an expansion card with internal cables is installed on the riser, disconnect the cables from the card.
12. Remove the expansion card:
 - a. Remove the screw (callout 1).
Retain the screw. The screw will be used to secure the new expansion card spare.
 - b. Press and hold the release latch (callout 2).
 - c. Detach the expansion card from the riser (callout 3).



Results

To replace the component, reverse the removal procedure.

Removing and replacing an expansion card from PCIe5 x16 low-profile riser

Prerequisites

- Before you perform this procedure, make sure that you have the following items available:
 - T-10 Torx screwdriver
 - Phillips No. 1 screwdriver

About this task

⚠ CAUTION:

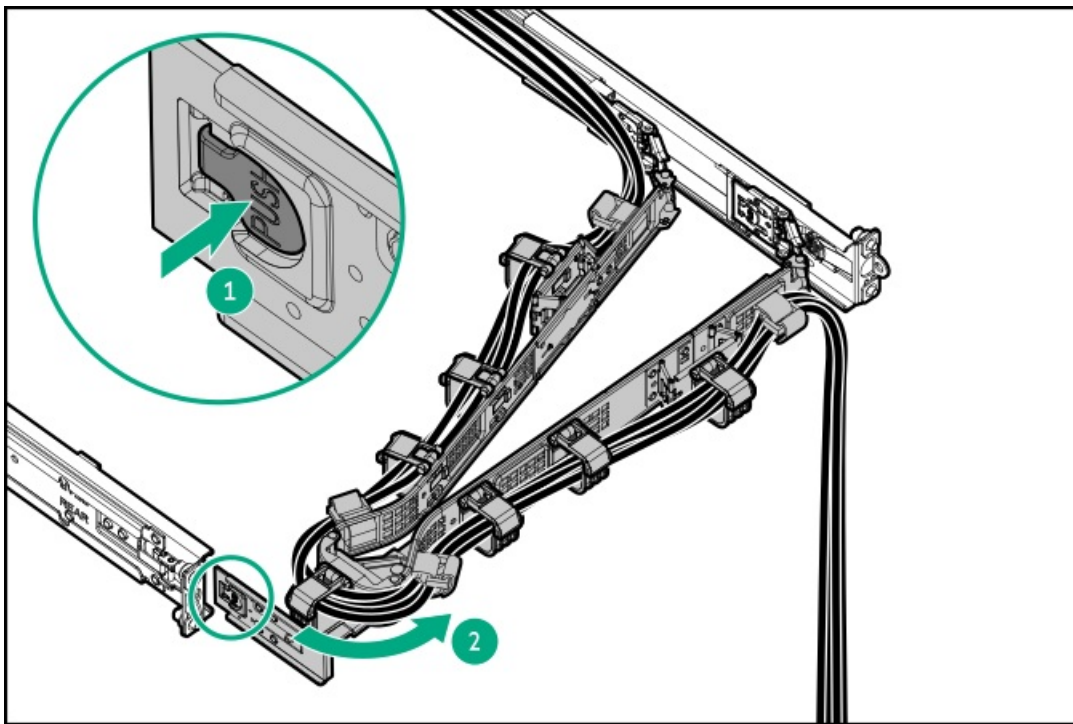
A discharge of static electricity from a finger or other conductor might damage system boards or other static-sensitive devices. To prevent damage, observe [antistatic precautions](#).

⚠ CAUTION:

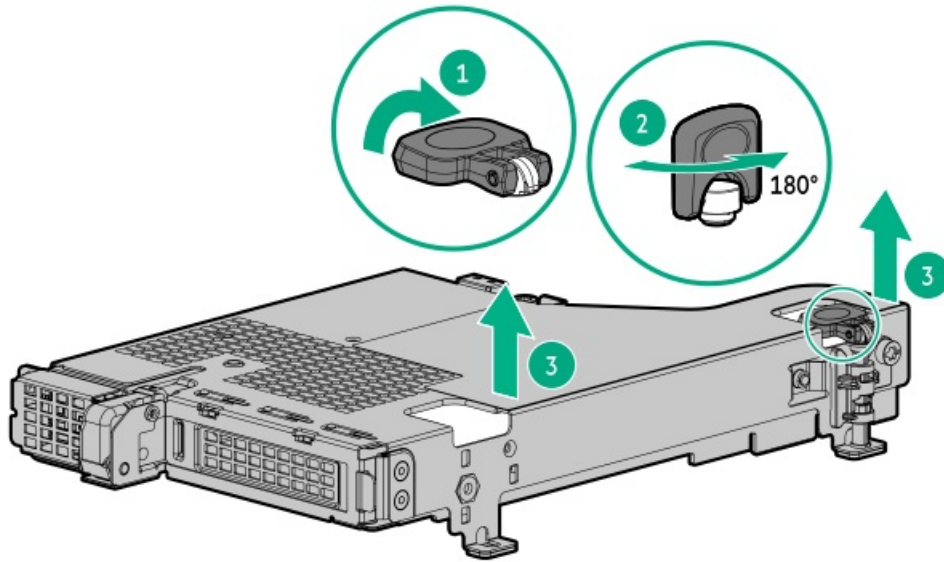
To prevent improper cooling and thermal damage, do not operate the server unless all PCI slots have either a riser slot blank or an expansion card installed.

Procedure

1. [Power down the server](#).
2. If installed, open the cable management arm.



3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Remove the server from the rack.
6. Place the server on a flat, level work surface.
7. Remove the access panel.
8. Remove the rear 4 LFF drive cage.
9. Disconnect any internal cables that are connected to the expansion card.
10. Remove the NS204i-u + secondary low-profile riser cage:
 - a. Release the half-turn spring latch (callouts 1 and 2).
 - b. Lift the riser cage off the system board (callout 3).



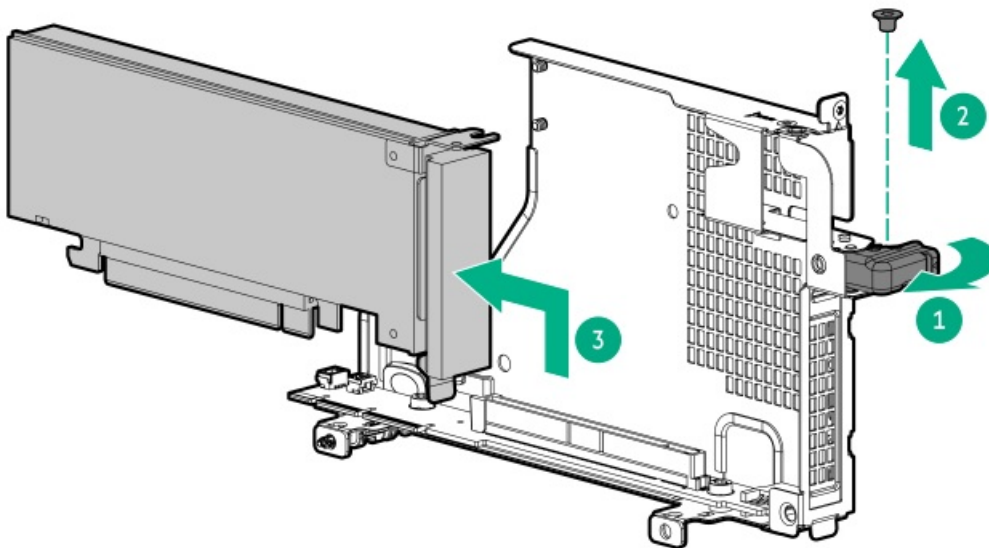
11. If installed, disconnect all cables from boot device and expansion card.

12. Remove the expansion card:

- a. Pivot the riser cage to vertical position.
- b. Open the retention latch (callout 1).
- c. Remove the expansion card screw (callout 2).

Retain the screw. The screw will be used to secure the new expansion card spare.

- d. Remove the expansion card from the riser cage (callout 3).



Results

To replace the component, reverse the removal procedure.

Removing and replacing an expansion card from three-slot primary/secondary riser cages

Prerequisites

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

About this task

⚠ CAUTION:

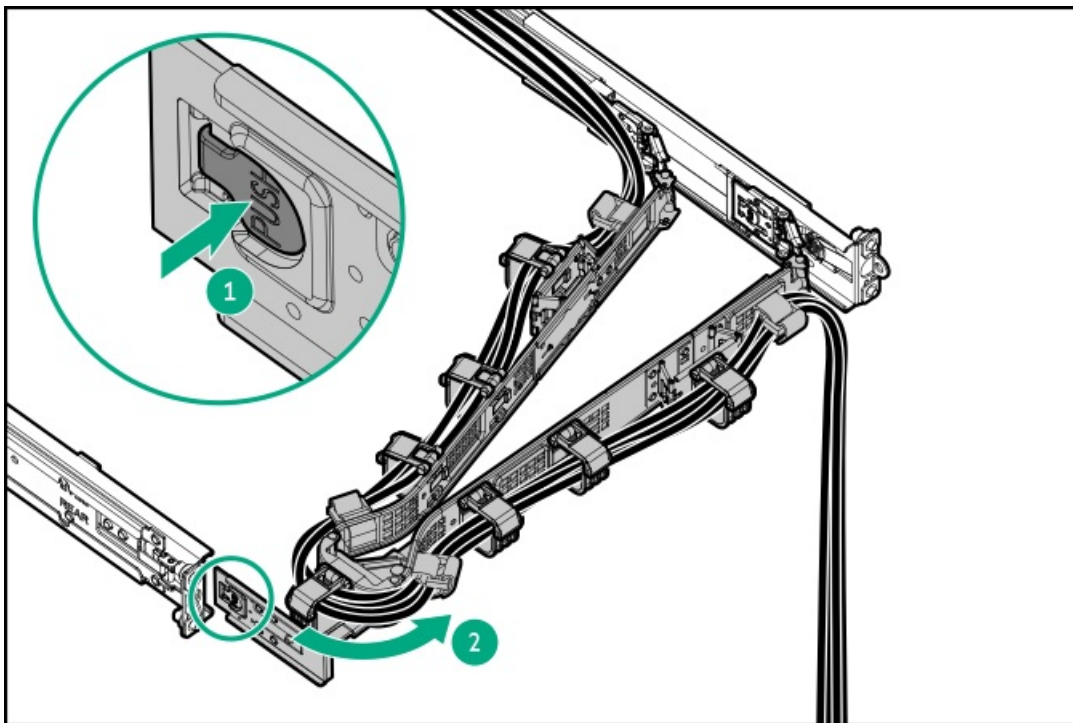
A discharge of static electricity from a finger or other conductor might damage system boards or other static-sensitive devices. To prevent damage, observe antistatic precautions.

⚠ CAUTION:

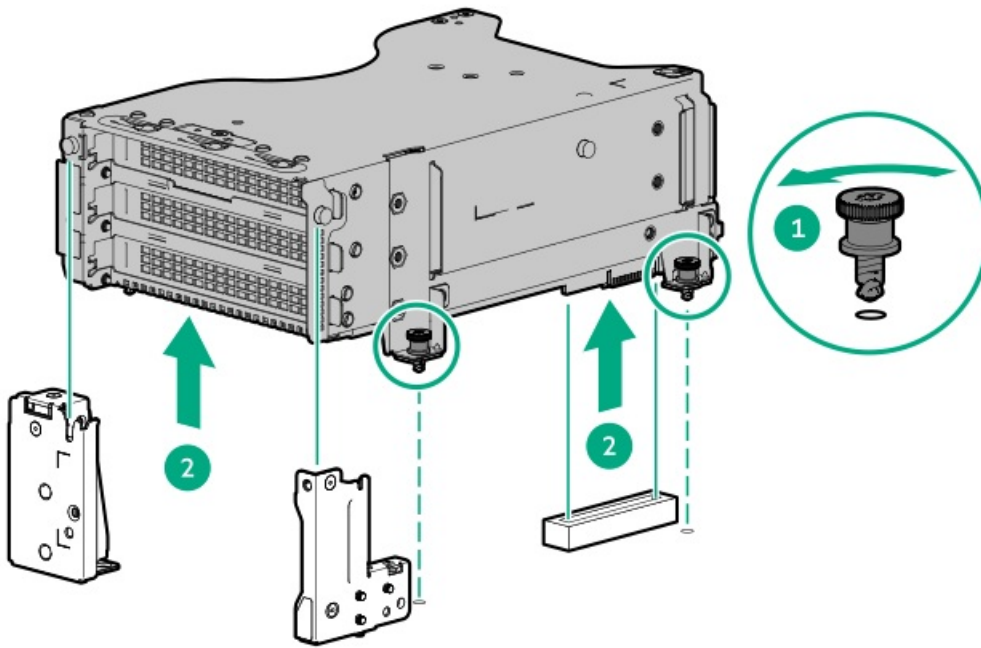
To prevent improper cooling and thermal damage, do not operate the server unless all PCI slots have either a riser slot blank or an expansion card installed.

Procedure

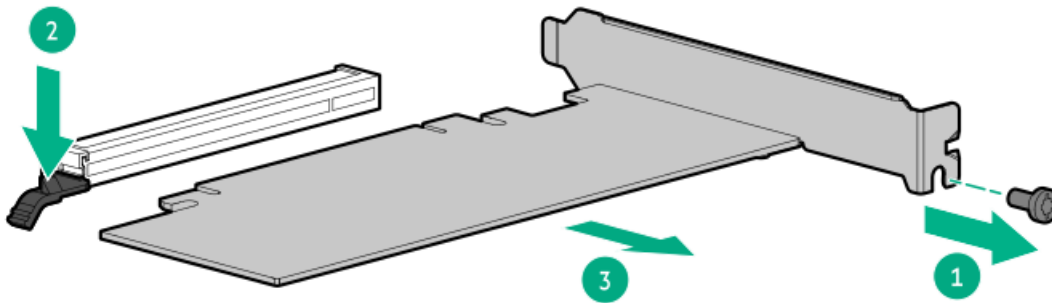
1. Power down the server.
2. If installed, open the cable management arm.



3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Remove the server from the rack.
6. Place the server on a flat, level work surface.
7. Remove the access panel.
8. Disconnect any internal cables that are connected to the expansion card.
9. Remove the three-slot riser cage:
 - a. Loosen the captive screws (callouts 1).
 - b. Lift the riser cage off the system board (callout 2).



10. If an expansion card with internal cables is installed on the riser, disconnect the cables from the card.
11. Remove the expansion card.



Results

To replace the component, reverse the removal procedure.

Removing and replacing a type-o storage controller

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:

The port blank provides EMI shielding and helps maintain proper thermal status inside the server. Do not operate the server when a port blank is removed without the corresponding I/O port option installed.

CAUTION:

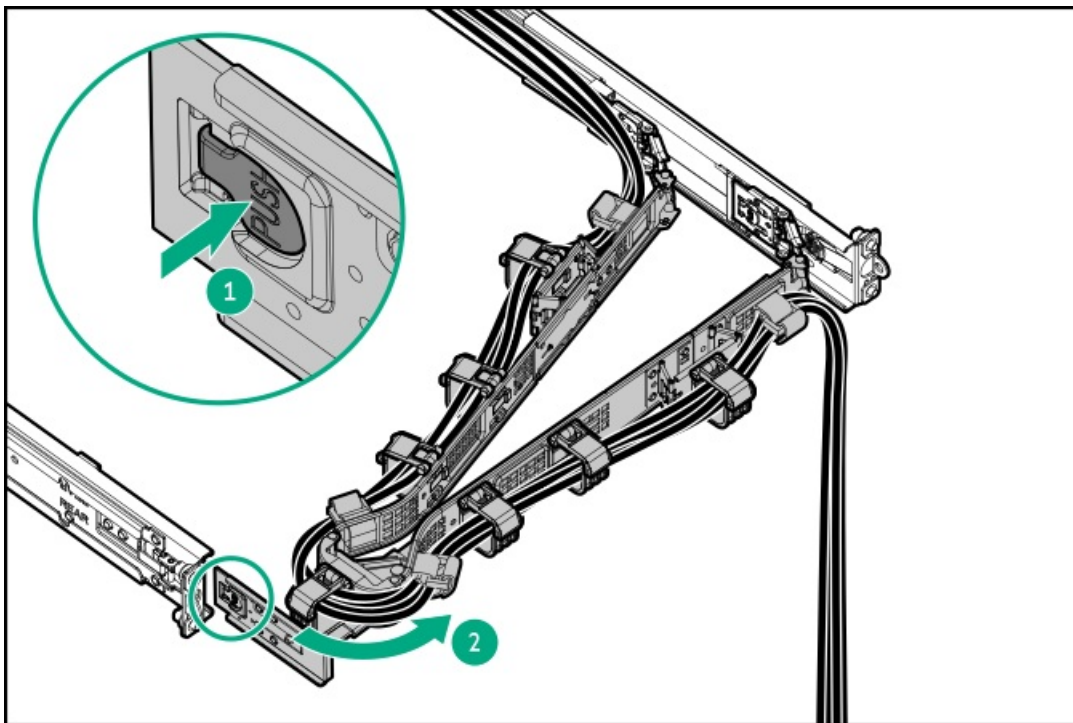
Before replacing a DIMM, backplane, expansion card, riser board, or other similar PCA components due to a perceived hardware error, make sure first that the component is firmly seated in the slot.

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.

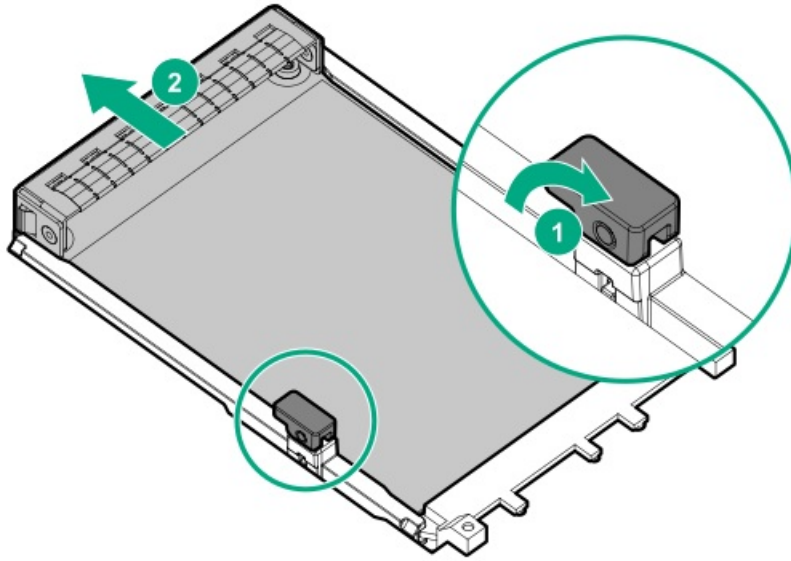
Procedure

1. Power down the server.
2. If installed, open the cable management arm.



3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Remove the server from the rack.
6. Place the server on a flat, level work surface.
7. Remove the access panel.
8. If the server is in the rear 4 LFF drive configuration, remove the rear 4 LFF drive cage.
9. Remove the secondary riser cage
10. Disconnect the storage cables from the type-o controller.
11. Remove the type-o storage controller:

- a. Rotate the locking pin to the open (vertical) position (callout 1).
- b. Slide the controller out of the bay (callout 2).



Results

To replace the component, reverse the removal procedure.

Removing and replacing an OCP slot blank

Prerequisites

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

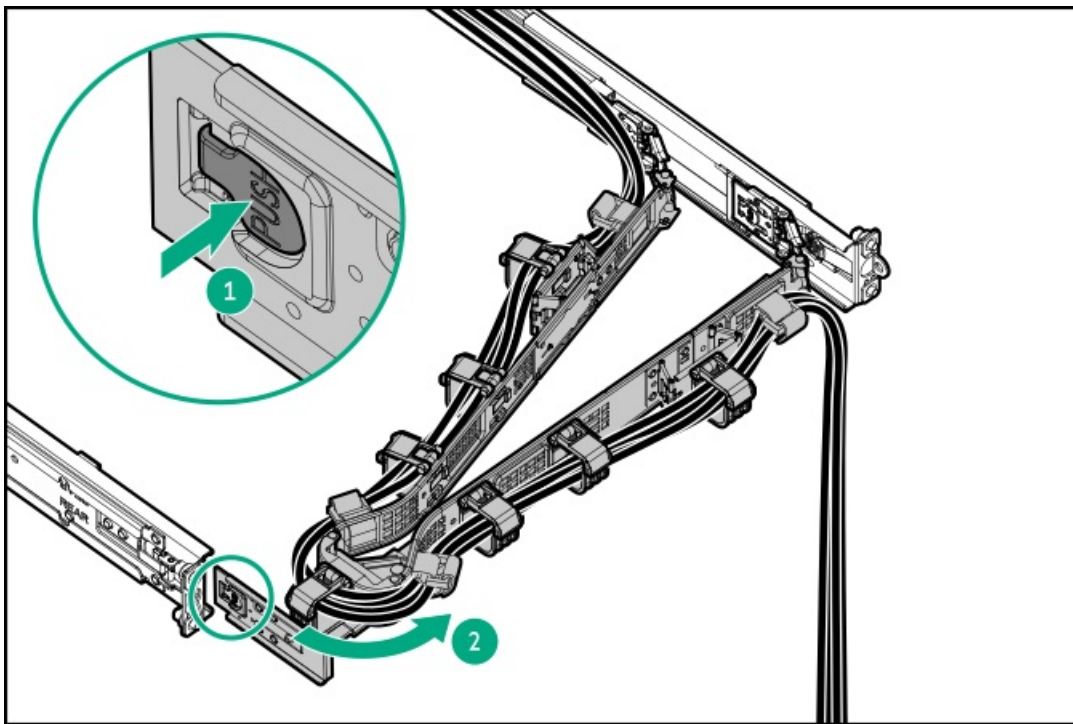
About this task

CAUTION:

The port blank provides EMI shielding and helps maintain proper thermal status inside the server. Do not operate the server when a port blank is removed without the corresponding I/O port option installed.

Procedure

1. Power down the server.
2. If installed, open the cable management arm.



3. Remove all power:

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

4. Disconnect all peripheral cables from the server.

5. Remove the server from the rack.

6. Place the server on a flat, level work surface.

7. Remove the access panel.

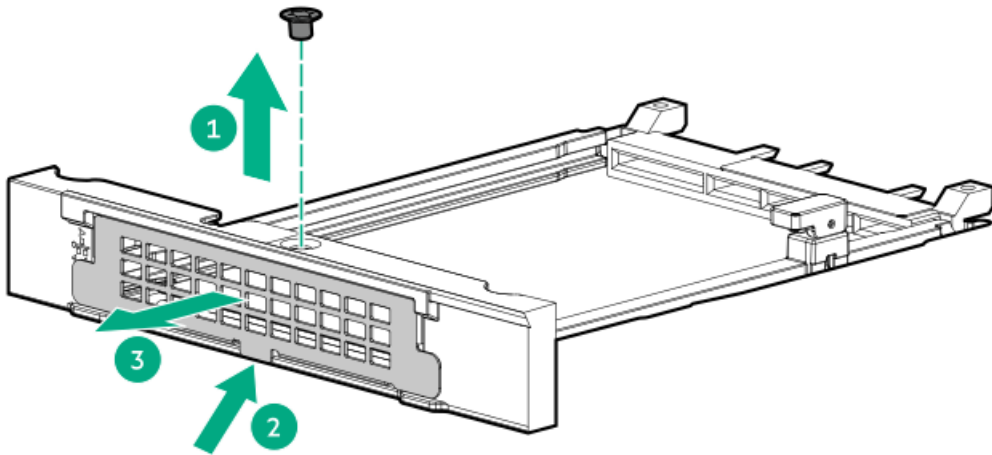
8. If the rear 4 LFF drive cage is installed, remove it.

9. Remove the riser cage.

10. Remove the OCP slot blank:

- a. Remove the blank screw (callout 1).
- b. Use a plastic spudger to pry the top side of the blank from the chassis (callout 2).
- c. Remove the blank (callout 3).

Retain the screw and blank for future use.



Results

To replace the component, reverse the removal procedure.

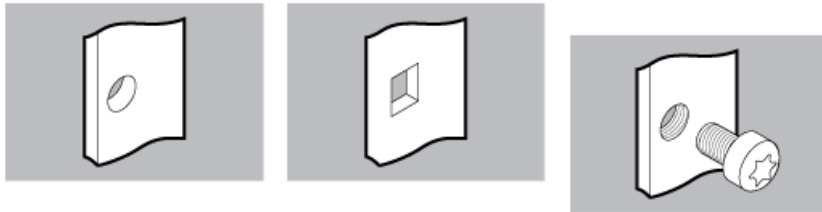
Removing and replacing the rack rails

Prerequisites

If you are replacing the rack mounting rails from a threaded-hole rack, make sure that you have a T-25 Torx screwdriver available.

About this task

The illustrations used in this procedure show an icon on the upper right corner of the image. This icon indicates whether the action shown in the image is for a round-hole, square-hole, or a threaded-hole rack.



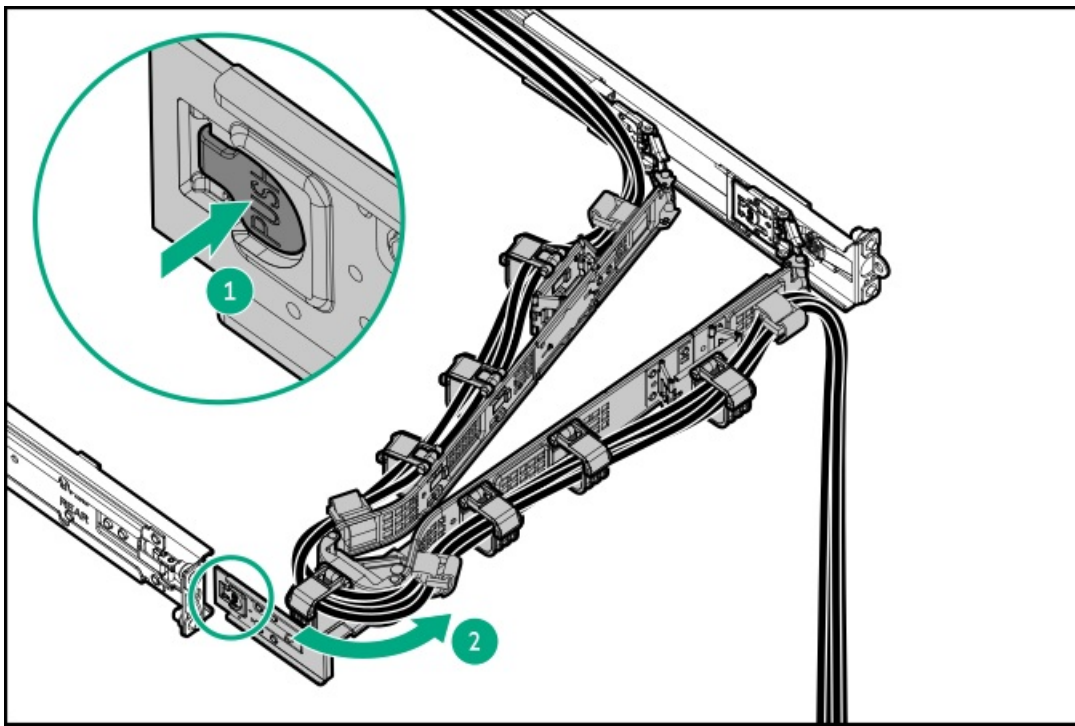
Round-hole rack

Square-hole rack

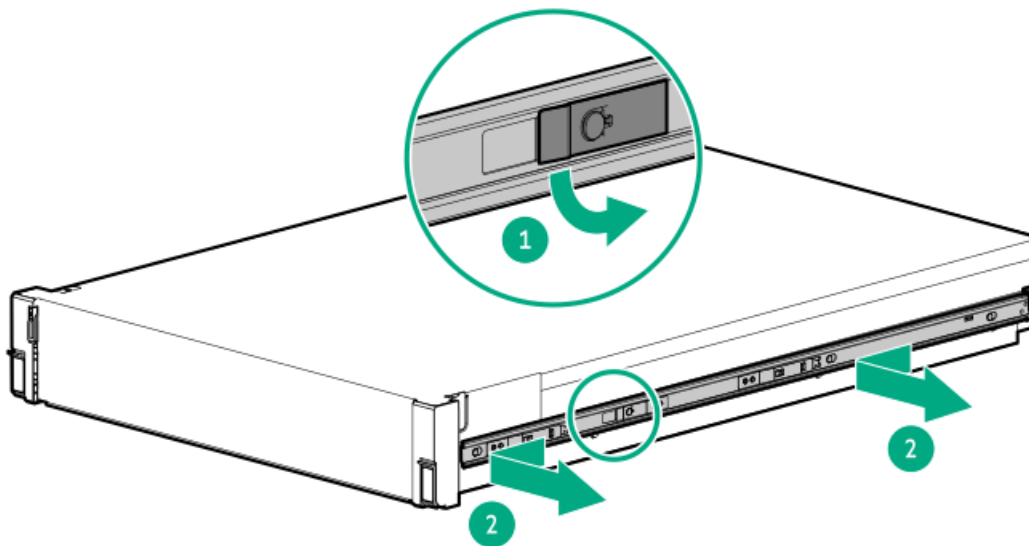
Threaded-hole rack

Procedure

1. [Power down the server.](#)
2. If installed, open the cable management arm.

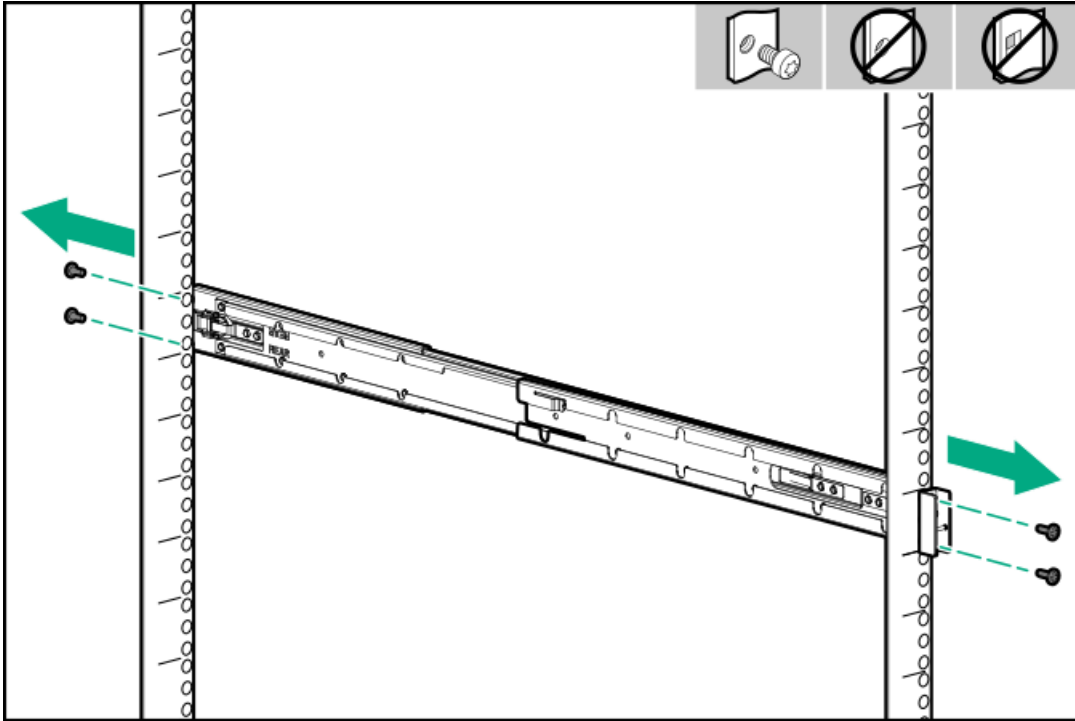


3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Remove the server from the rack.
6. Place the server on a flat, level surface.
7. To remove the sliding rails, do the following:
 - a. Pull and hold the release latch (callout 1).
 - b. Slide the rail towards the front panel and pull it from the server (callout 2).

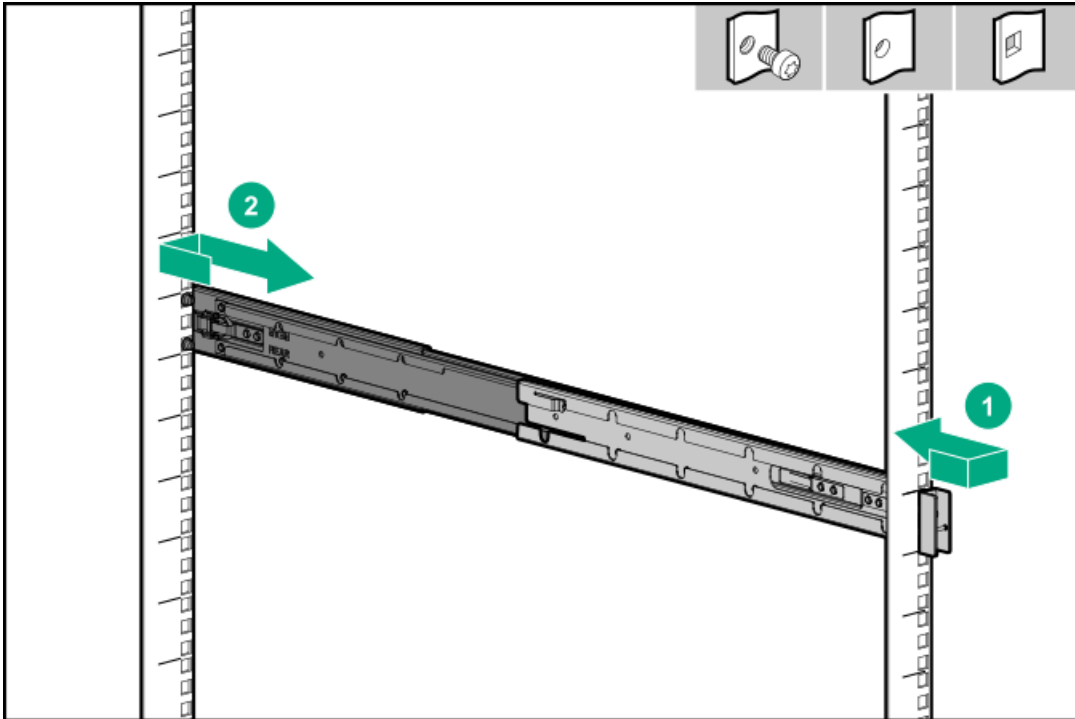


- c. Repeat steps a and b to remove the other rail.
8. To remove the rack mounting rails, do the following:

a. In a threaded-hole rack, remove the rail screws.



b. Disengage the rail pins from the rack columns (callouts 1 and 2).



c. Repeat steps a and b to remove the other rack rail.

Results

To replace the component, reverse the removal procedure.

Removing and replacing the left OCP Slot 21 rail



Prerequisites

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

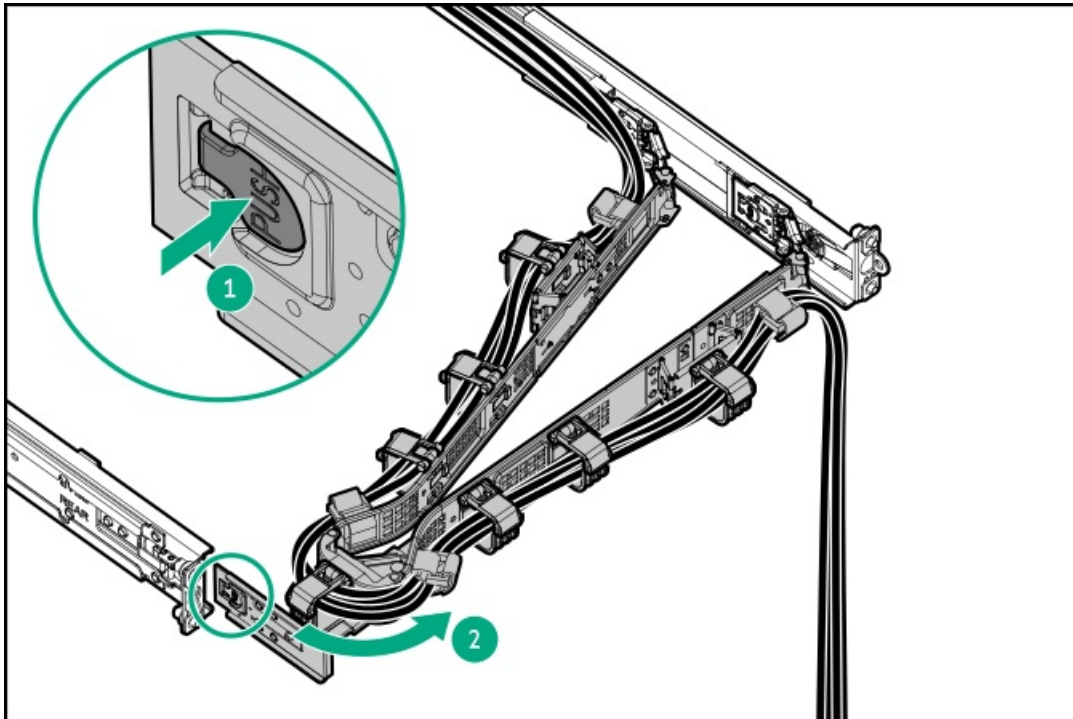
About this task

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.

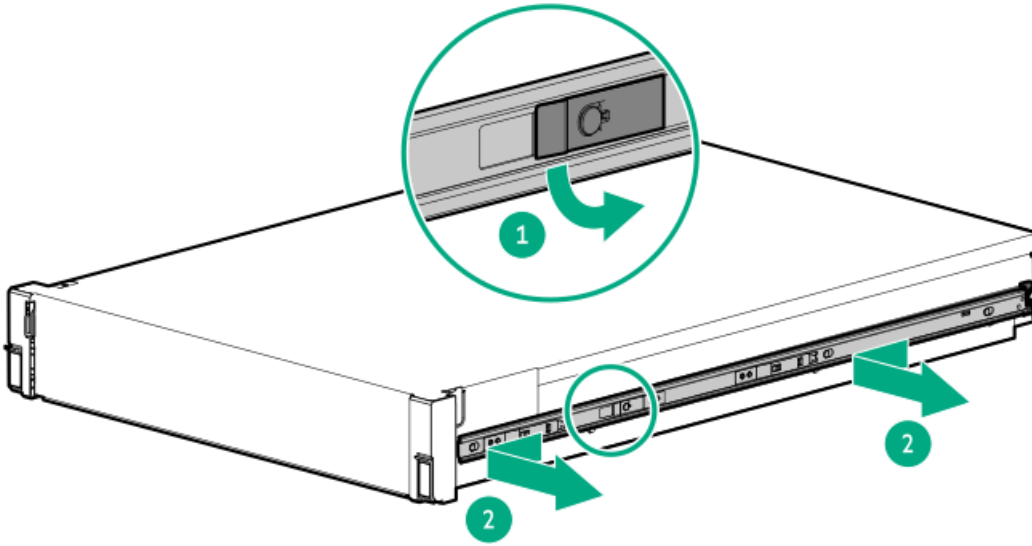
Procedure

1. Power down the server.
2. If installed, open the cable management arm.



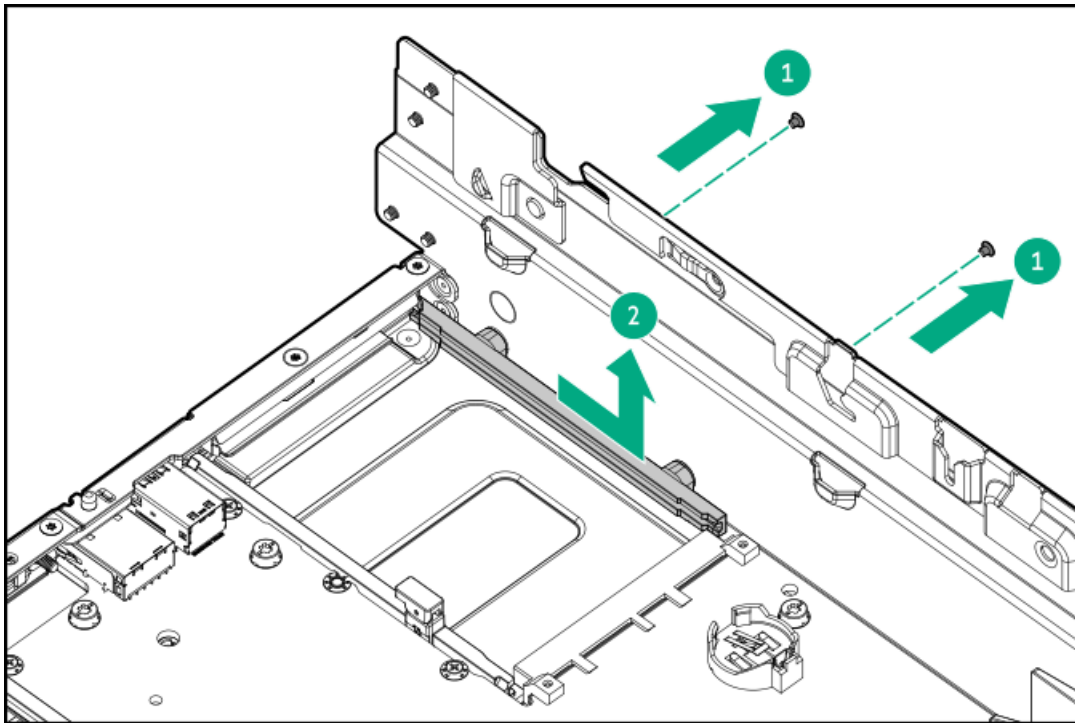
3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Remove the server from the rack.
6. Place the server on a flat, level work surface.
7. Remove the access panel.
8. If the rear 4 LFF drive cage is installed, remove it.
9. Remove the primary riser cage.
10. If installed, remove one of following:
 - Remove the OCP NIC 3.0 adapter
 - Removing and replacing a type-o storage controller
11. Remove the right rack sliding rail from the chassis:

- a. Pull and hold the release tab (callout 1).
- b. Slide the rail towards the front panel and pull it away from the server (callout 2).



12. Remove the left OCP Slot 21 rail.

Retain all screws. These screws will be used to secure the new left OCP Slot 21 rail spare.



Results

To replace the component, reverse the removal procedure.

Riser board replacement

Subtopics

Removing and replacing the PCIe5 x16 base riser from one-slot riser cage

[Removing and replacing the PCIe5 x16 low-profile riser](#)

[Removing and replacing the PCIe5 x16 base riser from three-slot riser cage](#)

[Removing and replacing the free-height riser](#)

[Removing and replacing the stacking riser](#)

Removing and replacing the PCIe5 x16 base riser from one-slot riser cage

Prerequisites

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

- T-15 Torx screwdriver
- T-10 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](#).



CAUTION:

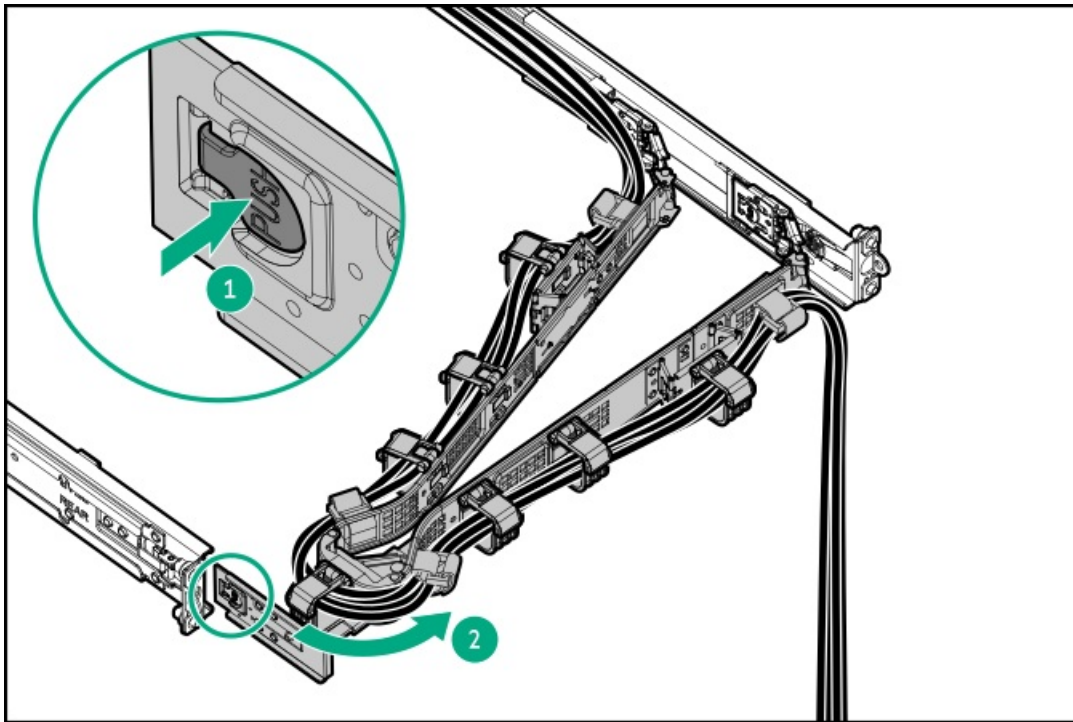
Before replacing a DIMM, backplane, expansion card, riser board, or other similar PCA components due to a perceived hardware error, make sure first that the component is firmly seated in the slot.

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. [Power down the server](#).
2. If installed, open the cable management arm.



3. Remove all power:

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

4. Disconnect all peripheral cables from the server.

5. Remove the server from the rack.

6. Place the server on a flat, level work surface.

7. Remove the access panel.

8. Do one of the following:

- a. Remove the air baffle.
- b. Remove the midplane drive cage.

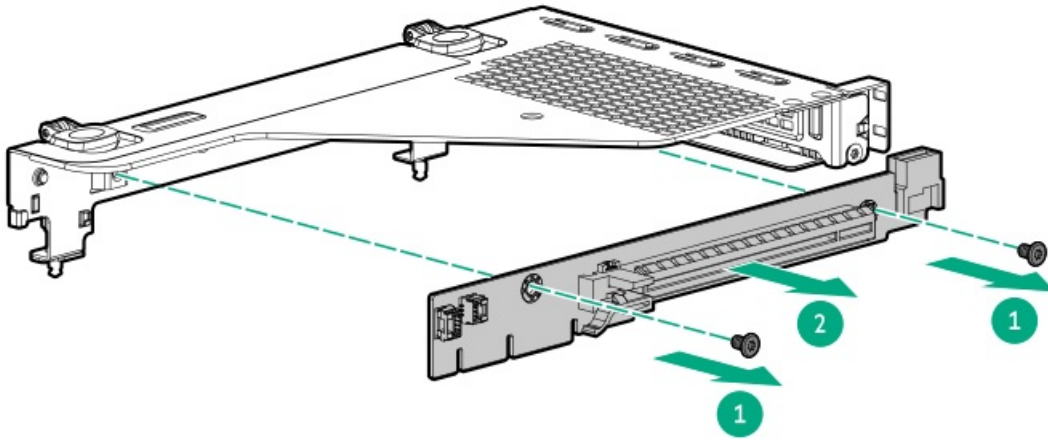
9. Remove the rear 4 LFF drive cage.

10. Remove the riser cage.

11. Remove the expansion card.

12. Remove the riser board.

Retain all screws. These screws will be used to secure the new riser board spare.



Results

To replace the component, reverse the removal procedure.

Removing and replacing the PCIe5 x16 low-profile riser

Prerequisites

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

- T-15 Torx screwdriver
- T-10 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](#).

⚠ CAUTION:

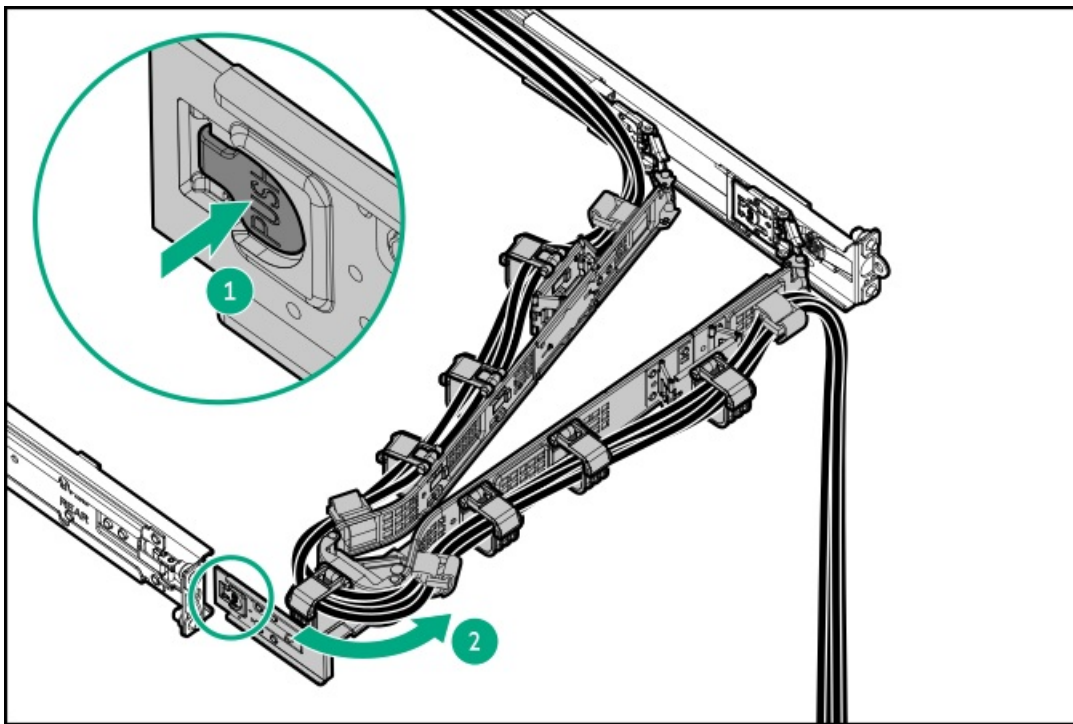
Before replacing a DIMM, backplane, expansion card, riser board, or other similar PCA components due to a perceived hardware error, make sure first that the component is firmly seated in the slot.

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. [Power down the server](#).
2. If installed, open the cable management arm.



3. Remove all power:

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

4. Disconnect all peripheral cables from the server.

5. Remove the server from the rack.

6. Place the server on a flat, level work surface.

7. Remove the access panel.

8. Do one of the following:

- a. Remove the air baffle.
- b. Remove the midplane drive cage.

9. Remove the rear 4 LFF drive cage.

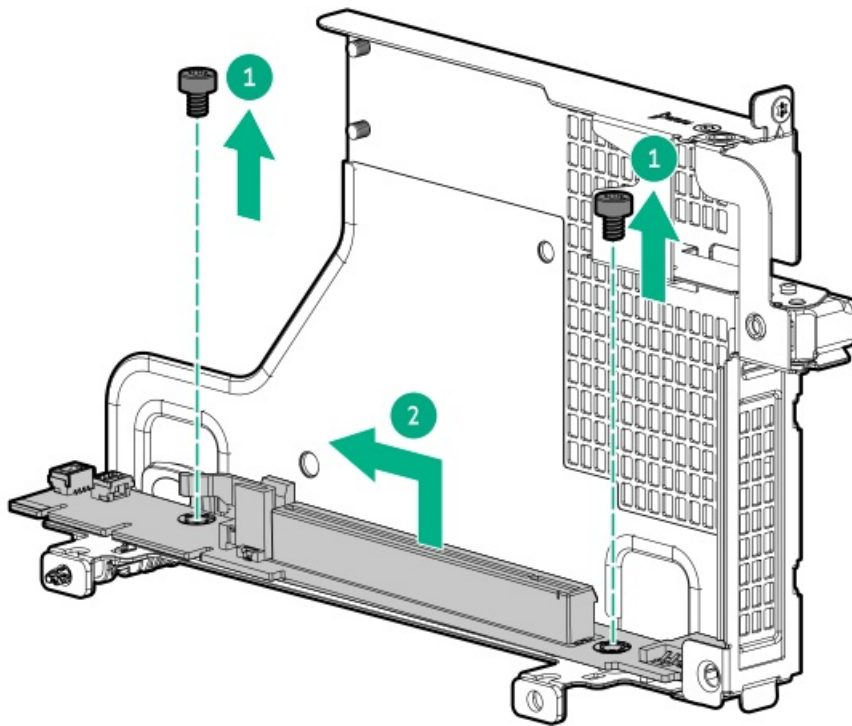
10. Remove the riser cage.

11. If an expansion card with internal cables is installed on the riser, disconnect the cables from the card.

12. Remove the expansion card.

13. Remove the riser board.

Retain all screws. These screws will be used to secure the new riser board spare.



Results

To replace the component, reverse the removal procedure.

Removing and replacing the PCIe5 x16 base riser from three-slot riser cage

Prerequisites

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

- T-15 Torx screwdriver
- T-10 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](#).

⚠ 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.

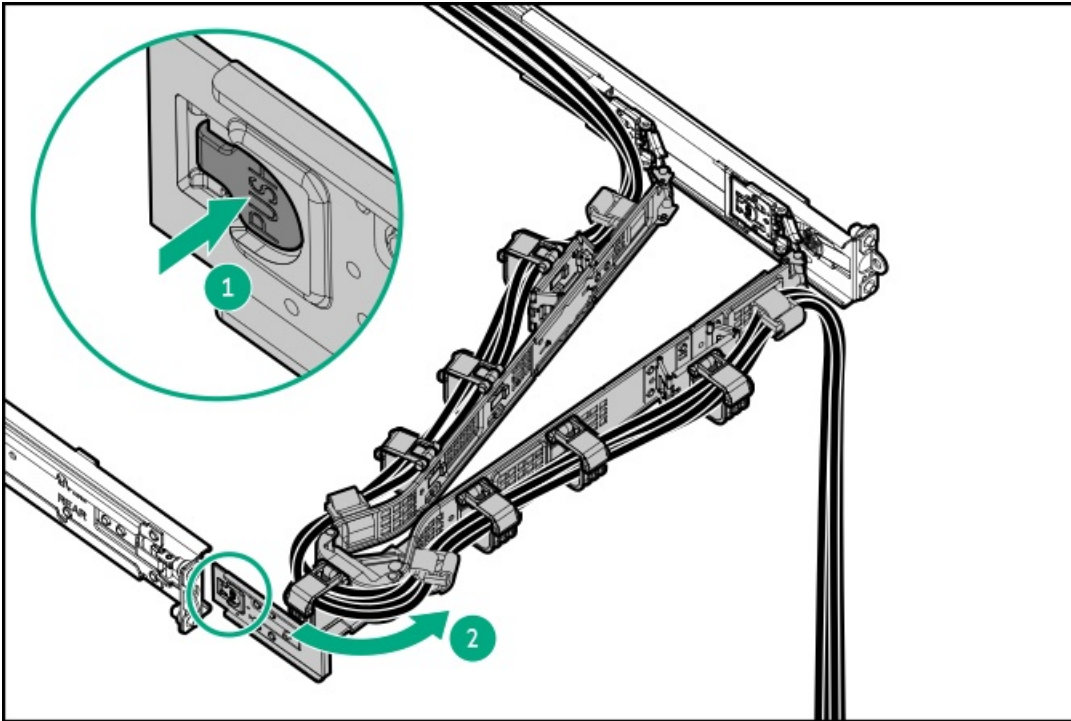
When installing the replacement component:

- 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.

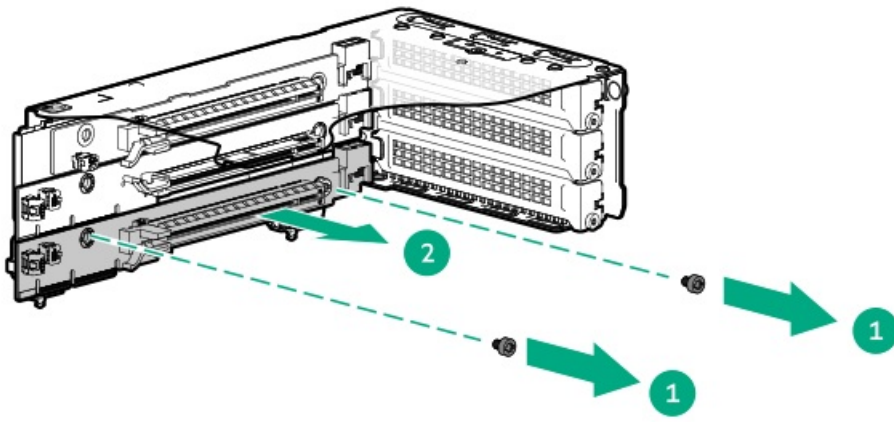
Procedure

1. [Power down the server.](#)

2. If installed, open the cable management arm.

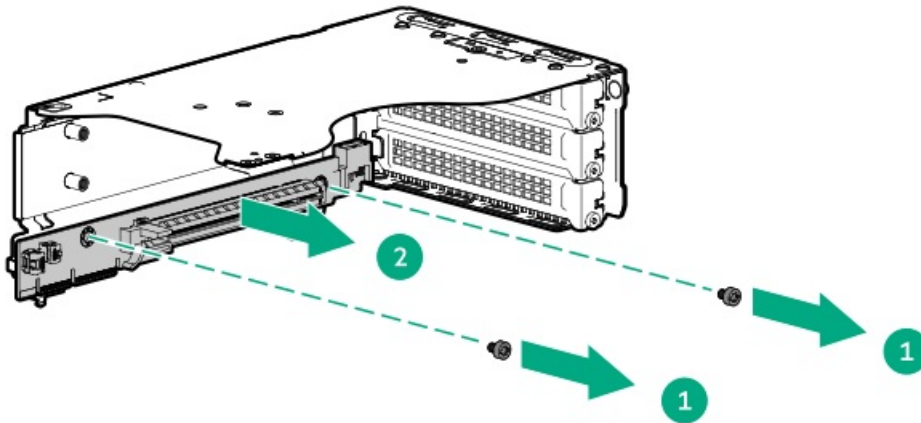


3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
 4. Disconnect all peripheral cables from the server.
 5. Remove the server from the rack.
 6. Place the server on a flat, level work surface.
 7. Remove the access panel.
 8. Do one of the following:
 - a. Remove the air baffle.
 - b. Remove the midplane drive cage.
 9. Disconnect the riser cable from the system board.
 10. Remove the riser cage.
 11. Remove the expansion card.
- Replacing the base riser from the three-slot primary riser cage**
12. Remove the base riser from the riser cage.



Replacing the base riser from the three-slot secondary riser cage

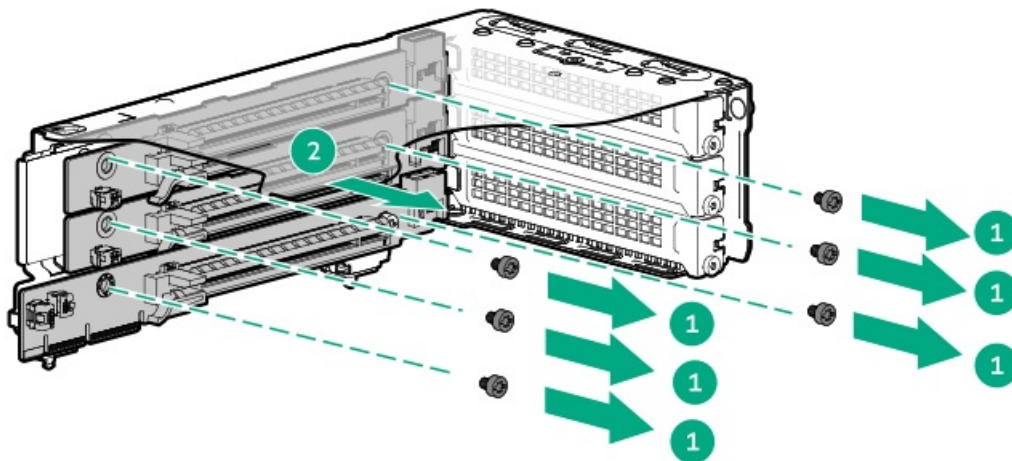
13. If two stacking risers are not installed, remove the base riser from the riser cage.



14. If two stacking risers are installed:

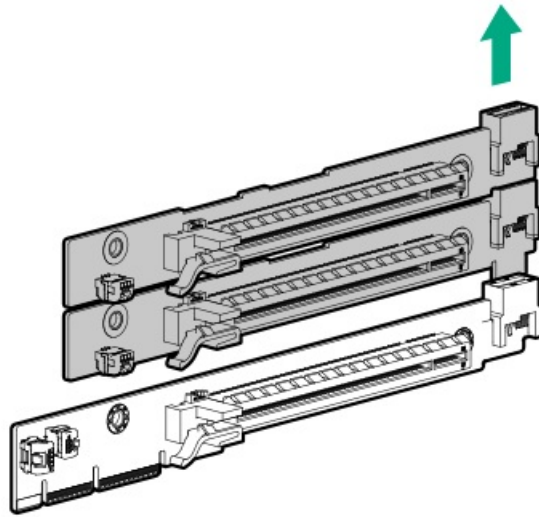
a. Remove all risers from the riser cage.

Retain all screws for future use.



b. Detach the stacking risers from the base riser.





Results

To replace the component, reverse the removal procedure.

Removing and replacing the free-height riser

Prerequisites

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

- T-15 Torx screwdriver
- T-10 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](#).

⚠ CAUTION:

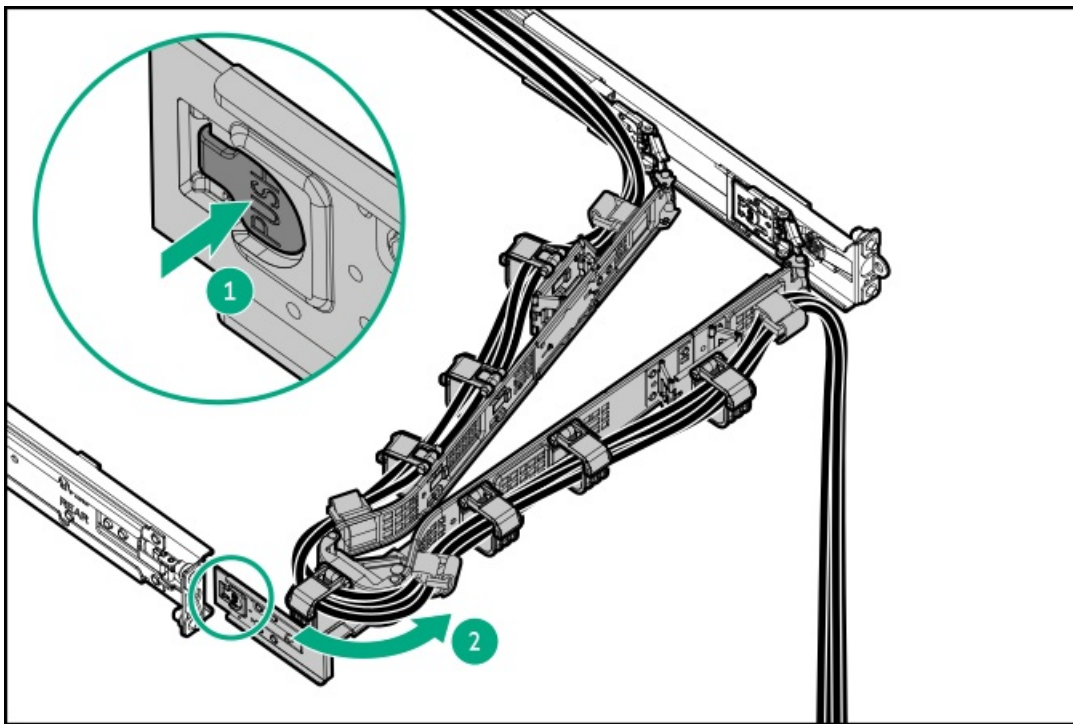
Before replacing a DIMM, backplane, expansion card, riser board, or other similar PCA components due to a perceived hardware error, make sure first that the component is firmly seated in the slot.

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.
-

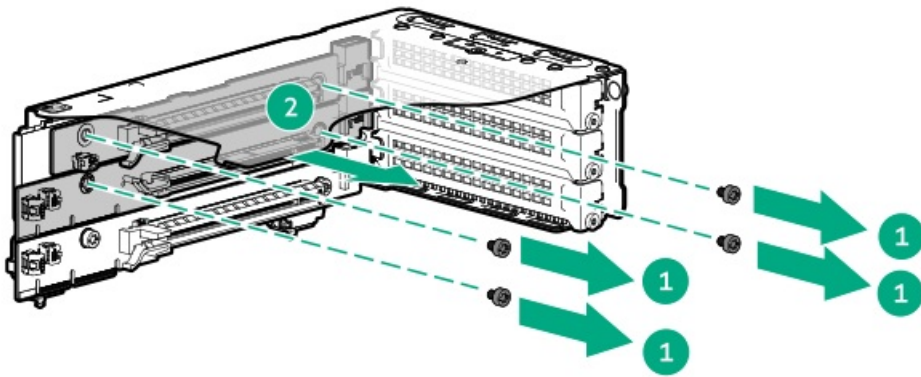
Procedure

1. [Power down the server](#).
2. If installed, open the cable management arm.

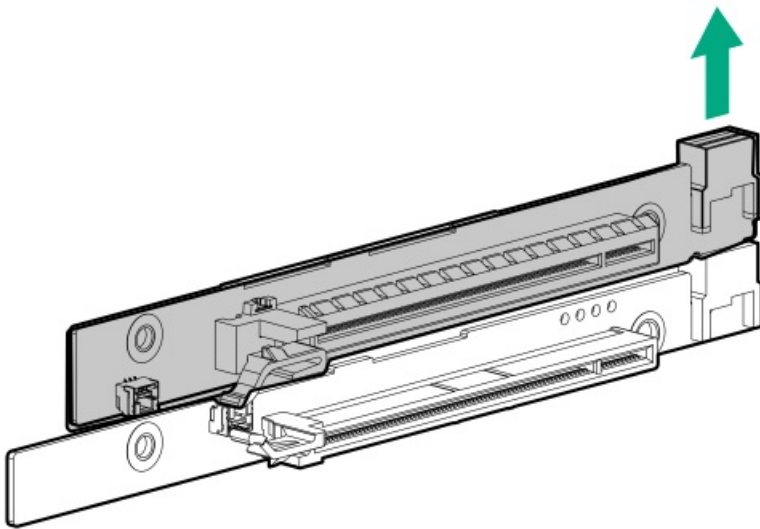


3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Remove the server from the rack.
6. Place the server on a flat, level work surface.
7. Remove the access panel.
8. Do one of the following:
 - a. Remove the air baffle.
 - b. Remove the midplane drive cage.
9. Disconnect the riser cable from the system board.
10. Remove the primary riser cage.
11. Remove the expansion card.
12. Remove the free-height riser and stacking riser from the riser cage.

Retain all screws for future use.



13. Detach the free-height riser and the stacking riser.



Results

To replace the component, reverse the removal procedure.

Removing and replacing the stacking riser

Prerequisites

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

- T-15 Torx screwdriver
- T-10 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](#).

CAUTION:

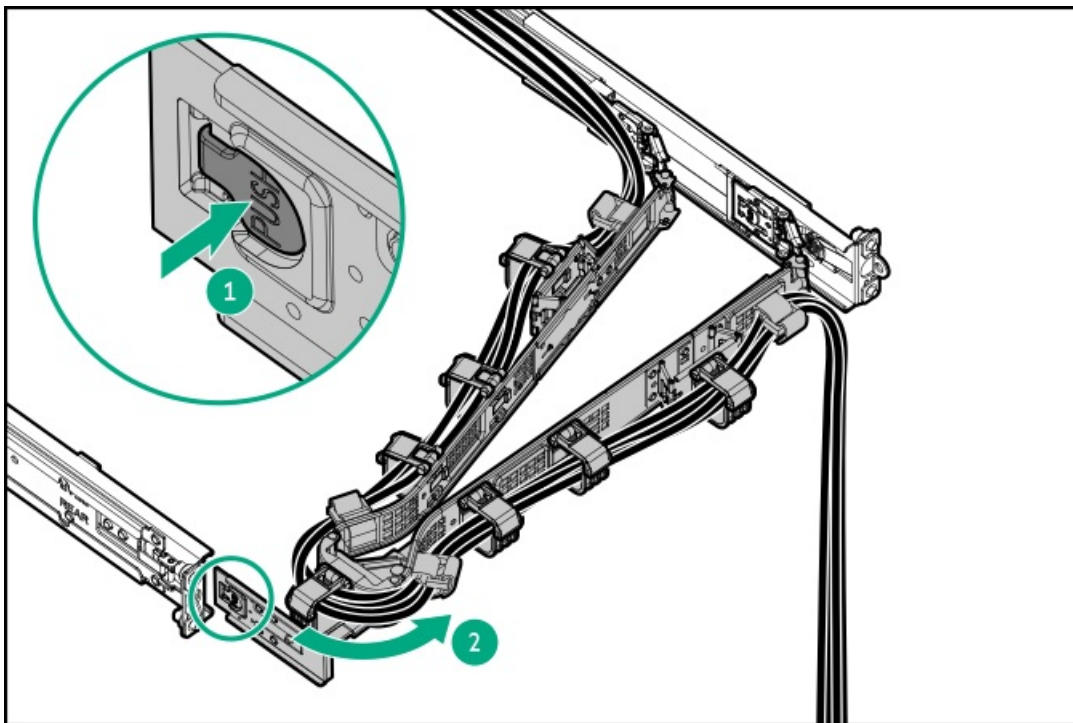
Before replacing a DIMM, backplane, expansion card, riser board, or other similar PCA components due to a perceived hardware error, make sure first that the component is firmly seated in the slot.

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. Power down the server.
2. If installed, open the cable management arm.



3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Remove the server from the rack.
6. Place the server on a flat, level work surface.
7. Remove the access panel.
8. Do one of the following:
 - a. Remove the air baffle.
 - b. Remove the midplane drive cage.
9. Disconnect the riser cable from the system board.

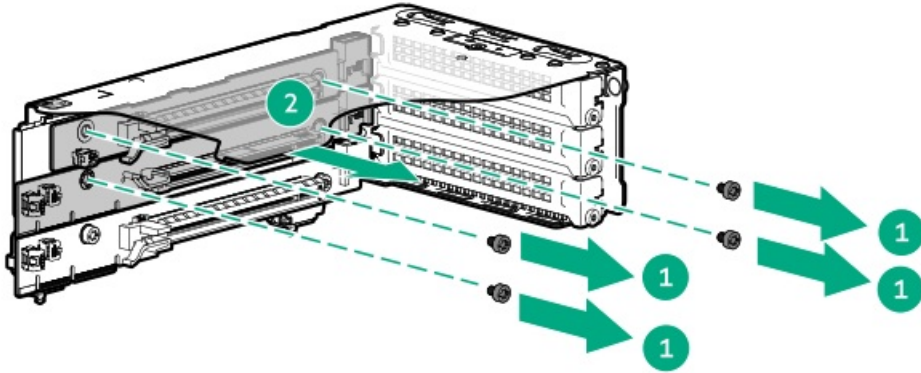
10. Remove the riser cage.

11. Remove the expansion card.

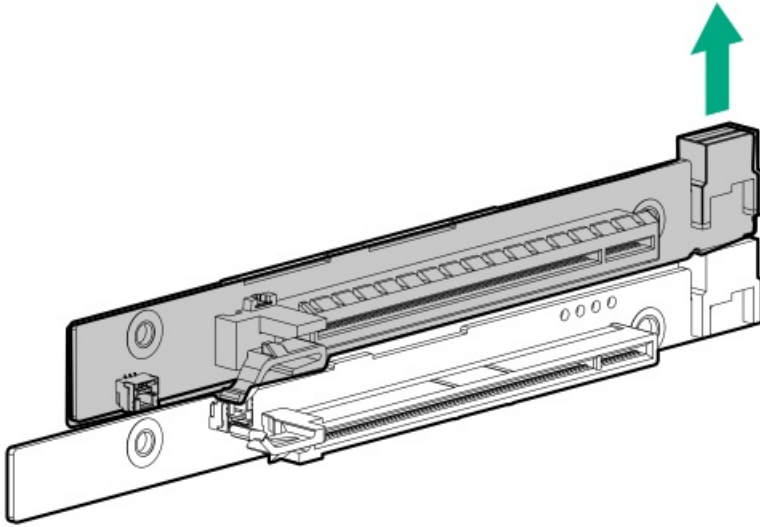
Replacing the stacking riser from the three-slot primary riser cage

12. Remove the free-height riser and stacking riser from the riser cage.

Retain all screws for future use.



13. Detach the free-height riser and the stacking riser.

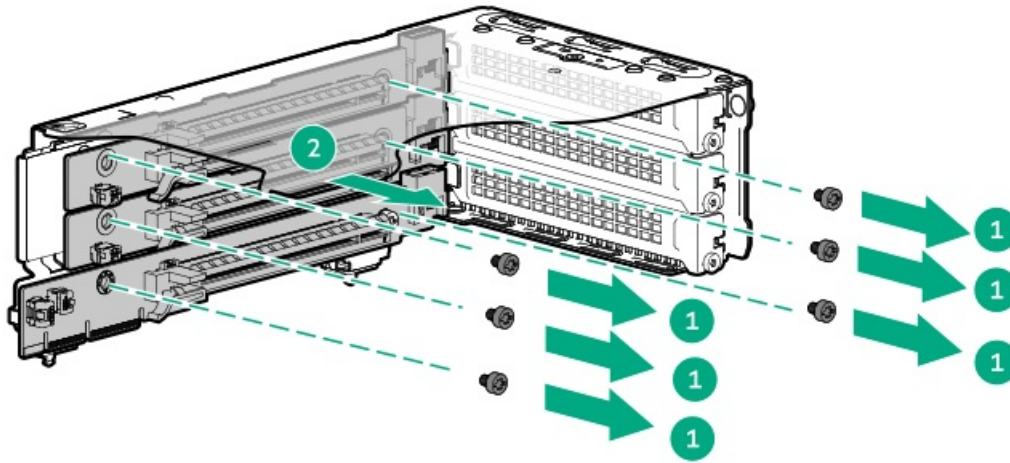


Replacing the stacking riser from the three-slot secondary riser cage

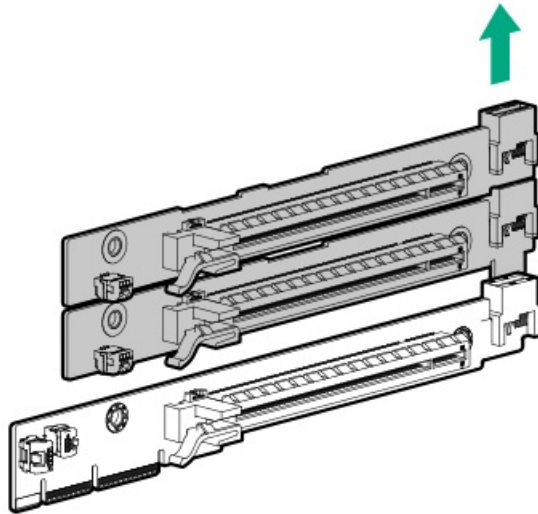
14. Remove all risers from the riser cage.

Retain all screws for future use.

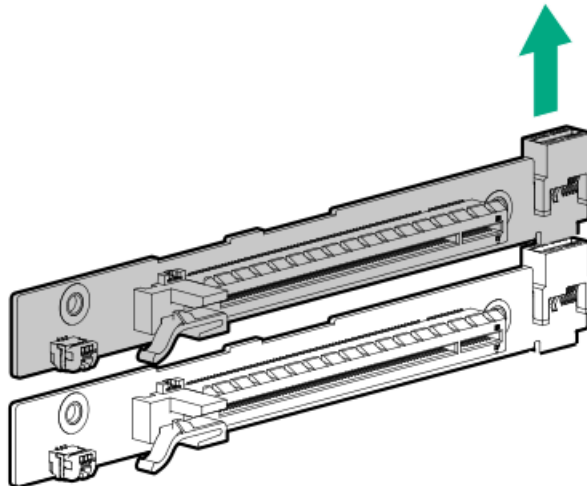




15. Detach the stacking risers from the base riser.



16. Detach the stacking risers.



Results

To replace the component, reverse the removal procedure.

Optical drive replacement

Subtopics

[Removing and replacing the optical drive from the LFF chassis](#)

[Removing and replacing the optical drive from the SFF chassis](#)

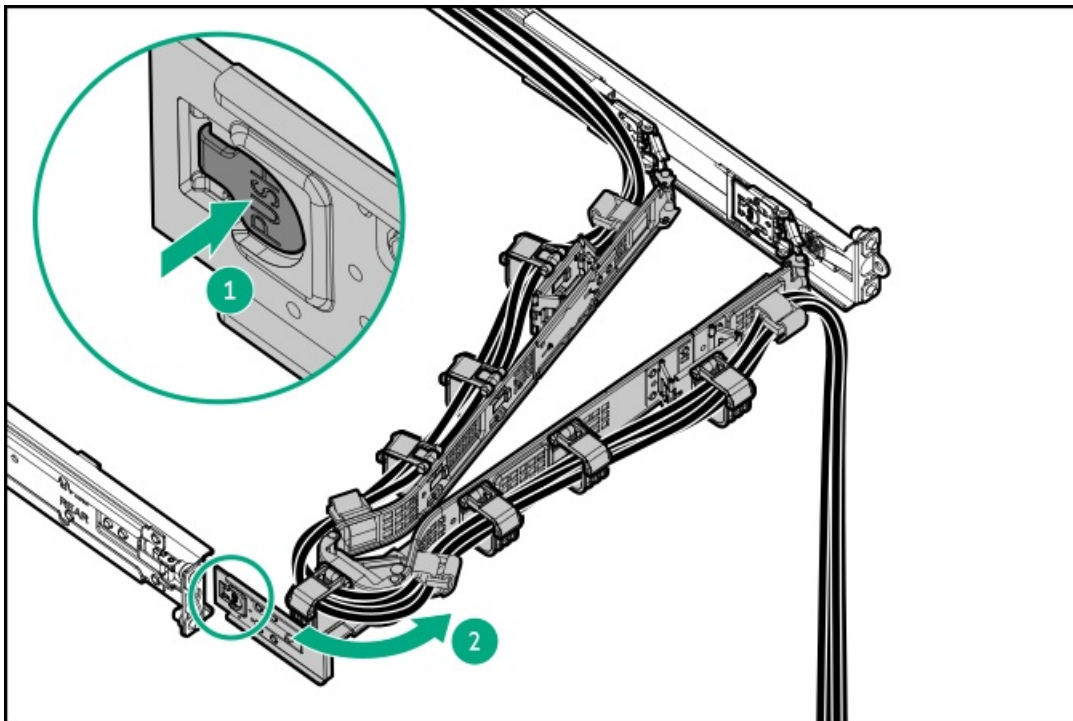
Removing and replacing the optical drive from the LFF chassis

Prerequisites

- Before you perform this procedure, make sure that you have the following items available:
 - T-10 Torx screwdriver
 - Phillips No. 1 screwdriver

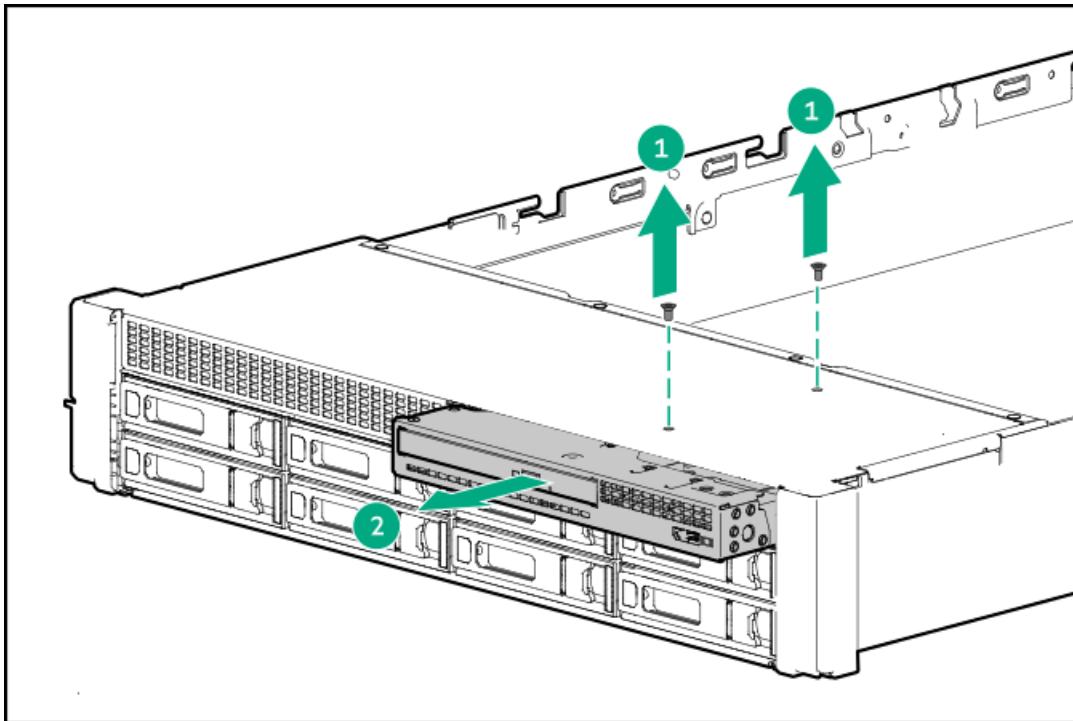
Procedure

1. [Power down the server.](#)
2. If installed, open the cable management arm.

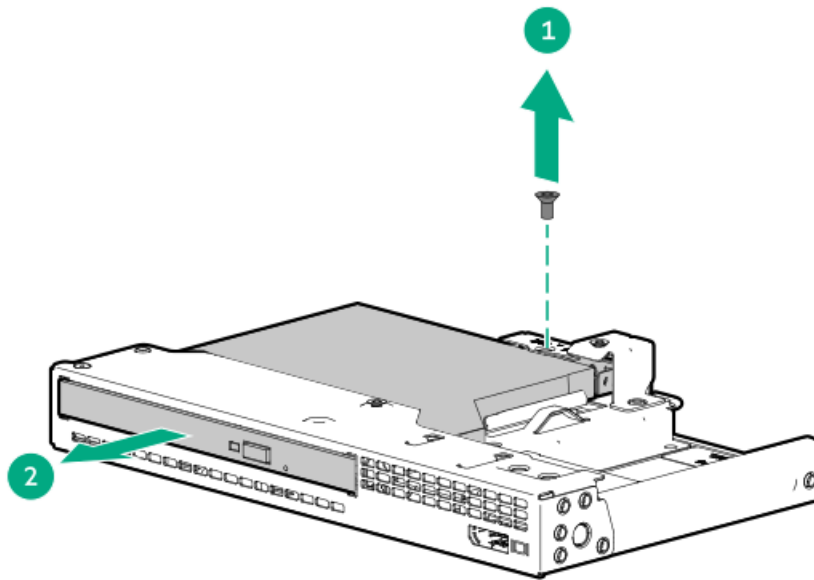


3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.

5. Remove the server from the rack.
6. Place the server on a flat, level work surface.
7. Remove the access panel.
8. Remove the fan cage.
9. Remove the midwall bracket.
10. Remove the drive backplane bracket.
11. Disconnect the SATA-power Y-cable from the optical drive.
12. Disconnect the DisplayPort cable from the system board.
13. Remove the universal media bay:
 - a. Remove the universal media bay screws (callout 1).
 - b. Remove the universal media bay from the server (callout 2)



14. Remove the screw (callout 1), and then remove the optical drive from the universal media bay (callout 2).



Results

To replace the component, reverse the removal procedure.

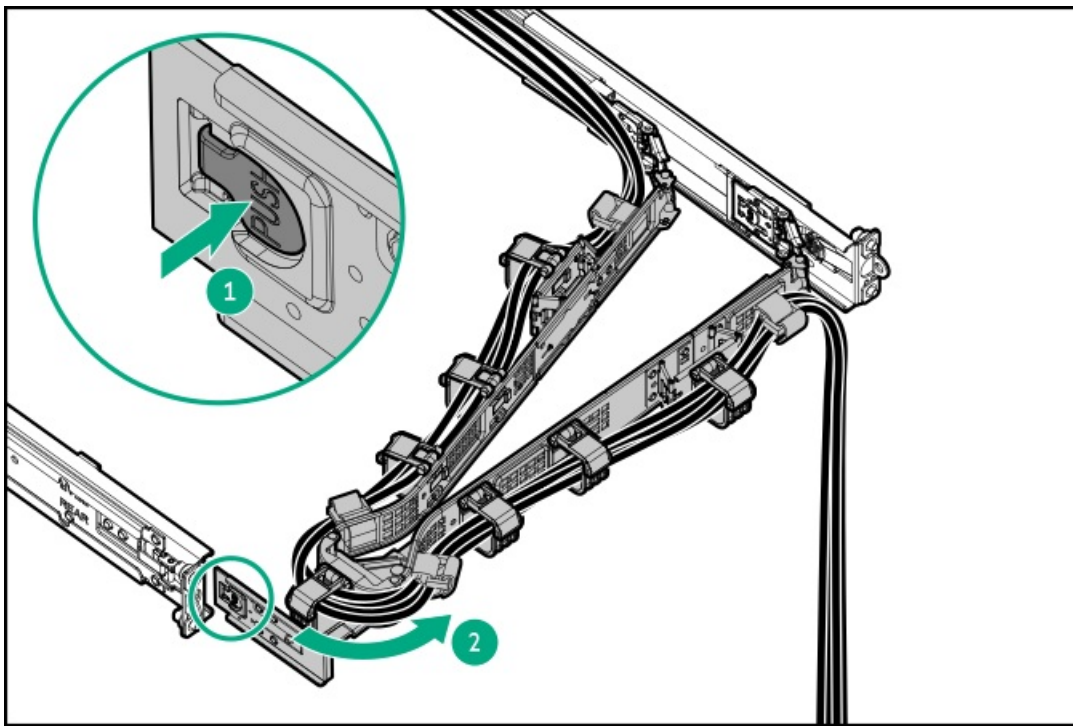
Removing and replacing the optical drive from the SFF chassis

Prerequisites

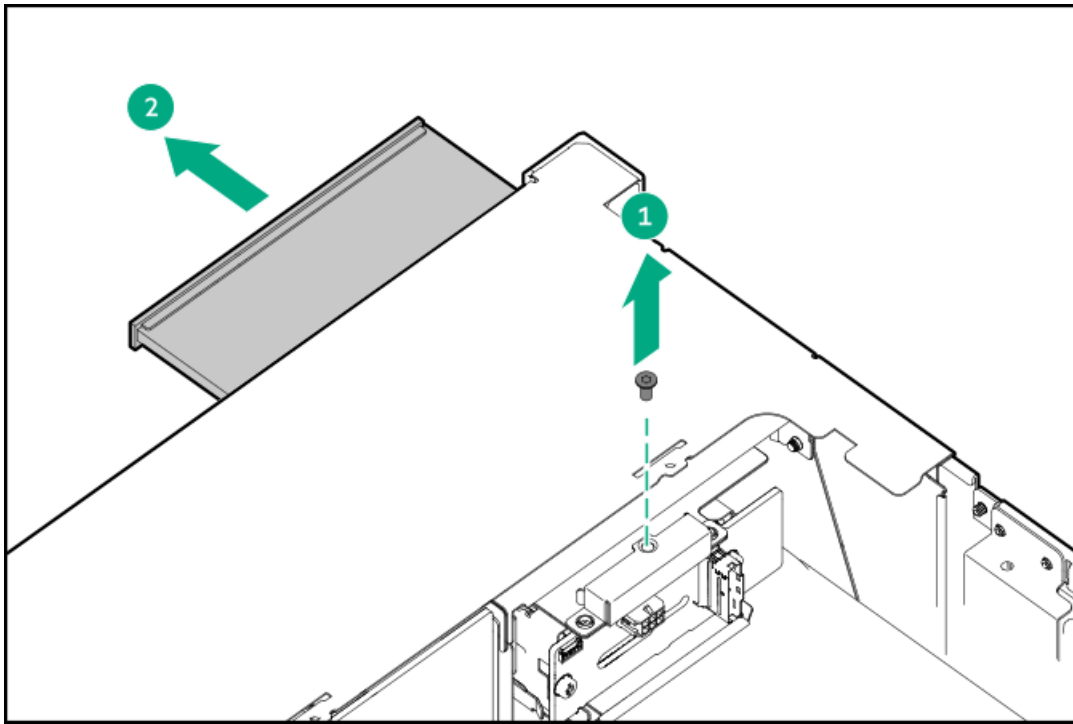
- Before you perform this procedure, make sure that you have the following items available:
 - T-10 Torx screwdriver
 - Phillips No. 1 screwdriver

Procedure

1. Power down the server.
2. If installed, open the cable management arm.



3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Remove the server from the rack.
6. Place the server on a flat, level work surface.
7. Remove the access panel.
8. Remove the fan cage.
9. Remove the midwall bracket.
10. Disconnect the SATA-power Y-cable from the optical drive.
11. Remove the screw (callout 1), and then remove the optical drive from the universal media bay (callout 2).



Results

To replace the component, reverse the removal procedure.

Drive backplane replacement

Subtopics

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

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

[Removing and replacing the 12 E3.S drive backplane](#)

[Removing and replacing the front 2 SFF side-by-side drive backplane](#)

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

[Removing and replacing the midplane drive backplane](#)

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

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

Removing and replacing the front 4 LFF drive backplane

Prerequisites

Before you perform this procedure, make sure that you have a T-15 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:

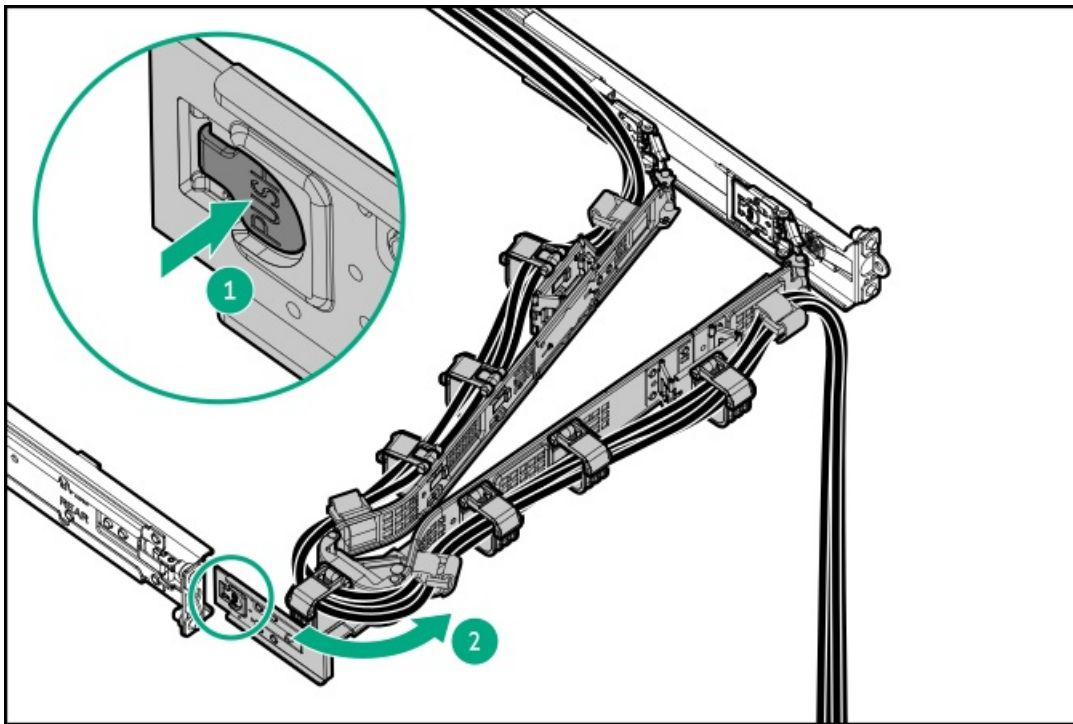
Before replacing a DIMM, backplane, expansion card, riser board, or other similar PCA components due to a perceived hardware error, make sure first that the component is firmly seated in the slot.

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.

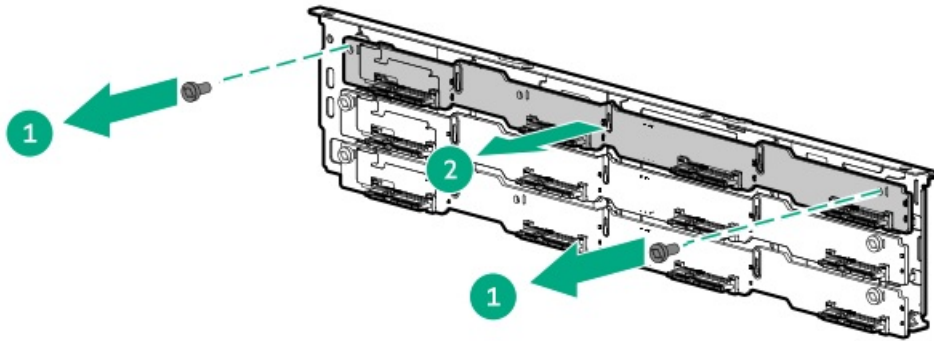
Procedure

1. If installed, remove the front bezel.
2. Power down the server.
3. If installed, open the cable management arm.

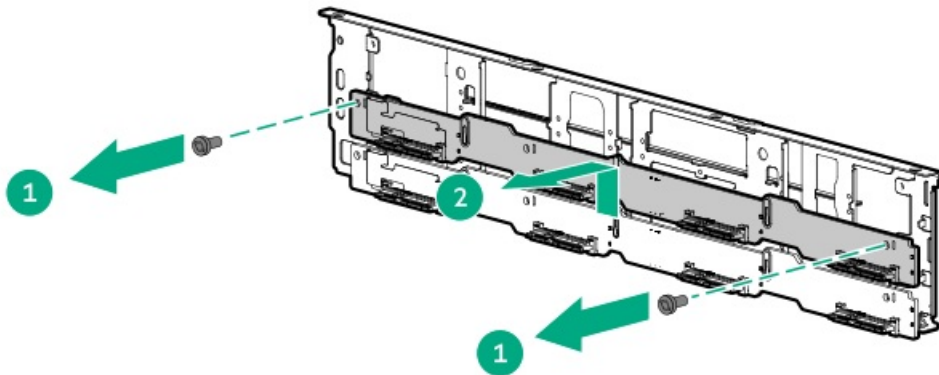


4. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Remove the server from the rack.
7. Place the server on a flat, level work surface.
8. Remove the access panel.
9. Remove the fan cage.

10. Remove the midwall bracket.
11. Remove the drive backplane bracket.
12. Remove the 4 LFF drive backplane from the drive backplane bracket.
 - Backplane for Box 1



- Backplane for Box 2/3



Results

To replace the component, reverse the removal procedure.

Removing and replacing the 8 SFF drive backplane

Prerequisites

Before you perform this procedure, make sure that you have a T-15 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:

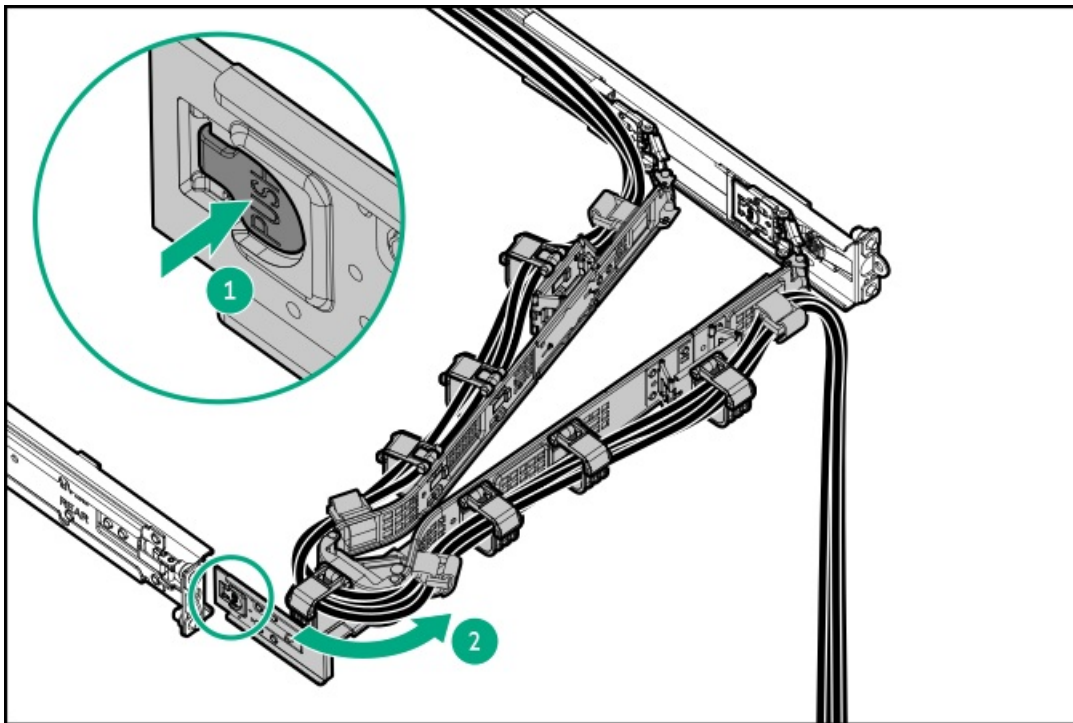
Before replacing a DIMM, backplane, expansion card, riser board, or other similar PCA components due to a perceived hardware error, make sure first that the component is firmly seated in the slot.

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.

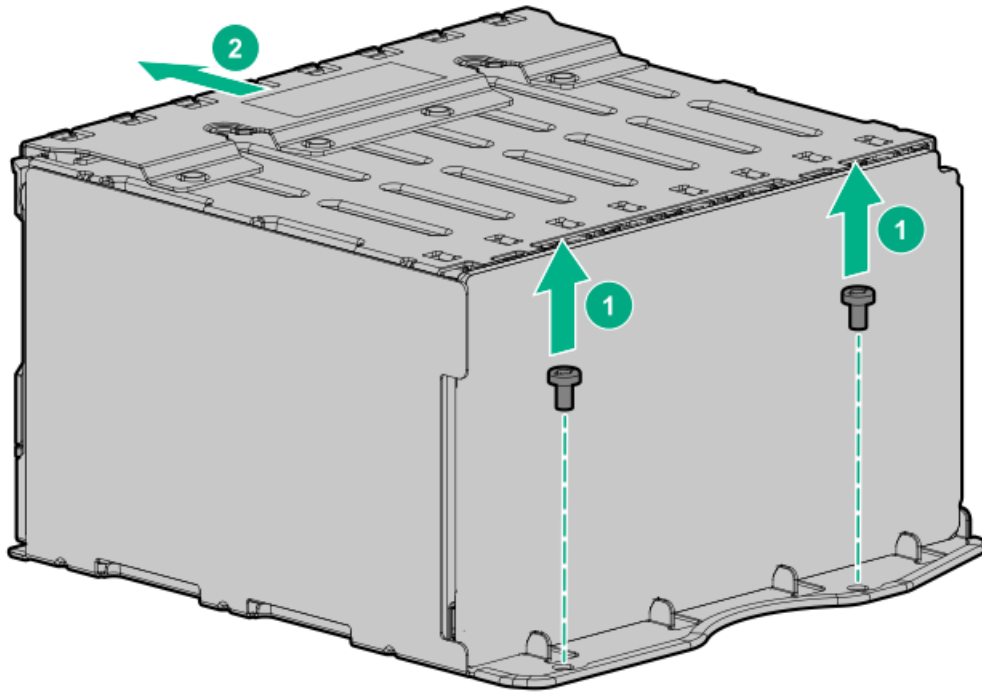
Procedure

1. If installed, remove the front bezel.
2. Power down the server.
3. If installed, open the cable management arm.

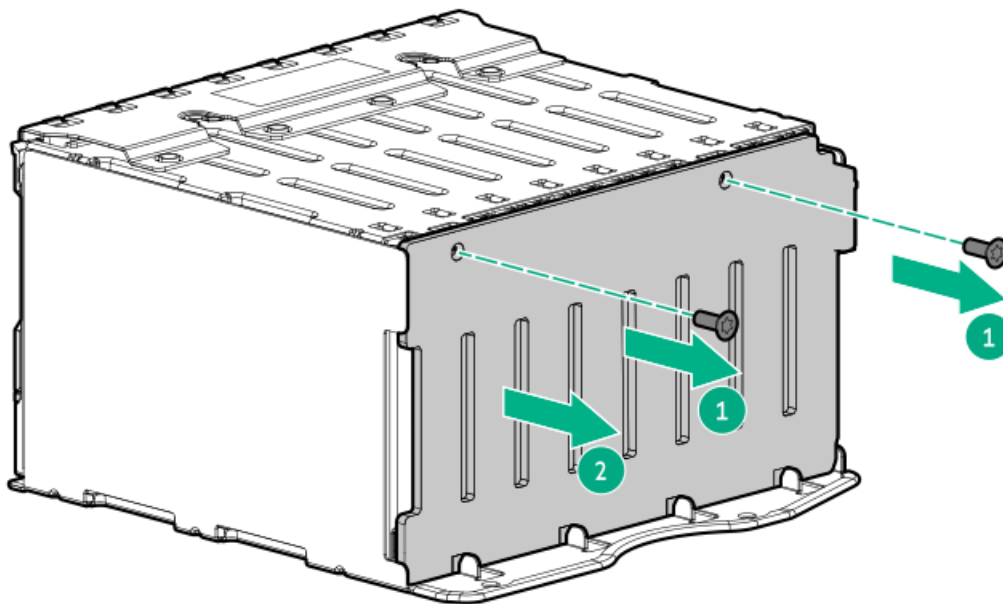


4. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Remove the server from the rack.
7. Place the server on a flat, level work surface.
8. Remove the access panel.
9. Remove the fan cage.
10. Remove the midwall bracket.
11. Disconnect all cables from the drive backplane.

12. Remove 8 SFF drive cage:
 - a. Remove the drive cage screws (callout 1).
 - b. Remove the 8 SFF drive cage from the server (callout 2).



13. Remove the 8 SFF drive backplane:
 - a. Remove the backplane screws (callout 1).
 - b. Remove the backplane from the drive cage (callout 2).



Results

To replace the component, reverse the removal procedure.

Removing and replacing the 12 E3.S drive backplane

Prerequisites

Before you perform this procedure, make sure that you have a T-15 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:

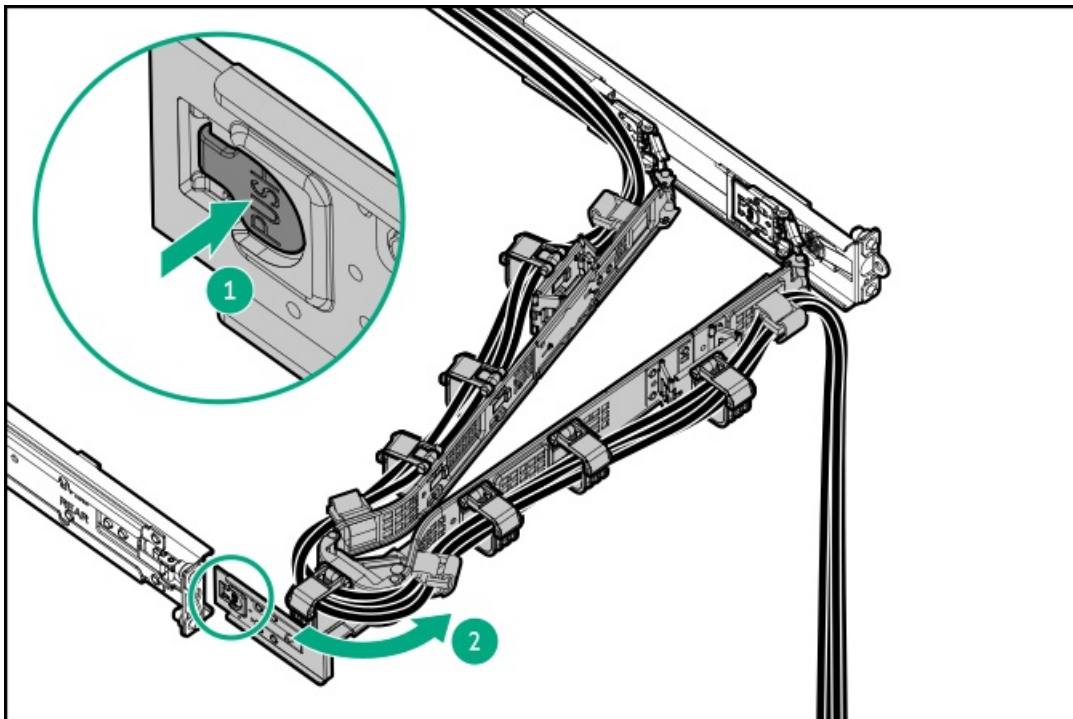
Before replacing a DIMM, backplane, expansion card, riser board, or other similar PCA components due to a perceived hardware error, make sure first that the component is firmly seated in the slot.

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.

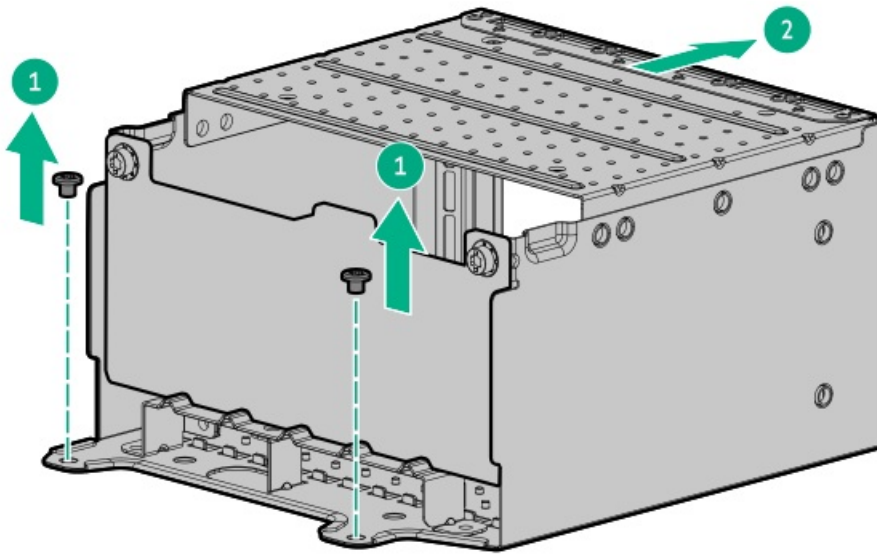
Procedure

1. If installed, [remove the front bezel](#).
2. [Power down the server](#).
3. If installed, open the cable management arm.

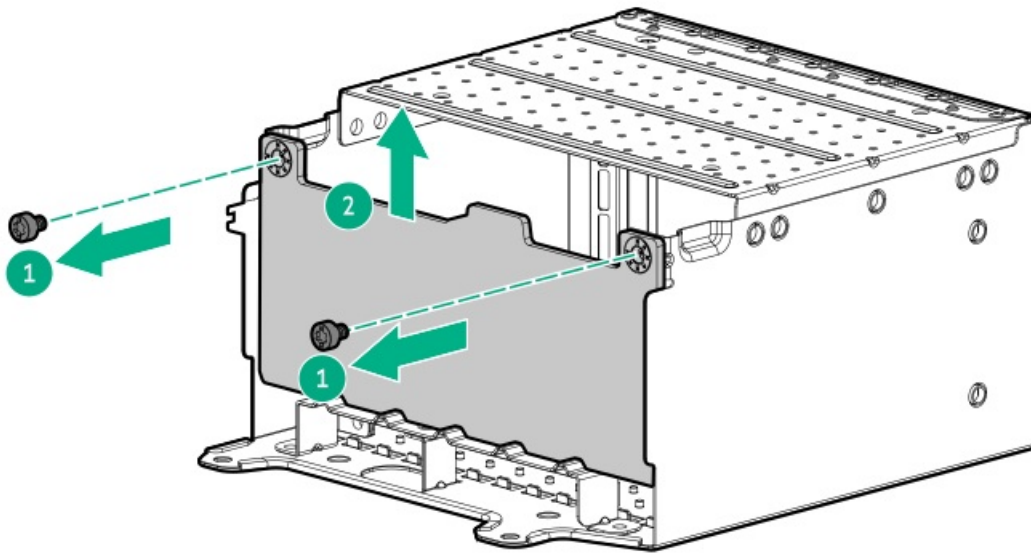


4. Remove all power:
 - a. Disconnect each power cord from the power source.

- b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Remove the server from the rack.
7. Place the server on a flat, level work surface.
8. Remove the access panel.
9. Remove the fan cage.
10. Remove the midwall bracket.
11. Disconnect all cables from the drive backplane.
12. Remove the E3.S drive cage:
 - a. Remove the drive cage screws (callout 1).
Retain all screws for future use.
 - b. Remove the E3.S drive cage from the server (callout 2).



13. Remove the E3.S drive backplane:
 - a. Remove the backplane screws (callout 1).
Retain all screws. These screws will be used to install the new spare drive backplane.
 - b. Remove the backplane from the drive cage (callout 2).



Results

To replace the component, reverse the removal procedure.

Removing and replacing the front 2 SFF side-by-side drive backplane

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:

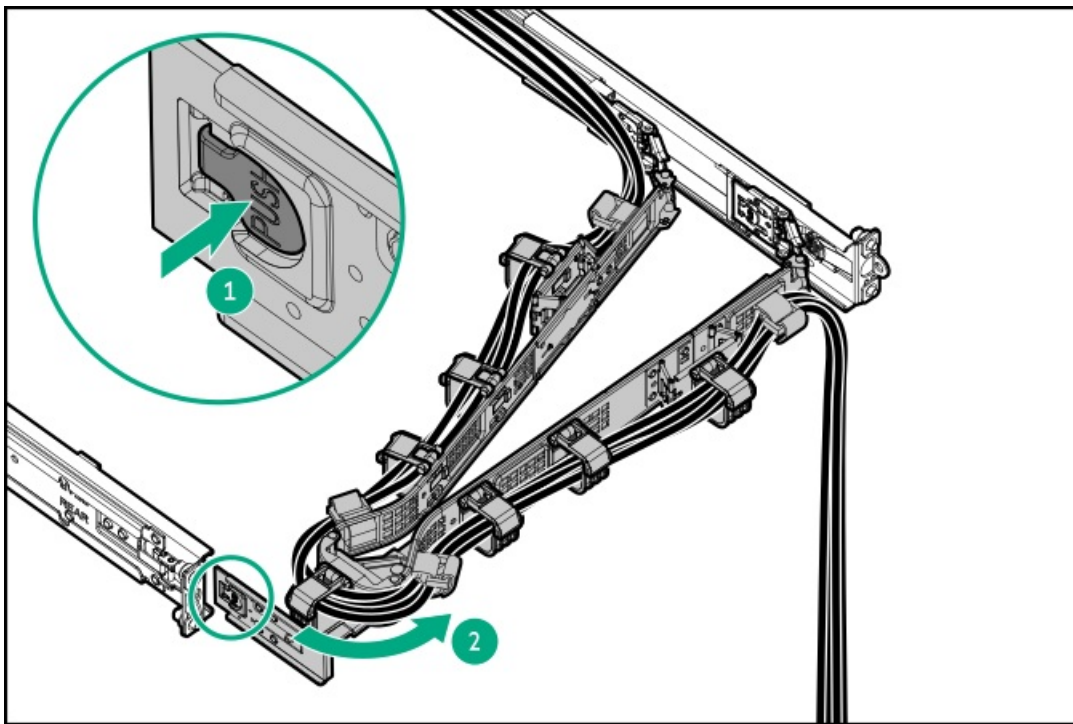
Before replacing a DIMM, backplane, expansion card, riser board, or other similar PCA components due to a perceived hardware error, make sure first that the component is firmly seated in the slot.

When installing the replacement component:

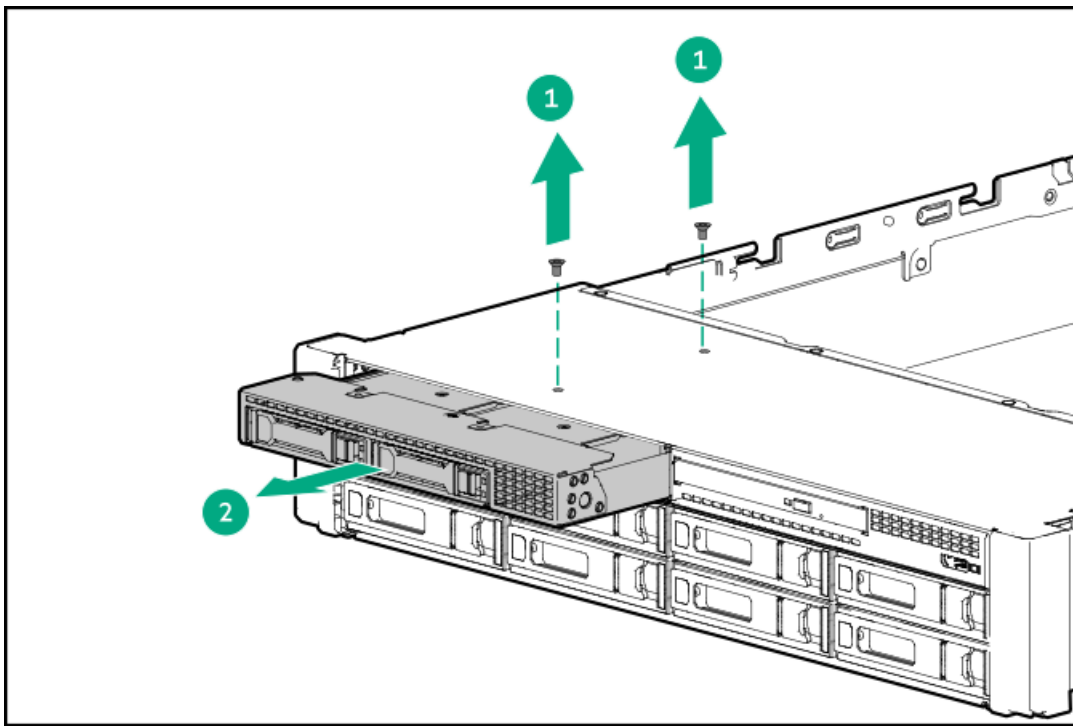
- Observe [antistatic precautions](#).
 - Handle the PCA only along the edges.
 - Do not touch the components and connectors on the PCA.
 - Do not bend or flex the PCA.
-

Procedure

1. If installed, [remove the front bezel](#).
2. [Power down the server](#).
3. If installed, open the cable management arm.

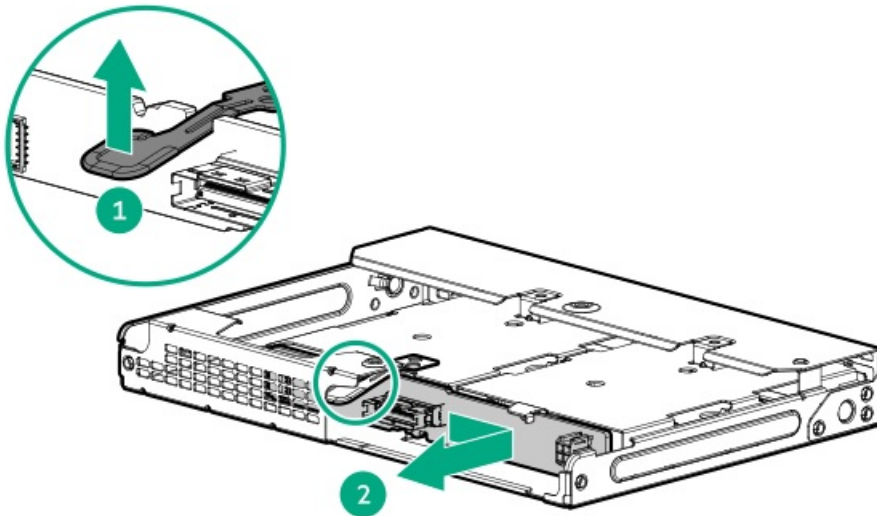


4. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Remove the server from the rack.
7. Place the server on a flat, level work surface.
8. Remove the access panel.
9. Remove the fan cage.
10. Remove the midwall bracket.
11. Remove the drive backplane bracket.
12. Disconnect the cables from the 2 SFF side-by-side drive backplane.
13. Remove the front 2 SFF side-by-side drive cage:
 - a. Remove the drive cage screws (callout 1).
 - b. Remove the front 2 SFF side-by-side drive cage from the server (callout 2).



14. Remove the 2 SFF side-by-side drive backplane:

- a. Lift the backplane latch (callout 1).
- b. Remove the backplane from the drive cage (callout 2).



Results

To replace the component, reverse the removal procedure.

Removing and replacing the front 2 SFF stacked drive backplane

Prerequisites

Before you perform this procedure, make sure that you have a T-15 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:

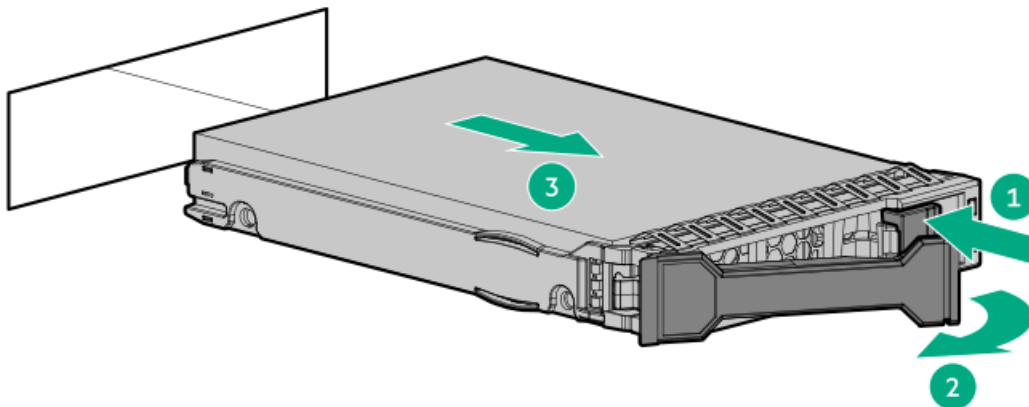
Before replacing a DIMM, backplane, expansion card, riser board, or other similar PCA components due to a perceived hardware error, make sure first that the component is firmly seated in the slot.

When installing the replacement component:

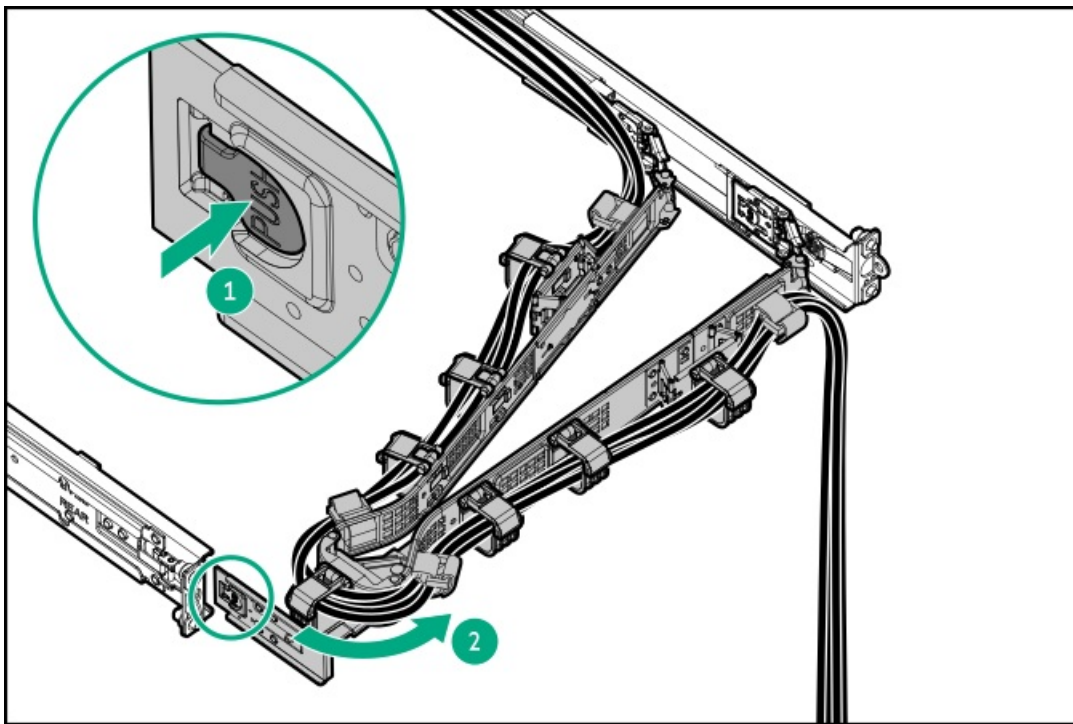
- Observe [antistatic precautions](#).
 - Handle the PCA only along the edges.
 - Do not touch the components and connectors on the PCA.
 - Do not bend or flex the PCA.
-

Procedure

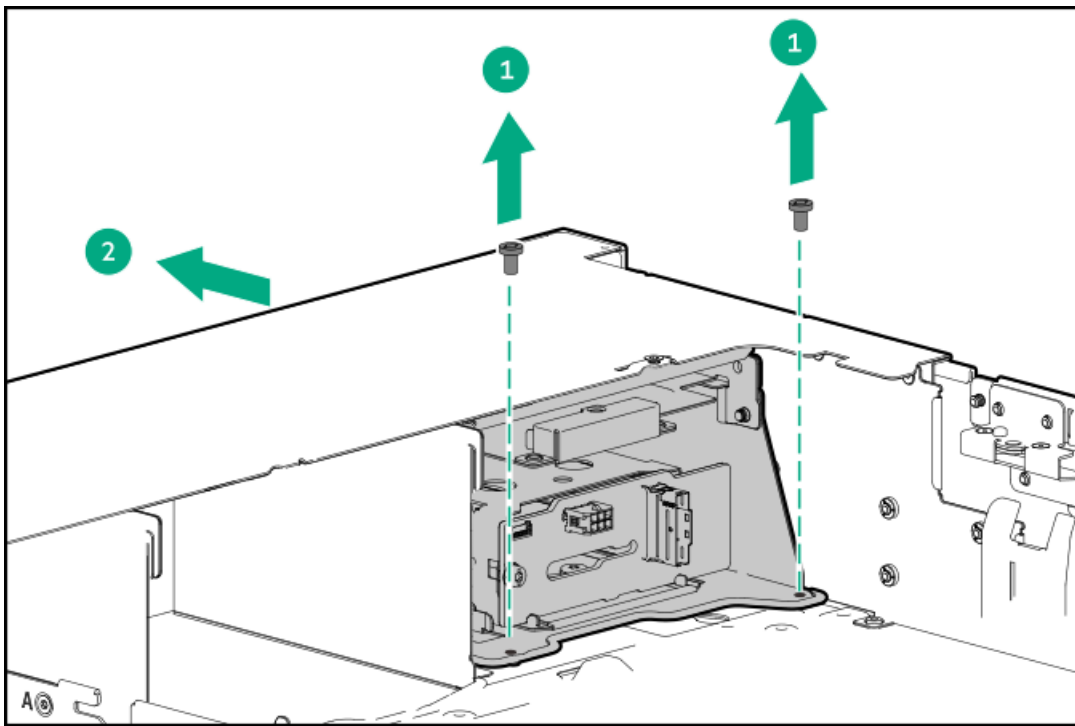
1. Back up all server data.
2. If installed, [remove the front bezel](#).
3. If installed, remove all drives from the 2 SFF stacked drive cage.



4. [Power down the server](#).
5. If installed, open the cable management arm.

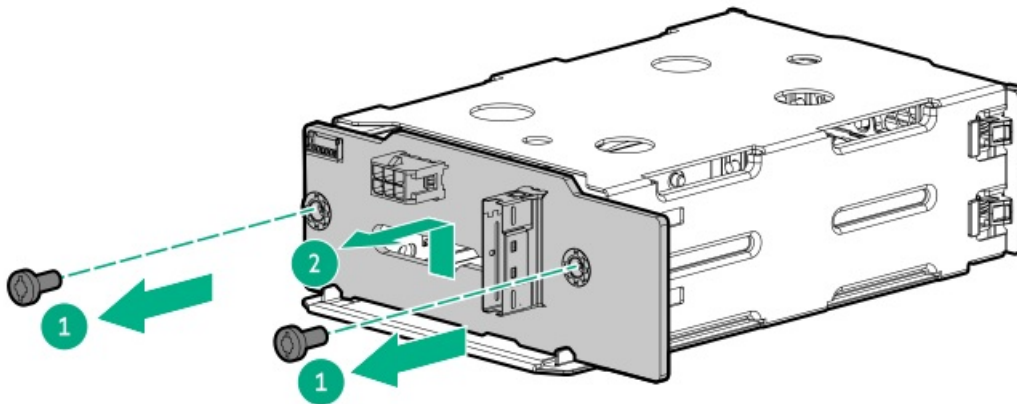


6. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
7. Disconnect all peripheral cables from the server.
8. Remove the server from the rack.
9. Place the server on a flat, level work surface.
10. Remove the access panel.
11. Remove the fan cage.
12. Remove the midwall bracket.
13. Disconnect all cables from the 2 SFF stacked drive backplane.
14. Remove the universal media bay:
 - a. Remove the universal media bay screws (callout 1).
 - b. Remove the universal media bay from the server (callout 2).



15. Remove the 2 SFF stacked drive backplane:

- a. Remove the backplane screws (callout 1).
- b. Remove the backplane from the drive cage (callout 2).



Results

To replace the component, reverse the removal procedure.

Removing and replacing the midplane drive backplane

Prerequisites

Before you perform this procedure, make sure that you have a T-15 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:

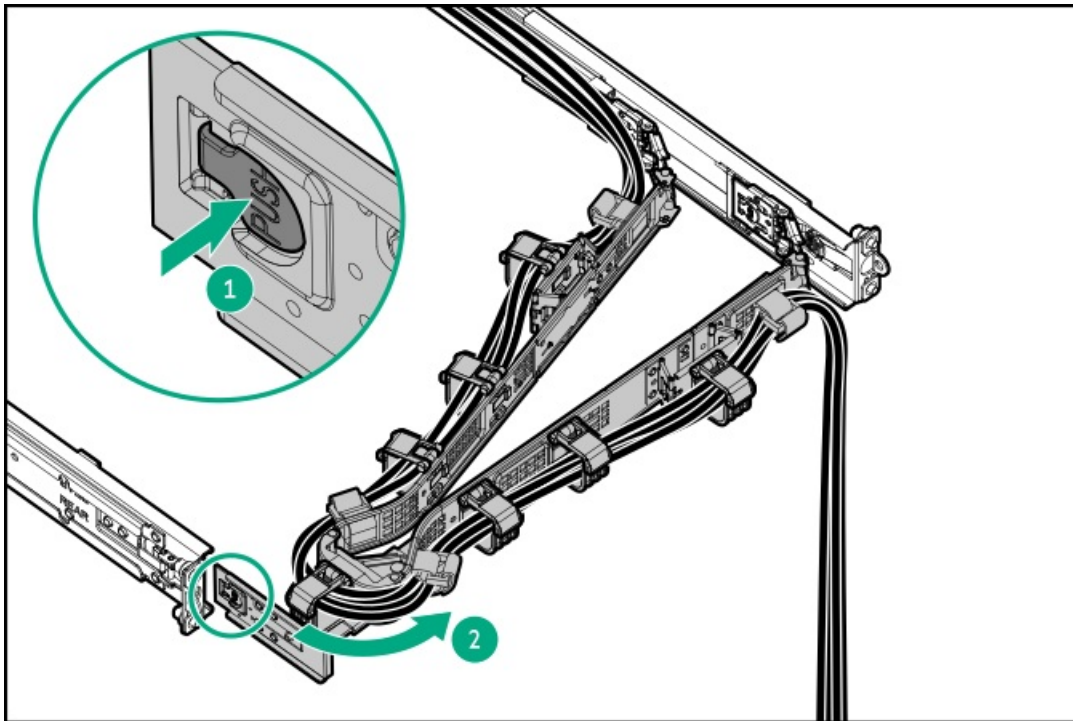
Before replacing a DIMM, backplane, expansion card, riser board, or other similar PCA components due to a perceived hardware error, make sure first that the component is firmly seated in the slot.

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.

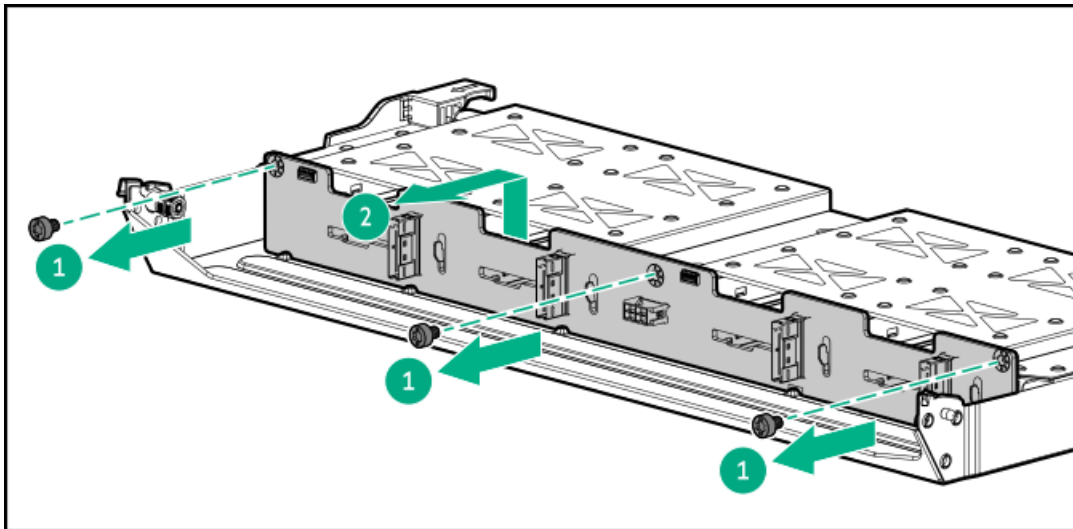
Procedure

1. [Power down the server.](#)
2. If installed, open the cable management arm.



3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. [Remove the server from the rack.](#)
6. Place the server on a flat, level work surface.
7. [Remove the access panel.](#)
8. Disconnect the drive cables from the midplane drive cage.
9. [Remove the midplane drive cage.](#)

10. Remove the midplane drive backplane:
 - a. Remove the backplane screws (callout 1).
 - b. Remove the backplane from the drive cage (callout 2).



Results

To replace the component, reverse the removal procedure.

Removing and replacing the rear 4 LFF drive backplane

Prerequisites

Before you perform this procedure, make sure that you have a T-15 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:

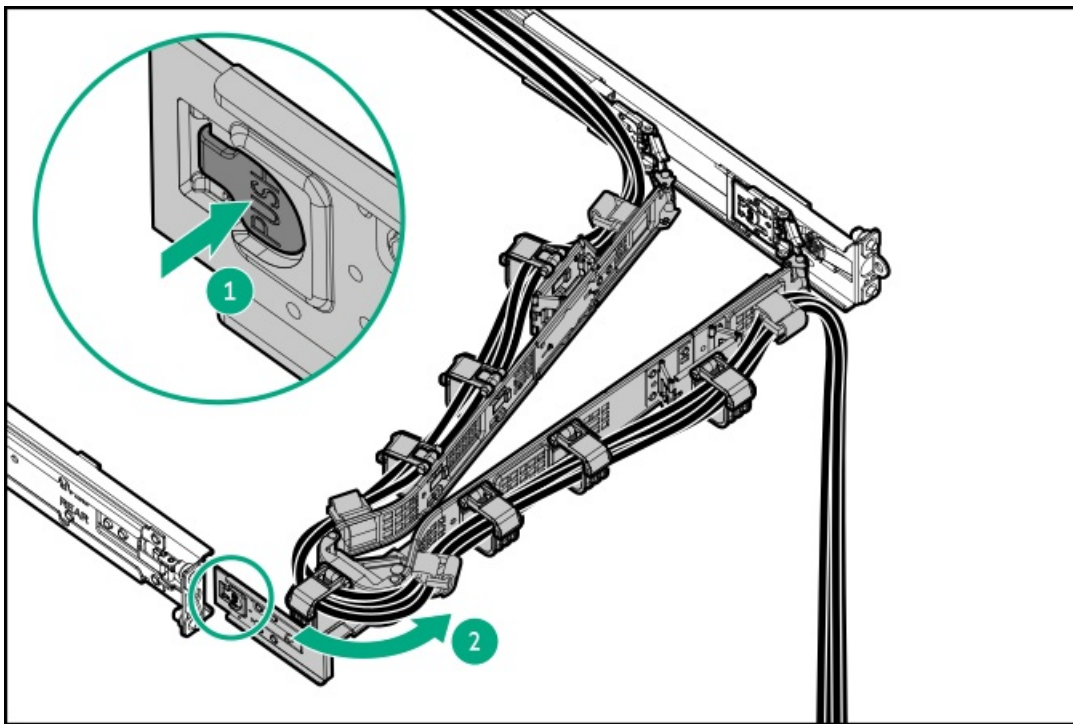
Before replacing a DIMM, backplane, expansion card, riser board, or other similar PCA components due to a perceived hardware error, make sure first that the component is firmly seated in the slot.

When installing the replacement component:

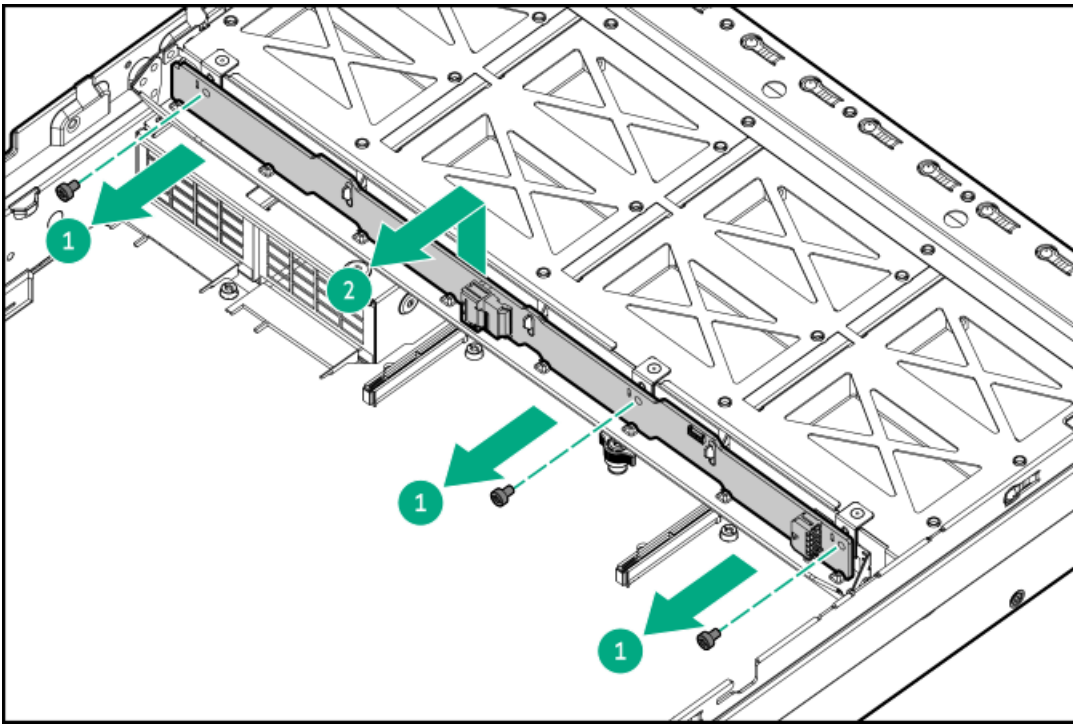
- Observe [antistatic precautions](#).
- Handle the PCA only along the edges.
- Do not touch the components and connectors on the PCA.
- Do not bend or flex the PCA.

Procedure

1. [Power down the server](#).
2. If installed, open the cable management arm.



3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Remove the server from the rack.
6. Place the server on a flat, level work surface.
7. Remove the access panel.
8. Do one of the following:
 - a. Remove the air baffle.
 - b. Remove the midplane drive cage.
9. If installed, remove the cable guards.
10. Remove the midplane drive cage.
11. Disconnect the cables from the rear 4 LFF drive backplane.
12. Remove the rear 4 LFF drive backplane:
 - a. Remove the backplane screws (callout 1).
 - b. Remove the backplane from the drive cage (callout 2).



Results

To replace the component, reverse the removal procedure.

Removing and replacing the rear 2 SFF drive backplane

Prerequisites

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

- T-15 Torx screwdriver
- T-10 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](#).

⚠ 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.

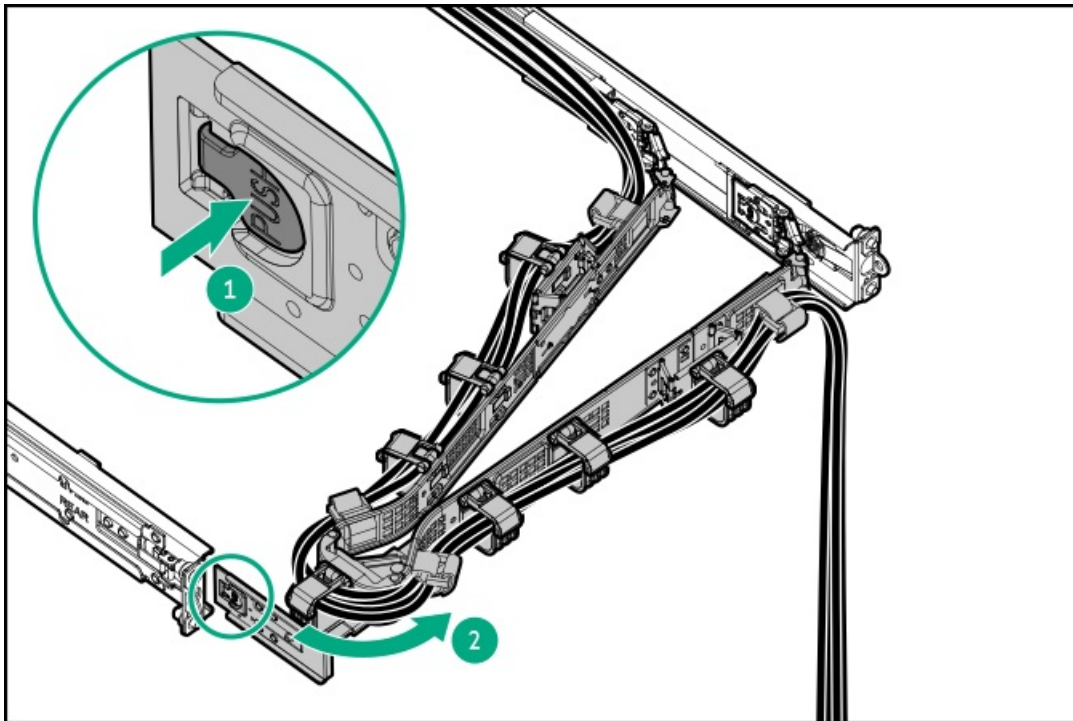
When installing the replacement component:

- 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.

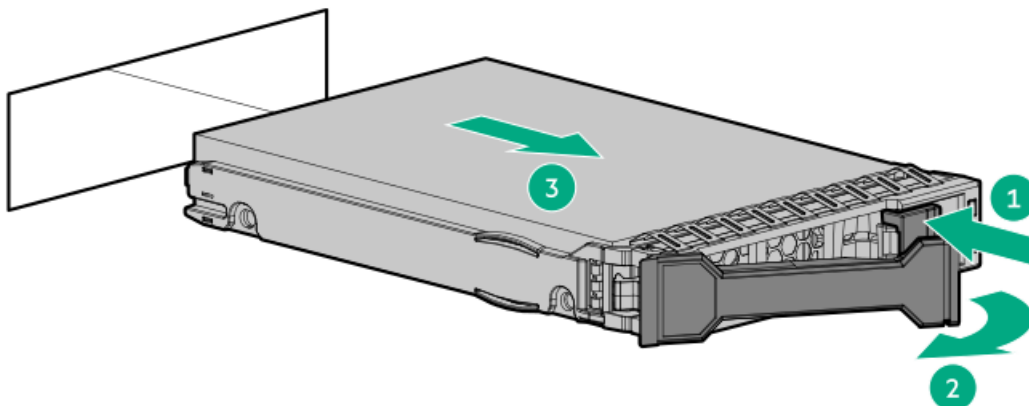
Procedure

1. [Power down the server](#).

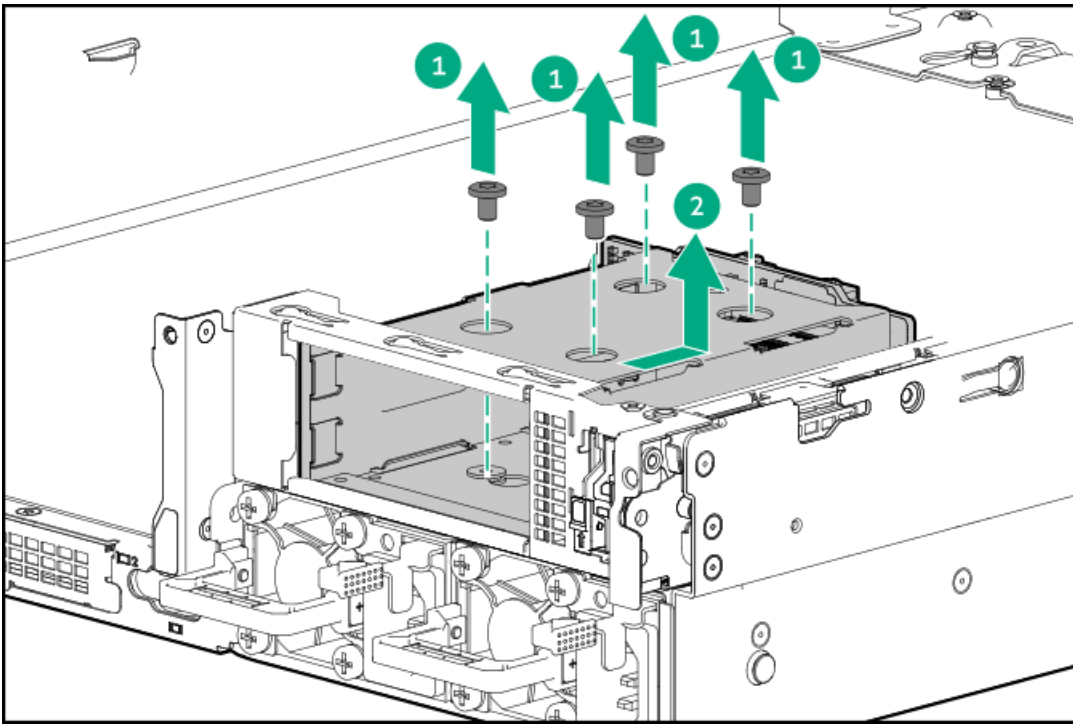
2. If installed, open the cable management arm.



3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Remove the server from the rack.
6. Place the server on a flat, level work surface.
7. Remove the access panel.
8. Disconnect the cables from the 2 SFF stacked drive backplane.
9. If installed, remove all drives from the 2 SFF stacked drive cage.

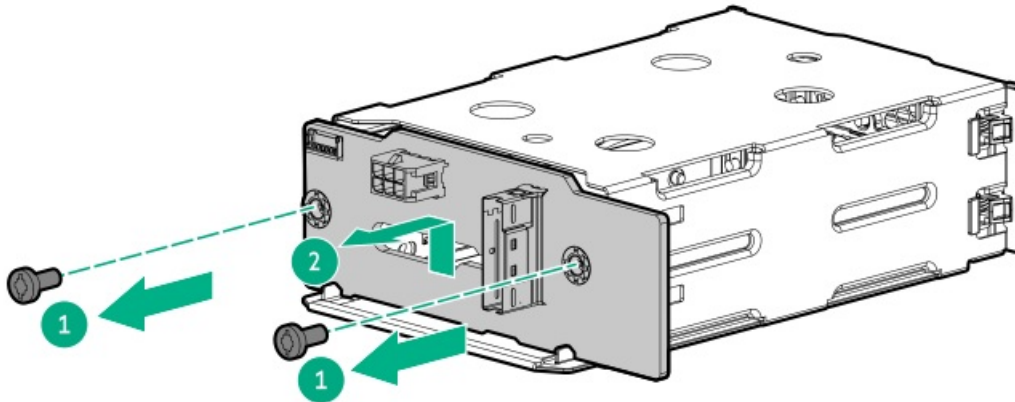


10. Remove the rear 2 SFF stacked drive cage:
 - a. Remove the stacked drive cage screws (callout 1).
 - b. Remove the rear 2 SFF stacked drive cage from top of the power supply cage (callout 2).



11. Remove the 2 SFF stacked drive backplane:

- a. Remove the backplane screws (callout 1).
- b. Remove the backplane from the drive cage (callout 2).



Results

To replace the component, reverse the removal procedure.

Removing and replacing the OCP NIC 3.0 adapter

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:

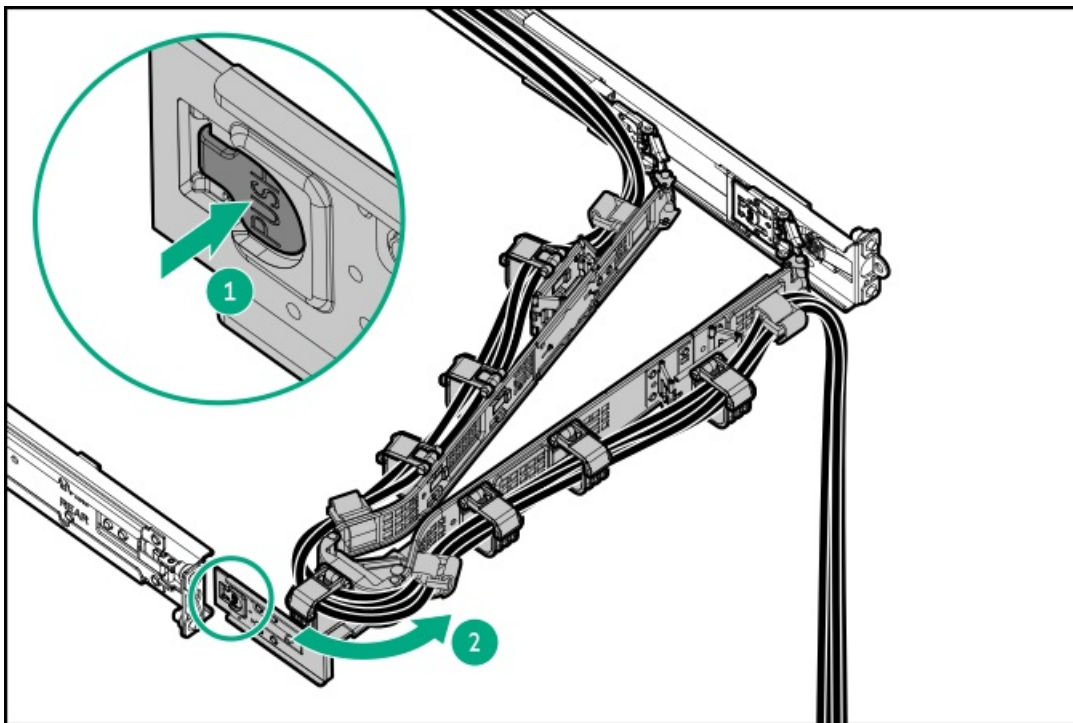
Before replacing a DIMM, backplane, expansion card, riser board, or other similar PCA components due to a perceived hardware error, make sure first that the component is firmly seated in the slot.

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.

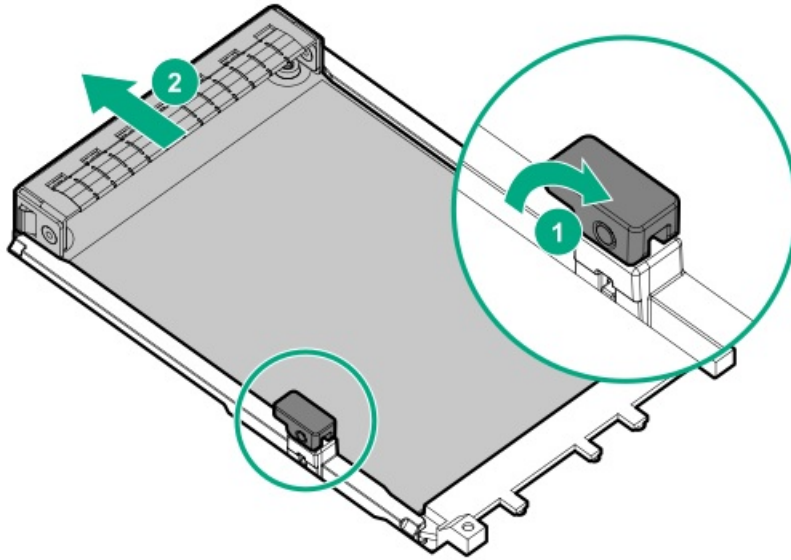
Procedure

1. Power down the server.
2. If installed, open the cable management arm.



3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Remove the server from the rack.
6. Place the server on a flat, level work surface.
7. Remove the access panel.
8. If the server is in the rear 4 LFF drive configuration, remove the rear 4 LFF drive cage.
9. Do one of the following:
 - a. If replacing the adapter on Slot 21, remove the primary riser cage.
 - b. If replacing the adapter on Slot 22, remove the secondary riser cage.

10. Remove the OCP NIC 3.0 adapter:
 - a. Rotate the locking pin to the open (vertical) position (callout 1).
 - b. Slide the adapter out of the bay (callout 2).



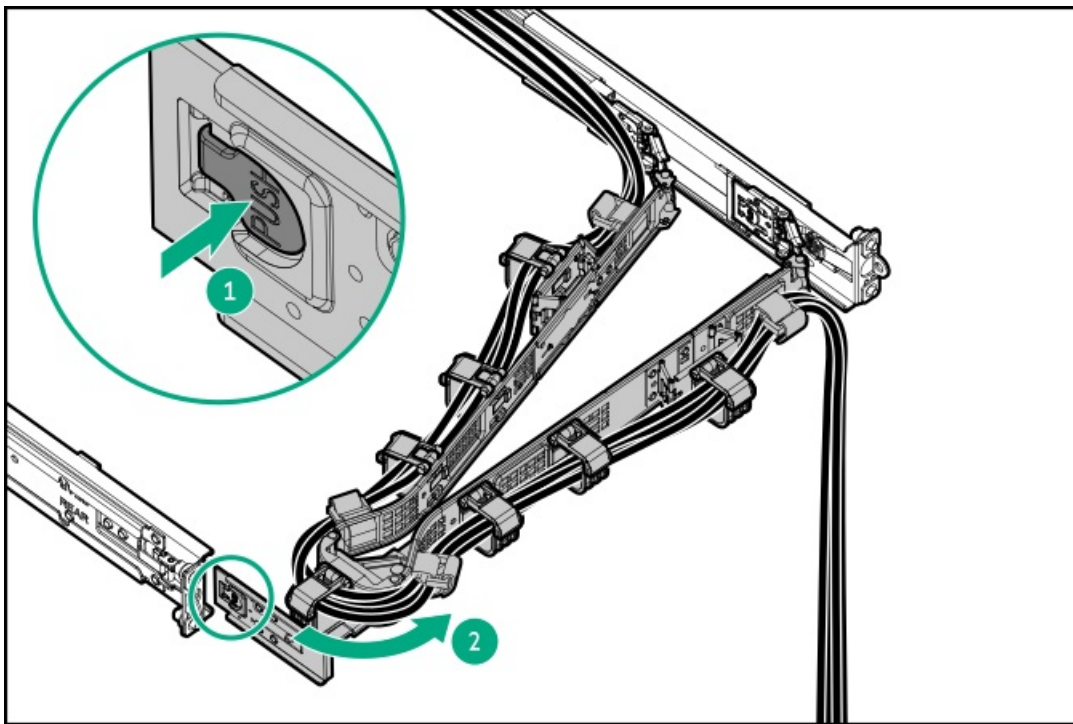
Results

To replace the component, reverse the removal procedure.

Removing and replacing the chassis intrusion detection switch

Procedure

1. Power down the server.
2. If installed, open the cable management arm.



3. Remove all power:

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

4. Disconnect all peripheral cables from the server.

5. Remove the server from the rack.

6. Place the server on a flat, level work surface.

7. Remove the access panel.

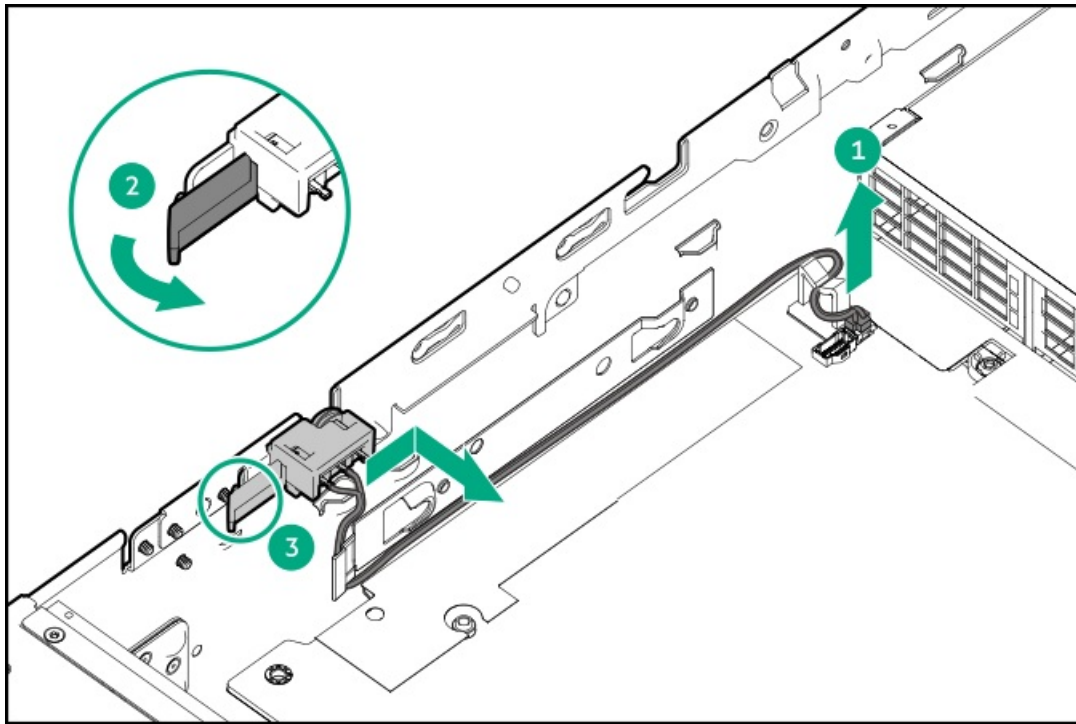
8. Do one of the following:

- a. Remove the air baffle.
- b. Remove the midplane drive cage.

9. Remove the chassis intrusion detection switch:

The chassis intrusion detection switch is located behind the energy pack holder.

- a. Disconnect the switch cable and release it from the cable clamp (callout 1).
- b. While carefully retracting the snap-in latch (callout 2), pull out the tab from the chassis slot (callout 3).



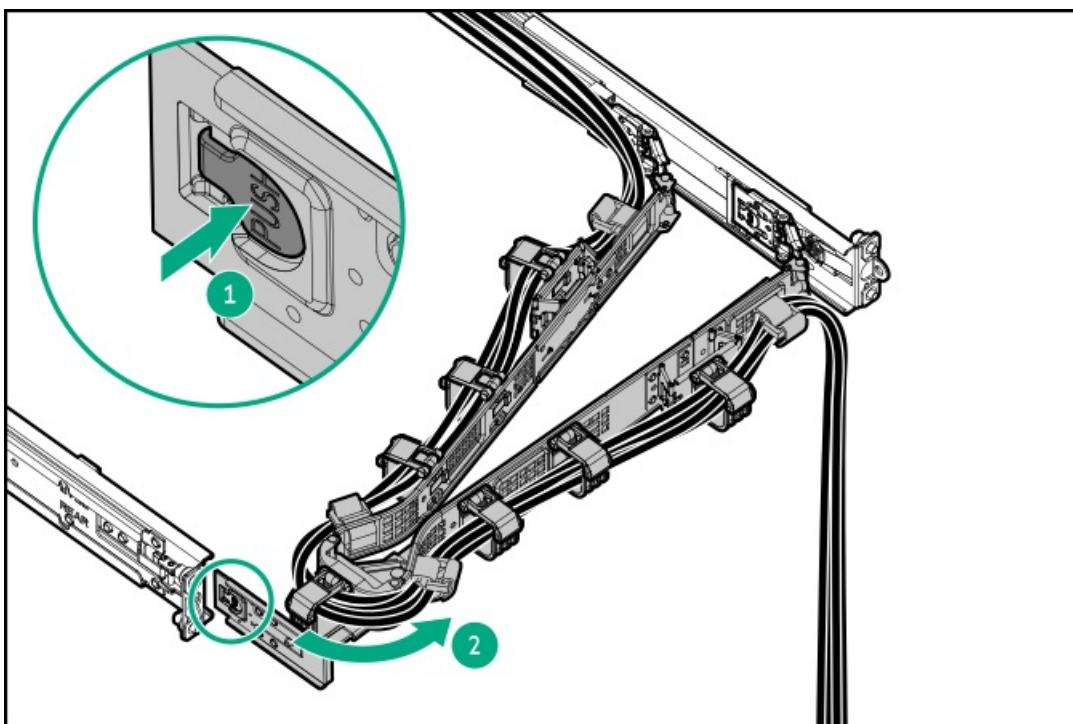
Results

To replace the component, reverse the removal procedure.

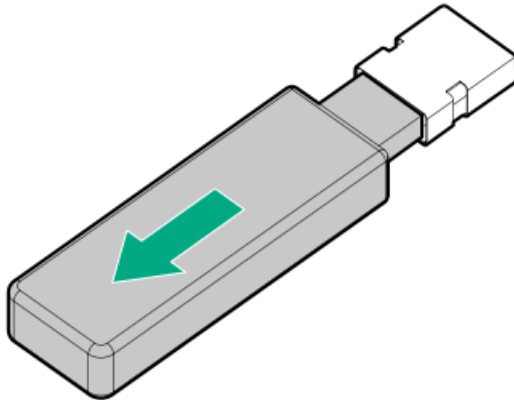
Removing and replacing the internal USB device

Procedure

1. Power down the server.
2. If installed, open the cable management arm.



3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Remove the server from the rack.
6. Place the server on a flat, level work surface.
7. Remove the access panel.
8. If the server is in the rear 4 LFF drive configuration, remove the rear 4 LFF drive cage.
9. Remove the primary riser cage.
10. Unplug the USB device from the USB port.



Results

To replace the component, reverse the removal procedure.

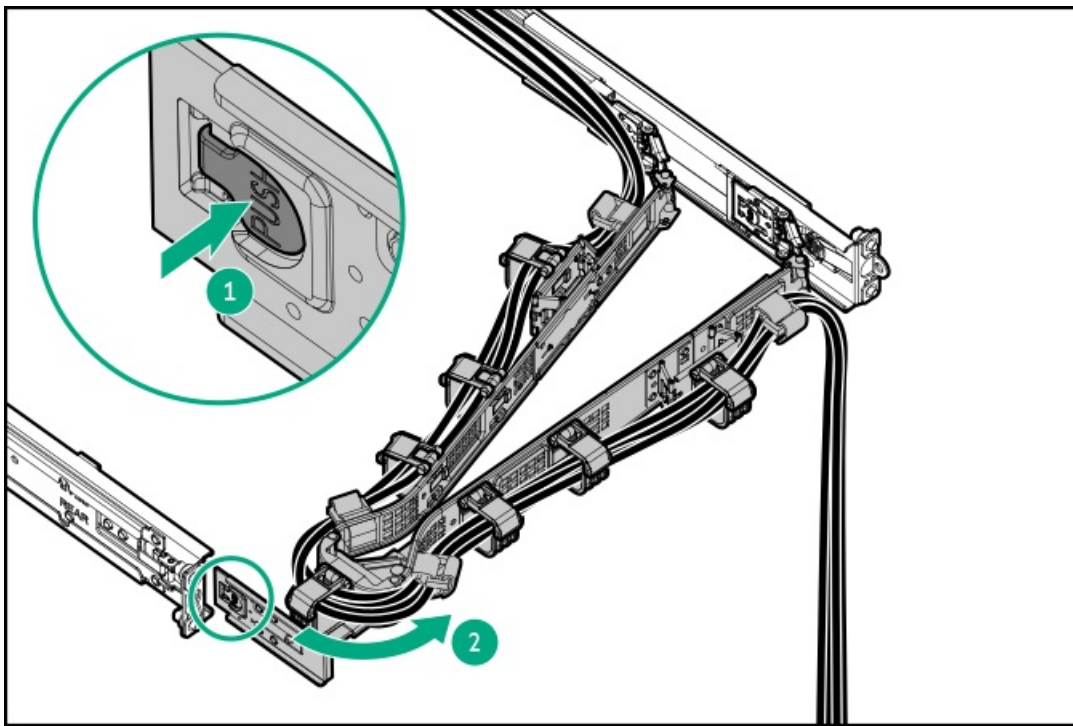
Removing the boot device security cover from the NS204i-u + secondary low-profile riser cage

Prerequisites

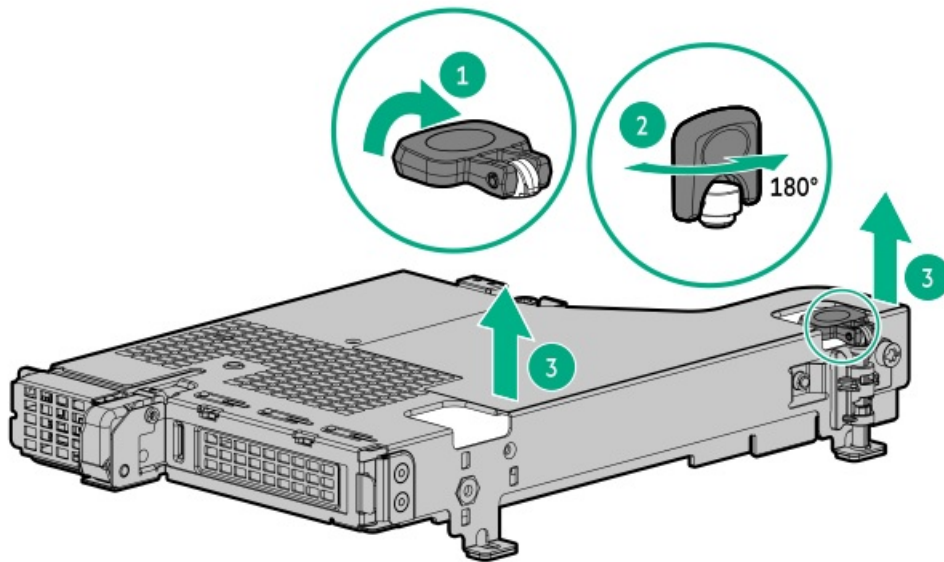
Before you perform this procedure, make sure that you have a T-10 Torx screwdriver available.

Procedure

1. Power down the server.
2. If installed, open the cable management arm.

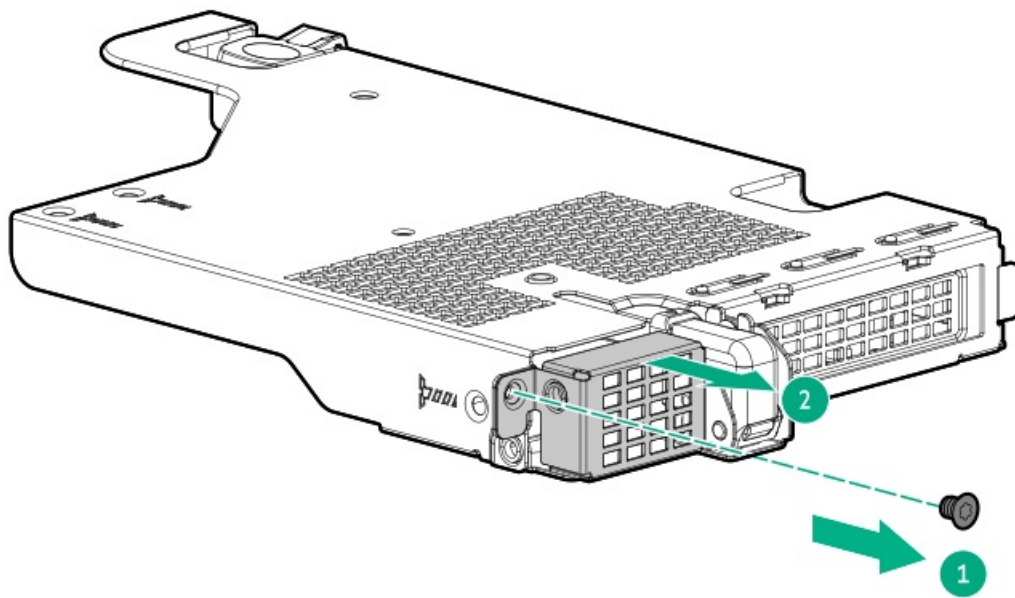


3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Do one of the following:
 - Extend the server from the rack.
 - Remove the server from the rack.
6. Remove the access panel.
7. Remove the rear 4 LFF drive cage.
8. Remove the NS204i-u + secondary low-profile riser cage:
 - a. Release the half-turn spring latch (callouts 1 and 2).
 - b. Lift the riser cage off the system board (callout 3).



9. Remove the security cover from the boot device riser cage.

Retain the screw and cover for future use.



Results

To replace the component, reverse the removal procedure.

HPE NS204i Boot Device replacement

Subtopics

[Removing and replacing the boot device cage assembly from NS204i-u + low-profile riser cage](#)

[Removing and replacing the boot device cage assembly on top of the power supply cage](#)

[Removing and replacing a boot device carrier with a security cover installed](#)

[Removing and replacing a boot device carrier without a security cover installed](#)

[Removing and replacing a boot device drive with a security cover installed](#)

[Removing and replacing a boot device drive without a security cover installed](#)

Removing and replacing the boot device cage assembly from NS204i-u + low-profile riser cage

Prerequisites

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

About this task

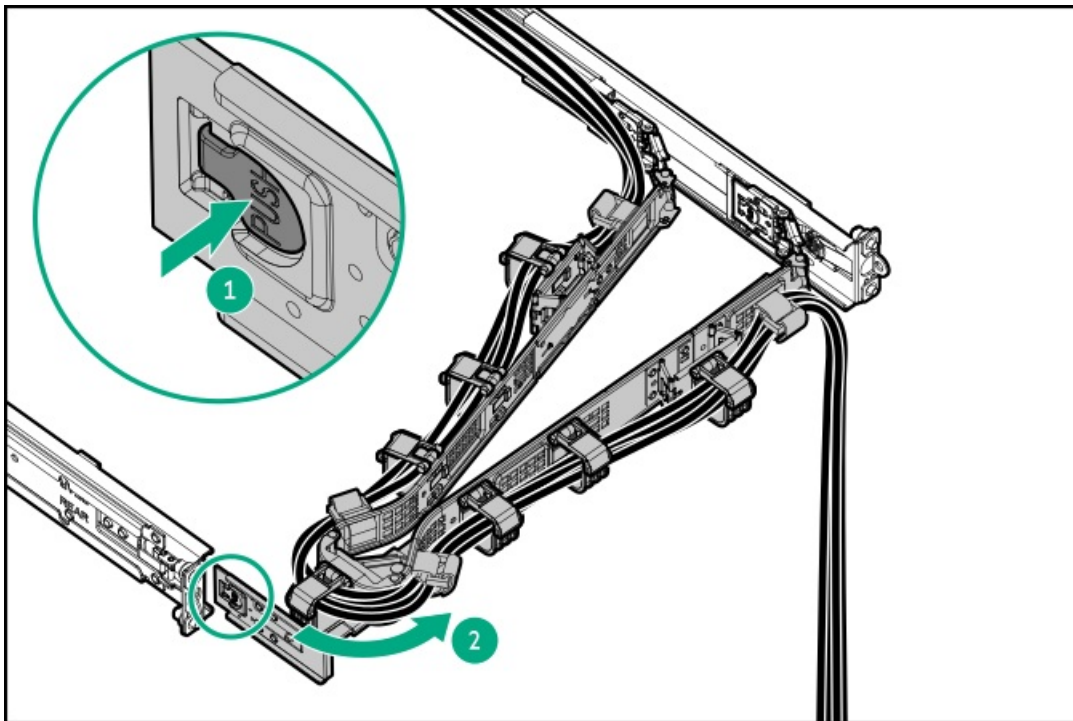


CAUTION:

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](#).

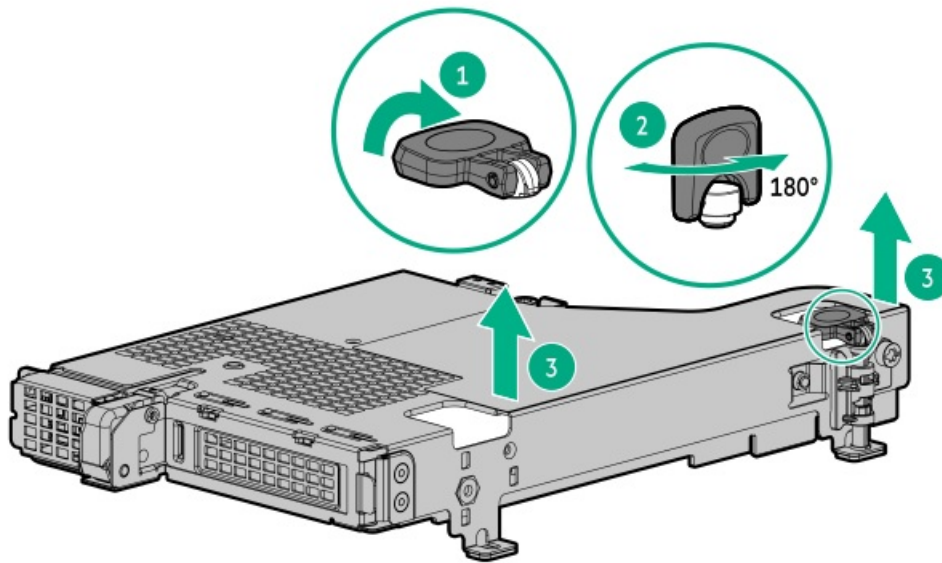
Procedure

1. [Power down the server.](#)
2. If installed, open the cable management arm.

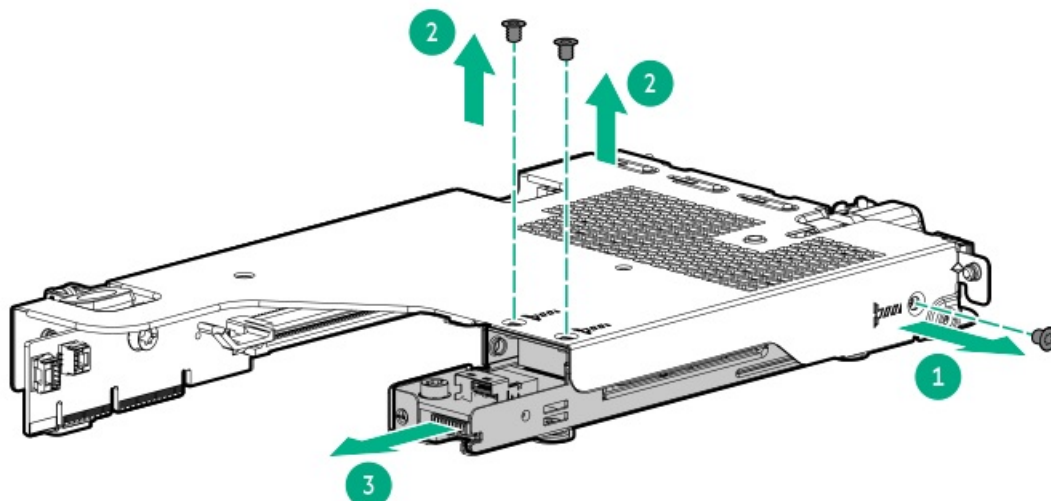


3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. [Remove the server from the rack.](#)
6. Place the server on a flat, level work surface.

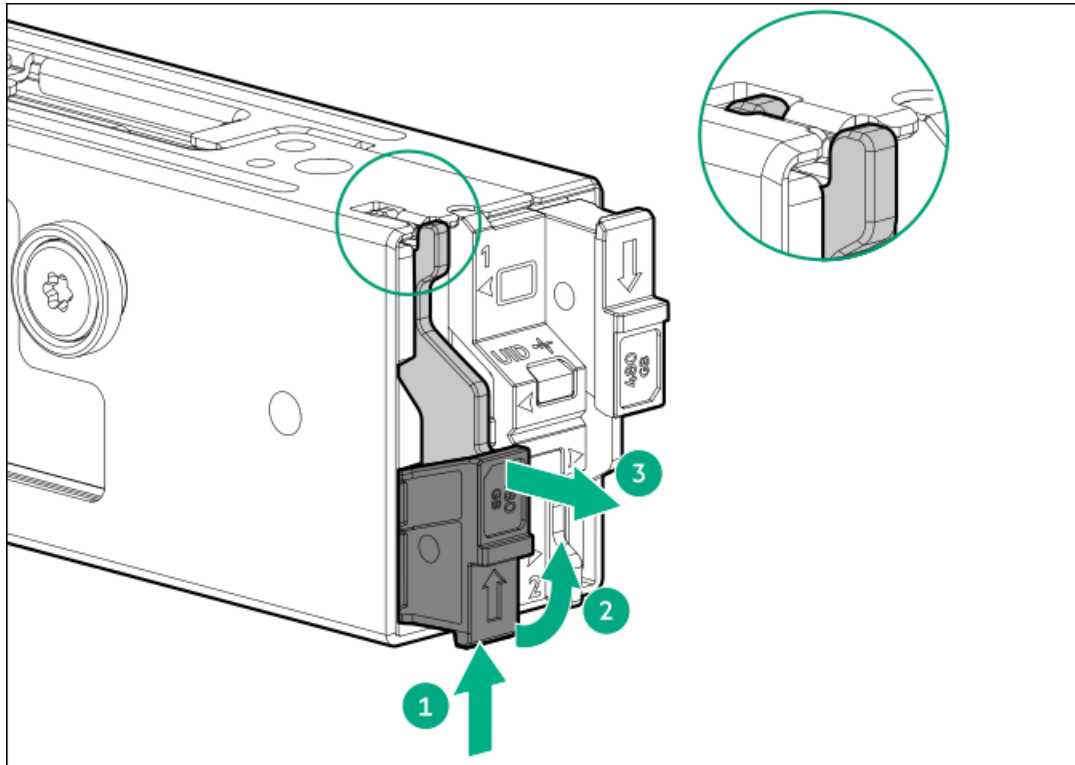
7. Remove the access panel.
8. Do one of the following:
 - a. Remove the air baffle.
 - b. Remove the midplane drive cage.
9. Remove the rear 4 LFF drive cage.
10. Disconnect the boot device signal and power cables from the system board.
11. Remove the NS204i-u + secondary low-profile riser cage:
 - a. Release the half-turn spring latch (callouts 1 and 2).
 - b. Lift the riser cage off the system board (callout 3).



12. Disconnect the signal and power cables from the boot device.
13. Remove the boot device cage assembly:
 - a. Remove screws from the riser cage (callouts 1 and 2).
Retain the screws. These screws will be used to secure the new boot device cage assembly.
 - b. Pull the cage assembly from the slot (callout 3).



14. Remove the boot device carrier:
 - a. Press and hold the carrier latch (callout 1).
 - b. Pivot the latch to open (callouts 2).
 - c. Slide the carrier out from the boot device cage (callout 3).



Results

To replace the component, reverse the removal procedure.

Removing and replacing the boot device cage assembly on top of the power supply cage

Prerequisites

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

- T-15 Torx screwdriver
- T-10 Torx screwdriver
- Phillips No. 1 screwdriver

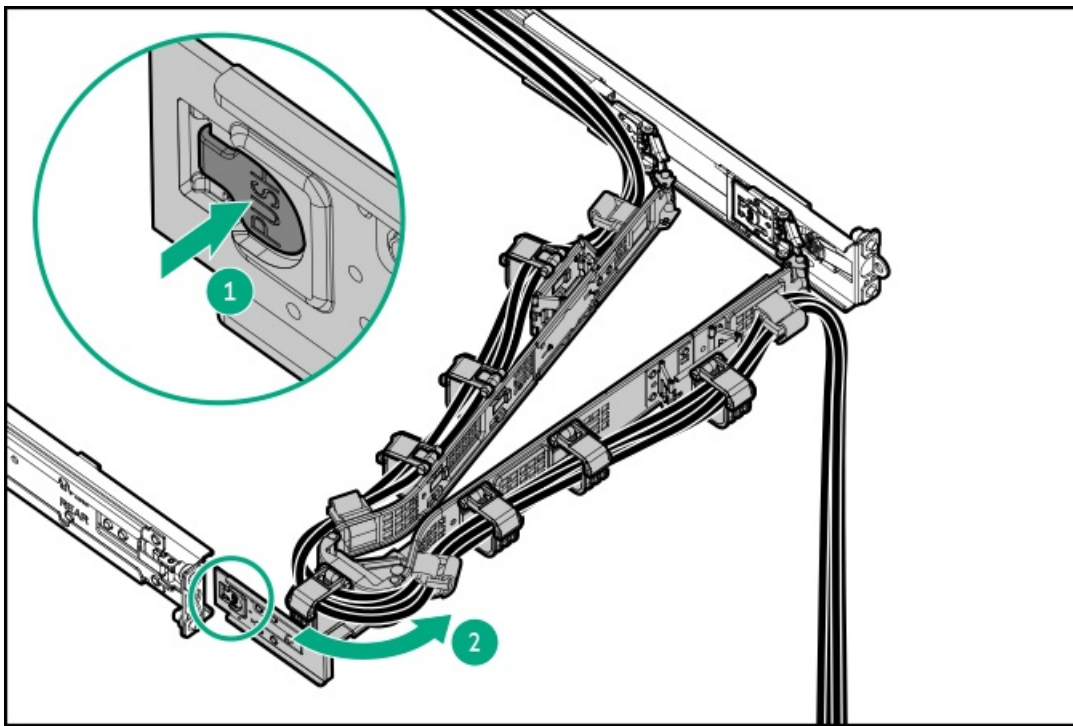
About this task

CAUTION:

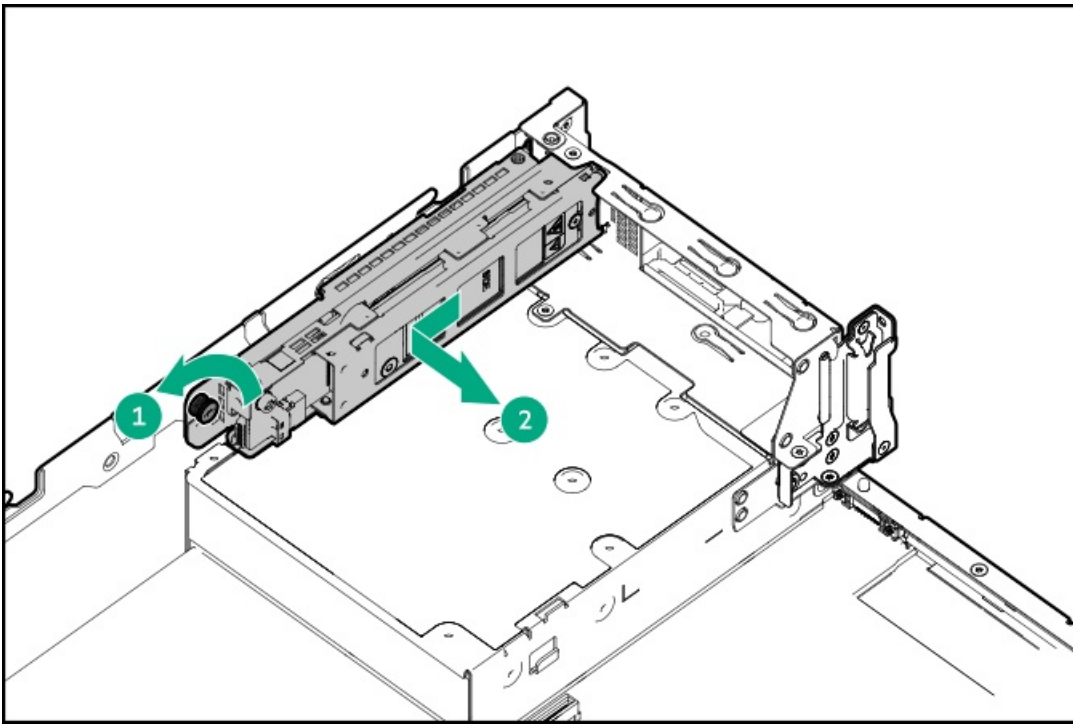
A discharge of static electricity from a finger or other conductor might damage system boards or other static-sensitive devices. To prevent damage, observe antistatic precautions.

Procedure

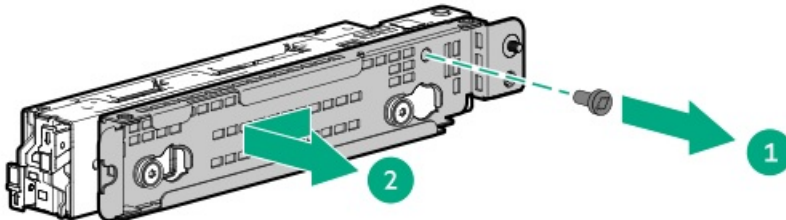
1. Power down the server.
2. If installed, open the cable management arm.



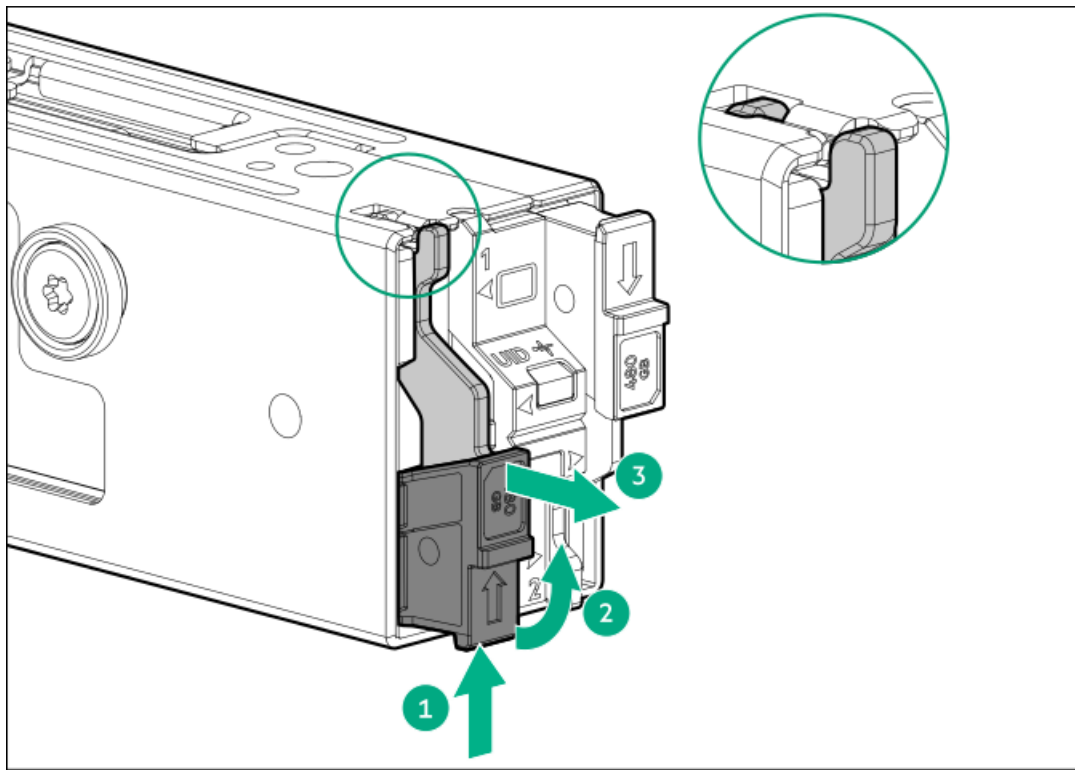
3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Remove the server from the rack.
6. Place the server on a flat, level work surface.
7. Remove the access panel.
8. Do one of the following:
 - a. Remove the air baffle.
 - b. Remove the midplane drive cage.
9. Disconnect the boot device signal and power cables from the system board.
10. Remove the boot device from the top of the power supply cage:
 - a. Loosen the bracket thumbscrew (callout 1).
 - b. Remove the boot device from the chassis side wall (callout 2).



11. Disconnect the signal and power cables from the boot device.
12. Remove the boot device bracket:
 - a. Remove the bracket screw (callout 1).
 - b. Remove the bracket from the boot device (callout 2).



13. Remove the boot device carrier:
 - a. Press and hold the carrier latch (callout 1).
 - b. Pivot the latch to open (callouts 2).
 - c. Slide the carrier out from the boot device cage (callout 3).



Results

To replace the component, reverse the removal procedure.

Removing and replacing a boot device carrier with a security cover installed

Prerequisites

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

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

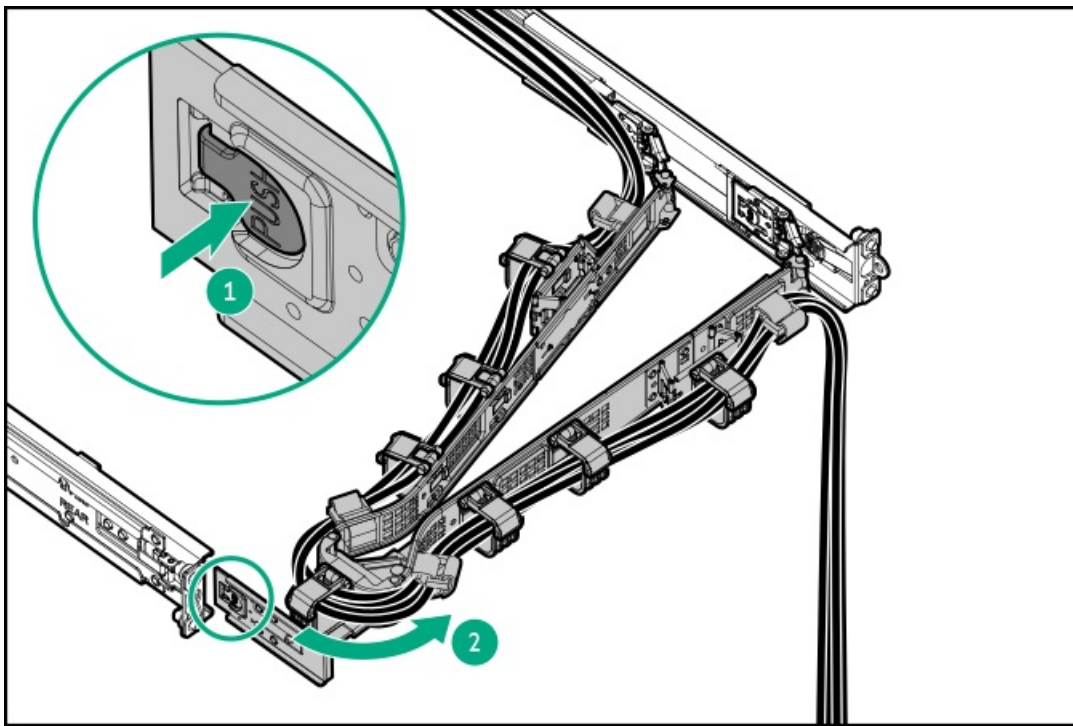
About this task

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.

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](#).

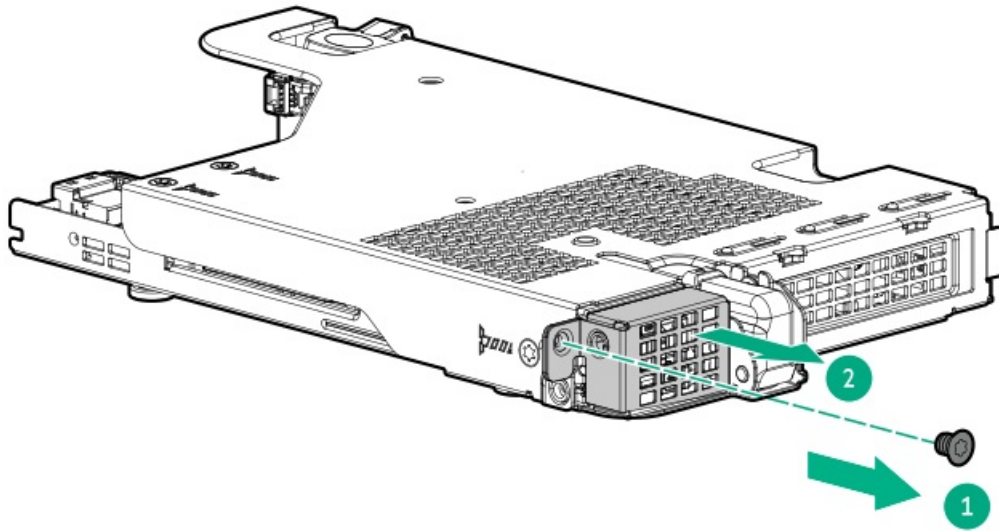
Procedure

1. Back up all server data.
2. [Power down the server](#).
3. If installed, open the cable management arm.

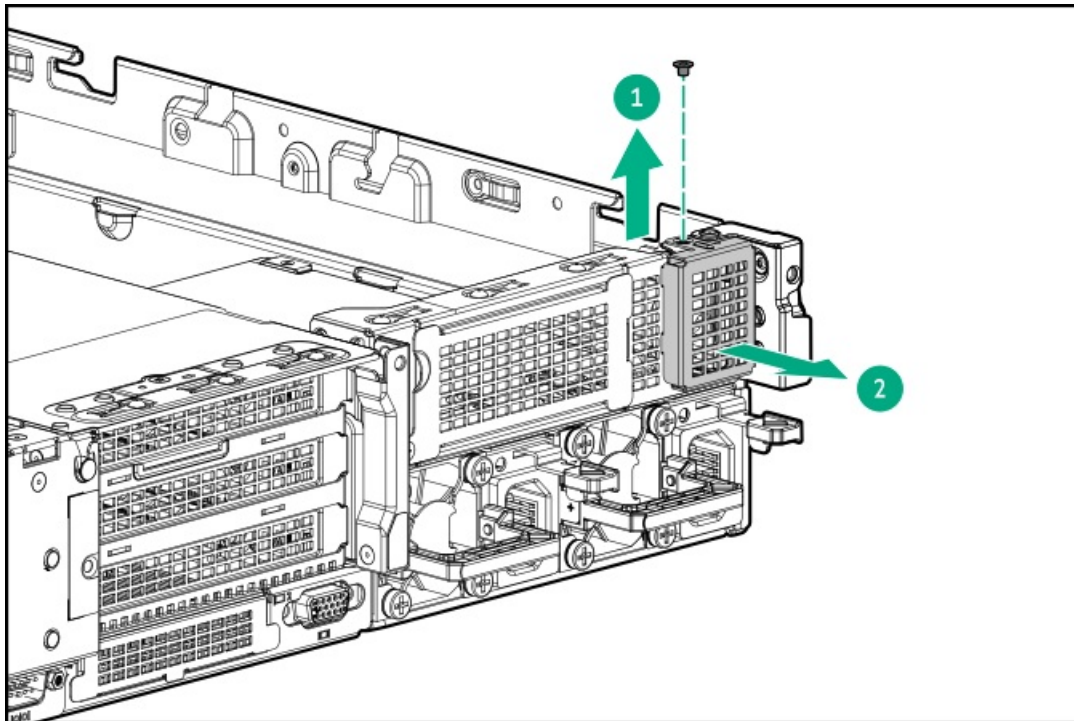


4. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Remove the server from the rack.
7. Place the server on a flat, level work surface.
8. Remove the access panel.
9. If replacing the boot device carrier on the NS204i-u + secondary low-profile riser cage:
 - a. Do one of the following:
 - Remove the air baffle.
 - Remove the midplane drive cage.
 - b. Remove the rear 4 LFF drive cage.
 - c. Remove the NS204i-u + secondary low-profile riser cage.
10. Remove the boot device security cover:
 - On the boot device riser cage



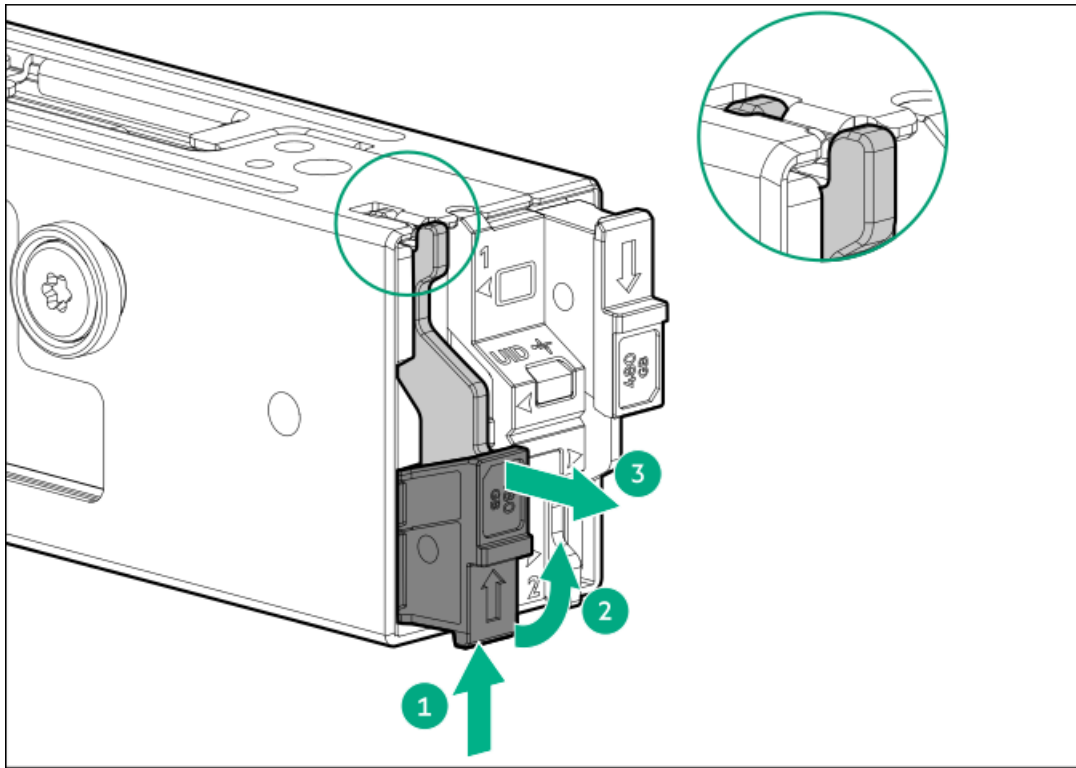


- On top of the power supply cage



11. Remove the boot device carrier:

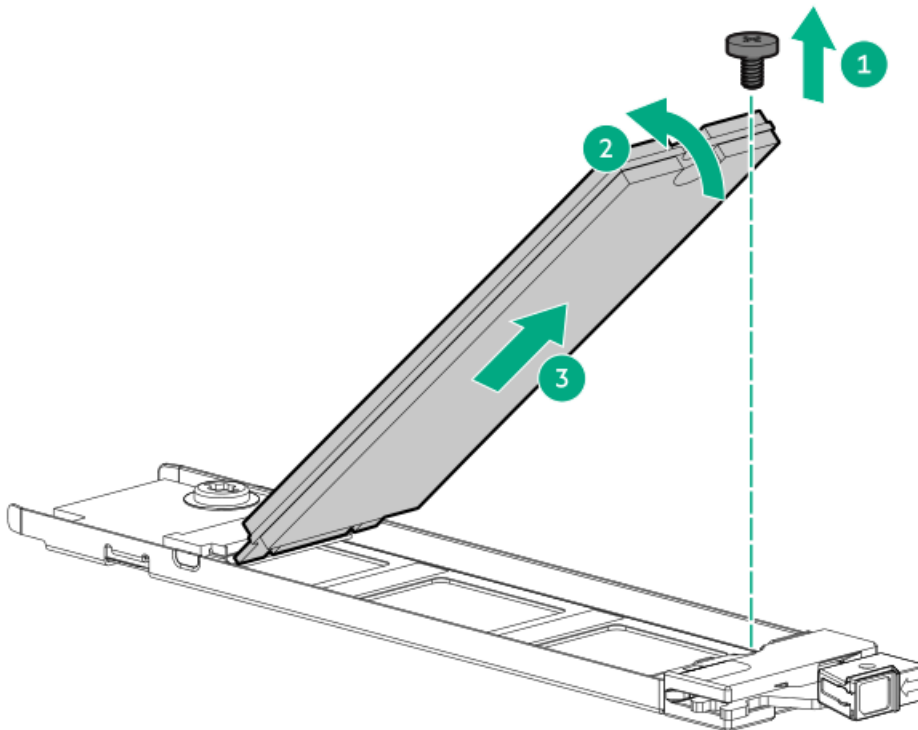
- Press and hold the carrier latch (callout 1).
- Pivot the latch to open (callouts 2).
- Slide the carrier out from the boot device cage (callout 3).



12. Remove the SSDs from the boot device carrier:

- a. Remove the SSD mounting screw (callout 1).
- b. Tilt the SSD with the M.2 slot at a 45° angle (callout 2).
- c. Carefully remove the SSD from the M.2 slot (callout 3).

Retain these SSDs for installation onto the new boot device carrier.



Results

To replace the component, reverse the removal procedure.

Removing and replacing a boot device carrier without a security cover installed

Prerequisites

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

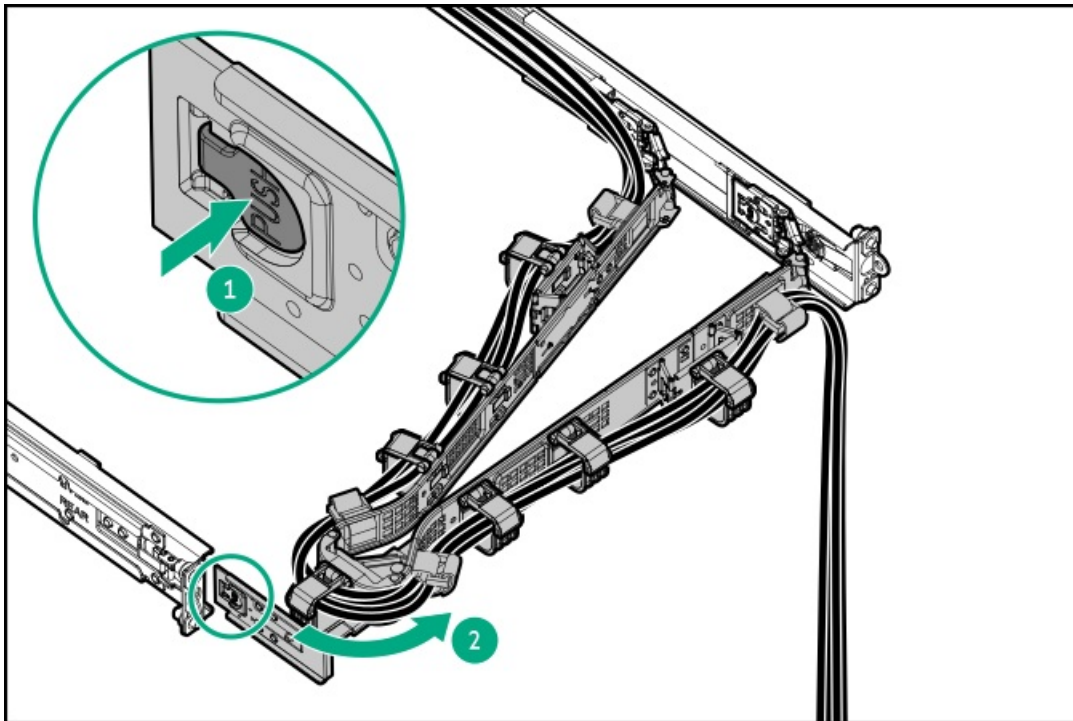
About this task

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.

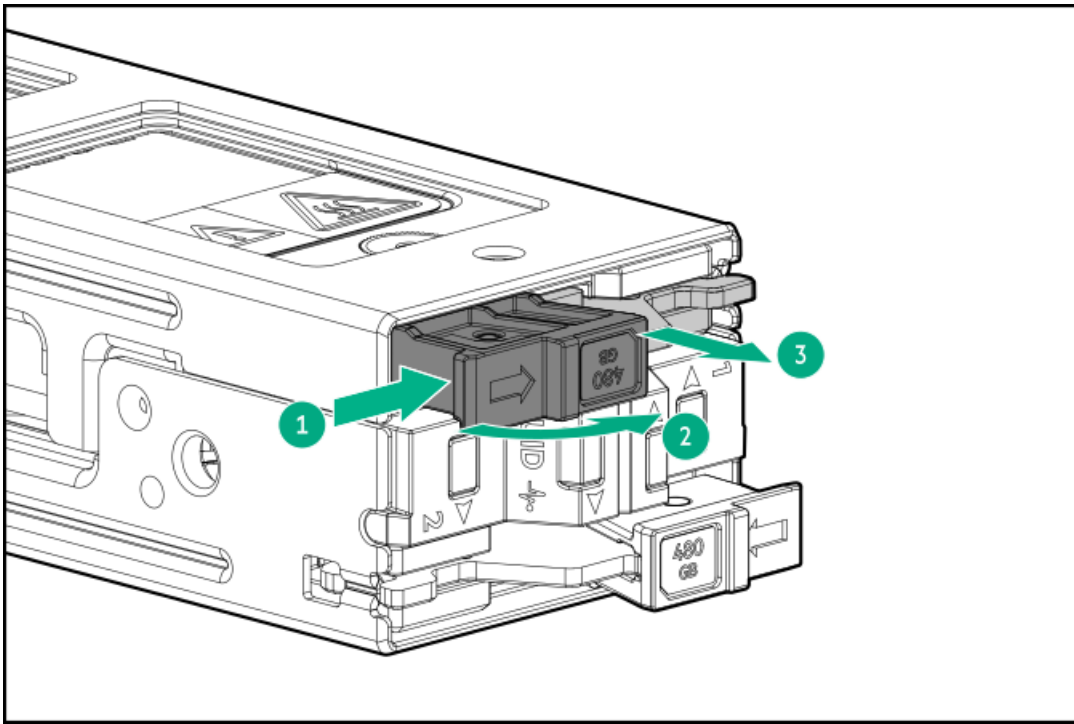
CAUTION:
A discharge of static electricity from a finger or other conductor might damage system boards or other static-sensitive devices. To prevent damage, observe antistatic precautions.

Procedure

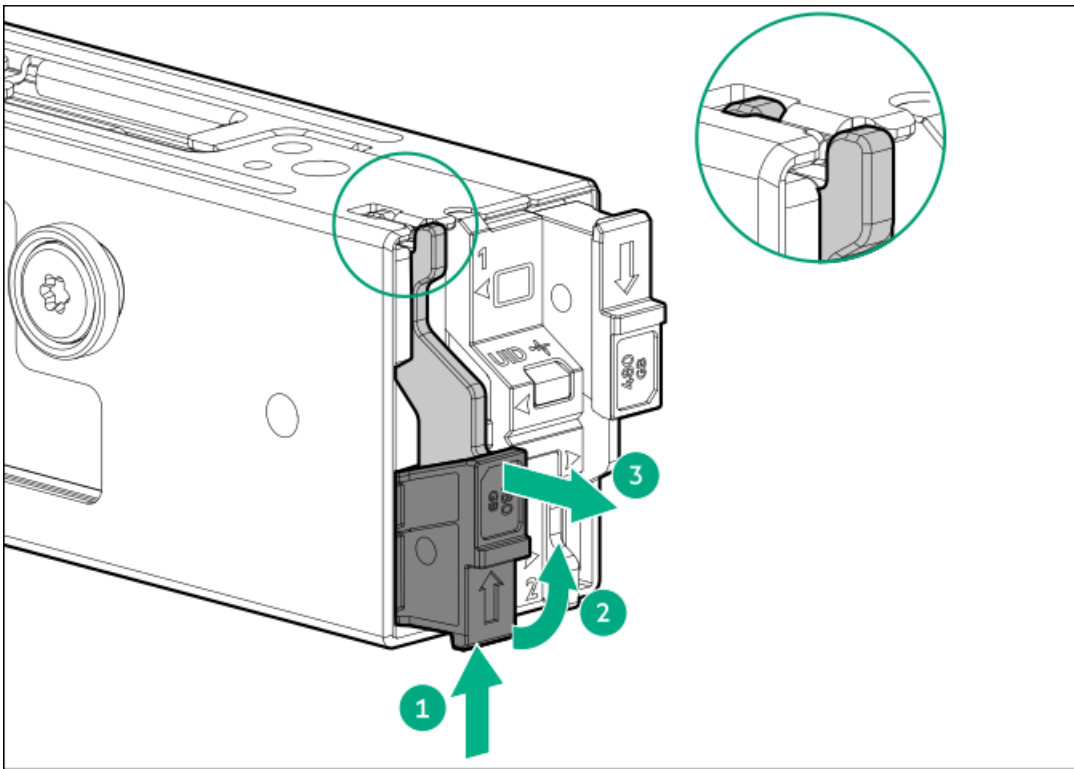
1. Back up all server data.
2. If installed, open the cable management arm.



3. Remove the boot device carrier:
 - a. Press and hold the carrier latch (callout 1).
 - b. Pivot the latch to open (callout 2).
 - c. Slide the carrier out from the boot device cage (callout 3).
 - Boot device on the NS204i-u + secondary low-profile riser cage

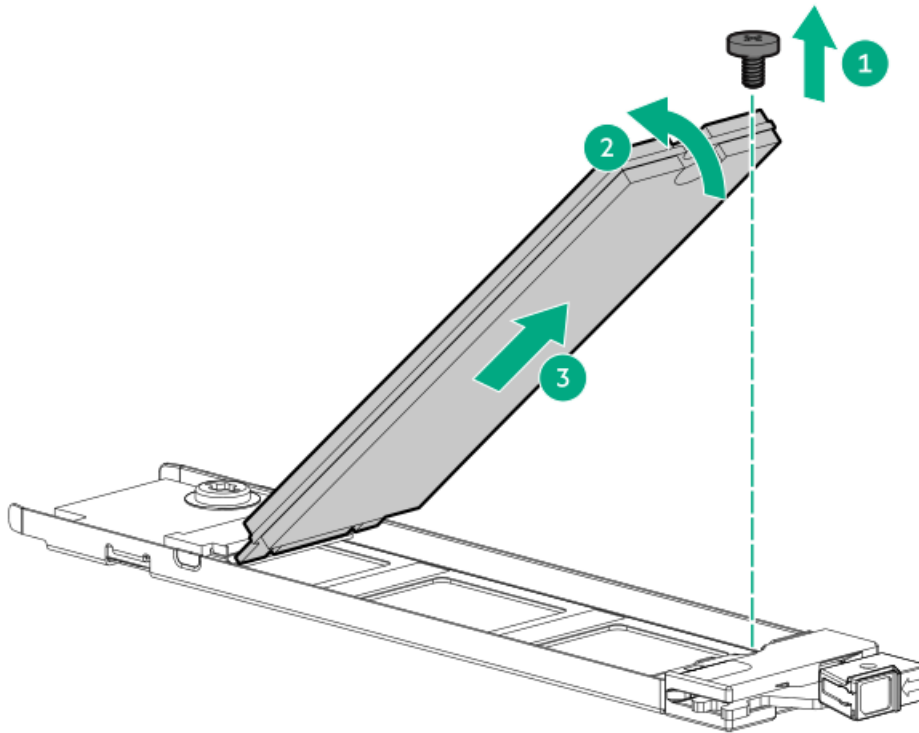


- Boot device on top of the power supply cage



4. Remove the SSDs from the boot device carrier:
 - a. Remove the SSD mounting screw (callout 1).
 - b. Tilt the SSD with the M.2 slot at a 45° angle (callout 2).
 - c. Carefully remove the SSD from the M.2 slot (callout 3).

Retain these SSDs for installation onto the new boot device carrier.



Results

To replace the component, reverse the removal procedure.

Removing and replacing a boot device drive with a security cover installed

Prerequisites

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

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

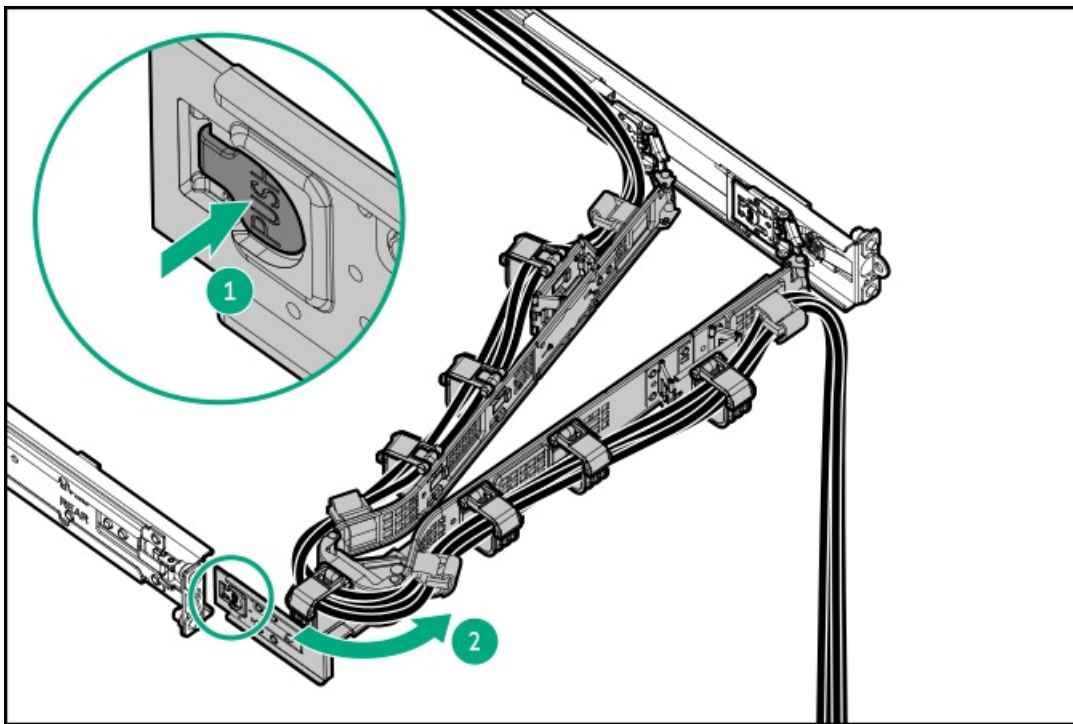
About this task

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.

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](#).

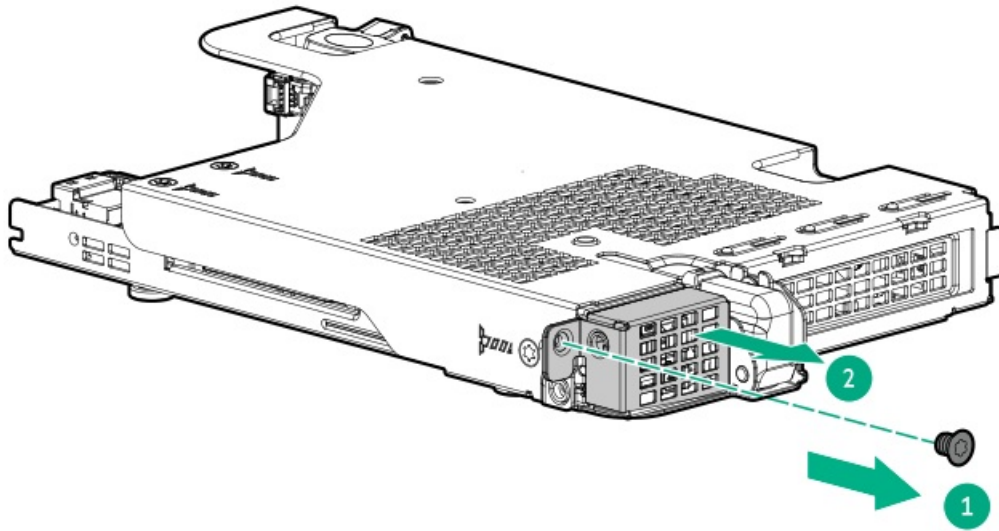
Procedure

1. Back up all server data.
2. Power down the server.
3. If installed, open the cable management arm.

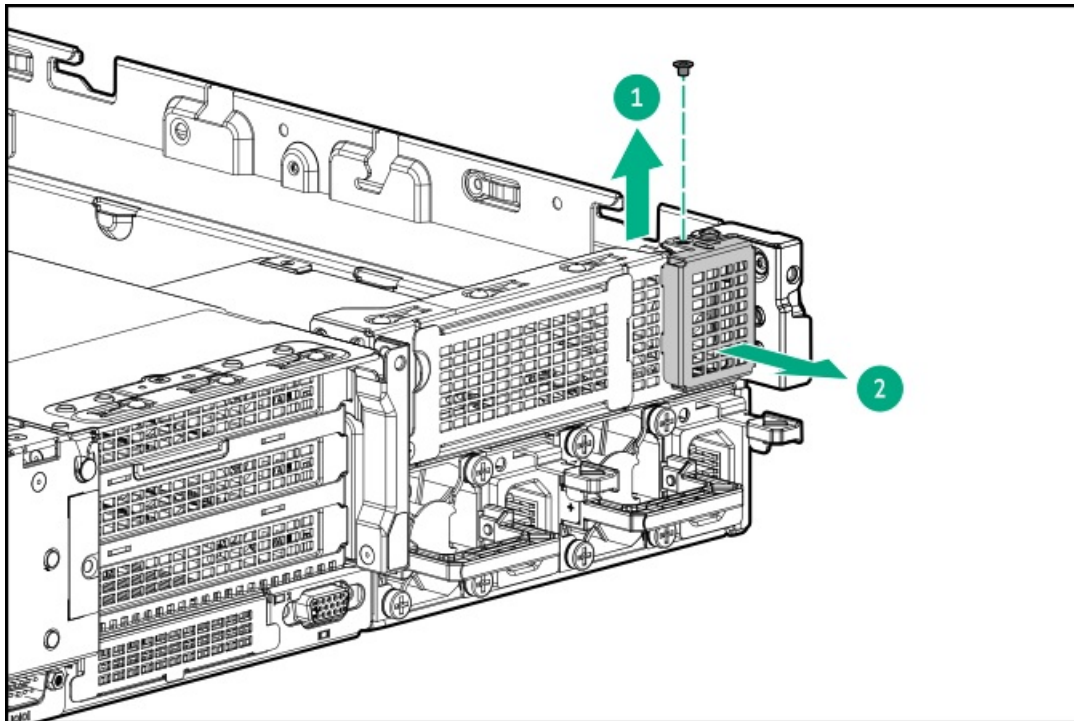


4. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Remove the server from the rack.
7. Place the server on a flat, level work surface.
8. Remove the access panel.
9. If replacing the boot device driver on the NS204i-u + secondary low-profile riser cage:
 - a. Do one of the following:
 - Remove the air baffle.
 - Remove the midplane drive cage.
 - b. Remove the rear 4 LFF drive cage.
 - c. Remove the NS204i-u + secondary low-profile riser cage.
10. Remove the boot device security cover:
 - On the boot device riser cage



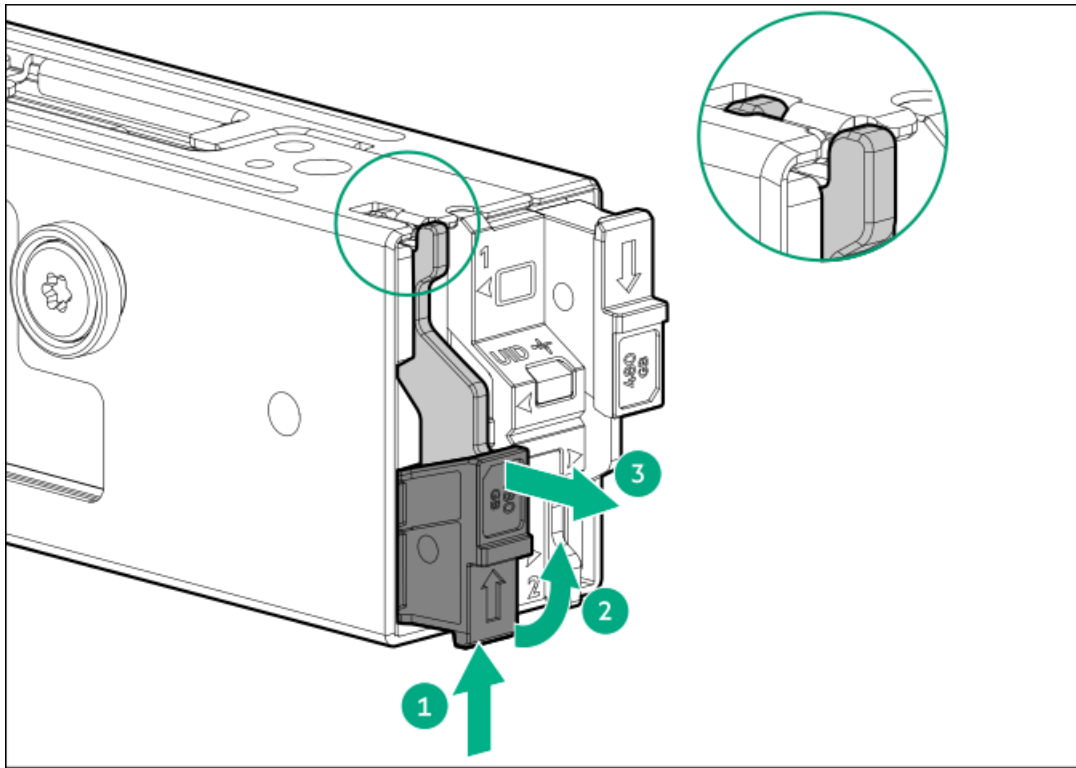


- On top of the power supply cage

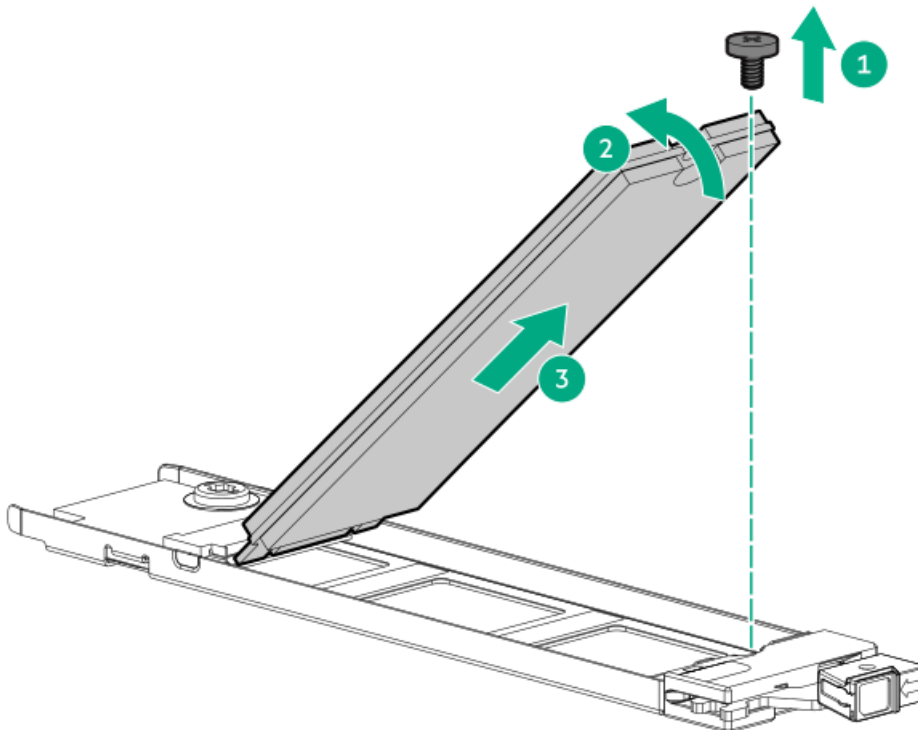


11. Remove the boot device carrier:

- Press and hold the carrier latch (callout 1).
- Pivot the latch to open (callouts 2).
- Slide the carrier out from the boot device cage (callout 3).



12. Remove the SSD from the boot device carrier:
 - a. Remove the SSD mounting screw (callout 1).
 - b. Tilt the SSD with the M.2 slot at a 45° angle (callout 2).
 - c. Carefully remove the SSD from the M.2 slot (callout 3).



Results

To replace the component, reverse the removal procedure.

Removing and replacing a boot device drive without a security cover installed

Prerequisites

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

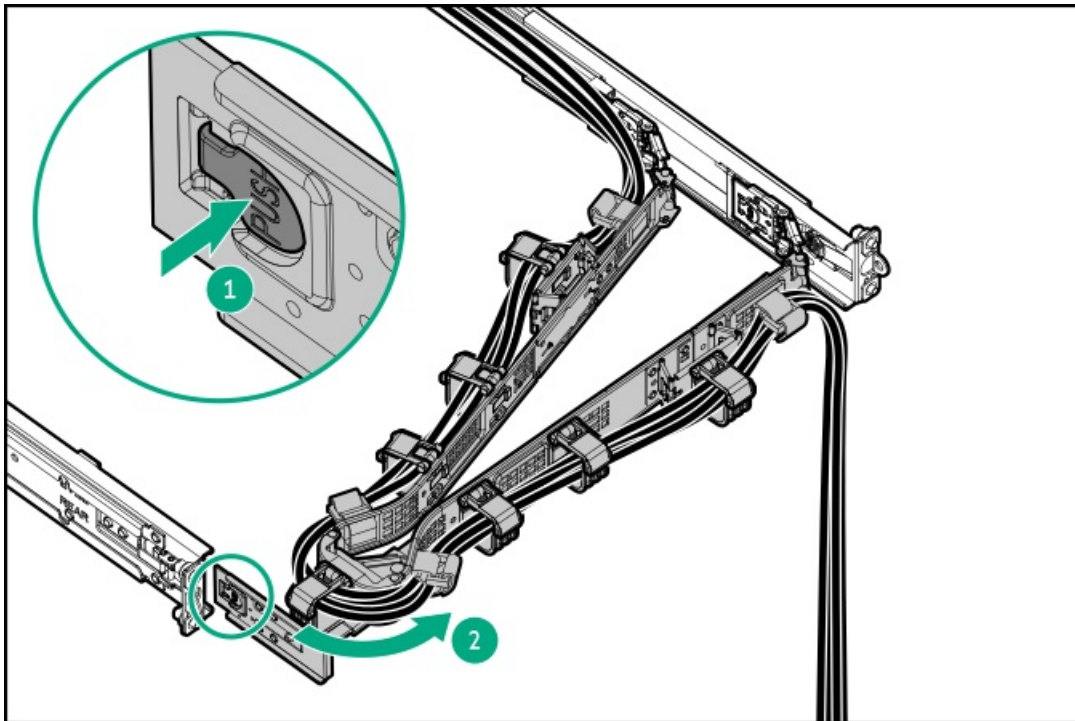
About this task

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.

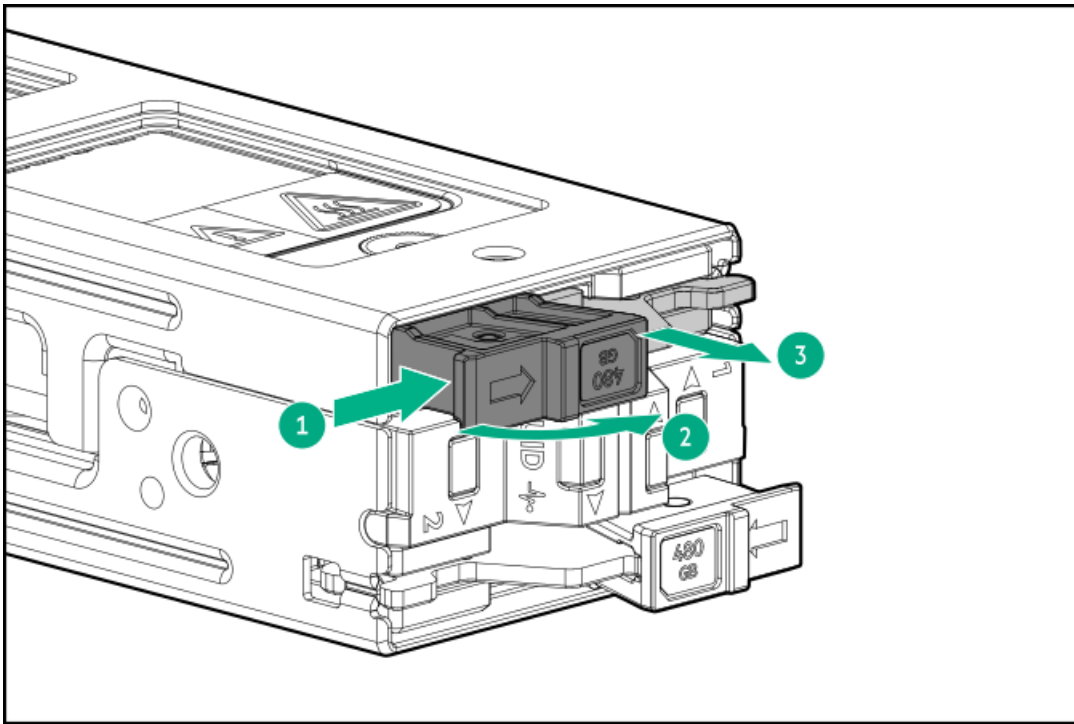
CAUTION:
A discharge of static electricity from a finger or other conductor might damage system boards or other static-sensitive devices. To prevent damage, observe antistatic precautions.

Procedure

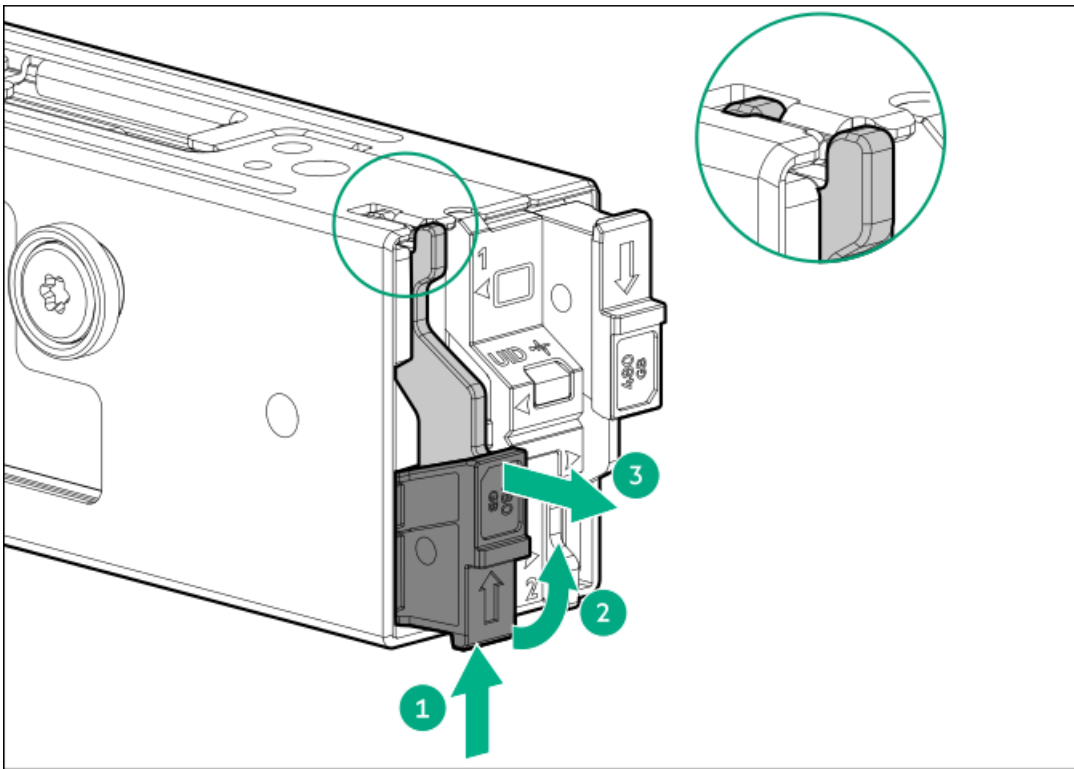
1. Back up all server data.
2. If installed, open the cable management arm.



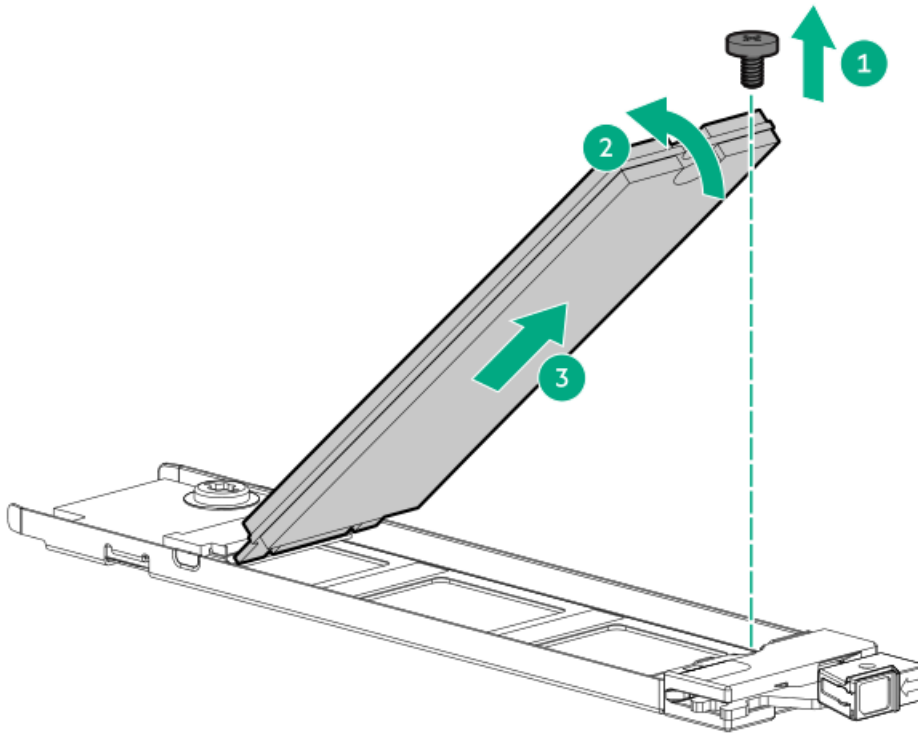
3. Remove the boot device carrier:
 - a. Press and hold the carrier latch (callout 1).
 - b. Pivot the latch to open (callout 2).
 - c. Slide the carrier out from the boot device cage (callout 3).
 - Boot device on the NS204i-u + secondary low-profile riser cage



- Boot device on top of the power supply cage



4. Remove the SSD from the boot device carrier:
 - a. Remove the SSD mounting screw (callout 1).
 - b. Tilt the SSD with the M.2 slot at a 45° angle (callout 2).
 - c. Carefully remove the SSD from the M.2 slot (callout 3).



Results

To replace the component, reverse the removal procedure.

Heatsink replacement

Subtopics

[Removing the heatsink](#)

[Installing the heatsink](#)

Removing the heatsink

Prerequisites

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

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.

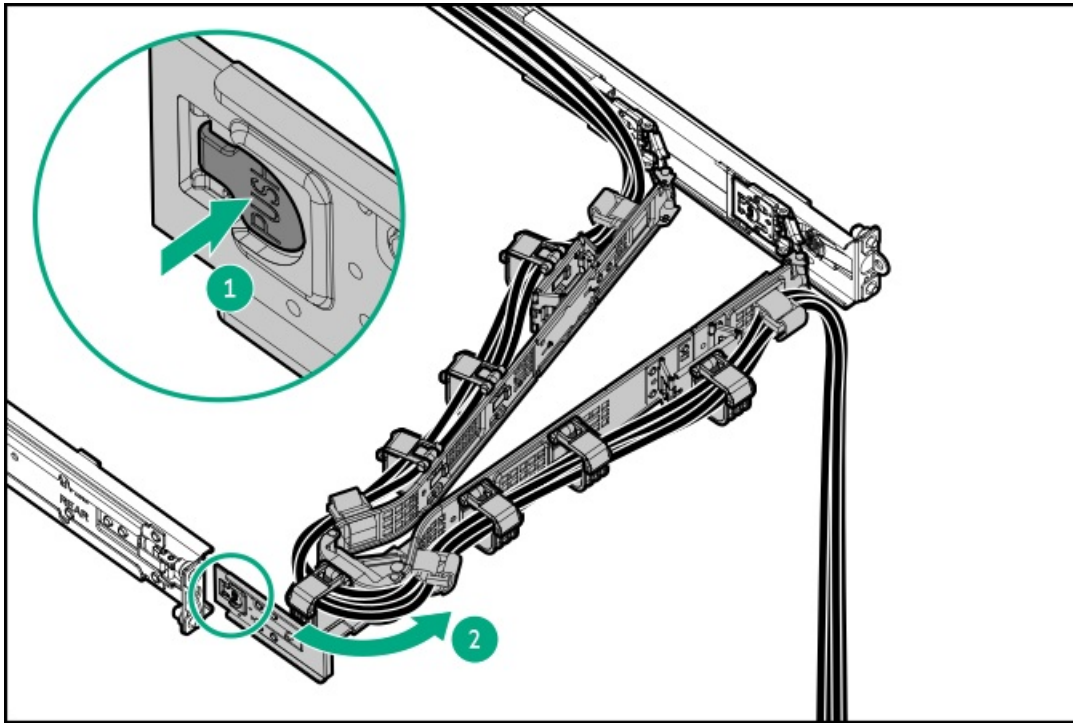


CAUTION:

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. [Power down the server](#).
2. If installed, open the cable management arm.

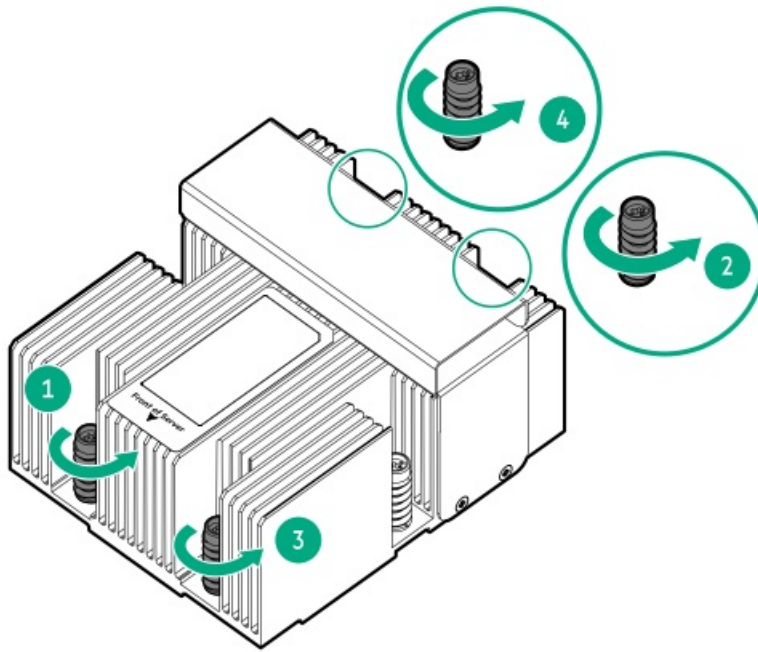


3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Remove the server from the rack.
6. Place the server on a flat, level work surface.
7. Remove the access panel.
8. Do one of the following:
 - a. Remove the air baffle.
 - b. Remove the midplane drive cage.
9. Allow all internal system components to cool before continuing.
10. Remove the heatsink:

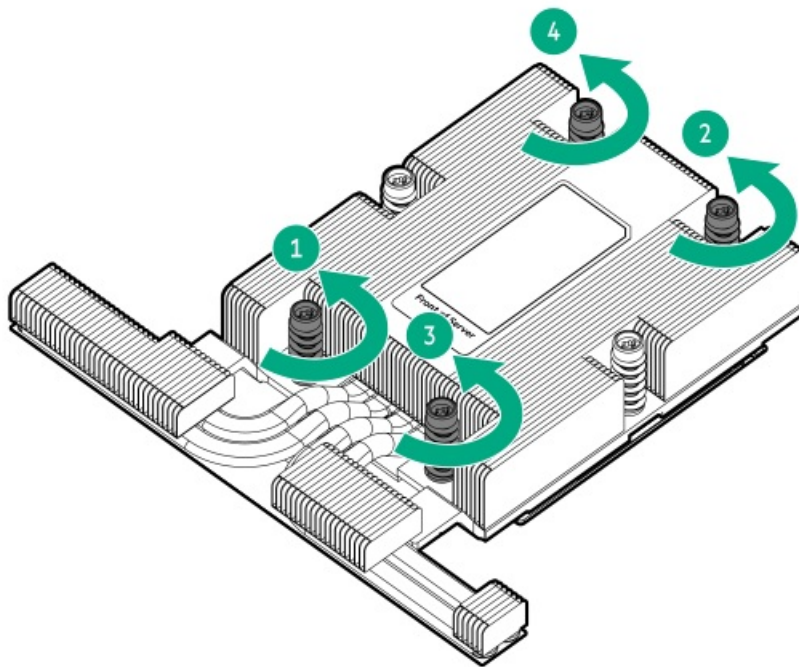
△ CAUTION:

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

- a. Review the heatsink screw numbering on the heatsink label.
- b. Loosen the heatsink screw numbers 6, 5, 4, and 3 in a diagonal manner (callouts 1 to 4).
 - Standard heatsink

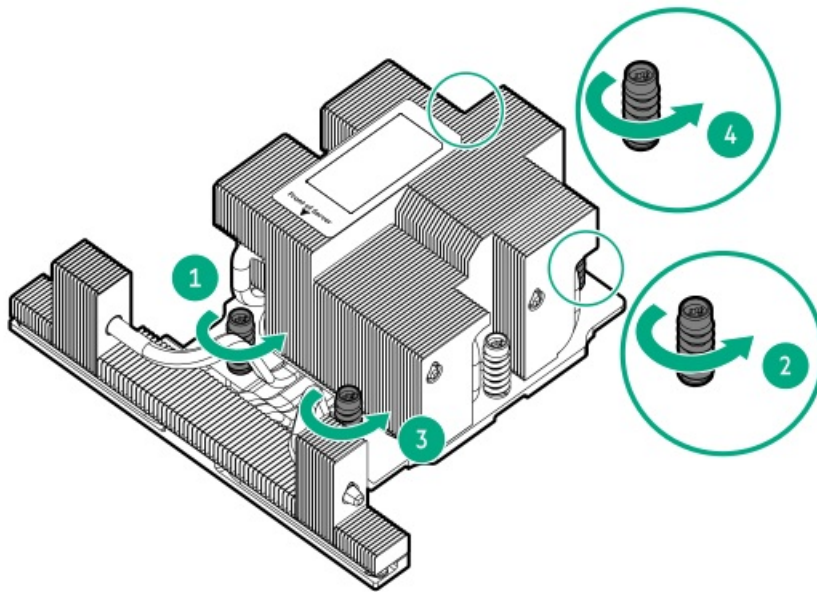


- Midplane cage heatsink



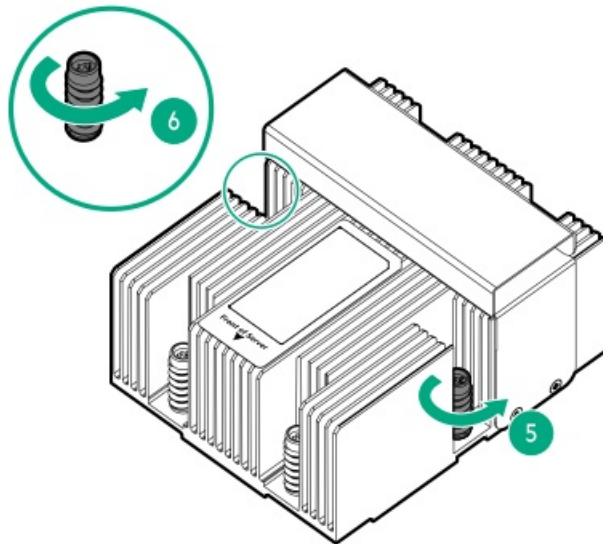
- High performance heatsink





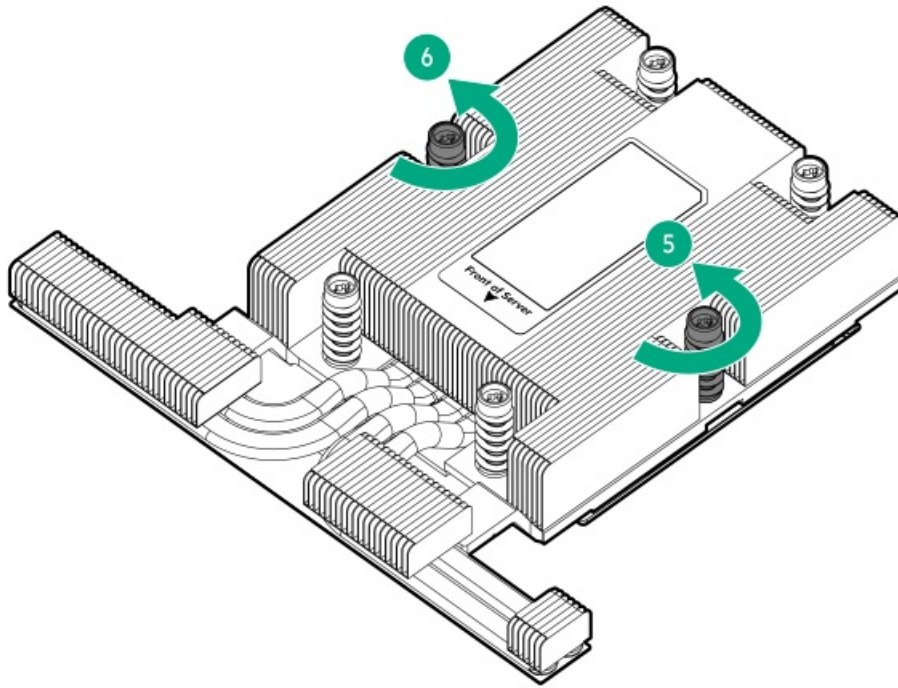
c. Loosen the heatsink screw numbers 2 and 1 (callouts 5 and 6).

- Standard heatsink

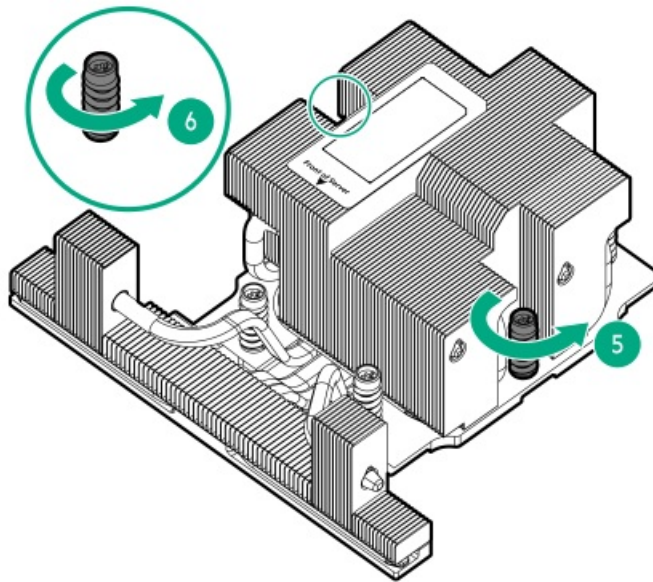


- Midplane cage heatsink





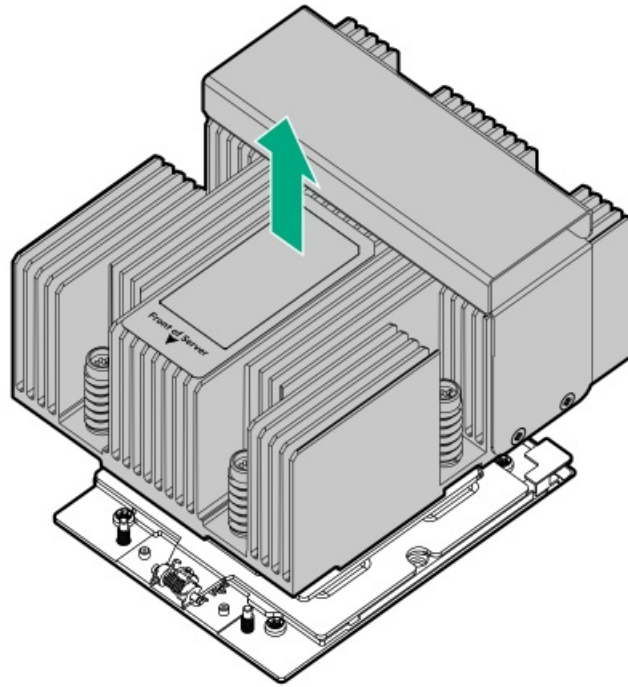
- High performance heasink



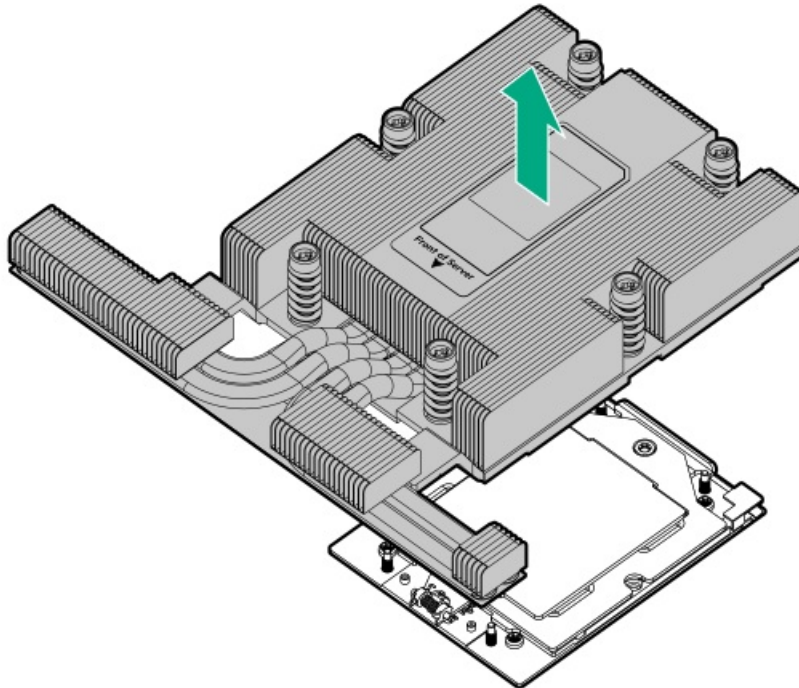
11. Lift the heatsink away from the processor socket.

- Standard heatsink



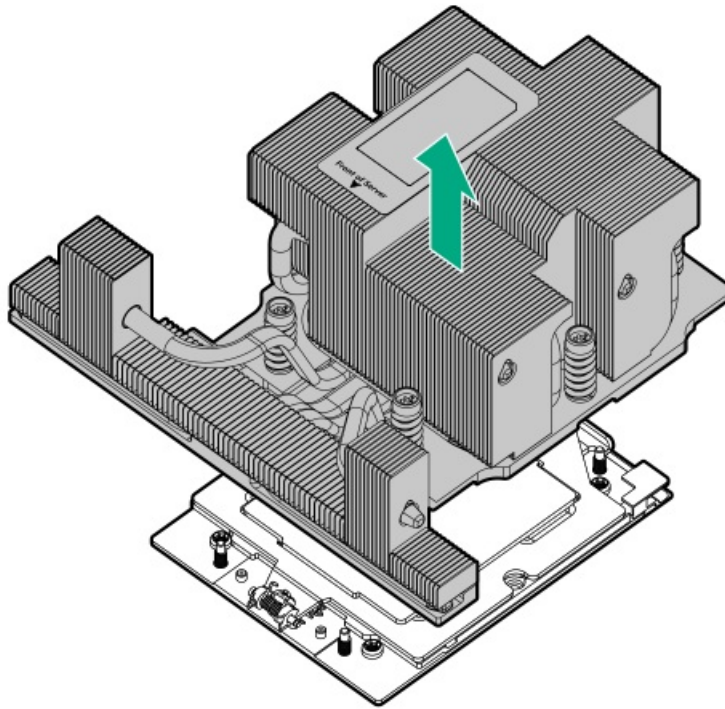


- Midplane cage heatsink



- High performance heatsink





12. Place the heatsink on a flat work surface with its contact side facing up.

Installing the heatsink

Prerequisites

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

- T-20 Torx screwdriver or a torque screwdriver with T-20 drill bit
- Alcohol wipe

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

Allow the alcohol to evaporate before continuing.

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

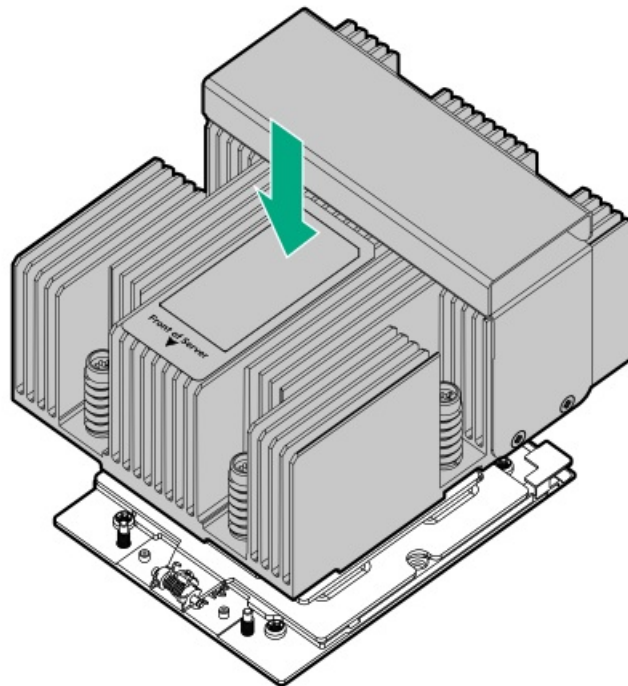
CAUTION:

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

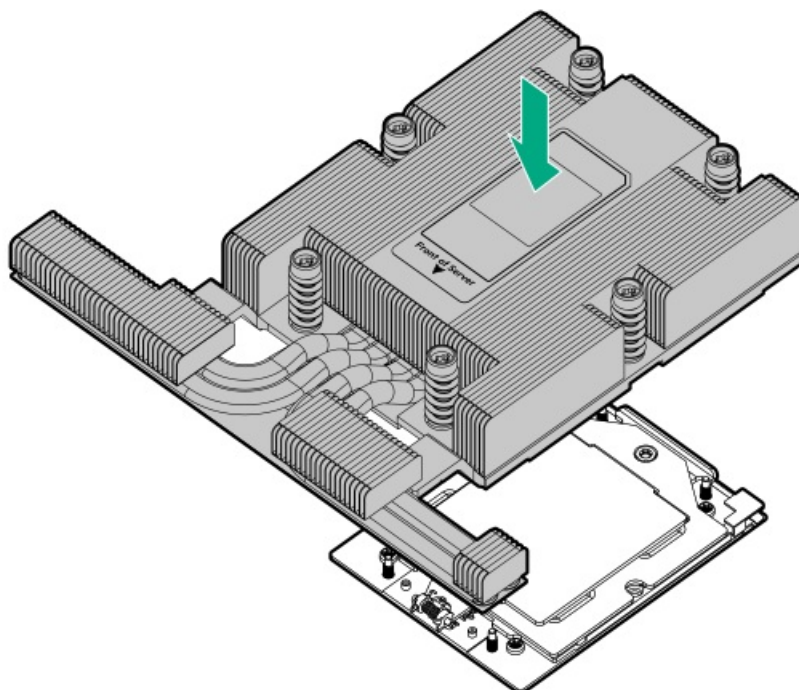
CAUTION:

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

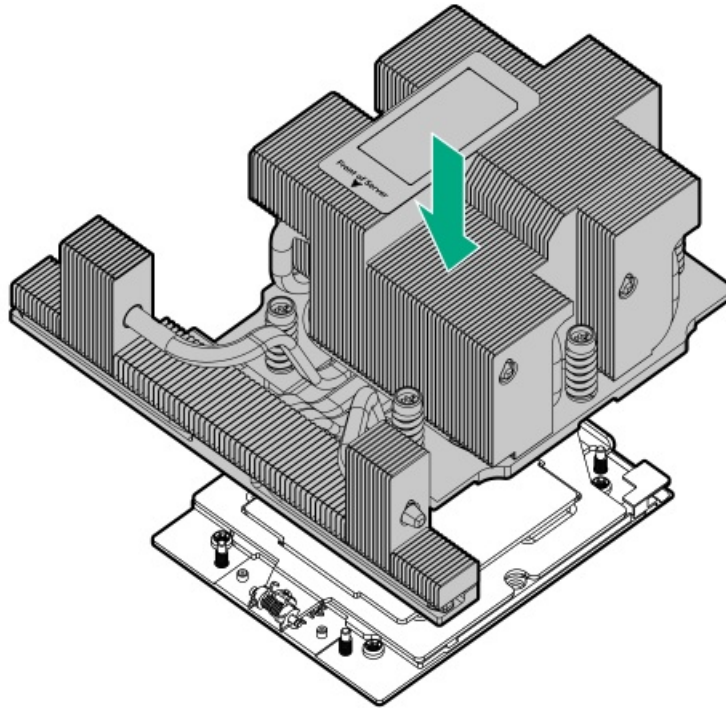
- a. When using a torque wrench to tighten the heatsink screws, set a torque between 1.24 N-m (11 lbf-in) to 1.47 N-m (13 lbf-in) .
- b. Note the **Front of server** text on the heatsink label to correctly orient the heatsink over the processor socket.
- c. Position the heatsink on top of the processor, ensuring that it is properly seated before securing the screws.
 - Standard heatsink



- Midplane cage heatsink

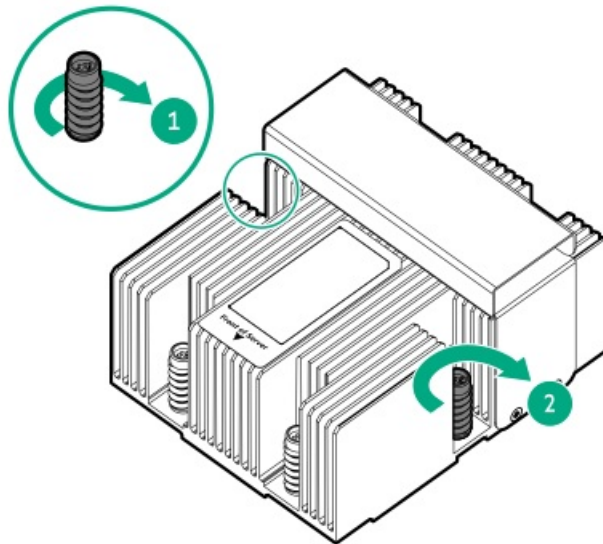


- High performance heatsink



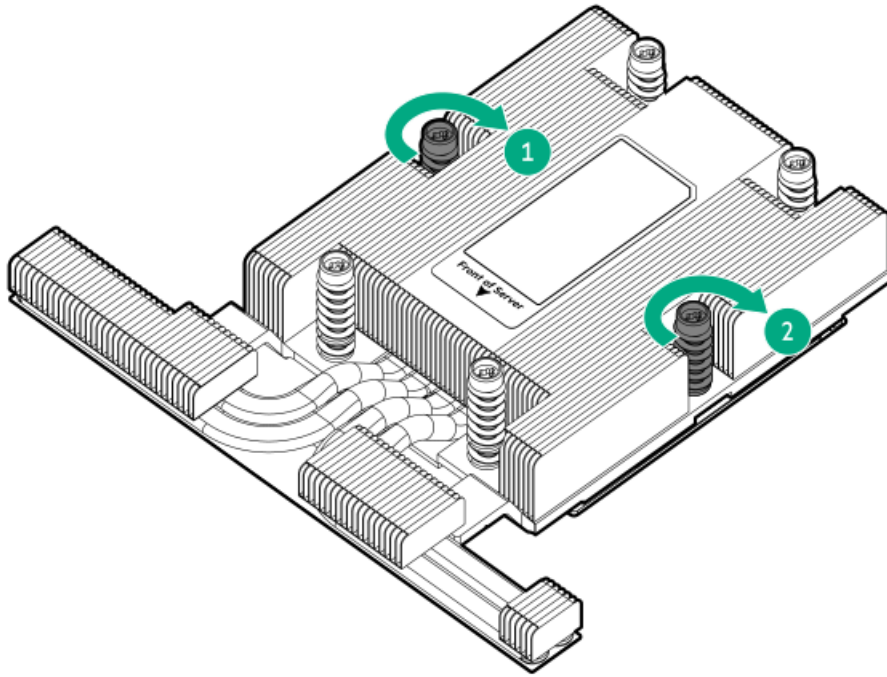
d. Tighten the heatsink screw numbers 1 and 2 (callouts 1 and 2).

- Standard heatsink

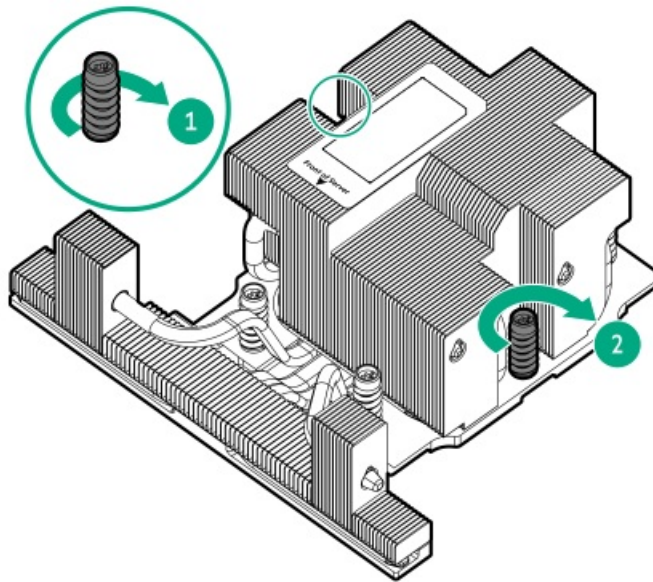


- Midplane cage heatsink





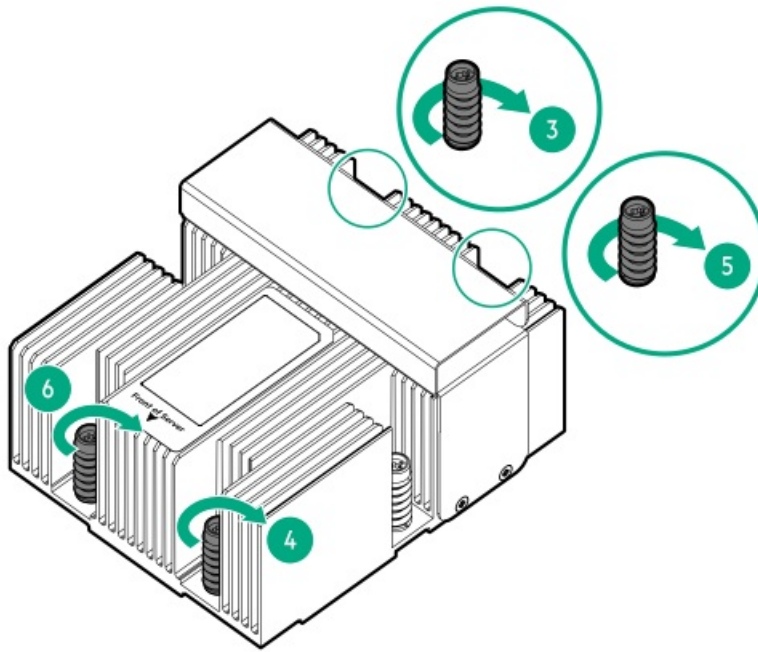
- High performance heatsink



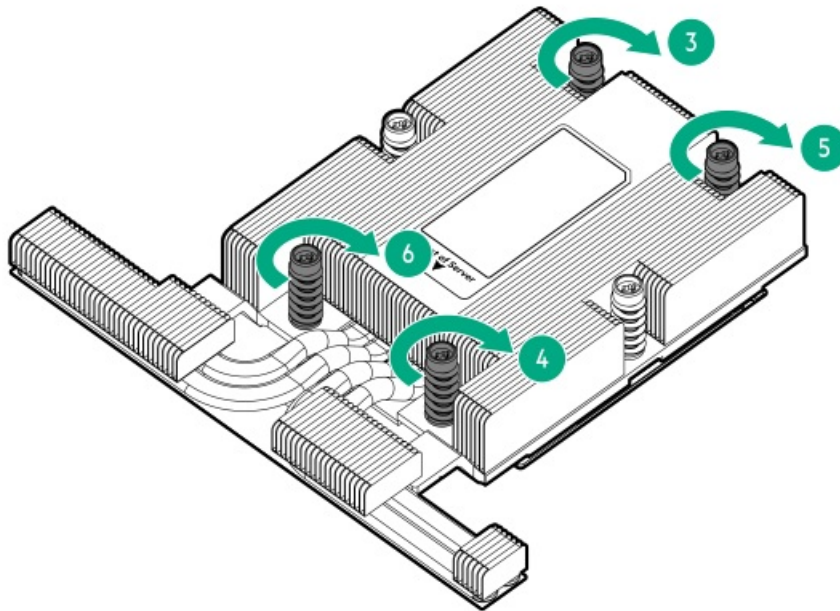
e. Tighten the heatsink screw numbers 3, 4, 5, and 6 in a diagonal manner (callouts 3 to 6).

- Standard heatsink



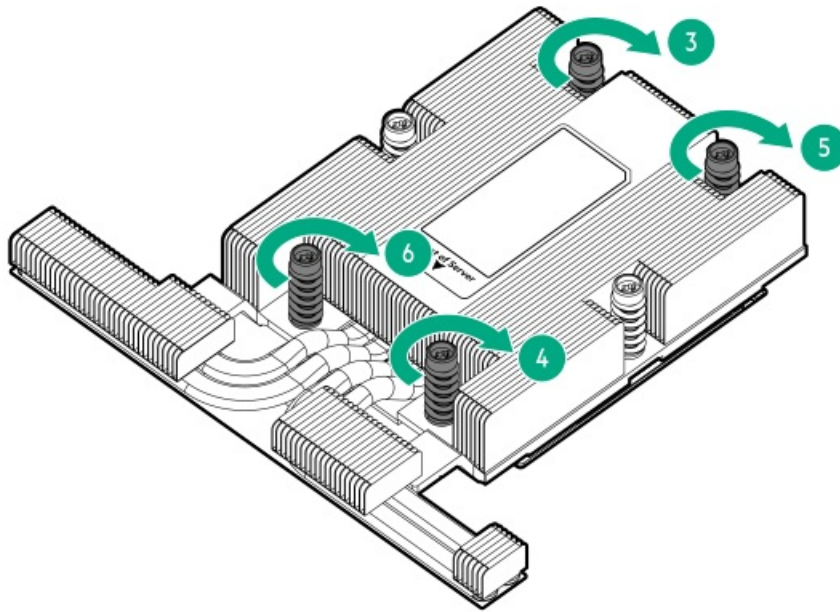


- Midplane cage heatsink



- High performance heatsink





4. Do one of the following:
 - a. Install the air baffle.
 - b. Install the midplane drive cage.
5. Install the access panel.
6. Install the server into the rack.
7. Connect all peripheral cables to the server.
8. Connect each power cord to the server.
9. Connect each power cord to the power source.
10. Power up the server.
11. If removed, install the front bezel.

Processor replacement

Subtopics

Processor cautions

Removing the processor

Installing the processor

Processor cautions



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

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

CAUTION: The pins on the processor socket and on the processor are very fragile and easily damaged . To avoid component damage, do not touch these pins. Any damage to them might require replacing the system board and/or processor.

IMPORTANT: Processor socket 1 must be populated at all times or the server does not function.

IMPORTANT: If installing a processor with a faster speed, update the system ROM before installing the processor. To download firmware, see [Updating firmware or system ROM](#).

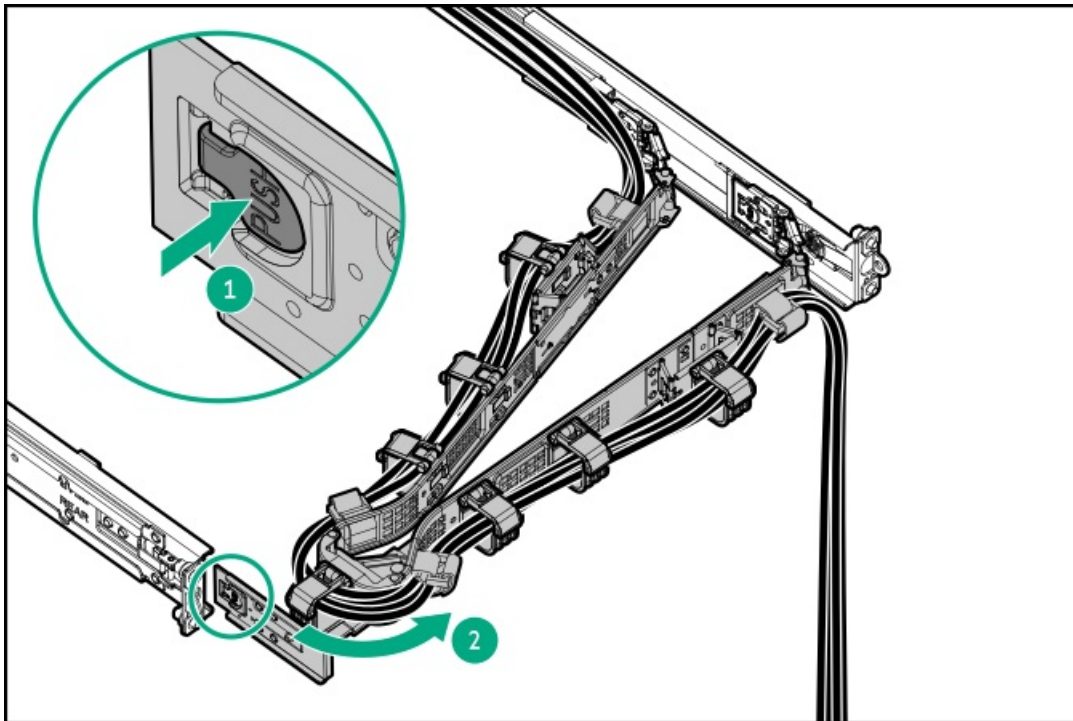
Removing the processor

Prerequisites

- [Identify the processor and socket components](#).
- [Review the processor cautions](#).
- Before you perform this procedure, make sure that you have the following items available:
 - T-20 Torx screwdriver
 - Alcohol wipe

Procedure

1. [Power down the server](#).
2. If installed, open the cable management arm.



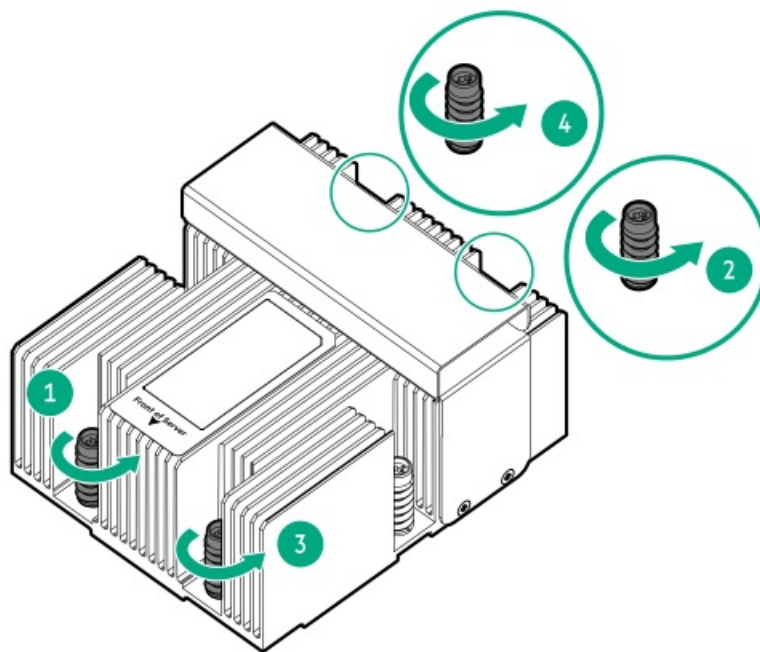
3. Remove all power:
 - a. Disconnect each power cord from the power source.

- b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Remove the server from the rack.
6. Place the server on a flat, level work surface.
7. Remove the access panel.
8. Do one of the following:
 - a. Remove the air baffle.
 - b. Remove the midplane drive cage.
9. Allow all internal system components to cool before continuing.
10. Remove the heatsink:

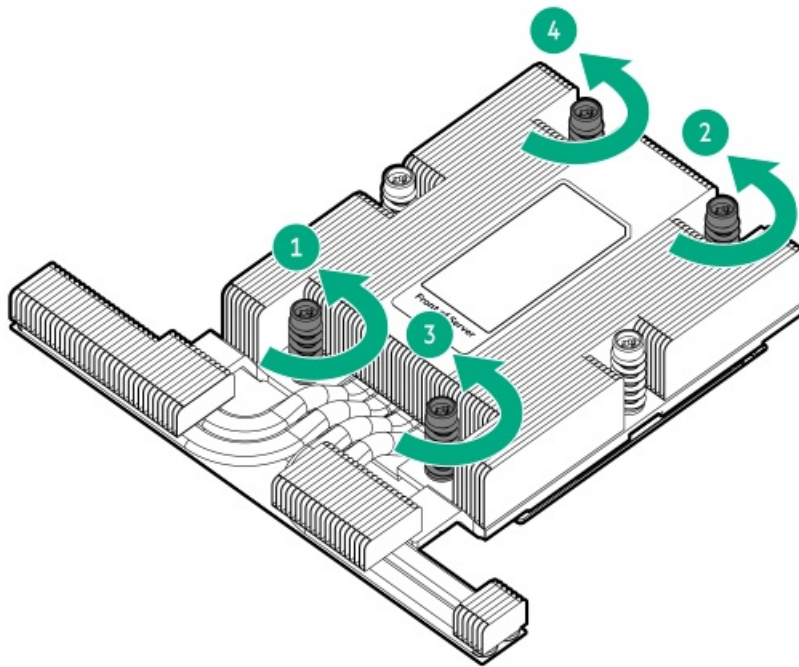
△ CAUTION:

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

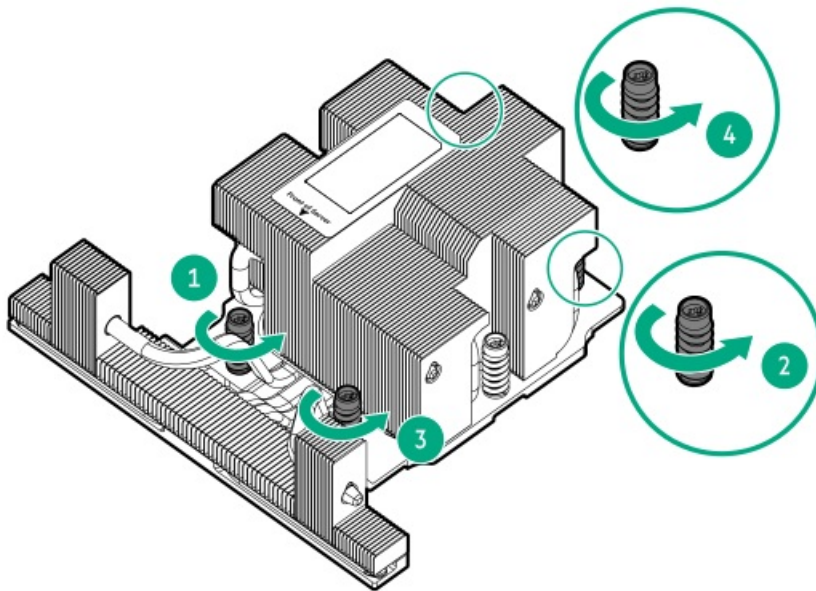
- a. Review the heatsink screw numbering on the heatsink label.
- b. Loosen the heatsink screw numbers 6, 5, 4, and 3 in a diagonal manner (callouts 1 to 4).
 - Standard heatsink



- Midplane cage heatsink



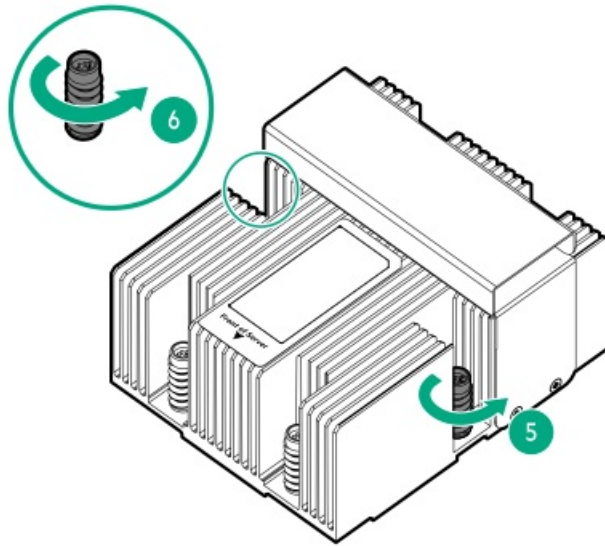
- High performance heatsink



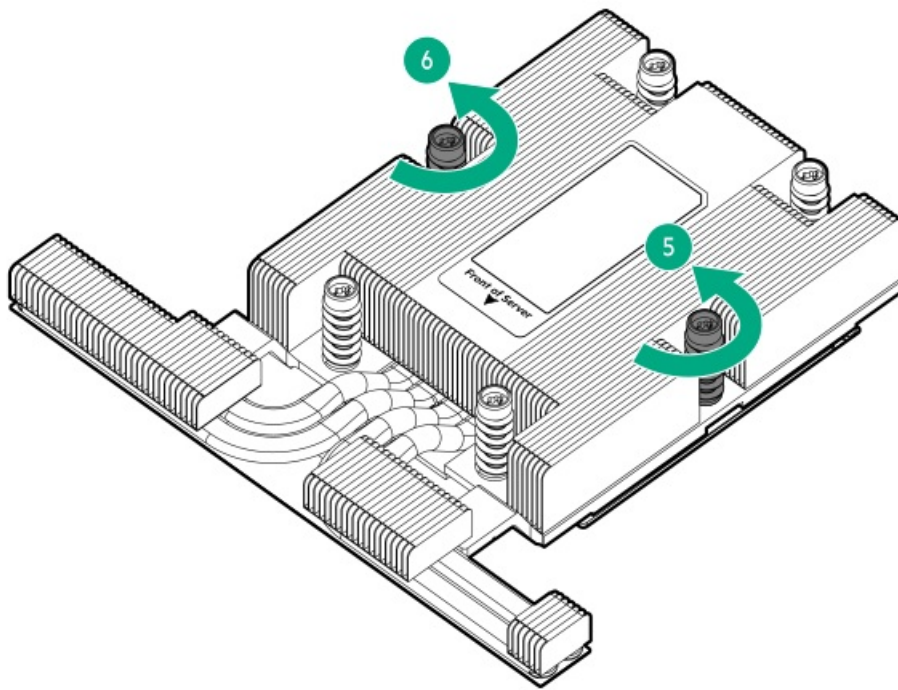
c. Loosen the heatsink screw numbers 2 and 1 (callouts 5 and 6).

- Standard heatsink

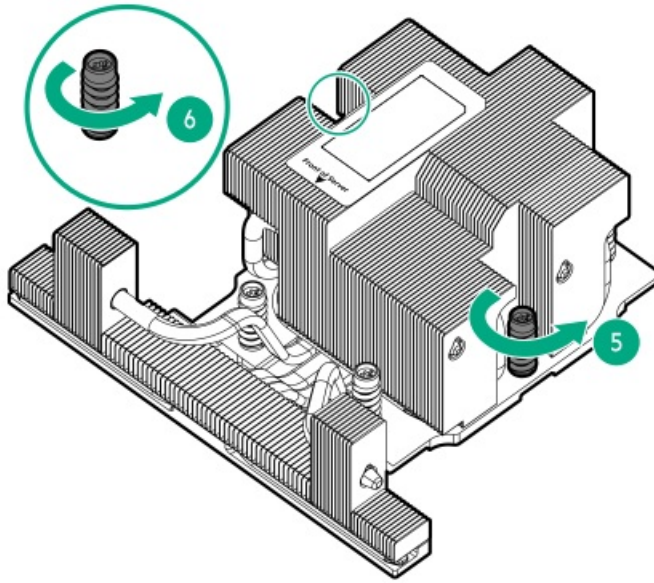




- Midplane cage heatsink

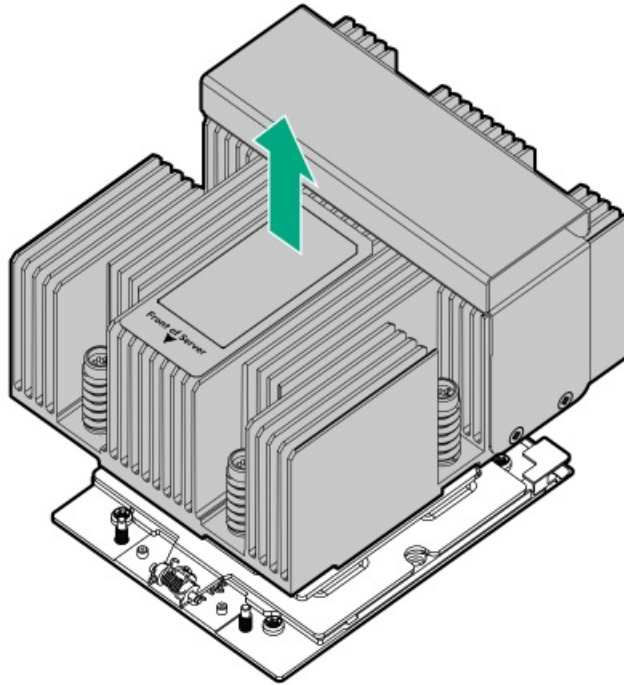


- High performance heatsink

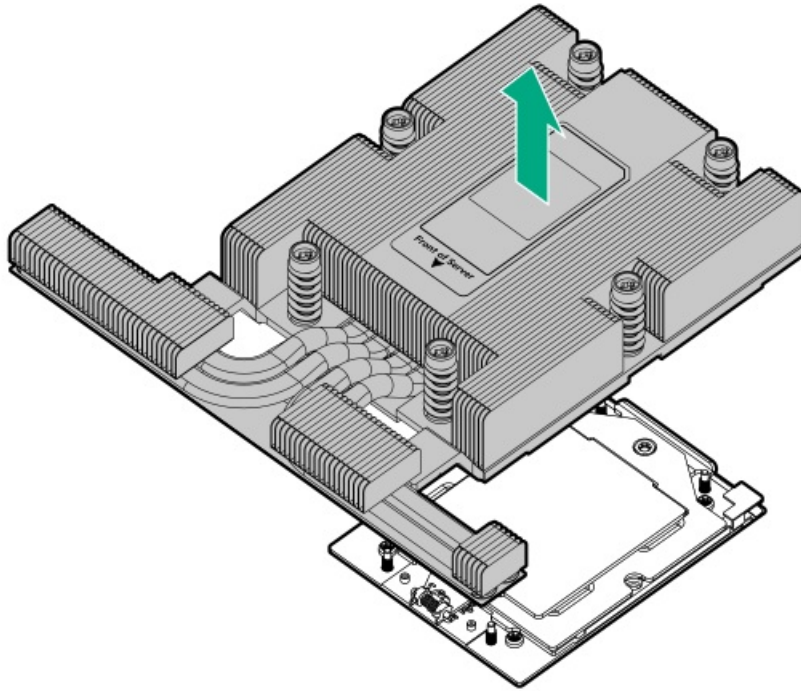


11. Lift the heatsink away from the processor socket.

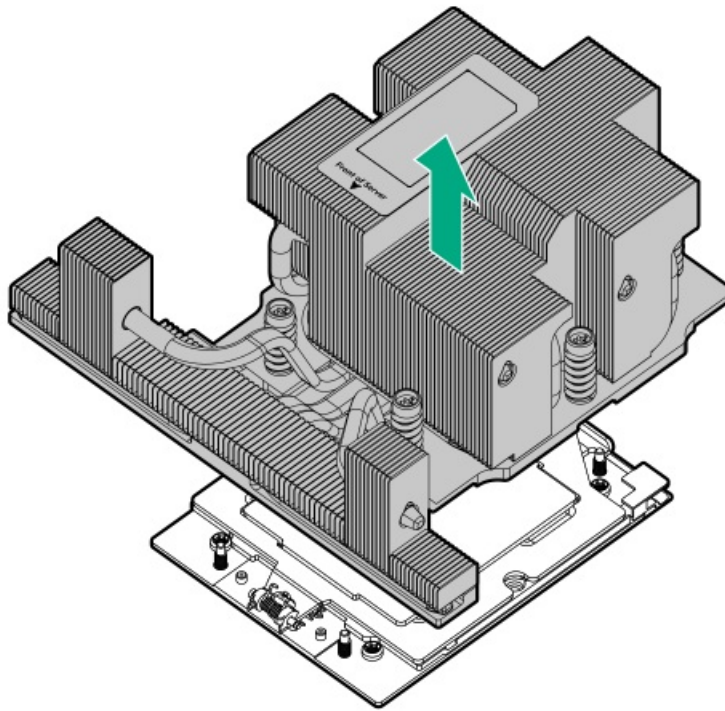
- Standard heatsink



- Midplane cage heatsink



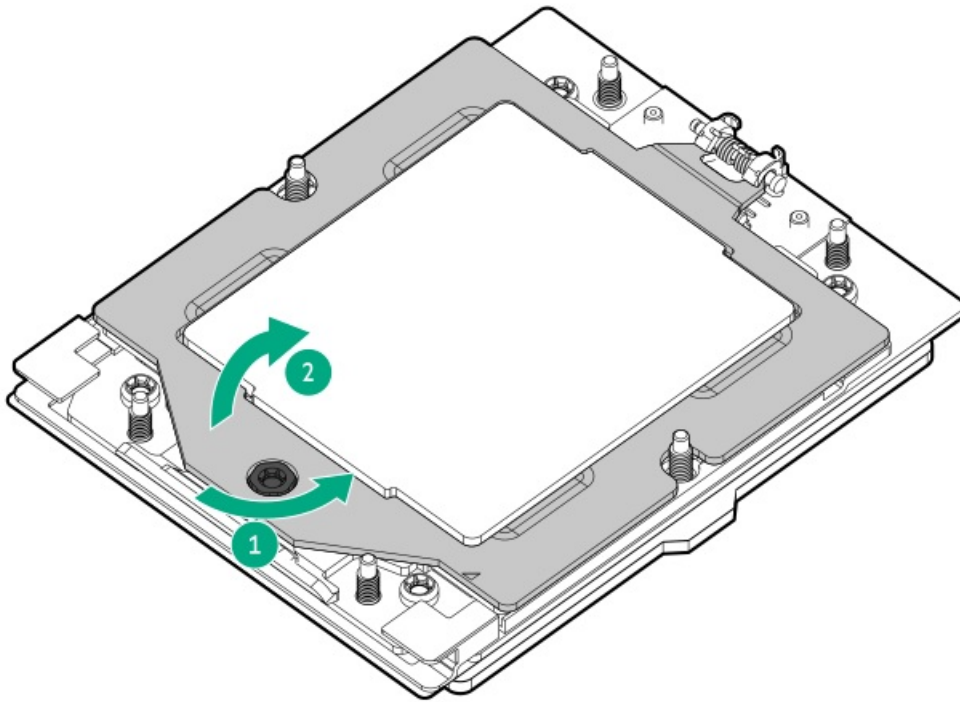
- High performance heatsink



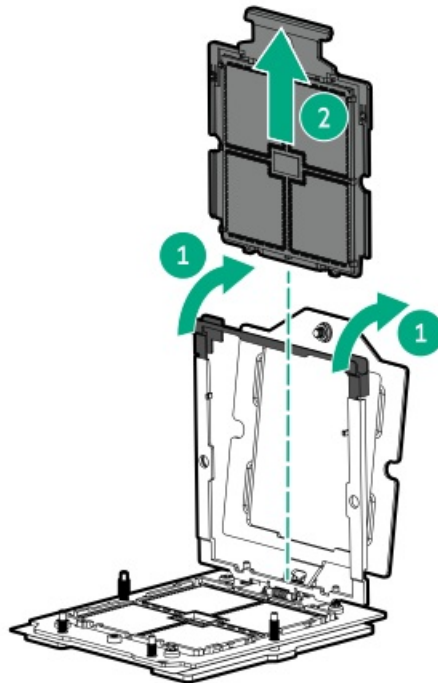
12. Place the heatsink on a flat work surface with its contact side facing up.
13. Use an alcohol wipe to remove the existing thermal grease from the heatsink and processor.
Allow the alcohol to evaporate before continuing.
14. Remove the processor:
 - a. While holding the sides of the retention frame, loosen the frame screw (callout 1).

This retention frame is spring-loaded. Once the screw is loosened enough, hold the retention frame as it automatically pivots to a vertical position (callout 2).



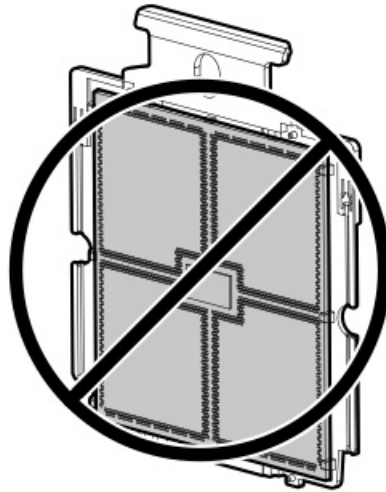
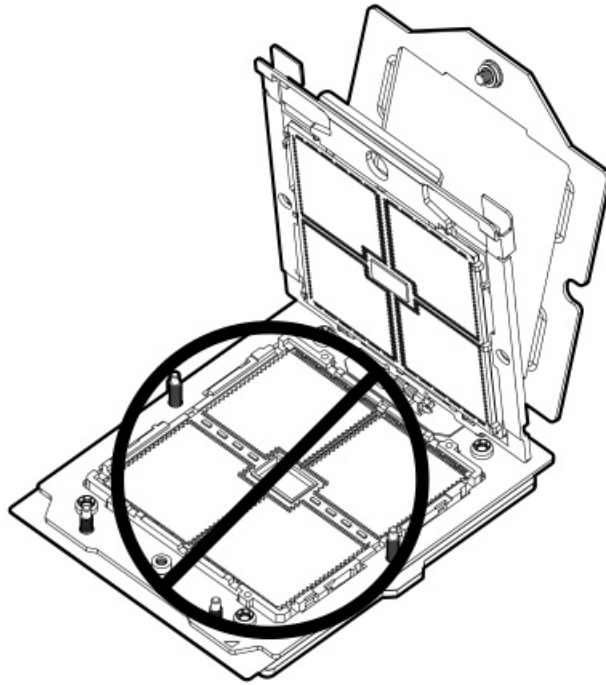


- b. Hold the lift tabs and pivot the rail frame to the vertical position (callout 1).
- c. Slide the processor out of the rail frame (callout 2).



CAUTION: The pins on the processor socket and on the processor are very fragile and easily damaged . To avoid component damage, do not touch these pins. Any damage to them might require replacing the system board and/or processor.

- 15. Do not touch the pin field on the socket and the processor contacts.



Installing the processor

Prerequisites

- [Identify the processor and socket components.](#)
- [Review the processor cautions.](#)
- Before you perform this procedure, make sure that you have the following items available:
 - T-20 Torx screwdriver or a torque screwdriver with T-20 drill bit
 - Thermal grease (spare part number: 777298-001)

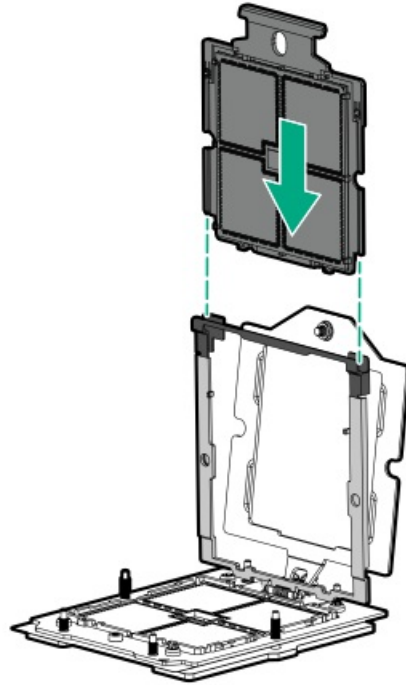
About this task

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.

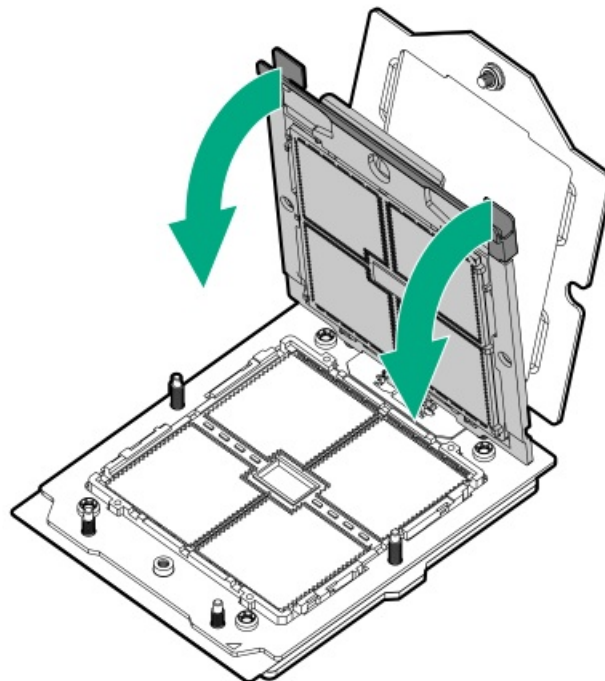
Procedure

1. Install the processor:
 - a. Hold the processor by its carrier handle.
 - b. Slide the processor into the rail frame until it engages with a click sound.



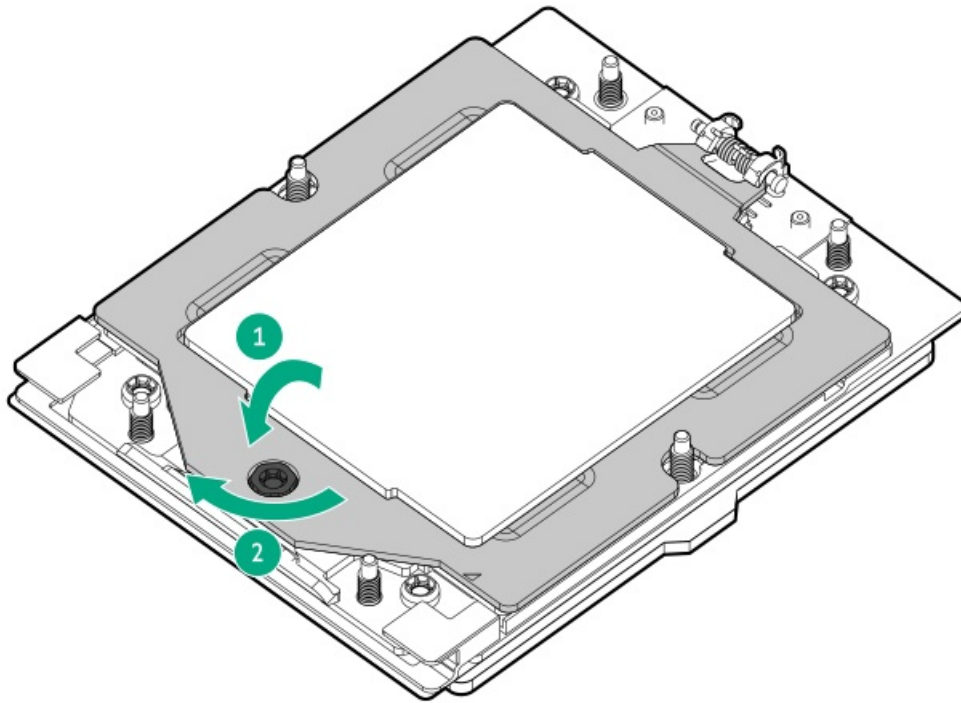
2. Hold the lift tabs and pivot the rail frame to the closed position.

A click sound indicates that the rail frame is properly engaged.

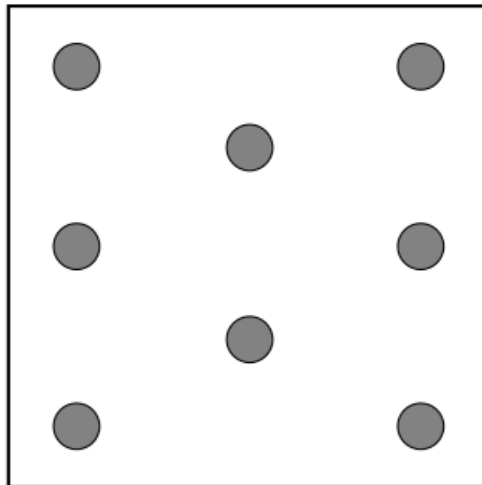


3. Close the retention frame:

- a. When using a torque wrench to tighten the retention frame screw, set a torque between 1.24 N-m (11 lbf-in) to 1.47 N-m (13 lbf-in) .
- b. Pivot the spring loaded retention frame downward and hold it down (callout 1).
- c. Tighten the retention frame screw (callout 2).



4. If you are using the same heatsink, apply the full content of the thermal grease syringes on top of the processor. Follow the pattern shown in the following image.



5. Install the heatsink:

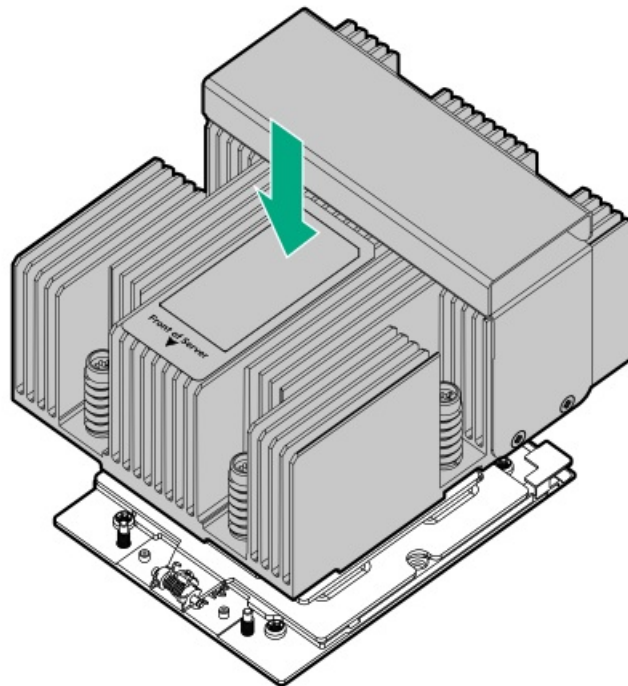
CAUTION:

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

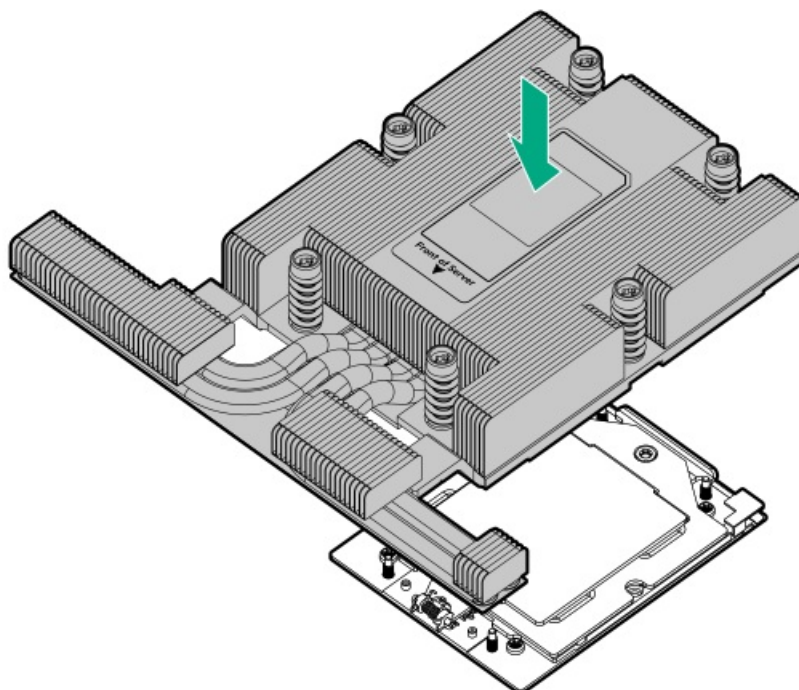
CAUTION:

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

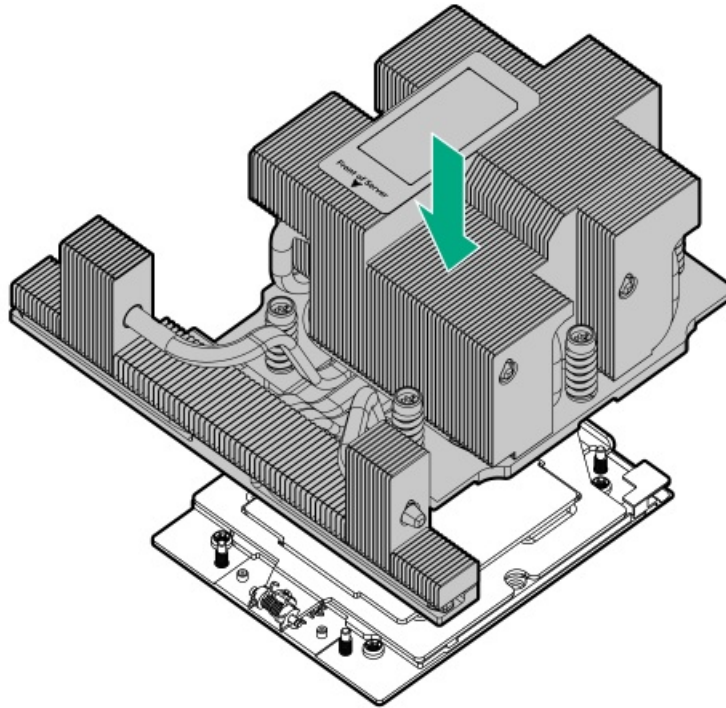
- a. When using a torque wrench to tighten the heatsink screws, set a torque between 1.24 N-m (11 lbf-in) to 1.47 N-m (13 lbf-in) .
- b. Note the **Front of server** text on the heatsink label to correctly orient the heatsink over the processor socket.
- c. Position the heatsink on top of the processor, ensuring that it is properly seated before securing the screws.
 - Standard heatsink



- Midplane cage heatsink

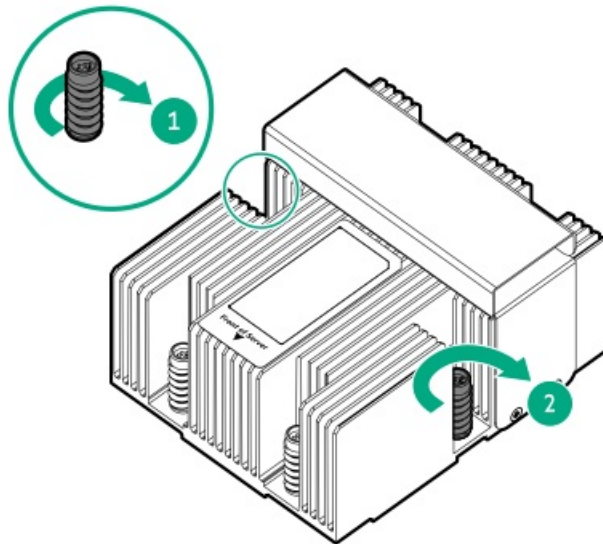


- High performance heatsink



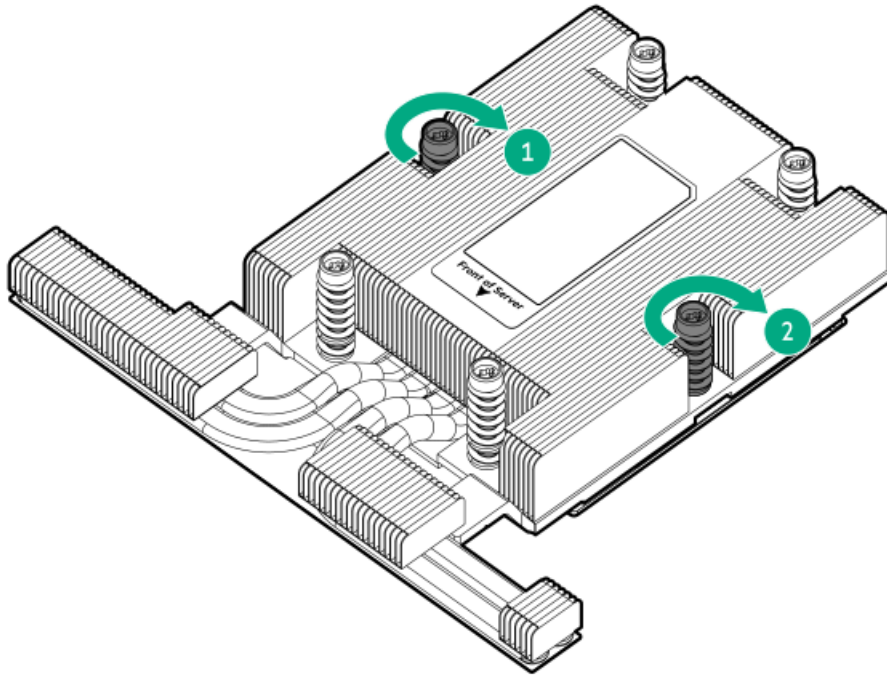
d. Tighten the heatsink screw numbers 1 and 2 (callouts 1 and 2).

- Standard heatsink

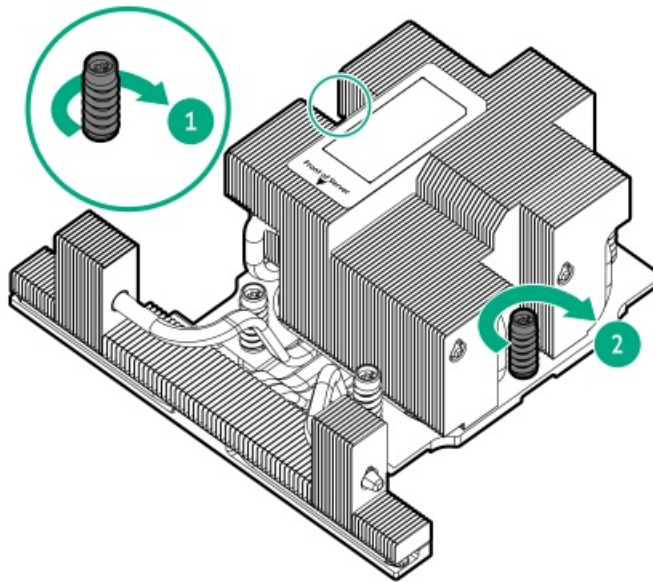


- Midplane cage heatsink





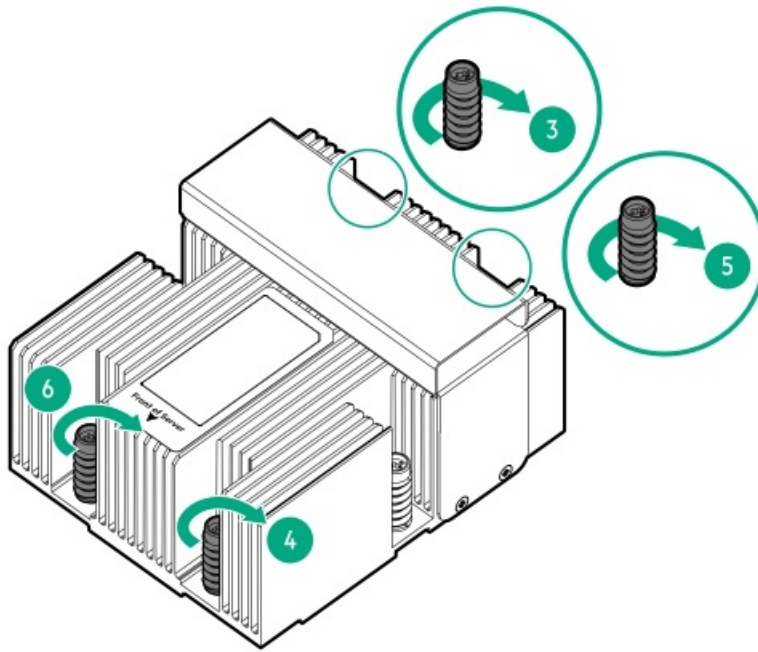
- High performance heatsink



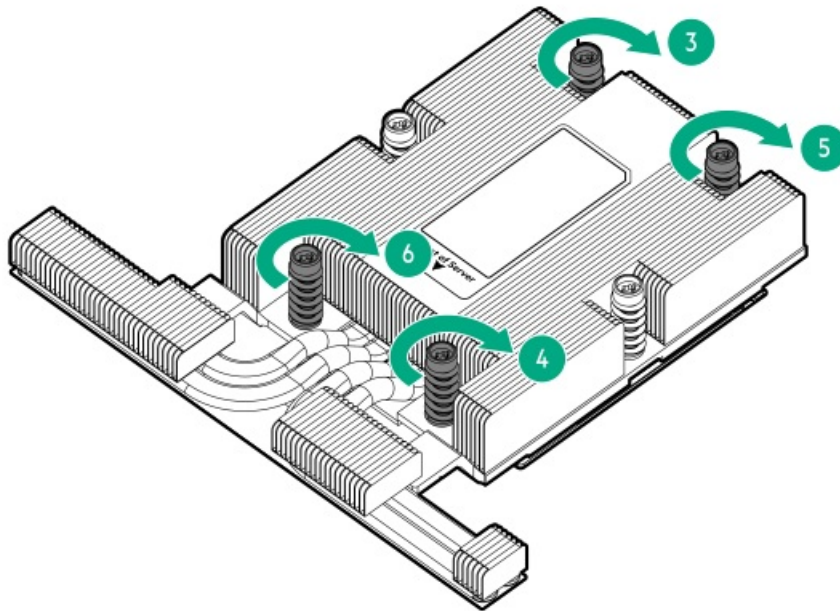
e. Tighten the heatsink screw numbers 3, 4, 5, and 6 in a diagonal manner (callouts 3 to 6).

- Standard heatsink



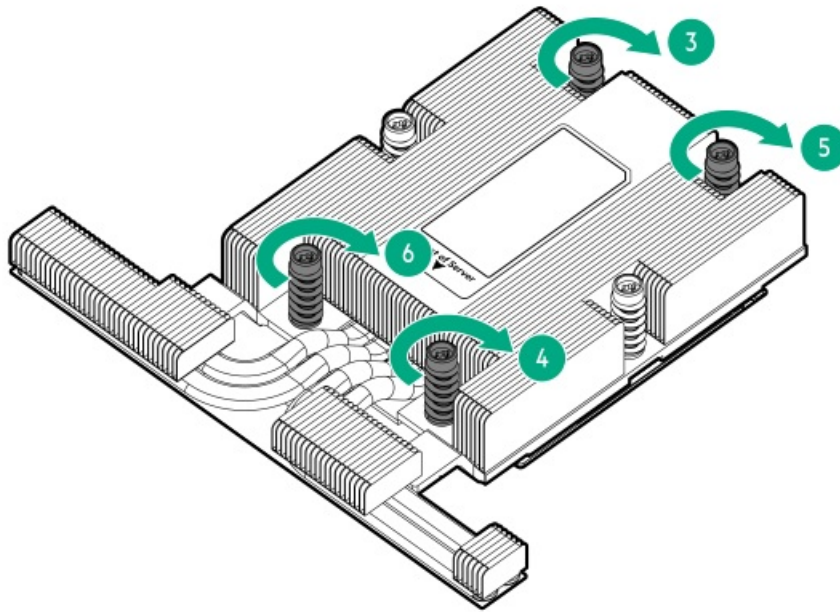


- Midplane cage heatsink



- High performance heatsink





6. Do one of the following:
 - a. Install the air baffle.
 - b. Install the midplane drive cage.
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. If removed, install the front bezel.

System board assembly replacement

Subtopics

[Removing the system board assembly](#)

[Installing the system board assembly](#)

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

Removing the system board assembly

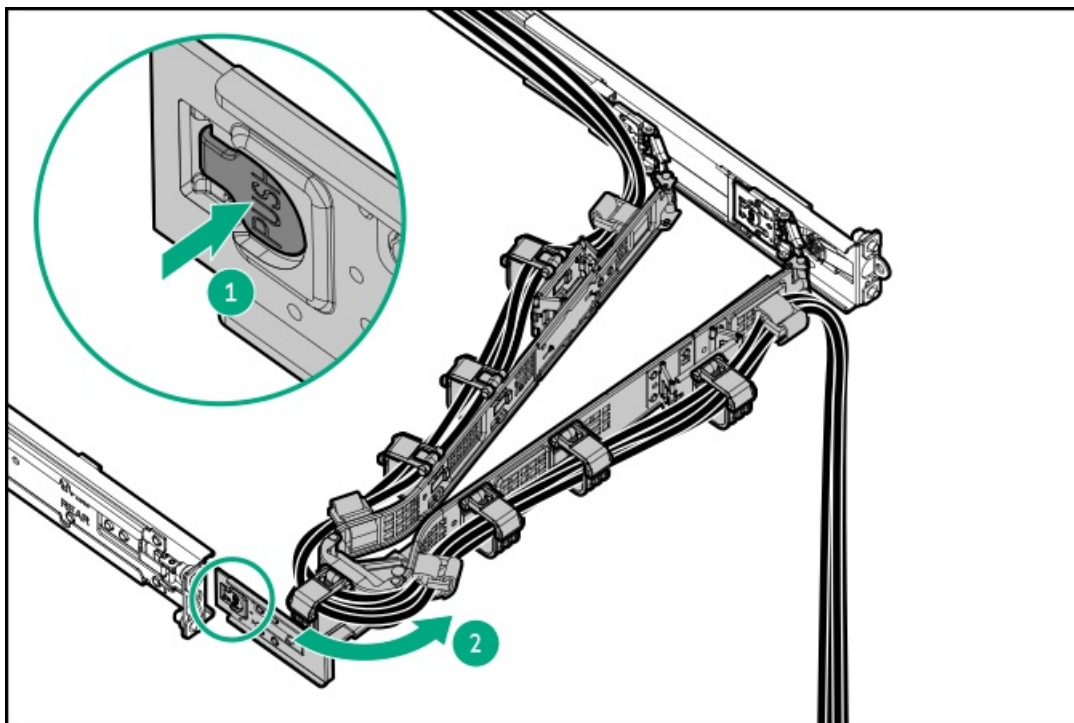
Prerequisites

- [Perform a backup of critical server data.](#)

- Before you perform this procedure, make sure that you have the following items available:
 - T-15 Torx screwdriver
 - T-20 Torx screwdriver
 - Hex screwdriver
 - Alcohol wipe

Procedure

1. Power down the server.
2. If installed, open the cable management arm.



3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Remove the server from the rack.
6. Place the server on a flat, level work surface.
7. Remove the access panel.
8. Do one of the following:
 - a. Remove the air baffle.
 - b. Remove the midplane drive cage.
9. Remove the fan cage.
10. Disconnect all cables from the expansion cards, riser boards, and the system board.
11. Remove all DIMMs.
12. Remove all riser cages

13. If installed, remove the following components:

- Type-o storage controller
- Chassis intrusion detection switch
- Energy pack
- OCP NIC 3.0 adapter
- Serial port cable

14. Remove the following components:.

- Energy pack holder
- Cable guards

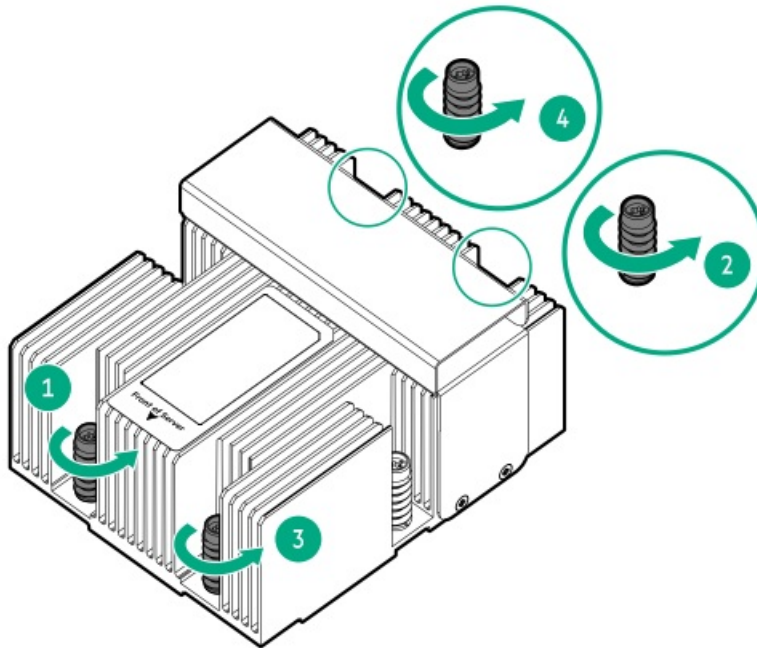
15. Allow all internal system components to cool before continuing.

16. Remove the heatsink:

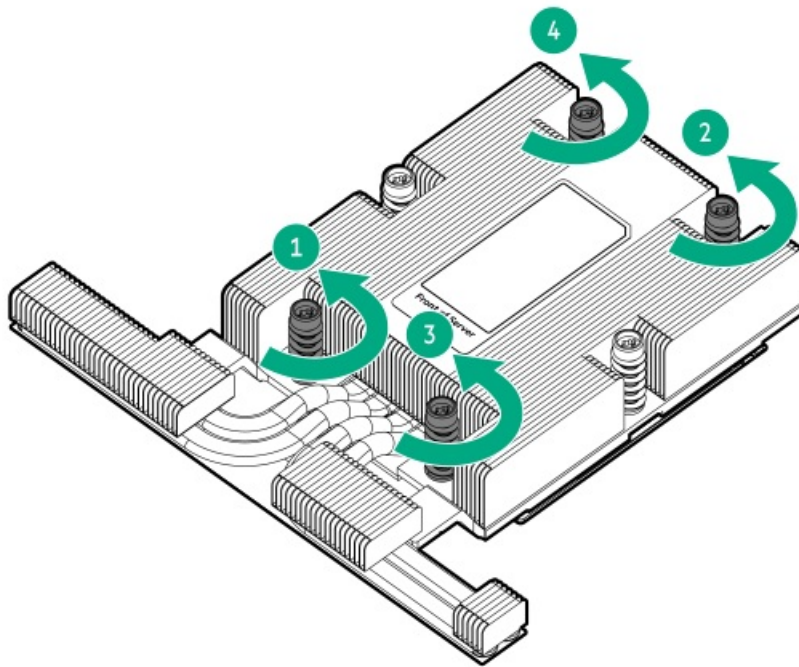
⚠ CAUTION:

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

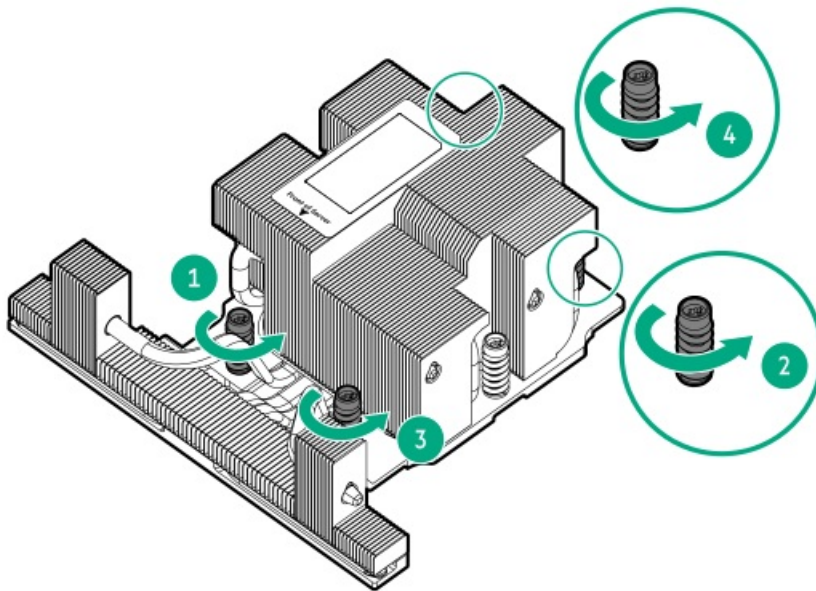
- a. Review the heatsink screw numbering on the heatsink label.
 - b. Loosen the heatsink screw numbers 6, 5, 4, and 3 in a diagonal manner (callouts 1 to 4).
- Standard heatsink



- Midplane cage heatsink

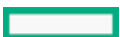


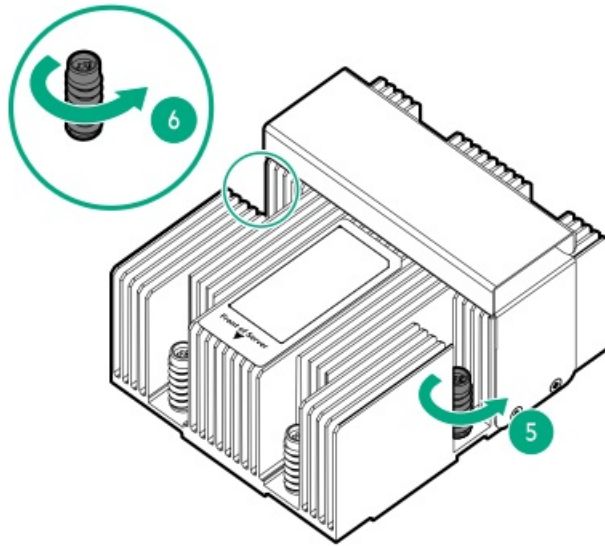
- High performance heatsink



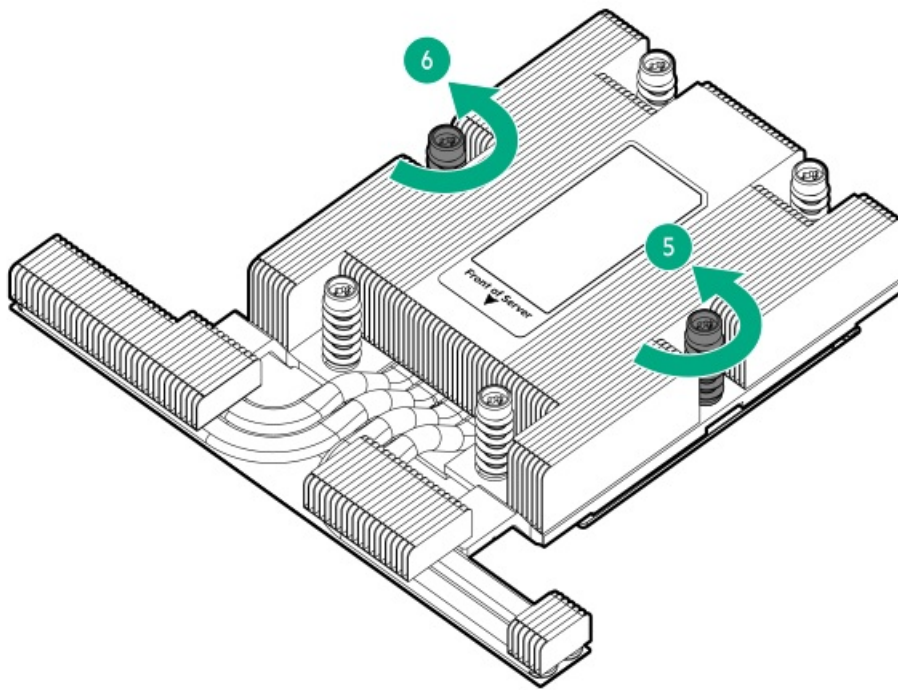
c. Loosen the heatsink screw numbers 2 and 1 (callouts 5 and 6).

- Standard heatsink

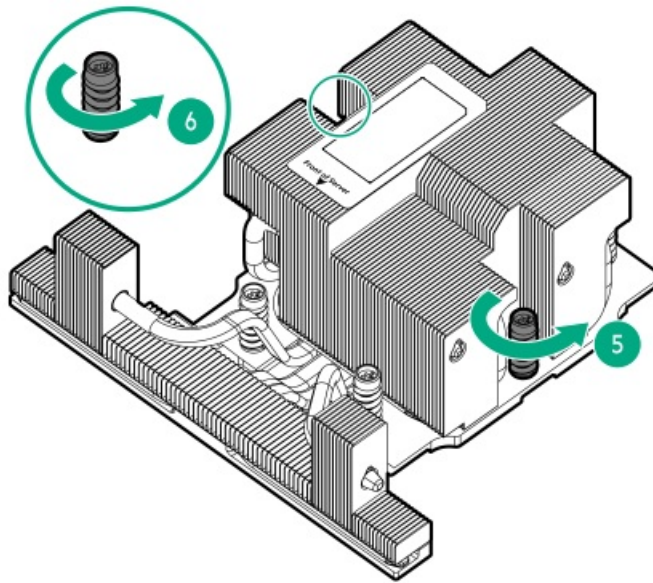




- Midplane cage heatsink

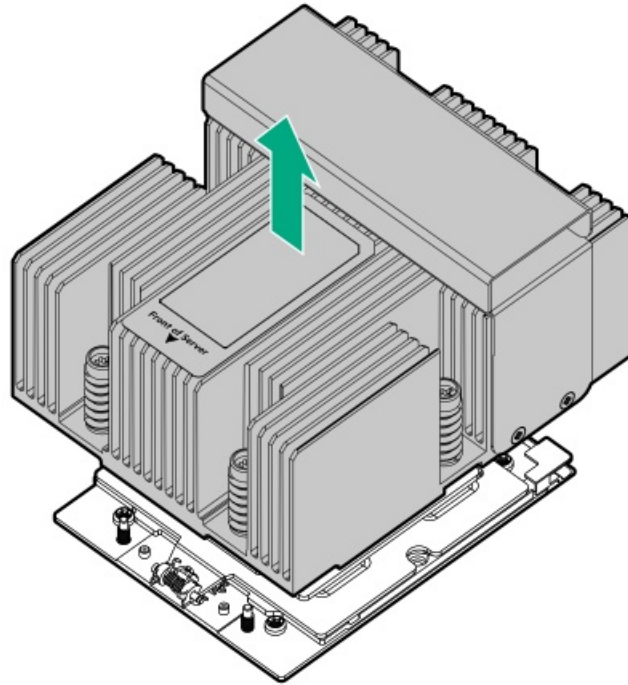


- High performance heatsink



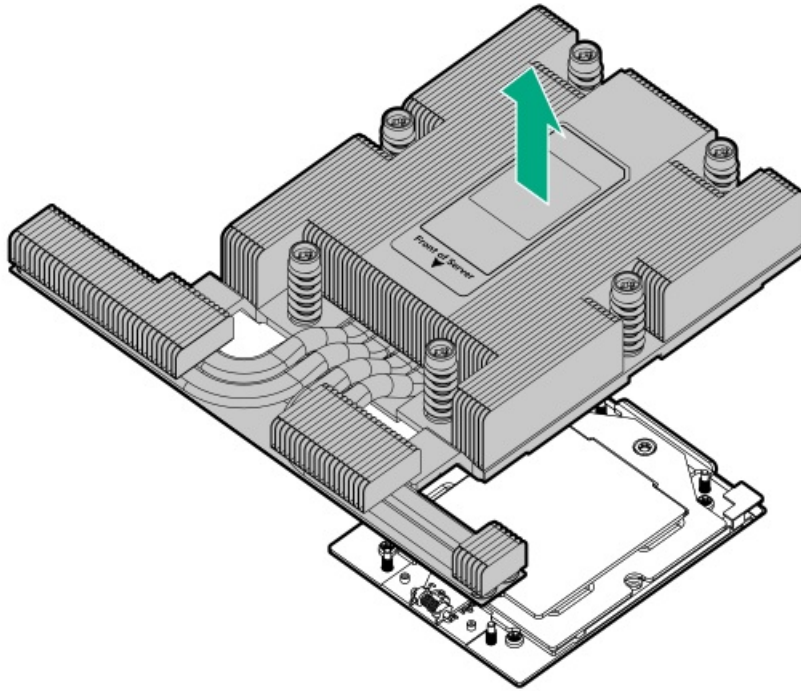
17. Lift the heatsink away from the processor socket.

- Standard heatsink

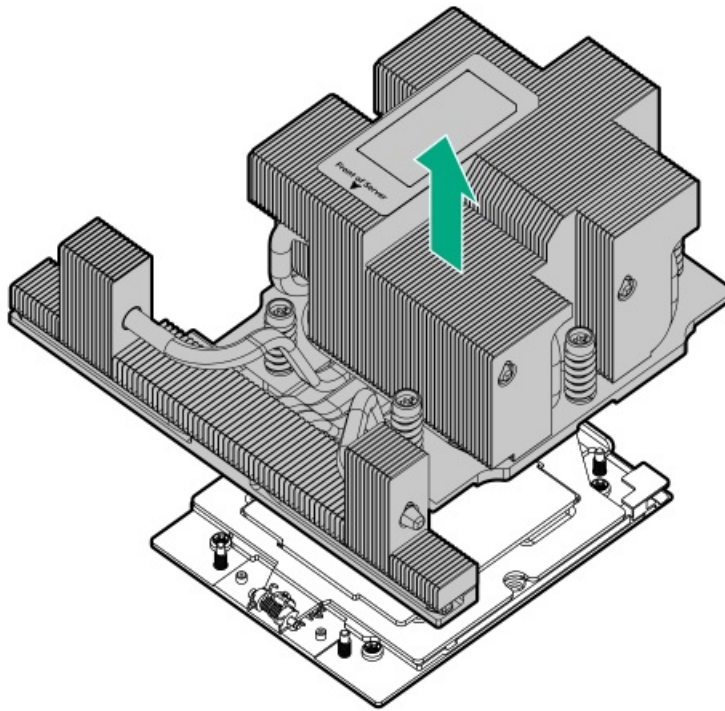


- Midplane cage heatsink



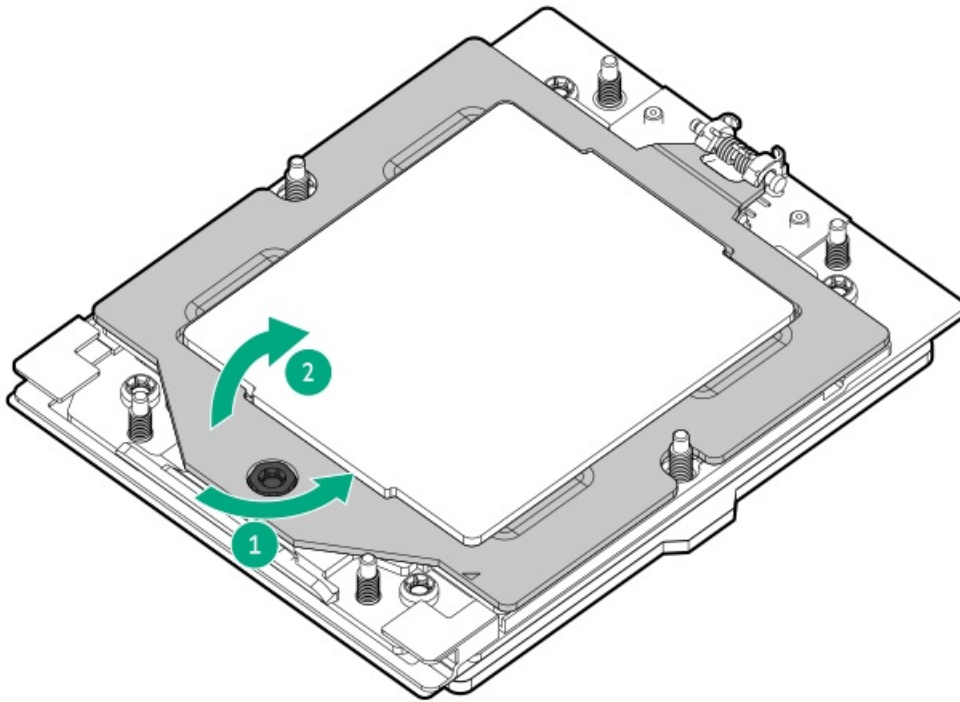


- High performance heatsink

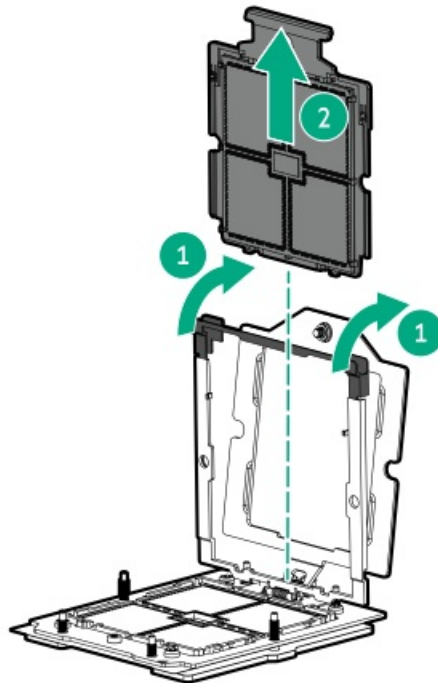


18. Place the heatsink on a flat work surface with its contact side facing up.
19. Use an alcohol wipe to remove the existing thermal grease from the heatsink and processor.
Allow the alcohol to evaporate before continuing.
20. Remove the processor:
 - a. While holding the sides of the retention frame, loosen the frame screw (callout 1).
This retention frame is spring-loaded. Once the screw is loosened enough, hold the retention frame as it automatically pivots to a vertical position (callout 2).



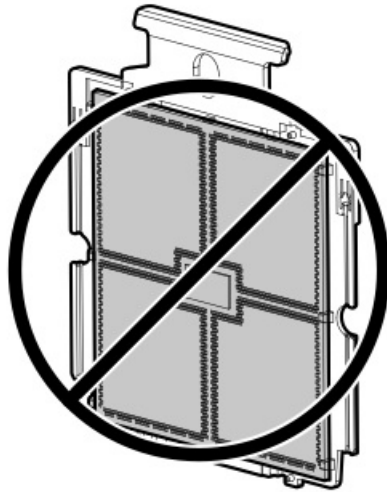
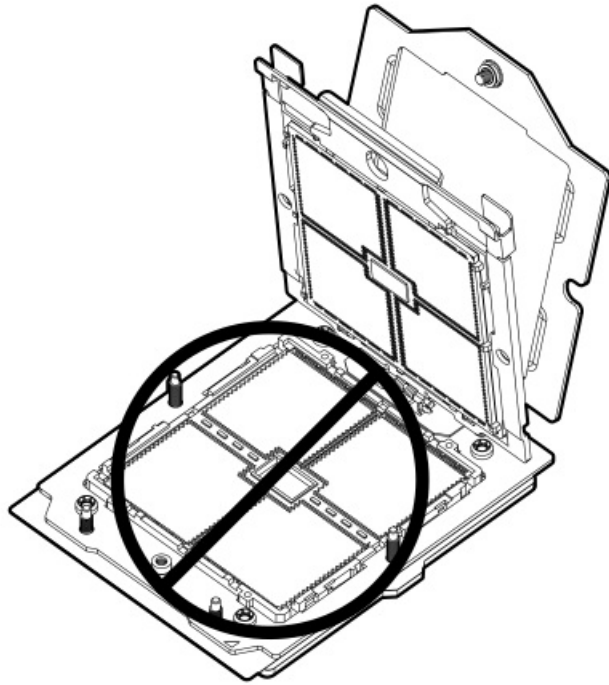


- b. Hold the lift tabs and pivot the rail frame to the vertical position (callout 1).
- c. Slide the processor out of the rail frame (callout 2).

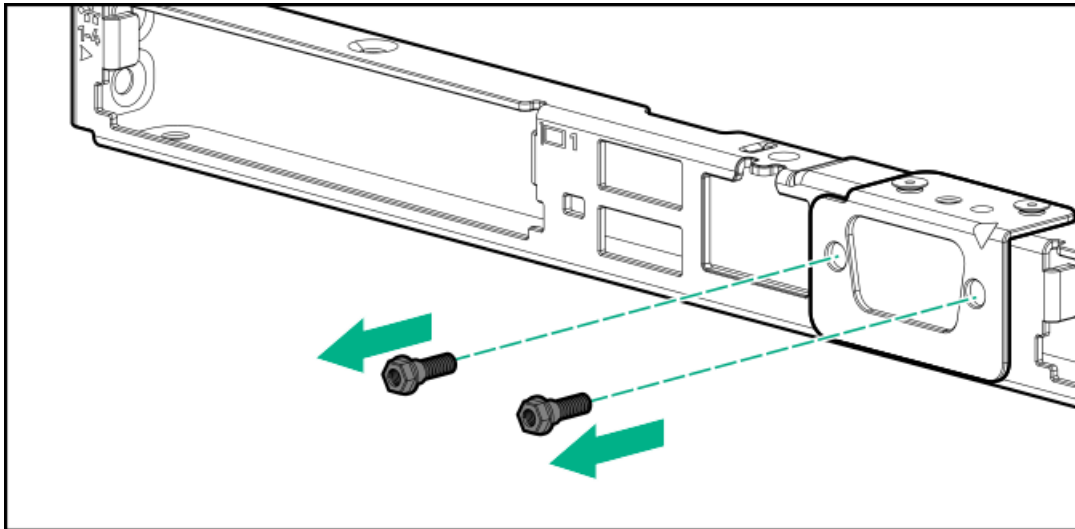


CAUTION: The pins on the processor socket and on the processor are very fragile and easily damaged . To avoid component damage, do not touch these pins. Any damage to them might require replacing the system board and/or processor.

- 21. Do not touch the pin field on the socket and the processor contacts.



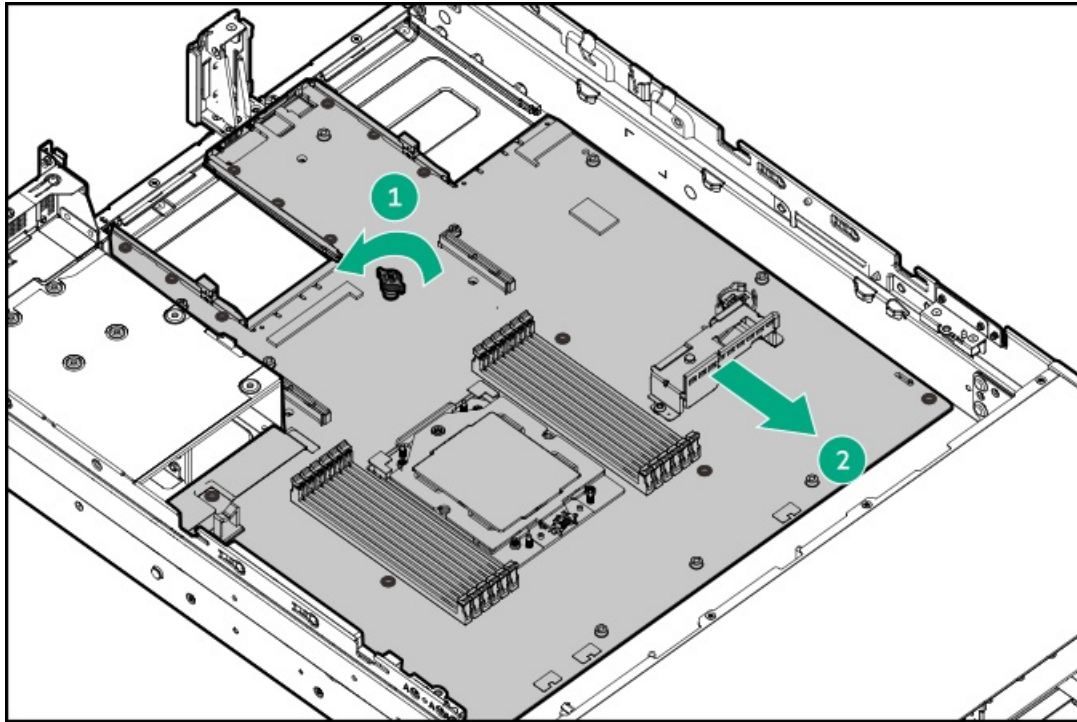
22. If the serial port cable is not installed, remove the hex screws from the serial port slot.



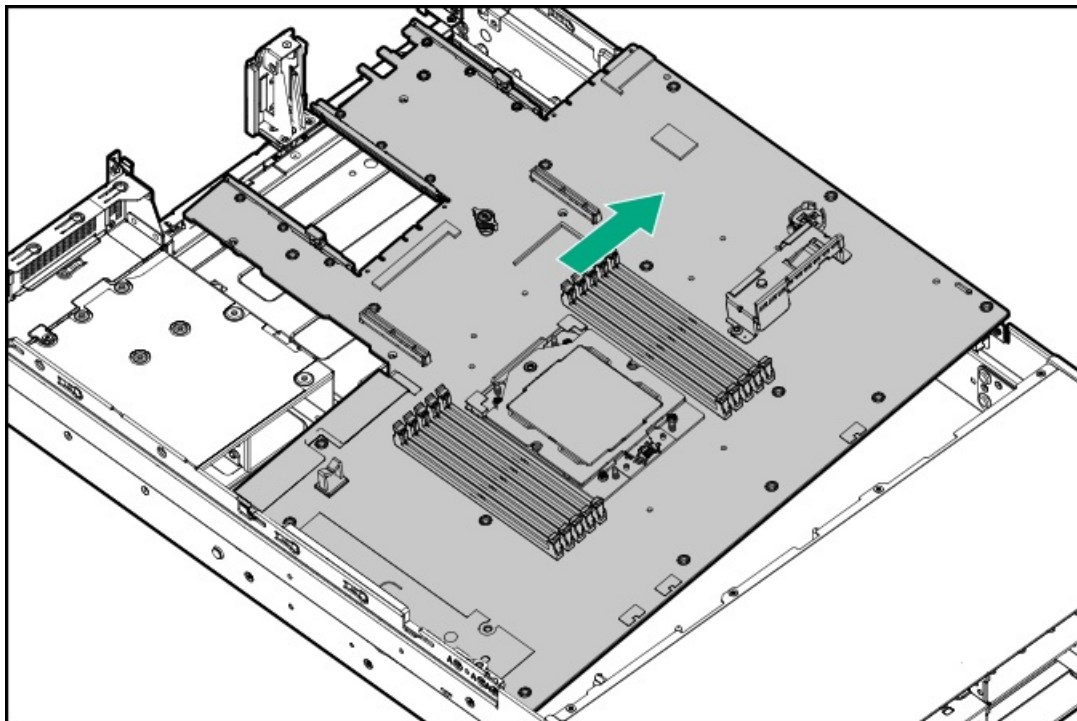
23. Remove the system board assembly:



- a. Loosen the system board thumbscrew (callout 1).
- b. Use the system board handle and thumbscrew to remove the system board from the rear panel (callout 2).



- c. Tilt the system board assembly up until the right side of the board away from the fan bracket, and then remove the system board assembly from the server..



Installing the system board assembly

Prerequisites

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

- T-20 Torx screwdriver
- T-15 Torx screwdriver
- Hex screwdriver
- Thermal grease (spare part number: 777298-001)

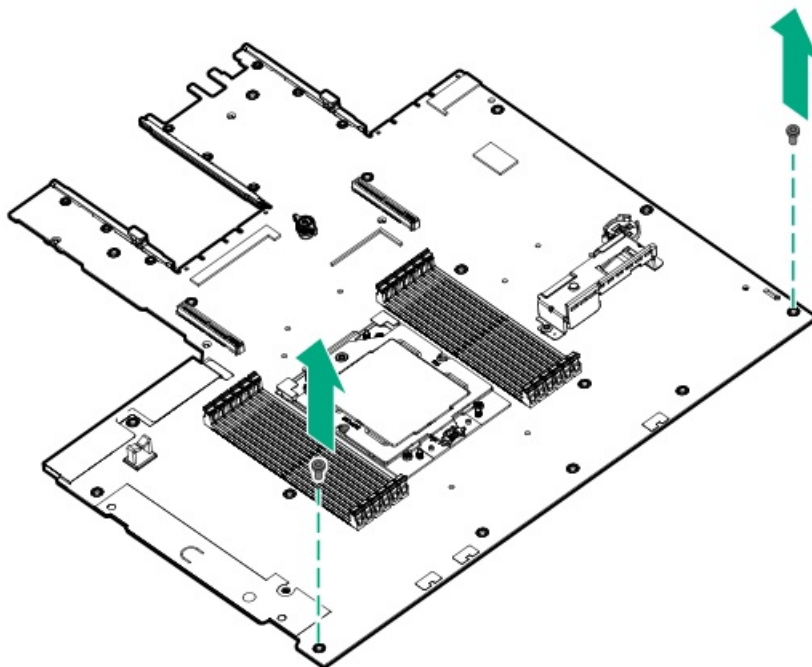
About this task

CAUTION:

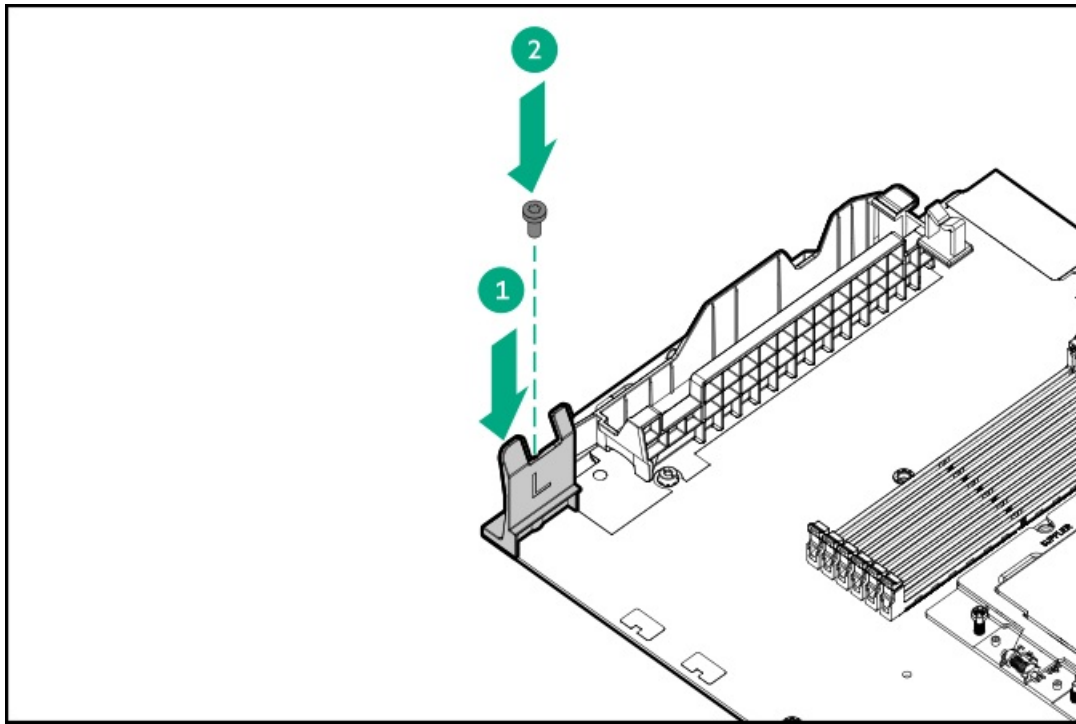
A discharge of static electricity from a finger or other conductor might damage system boards or other static-sensitive devices. To prevent damage, observe [antistatic precautions](#).

Procedure

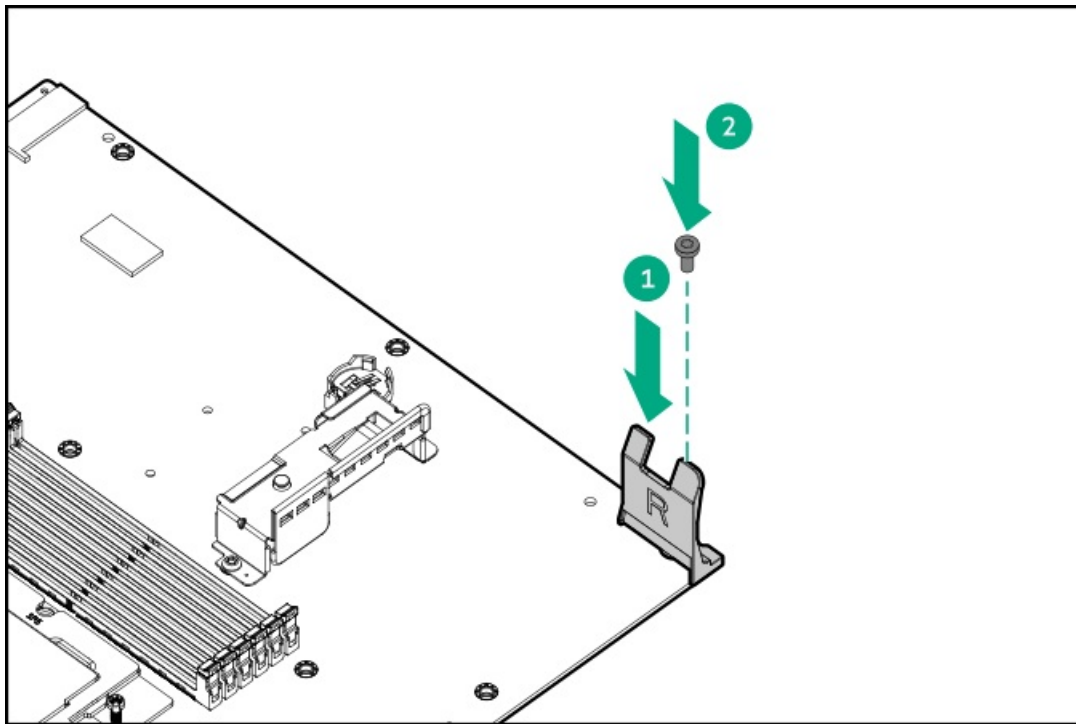
1. Remove the screws located on the cable guards from the new system board.



2. Install the removed cable guards on the new system board:
 - Left

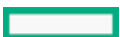


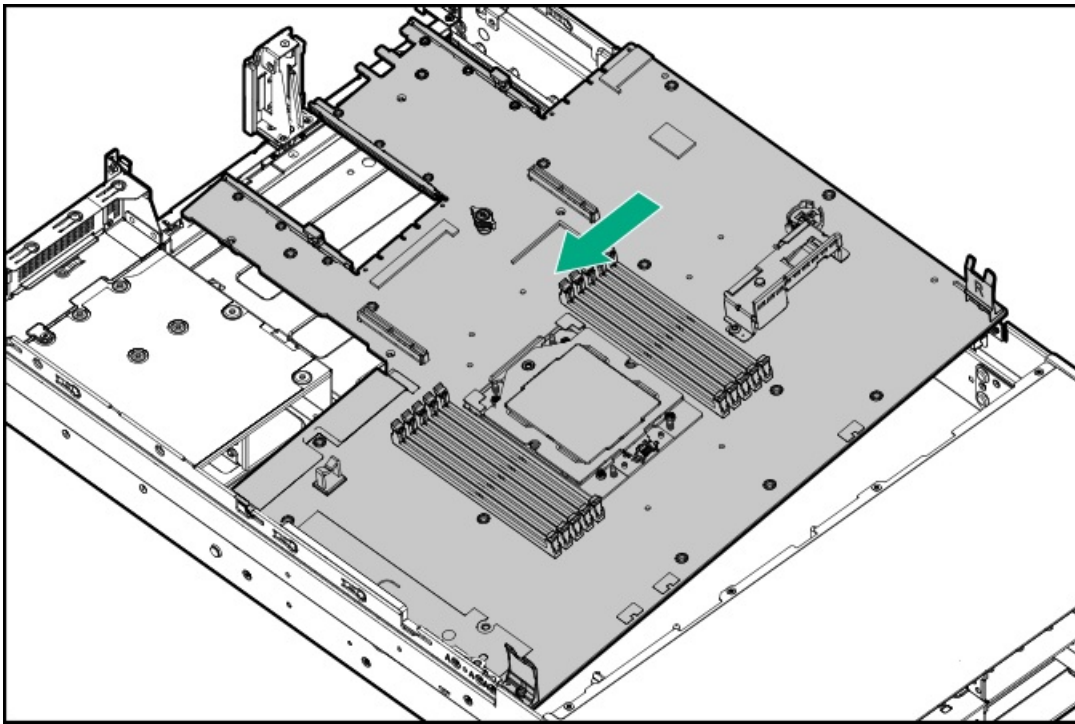
- Right



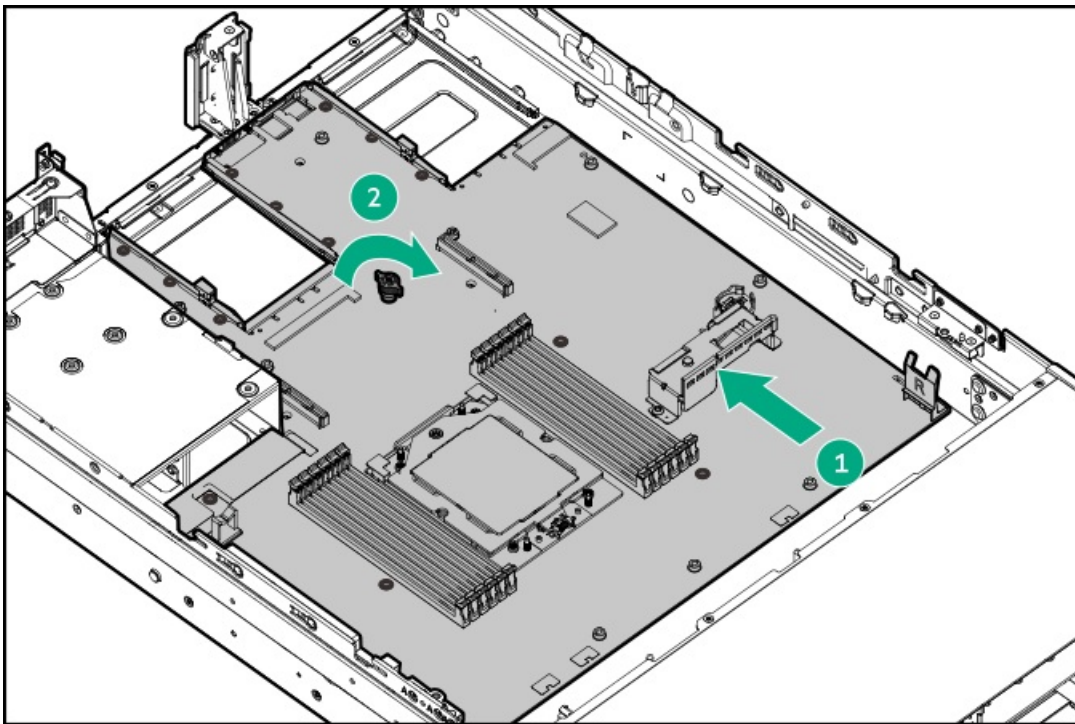
3. Install the new system board assembly:

- a. Tilt the system board down until left side of the board pass the fan bracket (callout 1), and then use the system board handle and thumbscrew to position the system board on the server (callout 2).



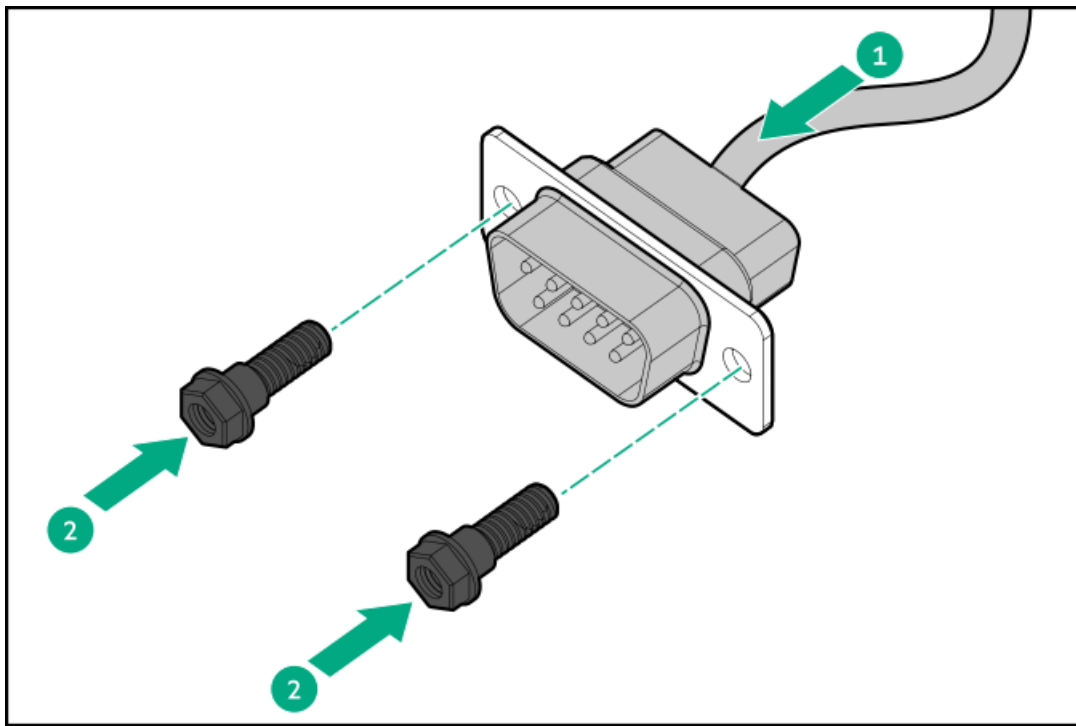


b. Insert the system board on the rear side of the chassis (callout 1), and then tighten the thumbscrew (callout 2).

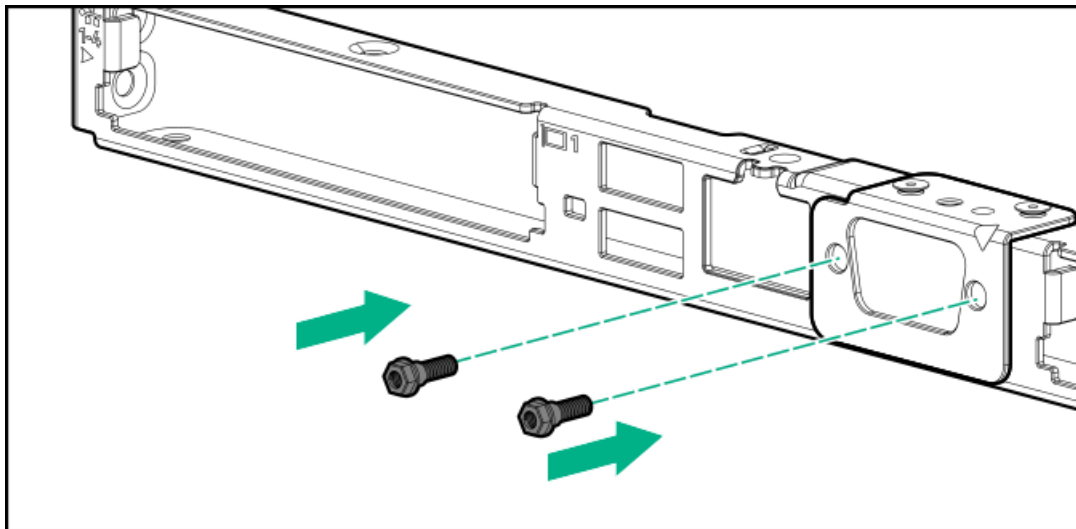


4. Do one of the following:
- Install the serial port cable.





- Install the hex screws on the serial port slot.

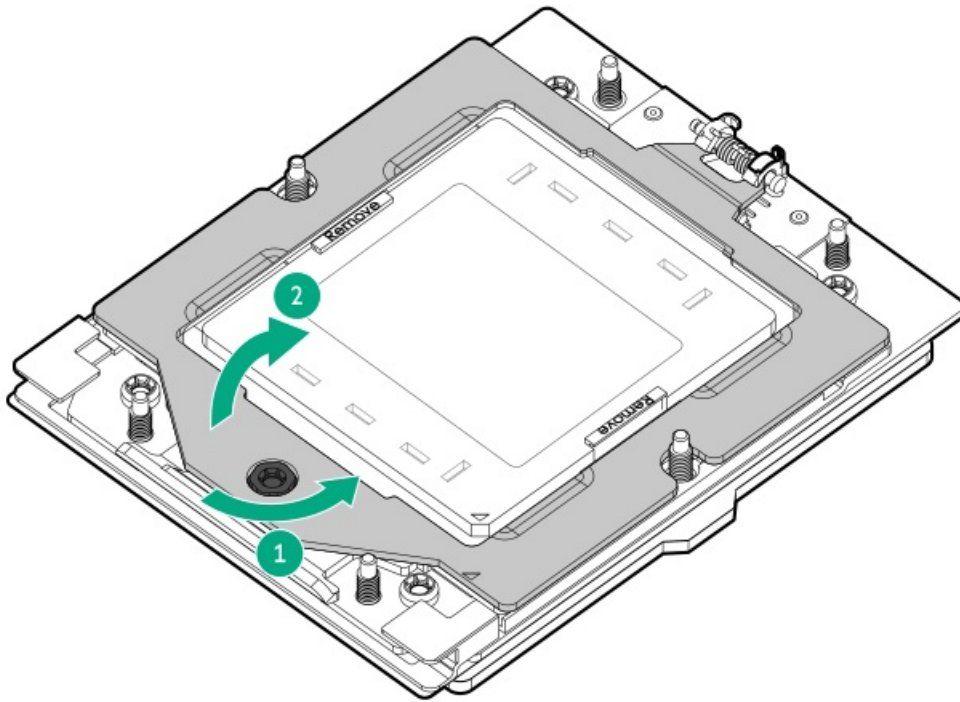


5. Remove the rail frame cover:

- While holding the sides of the retention frame, loosen the frame screw (callout 1).

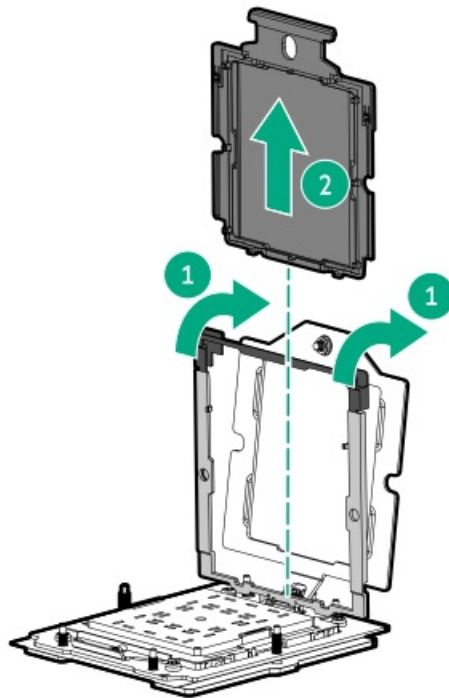
This retention frame is spring-loaded. Once the screw is loosened enough, hold the retention frame as it automatically pivots to a vertical position (callout 2).





- b. Hold the lift tabs and pivot the rail frame to the vertical position (callout 1).
- c. Slide the rail frame cover out of the rail frame (callout 2).

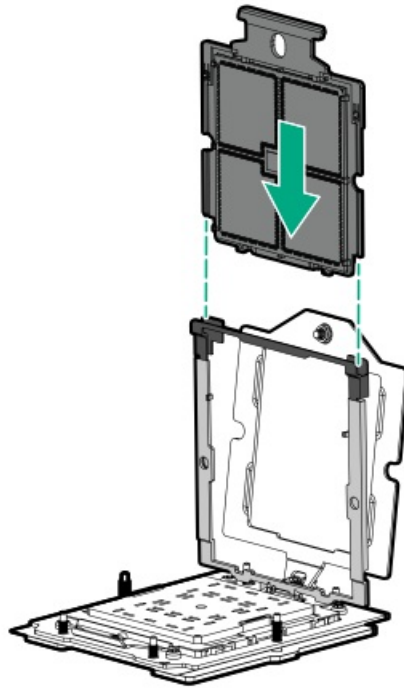
Retain the cover for future use.



6. Install the processor:

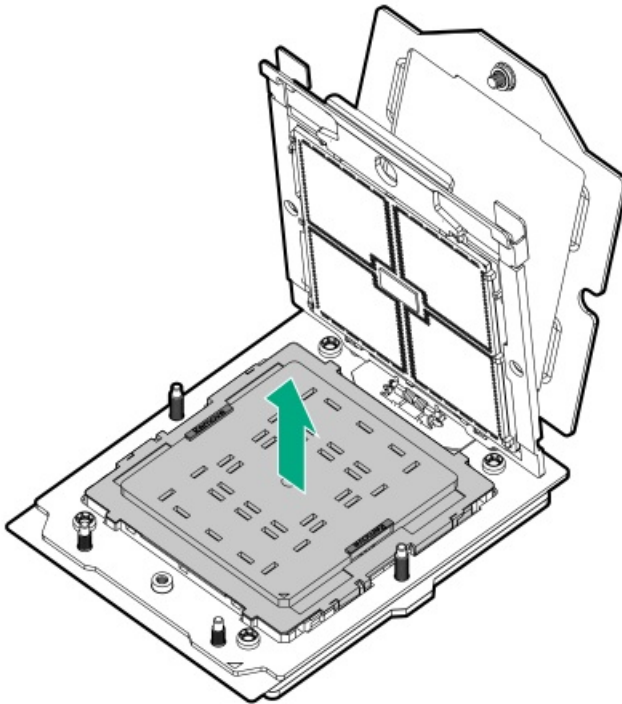
- a. Hold the processor by its carrier handle and slide the processor into the rail frame until it engages with a click sound.





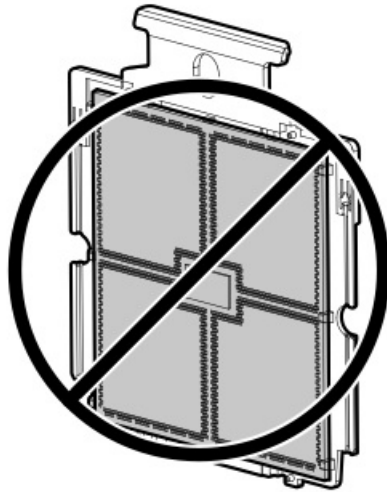
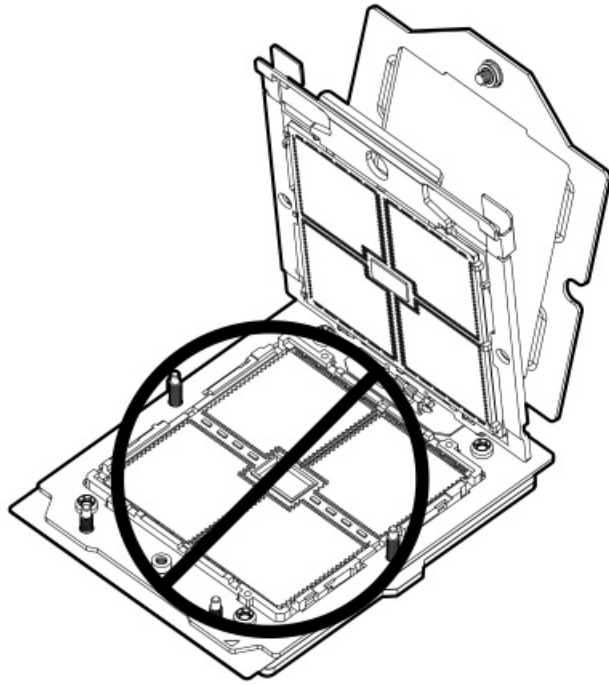
7. Remove the pin field cover cap.

Retain the cover for future use.



CAUTION: The pins on the processor socket and on the processor are very fragile and easily damaged . To avoid component damage, do not touch these pins. Any damage to them might require replacing the system board and/or processor.

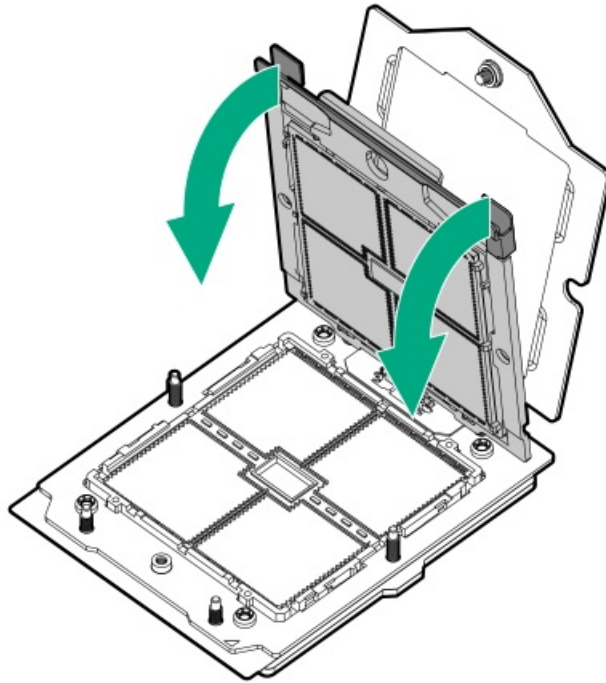
8. Do not touch the pin field on the socket and the processor contacts.



9. Hold the lift tabs and pivot the rail frame to the closed position.

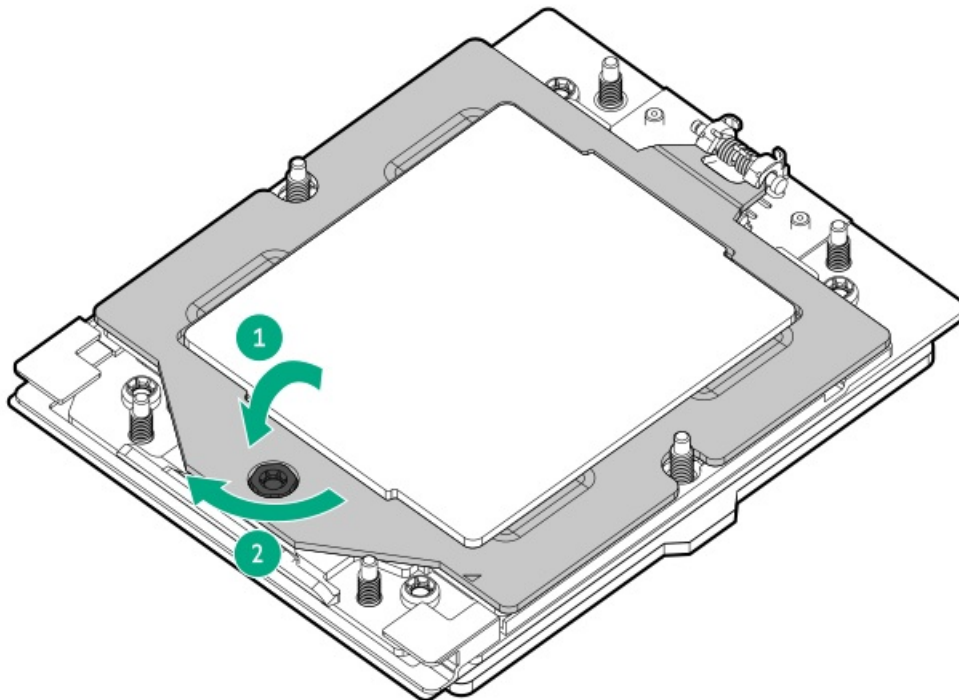
A click sound indicates that the rail frame is properly engaged.





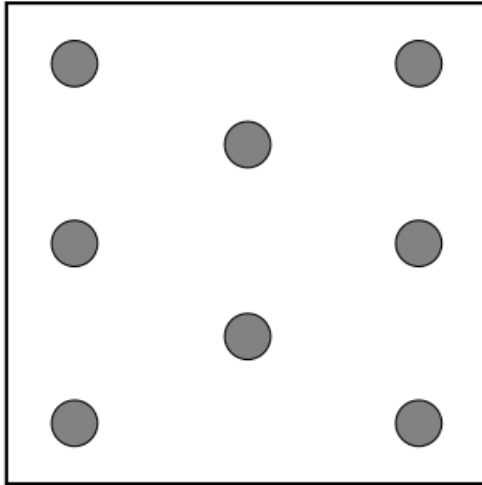
10. Close the retention frame:

- a. When using a torque wrench to tighten the retention frame screw, set a torque between 1.24 N-m (11 lbf-in) to 1.47 N-m (13 lbf-in) .
- b. Pivot the spring loaded retention frame downward and hold it down (callout 1).
- c. Tighten the retention frame screw (callout 2).



11. If you are using the same heatsink, apply the full content of the thermal grease syringes on top of the processor. Follow the pattern shown in the following image.





12. Install the heatsink:

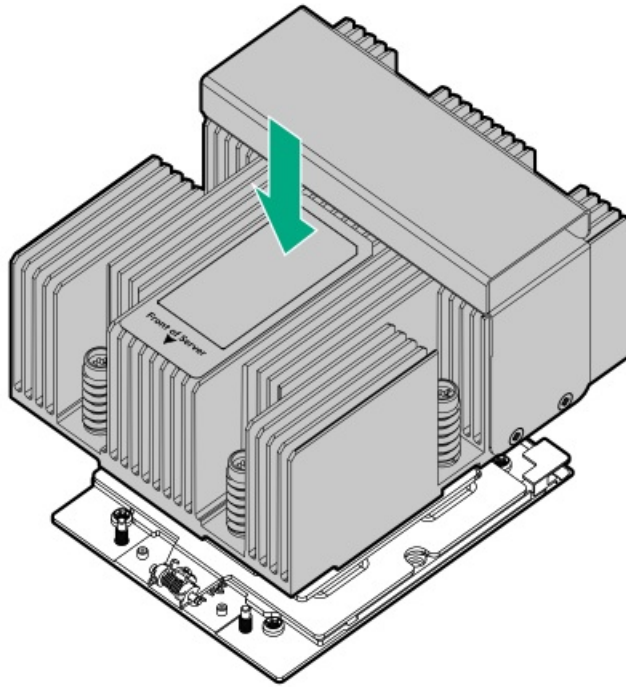
△ CAUTION:

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

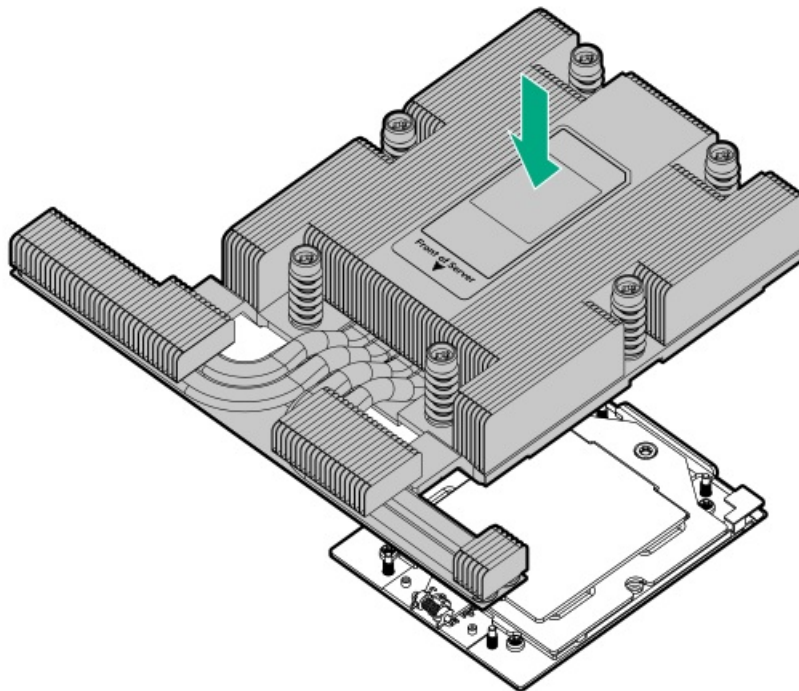
△ CAUTION:

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

- a. When using a torque wrench to tighten the heatsink screws, set a torque between 1.24 N-m (11 lbf-in) to 1.47 N-m (13 lbf-in) .
- b. Note the **Front of server** text on the heatsink label to correctly orient the heatsink over the processor socket.
- c. Position the heatsink on top of the processor, ensuring that it is properly seated before securing the screws.
 - Standard heatsink

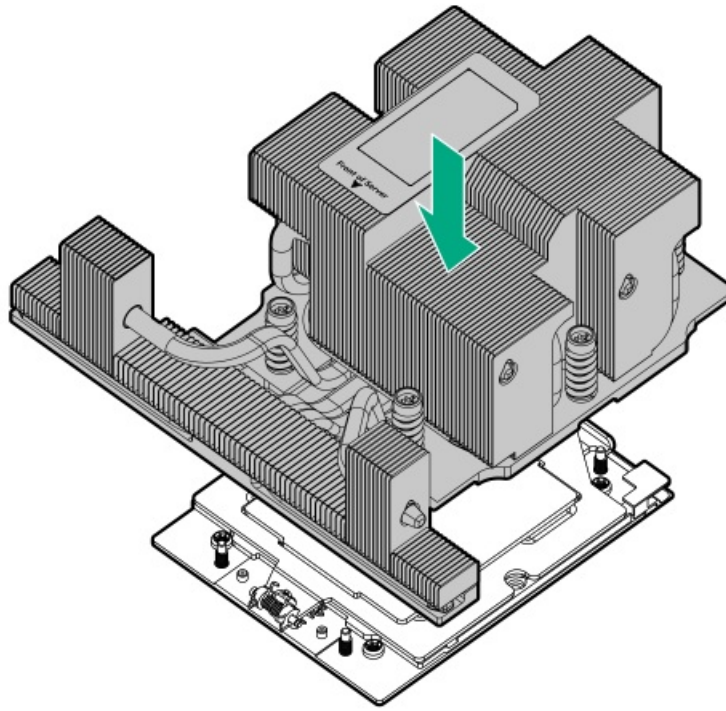


- Midplane cage heatsink



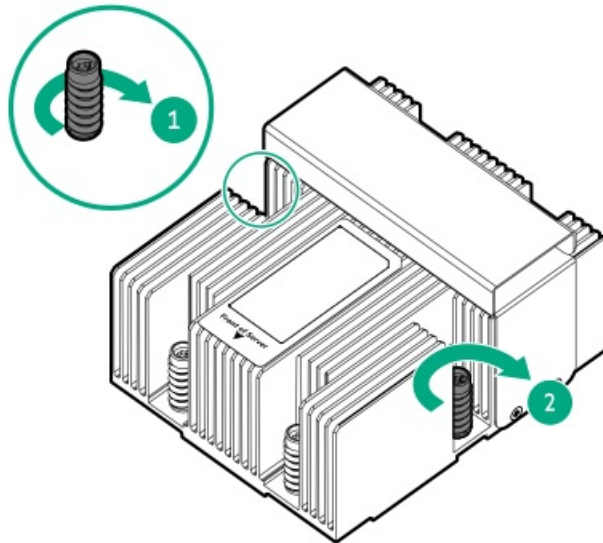
- High performance heatsink





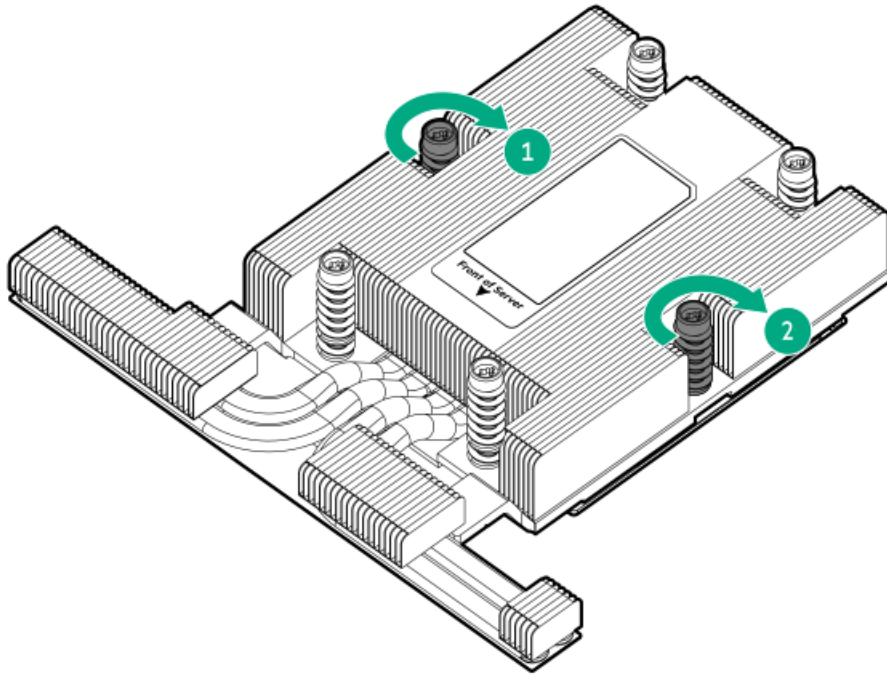
d. Tighten the heatsink screw numbers 1 and 2 (callouts 1 and 2).

- Standard heatsink

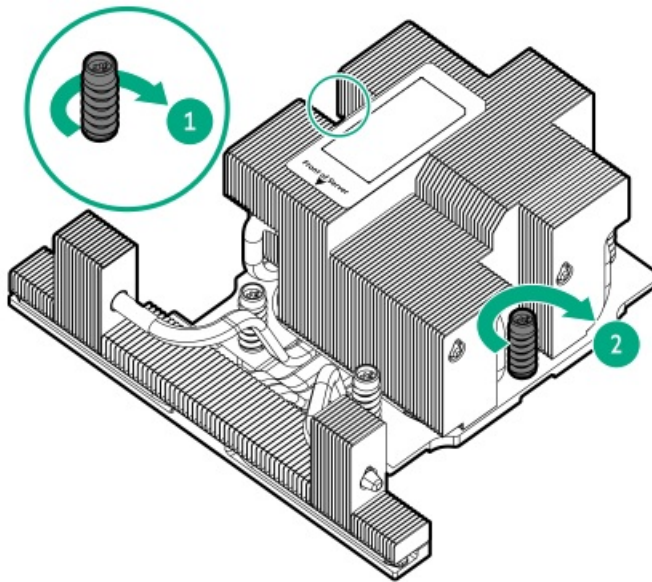


- Midplane cage heatsink





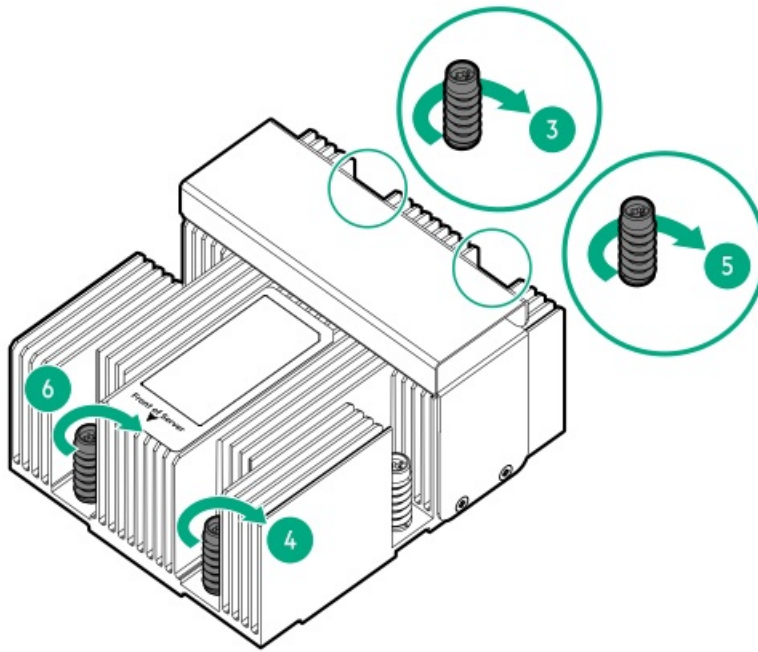
- High performance heatsink



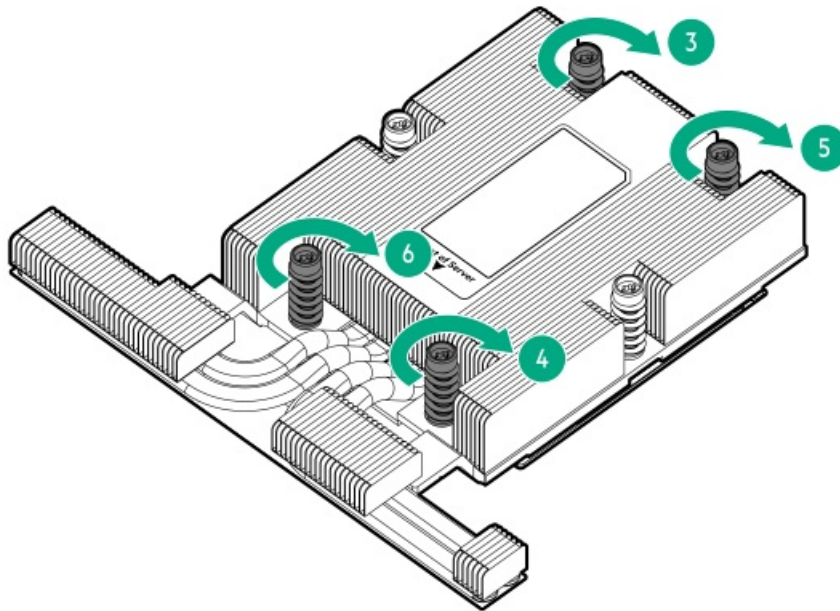
e. Tighten the heatsink screw numbers 3, 4, 5, and 6 in a diagonal manner (callouts 3 to 6).

- Standard heatsink



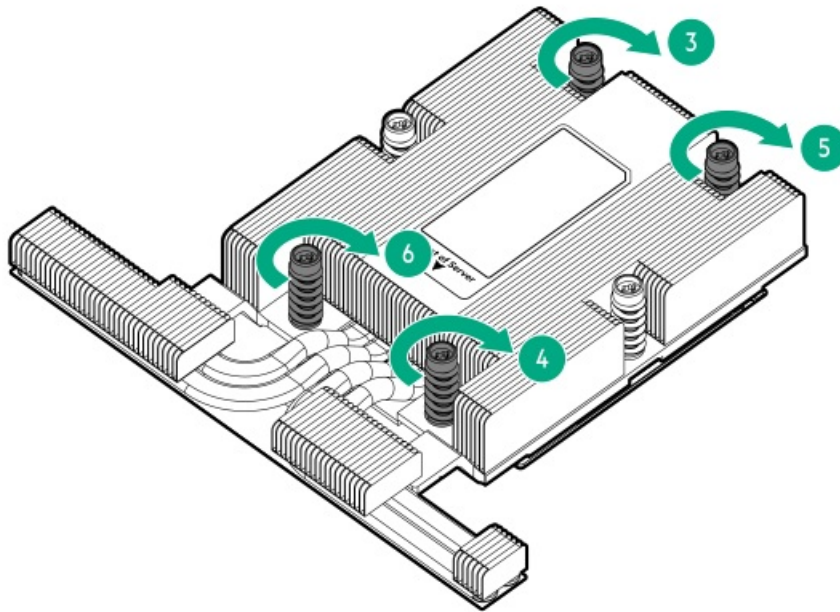


- Midplane cage heatsink



- High performance heatsink





13. Install all removed components on the new system board.
14. Do one of the following:
 - a. Install the air baffle.
 - b. Install the midplane drive cage.
15. Install the access panel.
16. Install the server into the rack.
17. Connect all peripheral cables to the server.
18. Connect each power cord to the server.
19. Connect each power cord to the power source.
20. Power up the server.
21. If removed, install the front bezel.
22. Make sure all firmware, including option cards and embedded devices, is updated to the same versions to ensure that the latest drivers are being used.
23. Re-enter any Secure Boot keys that were previously added in the Secure Boot configuration.
24. Re-enter the server serial number and product ID, and configure the date and time settings.

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.

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.

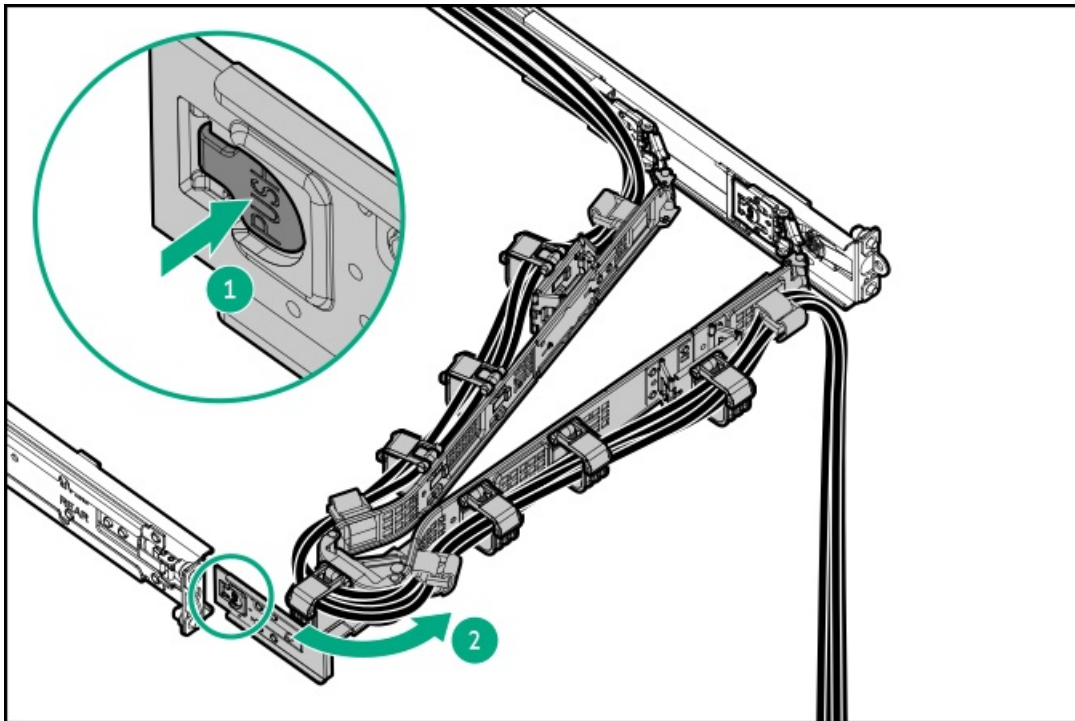
Removing and replacing the system battery

About this task

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

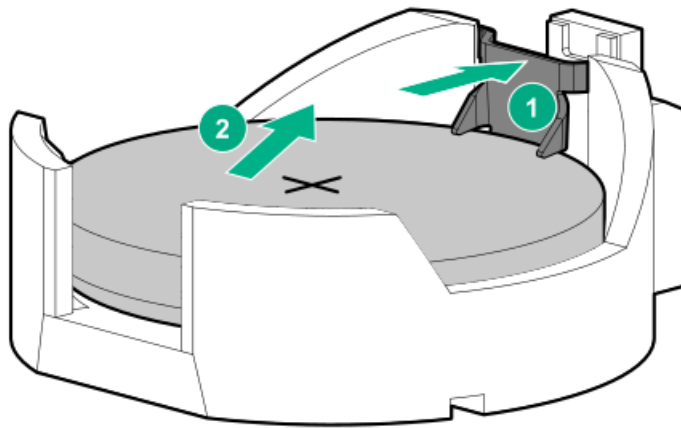
Procedure

1. [Power down the server.](#)
2. If installed, open the cable management arm.

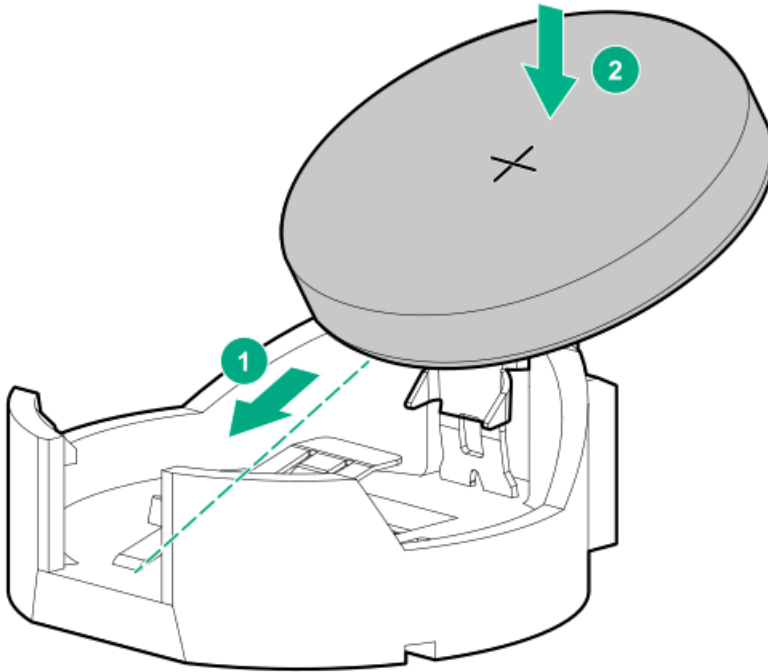


3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.

5. Remove the server from the rack.
6. Place the server on a flat, level work surface.
7. Remove the access panel.
8. Do one of the following:
 - a. Remove the air baffle.
 - b. Remove the midplane drive cage.
9. Locate the battery on the system board.
10. Remove the system battery:
 - a. Use a small flat-bladed, nonconductive tool to press the battery latch (callout 1).
 - b. Remove the system battery from the socket (callout 2).



11. Install the system battery:
 - a. With the side of the battery showing the "+" sign facing up, insert the battery into the socket (callout 1).
 - b. Press the system battery down until it clicks into place (callout 2).



12. Do one of the following:
 - a. Install the air baffle.
 - b. Install the midplane drive cage.
13. Install the air baffle.
14. Install the access panel.
15. If removed, install the front bezel.
16. Install the server into the rack.
17. Connect all peripheral cables to the server.
18. Connect each power cord to the server.
19. Connect each power cord to the power source.
20. Power up the server.
21. Properly dispose of the old battery.

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

Results

The installation is complete.

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 Gen11 server products in the following documents:

- Troubleshooting Guide for HPE ProLiant Gen11 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 Gen11 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](#).

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](#)

[System board components](#)

[Riser board components](#)

[PCIe5 slot description](#)

[Riser slot numbering](#)

[HPE Basic Drive LED definitions](#)

[EDSFF SSD LED definitions](#)

[Drive bay numbering](#)

[Drive backplane naming](#)

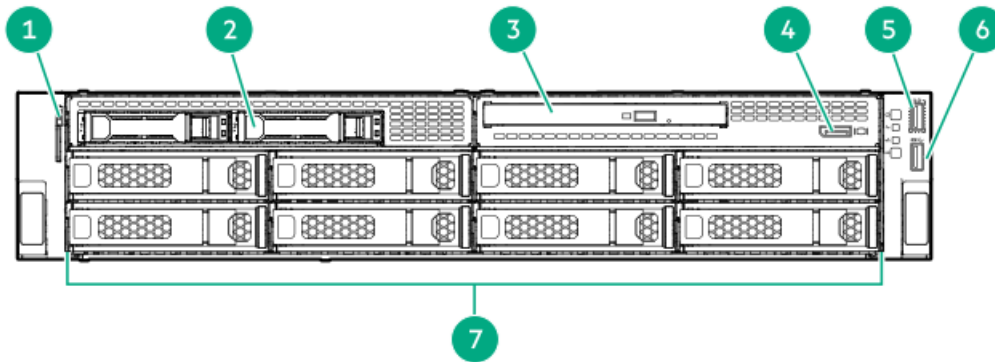
[Fan numbering](#)

[DSC-25 2-port SFP28 card ports and LEDs](#)

[Trusted Platform Module 2.0](#)

Front panel components

8 LFF drive configuration



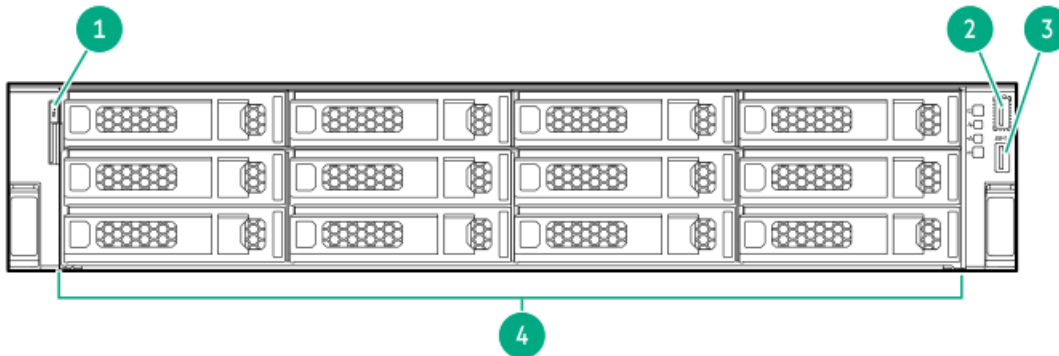
Item	Description
1	Serial number/iLO information pull tab ¹
2	2 SFF side-by-side drives (optional) ²
3	Optical drive (optional)
4	DisplayPort 1.1a (optional)
5	iLO service port
6	USB 3.2 Gen 1 port
7	LFF drives ³

¹ 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.

² The 2 SFF side-by-side drive cage option supports SAS, SATA, or U.3 NVMe drives.

³ The server supports LFF SAS or SATA drives.

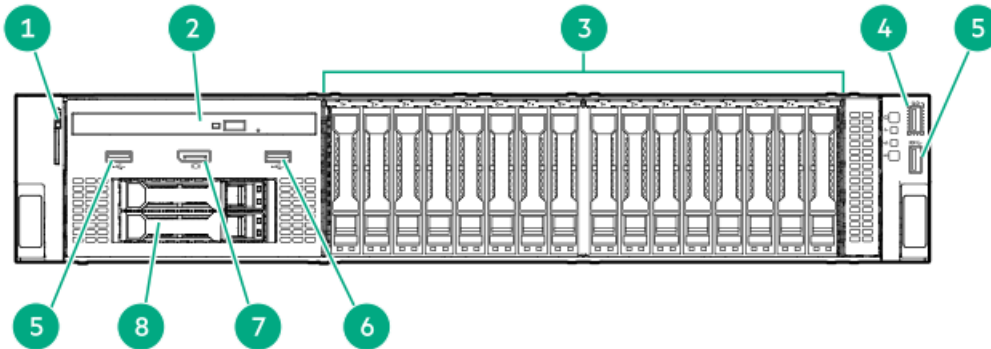
12 LFF drive configuration



Item	Description
1	Serial number/iLO information pull tab ¹
2	iLO service port
3	USB 3.2 Gen 1 port
4	LFF drives ²

- ¹ 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.
- ² The server supports LFF SAS or SATA drives.

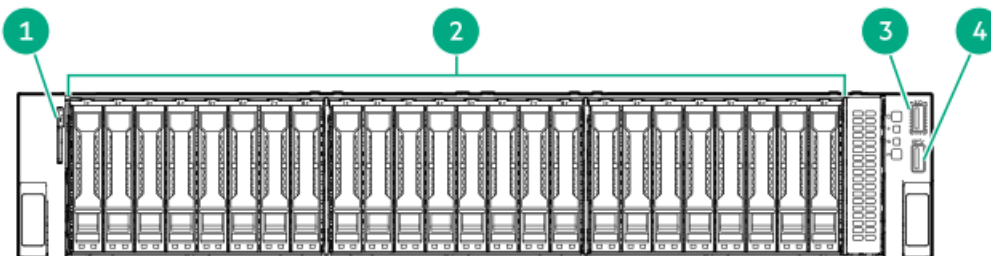
16 SFF drive configuration



Item	Description
1	Serial number/iLO information pull tab ¹
2	Optical drive (optional)
3	SFF drives ²
4	iLO service port
5	USB 3.2 Gen 1 ports
6	USB 2.0 port
7	DisplayPort 1.1a (optional)
8	2 SFF stacked drives (optional) ³

- ¹ 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.
- ² Depending on the type of drive backplane installed, the front-end SFF drive boxes supports SAS, SATA, or U.3 NVMe drives.
- ³ The 2 SFF stacked drive cage option supports SAS, SATA, or U.3 NVMe drives.

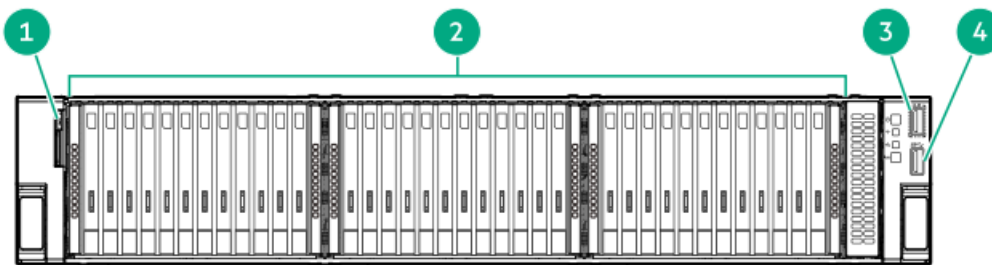
24 SFF drive configuration



Item	Description
1	Serial number/iLO information pull tab ¹
2	SFF drives ²
3	iLO service port
4	USB 3.2 Gen 1 port

- ¹ 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.
- ² Depending on the [type of drive backplane installed](#), the server supports SFF SAS, SATA, or U.3 NVMe drives.

36 E3.S drive configuration



Item	Description
1	Serial number/iLO information pull tab ¹
2	E3.S drives
3	iLO service port
4	USB 3.2 Gen 1 port

- ¹ 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.

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

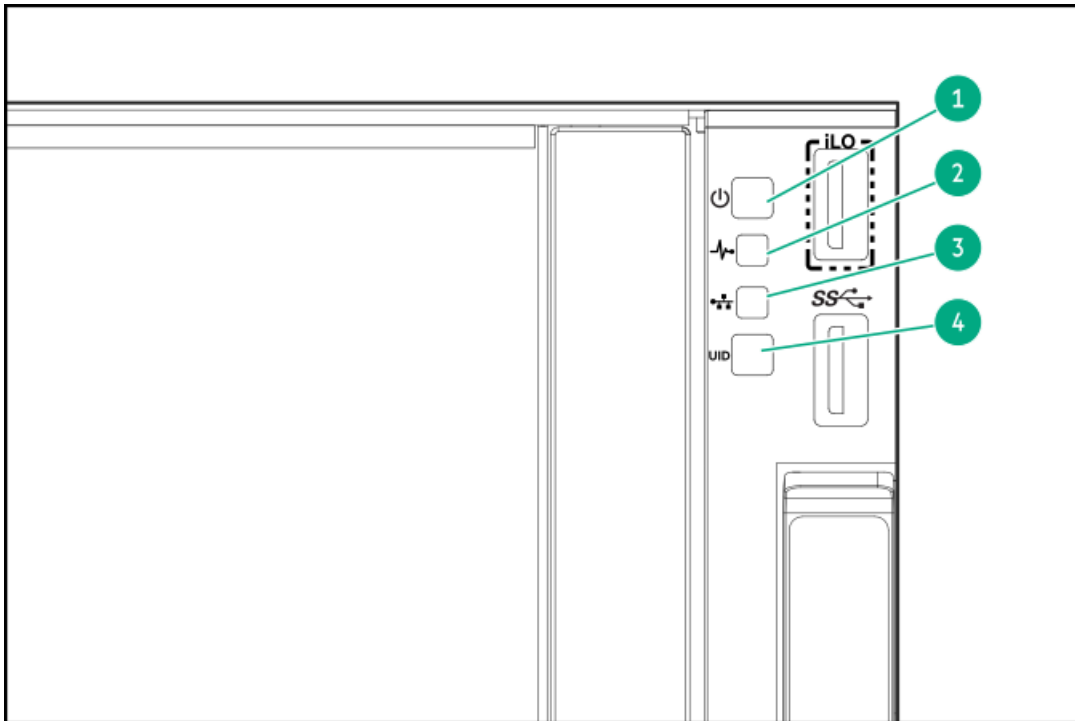
When you use the iLO Service Port:

- 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



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

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

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

³ If the health LED indicates a degraded or critical state, [review the system Integrated Management Log \(IML\)](#) or use [HPE iLO](#) to [review the system health status](#).

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 rack 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/ilo6>

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

Front panel LED power fault codes

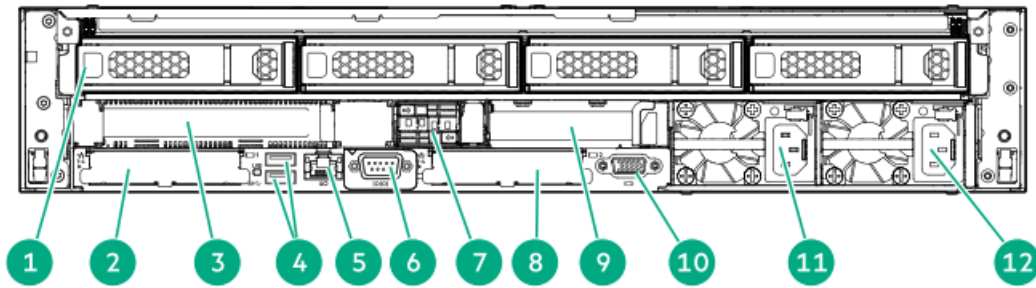
The following table provides a list of power fault codes, and the subsystems that are affected. Not all power faults are used by all servers.

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

Rear panel with rear 4 LFF drives

The rear panel with 4 LFF drive configuration is only supported when the front-end drives are also LFF.



Item	Description
1	LFF drives (optional) ¹
2	Slot 21 OCP PCIe5 x8 ²
3	Slot 3 PCIe5 x16 base riser ³
4	USB 3.2 Gen 1 ports
5	iLO management port
6	Serial port (optional)
7	NS204i-u boot device (optional)
8	Slot 22 OCP PCIe5 x8
9	Slot 6 PCIe5 x16 in low-profile riser ⁴
10	VGA port
11	Flexible Slot power supply 2 (optional)
12	Flexible Slot power supply 1

¹ The server supports LFF SAS or SATA drives.

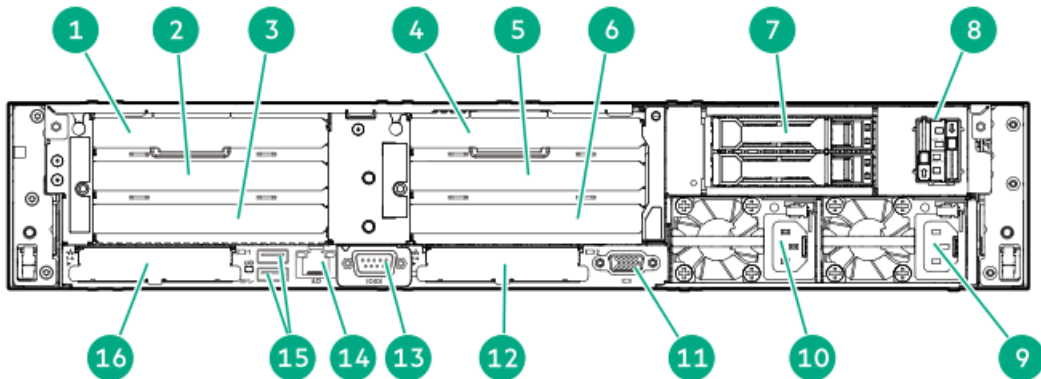
² In Slot 21 OCP, the [OCP bandwidth upgrade cable](#) is required to support a x16 OCP expansion option.

³ This riser slot is in a primary riser cage.

⁴ This riser slot is in a secondary riser cage.

Rear panel with 2 SFF stacked drives

The rear panel with 2 SFF stacked drive configuration is only supported when the front-end drives are also SFF.



Item	Description
1	Slot 1 PCIe5 x16 stacking riser ¹
2	Slot 2 PCIe5 x16 free-height riser ¹
3	Slot 3 PCIe5 x16 base riser ¹
4	Slot 4 PCIe5 x16 stacking riser ²
5	Slot 5 PCIe5 x16 stacking riser ²
6	Slot 6 PCIe5 x16 base riser ²
7	2 SFF stacked drives (optional) ³
8	NS204i-u boot device (optional)
9	Flexible Slot power supply 1
10	Flexible Slot power supply 2 (optional)
11	<u>VGA port</u>
12	Slot 22 OCP PCIe5 x8
13	Serial port (optional)
14	iLO management port
15	USB 3.2 Gen 1 ports
16	Slot 21 OCP PCIe5 x8 ⁴

¹ These riser slots are in a primary riser cage.

² These riser slots are in a secondary riser cage.

³ The 2 SFF stacked drive cage option supports SAS, SATA, or U.3 NVMe drives.

⁴ In Slot 21 OCP, the OCP bandwidth upgrade cable is required to support an x16 OCP expansion option.

Subtopics

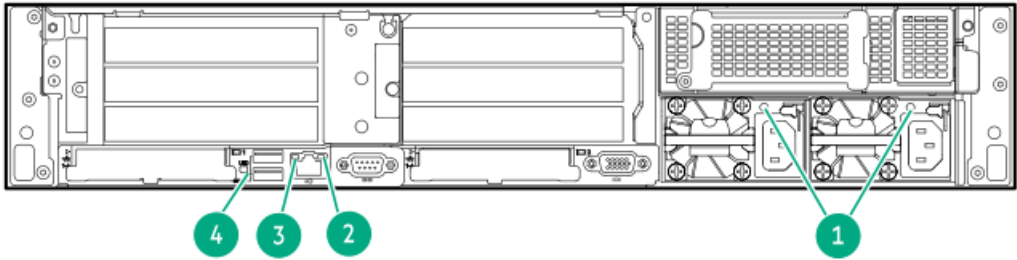
Display device setup

Display device setup

This server supports both VGA port and DisplayPort 1.1a. Before connecting a display device to this server, review the information below.

- Whenever possible, use the same display connection type. For example, if your PC or monitor only has a VGA output, connect it to the server VGA port. Use of any kind of adapter or converter cable or dongle might lead to decreased display quality or a lag over the connection.
- DisplayPort connection: When connecting an HDMI or DVI display to the DisplayPort, use an active type adapter. Passive type adapter—marked with the DP++ symbol—is not supported.
- Display output modes:
 - If you connect two display devices to the VGA port and DisplayPort, the same image is shown on both devices—screen mirroring mode.
 - The embedded video controller in the iLO 6 chipset does not support dual display or screen extension mode. To enable dual display mode, install a compatible PCIe graphics card that supports this feature in the expansion slot.

Rear panel LEDs

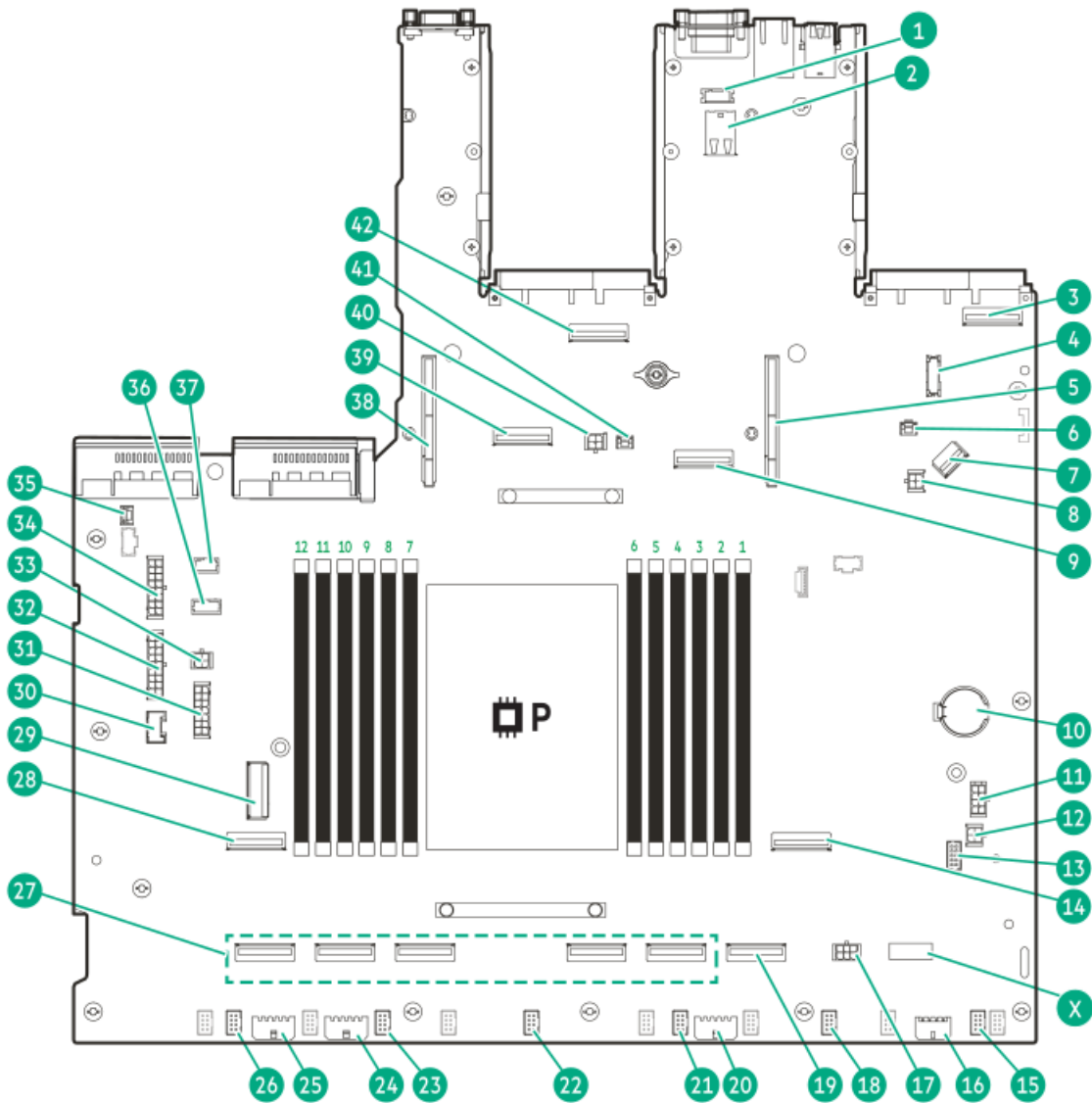


Item	LED	Status	Definition
1	Power supply	Solid green	The power supply is operating normally.
		Off	One or more of the following conditions exists: <ul style="list-style-type: none"> • Power is unavailable • Power supply failure • Power supply is in standby mode • Power supply error • The front I/O cable is disconnected.
2	iLO status	Solid green	Lined to network
		Flashing green	Network active
		Off	No network activity
3	iLO link	Solid green	Network link
		Off	No network link
4	UID	Solid blue	Activated
		Flashing blue	<ul style="list-style-type: none"> • 1 flash per sec—Remote management or firmware upgrade in progress • 4 flashes per sec—iLO manual reboot sequence initiated • 8 flashes per sec—iLO manual reboot sequence in progress
		Off	Deactivated
		Off	Deactivated

System board components

The grayed out components in the system board image are not for use in this server.





Item	Description
1	Serial port connector
2	Stacked, dual USB 3.2 Gen 1 ports
3	Slot 21 OCP x16 upgrade connector
4	Front USB and DisplayPort connector
5	Primary riser connector
6	Slot 21 OROC storage backup power connector
7	Front I/O connector
8	Power connector for the free-height riser
9	NVMe port 9A
10	System battery
11	GPU riser power connector 1
12	Auxiliary power connector for the free-height riser
13	Sideband connector for the free-height riser (primary)
14	NVMe/SATA port 1A
15	Fan connector 6

Item	Description
16	GPU riser power connector 2
17	Optical drive power connector
18	Fan connector 5
19	NVMe/SATA port 2A
20	Front drive backplane power connector 3
21	Fan connector 4
22	Fan connector 3
23	Fan connector 2
24	Front drive backplane power connector 2
25	Front drive backplane power connector 1
26	Fan connector 1
27	NVMe ports 3A – 7A (right to left)
28	NVMe port 8A
29	NS204i-u signal connector
30	Energy pack connector
31	Rear drive backplane / Graphics card power connector C (J9019)
32	Drive backplane / Graphics card power connector A (J9017)
33	Auxiliary power connector for the free-height riser
34	Drive backplane / Graphics card power connector B (J9018)
35	Chassis intrusion detection switch connector
36	Sideband connector for the free-height riser (secondary)
37	NS204i-u power connector
38	Secondary riser connector
39	NVMe/SATA port 1B
40	SmartNIC auxiliary power connector
41	Slot 22 OROC storage backup power connector
42	Slot 22 OCP x16 upgrade connector ¹
X	<u>System maintenance switch</u>

¹ There is currently no OCP x16 bandwidth upgrade cable option available for Slot 22 OCP. This slot will support x8 OCP expansion options.

Subtopics

[System maintenance switch descriptions](#)

[DIMM label identification](#)

[DIMM slot numbering](#)

[Processor and socket components](#)

System maintenance switch descriptions

Position	Default	Function
S1 ¹	Off	<ul style="list-style-type: none"> Off—iLO 6 security is enabled. On—iLO 6 security is disabled.
S2	Off	Reserved
S3	Off	Reserved
S4	Off	Reserved
S5 ¹	Off	<ul style="list-style-type: none"> Off—Power-on password is enabled. On—Power-on password is disabled.
S6 ^{1, 2, 3}	Off	<ul style="list-style-type: none"> Off—No function On—Restore default manufacturing settings
S7	Off	Reserved
S8	Off	Reserved
S9	Off	Reserved
S10	Off	Reserved
S11	Off	Reserved
S12	Off	Reserved

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

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

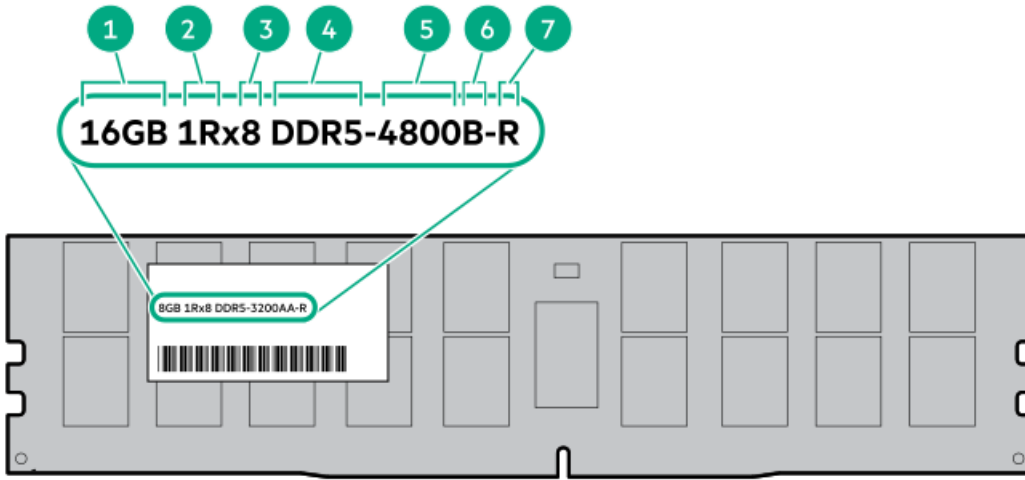
³ When the system maintenance switch position 6 is set to the On position and Secure Boot is enabled, some configurations cannot be restored. For more information, see [Configuring the server](#).

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.

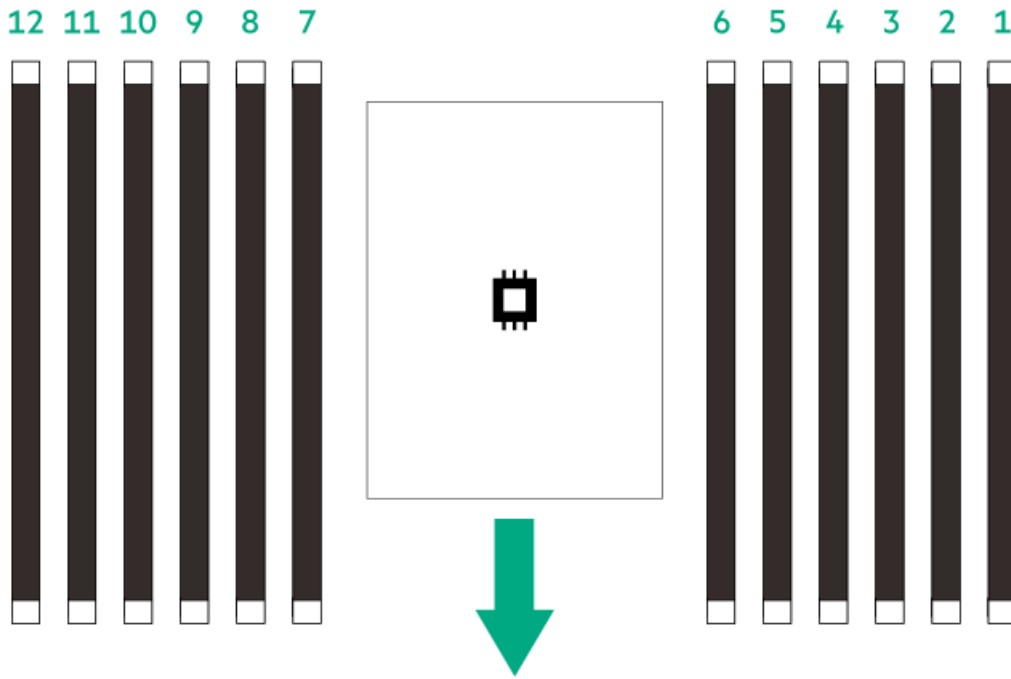
For more information about product features, specifications, options, configurations, and compatibility, see the HPE DDR5 SmartMemory QuickSpecs:

<https://www.hpe.com/docs/server-memory>



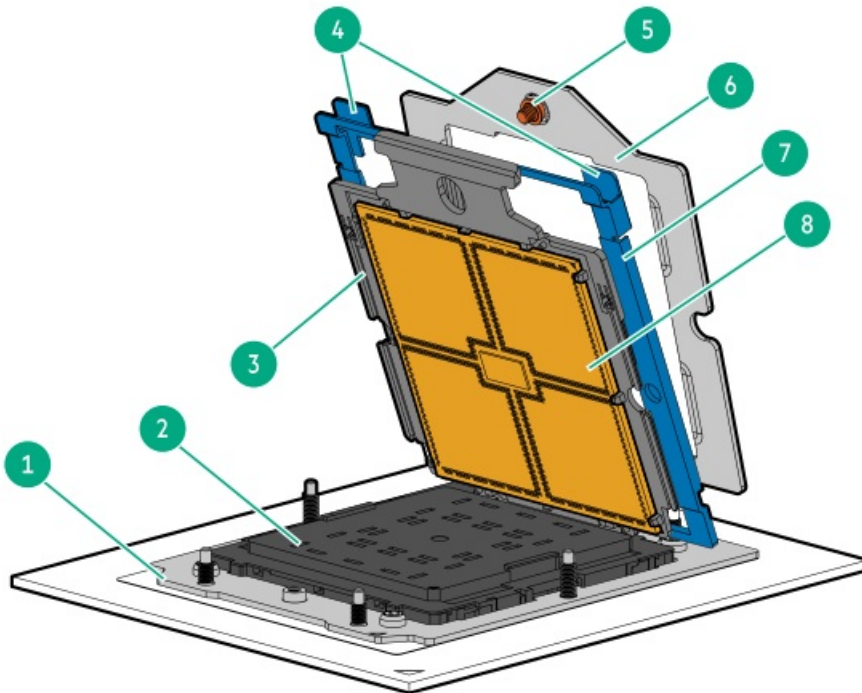
Item	Description	Example
1	Capacity	16 GB 32 GB 64 GB 128 GB 256 GB
2	Rank	1R—Single rank 2R—Dual rank 4R—Quad rank 8R—Octal rank
3	Data width on DRAM	x4—4-bit x8—8-bit
4	Memory generation	PC5—DDR5
5	Maximum memory speed	4800 MT/s
6	CAS latency	B—42-42-42 B—50-42-42 (for 128 GB and 256 GB capacities)
7	DIMM type	R—RDIMM (registered)

DIMM slot numbering



The arrow points to the front of the server.

Processor and socket components



Item	Description
1	Processor socket
2	Pin field cover cap
3	Processor carrier
4	Rail frame lift tabs
5	Retention frame screw (T-20)
6	Retention frame
7	Rail frame
8	Processor

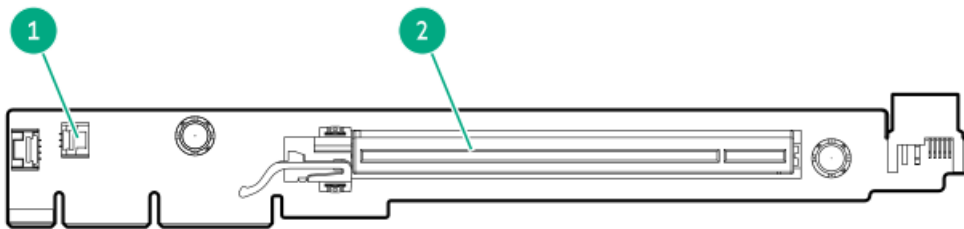
Riser board components

This server support two general types of PCIe risers:

- Standard riser—This riser is a board-only riser that is directly installed on the riser connector on the system board. This riser type is used:
 - As a standalone riser in a single-slot riser cage.
 - As the base riser in a three-slot riser cage.
- Cabled riser—This riser type has its signal cable soldered on the board itself. This riser type is combined with a standard, base riser and another cabled riser in a three-slot riser cage.

For clarity, the riser cage and the cables of the cabled risers are not shown in the following images.

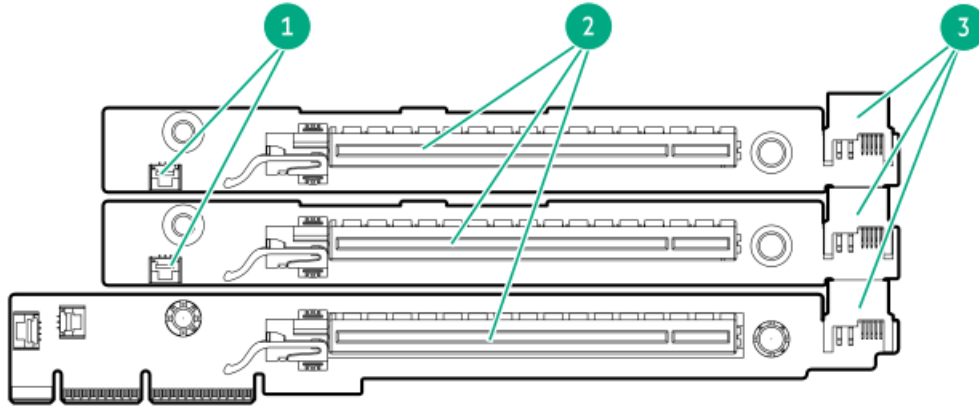
Standard riser components



Item Description

1	Storage controller backup power connector
2	PCIe5 x16 (16, 8, 4, 1) slot

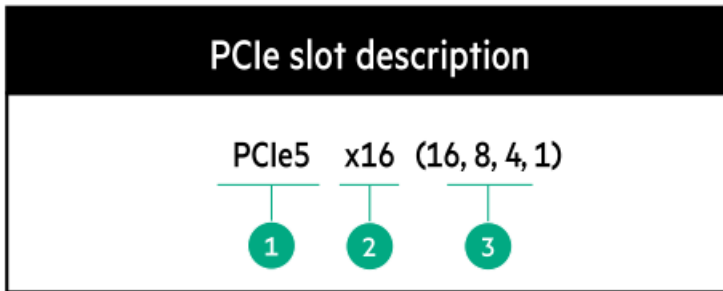
Cabled riser components



Item Description

- 1 Storage controller backup power connectors
- 2 PCIe x16 (16, 8, 4, 1) slots
- 3 Riser power connectors

PCIe5 slot description



Item	Description	Definition
1	PCI Express version	<p>Each PCIe version corresponds to a specific data transfer rate between the processor and peripheral devices. Generally, a version update corresponds to an increase in transfer rate.</p> <ul style="list-style-type: none"> • PCIe 1.x • PCIe 2.x • PCIe 3.x • PCIe 4.x • PCIe 5.x <p>The PCIe technology is under constant development. For the latest information, see the PCI-SIG website.</p>
2	Physical connector link width	<p>PCIe devices communicate through a logical connection called an interconnect or link. At the physical level, a link is composed of one or more lanes. The number of lanes is written with an x prefix with x16 being the largest size in common use.</p> <ul style="list-style-type: none"> • x1 • x2 • x4 • x8 • x16
3	Negotiable link width	<p>These numbers correspond to the maximum link bandwidth supported by the slot.</p>

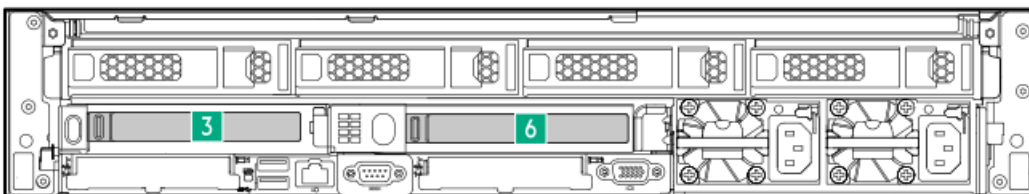
Riser slot numbering

⚠ CAUTION:

To maintain proper system cooling, do not install a 100 Gb or faster Ethernet / InfiniBand / NVMe-oF adapter in Slot 6.

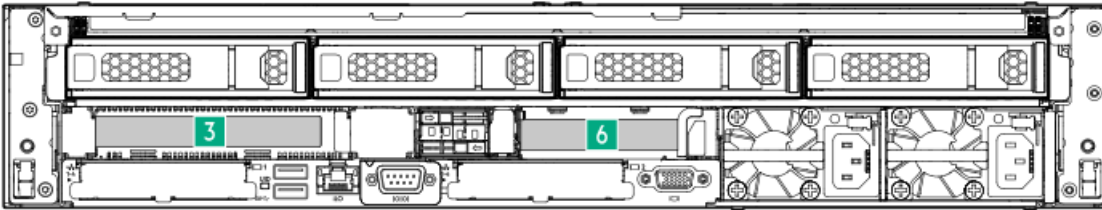
All riser slots are PCIe5 x16 (16, 8, 4, 1) and are rated for a maximum power draw of 75 W each.

Two-slot riser configuration without HPE NS204i Boot Device



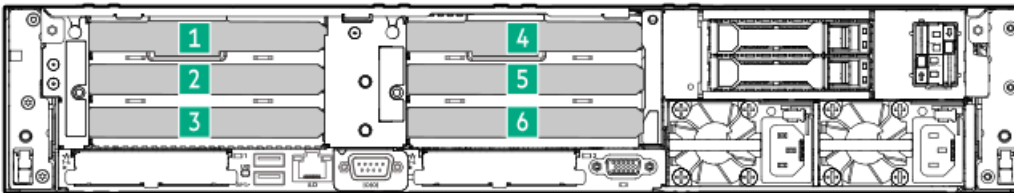
Slot number	Location	Supported form factors
3	Primary riser cage	<ul style="list-style-type: none"> • Full-height, half-length
6	Secondary riser cage	<ul style="list-style-type: none"> • Half-height, half-length (low-profile)

Two-slot riser configuration with HPE NS204i Boot Device



Slot number	Location	Supported form factors
3	Primary riser cage	<ul style="list-style-type: none"> Full-height, half-length Half-height, half-length (low-profile)
6	Secondary riser cage	Half-height, half-length (low-profile)

Six-slot riser configuration



Slot number	Location	Description	Supported form factors
1	Primary riser cage	Stacking riser	Full-height, half-length
2		Free-height riser	Half-height, half-length (low-profile)
3		Base riser	
4	Secondary riser cage	Stacking riser	
5		Stacking riser	
6		Base riser	

HPE Basic Drive LED definitions

The HPE Basic drive carrier has the following LEDs:

- Amber/blue LED—Managed by the drive backplane in conjunction with the storage controller and is used to indicate drive status.
- Green LED—Managed by the drive itself and indicates the drive activity.

Item	LED	State	Definition
1	Fault/Locate	Solid amber	This 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.
		Off	The drive is operating normally and not being identified by a management application.
2	Online/Activity	Solid green	The drive is online and has no activity.
		Flashing green (1 flash per second)	The drive is doing one of the following: <ul style="list-style-type: none"> Rebuilding or performing a RAID Performing a stripe size migration Performing a capacity expansion Performing a logical drive extension Erasing Spare part activation
		Flashing green (4 flashes per second)	The drive is operating normally and has activity.
		Off	The drive is not configured by a RAID controller or is a spare drive.

EDSFF SSD LED definitions

This server supports hot-plug Enterprise and Data Center Standard Form Factor (EDSFF) drives. Specifically, E3.S PCIe5 NVMe SSDs. The EDSFF drive carrier has two LEDs:

- Amber/blue LED—Managed by the drive backplane in conjunction with the storage controller and is used to indicate drive status.
- Green LED—Managed by the drive itself and indicates the drive activity.



Item	LED	State	Definition
1	Fault/Locate	Solid amber	This 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.
		Off	The drive is operating normally and not being identified by a management application.
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.
		Off	No power present

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

[LFF drive bay numbering](#)

[SFF drive bay numbering](#)

[E3.S drive bay numbering](#)

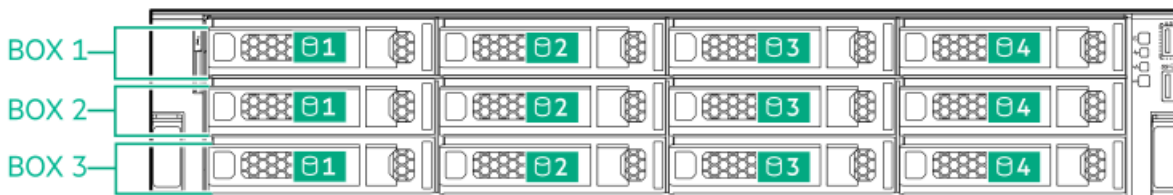
LFF drive bay numbering

The following drive backplane options are supported in LFF drive configurations:

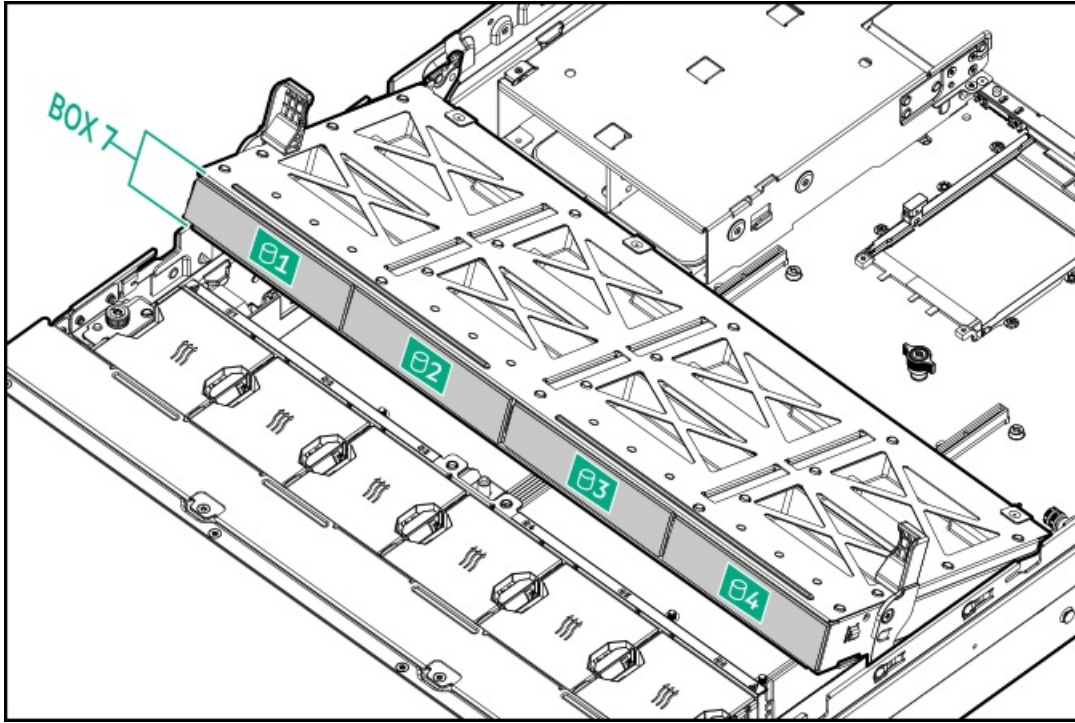
- 4 LFF 12G x1 SAS / SATA UBM2 LP
- 4 LFF 12G x1 SAS / SATA UBM6 LP

For more information on the drive backplane description, see [Drive backplane naming](#).

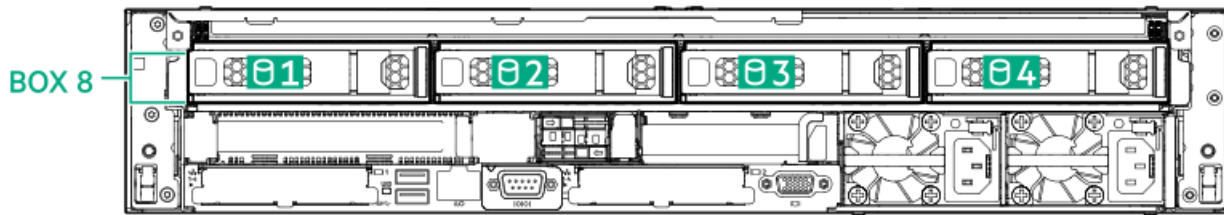
Front: 12 LFF drive bay numbering



Midplane: 4 LFF drive bay numbering



Rear: 4 LFF drive bay numbering



SFF drive bay numbering

The following drive backplane options are supported in SFF drive configurations:

- Front-end: 2 SFF, side-by-side (LFF chassis only)
 - 2 SFF 24G x4 U.3 NVMe / SAS UBM3 BC
 - 2 SFF 24G x4 U.3 NVMe / SAS UBM6 BC
- Front- or rear-end: 2 SFF, stacked:
 - 24G x4 U.3 NVMe / SAS UBM3 BC
 - 24G x4 U.3 NVMe / SAS UBM6 BC
- Front-end: 8 SFF
 - 8 SFF 24G x1 U.3 NVMe / SAS UBM3 BC
 - 8 SFF 24G x1 U.3 NVMe / SAS UBM6 BC
 - 8 SFF 24G x4 U.3 NVMe / SAS UBM3 BC
 - 8 SFF 24G x4 U.3 NVMe / SAS UBM6 BC

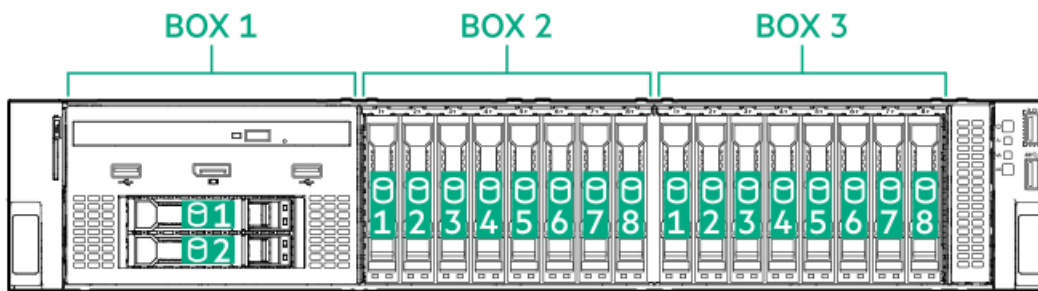
- Midplane: 8 SFF
 - 8 SFF 24G x1 U.3 NVMe / SAS UBM3 BC
 - 8 SFF 24G x4 U.3 NVMe / SAS UBM3 BC

For more information on the drive backplane description, see [Drive backplane naming](#).

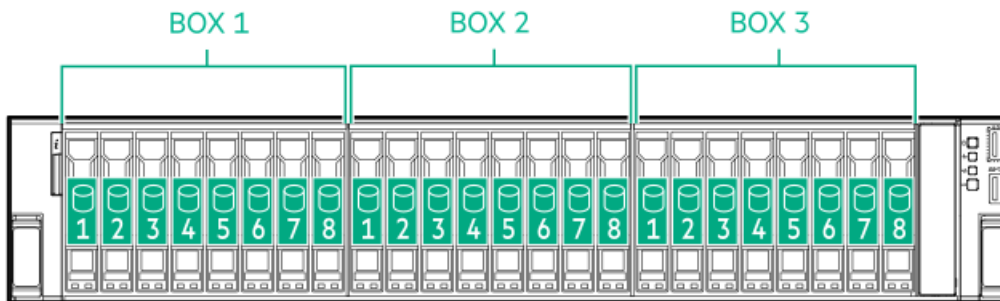
Front: 8 LFF + 2 SFF drive bay numbering



Front: 16 SFF + 2 SFF drive bay numbering

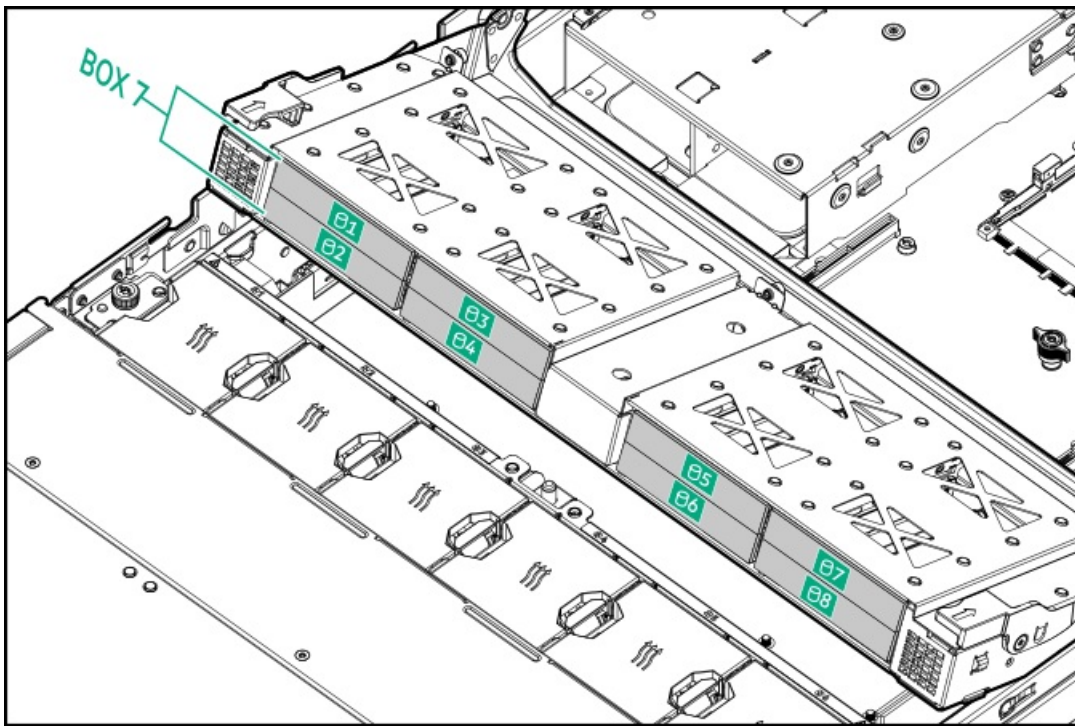


Front: 24 SFF drive bay numbering

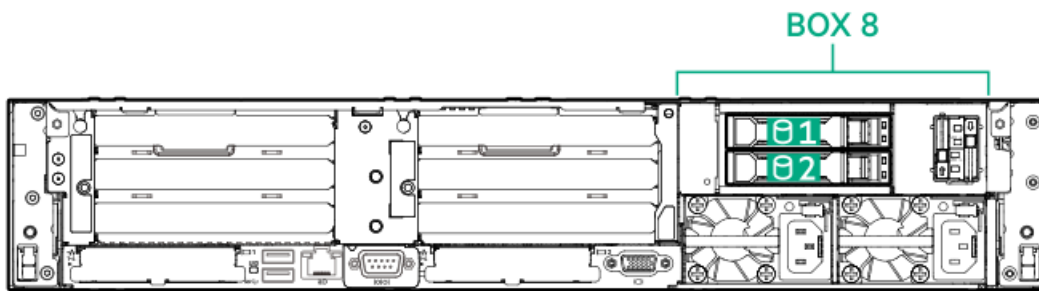


Midplane: 8 SFF drive bay numbering





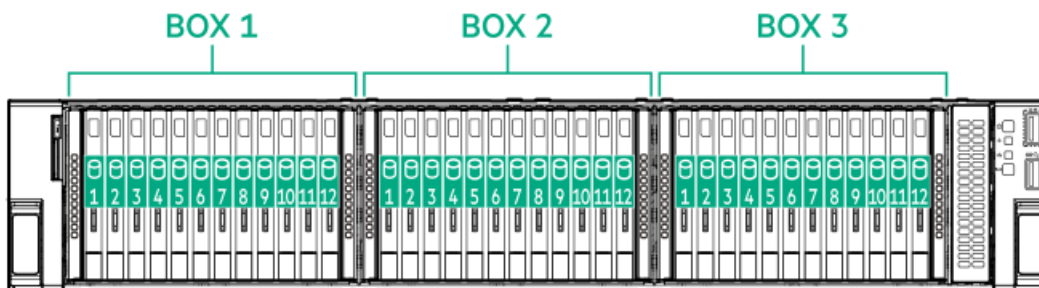
Rear: 2 SFF drive bay numbering



E3.S drive bay numbering

E3.S drive box uses the 12 E3.S 32G x4 NVMe UBM5 EC drive backplane.

For more information on the drive backplane description, see [Drive backplane naming](#).



Drive backplane naming

This topic explains the features represented in the drive backplane naming. This naming convention was adopted starting in the HPE Gen11 server release. Your server might not support all the features listed in this topic. For server-specific support information, see the server guides:

- Drive backplane support, see [Drive bay numbering](#).
- Drive backplane cabling, see [Storage cabling](#).



Item	Description	Values
1	Drive bay count	Number of drive bays supported by the backplane.
2	Drive form factor	LFF—Large Form Factor SFF—Small Form Factor E3.S—Enterprise and Datacenter Standard Form Factor (EDSFF)
3	Maximum link rate per lane (GT/s)	12G 16G 24G 32G
4	Port link width and interface	x1 NVMe/SAS—U.3 NVMe, SAS, or SATA ¹ x4 NVMe/SAS—U.3 NVMe, SAS, or SATA ² x4 NVMe—U.2 NVMe ³ x4 NVMe—E3.S
5	Universal backplane manager (UBM) options	UBM2—Segregated SAS/SATA UBM3 or UBM6—Converged UBM4 or UBM6—Segregated U.2 NVMe UBM5 or UBM7—EDSFF
6	Drive carrier type	BC—Basic carrier (SFF) LP—Low-profile carrier (LFF) EC1—E3.S carrier

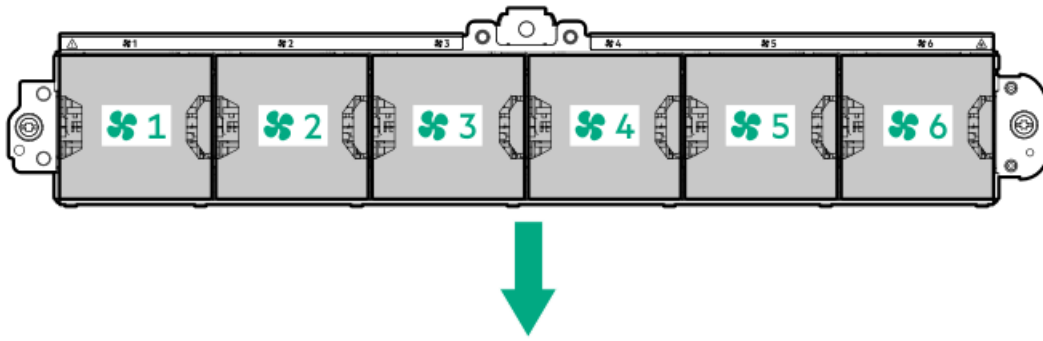
¹ Tri-mode controller support for x1 U.3 NVMe, SAS, and SATA drives. System board connection supports SATA drives only.

² CPU direct attach or tri-mode controller support for x4 U.3 NVMe or x1 SAS and SATA drives.

³ CPU direct attach or tri-mode controller support for x4 U.2 NVMe drives.

Fan numbering

To provide sufficient airflow to the system, the server is by default populated by six fans. The fans can either be standard, single-rotor fans (P58464-B21) or high performance, dual-rotor fans (P58465-B21). Mixed fan configuration is not supported.



The arrow points to the front of the server.

Subtopics

Fan and heatsink requirements

Fan and heatsink requirements

⚠ CAUTION:

To maintain proper system cooling, install the correct fan and heatsink types required for specific hardware configurations.

⚠ CAUTION:

When a 100 Gb or faster Ethernet / InfiniBand / NVME-oF adapter is installed in any configuration, high performance fans are required.

The information in this section is valid for up to the maximum 12 LFF and 24 SFF front-end drive configurations.

Midplane drive	Rear drive	Processor TDP	Fan type	Heatsink type
Not installed	Not installed	≤ 240 W	Standard fans ¹	Standard heatsink ²
Not installed		> 240 W	Standard fans ¹	High performance heatsink
Not installed	2 SFF or 4 LFF	≤ 240 W	High performance fans ⁴	Standard heatsink ²
		> 240 W	High performance fans ⁴	High performance heatsink ³
4 LFF or 8 SFF	None, 2 SFF, or 4 LFF	≤ 300 W	High performance fans ⁴	Midplane cage heatsink ⁵

¹ Option kit: P58464-B21

² Option kit: P58458-B21

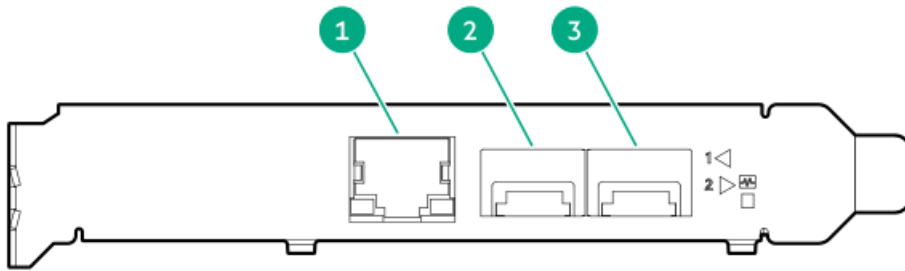
³ Option kit: P58459-B21

⁴ Option kit: P58465-B21

⁵ Option kit: P58457-B21

DSC-25 2-port SFP28 card ports and LEDs

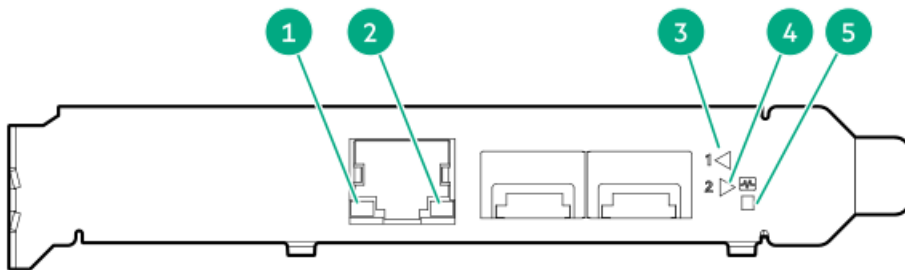
Ports



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

LEDs

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



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

Trusted Platform Module 2.0

The Trusted Platform Module 2.0 (TPM) is a hardware-based system security feature that securely store artifacts used to authenticate the platform. These artifacts can include passwords, certificates, and encryption keys.

The TPM 2.0 is embedded on the server system board.

The TPM 2.0 is supported with specific operating system support such as Microsoft Windows Server 2012 R2 and later. For more information about operating system support, see the product QuickSpecs on the Hewlett Packard Enterprise website (<https://www.hpe.com/info/qs>). For more information about Microsoft Windows BitLocker Drive Encryption feature, see the Microsoft website (<https://www.microsoft.com>).

Subtopics

[Trusted Platform Module 2.0 guidelines](#)

[BitLocker recovery key/password retention guidelines](#)

Trusted Platform Module 2.0 guidelines

△ CAUTION:

- Always observe the TPM guidelines in this section. Failure to follow these guidelines can cause hardware damage or halt data access.
- If you do not follow procedures for modifying the server and suspending or disabling the TPM in the OS, an OS that is using TPM might lock all data access. This includes updating system or option firmware, replacing hardware such as the system board and drives, and modifying TPM OS settings.
- Changing the TPM mode after installing an OS might cause problems, including loss of data.

Hewlett Packard Enterprise SPECIAL REMINDER: Before enabling TPM functionality on this system, you must ensure that your intended use of TPM complies with relevant local laws, regulations and policies, and approvals or licenses must be obtained if applicable.

慧与特别提醒：在您启用系统中的TPM功能前，请务必确认您对TPM的使用遵守当地相关法律、法规及政策，并已事先获得所需的一切批准及许可（如适用），因您未获得相应的操作/使用许可而导致的违规问题，皆由您自行承担全部责任，与慧与无涉。

- When the embedded TPM is enabled, the Trusted Platform Module operates in TPM 2.0 mode.
- Use the UEFI System Utilities to configure the TPM. From the System Utilities screen, select System Configuration > BIOS/Platform Configuration (RBSU) > Server Security > Trusted Platform Module options. For more information, see the UEFI user guide:
<https://www.hpe.com/support/UEFIGen11-UG-en>
- When using the Microsoft Windows BitLocker Drive Encryption feature, always retain the recovery key or password. The recovery key or password is required to enter Recovery Mode after BitLocker detects a possible compromise of system integrity.
- HPE is not liable for blocked data access caused by improper TPM use. For operating instructions, see the documentation for the encryption technology feature provided by the operating system.

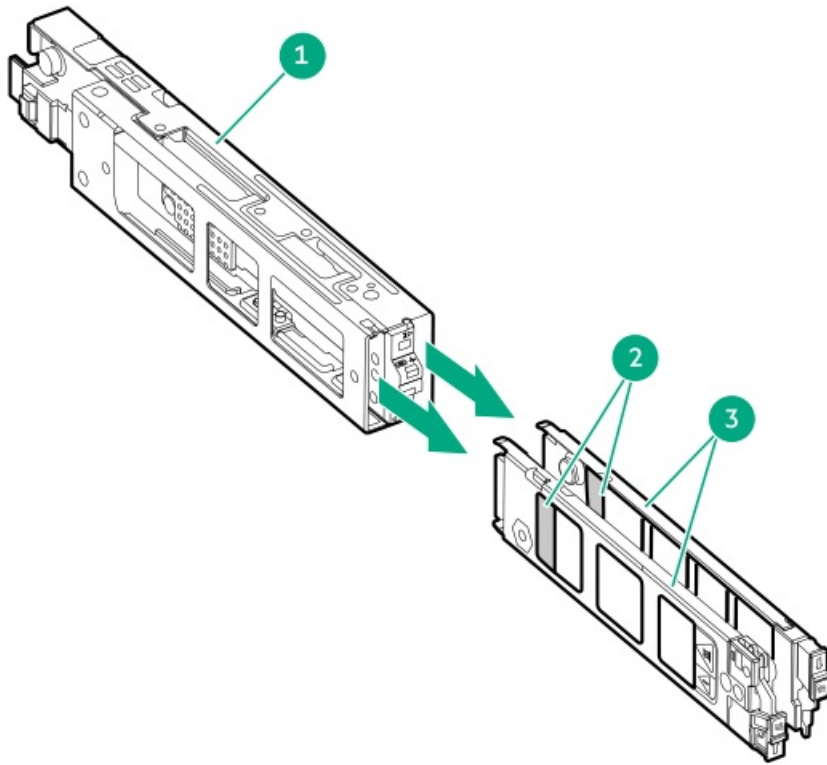
BitLocker recovery key/password retention guidelines

The recovery key/password is generated during BitLocker setup, and can be saved and printed after BitLocker is enabled. When using BitLocker, always retain the recovery key/password. The recovery key/password is required to enter Recovery Mode after BitLocker detects a possible compromise of system integrity.

To help ensure maximum security, observe the following guidelines when retaining the recovery key/password:

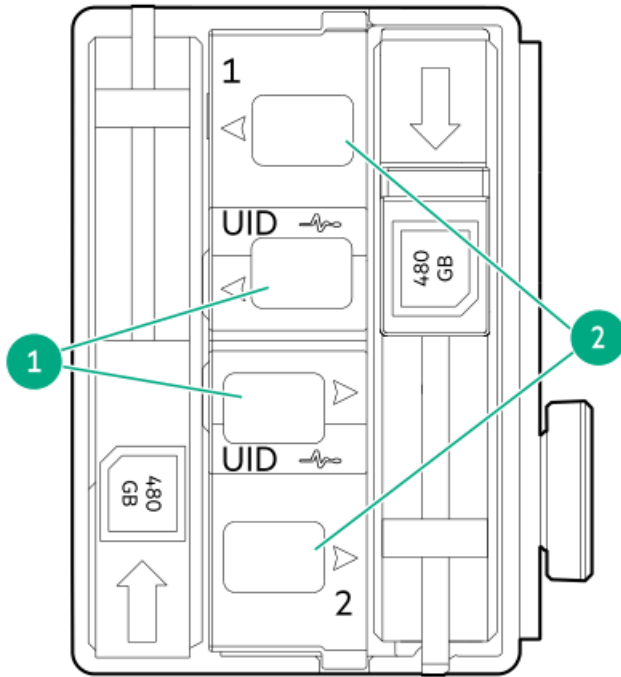
- Always store the recovery key/password in multiple locations.
- Always store copies of the recovery key/password away from the server.
- Do not save the recovery key/password on an encrypted drive.

HPE NS204i-u Boot Device components



Item	Description
1	Boot device cage
2	M.2 slots
3	Boot device carriers

HPE NS204i-u Boot Device LED definitions



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

Cabling

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

Subtopics

[Cabling guidelines](#)

[Cabling diagrams](#)

Internal cabling management

Stacking and free-height riser cabling

Storage cabling

Optical drive cabling

Universal media bay cabling

HPE NS204i Boot Device cabling

Fan cabling

OCP bandwidth upgrade cabling

Serial port cabling

Chassis intrusion detection switch cabling

Front I/O cabling

Cabling guidelines

Observe the following:

- Some diagrams show alphabetical callouts A, B, C, etc. These callouts correspond to labels near the connectors on the cable.
- The cable colors in the cabling diagrams used in this chapter are for illustration purposes only.
- Observe all guidelines when working with server cables.

Before connecting cables

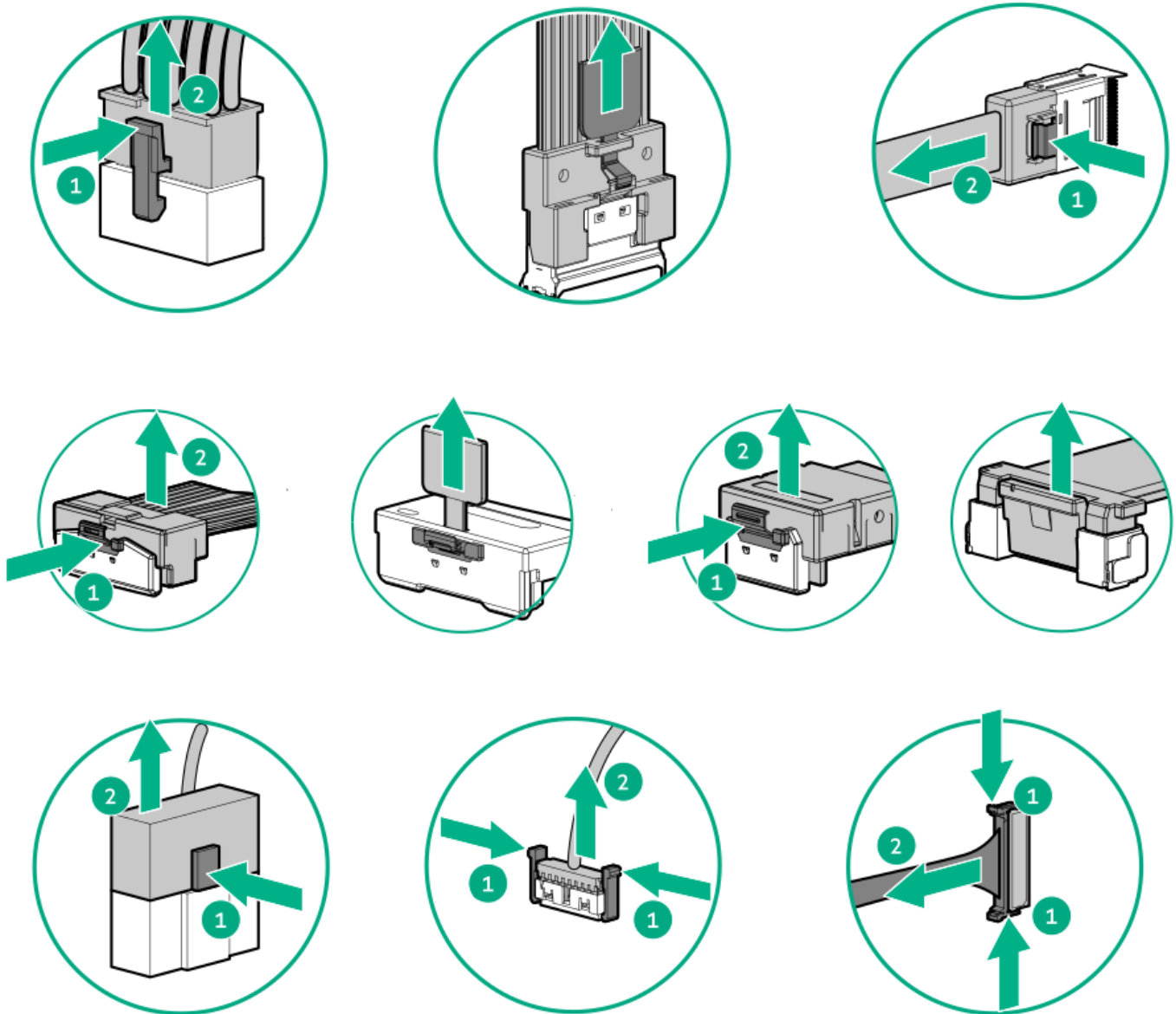
- Note the port labels on the PCA components. Not all these components are used by all servers:
 - System board ports
 - Drive and power supply backplane ports
 - Expansion board ports (controllers, adapters, expanders, risers, and similar boards)
- Note the label near each cable connector. This label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

When connecting cables

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

When disconnecting cables

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



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

Cabling diagrams

Observe the following:

- Before cabling components, see the [cabling guidelines](#).
- Use the cable part number or search feature to find your diagram.

Component cabling

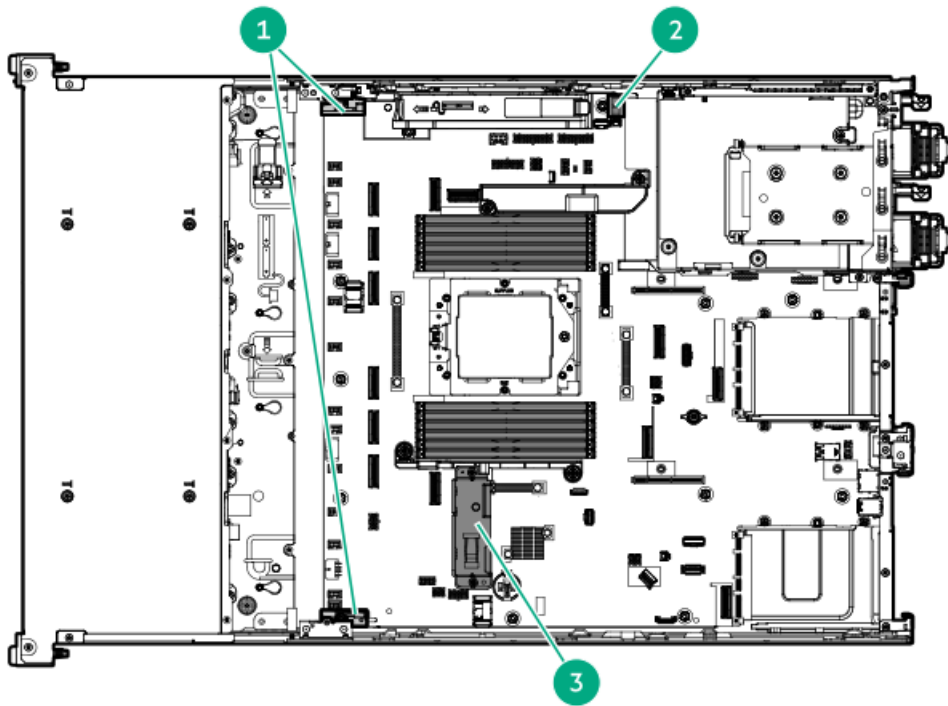
Cable part number

Component cabling	Cable part number
Primary free-height riser cable	P50364-001
Primary stacking riser cable	P51472-001
Primary / secondary stacking riser cable	P50365-001
Front drive storage controller cable	—
8/12 LFF drive onboard SATA cable	P57187-001 P58865-001
8/16 SFF drive onboard SATA cable	P57194-001 P57196-001
8/16/24 SFF x2 NVMe direct attach cable	P57220-001 P57222-001 P57224-001
8 SFF x4 NVMe direct attach cable	P57205-001 P57215-001
36 E3.S x2 direct attach cable	P59118-001 P59120-001 P59094-001 P59121-001
8 LFF SAS/SATA drive controller cable: Type-o controller in Slot 21	P58101-001
8 LFF SAS/SATA drive controller cable: Type-p controller in the primary riser	P58063-001
4 LFF Box 1 SAS/SATA drive controller cable: Type-p controller in the primary riser	P57188-001
8/12 LFF SAS/SATA drive controller cable: Type-p controller in the primary riser	P57188-001 P58063-001
8 SFF Box 1 SAS/SATA controller cable: Type-o controller in Slot 22	P58016-001
8/16 SFF SAS/SATA controller cable: Type-p controller in the primary riser	P58018-001 P58020-001
8/16/24 SFF SAS/SATA controller cable: Type-p controller in the primary riser	P58018-001 P58019-001 P58020-001
8 SFF Box 1 x2 NVMe storage controller cable: Type-o controller in Slot 22	P58075-001 P58076-001
8/16 SFF x2 NVMe storage controller cable: Type-p controller in the primary riser	P58123-001 P58127-001

Component cabling	Cable part number
8 SFF Box 1 x2 NVMe storage controller cable: Type-p controller in the secondary riser	P58124-001
8 SFF Box 3 x4 NVMe storage controller cable: Type-p controller in the primary riser	P58120-001
8 SFF Box 2 x4 NVMe storage controller cable: Type-p controller in the primary riser	P58122-001
8 SFF Box 1 x4 NVMe storage controller cable: Type-p controller in the secondary riser	P58114-001
Front 2 SFF side-by-side drive controller cable: Type-o controller	P58145-001
Front 2 SFF stacked drive controller cable: Type-o controller	P58145-001
Midplane drive storage controller cable	—
8 SFF midplane x2 NVMe drive direct attach cable	P57207-001 P59467-001
4 LFF x1 SAS midplane drive controller cable: SR932i-p storage controller in the primary riser	P57188-001
8 SFF midplane SAS/x1 NVMe drive controller cable: Type-p controller	P58089-001
8 SFF midplane x4 NVMe storage controller cable: Type-p controller in the secondary riser	P58095-001 P58094-001
Rear drive storage controller cable	—
Rear 4 LFF drive: Onboard SATA cable	P57184-001
Rear 4 LFF x1 SAS drive controller cable: Type-o controller in Slot 22	P58098-001
Rear 4 LFF x1 SAS drive controller cable: SR932i-p storage controller in the primary riser	P57183-001
Rear 2 SFF SAS / x4 NVMe stacked drive controller cable: Type-o controller	P58149-001
Front drive power cable	—
8/12 LFF drive power cable	P58035-001 P58036-001 P58867-001
8/16/24 SFF drive power cable	P57198-001 P58023-001 P57209-001
36 E3.S drive power cable	P58822-001 P59122-001
2 SFF side-by-side drive power cable	P58036-001

Component cabling	Cable part number
2 SFF stacked drive power cable	P57198-001
Midplane drive power cable	—
4 LFF midplane drive power cable	P57182-001
8 SFF midplane SAS / NVMe x1 drive power cable	P57177-001
8 SFF midplane NVMe x4 power cable	P57201-001
Rear drive power cable	—
Rear 4 LFF drive power cable	P57185-001
Rear 2 SFF stacked drive power cable	P57178-001
Energy pack cable	P01366-B21 P02377-B21
Storage controller backup power cable from type-o controller in Slot 22	—
Optical drive cable in the LFF universal media bay	P59116-001
Optical drive cable in the SFF universal media bay	P59116-001
LFF universal media bay cable: DisplayPort cable	869808-001
SFF universal media bay cables: USB 2.0 / DisplayPort Y-cable	P14314-001
SFF universal media bay cables: USB 3.2 Gen 1 port cable	P57248-001
HPE NS204i Boot Device power cable	P54088-001
HPE NS204i Boot Device signal cable	P54087-001
OCP bandwidth upgrade cable for OCP slot 21	P56686-001
Serial port cable	P47752-001
Chassis intrusion detection switch cable	P54901-001
Front I/O cable	P43727-001

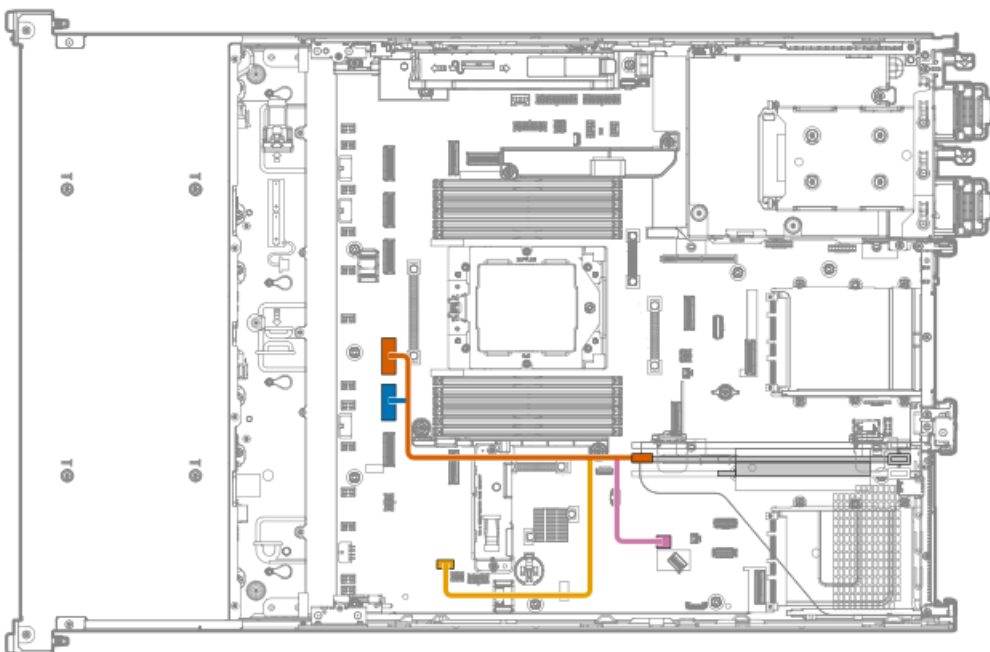
Internal cabling management



Item	Description
1	Cable guards
2	Cable clip
3	Full-length card stabilizer

Stacking and free-height riser cabling

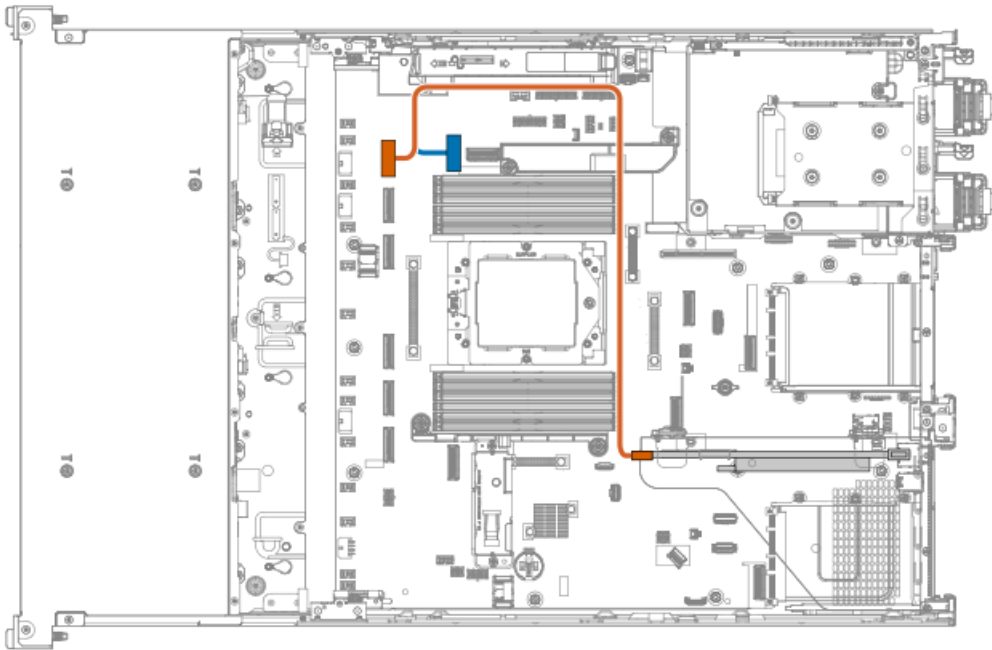
Primary free-height riser cabling



Riser part number	Color	From	To
P50364-001 ¹	Orange	Primary free-height riser on Slot 2	NVMe port 4A
	Blue		NVMe port 3A
	Gold	Sideband connector for the free-height riser (primary)	
	Pink	Power connector for the free-height riser	

¹ Option kit: P57116-B21; P57117-B21

Primary stacking riser cabling

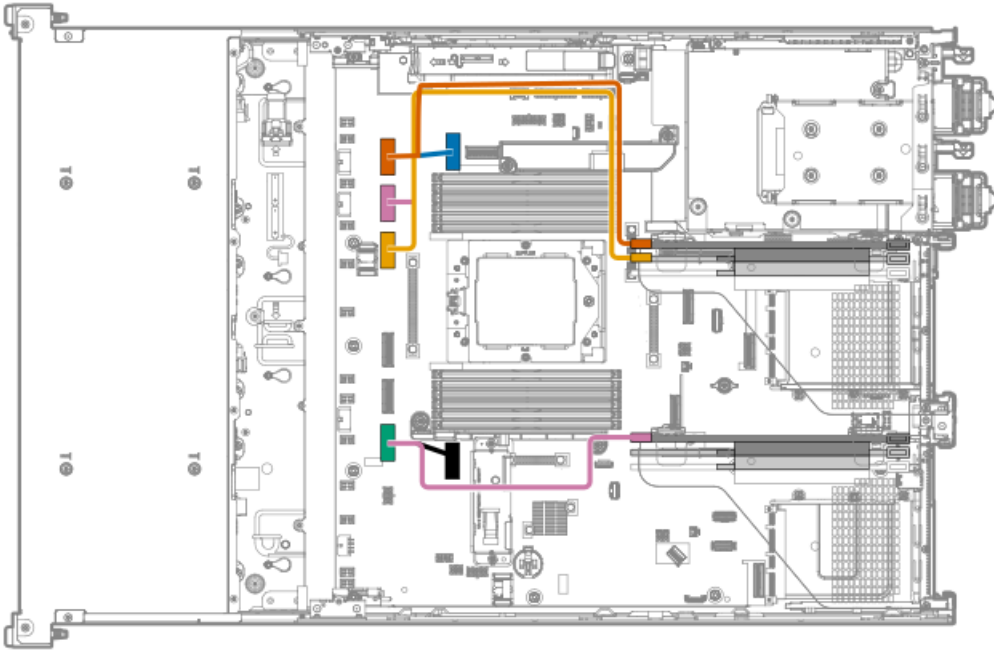


Riser part number	Color	From	To
P51472-001 ¹	Orange	Primary stacking riser on Slot 1	NVMe port 7A
	Blue		NVMe port 8A

¹ Option kit: P57116-B21

Primary/secondary stacking riser cabling





Riser part number	Color	From	To
P50365-001 ¹	Orange	Secondary stacking riser on Slot 4	NVMe port 7A
	Blue		NVMe port 8A
	Gold	Secondary stacking riser on Slot 5	NVMe port 5A
	Pink		NVMe port 6A
	Green	Primary stacking riser on Slot 1	NVMe/SATA port 2A
	Black		NVMe/SATA port 1A

¹ Option kit: P57117-B21

Storage cabling

Subtopics

[Storage controller cabling](#)

[Drive power cabling](#)

[Energy pack cabling](#)

[Storage controller backup power cabling](#)

Storage controller cabling

Subtopics

[Front drive storage controller cabling](#)

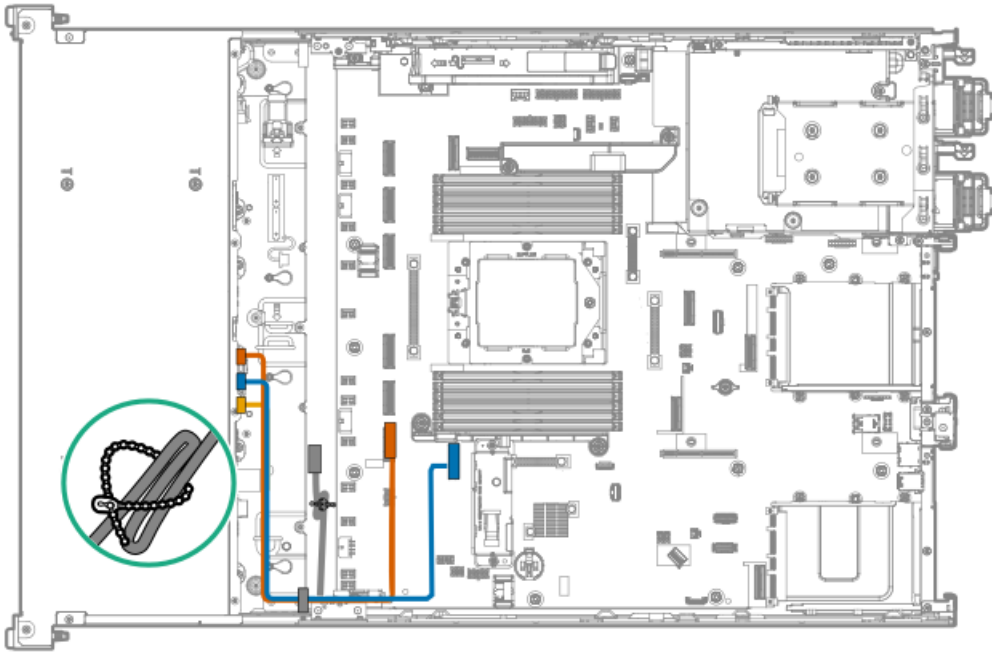
Midplane drive storage controller cabling

Rear drive storage controller cabling

Front drive storage controller cabling

8/12 LFF drive: Onboard SATA cabling

If the 4 LFF midplane drive cage is not installed, use the cable tie that ships with cable kit to secure the cable to the midplane drive cage by the drive backplane bracket.

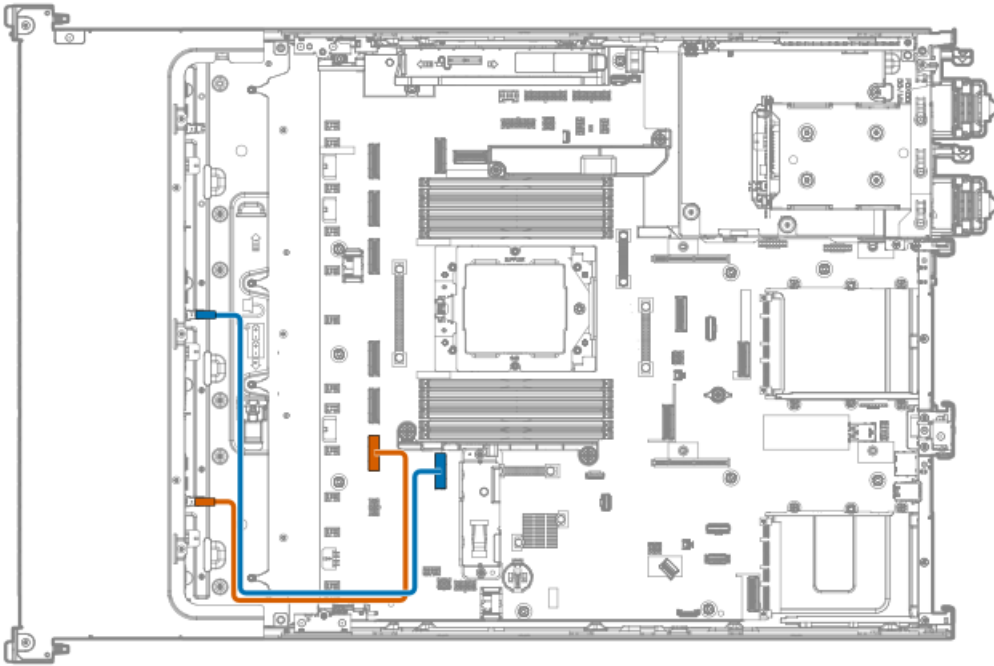


Cable part number	Color	From	To
P57187-001 ¹	Orange	Box 1 port 1	NVMe/SATA port 2A
P58865-001 ²	Blue	Box 2 port 1	NVMe/SATA port 1A
	Gold	Box 3 port 1	

¹ Option kit: P57114-B21

² Option kit: P58864-B21

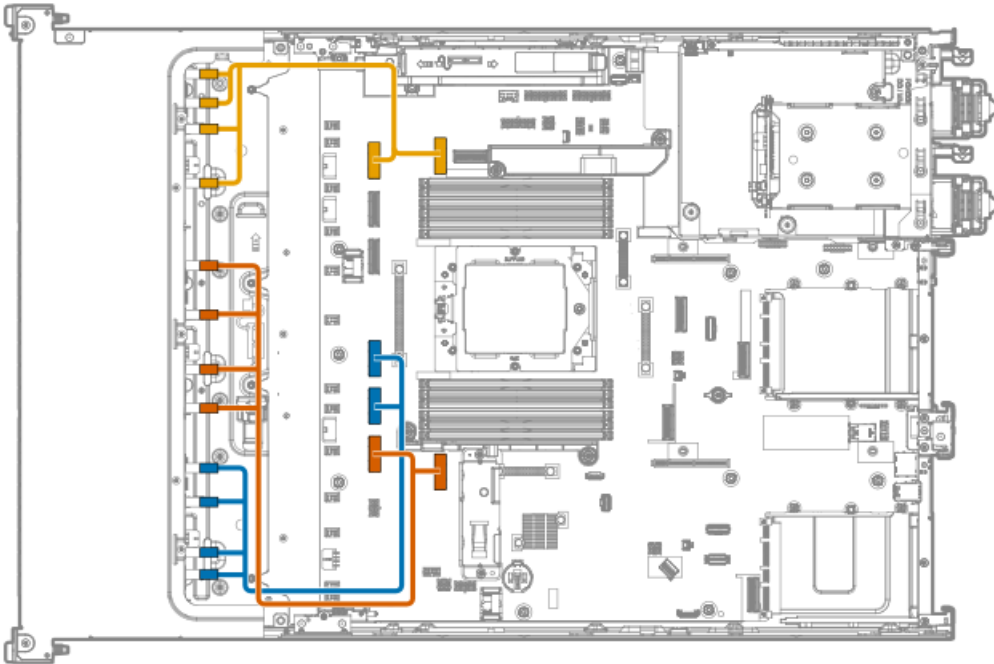
8/16 SFF drive: Onboard SATA cabling



Cable part number	Color	From	To
P57194-001 ¹	Blue	Box 2 port 1	NVMe/SATA port 1A
P57196-001 ¹	Orange	Box 3 port 1	NVMe/SATA port 2A

¹ Option kit: P57121-B21

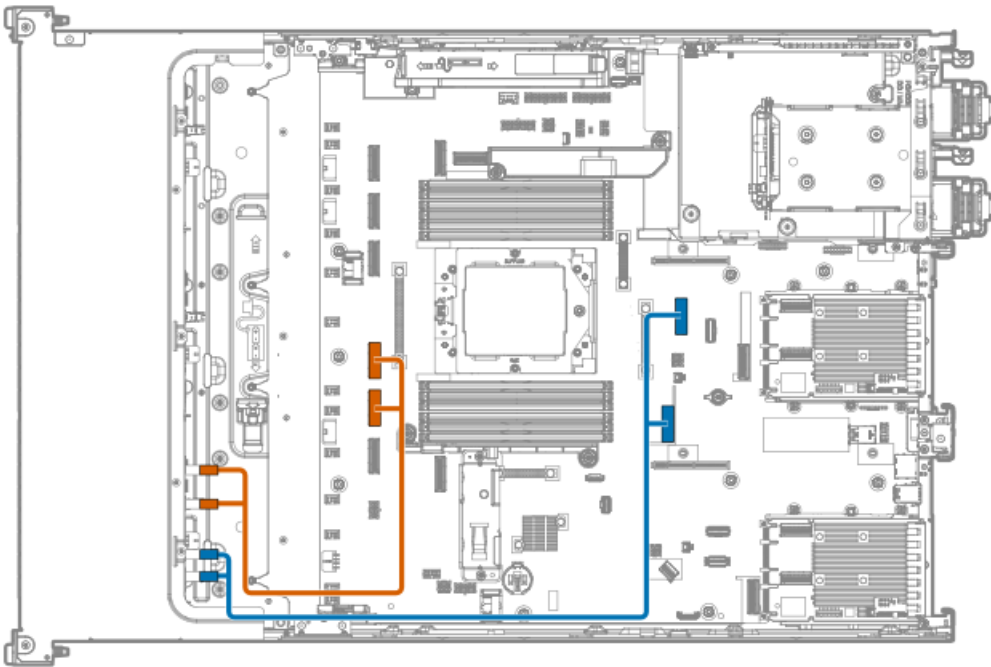
8/16/24 SFF x2 NVMe direct attach cabling



Cable part number	Color	From	To
P57224-001 ¹	Gold	Box 1 port 1 and port 2	NVMe port 7A
		Box 1 port 3 and port 4	NVMe port 8A
P57222-001 ¹	Orange	Box 2 port 1 and port 2	NVMe/SATA port 1A
		Box 2 port 3 and port 4	NVMe/SATA port 2A
P57220-001 ¹	Blue	Box 3 port 1 and port 2	NVMe port 3A
		Box 3 port 3 and port 4	NVMe port 4A

¹ Option kit: P57126-B21

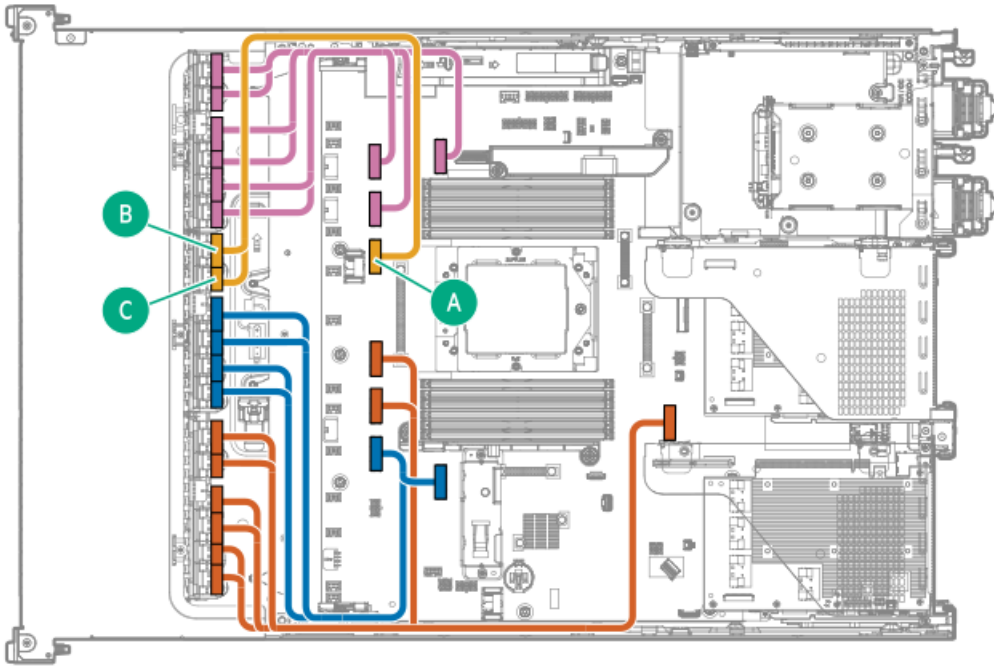
8 SFF x4 NVMe direct attach cabling



Cable part number	Color	From	To
P57205-001 ¹	Orange	Box 3 port 1 and port 2	NVMe port 3A
			NVMe port 4A
P57215-001 ¹	Blue	Box 3 port 3 and port 4	NVMe/SATA port 1B
			NVMe port 9A

¹ Option kit: P57124-B21

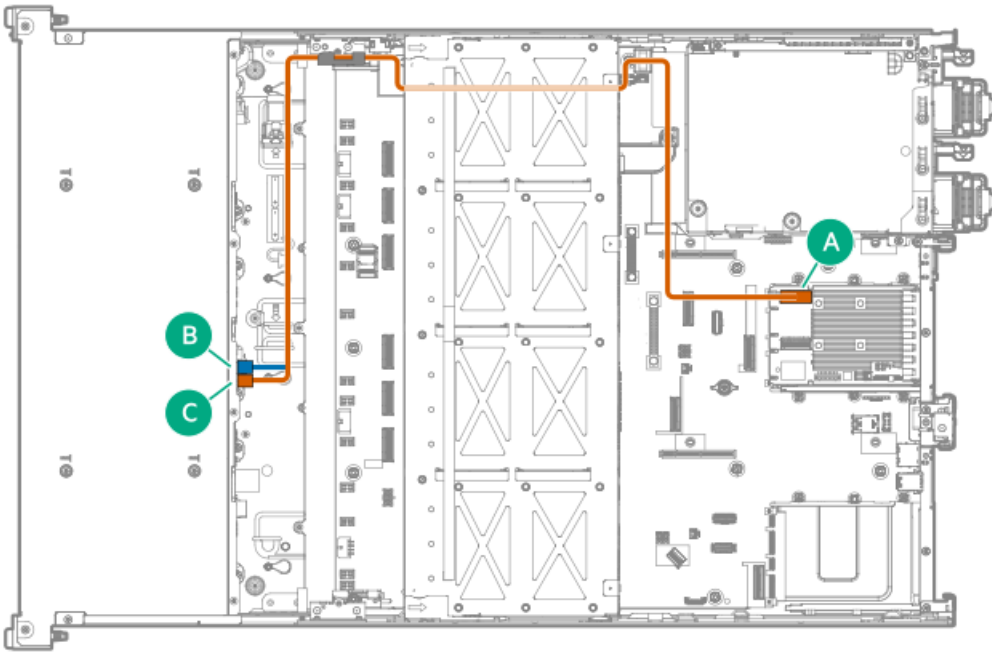
36 E3.S x2 NVMe direct attach cabling



Cable part number	Color	From	To
P59118-001 ¹	Orange	Box 3 ports 1-2	NVMe port 3A
		Box 3 ports 3-4	NVMe port 4A
		Box 3 ports 5-6	NVMe port 9A
P59120-001 ¹	Blue	Box 2 ports 3-4	NVMe/SATA port 1A
		Box 2 ports 5-6	NVMe/SATA port 2A
P59094-001 ¹	Gold	Box 2 ports 1-2	NVMe port 5A
P59121-001 ¹	Pink	Box 1 ports 1-2	NVMe port 8A
		Box 1 ports 3-4	NVMe port 7A
		Box 1 ports 5-6	NVMe port 6A

¹ Option kit: P55090-B21

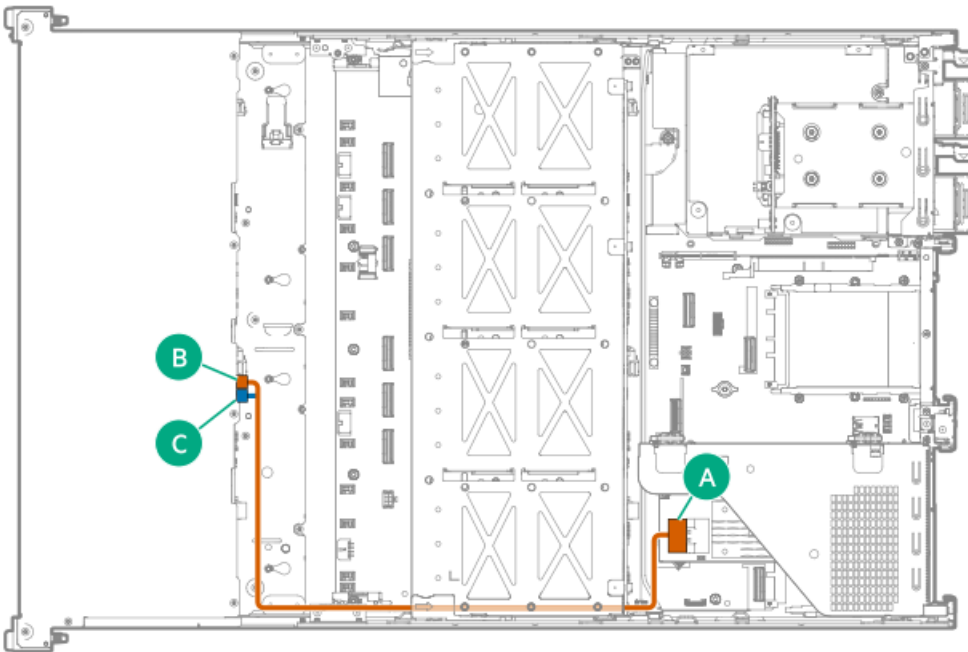
8 LFF SAS/SATA drive controller cable: Type-o controller in Slot 22



Cable part number	Color	From	To
P58101-001 ¹	Blue	Box 2 port 1	Type-o storage controller port 1 in Slot 22
	Orange	Box 3 port 1	

¹ Option kit: P59638-B21

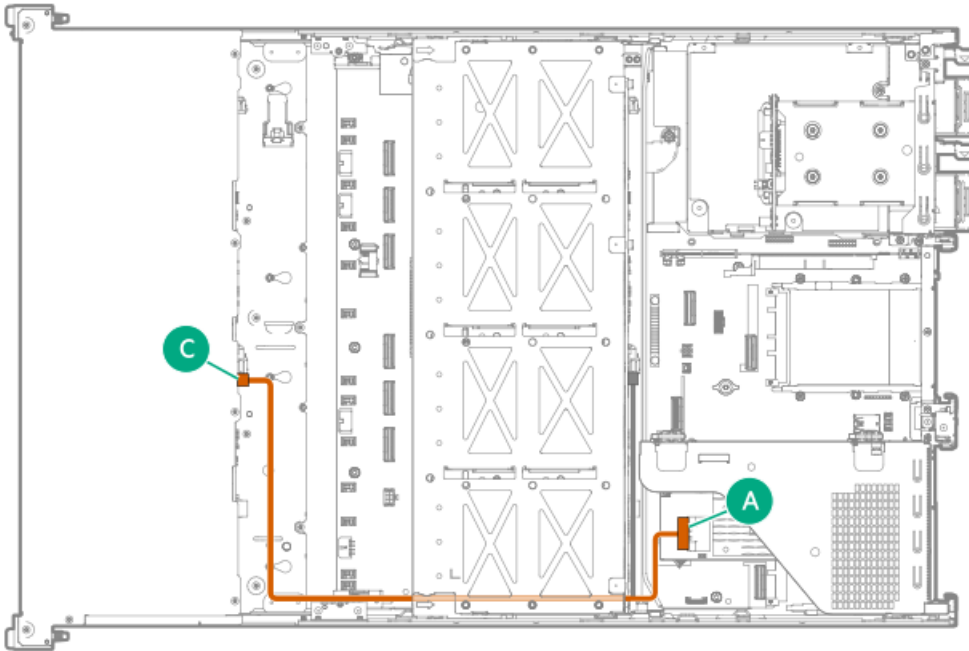
8 LFF SAS/SATA drive controller cabling: Type-p controller in the primary riser



Cable part number	Color	From	To
P58063-001 ¹	Orange	Box 2 port 1	Primary type-p storage controller port 1
	Blue	Box 3 port 1	

1 Option kit: P59254-B21

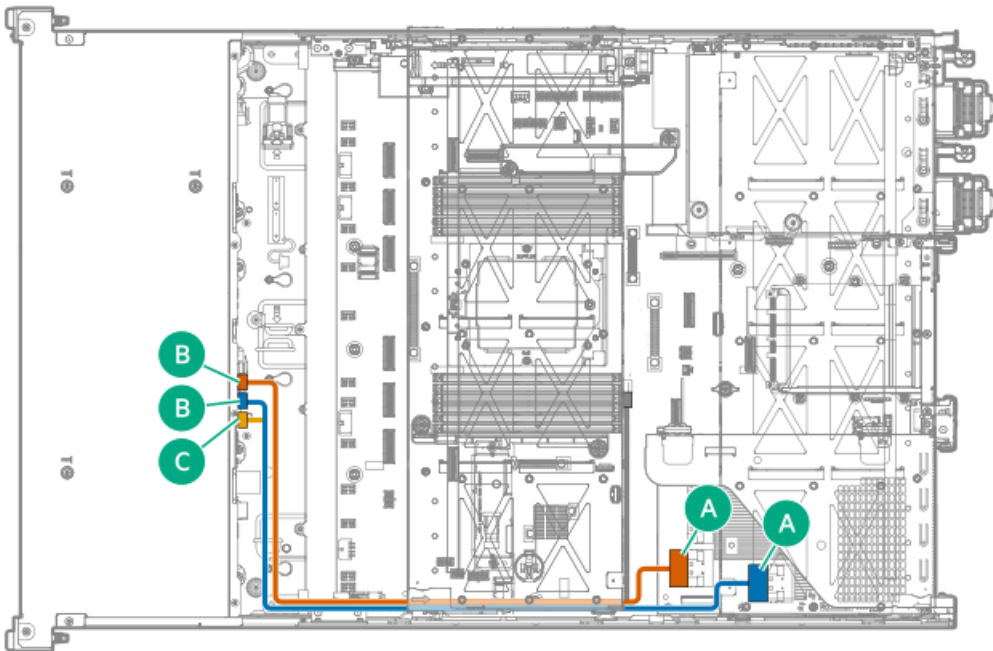
4 LFF Box 1 SAS/SATA drive controller cabling: Type-p controller in the primary riser



Cable part number	Color	From	To
P57188-001 1	Orange	Box 1 port 1	Primary type-p storage controller port 1

1 Option kit: P57114-B21

8/12 LFF SAS/SATA drive controller cabling: Type-p storage controller in the primary riser

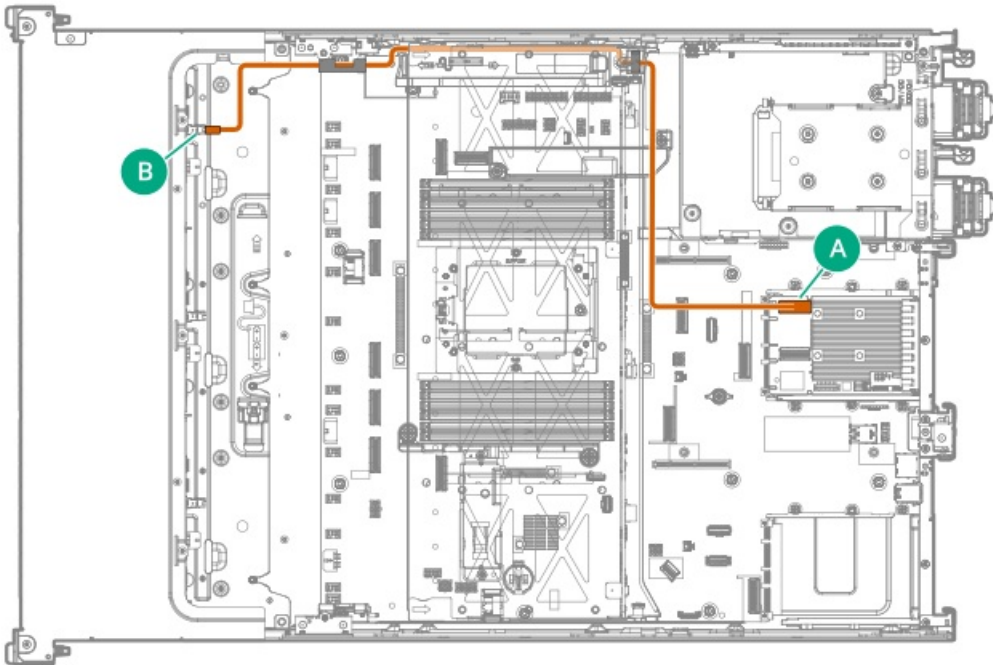


Cable part number	Color	From	To
P57188-001 ¹	Orange	Box 1 port 1	Primary type-p storage controller port 2
P58063-001 ²	Blue	Box 2 port 1	Primary type-p storage controller port 1
	Gold	Box 3 port 1	

¹ Option kit: P57114-B21

² Option kit: P59254-B21

8 SFF Box 1 SAS/SATA controller cabling: Type-o controller in the Slot 22

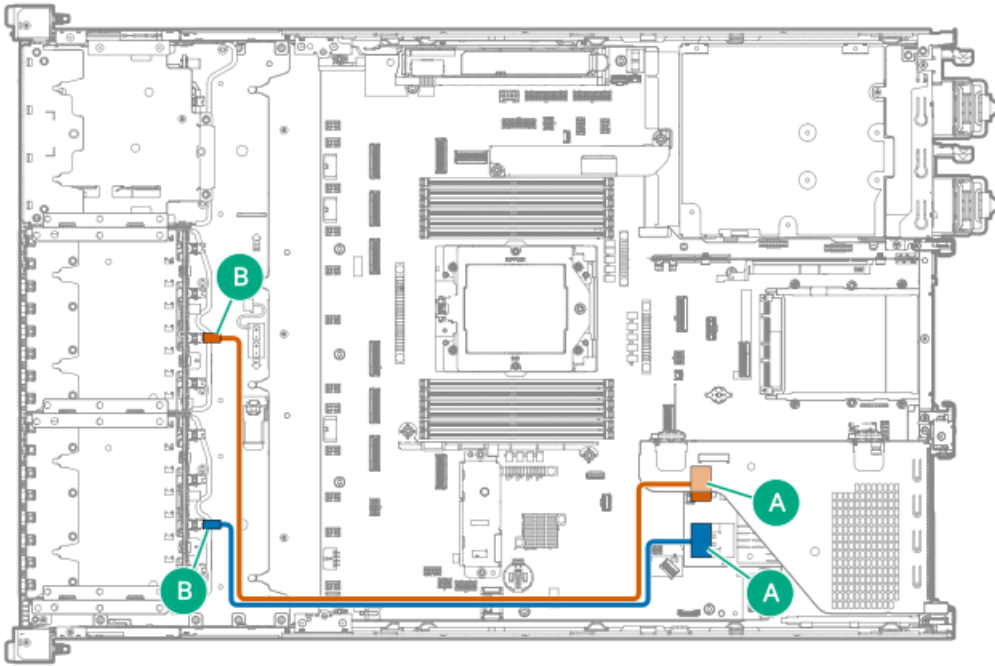


Cable part number	Color	From	To
P58016-001 ¹	Orange	Box 1 port 1	Type-o storage controller port 1 in Slot 22

¹ Option kit: P59637-B21

8/16 SFF SAS/SATA controller cabling: Type-p controller in the primary riser

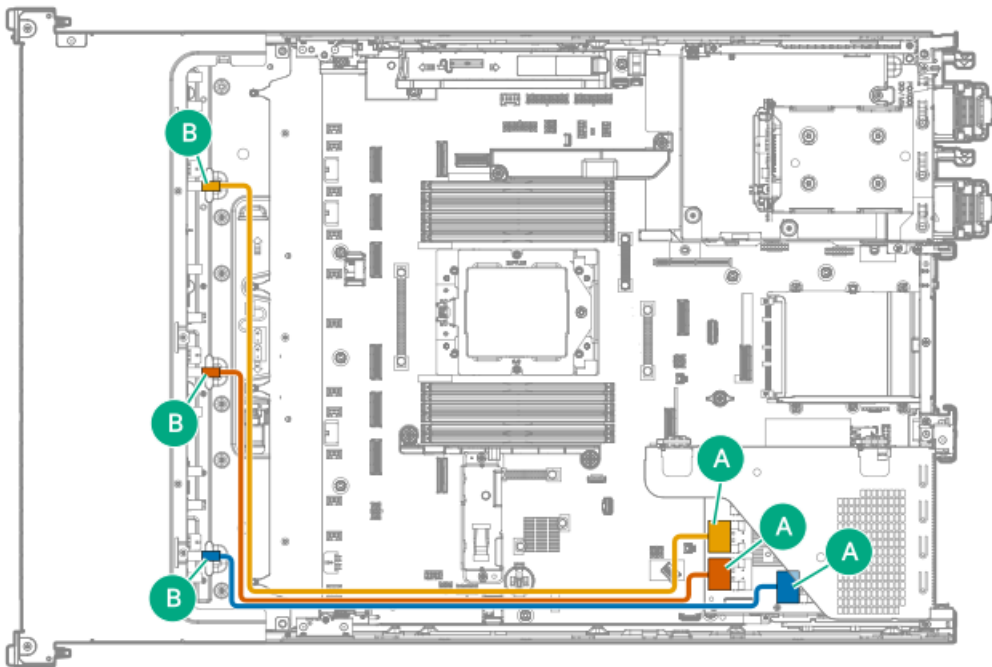




Cable part number	Color	From	To
P58020-001 ¹	Orange	Box 2 port 1	Primary type-p storage controller port 2
P58018-001 ¹	Blue	Box 3 port 1	Primary type-p storage controller port 1

¹ Option kit: P57123-B21

8/16/24 SFF SAS/SATA controller cabling: Type-p controller in the primary riser

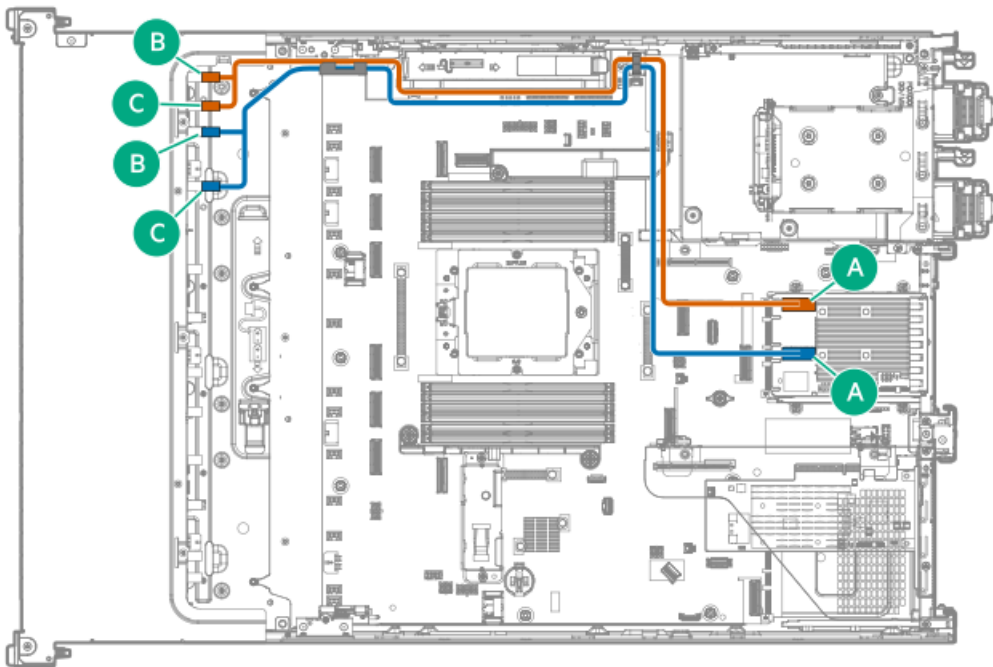


Cable part number	Color	From	To
P58019-001 ¹	Gold	Box 1 port 1	Primary type-p storage controller port 3
P58020-001 ²	Orange	Box 2 port 1	Primary type-p storage controller port 2
P58018-001 ²	Blue	Box 3 port 1	Primary type-p storage controller port 1

¹ Option kit: P57122-B21

² Option kit: P57123-B21

8 SFF Box 1 x2 NVMe storage controller cabling: Type-o controller in Slot 22

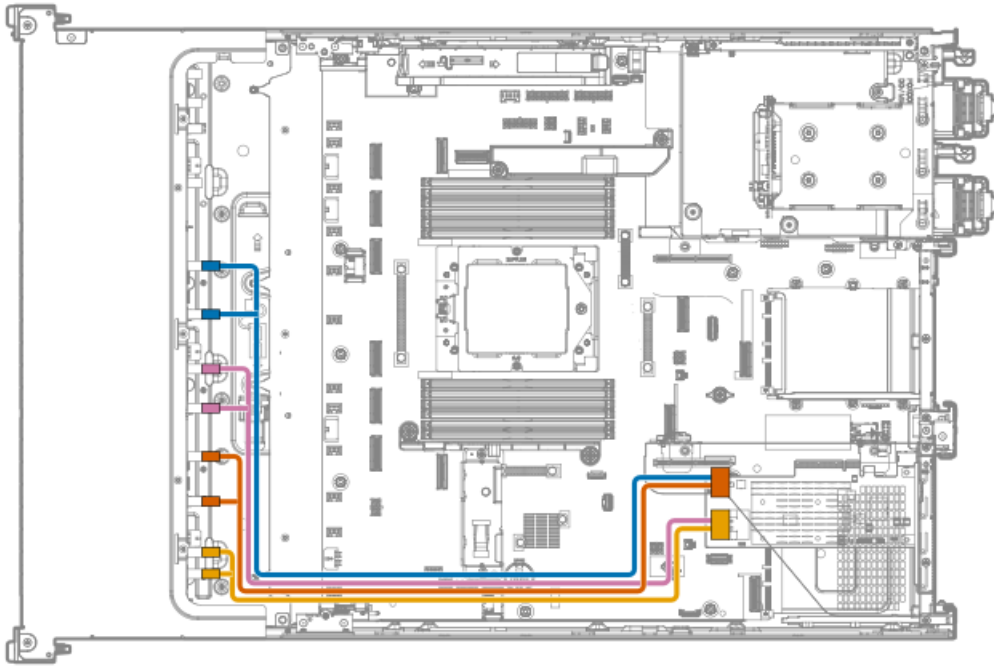


Cable part number	Color	From	To
P58075-001 ¹	Orange	Box 1 port 3 and port 4	Type-o controller port 2 in Slot 22
P58076-001 ¹	Blue	Box 1 port 1 and port 2	Type-o storage controller port 1 in Slot 22

¹ Option kit: P57129-B21

8/16 SFF x2 NVMe storage controller cabling: Type-p controller in the primary riser

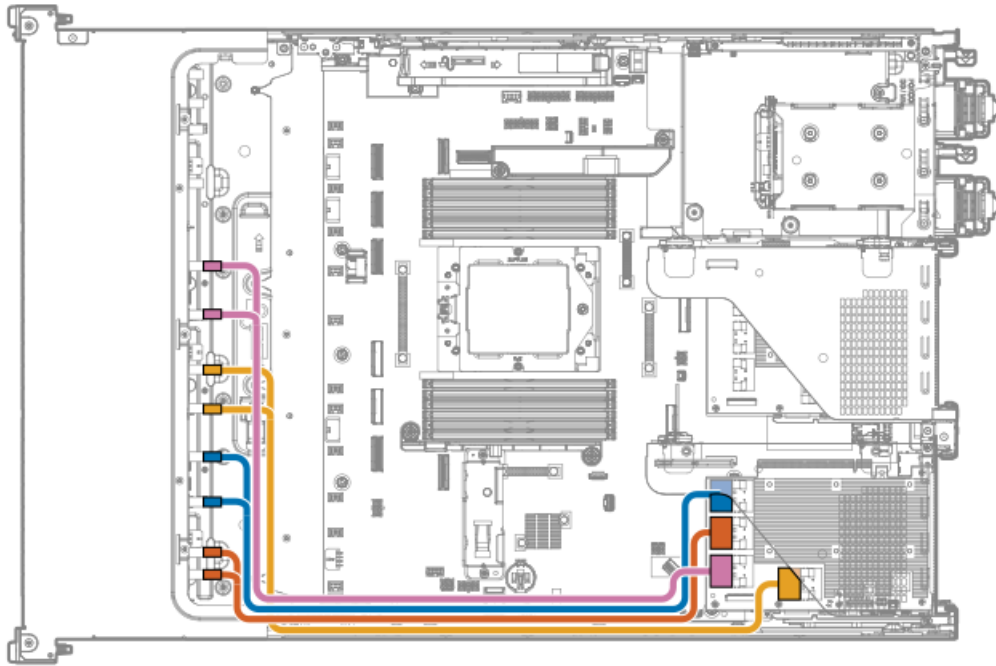
- MR416i-p controller



Cable spare part	Color	From	To
P58123-001 ¹	Blue	Box 2 port 1 and port 2	Primary type-p storage controller port 2
	Pink	Box 2 port 3 and port 4	Primary type-p storage controller port 1
P58127-001 ¹	Orange	Box 3 port 1 and port 2	Primary type-p storage controller port 2
	Gold	Box 3 port 3 and port 4	Primary type-p storage controller port 1

¹ Option kit: P57129-B21

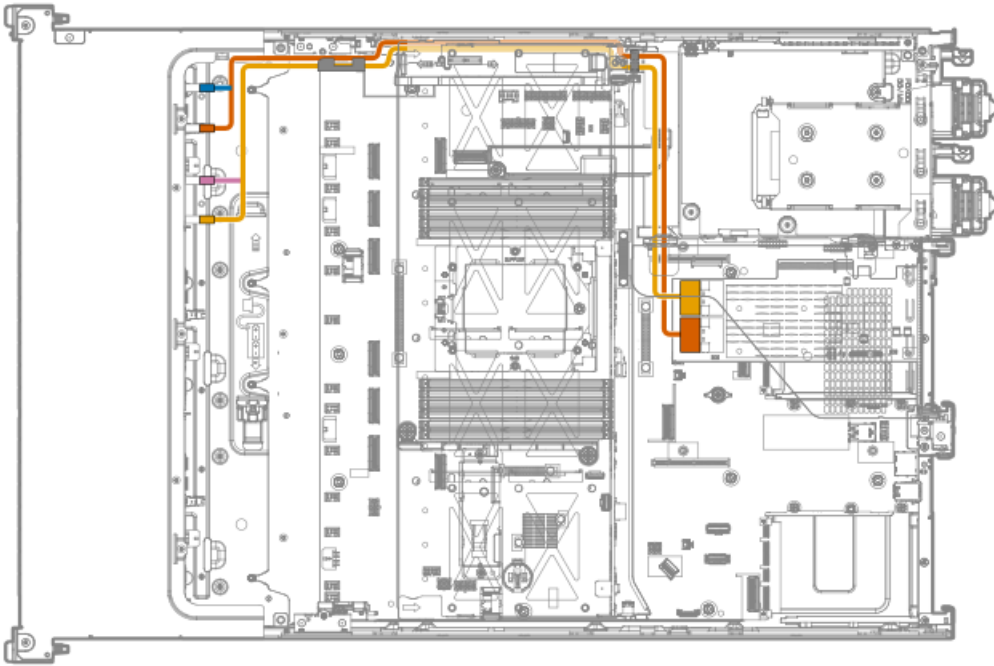
- SR932i-p controller



Cable spare part	Color	From	To
P58127-001 ¹	Blue	Box 3 port 1 and port 2	Primary type-p storage controller port 4
	Orange	Box 3 port 3 and port 4	Primary type-p storage controller port 3
P58123-001 ¹	Pink	Box 2 port 1 and port 2	Primary type-p storage controller port 2
	Gold	Box 2 port 3 and port 4	Primary type-p storage controller port 1

¹ Option kit: P57129-B21

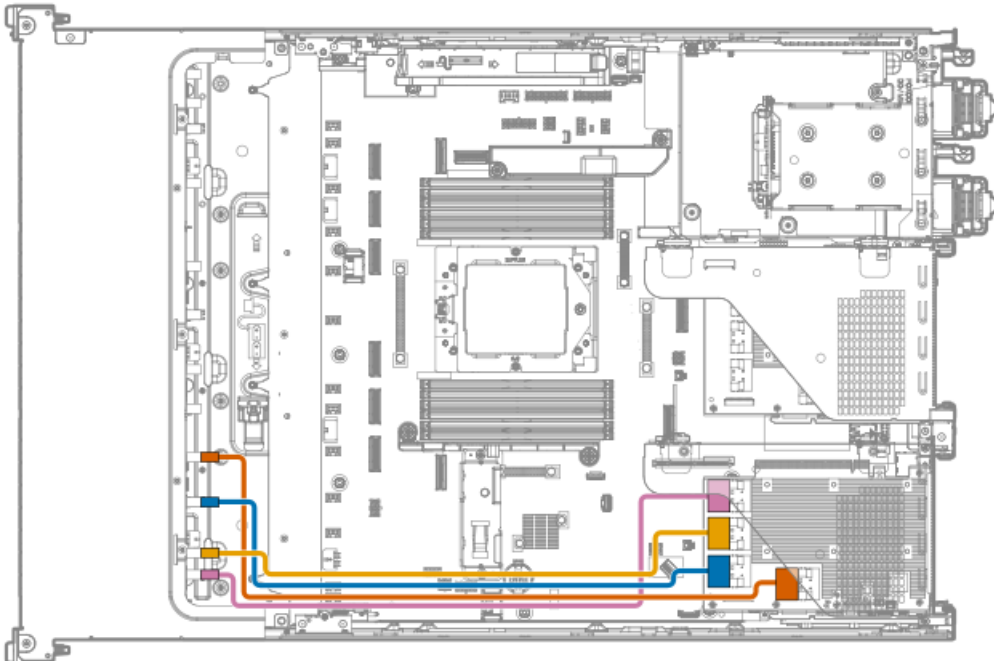
8 SFF Box 1 x2 NVMe storage controller cabling: Type-p controller in the secondary riser



Cable part number	Color	From	To
P58124-001 ¹	Blue	Box 1 port 1	Secondary type-p storage controller port 1
	Orange	Box 1 port 2	
	Pink	Box 1 port 3	Secondary type-p storage controller port 2
	Gold	Box 1 port 4	

¹ Option kit: P57129-B21

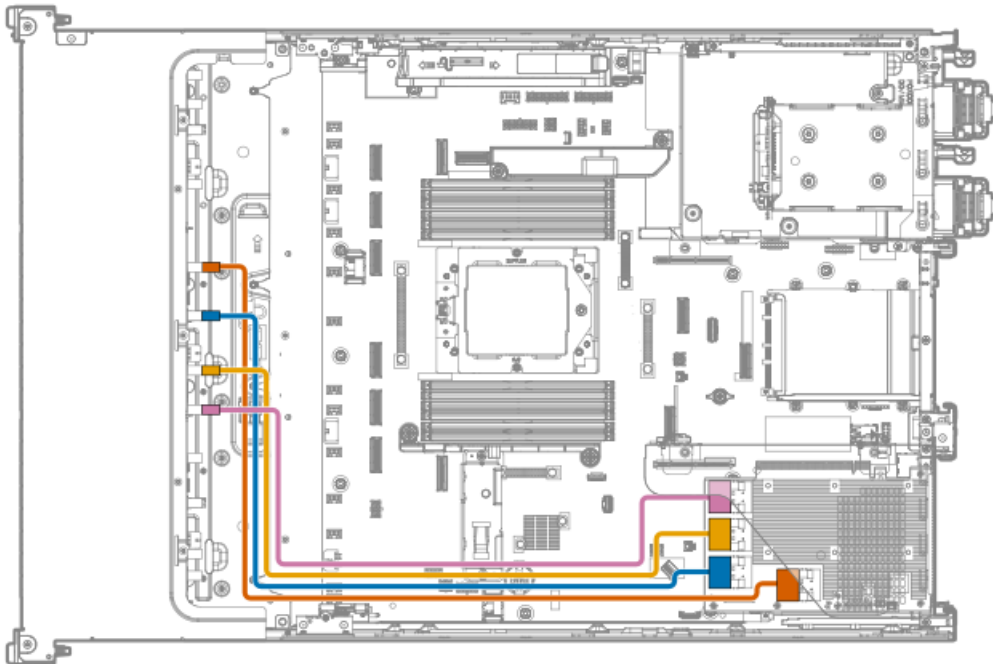
8 SFF Box 3 x4 NVMe storage controller cabling: Type-p controller in the primary riser



Cable part number	Color	From	To
P58120-001 ¹	Orange	Box 3 port 1	Primary type-p storage controller port 1
	Blue	Box 3 port 2	Primary type-p storage controller port 2
	Gold	Box 3 port 3	Primary type-p storage controller port 3
	Pink	Box 3 port 4	Primary type-p storage controller port 4

¹ Option kit: P57127-B21; P57128-B21

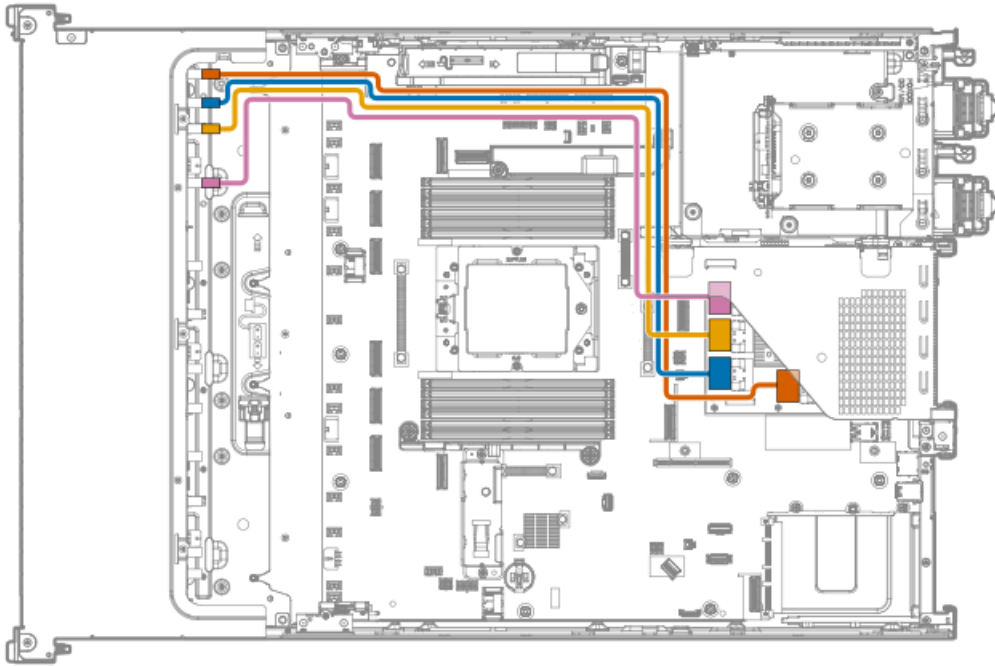
8 SFF Box 2 x4 NVMe storage controller cabling: Type-p controller in the primary riser



Cable part number	Color	From	To
P58122-001 ¹	Orange	Box 2 port 1	Primary type-p storage controller port 1
	Blue	Box 2 port 2	Primary type-p storage controller port 2
	Gold	Box 2 port 3	Primary type-p storage controller port 3
	Pink	Box 2 port 4	Primary type-p storage controller port 4

¹ Option kit: P57128-B21

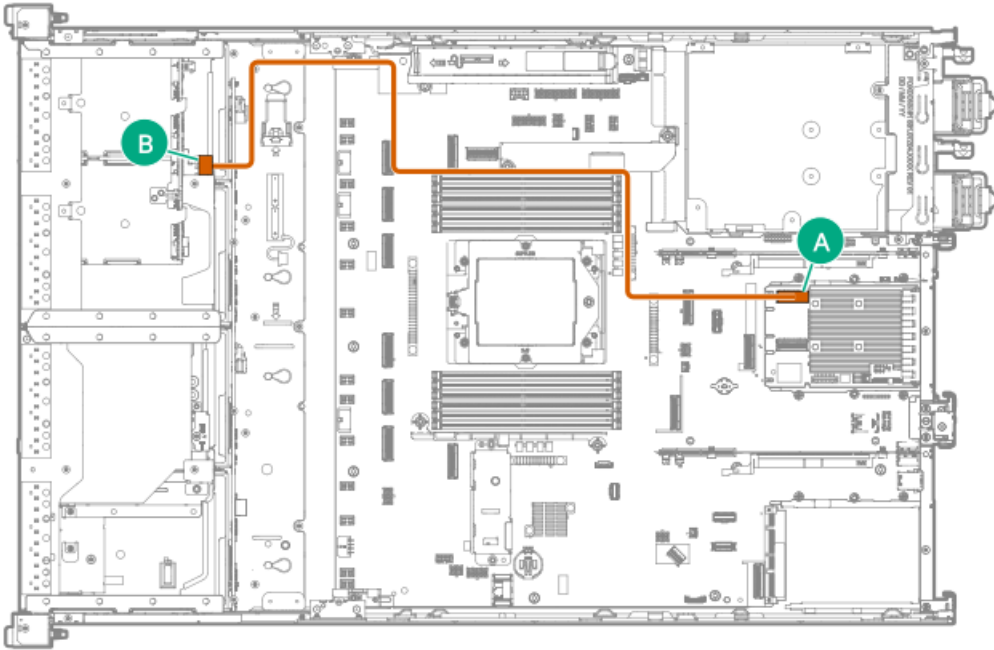
8 SFF Box 1 x4 NVMe storage controller cabling: Type-p controller in the secondary riser



Cable part number	Color	From	To
P58114-001 ¹	Orange	Box 1 port 1	Secondary type-p storage controller port 1
	Blue	Box 1 port 2	Secondary type-p storage controller port 2
	Gold	Box 1 port 3	Secondary type-p storage controller port 3
	Pink	Box 1 port 4	Secondary type-p storage controller port 4

¹ Option kit: P57128-B21

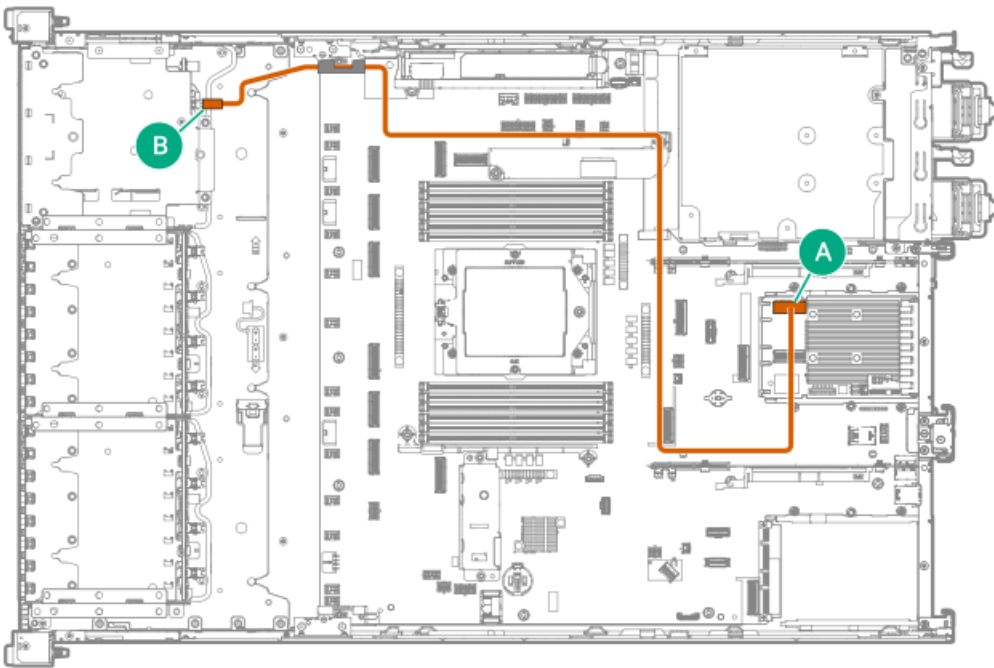
Front 2 SFF side-by-side drive controller cabling: Type-o controller



Cable part number	Color	From	To
P58145-001 ¹	Orange	Box 1 port 1	Type-o storage controller port 1 in Slot 22

¹ Option kit: P57111-B21

Front 2 SFF stacked drive controller cabling: Type-o controller

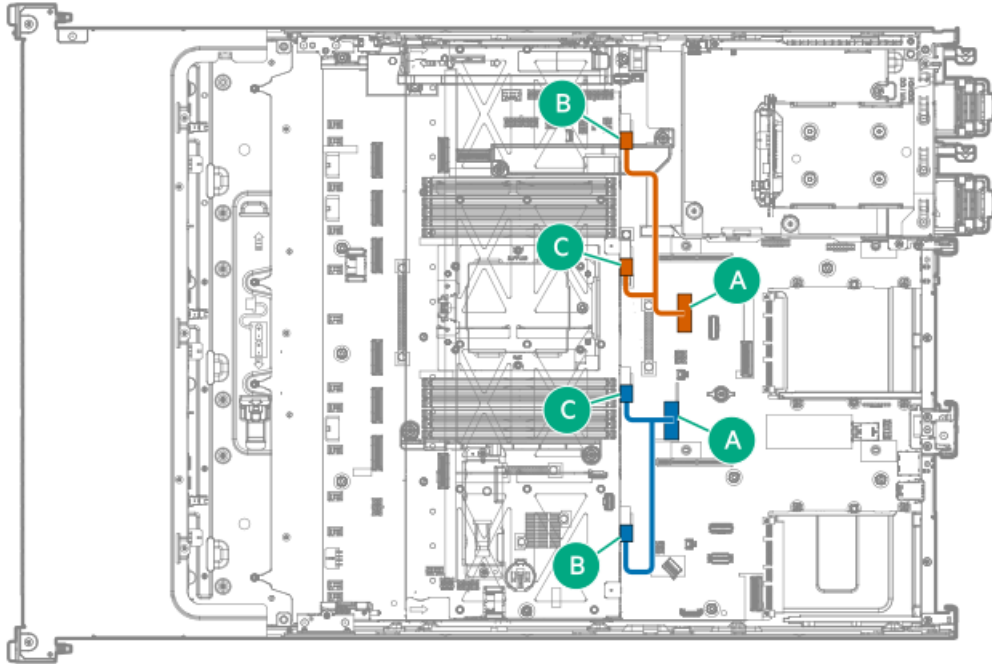


Cable part number	Color	From	To
P58145-001 ¹	Orange	Box 1 port 1	Type-o storage controller port 1 in Slot 22



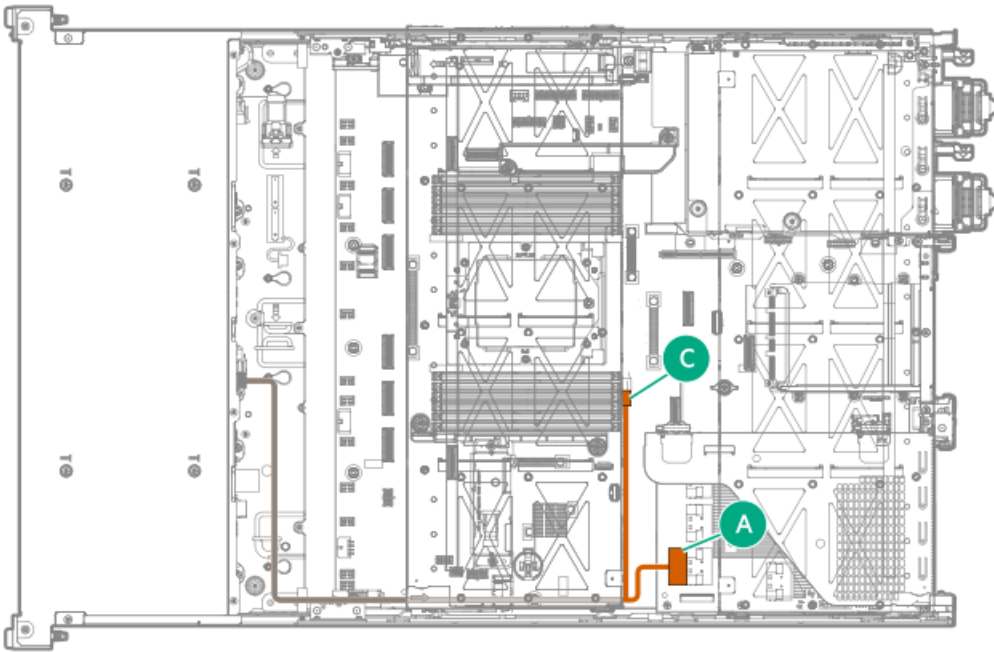
Midplane drive storage controller cabling

8 SFF midplane x2 NVME drive direct attach



Cable part number	Color	From	To
P57207-001 ¹	Orange	Box 7 port 1 and port 2	NVMe/SATA port 1B
P59467-001 ¹	Blue	Box 7 port 3 and port 4	NVMe port 9A

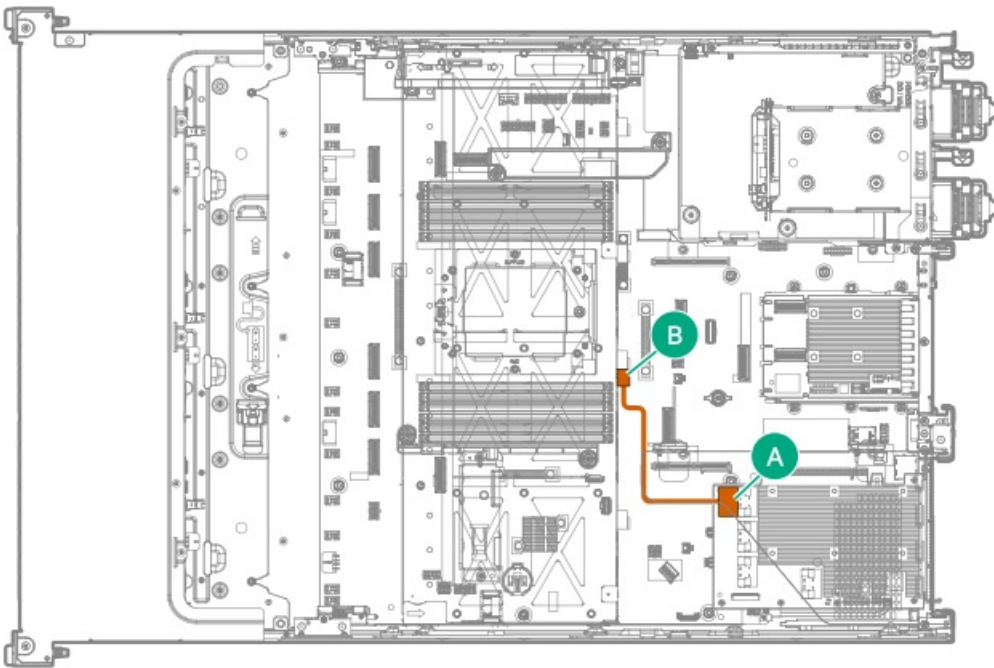
4 LFF x1 SAS midplane drive controller cabling: type-p storage controller in the primary riser



Cable part number	Color	From	To
P57188-001 ¹	Orange	Box 7 port 1	Primary type-p storage controller port 2

¹ P57114-B21

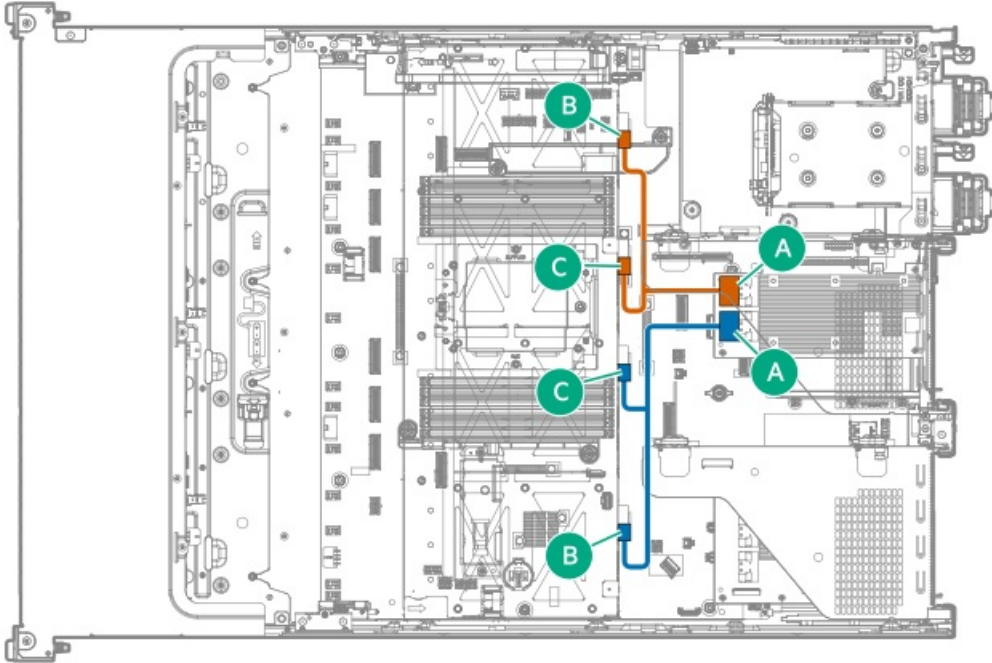
8 SFF midplane SAS x1 NVMe drive controller cabling: type-p storage controller



Cable part number	Color	From	To
P58089-001 ¹	Orange	Box 7 port 1	Primary type-p storage controller port 4

¹ Option kit: P57108-B21

8 SFF midplane x4 NVMe storage controller cabling: type-p storage controller in the secondary riser



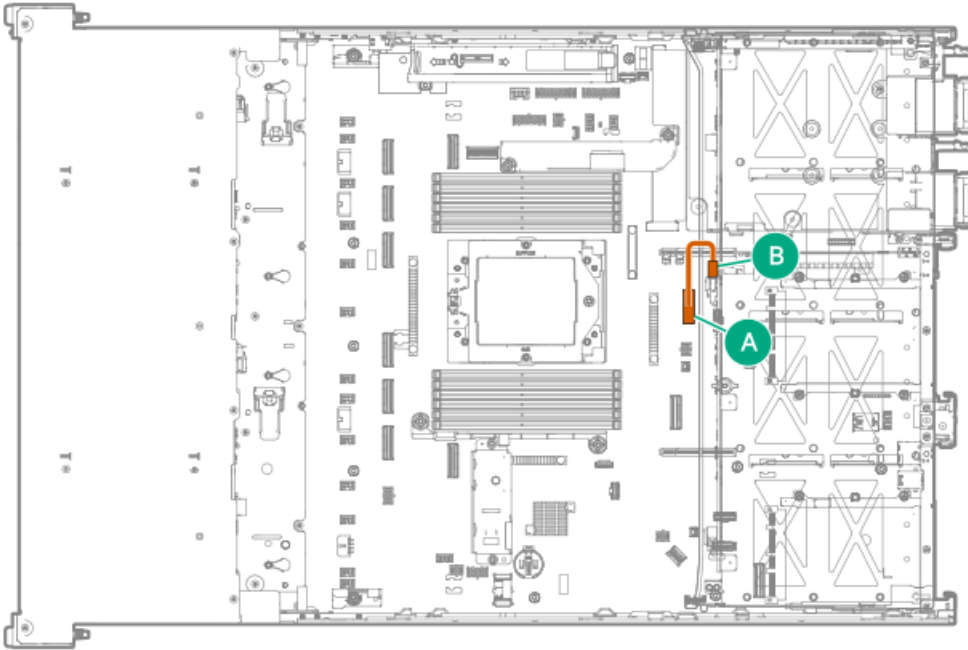
Cable spare part	Color	From	To
P58095-001 ¹	Orange	Box 7 port 1 and port 2	Primary type-p storage controller port 2
P58094-001 ²	Blue	Box 7 port 3 and port 4	Primary type-p storage controller port 1

¹ P57109-B21

² P57109-B21

Rear drive storage controller cabling

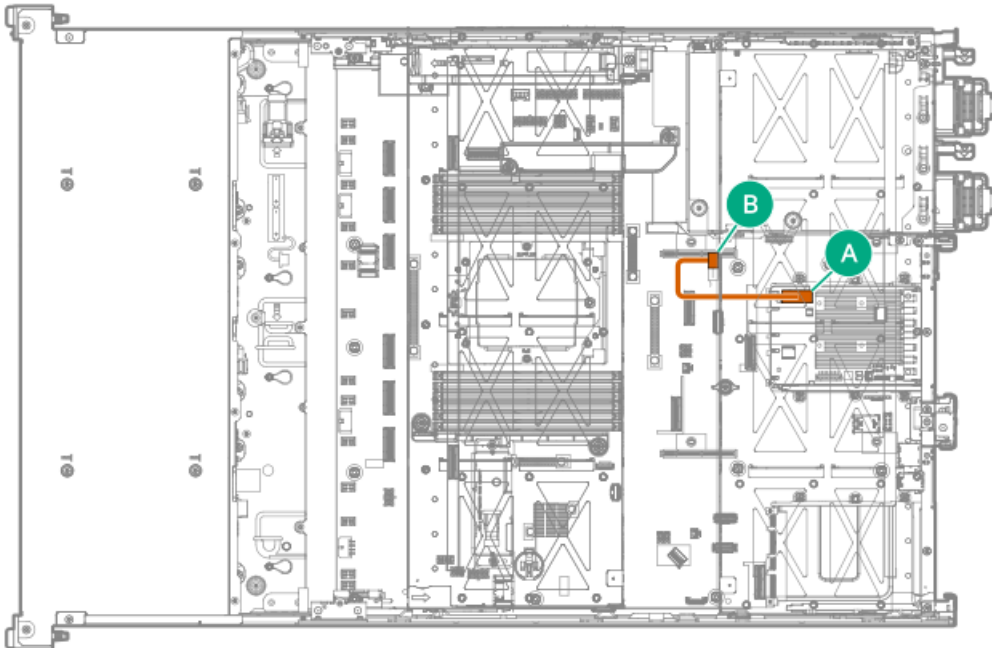
Rear 4 LFF drive: onboard SATA cabling



Cable part number	Color	From	To
P57184-001 ¹	Orange	Box 8 port 1	NVMe/SATA port 1B

¹ P57113-B21

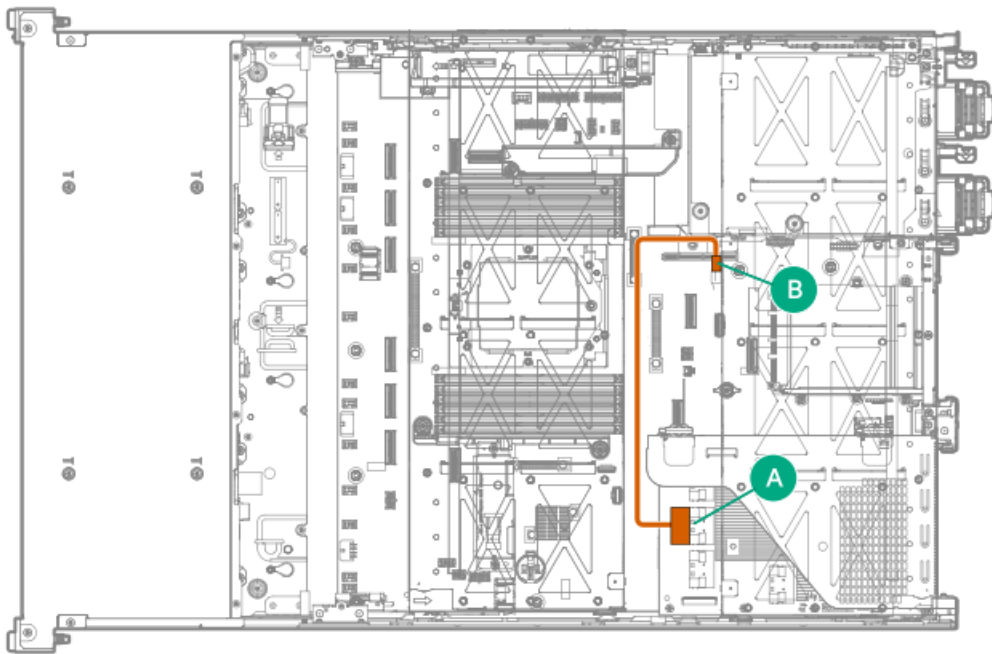
Rear 4 LFF x1 SAS drive controller cabling: type-o storage controller in Slot 22



Cable part number	Color	From	To
P58098-001 ¹	Orange	Box 8 port 1	type-o storage controller port 1 in Slot 21

¹ P57113-B21

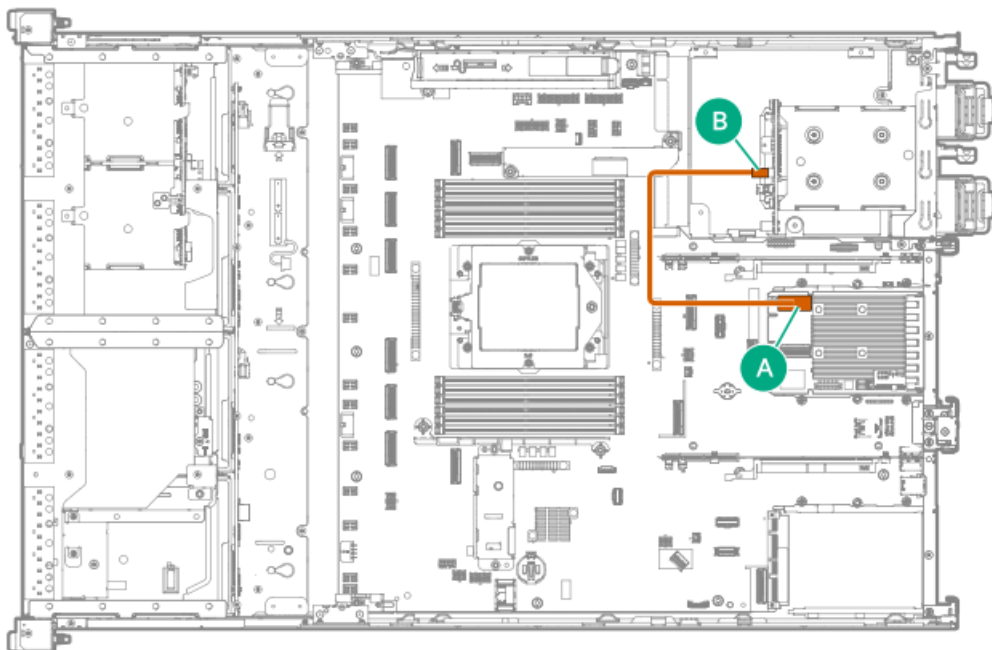
Rear 4 LFF x1 SAS drive controller cabling: type-p storage controller in the primary riser



Cable part number	Color	From	To
P57183-001 ¹	Orange	Box 8 port 1	Primary SR932i-p storage controller port 3

¹ P57113-B21

Rear 2 SFF SAS x4 NVMe stacked drive controller cabling: type-o storage controller



Cable part number	Color	From	To
P58149-001 ¹	Orange	Box 8 port 1	type-o storage controller port 1 in Slot 22

Drive power cabling

Drive power cables are either preinstalled in the server or structured under the relevant storage controller cable option kit.

Subtopics

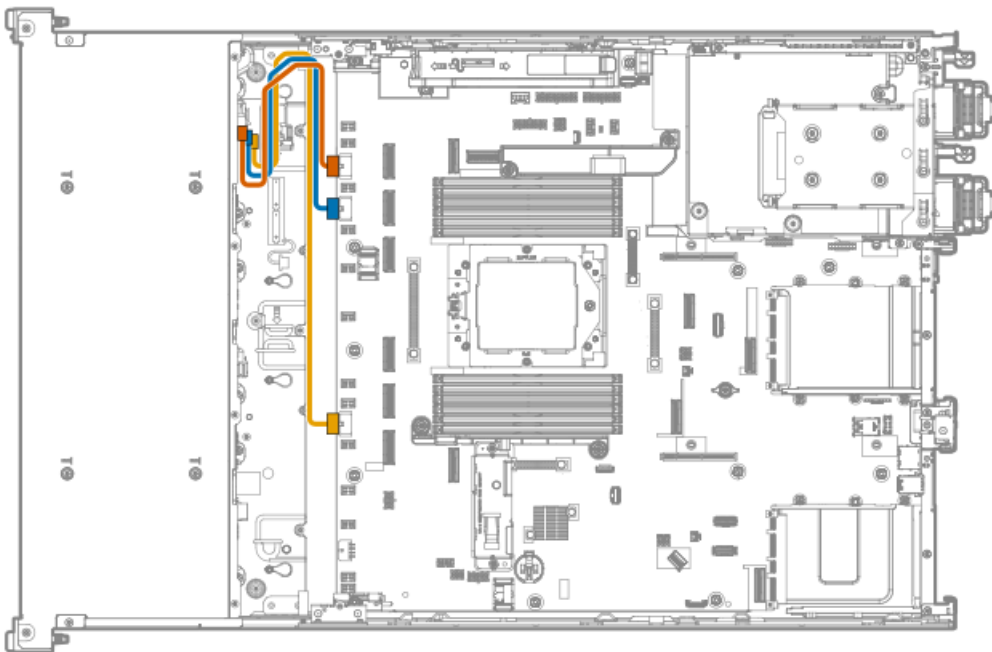
[Front drive power cabling](#)

[Midplane drive power cabling](#)

[Rear drive power cabling](#)

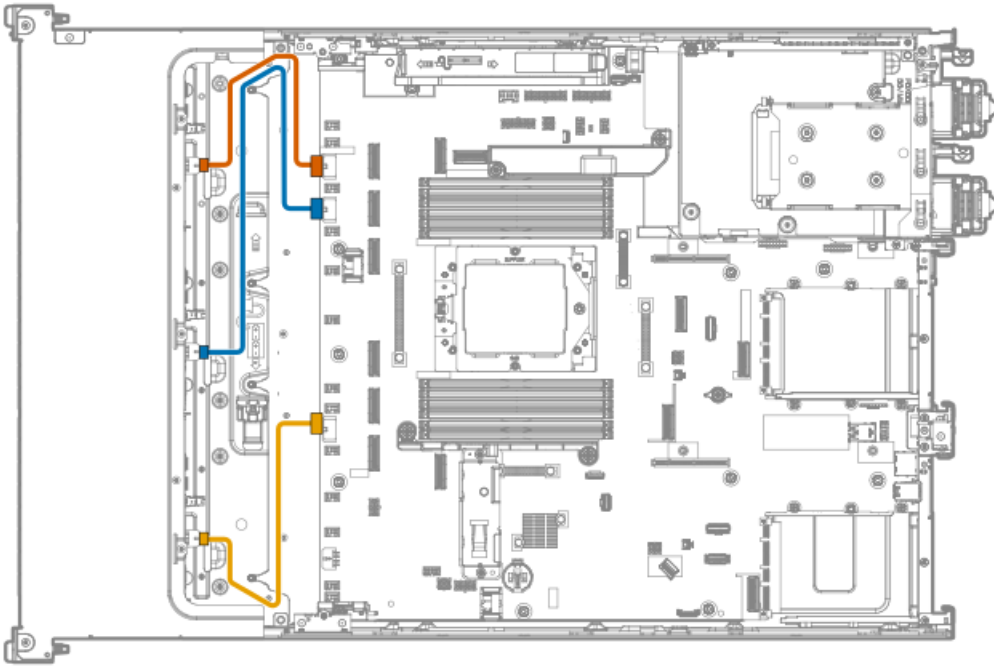
Front drive power cabling

8/12 LFF drive power cabling



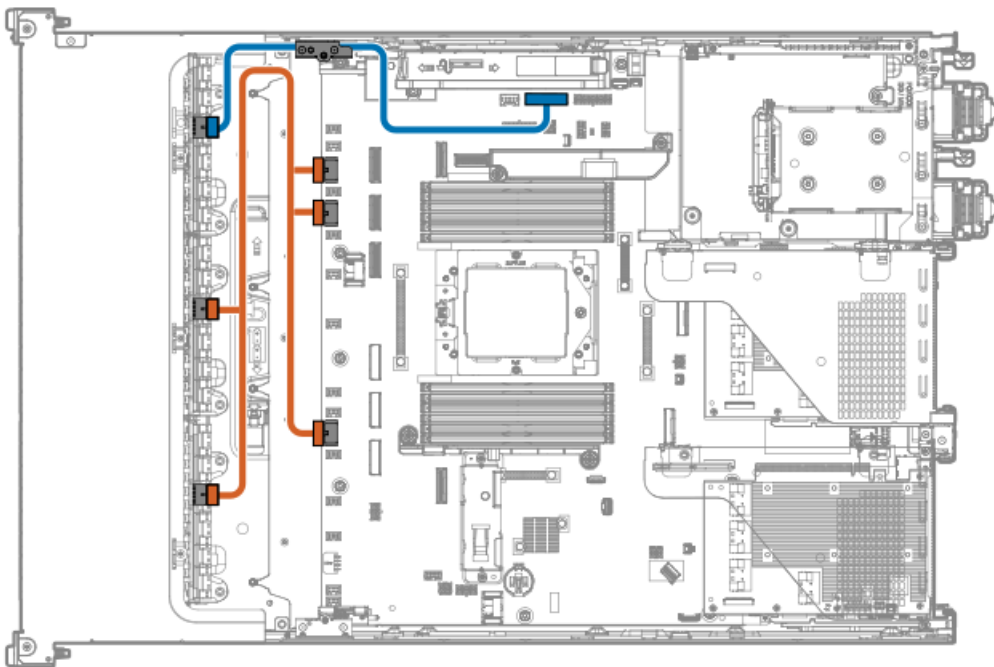
Cable part number	Color	From	To
P58035-001	Orange	Box 1 power connector	Front drive backplane power connector 1
P58036-001	Blue	Box 2 power connector	Front drive backplane power connector 2
P58867-001	Yellow	Box 3 power connector	Front drive backplane power connector 3

8/16/24 SFF drive power cabling



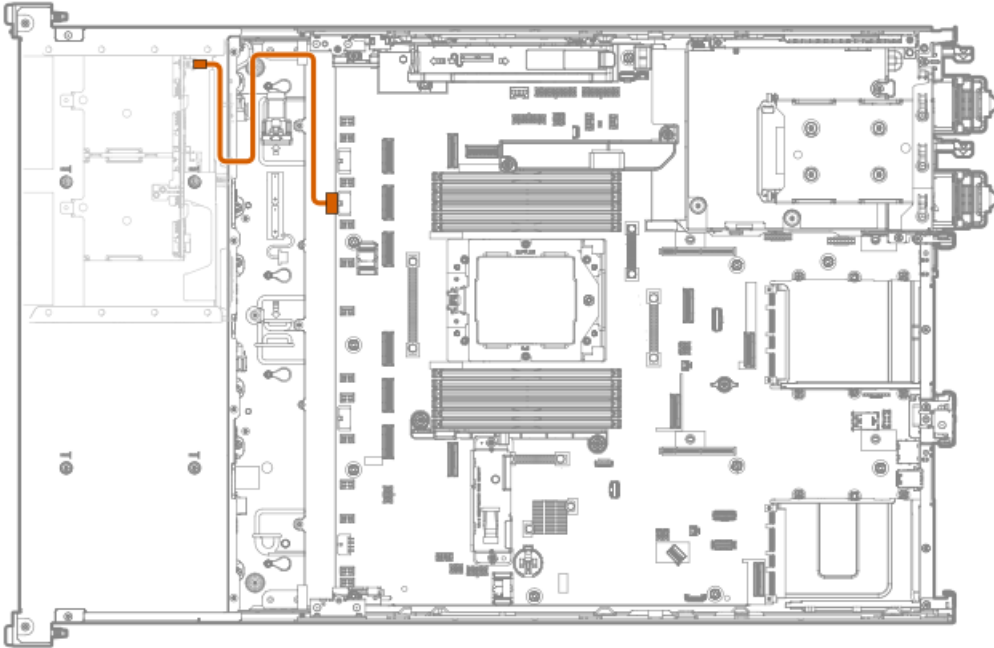
Cable part number	Color	From	To
P57198-001	Orange	Box 1 power connector	Front drive backplane power connector 1
P58023-001	Blue	Box 2 power connector	Front drive backplane power connector 2
P57209-001	Gold	Box 3 power connector	Front drive backplane power connector 3

36 E3.S drive power cabling



Cable part number	Color	From	To
P58822-001	Orange	Box 2–3 power connectors	Front drive backplane power connectors 1–3
P59122-001	Blue	Box 1 power connector	Drive backplane / Graphics card power connector A (J9017)

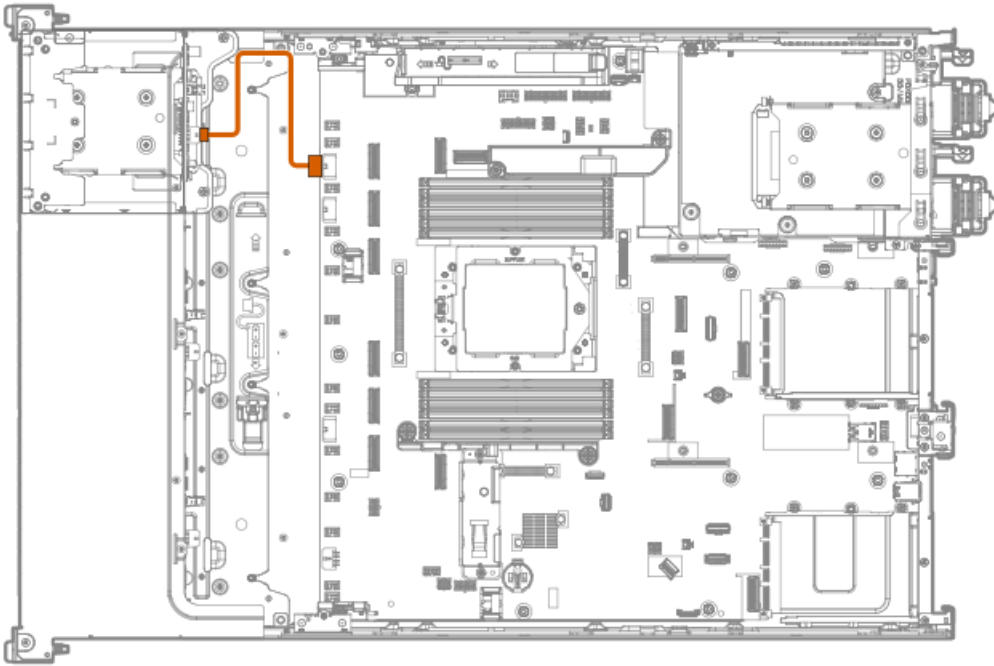
Front 2 SFF side-by-side drive power cabling



Cable part number	Color	From	To
P58036-001	Orange	2 SFF side-by-side drive backplane power connector	Front drive backplane power connector 2

Front 2 SFF stacked drive power cabling

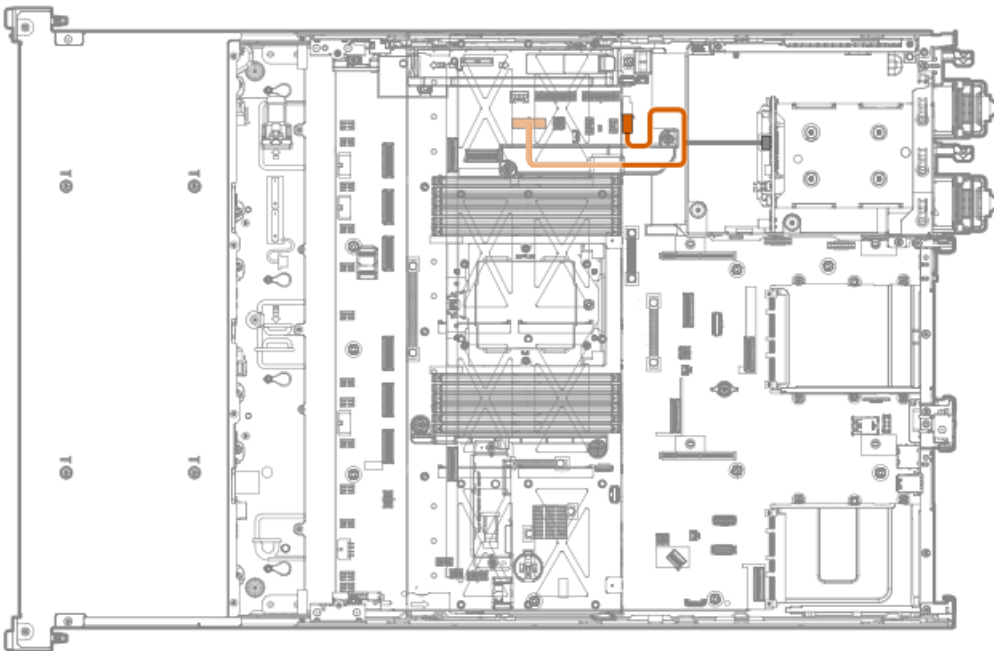




Cable part number	Color	From	To
P57198-001	Orange	Box 1 power connector	Front drive backplane power connector 1

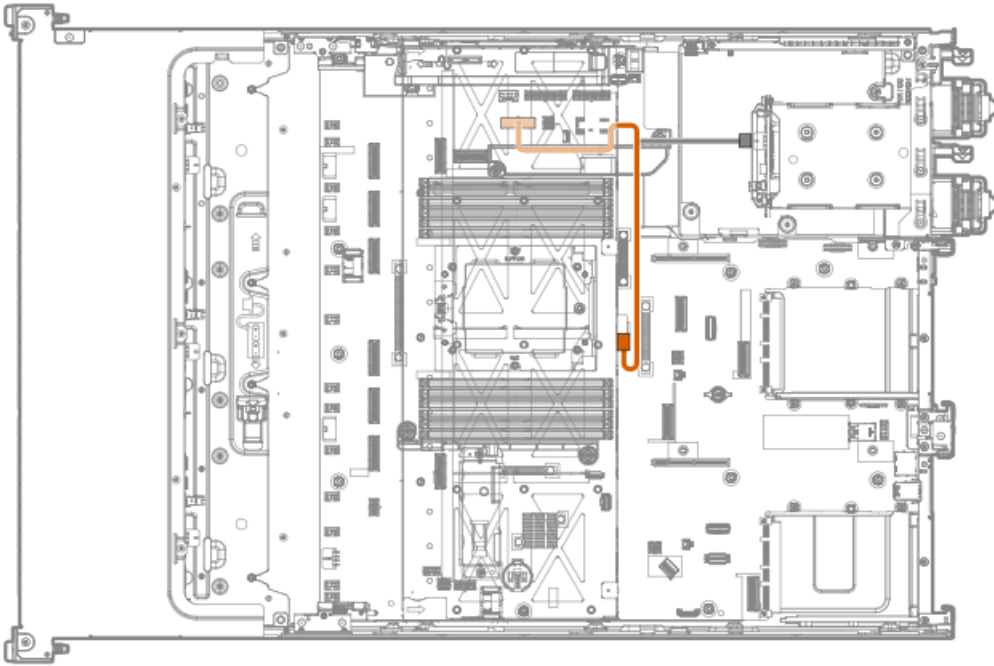
Midplane drive power cabling

4 LFF midplane drive power cabling



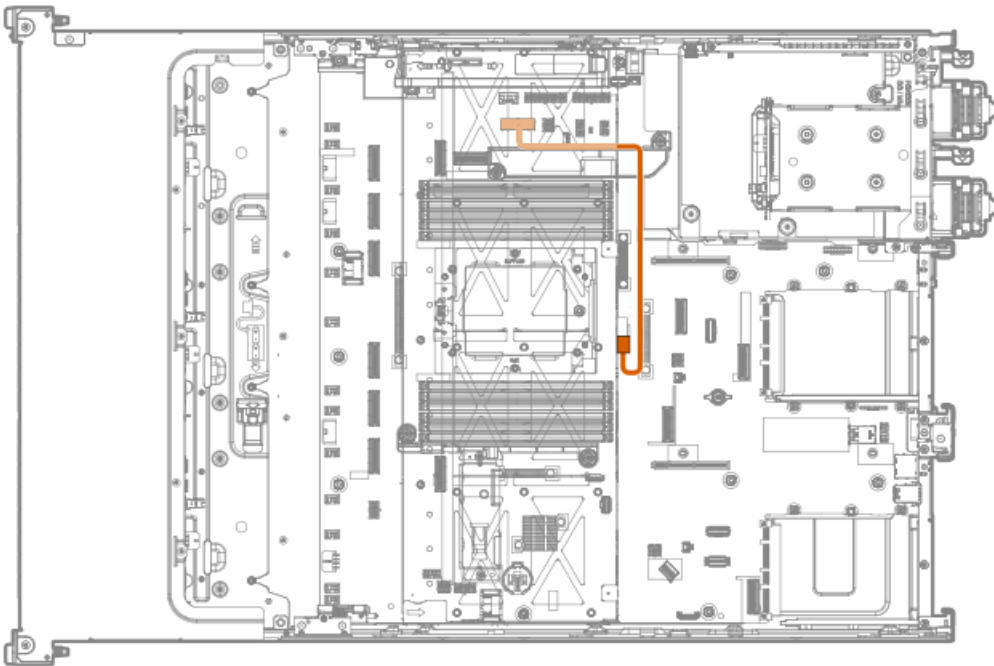
Cable spare part	Color	From	To
P57182-001	Orange	Box 7 power connector	Rear drive backplane / Graphics card power connector C (J9019)

8 SFF midplane SAS/NVMe x1 drive power cabling



Cable part number	Color	From	To
P57177-001	Orange	Box 7 power connector	Rear drive backplane / Graphics card power connector C (J9019)

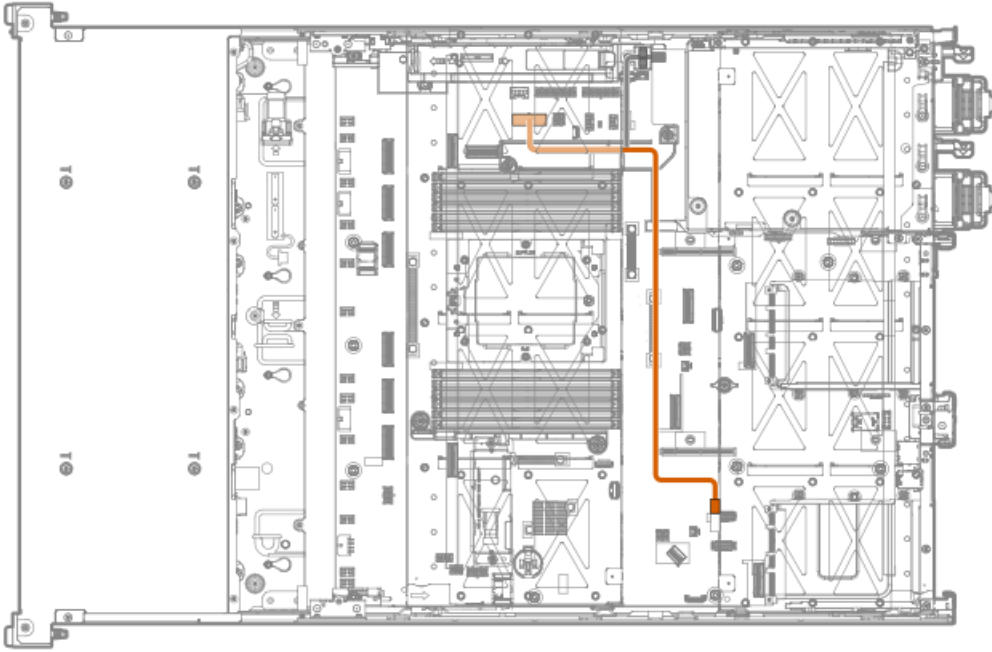
8 SFF midplane NVMe x4 power cabling



Cable part number	Color	From	To
P57201-001	Orange	Box 7 power connector	Rear drive backplane / Graphics card power connector C (J9019)

Rear drive power cabling

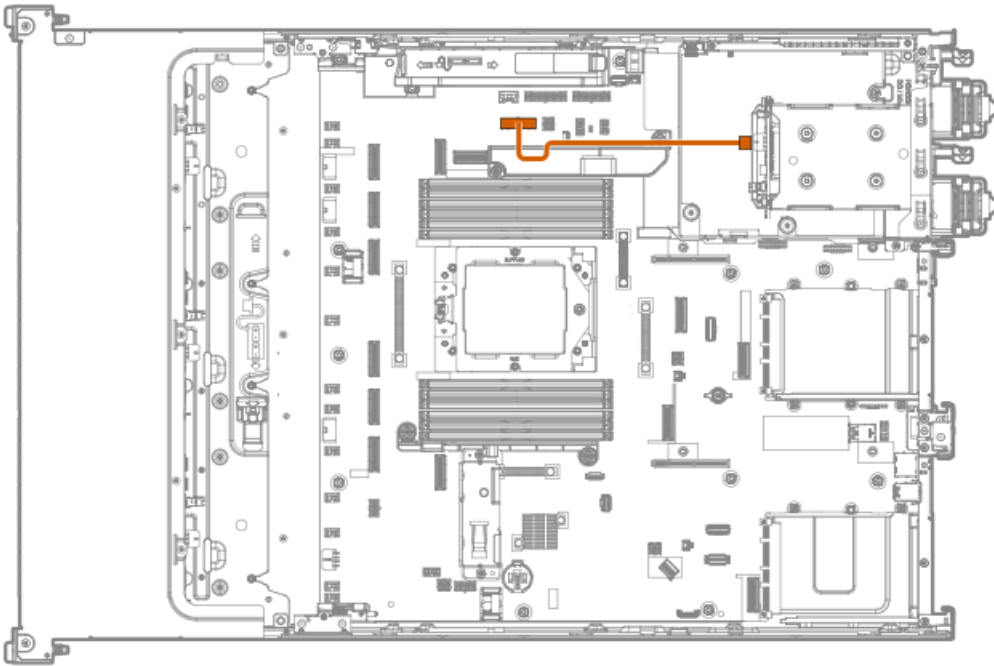
Rear 4 LFF drive power cabling



Cable part number	Color	From	To
P57185-001	Orange	Box 8 power connector	Rear drive backplane / Graphics card power connector C (J9019)

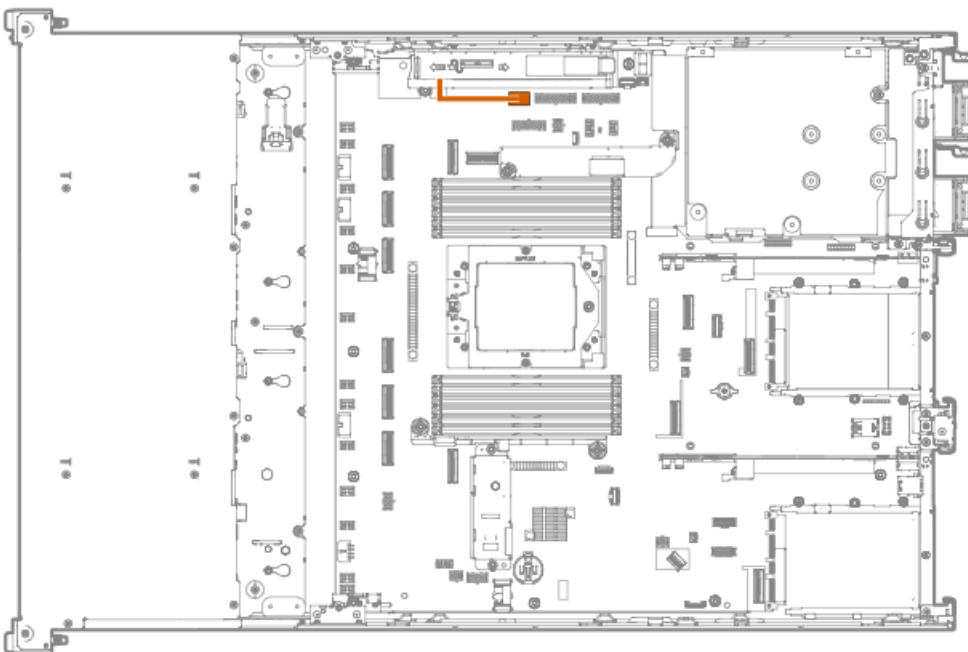
Rear 2 SFF stacked drive power cabling





Cable part number	Color	From	To
P57178-001	Orange	Box 8 power connector	Rear drive backplane / Graphics card power connector C (J9019)

Energy pack cabling



Storage controller backup power cabling



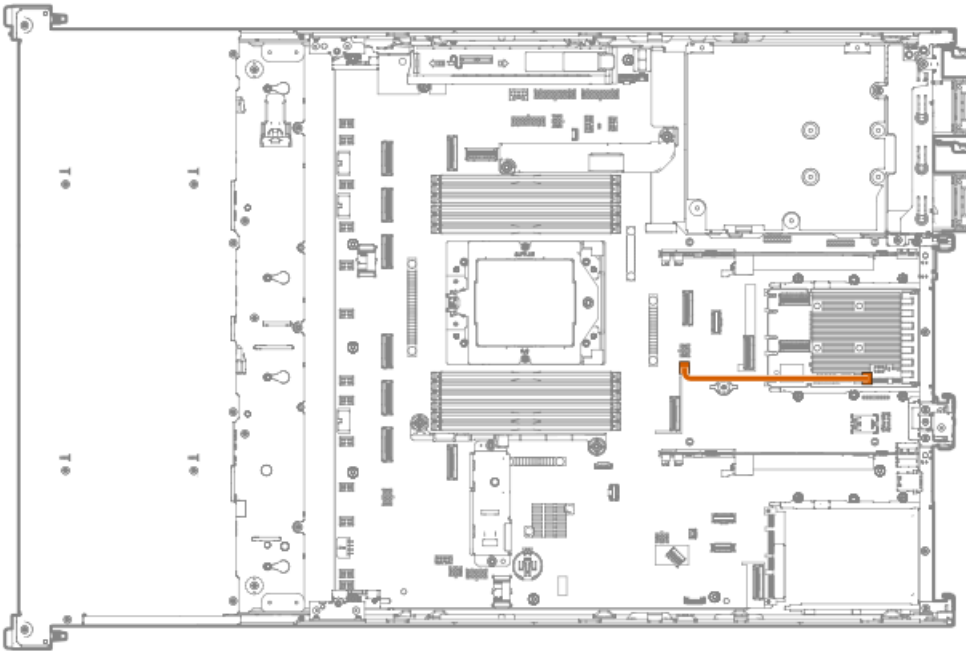
Storage controller backup power cabling

The exact route of the storage controller backup power cabling will depend on:

- The riser slot where the controller is installed
- The location of the storage controller backup power connector on the controller

Use the following diagrams for reference only.

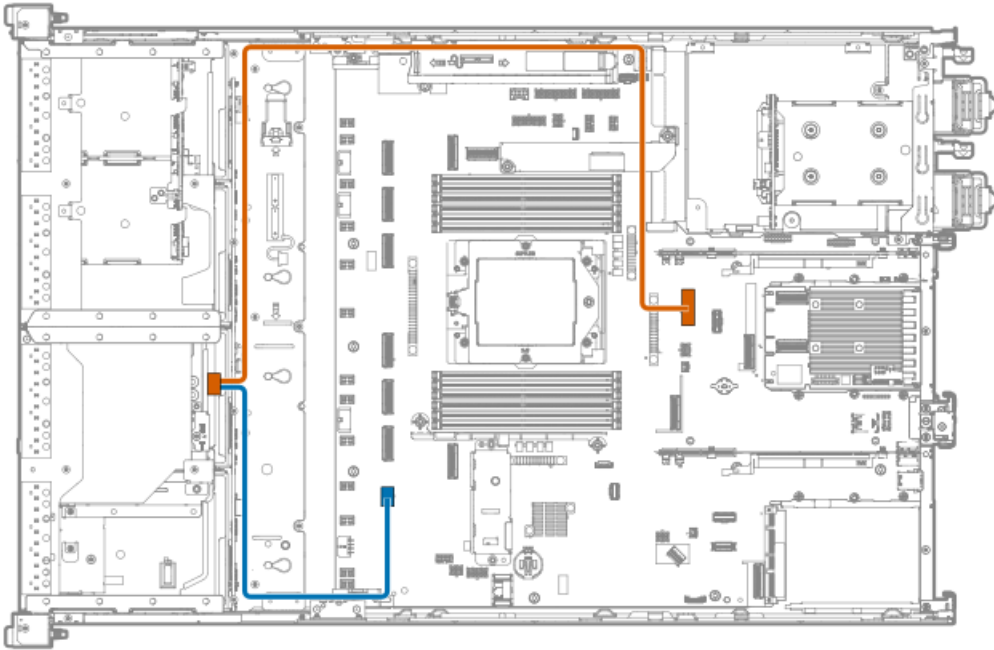
Storage controller backup power cabling from type-o storage controller in Slot 22



Color	From	To
Orange	Type-o controller in Slot 22	Slot 22 OROC storage backup power connector

Optical drive cabling

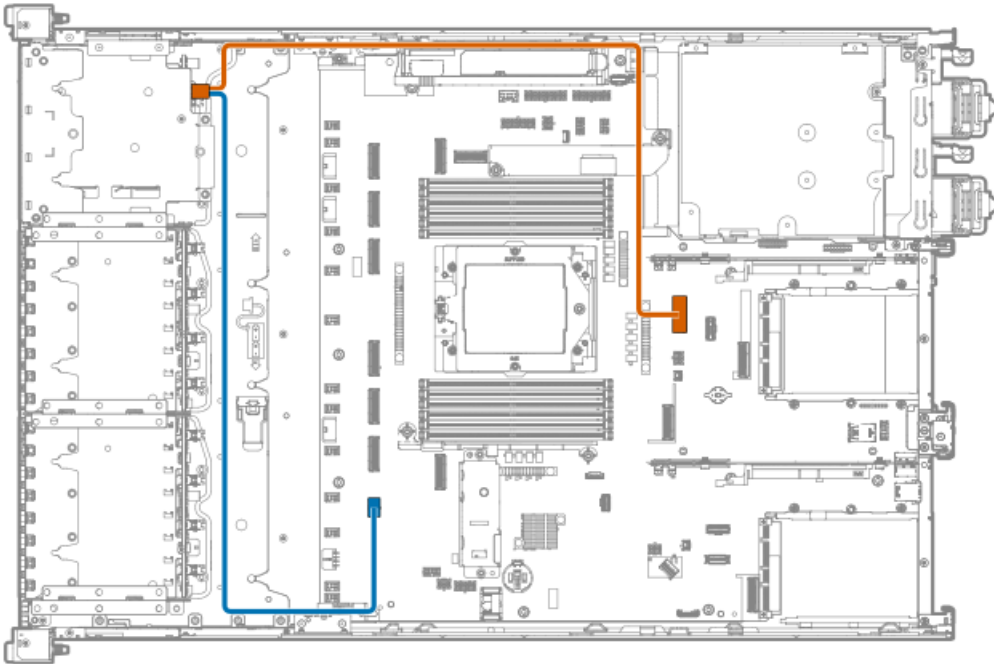
Optical drive cabling in the LFF universal media bay



Cable part number	Color	From	To
P59116-001 ¹	Orange	LFF universal media bay	NVMe/SATA port 1B
	Blue		Optical drive power connector

¹ Option kit: P59602-B21

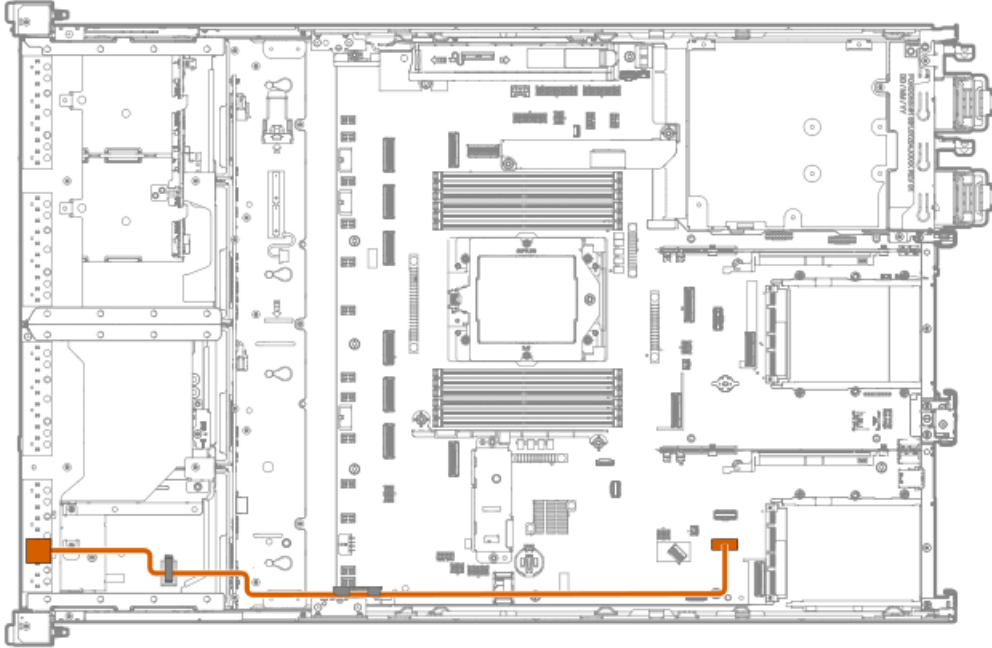
Optical drive cabling in the SFF universal media bay



Cable part number	Color	From	To
P59116-001 ¹	Orange	SFF universal media bay	NVMe/SATA port 1B
	Blue		Optical drive power connector

Universal media bay cabling

LFF universal media bay cabling: DisplayPort cable

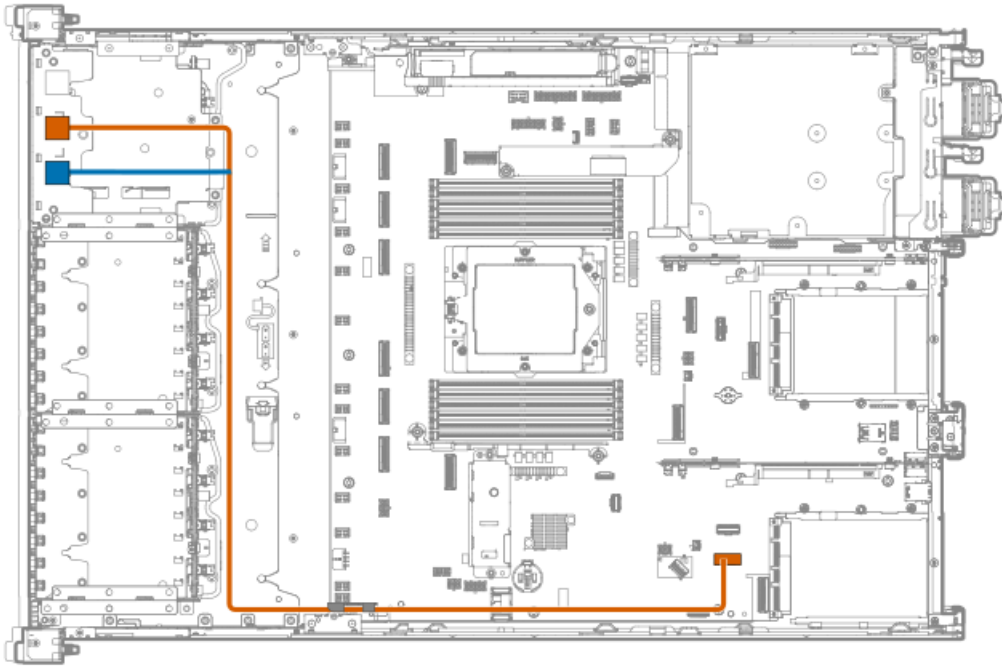


Cable spare part	Color	From	To
869808-001 ¹	Orange	LFF universal media bay	Front USB and DisplayPort connector

SFF universal media bay cabling

USB 2.0 / DisplayPort Y-cable

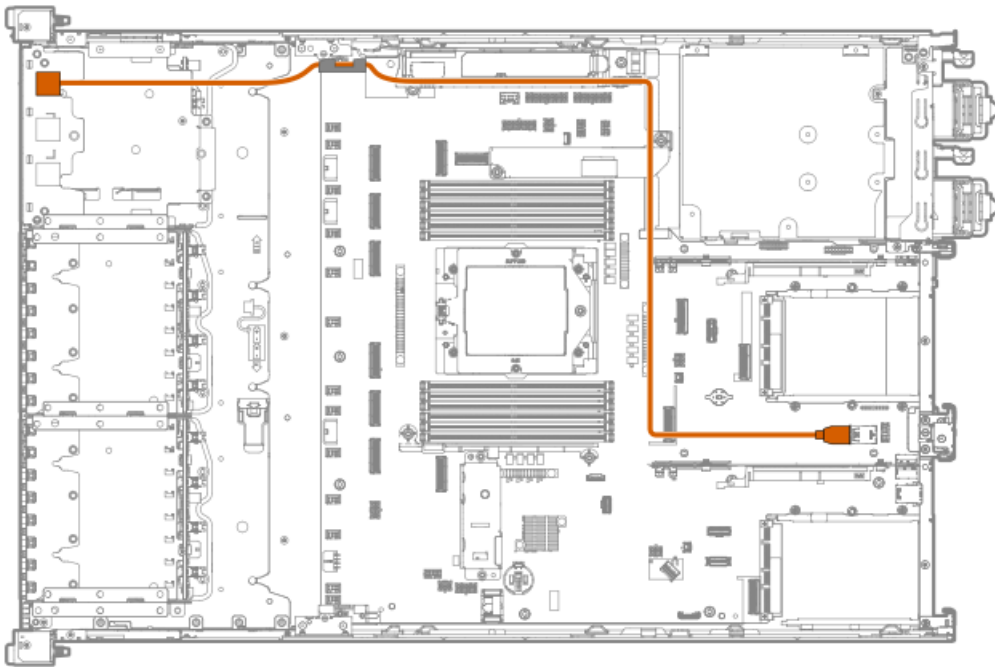




Cable part number	Color	From	To
P14314-001 ¹	Orange	SFF universal bay	Front USB and DisplayPort connector
	Blue		

¹ Option kit: P57857-B21

USB 3.2 Gen 1 port cable

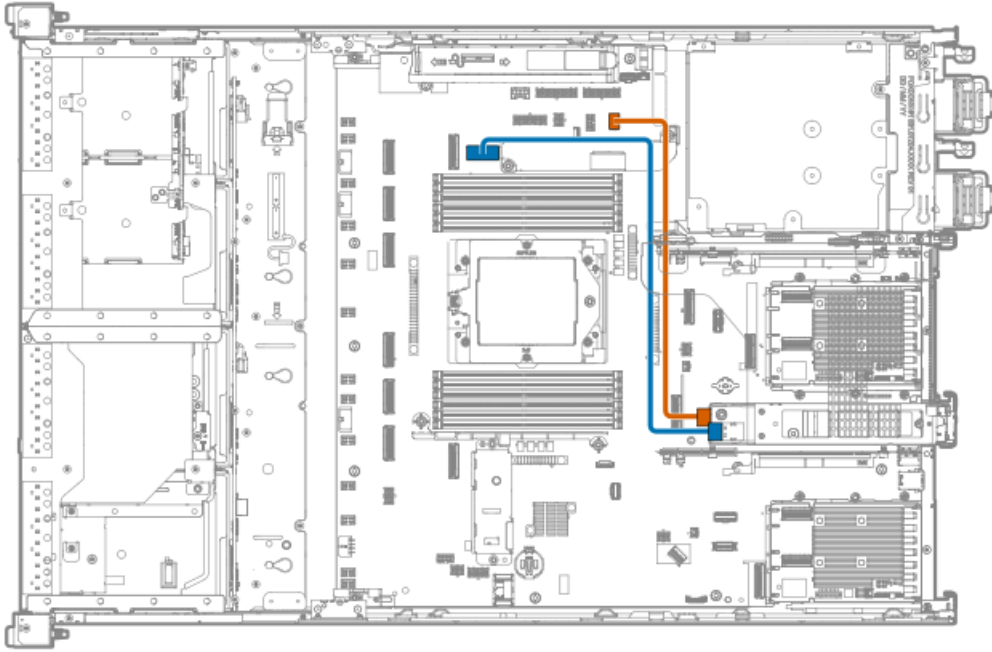


Cable spare part	Color	From	To
P57248-001 ¹	Orange	SFF universal media bay	Stacked, dual USB 3.2 Gen 1 ports

HPE NS204i Boot Device cabling

HPE NS204i Boot Device on the NS204i-u + secondary low-profile riser cage

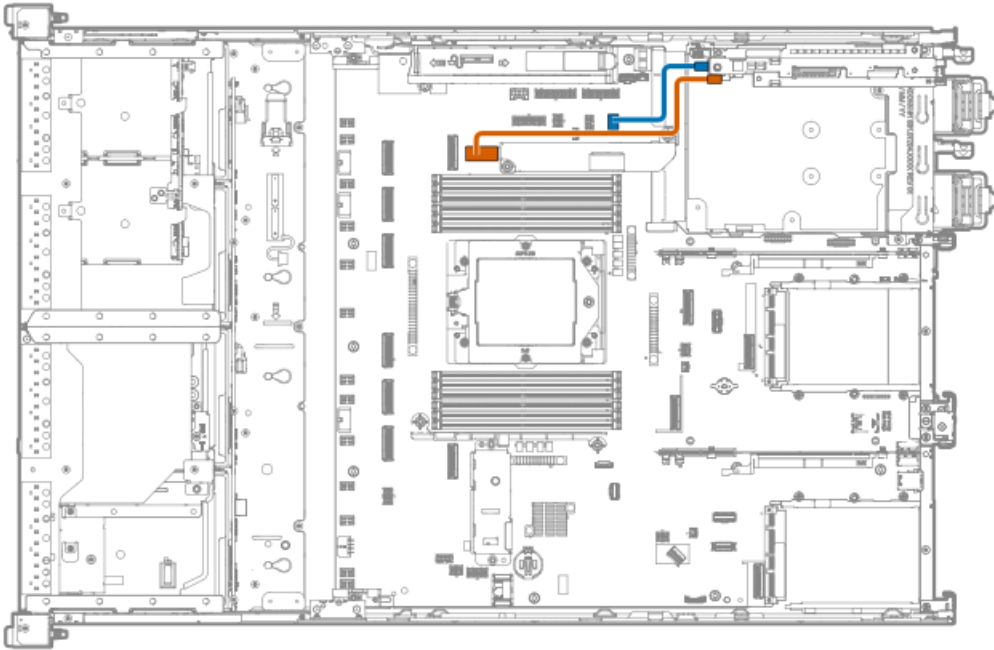
The boot device on the NS204i-u + secondary low-profile riser cage is only supported when the rear 4 LFF drive cage is installed.



Cable part number	Color	From	To
P54088-001 ¹	Orange	Boot device power connector	NS204i power connector
P54087-001 ¹	Blue	Boot device signal connector	NS204i signal connector

HPE NS204i Boot Device on top of the power supply cage

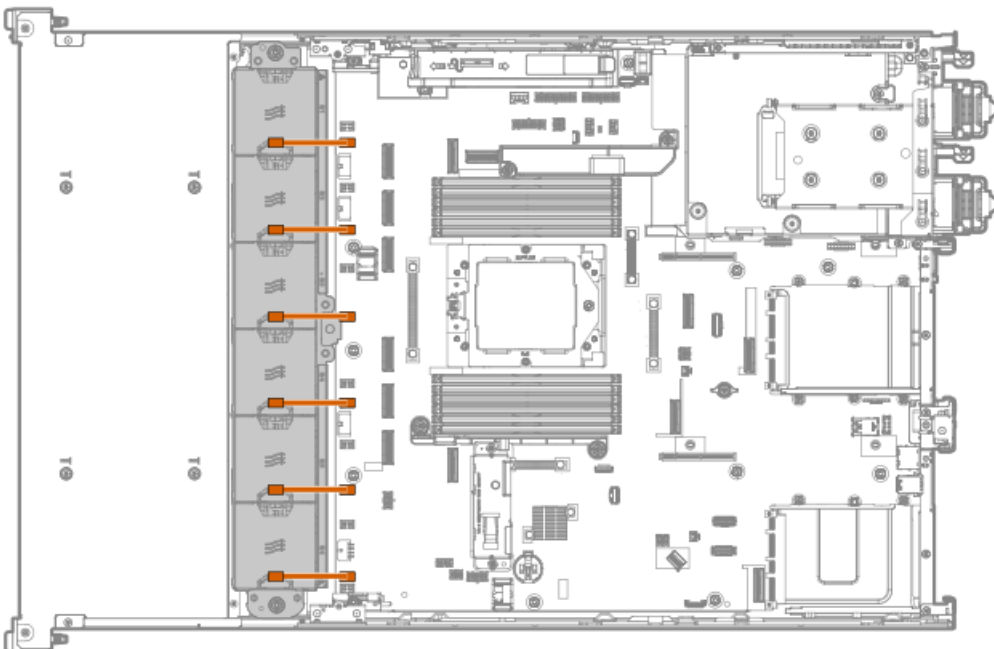
The boot device on the top of the power supply cage is only supported when the rear 2 SFF stacked drive cage is installed.



Cable part number	Color	From	To
P54088-001 ¹	Blue	Boot device power connector	NS204i power connector
P54087-001 ¹	Orange	Boot device signal connector	NS204i signal connector

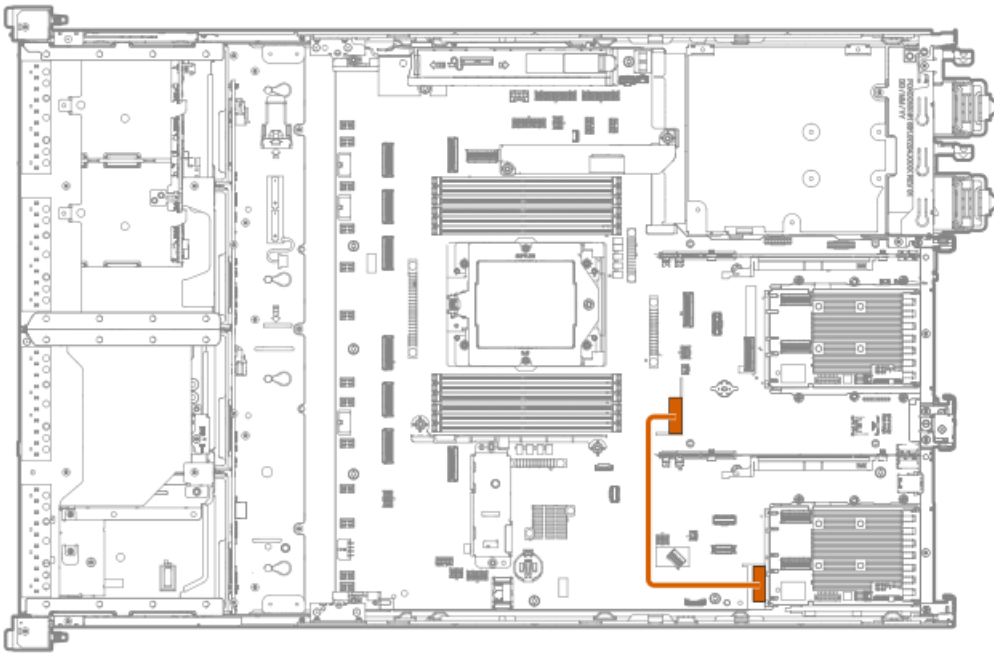
¹ Option kit: P57013-B21

Fan cabling



OCP bandwidth upgrade cabling

In Slot 21 OCP, the OCP bandwidth upgrade cable is required to support a x16 OCP expansion option.

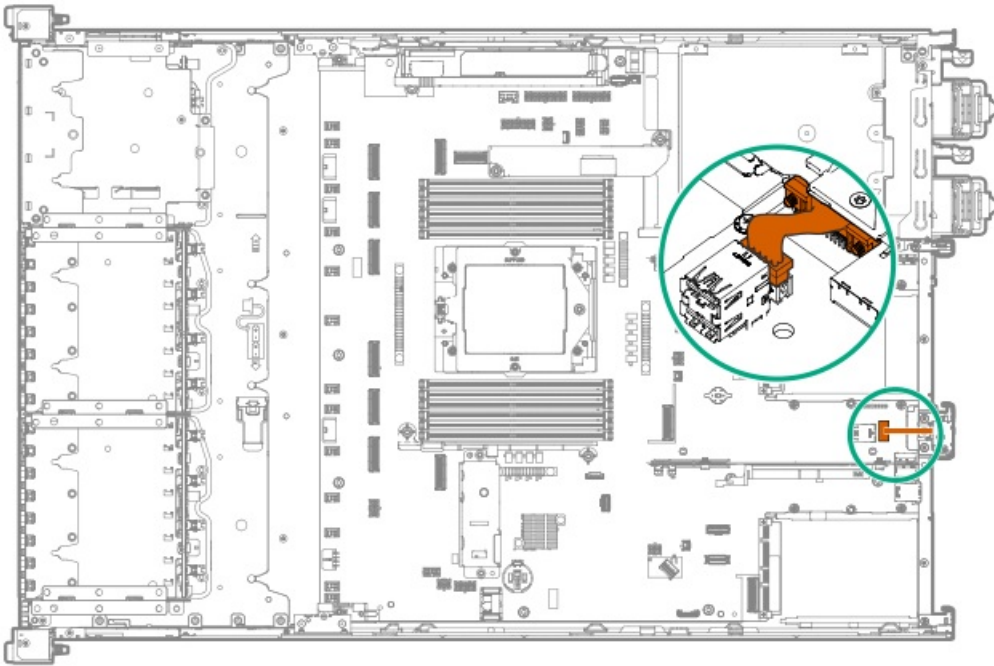


Cable part number	Color	From	To
P56686-001 ¹	Orange	Slot 21 OCP x16 upgrade connector	NVMe port 9A

¹ Option kit: P56658-B21

Serial port cabling

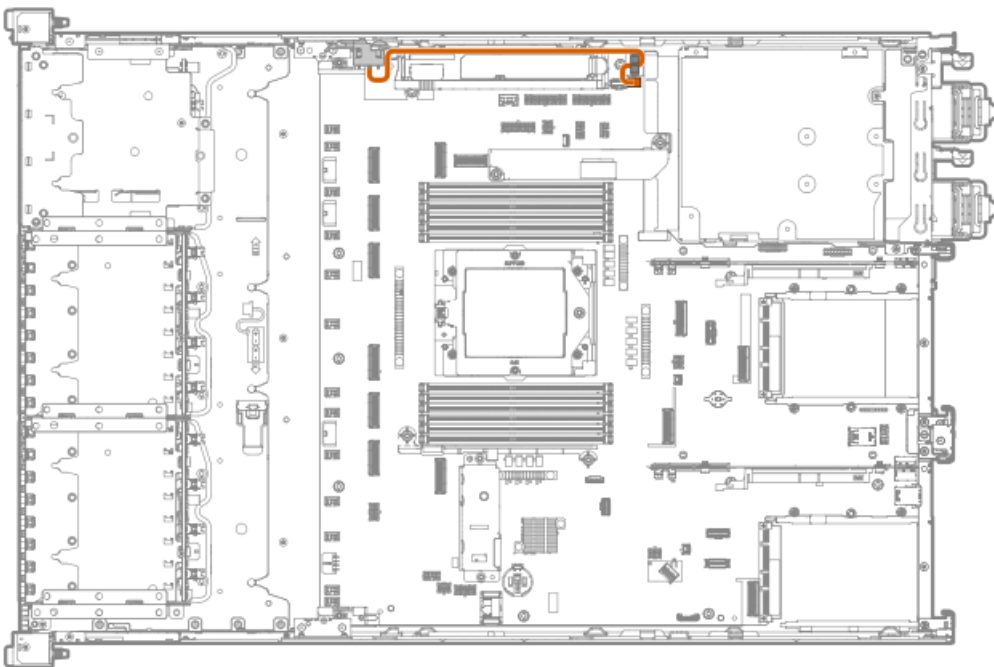




Cable part number	Color	From	To
P47752-001 ¹	Orange	Serial port	Serial port connector

¹ Option kit: P50887-B21

Chassis intrusion detection switch cabling

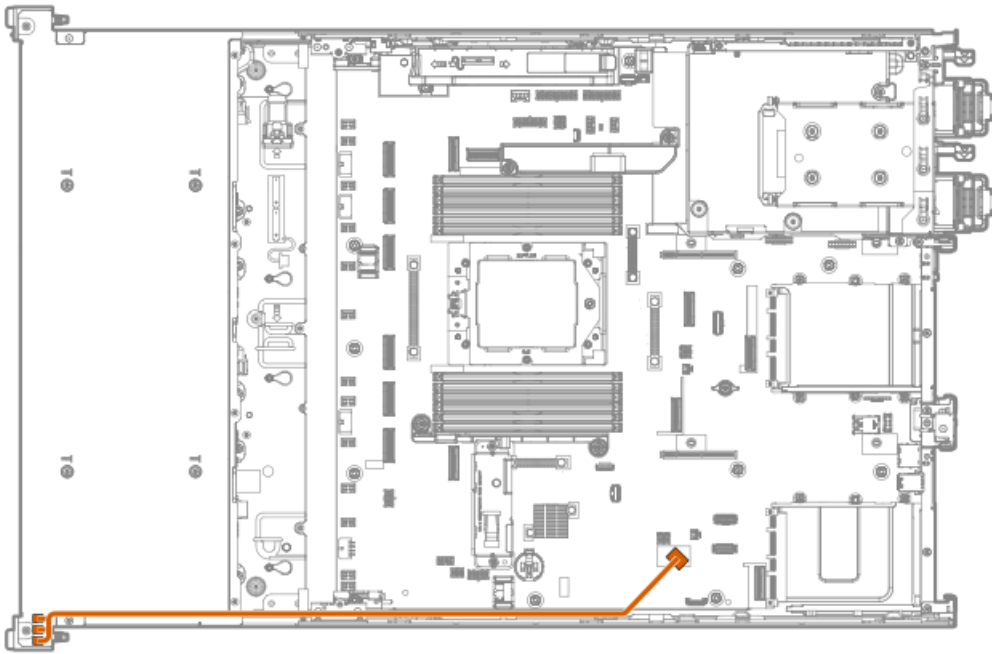


Cable part number	Color	From	To
P54901-001 ¹	Orange	Chassis intrusion detection switch	Chassis intrusion detection switch connector

¹ Option kit: P55713-B21

Front I/O cabling

Front I/O cables are preinstalled in the server.



Cable part number	Color	From	To
P43727-001	Orange	Right chassis ear	Front USB and DisplayPort connector

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://buy.hpe.com/us/en/p/1014689145>).
- 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

Managing the HPE NS204i Boot Device

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

Configuring the server

To configure	Use
Single server (GUI)	<ul style="list-style-type: none"> Intelligent Provisioning https://www.hpe.com/info/intelligentprovisioning/docs iLO remote console or web interface https://www.hpe.com/support/ilo6 UEFI System Utilities https://www.hpe.com/info/UEFI-manuals HPE GreenLake for Compute Ops Management https://www.hpe.com/info/com-docs
Single server (scripting)	<ul style="list-style-type: none"> RESTful Interface Tool https://www.hpe.com/support/restfulinterface/docs Python iLO Redfish Library (python-ilo-rest-library) https://github.com/HewlettPackard/python-ilo-rest-library Scripting Tools for Windows Powershell https://www.hpe.com/info/powershell/docs iLO RESTful API https://hewlettpackard.github.io/ilo-rest-api-docs/ HPE GreenLake for Compute Ops Management API https://developer.greenlake.hpe.com/
Multiple servers (either UI or scripting)	<ul style="list-style-type: none"> HPE OneView ¹ https://www.hpe.com/support/oneview-docs HPE GreenLake for Compute Ops Management https://www.hpe.com/info/com-docs <ul style="list-style-type: none"> Server settings: Define server-specific parameters such as firmware baselines, and then apply them to server groups. Server groups: 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.

¹ 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/ilo6>.

Configuring storage controllers

Controller type	Documentation
SR controllers	—
Gen11	HPE SR Gen11 Controller User Guide https://hpe.com/support/SR-Gen11-UG
Gen10	HPE Smart Array SR Controller Gen10 User Guide https://www.hpe.com/support/SR-Gen10-UG
MR controllers	—
Gen11	HPE MR Gen11 Controller User Guide https://hpe.com/support/MR-Gen11-UG
Cross-generation MR guides	<ul style="list-style-type: none"> HPE MR Storage Administrator User Guide https://www.hpe.com/support/MRSA HPE MR StorCLI User Guide https://www.hpe.com/support/StorCLI

Managing the HPE NS204i Boot Device

For more information on supported features and maintenance information for the HPE NS204i Boot Device, see the HPE NS204 Boot Device User Guide:

<https://www.hpe.com/support/NS204-UG>

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 https://www.hpe.com/info/boot-from-san-config-guide
Configure the server to boot from a PXE server	UEFI System Utilities User Guide for HPE ProLiant Gen11 Servers and HPE Synergy https://www.hpe.com/support/UEFIGen11-UG-en
Deploy an OS using iLO virtual media	iLO user guide https://www.hpe.com/support/ilo6
Deploy an OS using Intelligent Provisioning	Intelligent Provisioning user guide https://www.hpe.com/info/intelligentprovisioning/docs

Configuring security

To	See
Implement server security best practices.	<ul style="list-style-type: none"> HPE Compute Security Reference Guide https://www.hpe.com/info/server-security-reference-en HPE iLO 6 Security Technology Brief https://www.hpe.com/support/ilo6-security-en
Configure and use the Server Configuration Lock feature on HPE Trusted Supply Chain servers and other servers that have the Server Configuration Lock feature enabled.	Server Configuration Lock User Guide for HPE ProLiant servers and HPE Synergy https://www.hpe.com/info/server-config-lock-UG-en

Optimizing the server

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

Server management

To monitor	See
Single server	HPE iLO https://www.hpe.com/support/ilo6
Multiple servers	HPE OneView https://www.hpe.com/support/oneview-docs
Single or multiple servers	HPE GreenLake for Compute Ops Management https://www.hpe.com/info/com-docs

Managing Linux-based high performance compute clusters

To	Use
Provision, manage, and monitor clusters.	HPE Performance Cluster Manager https://www.hpe.com/support/hpcm_manuals
Optimize your applications.	HPE Performance Analysis Tools https://www.hpe.com/info/perftools
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 https://www.hpe.com/info/cray-pe-user-guides

Specifications

Subtopics

[Environmental specifications](#)

[Mechanical specifications](#)

[Power supply specifications](#)

Environmental specifications

Specifications	Value
Temperature range*	—
Operating	10°C to 35°C (50°F to 95°F)
Nonoperating	-30°C to 60°C (-22°F to 140°F)
Relative humidity (noncondensing)	—
Operating	8% to 90% 28°C (82.4°F) maximum wet bulb temperature, noncondensing
Nonoperating	5% to 95% 38.7°C (101.7°F) maximum wet bulb temperature, noncondensing
Altitude	—
Operating	3050 m (10,000 ft) This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1,500 ft/min).
Nonoperating	9144 m (30,000 ft) Maximum allowable altitude change rate is 457 m/min (1,500 ft/min).

Standard operating support

10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1,000 ft) above sea level to a maximum of 3,050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 20°C/hr (36°F/hr). The upper limit and rate of change may be limited by the type and number of options installed.

System performance during standard operating support might be reduced if operating above 30°C (86°F).

Extended ambient operating support

For approved hardware configurations, the supported system inlet range is extended to be:

- 5° to 10°C (41° to 50°F) and 35° to 40°C (95° to 104°F) at sea level with an altitude derating of 1.0°C per every 175 m (1.8°F per every 574 ft) above 900 m (2,953 ft) to a maximum of 3050 m (10,000 ft).
- 40°C to 45°C (104°F to 113°F) at sea level with an altitude derating of 1.0°C per every 125 m (1.8°F per every 410 ft) above 900 m (2953 ft) to a maximum of 3,050 m (10,000 ft).

The approved hardware configurations for this system are listed in the Extended Ambient Temperature Guidelines for Gen11 HPE ProLiant servers:

<https://www.hpe.com/support/ASHRAEGen11>

Mechanical specifications

Specification	Value
Dimensions	—
Height	8.75 cm (3.44 in)
Depth, SFF	64.64 cm (25.45 in)
Depth, LFF	66.31 cm (26.10 in)
Width	44.80 cm (17.63 in)
Weight, approximate values	—
Minimum, SFF	16.12 kg (35.53 lb)
Maximum, SFF	27.16 kg (59.87 lb)
Minimum, LFF	18.38 kg (40.52 lb)
Maximum, LFF	35.67 kg (78.63 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 1600 W Flex Slot Platinum Hot-plug Low Halogen Power Supply](#)

[HPE 1600 W Flex Slot -48 VDC Hot-plug Power Supply](#)

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

Specification	Value
Input requirements	—
Rated input voltage	100 VAC to 240 VAC 240 VDC for China only
Rated input frequency	50 Hz to 60 Hz Not applicable to 240 VDC
Rated input current	5.8 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
Power supply output	—
Rated steady-state power	500 W at 100 VAC to 127 VAC input 500 W at 100 VAC to 240 VAC input 500 W at 240 VDC input for China only
Maximum peak power	500 W at 100 VAC to 127 VAC input 500 W at 100 VAC to 240 VAC input 500 W at 240 VDC input for China only

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

Specification	Value
Input requirements	—
Rated input voltage	100 VAC to 127 VAC 200 VAC to 240 VAC 240 VDC for China only
Rated input frequency	50 Hz to 60 Hz Not applicable to 240 VDC
Rated input current	9.1 A at 100 VAC 4.4 A at 200 VAC 3.6 A at 240 VDC for China only
Maximum rated input power	899 W at 100 VAC 867 W at 200 VAC 864 W at 240 VDC for China only
BTUs per hour	3067 at 100 VAC 2958 at 200 VAC 2949 at 240 VAC for China only
Power supply output	—
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 1600 W Flex Slot Platinum Hot-plug Low Halogen Power Supply

Specification	Value
Input requirements	—
Rated input voltage	200 VAC to 240 VAC 240 VDC for China only
Rated input frequency	50 Hz to 60 Hz
Rated input current	8.7 A at 200 VAC 7.5 A at 230 VAC
Maximum rated input power	1734 W at 200 VAC 1727 W at 230 VAC
BTUs per hour	5918 at 200 VAC 5891 at 230 VAC
Power supply output	—
Rated steady-state power	1600 W at 200 VAC to 240 VAC input 1600 W at 240 VDC input
Maximum peak power	2200 W for 1 ms (turbo mode) at 200 VAC to 240 VAC input

HPE 1600 W Flex Slot -48 VDC Hot-plug Power Supply

Specification	Value
Input requirements	—
Rated input voltage	-40 VDC to -72 VDC
Rated input frequency	DC
Nominal input current	45 A DC at -40 VDC input 36.6 A DC at -48 VDC input 24.4 A DC at -72 VDC input
Maximum Rated Input Wattage Rating	1798 W at -40 VDC input 1758 W at -48 VDC input 1755 W at -72 VDC input
BTUs per hour	6026 at -40 VDC input 6000 at -48 VDC input input 5989 at -72 VDC input
Power supply output	—
Rated steady-state power	1600 W at -40 VDC to -72 VDC
Maximum peak power	1600 W at -40 VDC to -72 VDC

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 DL345 Gen11 Server product page

<https://buy.hpe.com/us/en/p/1014689145>

HPE ProLiant DL345 Gen11 Server user documents

<https://www.hpe.com/info/dl345gen11-docs>

Support and other resources

- [Accessing Hewlett Packard Enterprise Support](#)
- [Accessing updates](#)
- [Remote support](#)
- [Warranty information](#)
- [Regulatory information](#)
- [Documentation feedback](#)

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.

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.

