Hewlett Packard Enterprise

HPE Apollo 4200 Gen10 Plus Server Maintenance and Service Guide

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Abstract

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

Notices

Acknowledgments

Revision history

Part number	Publication date	Edition	Summary of changes
P35306-002	January 2022	2	
P35306-001	July 2021	1	Initial release

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

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

Parts only warranty service

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

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

Réparation par le client (CSR)

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

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

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

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

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

Pour plus d'informations sur le programme CSR de Hewlett Packard Enterprise, contactez votre Mainteneur 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 spedirà direttamente al cliente per la sostituzione. Vi sono due categorie di parti CSR:

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

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

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

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

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

Servizio di garanzia per i soli componenti

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

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

Customer Self Repair

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

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

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

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

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

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

Parts-only Warranty Service (Garantieservice ausschließlich für Teile)

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

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

Reparaciones del propio cliente

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

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

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

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

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

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

Servicio de garantía exclusivo de componentes

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

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

Customer Self Repair

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

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

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

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

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

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

Garantieservice "Parts Only"

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

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

Reparo feito pelo cliente

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

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

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

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

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

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

fornecedor de serviços local.

Serviço de garantia apenas para peças

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

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

Illustrated parts catalog

Mechanical components

Hewlett Packard Enterprise continually improves and changes product parts. For complete and current supported parts information, see the Hewlett Packard Enterprise **PartSurfer website**.
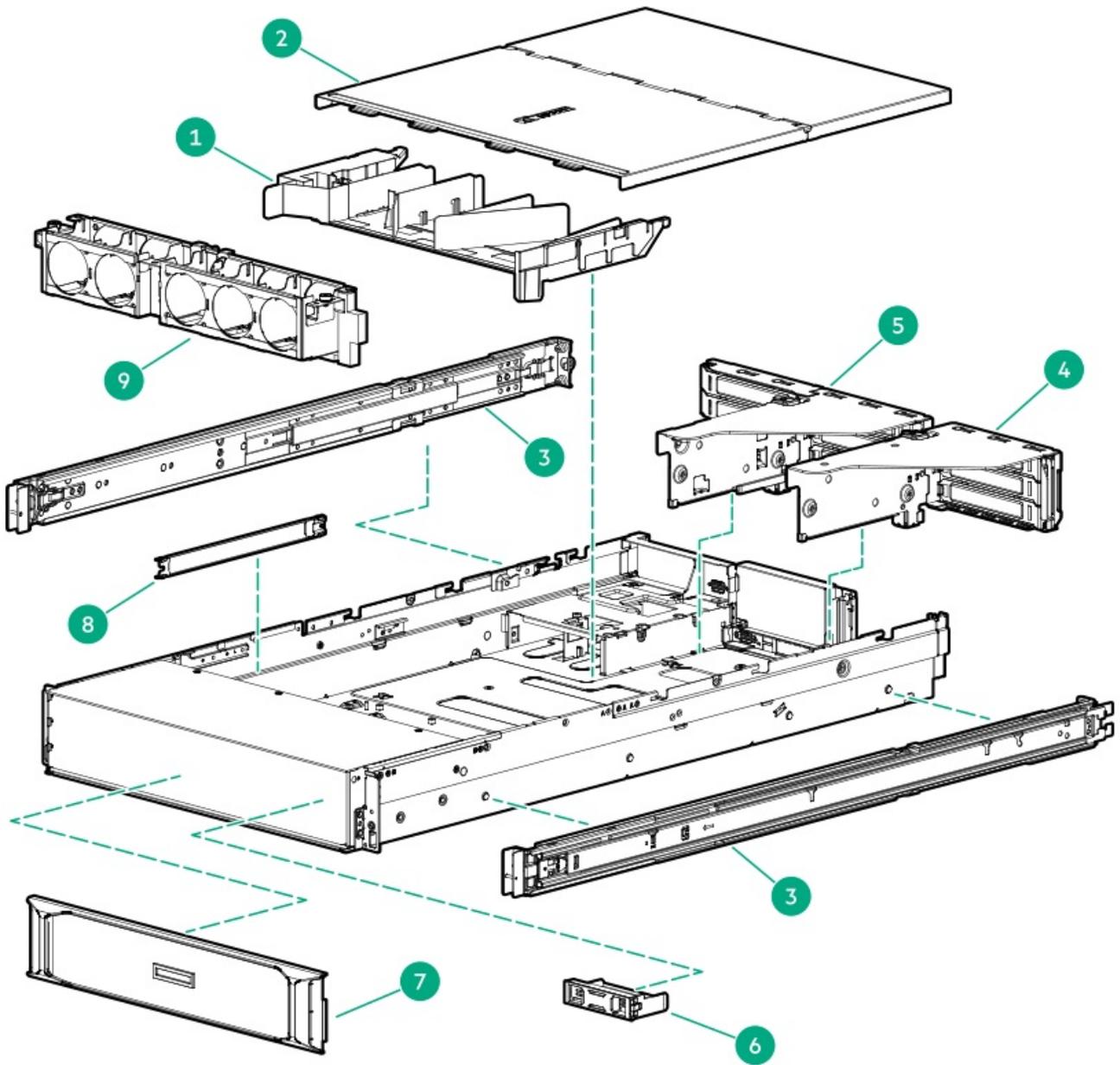
Item	Description	Customer self repair
1	Air baffle	Mandatory
2	Access panel	Mandatory
3	Rail kit	Mandatory
4	Primary PCI riser cage	Mandatory
5	Secondary PCI riser cage	Mandatory
6	HDD blank	Mandatory
7	Security slim bezel	Mandatory
8	Cable holder	No
9	Fan cage	Mandatory

System components

Hewlett Packard Enterprise continually improves and changes product parts. For complete and current supported parts information, see the Hewlett Packard Enterprise **PartSurfer website**.
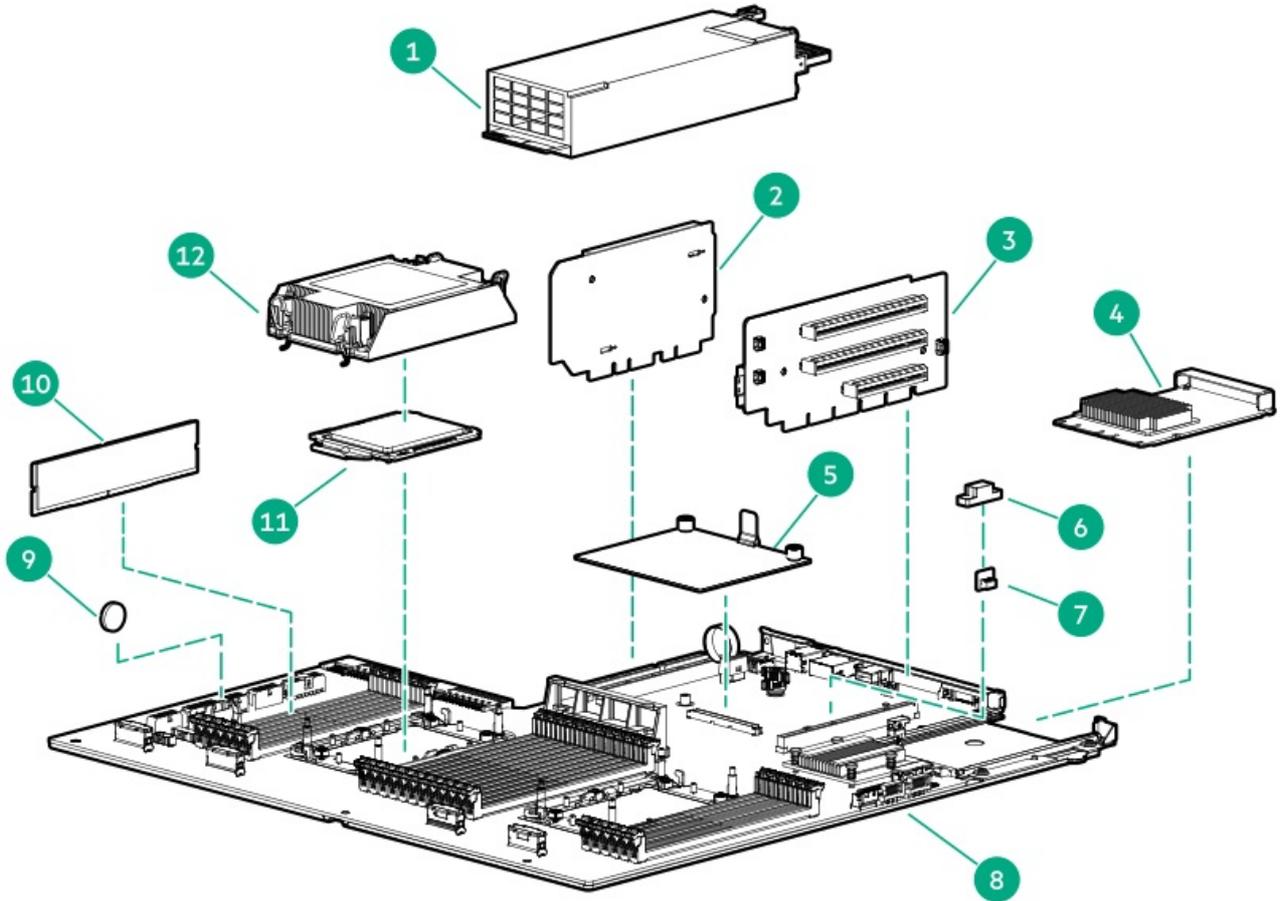
Item	Description	Customer self repair
1	Power supply	Mandatory
2	Tertiary PCIe riser board	No
3	Primary PCIe riser board	No
4	Network adapter	Mandatory
5	Storage controller	Mandatory
6	HPE TPM 2.0 Gen10 Plus module cover	No
7	HPE TPM 2.0 Gen10 Plus module	No
8	System board	No
9	System battery	No
10	DIMM module	Mandatory
11	Processor	No
12	Heatsink	No

For more information, see Removal and replacement procedures.

Server options

Hewlett Packard Enterprise continually improves and changes product parts. For complete and current supported parts information, see the Hewlett Packard Enterprise **PartSurfer website**.
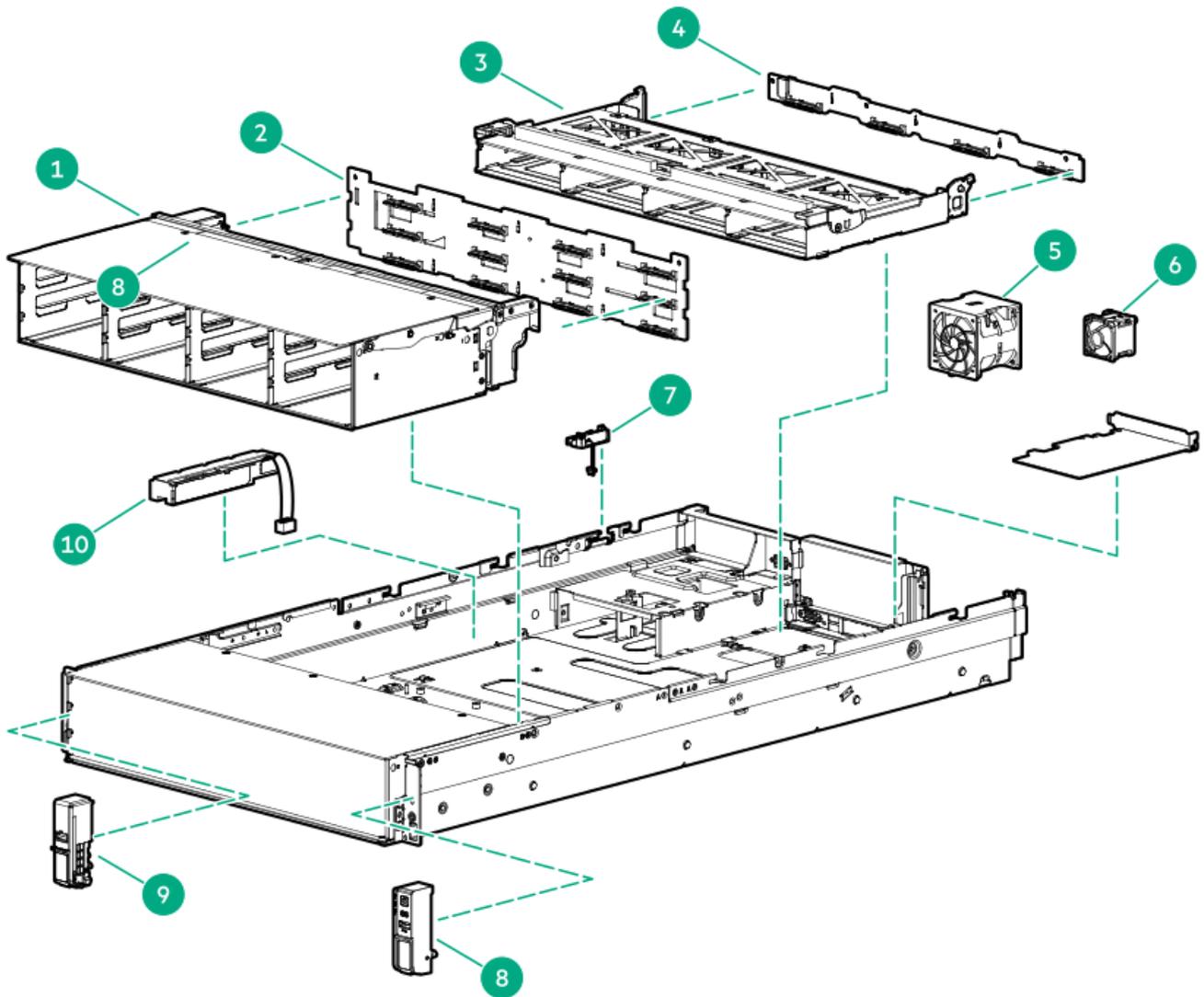
Item	Description	Customer self repair
1	Drive cage 2	No
2	Drive cage 2 backplane	No
3	Drive cage 3	Mandatory
4	Drive cage 3 backplane	Mandatory
5	Chassis fan	Mandatory
6	Drive cage fan	No
7	Chassis intrusion switch	No
8	Front I/O board	Mandatory
9	iLO service port	No
10	HPE Smart Storage Battery	No
11	System cables [1]	No

Removal and replacement procedures

Required tools

You need the following items for some procedures:

- T-10 Torx screwdriver

- T-15 Torx screwdriver

- T-25 Torx screwdriver

- Flathead screwdriver (for removing the front I/O board)

Safety considerations

Before performing service procedures, review all the safety information.

Preventing electrostatic discharge

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

Procedure

- Avoid hand contact by transporting and storing products in static-safe containers.

- Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.

- Place parts on a grounded surface before removing them from their containers.

- Avoid touching pins, leads, or circuitry.

- Always be properly grounded when touching a static-sensitive component or assembly.

Symbols on equipment

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

This symbol indicates Hewlett Packard Enterprise systems and peripherals that contain assemblies and components that are sensitive to electrostatic discharge. Carefully observe the precautions and recommended procedures in this document to prevent component damage from static electricity.

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 chassis 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 chassis 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.

Rack warnings and cautions

⚠ **WARNING:**

When all components are removed, the server weighs 22.34 kg (49.25 lb). When all components are installed, the server can weigh up to 40.60 kg (89.51 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 22.34 kg (49.25 lb), so at least two people must lift the server into the chassis 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 chassis.

- Adequately stabilized the chassis before extending a component outside the chassis. Extend only one component at a time. A chassis 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 chassis, be sure to properly scope the limitations of the chassis. Before proceeding with the installation, consider the following:

- You must fully understand the static and dynamic load carrying capacity of the chassis 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.

ⓘ **IMPORTANT:**

The HPE Apollo 4200 Gen10 Plus Server cable management arm is not supported on Compaq-branded 7000 series racks.

Cabling replacement parts

If you are replacing an assembly that includes a cable, you are not required to replace the current cable with the new cable from the assembly. If the current cable is still functioning properly, you can keep the current cable in place.

Preparation procedures

Power down the server

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

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

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

- Press and release the Power On/Standby button.

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

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

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

- Use a virtual power button selection through iLO 5.

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

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

Remove the bezel

To access the front panel components, unlock and then remove the bezel.
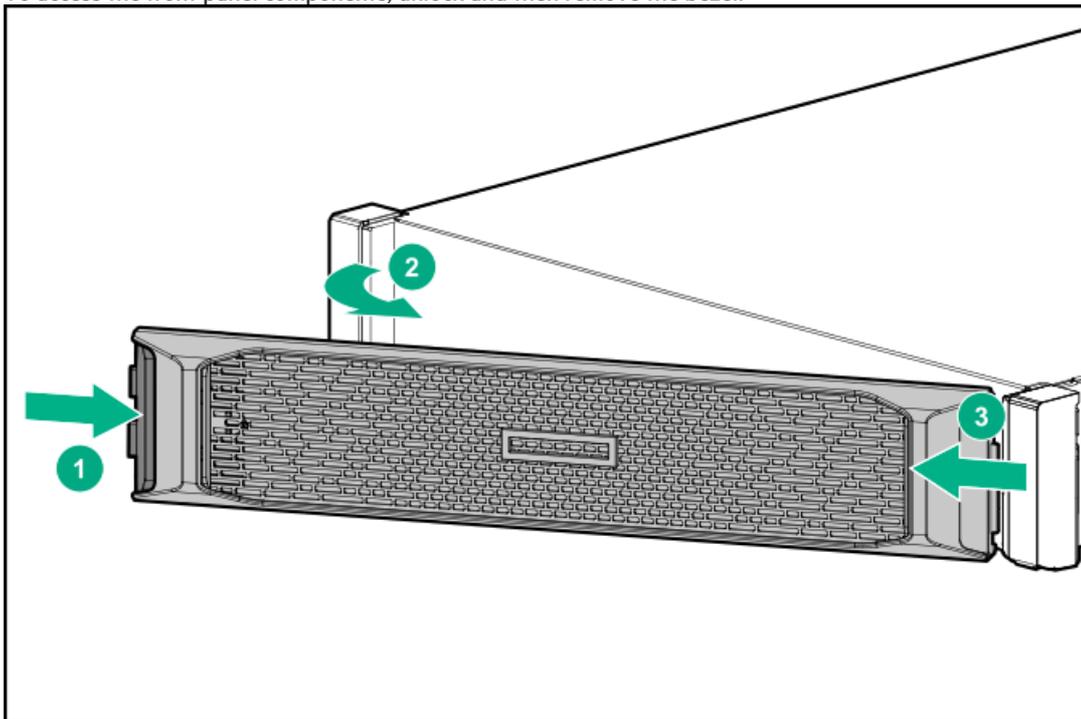
Releasing the cable management arm

Release the cable management arm and then swing the arm away from the rack.

Extend the server from the rack

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

> ⚠️ **WARNING:**
> To reduce the risk of personal injury or damage to the equipment, be sure that:
> - The rack is bolted to the floor using the concrete anchor kit.
> - The leveling feet extend to the floor.
> - The full weight of the rack rests on the leveling feet.
> - The racks are coupled together in multiple rack installations.
> - Only one component is extended at a time. If more than one component is extended, a rack might become unstable.

Prerequisites

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

Procedure

1. Pull down the quick release levers on each side of the server.

2. Loosen the screws behind both quick release levers.

3. Extend the server from the rack.

4. After performing the installation or maintenance procedure, slide the server back into the rack, and then press the server firmly into the rack to secure it in place.

Remove the server from the rack

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

> ⚠️ **WARNING:** This server is heavy. To reduce the risk of personal injury or damage to the equipment:
> - Observe local occupational health and safety requirements and guidelines for manual material handling.
> - Get help to lift and stabilize the product during installation or removal, especially when the product is not fastened

to the rails. Hewlett Packard Enterprise recommends that a minimum of two people are required for all rack server installations. A third person may be required to help align the server if the server is installed higher than chest level.

- Use caution when installing the server in or removing the server from the rack; it is unstable when not fastened to the rails.

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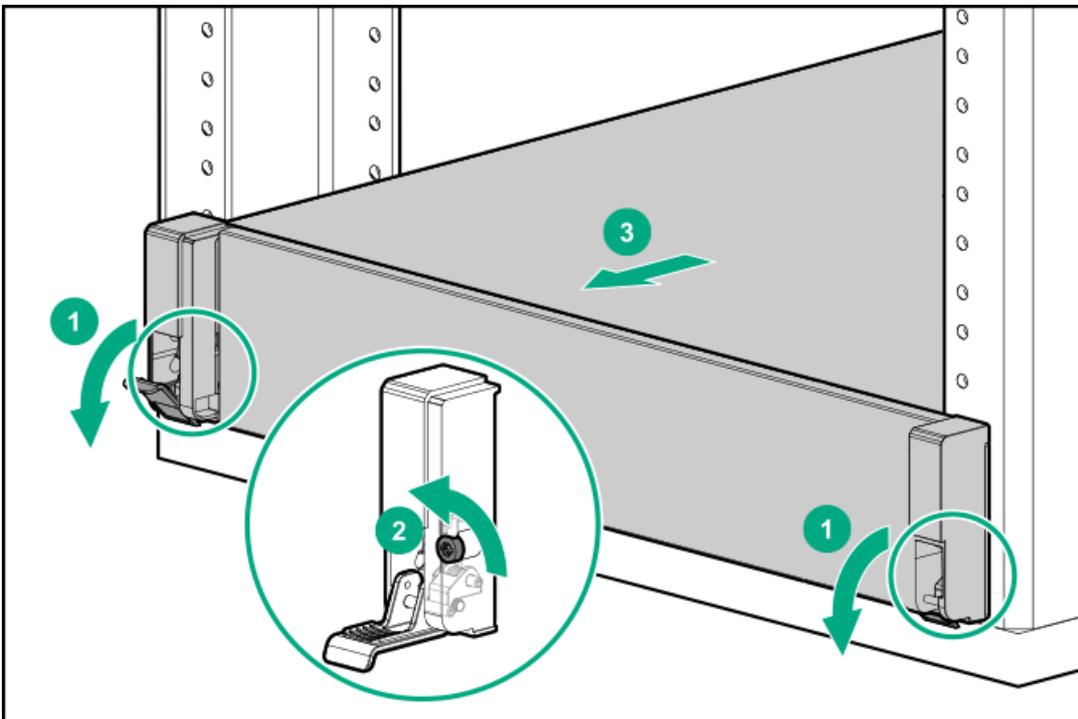To reduce the risk of personal injury or damage to the equipment, be sure that:

- The rack is bolted to the floor using the concrete anchor kit.

- The leveling feet extend to the floor.

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

- The racks are coupled together in multiple rack installations.

- Only one component is extended at a time. If more than one component is extended, a rack might become unstable.

Procedure

1. Back up all server data.

2. Power down the server.

3. Remove all power:

    a. Disconnect each power cord from the power source.

    b. Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. Remove the server from the rack.

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

Access panel options

Open the access panel to access drive cage 3

⚠ **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. Extend the server from the rack.

2. Remove the access panel:

    a. If necessary, unlock the access panel latch.

    b. Press the release button.

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

    d. Lift the front half of the access panel to access drive cage 3.

Remove the complete access panel

> ⚠ **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.

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

Procedure

1. Power down the server.

2. Remove the server from the rack.

3. Place the server on a flat, level surface.

4. Remove the access panel:

   a. If necessary, unlock the access panel latch.

   b. Press the release button.

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

   d. Slide the access panel toward the rear of the server and lift it from the chassis.

Turn the access panel over to locate the HPE Apollo 4200 Gen10 Plus Server access panel label. This label provides convenient access to component identification, LED status indicators, and system maintenance switch settings information.

Remove the air baffle

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

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

Procedure

1. Power down the server.

2. Remove the server from the rack.

3. Place the server on a flat, level surface.

4. Remove the access panel.

5. Remove the air baffle.

Removing and replacing the cable management arm

> ⚠ **WARNING:**
> To reduce the risk of personal injury or damage to the equipment, you must adequately support the chassis during installation and removal.

Procedure

1. Power down the server.

2. Remove all power:

   a. Disconnect each power cord from the power source.

   b. Disconnect each power cord from the server.

3. Extend the server from the rack.

4. Remove the cables from the cable management arm.
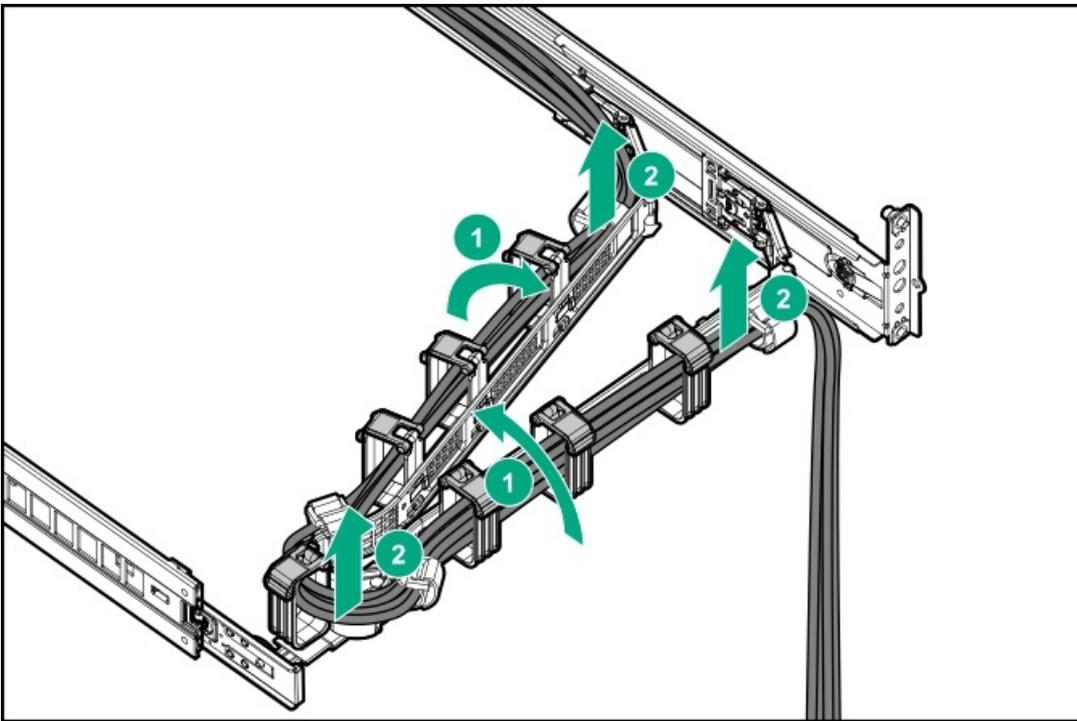
5. Remove the cable management arm.
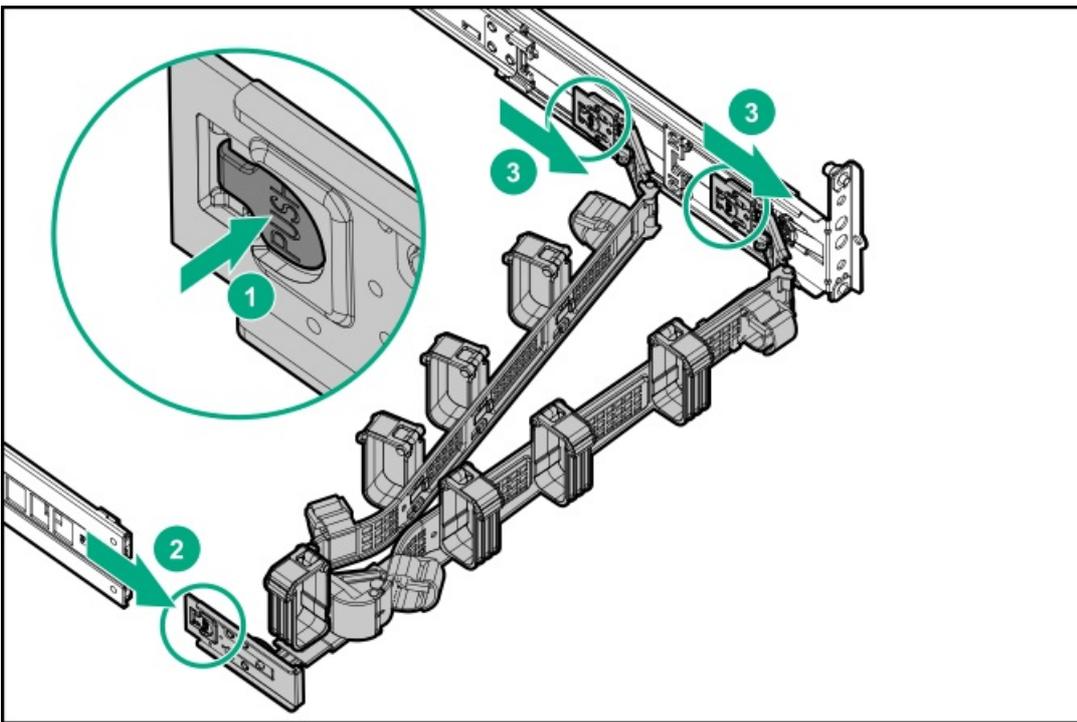
To replace the component, reverse the removal procedure.

Removing and replacing the rack rails

⚠ **WARNING:**

To reduce the risk of personal injury or damage to the equipment, you must adequately support the chassis during installation and removal.

Prerequisites

Before you begin, be sure that you have the appropriate screwdriver for the screws in the rack.

Procedure

1. Power down the server.

2. Remove the server from the rack.

3. Place the server on a flat, level surface.

   ⓘ **IMPORTANT:**

   When removing the rail from the rack, always remove the front of the rail first.

4. Remove the rail from the rack.
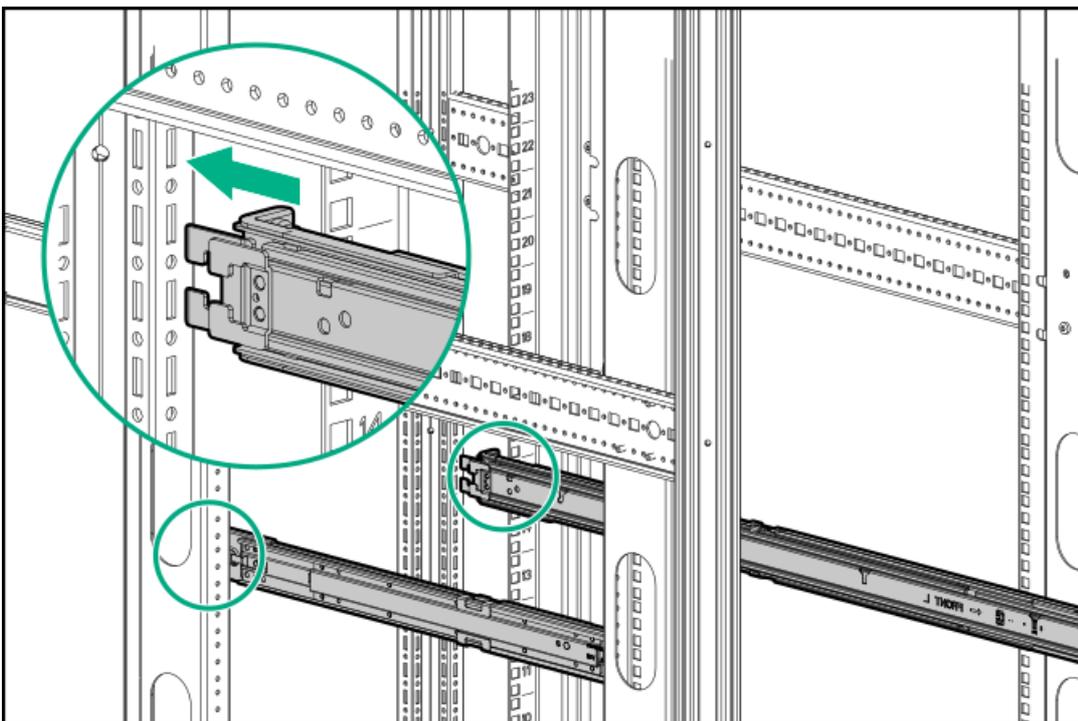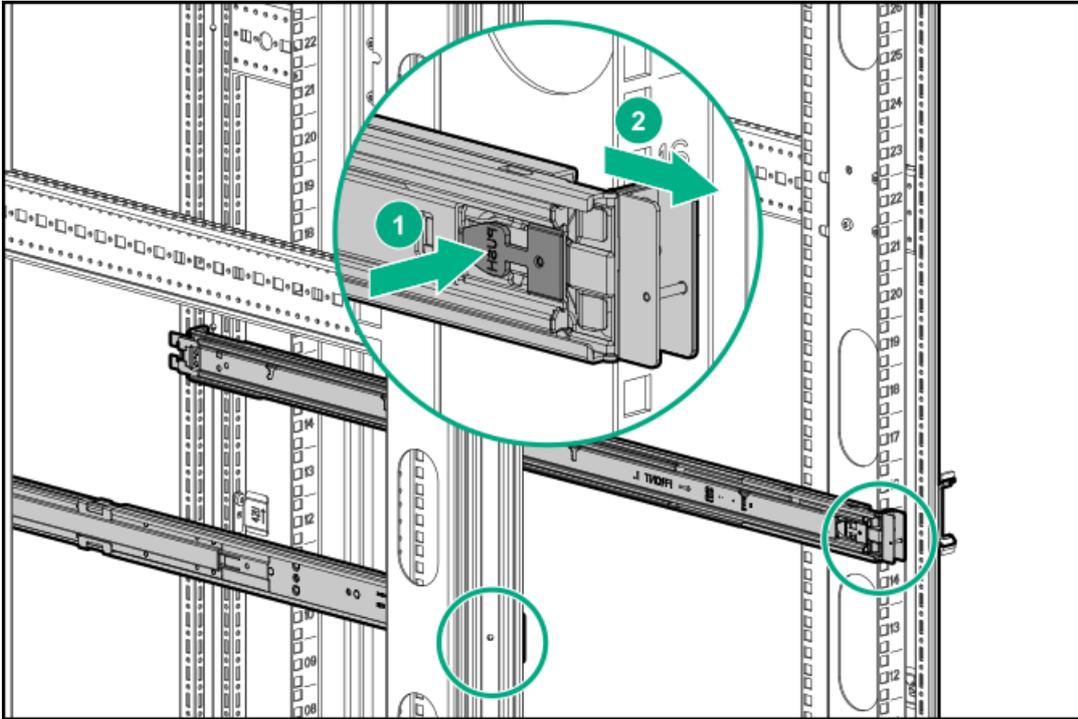
To replace the component, reverse the removal procedure.

Removing and replacing a drive blank

Remove the component as indicated.

To replace the component, squeeze the release latch and slide the drive blank into the bay until it clicks into place.

Removing and replacing drives

Depending on the configuration, this system supports SAS, SATA, or NVMe drives. When removing and replacing drives, observe the following general guidelines.

- The system automatically sets all device numbers.

- If only one drive is used, install the drive in the drive bay with the lowest device number (see Drive numbering).

- Drives must be the same capacity to provide the greatest storage space efficiency when drives are grouped together into the same drive array.

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

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

⚠ **CAUTION:** Do not operate the system for long periods with the front drive cages extended. When the front drive cages are extended while the system is powered on, monitor the status of the front drive temp sensor (08-HD Max) in iLO. If the iLO temp sensor (08-HD Max) reading is reporting an N/A value, monitor how long the drive cages have been out of the chassis. Before reaching the 110 second mark, slide the drive cages back into the chassis and keep them there for at least 300 seconds before extending them again.

Failure to observe this caution will result in improper airflow and insufficient cooling that can lead to thermal damage.

⚠ **CAUTION:**

Do not operate the server with any of the front or rear drive cage bays empty. To maintain proper airflow and sufficient cooling, all drive bays in the front and rear cage must have a drive or a drive blank.

⚠ **CAUTION:**

Do not operate the server with any of the rear drive bays empty. To maintain proper airflow and sufficient cooling in the rear drive cage, all drive bays in this cage must have a drive or a drive blank. Hewlett Packard Enterprise recommends installing at least one drive in the rear drive cage before operating the server.

Removing and replacing a hot-plug drive from drive cage 1

Procedure

1. Back up all server data.

2. If installed, remove the bezel.

3. Depending on the type of drive in the cage, do one of the following:

   - Remove an LFF drive:

     a. Determine the status of the drive from the low profile LFF drive LEDs (see Drive LEDs).

     b. Wait until the Online/Activity LED stops flashing.

  c. To open the release lever, press the latch.

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

- Remove an SFF drive:

  a. Determine the status of the drive from the SFF LEDs (see Drive LEDs).

  b. Wait until the icon in the Do Not Remove button stops flashing and is no longer illuminated.

  c. Press the Do Not Remove button to open the release lever.

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

To replace the component, reverse the removal procedure.

Removing and replacing a hot-plug drive from drive cage 2

Procedure

1. Back up all server data.

2. Extend the server from the rack.

3. Open drive cage 2.

4. Depending on the type of drive in the cage, do one of the following:

- Remove an LFF drive:

  a. Determine the status of the drive from the low profile LFF drive LEDs (see Drive LEDs).

  b. Wait until the Online/Activity LED stops flashing.

  c. To open the release lever, press the latch.

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

- Remove an SFF drive:

  a. Determine the status of the drive from the SFF LEDs (see Drive LEDs).

  b. Wait until the icon in the Do Not Remove button stops flashing and is no longer illuminated.

  c. Press the Do Not Remove button to open the release lever.

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

To replace the component, reverse the removal procedure.

Removing and replacing a hot-plug drive in drive cage 3

Procedure

1. Back up all server data.

2. Extend the server from the rack.

3. Open the access panel to access drive cage 3.

4. Open drive cage 3.

5. Depending on the type of drive in the cage, do one of the following:

    - Remove an LFF drive:

        a. Determine the status of the drive from the low profile LFF drive LEDs (see Drive LEDs).

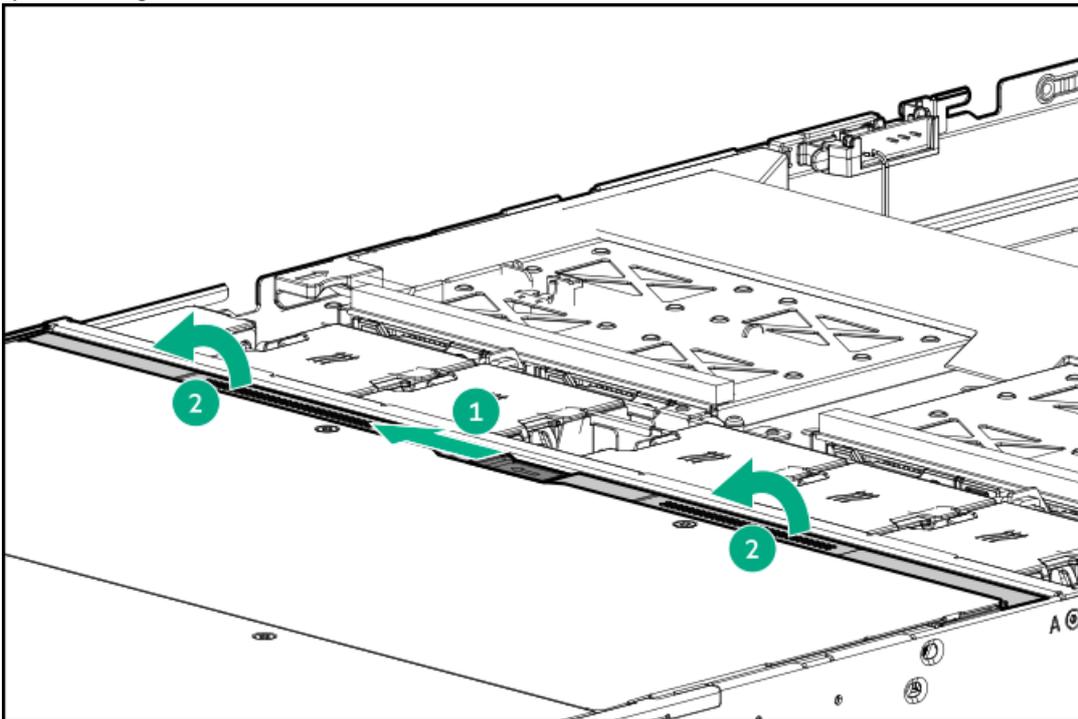   b. Wait until the Online/Activity LED stops flashing.

        c. To open the release lever, press the latch.

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

    - Remove an SFF drive:

        a. Determine the status of the drive from the SFF LEDs (see Drive LEDs).

        b. Wait until the icon in the Do Not Remove button stops flashing and is no longer illuminated.

        c. Press the Do Not Remove button to open the release lever.

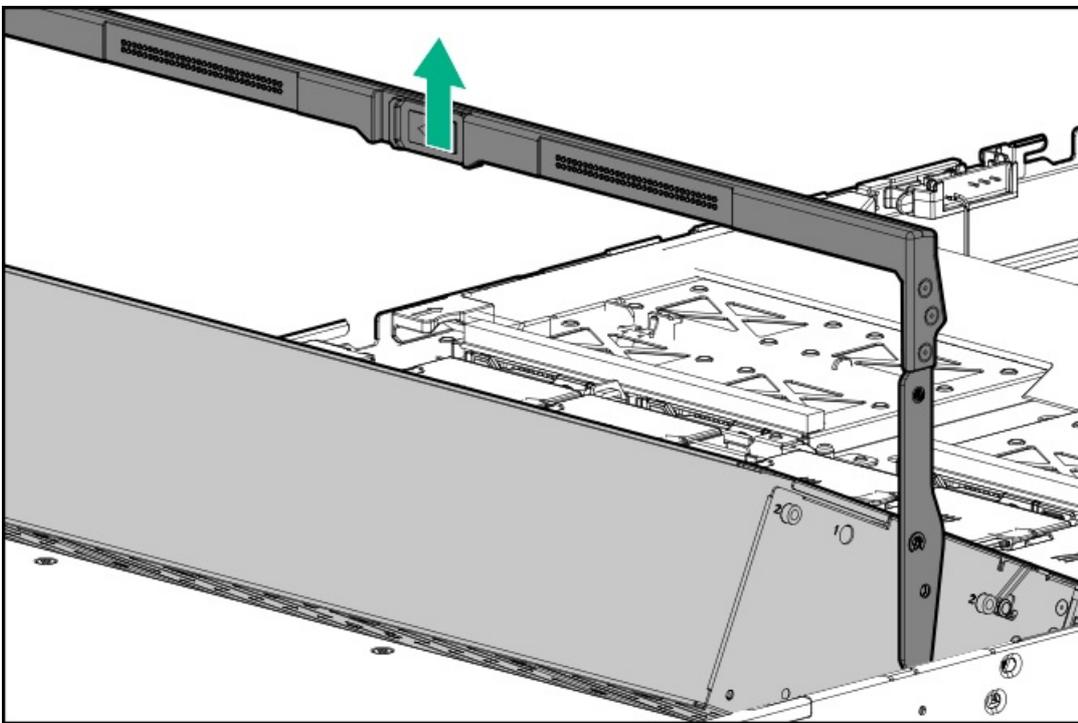   d. Pull the release lever to disengage the drive from the backplane, and then slide the drive out of the bay.

    To replace the component, reverse the removal procedure.

Removing and replacing a hot-plug drive from a rear drive cage

Procedure

1. Back up all server data.

2. Access the product rear panel (see Rear panel components).
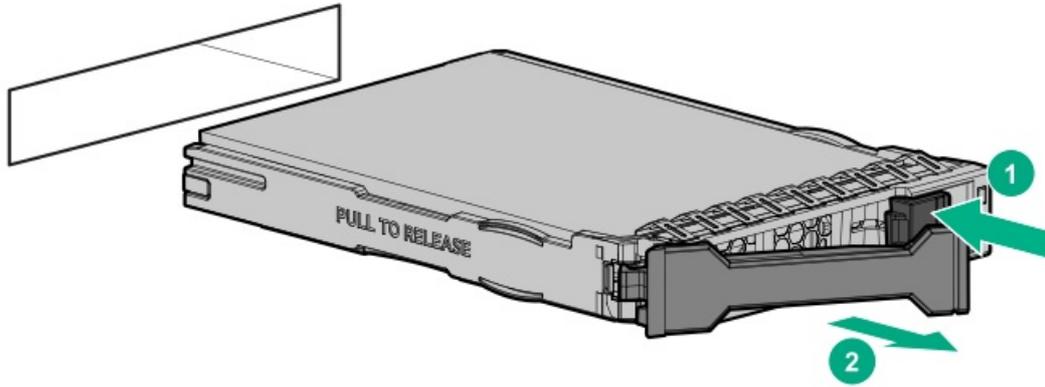
3. Remove the drive.

   To replace the component, reverse the removal procedure.

Removing and replacing a fan

Removing and replacing a fan from rear of drive cage 2

Procedure

1. Extend the server from the rack.

2. Open the access panel to access drive cage 3 to access the fans behind drive cage 2.
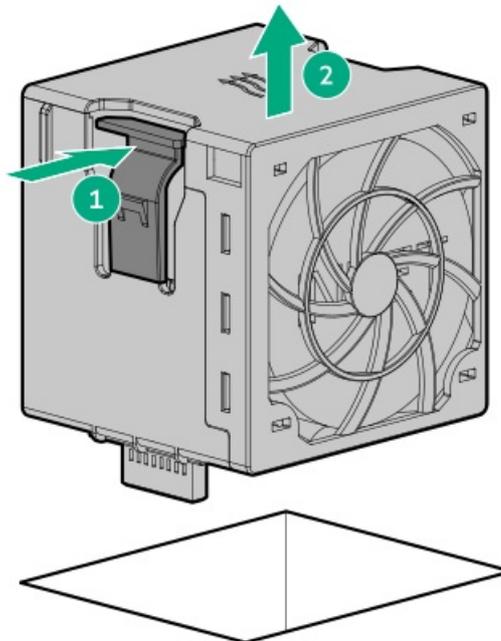
3. Remove the fan.

   To replace the component, reverse the removal procedure.

Drive cage options

Removing and replacing drive cage 3

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

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

Procedure

1. Power down the server.

2. Remove the server from the rack.

3. Place the server on a flat, level surface.

4. Remove the complete access panel.

5. Do one of the following:

   a. If you have the eight SFF drive cage 3 installed, remove the air baffle.

   b. If you have the four LFF drive cage 3 installed, proceed to the next step.

   ⚠ **CAUTION:**

   When removing drive cage 3 from the server, be sure to carefully feed the cables through the openings at the rear of the drive cage.

6. Disconnect cables connected to the backplane.
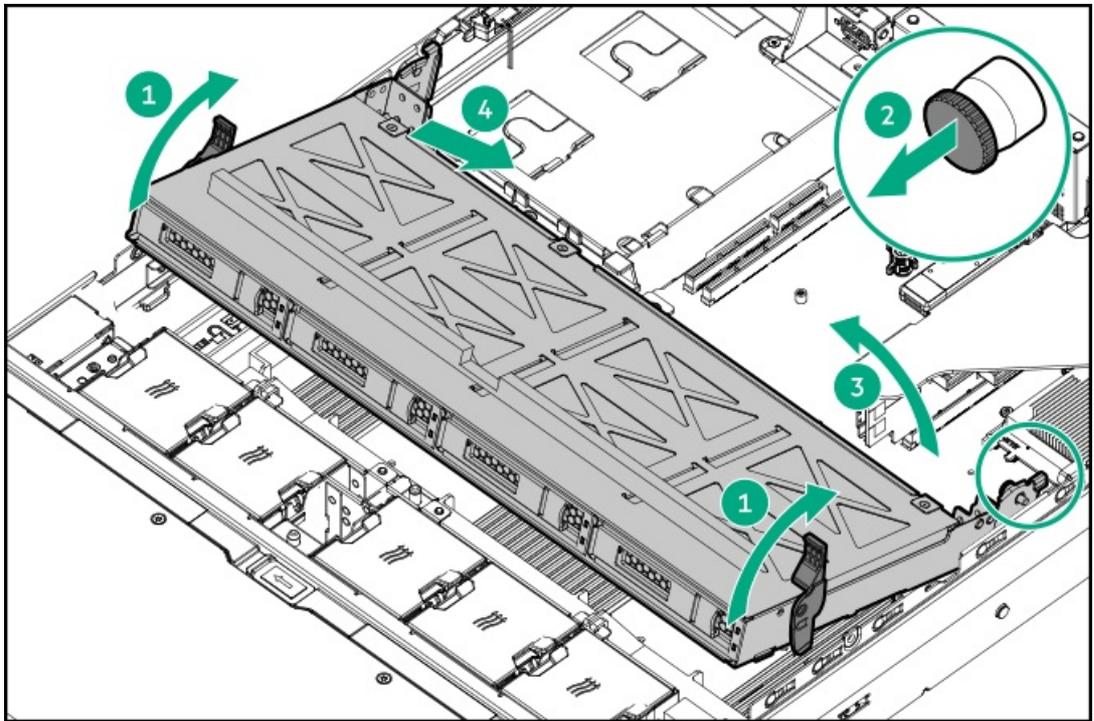
7. Remove drive cage 3.

To replace the component, reverse the removal procedure.

Removing and replacing a rear drive cage

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

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

Procedure

1. Power down the server.

2. Remove the server from the rack.

3. Place the server on a flat, level surface.

4. Remove the complete access panel.

5. Remove the rear drive cage.
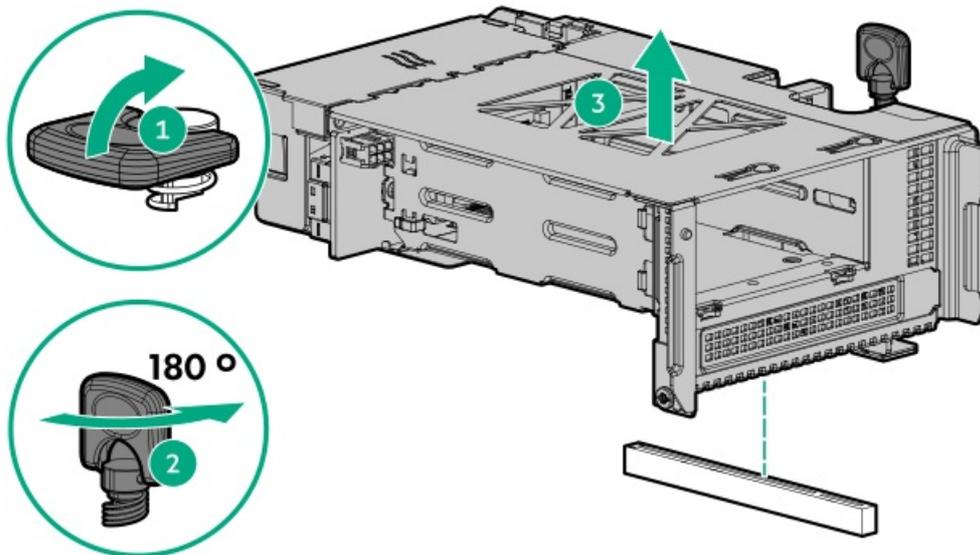
To replace the component, reverse the removal procedure.

Removing and replacing drive backplanes
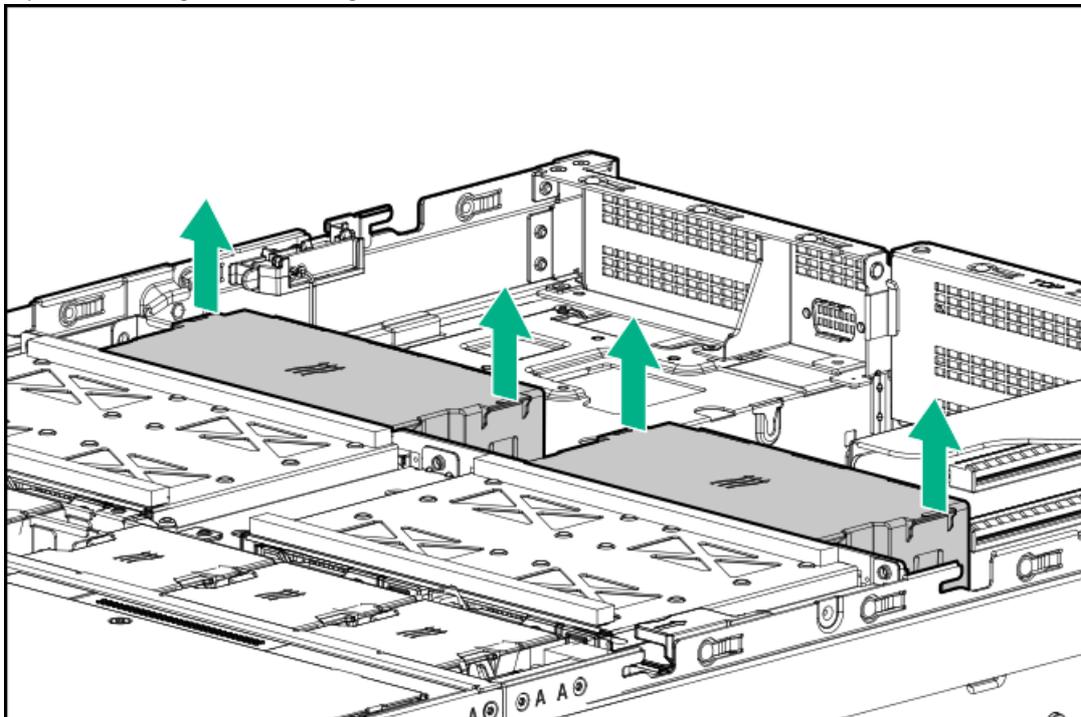
Removing and replacing the 4 LFF or 8 SFF backplane from drive cage 3

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

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

- Get help to lift and stabilize the product during installation or removal, especially when the product is not fastened to the rails. Hewlett Packard Enterprise recommends that a minimum of two people are required for all rack server installations. A third person may be required to help align the server if the server is installed higher than chest level.

- Use caution when installing the server in or removing the server from the rack; it is unstable when not fastened to the rails.

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

Prerequisites

Before you perform this procedure, make sure that you have the components included with the hardware kit.

Procedure

1. Power down the server.

2. Remove the server from the rack.

3. Place the server on a flat, level surface.

4. Remove the access panel.

5. Disconnect all cables connected to the drive backplane.

6. Remove drive cage 3.

7. Remove the drive backplane.

- 4 LFF backplane
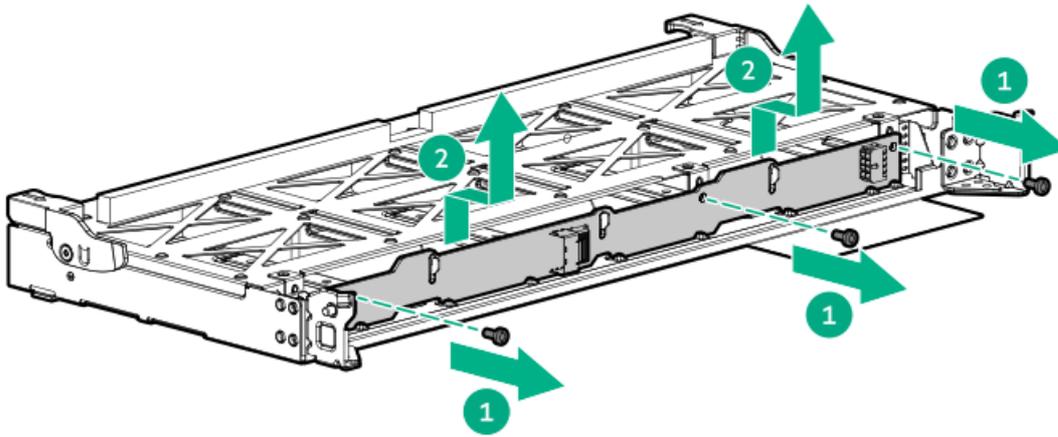
- 8 SFF backplane
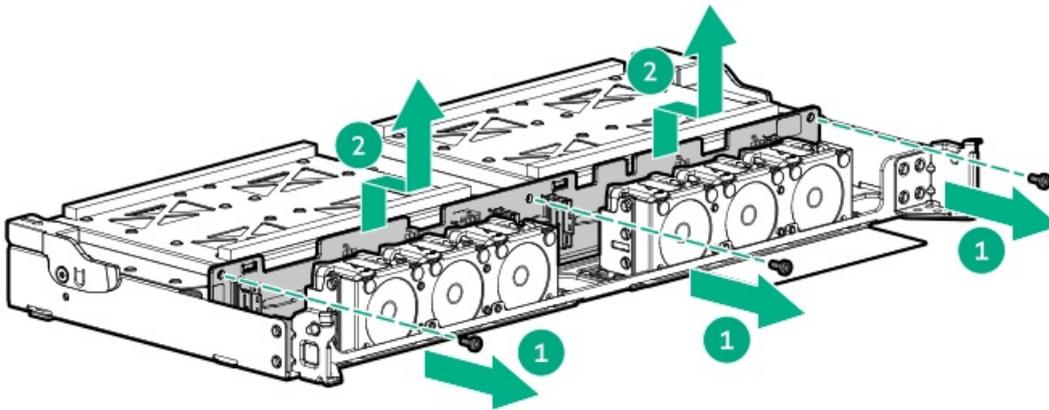
To replace the component, reverse the removal procedure.

Removing and replacing a power supply blank

⚠ **CAUTION:**

   Always install a power supply blank into each bay to maintain proper airflow and cooling in the power enclosure. Improper airflow can lead to thermal damage.

Procedure

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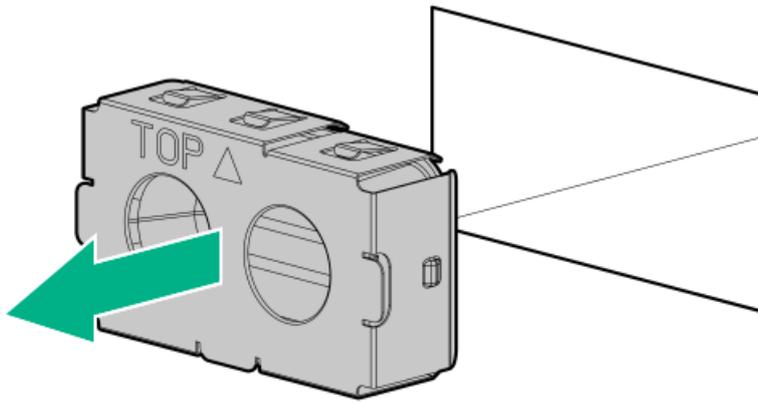
2. Immediately install the replacement power supply blank spare.

Power supply options

Removing and replacing a hot-plug AC power supply

> ⚠ **WARNING:**
>
> To reduce the risk of personal injury, fire, or damage to the equipment, do not overload the AC supply branch circuit that provides power to the rack. Consult the electrical authority having jurisdiction over wiring and installation requirements of your facility.

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

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

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

Procedure

1. If installed, release the cable management arm .

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

   a. Back up all server data.

   b. Power down the server.

   c. Disconnect all peripheral cables from the server.

3. Release the power cord from the strain relief strap.
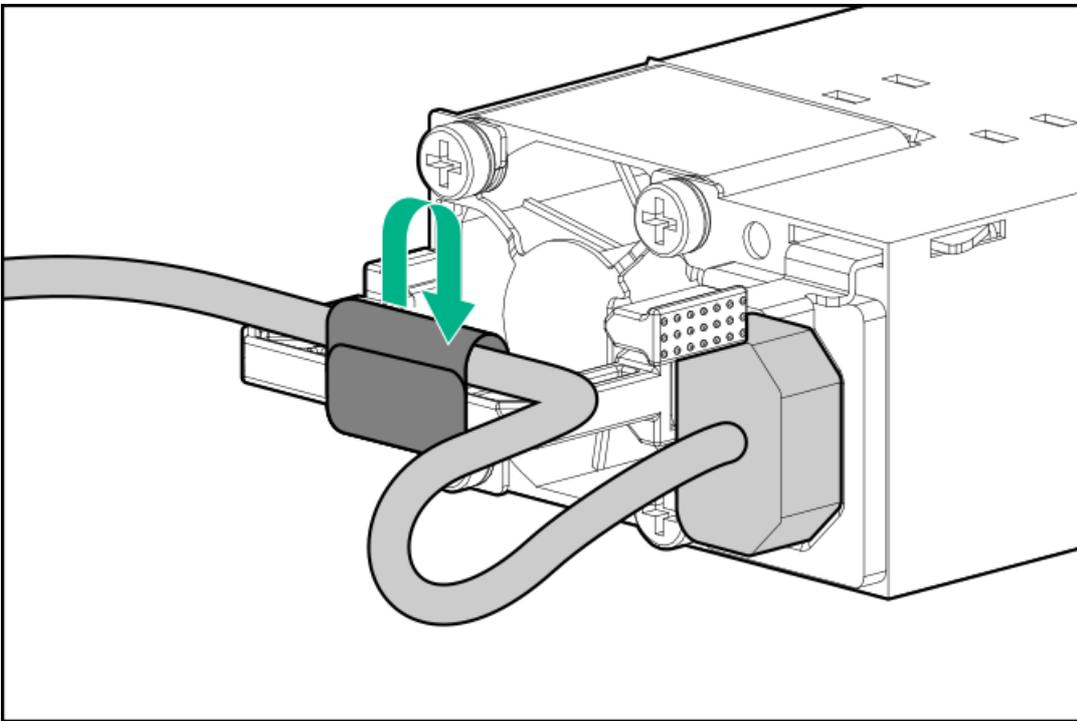
4. Disconnect the power cord from the power supply.
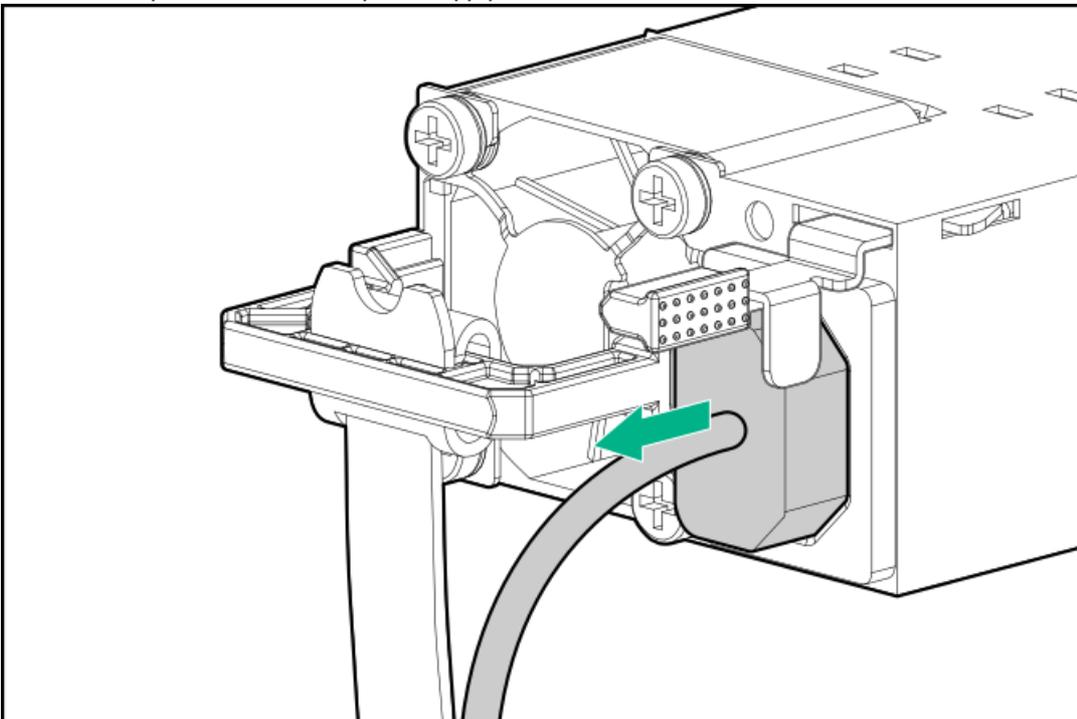
5. Remove the power supply.

To replace the component, reverse the removal procedure.

Removing and replacing the HPE 800 W Flex Slot -48 VDC hot-plug power supply

⚠ **WARNING:**

To reduce the risk of electric shock, fire, and damage to the equipment, you must install this product in accordance with the following guidelines:

- The HPE 800 W Flex Slot -48 VDC hot-plug power supply is intended only for installation in Hewlett Packard Enterprise servers located in a restricted access location.

- The HPE 800 W Flex Slot -48 VDC hot-plug power supply is not intended for direct connection to the DC supply branch circuit. Only connect this power supply to a power distribution unit (PDU) that provides an independent overcurrent-protected output for each DC power supply. Each output overcurrent-protected device in the PDU must be suitable for interrupting fault current available from the DC power source and must be rated no more than 30 A.

- The PDU output must have a shut-off switch or a circuit breaker to disconnect power for each power supply. To completely remove power from the power supply, disconnect power at the PDU. Disconnect the power for each power supply, if there are multiple power supplies.

- In accordance with applicable national requirements for Information Technology Equipment and Telecommunications Equipment, this power supply only connects to DC power sources that are classified as SELV or TNV. Generally, these requirements are based on the International Standard for Information Technology Equipment, IEC 60950-1/IEC 62368-1. In accordance with local and regional electric codes and regulations, the DC source must have one pole (Neutral/Return) reliably connected to earth ground.

- You must connect the power supply ground screw located on the front of the power supply to a suitable ground (earth) terminal. In accordance with local and regional electric codes and regulations, this terminal must be connected to a suitable building ground (earth) terminal. Do not rely on the rack or cabinet chassis to provide adequate ground (earth) continuity.

Prerequisites

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

- No. 1 Phillips screwdriver

- If you are replacing the factory installed ground lug, use the KST RNB5-5 crimp terminal ring or equivalent. Use an M5-0.80 x 8 screw to attach the ground lug to the power supply.
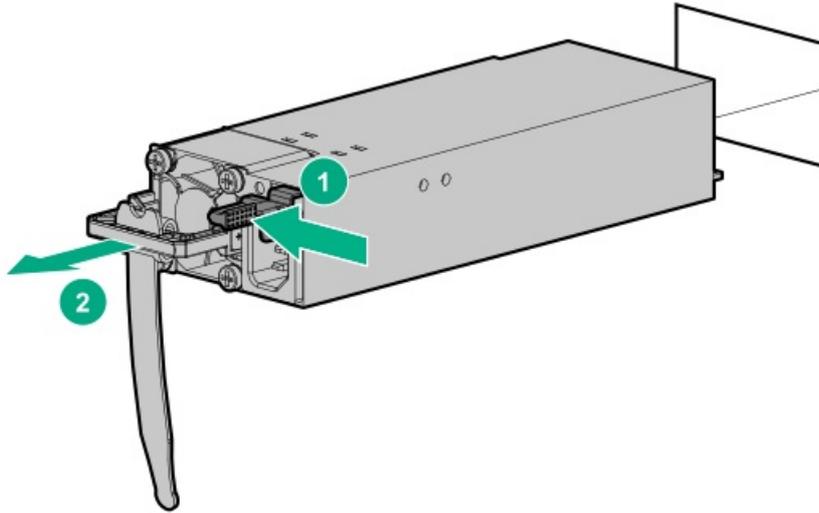
Procedure

1. If installed, release the cable management arm.

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

   a. Back up all server data.

   b. Power down the server.

   c. Disconnect all peripheral cables from the server.

3. Release the power cord, wires, and/or cables from the strain relief strap.

4. To access the ground cable screw, slide the power supply out of the bay.
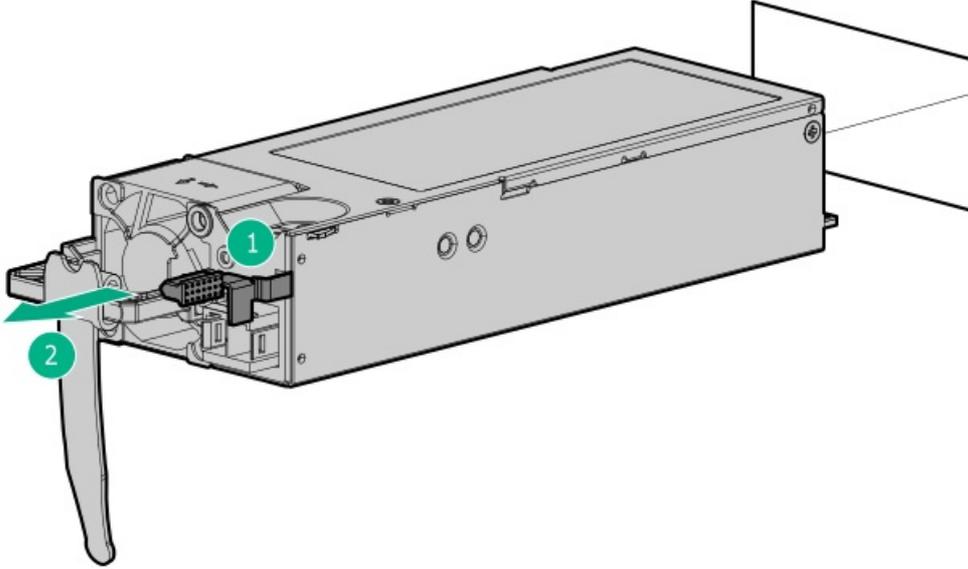
5. Detach the ground (earthed) cable from the power supply.
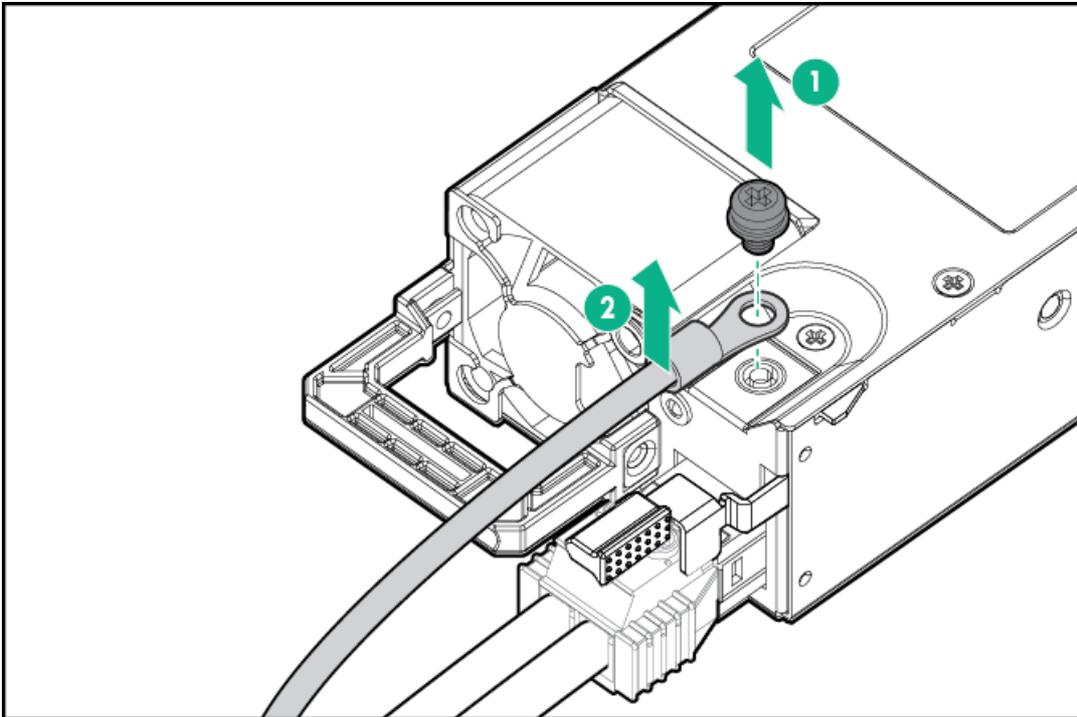
6. Remove the terminal block connector from the power supply.

To replace the component, reverse the removal procedure.

Removing and replacing an HPE 1600 W Flex Slot -48 VDC hot-plug power supply

⚠ **WARNING:**

To reduce the risk of electric shock, fire, and damage to the equipment, you must install this product in accordance with the following guidelines:

- The HPE 1600 W Flex Slot -48 VDC hot-plug power supply is intended only for installation in Hewlett Packard Enterprise servers located in a restricted access location.

- The HPE 1600 W Flex Slot -48 VDC hot-plug power supply is not intended for direct connection to the DC supply branch circuit. Only connect this power supply to a power distribution unit (PDU) that provides an independent overcurrent-protected output for each DC power supply. Each output overcurrent-protected device in the PDU must be suitable for interrupting fault current available from the DC power source and must be rated no more than 45 A.

- The PDU output must have a shut-off switch or a circuit breaker to disconnect power for each power supply. To completely remove power from the power supply, disconnect power at the PDU. The end product may have multiple power supplies. To remove all power from the product, disconnect the power for each power supply.

- In accordance with applicable national requirements for Information Technology Equipment and Telecommunications Equipment, this power supply only connects to DC power sources that are classified as SELV or TNV. Generally, these requirements are based on the International Standard for Information Technology Equipment, IEC 60950-1/IEC 62368-1. In accordance with local and regional electric codes and regulations, the DC source must have one pole (Neutral/Return) reliably connected to earth ground.

- You must connect the power supply ground screw located on the front of the power supply to a suitable ground (earth) terminal. In accordance with local and regional electric codes and regulations, this terminal must be connected to a suitable building ground (earth) terminal. Do not rely on the rack or cabinet chassis to provide adequate ground (earth) continuity.

Prerequisites

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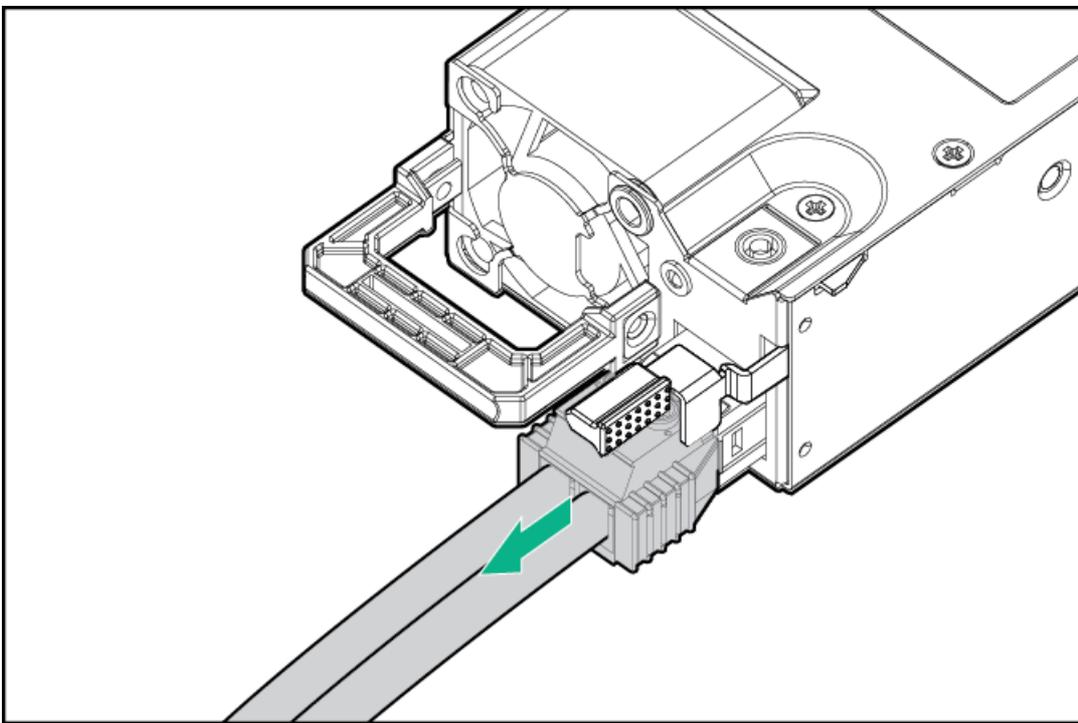
Procedure

1. If installed, release the cable management arm.

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

    a. Back up all server data.

    b. Power down the server.

    c. Disconnect all peripheral cables from the server.

3. Slide the power supply out of the bay.

4. Release the ground (earthed), -48 V, and return wires from the strain relief strap.
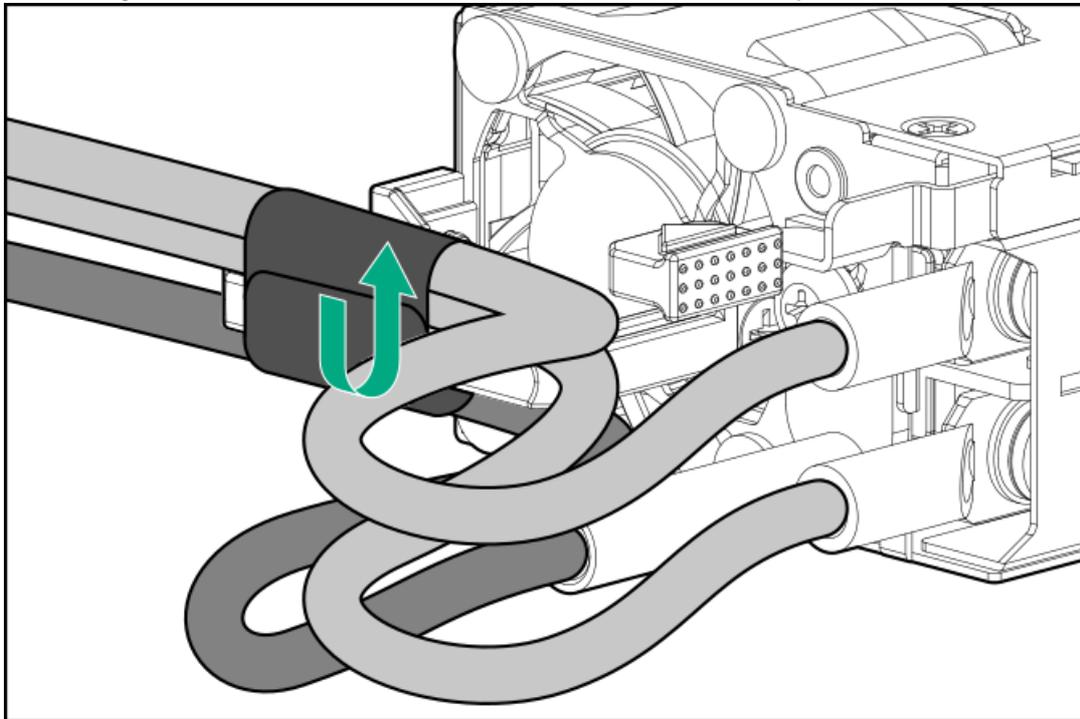
5. Disconnect the ground (earthed) wire from the power supply.
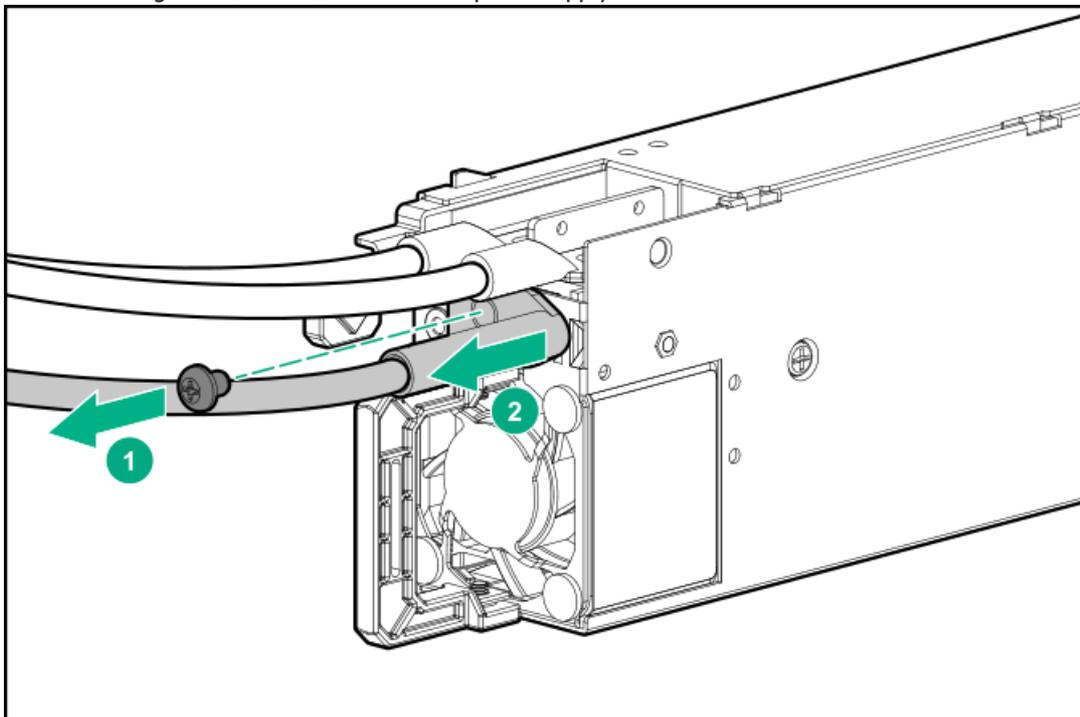
6. Remove the clear plastic cover from the power supply.
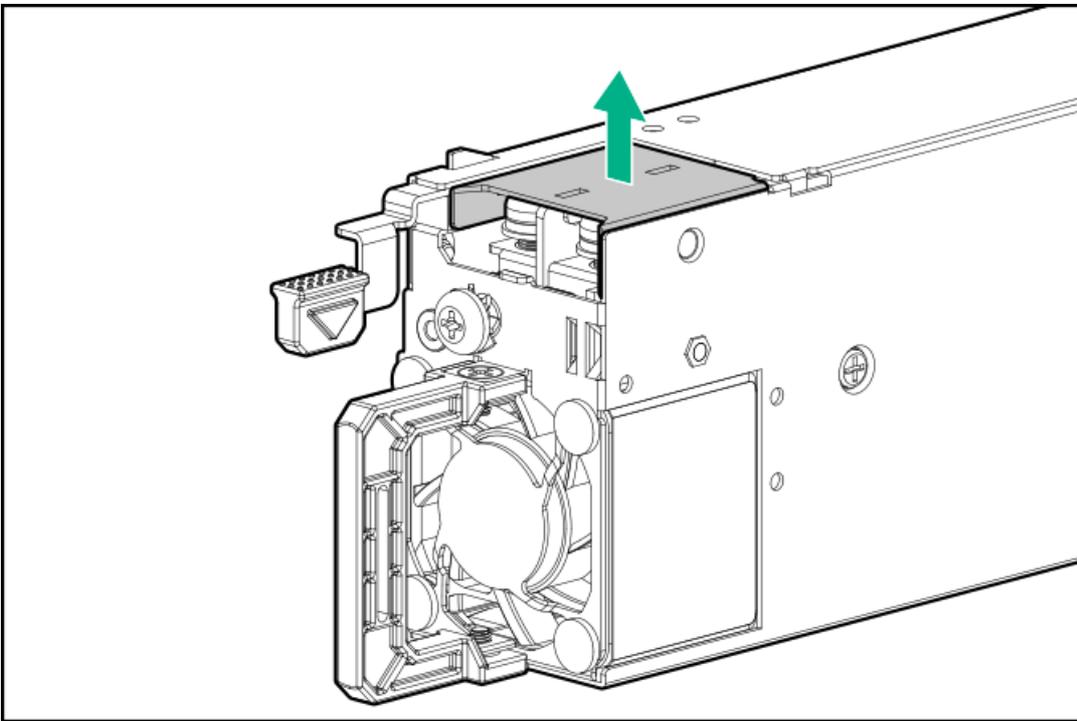
7. Disconnect the -48 V and return wires from the power supply.
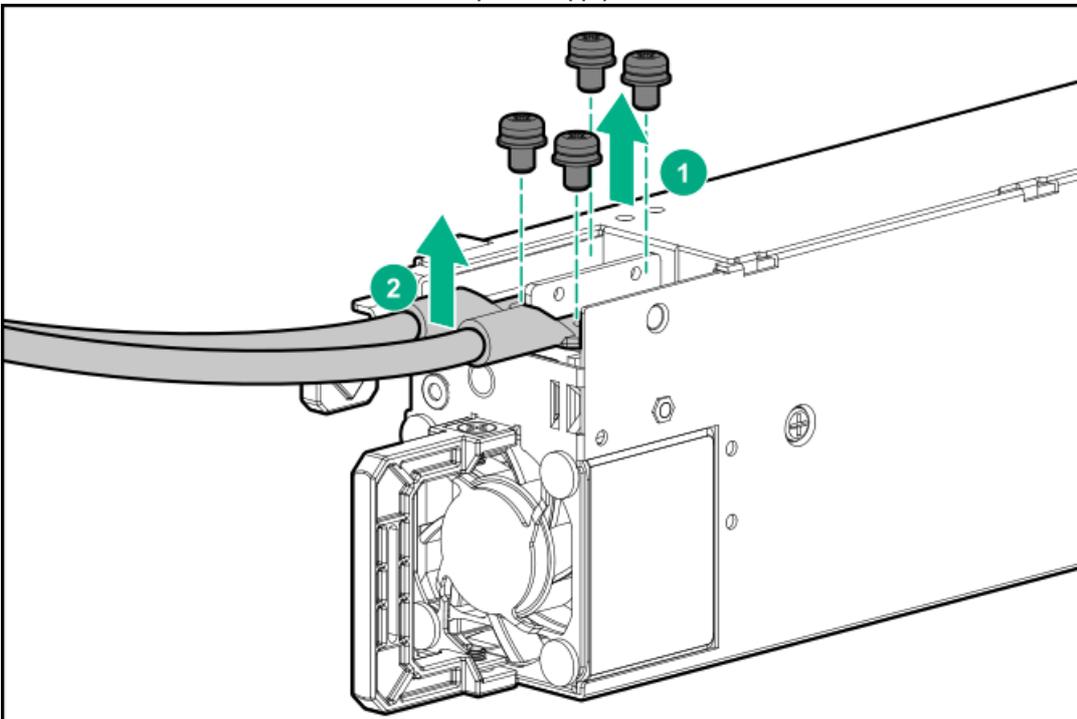
To replace the component, reverse the removal procedure.

Removing and replacing the cable arm

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

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

ⓘ **IMPORTANT:**

Screws included for this part are color-coded. Be sure to replace the color-coded screws in the same location from

which they were removed.

Prerequisites

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

1. Power down the server.

2. Remove all power:

    a. Disconnect each power cord from the power source.

    b. Disconnect each power cord from the server.

3. Remove the server from the rack.

4. Remove the access panel.

5. Remove the air baffle.

6. Remove drive cage 2.

7. Remove the cable arm.
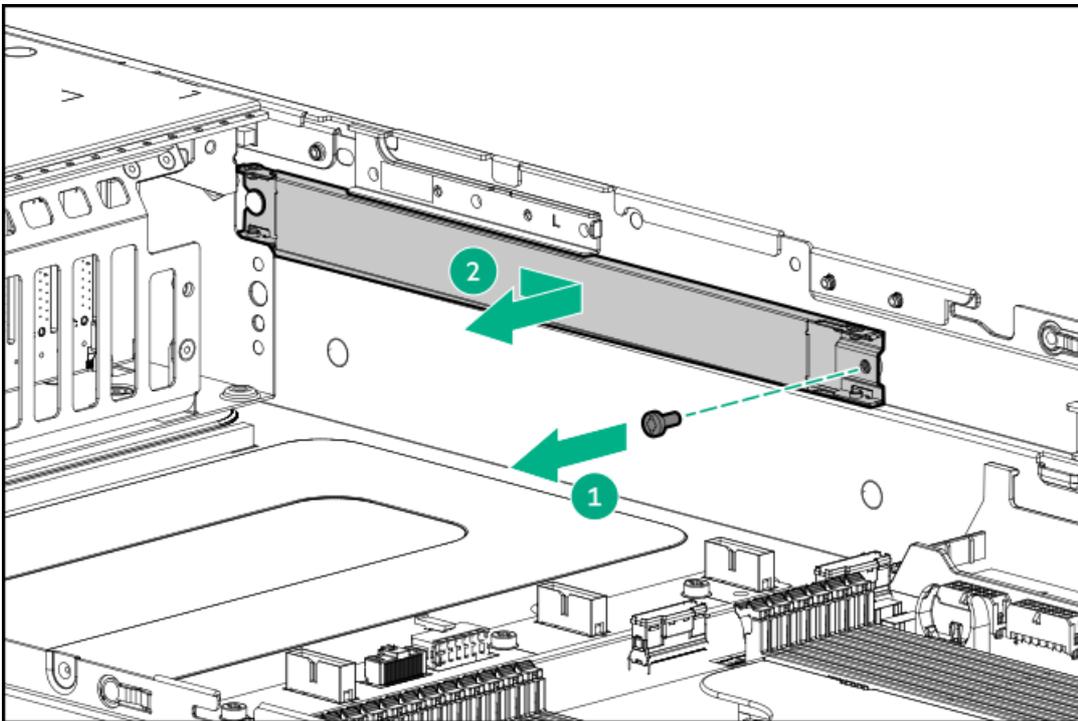
8. Remove the brackets from the cable arm and then remove the cables.
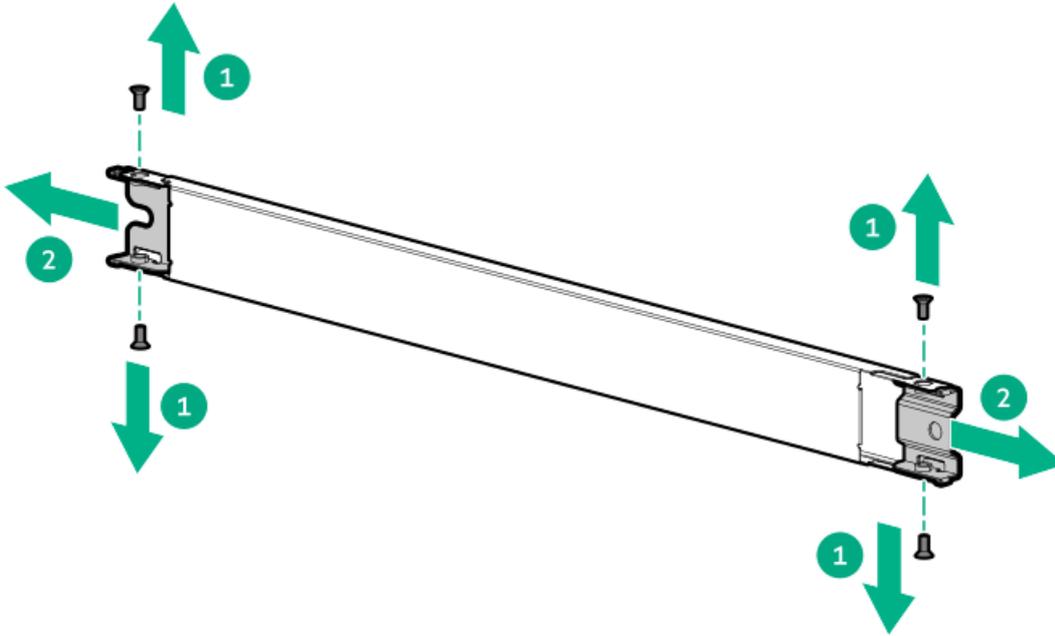
To replace the component, reverse the removal procedure.

Removing and replacing the PCI riser cage

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

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

Prerequisites

Before you perform this procedure, make sure that you have the components included with the hardware kit.

Procedure

1. Power down the server.

2. Remove the server from the rack.

3. Place the server on a flat, level surface.

4. Remove the complete access panel.

5. If expansion boards with internal cabling are installed on the PCI riser cage, disconnect all internal cables from the expansion boards to remove the cage from the server.

6. Remove the PCI riser cage.

   Primary slot
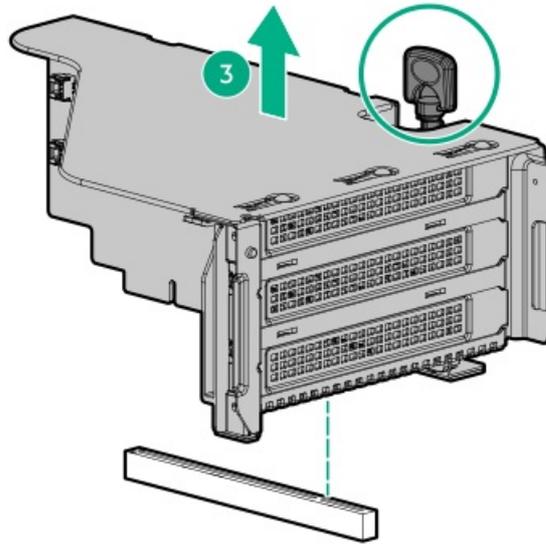
Secondary slot
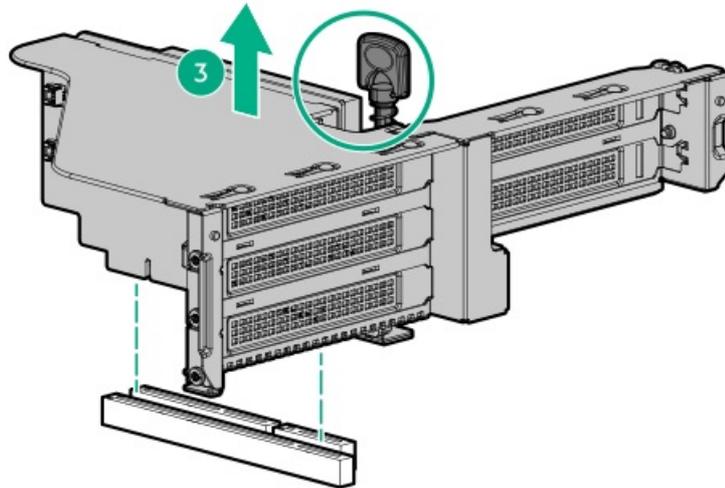
To replace the component, reverse the removal procedure.

Removing and replacing an expansion board

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

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

⚠ **CAUTION:**

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

Use these instructions to remove and replace expansion boards including type -p storage controllers, PCIe accelerators, and network adapters into the server. For more information on installing controllers, SAS expanders, or GPU cards, see the related section.

Prerequisites

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

- Components included with the hardware kit

- T-10 screwdriver

Procedure

1. Power down the server.

2. Remove the server from the rack.

3. Place the server on a flat, level surface.

4. Remove the complete access panel.

5. If you are removing an expansion board installed in the PCI riser cage, remove the riser cage.

6. Disconnect any cables that are connected to the expansion board.

7. Remove the expansion board.

    - Expansion board removal from an onboard expansion slot

    - Expansion board removal from the PCI riser cage

    To replace the component, reverse the procedure.

Removing and replacing a type -a storage controller

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

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

Prerequisites

Before you perform this procedure, make sure that you have the components included with the hardware kit.

Procedure

1. Power down the server.

2. Remove the server from the rack.

3. Place the server on a flat, level surface.

4. Remove the complete access panel.

5. Disconnect all cables connected to the storage controller.

6. Remove the storage controller.

7. Configure the new storage controller.

   For more information, see the user guide for your controller series on the Hewlett Packard Enterprise website (http://www.hpe.com/info/smartstorage-docs).

To replace the component, reverse the removal procedure.

Removing and replacing the HPE NS204i-p NVMe OS Boot Device option

Removing and replacing the boot device

Prerequisites

Procedure

1. Observe the following alerts:

   > **⚠ CAUTION:**

The boot device and the drives installed on the boot device are not hot-pluggable. To remove the boot device, or a drive from the boot device, you must first power down the server.

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

2. Back up all server data.

3. Power down the server.

4. Remove all power:

   a. Disconnect each power cord from the power source.

   b. Disconnect each power cord from the server.

5. Remove the server from the rack.

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

7. Remove the access panel.

8. Remove the PCI riser cage.

9. Remove the boot device.

10. Remove the drives from the boot device.

    Retain these drives for installation onto the replacement boot device.

To replace the component, reverse the removal procedure.

Removing and replacing a boot device drive

The boot device supports two physical drive sizes:

- 22110 (110 mm)

- 2280 (80 mm)

Two drives of the same physical size, or one of each size, can be installed at the same time. Depending on the replacement drive size, you might need to relocate the M.2 drive retaining latches on the boot device.

Prerequisites

Review the boot device drive bay LEDs to determine the failed drive.

Procedure

1. Observe the following alerts:

   > **⚠ CAUTION:**
   > The boot device and the drives installed on the boot device are not hot-pluggable. To remove the boot device, or a drive from the boot device, you must first power down the server.

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

2. Back up all server data.

3. Power down the server.

4. Remove all power:

   a. Disconnect each power cord from the power source.

   b. Disconnect each power cord from the server.

5. Remove the server from the rack.

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

7. Remove the access panel.

8. If necessary, remove the PCI riser cage.

9. Remove the boot device.

10. Remove the failed drive from the boot device.

To replace the component, reverse the removal procedure.

Relocating the M.2 drive retaining latches

Procedure

1. If your spare kit includes an 80 mm replacement drive, remove the retaining latch from its current location.

2. Install the retaining latch at the 80 mm drive location.

Removing and replacing a DIMM

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

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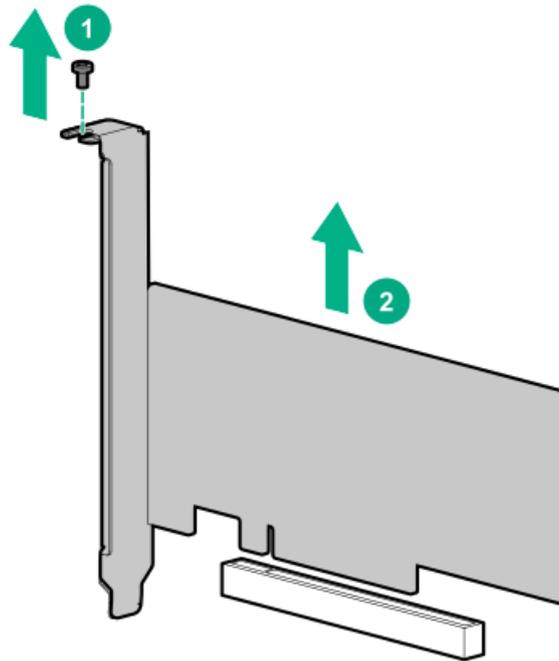
Prerequisites

Before you perform this procedure, make sure that you have the components included with the hardware kit.
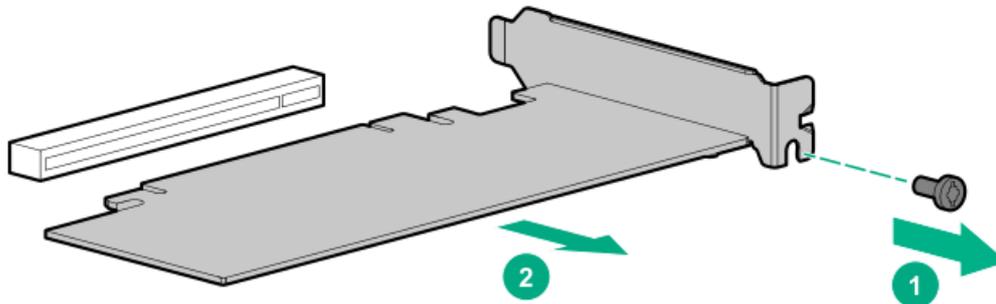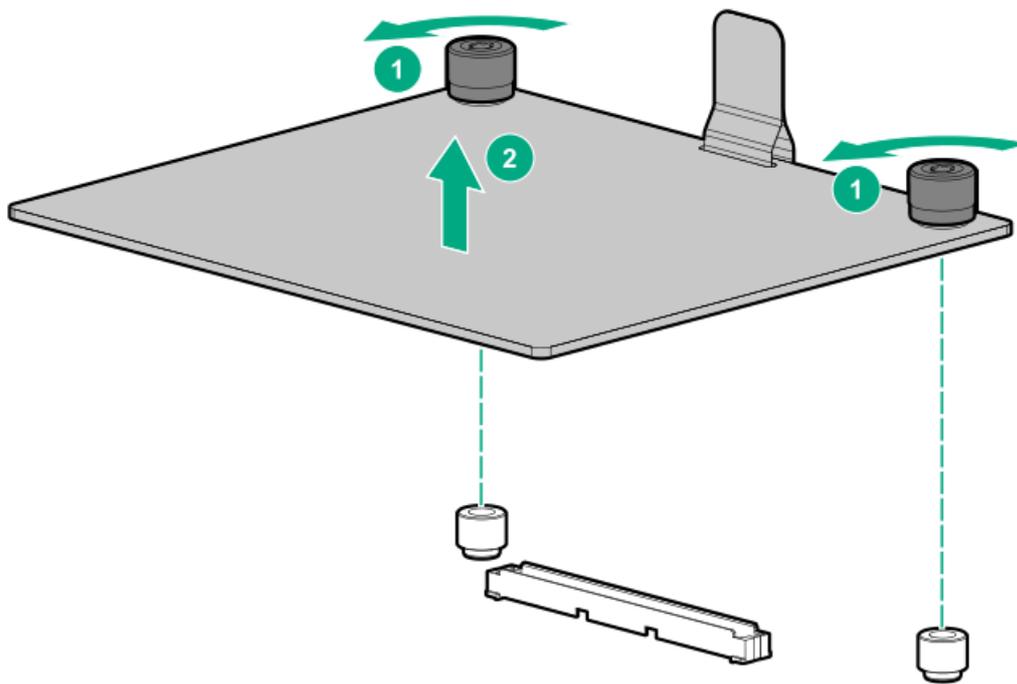
Procedure

1. Power down the server.

2. Remove the server from the rack.

3. Place the server on a flat, level surface.

4. Remove the complete access panel.

5. Remove the air baffle.

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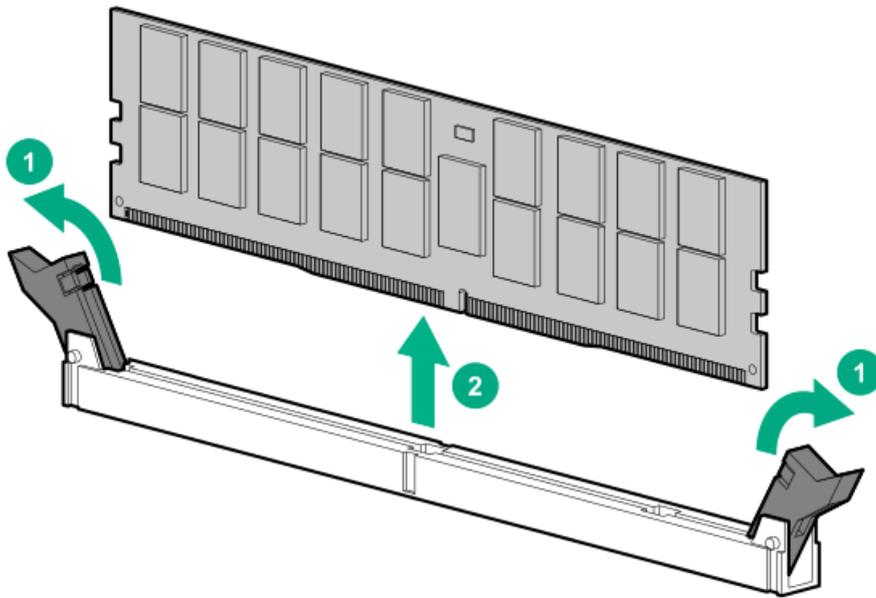
To replace the component, reverse the removal procedure.

> **NOTE:**
>
> If you are removing a DIMM permanently, replace the component with a DIMM blank. The DIMM slots must always have a DIMM installed or a DIMM blank inserted.

Removing and replacing the OCP NIC 3.0 adapter

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

Prerequisites

Before you perform this procedure, make sure that you have the components included with the hardware kit.

Procedure

1. Power down the server.

2. Remove all power:

   a. Disconnect each power cord from the power source.

   b. Disconnect each power cord from the server.

3. Remove the server from the rack.

4. Place the server on a flat, level surface.

5. Remove the complete access panel.

6. Remove the secondary PCIe riser cage (if equipped).

7. Remove the OCP NIC 3.0 adapter.
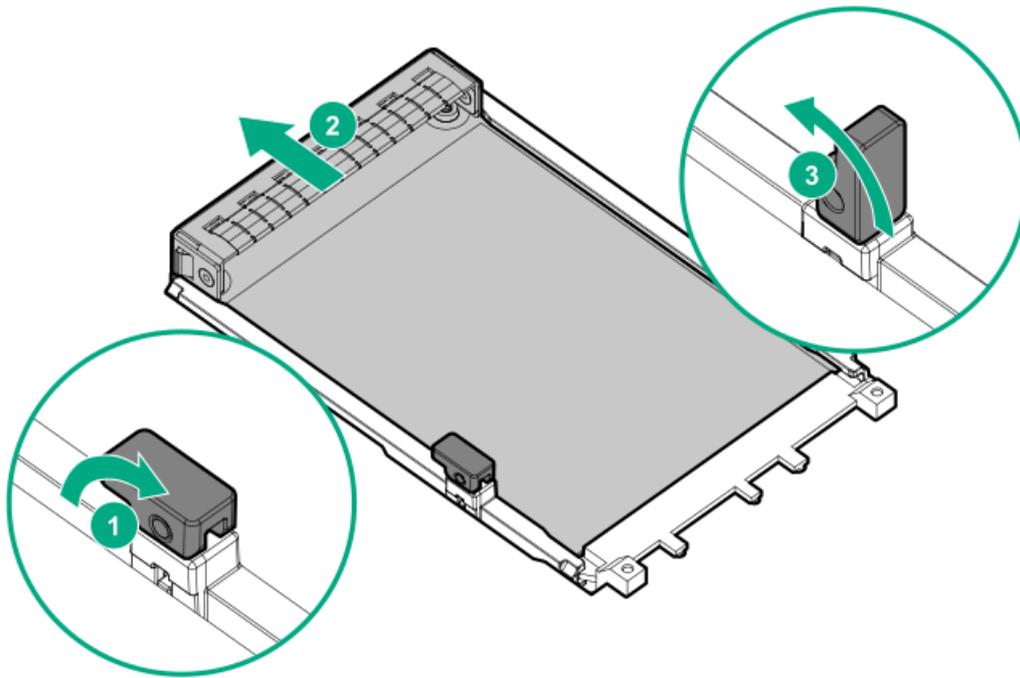
To replace the component, reverse the removal procedure.

Removing and replacing the OCP fan board

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

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

⚠ **CAUTION:**

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

Prerequisites

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

- Components included with the hardware kit
- T-10 screwdriver

Procedure

1. Power down the server.

2. Remove the server from the rack.

3. Place the server on a flat, level surface.

4. Remove the complete access panel.

5. Remove drive cage 4.

6. Remove the OCP fan board.
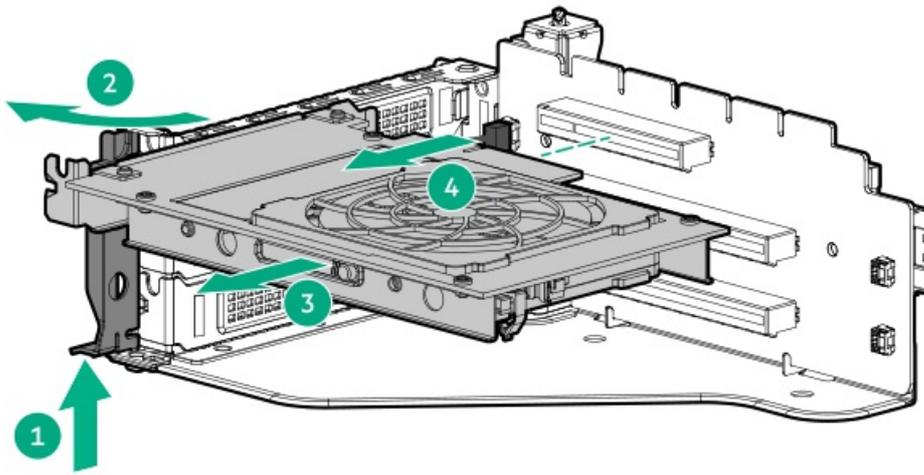
7. Disconnect the power cable.

   To replace the component, reverse the procedure.

Removing and replacing the front I/O board

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

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

Prerequisites

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

- Components included with the hardware kit
- T-10 screwdriver
- T-15 screwdriver

Procedure

1. Power down the server.

2. Remove the server from the rack.

3. Place the server on a flat, level surface.

4. Remove the right rack ear assembly:

   a. Remove the screws behind the right rack ear.

   b. Carefully open the right rack ear from behind, and then disconnect the front I/O cable.

      This action releases the right rack ear assembly from the chassis.
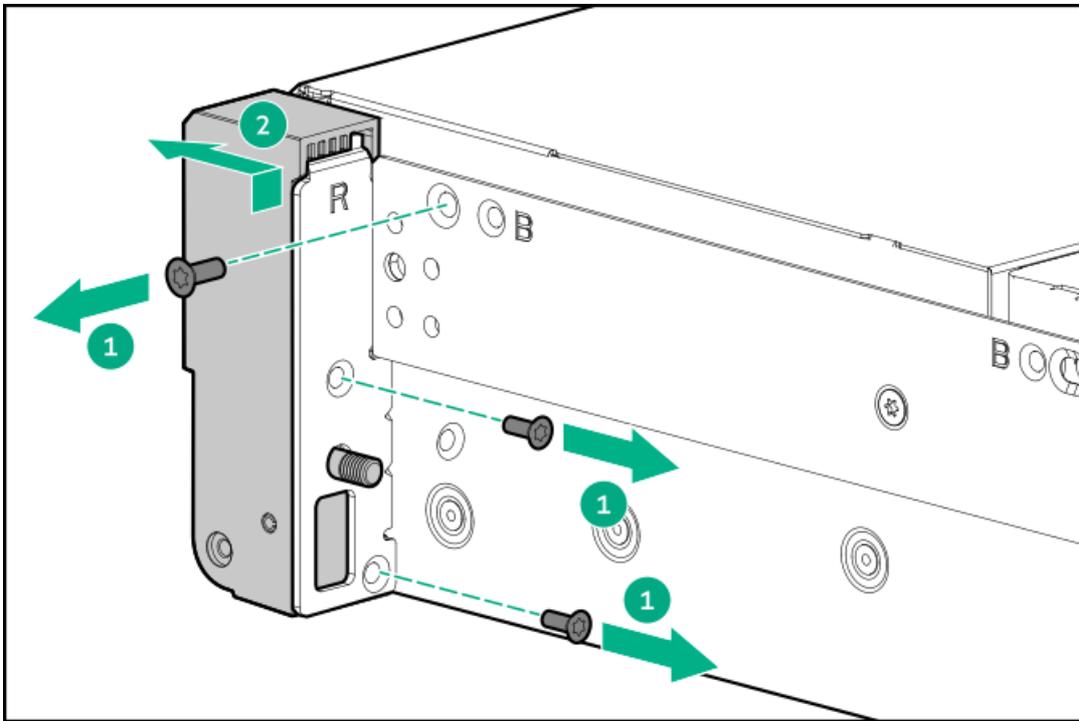
5. Use a flat-headed screwdriver to remove the front I/O board.
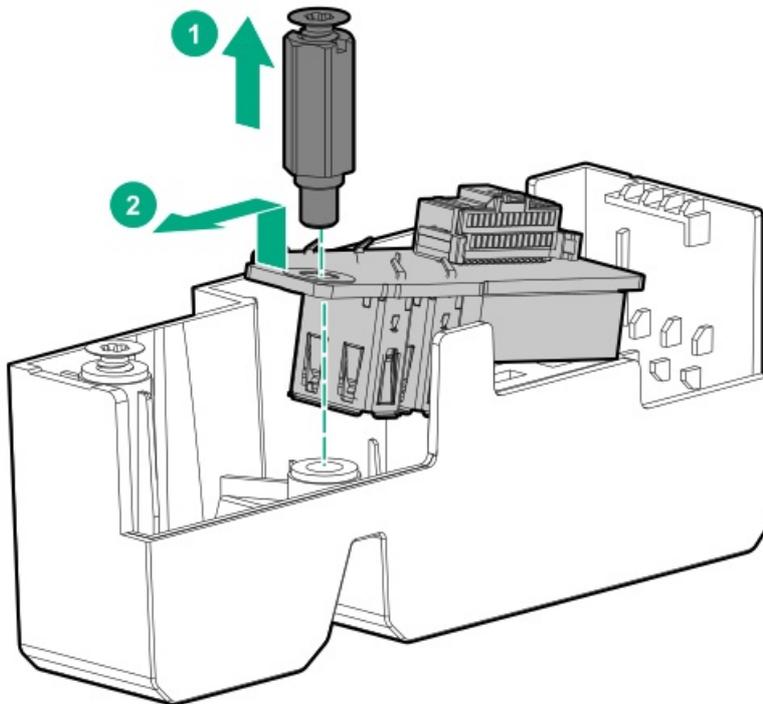
To replace the component, reverse the removal procedure.

Diagnostic tools

UEFI System Utilities

The UEFI System Utilities is embedded in the system ROM. Its features enable you to perform a wide range of configuration activities, including:

- Configuring system devices and installed options.

- Enabling and disabling system features.

- Displaying system information.

- Selecting the primary boot controller or partition.

- Configuring memory options.

- Launching other preboot environments.

HPE servers with UEFI can provide:

- Support for boot partitions larger than 2.2 TB. Such configurations could previously only be used for boot drives when using RAID solutions.

- Secure Boot that enables the system firmware, option card firmware, operating systems, and software collaborate to enhance platform security.

- UEFI Graphical User Interface (GUI)

- An Embedded UEFI Shell that provides a preboot environment for running scripts and tools.

- Boot support for option cards that only support a UEFI option ROM.

Selecting the boot mode

This server provides two Boot Mode configurations: UEFI Mode and Legacy BIOS Mode. Certain boot options require that you select a specific boot mode. By default, the boot mode is set to UEFI Mode. The system must boot in UEFI Mode to use certain options, including:

- Secure Boot, UEFI Optimized Boot, Generic USB Boot, IPv6 PXE Boot, iSCSI Boot, NVMe Boot and Boot from URL

- Fibre Channel/FCoE Scan Policy

> **NOTE:**
> The boot mode you use must match the operating system installation. If not, changing the boot mode can impact the ability of the server to boot to the installed operating system.

Prerequisite

When booting to UEFI Mode, leave UEFI Optimized Boot enabled.

Procedure

1. From the System Utilities screen, select System Configuration > BIOS/Platform Configuration (RBSU) > Boot Options > Boot Mode.

2. Select a setting.

   - UEFI Mode (default)—Configures the system to boot to a UEFI compatible operating system.

   - Legacy BIOS Mode—Configures the system to boot to a traditional operating system in Legacy BIOS compatibility mode.

3. Save your setting.

4. Reboot the server.

Secure Boot

Secure Boot is a server security feature that is implemented in the BIOS and does not require special hardware. Secure Boot ensures that each component launched during the boot process is digitally signed and that the signature is validated against a set of trusted certificates embedded in the UEFI BIOS. Secure Boot validates the software identity of the following components in the boot process:

- UEFI drivers loaded from PCIe cards

- UEFI drivers loaded from mass storage devices

- Preboot UEFI Shell applications

- OS UEFI boot loaders

When Secure Boot is enabled:

- Firmware components and operating systems with boot loaders must have an appropriate digital signature to execute during the boot process.

- Operating systems must support Secure Boot and have an EFI boot loader signed with one of the authorized keys to boot. For more information about supported operating systems, see **https://www.hpe.com/servers/ossupport**.

You can customize the certificates embedded in the UEFI BIOS by adding or removing your own certificates, either from a management console directly attached to the server, or by remotely connecting to the server using the iLO Remote Console.

You can configure Secure Boot:

- Using the System Utilities options described in the following sections.

- Using the iLO RESTful API to clear and restore certificates. For more information, see the Hewlett Packard Enterprise website (**https://www.hpe.com/info/redfish**).

- Using the `secboot` command in the Embedded UEFI Shell to display Secure Boot databases, keys, and security reports.

Launching the Embedded UEFI Shell

Use the Embedded UEFI Shell option to launch the Embedded UEFI Shell. The Embedded UEFI Shell is a preboot command-line environment for scripting and running UEFI applications, including UEFI boot loaders. The Shell also provides CLI-based commands you can use to obtain system information, and to configure and update the system BIOS.

Prerequisites

- Embedded UEFI Shell is set to Enabled.

Procedure

1. From the System Utilities screen, select Embedded Applications > Embedded UEFI Shell.

   The Embedded UEFI Shell screen appears.

2. Press any key to acknowledge that you are physically present.

   This step ensures that certain features, such as disabling Secure Boot or managing the Secure Boot certificates using third-party UEFI tools, are not restricted.

3. If an administrator password is set, enter it at the prompt and press Enter.

   The `Shell>` prompt appears.

4. Enter the commands required to complete your task.

5. Enter the `exit` command to exit the Shell.

Intelligent Provisioning

Intelligent Provisioning is a single-server deployment tool embedded in ProLiant servers and HPE Synergy compute modules. Intelligent Provisioning simplifies server setup, providing a reliable and consistent way to deploy servers.

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

(i) **IMPORTANT:**

   HPE ProLiant XL servers do not support operating system installation with Intelligent Provisioning, but they do

support the maintenance features. For more information, see "Performing Maintenance" in the Intelligent Provisioning user guide and online help.

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

To access Intelligent Provisioning:

- Press F10 from the POST screen and enter Intelligent Provisioning .

- From the iLO web interface using Lifecycle Management. Lifecycle Management allows you to access Intelligent Provisioning without rebooting your server.

HPE Insight Remote Support

Hewlett Packard Enterprise strongly recommends that you register your device for remote support to enable enhanced delivery of your Hewlett Packard Enterprise warranty, HPE support services, or Hewlett Packard Enterprise contractual support agreement. Insight Remote Support supplements your monitoring continuously to ensure maximum system availability by providing intelligent event diagnosis, and automatic, secure submission of hardware event notifications to Hewlett Packard Enterprise, which will initiate a fast and accurate resolution, based on your product's service level. Notifications can be sent to your authorized Hewlett Packard Enterprise Channel Partner for onsite service, if configured and available in your country.

For more information, see Insight Remote Support and Insight Online Setup Guide for ProLiant Servers and BladeSystem c-Class Enclosures on the **Hewlett Packard Enterprise website** . Insight Remote Support is available as part of Hewlett Packard Enterprise Warranty, HPE support services, or Hewlett Packard Enterprise contractual support agreement.

HPE InfoSight for servers

The HPE InfoSight portal is a secure web interface hosted by HPE that allows you to monitor supported devices through a graphical interface.

HPE InfoSight for servers:

- Combines the machine learning and predictive analytics of HPE InfoSight with the health and performance monitoring of Active Health System (AHS) and HPE iLO to optimize performance and predict and prevent problems

- Provides automatic collection and analysis of the sensor and telemetry data from AHS to derive insights from the behaviors of the install base to provide recommendations to resolve problems and improve performance

For more information on getting started and using HPE InfoSight for servers, go to: **https://www.hpe.com/info/infosight-servers-docs**.

USB support

Hewlett Packard Enterprise Gen10 and Gen10 Plus servers support all USB operating speeds depending on the device that is connected to the server.

External USB functionality

Hewlett Packard Enterprise provides external USB support to enable local connection of USB devices for   server administration, configuration, and diagnostic procedures.

For additional security, external USB functionality can be disabled through USB options in UEFI System Utilities.

Smart Storage Administrator

SSA is the main tool for configuring arrays on these controllers. It exists in three interface formats: the SSA GUI, the SSA CLI, and SSA Scripting. All formats provide support for configuration tasks. Some of the advanced tasks are available in only one format.

The diagnostic features in SSA are also available in the standalone software Smart Storage Administrator Diagnostics Utility CLI.

- **Accessing SSA in the offline environment:** Using one of multiple methods, you can run SSA before launching the host operating system. In offline mode, users can configure or maintain detected and supported HPE ProLiant devices, such as optional controllers and integrated controllers. Some SSA features are only available in the offline environment, such as setting the boot controller or performing split-mirror operations.

- **Accessing SSA in the online environment:** This method requires an administrator to download the SSA executables and install them. You can run SSA online after launching the host operating system.

Troubleshooting

Troubleshooting resources

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

- Troubleshooting Guide for HPE ProLiant Gen10 and Gen10 Plus servers provides procedures for resolving common problems and comprehensive courses of action for fault isolation and identification, issue resolution, and software maintenance.

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

To access troubleshooting resources for your product, see the **Hewlett Packard Enterprise website**.

Component identification

Front panel components

- 12 LFF server

Item	Description
1	iLO Service Port
2	LFF hot-plug drives
3	USB 3.0 port

- 24 SFF server

Item	Description
1	iLO Service Port
2	SFF hot-plug drives
3	USB 3.0 port

Front panel LEDs and buttons

Item	Description	Status
1	Health LED [1]	- Solid green = Normal - Flashing green (1 flash per sec) = iLO is rebooting - Flashing amber = System degraded [1] - Flashing red (1 flash per sec) = System critical
2	Power On/Standby button and system power LED [2]	- Solid green = System on - Flashing green (1 flash per second) = Performing power on sequence - Solid amber = System in standby - Off = No power present [3]
3	NIC status LED [1]	- Solid green = Link to network - Flashing green (1 flash per second) = Network active - Off = No network activity

Item	Description	Status
4	UID button/LED [1]	- Solid blue = Activated - Flashing blue: 1 flash per second = Remote management or firmware upgrade in progress 4 flashes per second = iLO manual reboot sequence initiated 8 flashes per second = iLO manual reboot sequence in progress 1 fast flash and then off for 3 seconds = iLO Service Port status is Complete 4 medium flashes and then off for 1 second = iLO Service Port status is Busy 8 fast flashes and then off for 1 second = iLO Service Port status is Error - Off = Deactivated
5	Front drive health/thermal LED	- Solid green = Drives supported by the SAS expander are functional. [4] - Solid amber = Failure or predictive failure of one or more drives supported by the SAS expander [4] - Off = No power present [2]

[1] If the health LED indicates a degraded or critical state, review the system IML or use iLO to review the system health status.
[2] When these four LEDs flash simultaneously, a power fault has occurred.
[3] 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.
[4] This LED behavior applies to all front drives, as well as to the rear drives connected to the drive cage 2 backplane.

UID button functionality

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

Front panel LED power fault codes

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

Subsystem	LED behavior
System board	1 flash
Processor	2 flashes
Memory	3 flashes
Riser board PCIe slots	4 flashes
FlexibleLOM	5 flashes
Storage controller	6 flashes

Subsystem	LED behavior
System board PCIe slots	7 flashes
Power backplane	8 flashes
Storage backplane	9 flashes
Power supply	10 flashes
PCIe expansion cards installed in riser board	11 flashes
Chassis	12 flashes
GPU card	13 flashes

Rear panel components

Item	Description
1	Primary riser or drive cage 4 (riser shown)
2	Secondary/tertiary riser or drive cage 5 (riser shown)
3	Hot-plug power supply bay 1 (standard)
4	Hot-plug power supply bay 2 (optional)
5	COM port
6	USB 3.0 connectors
7	iLO Management port
8	Video connector
9	OCP NIC 3.0

Rear panel LEDs

Item	Description	Status
1	iLO port 1 link LED	Green = Network link
		Off = No network link
2	iLO port 1 activity LED	Solid green = Link to network
		Flashing green = Network active
		Off = No network activity
3	UID LED	Solid blue = Activated
		Flashing blue:
		• 1 flash per second = Remote management or firmware upgrade in progress
		• 4 flashes per second = iLO manual reboot sequence initiated
		• 8 flashes per second = iLO manual reboot sequence in progress
		Off = Deactivated
4	Power supply LED (bay 2)	Solid green = Normal
		Off = One or more of the following conditions exists:
		• Power is unavailable.
		• Power supply failed
		• Power supply is in standby mode.
		• Power supply error
5	Power supply LED (bay 1)	Solid green = Normal
		Off = One or more of the following conditions exists:
		• Power is unavailable.
		• Power supply failed
		• Power supply is in standby mode.
		• Power supply error

System board components

The components shown in this section are associated with the ProLiant XL420 Gen10 Plus server server board.

Item	Description
1	Internal USB 3.0 connector [1]
2	Front USB for iLO connector
3	TPM 2.0 connector

Item	Description
4	X8 / X16 slot (primary)
5	Type -a storage controller slot
6	System maintenance switch
7	OCP NIC 3.0 x16 upgrade connector
8	SATA port 1
9	SATA port 2
10	Front panel connector
11	NVMe Slimline 2A
12	NVMe Slimline 1A
13	NVMe Slimline 2B
14	Fan cage signal connector
15	NVMe Slimline 1B
16	Drive cage 3 signal connector
17	Chassis intrusion detection switch connector
18	System battery
19	Fan cage power connector
20	Energy pack connector
21	Drive cage 2 power connector
22	GPU power connector
23	Drive cage 3 power connector
24	Drive cage 1 power connector
25	Secondary PCIe4 riser connector
26	Tertiary PCIe4 riser connector

[1] This description may be different from the label on the server.

DIMM slot locations

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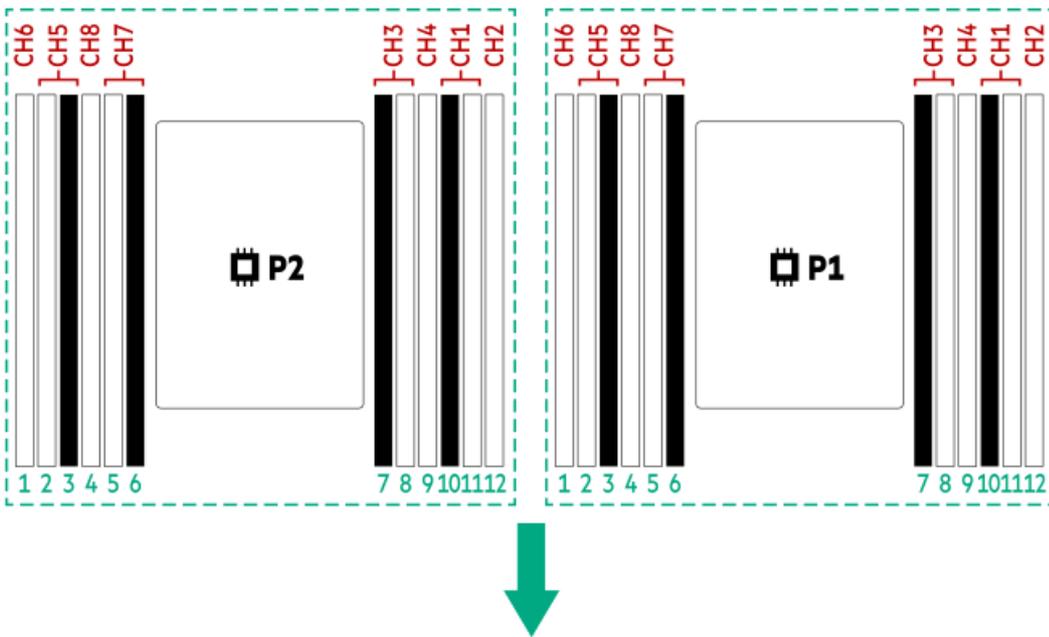
The arrow points to the front of the server.

DIMM label identification

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

For more information about product features, specifications, options, configurations, and compatibility, see the HPE DDR4 SmartMemory QuickSpecs on the Hewlett Packard Enterprise website (**https://www.hpe.com/support/DDR4SmartMemoryQS**).
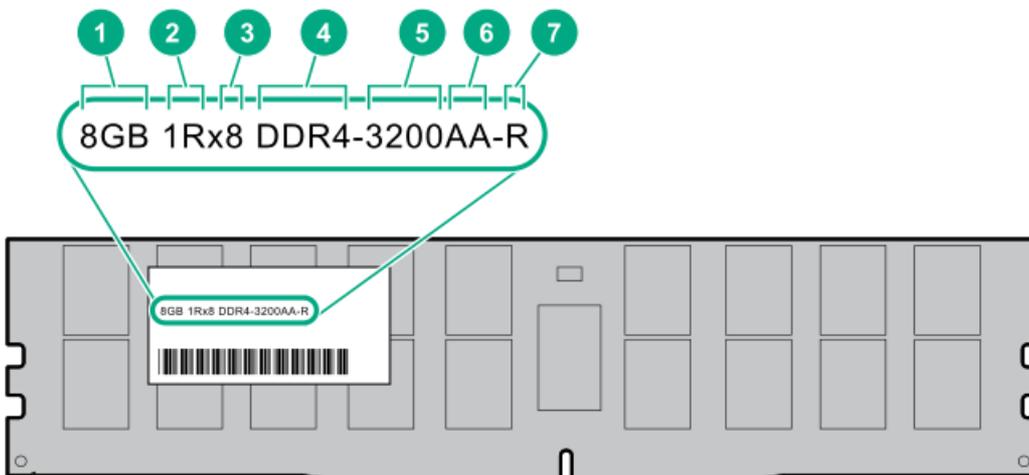
Item	Description	Example
1	Capacity	8 GB
		16 GB
		32 GB
		64 GB
		128 GB
		256 GB

Item	Description	Example
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	PC4 = DDR4
5	Maximum memory speed	3200 MT/s
6	CAS latency	AA = CAS 22-22-22
		AA = CAS 26-22-22 (for 3DS LRDIMM)
7	DIMM type	E = Unbuffered ECC (UDIMM)
		R = RDIMM (registered)
		L = LRDIMM (load reduced)

System maintenance switch descriptions

Position	Default	Function
S1 [1]	Off	• Off = iLO 5 security is enabled. • On = iLO 5 security is disabled.
S2	Off	Reserved
S3	Off	Reserved
S4	Off	Reserved
S5 [1]	Off	• Off = Power-on password is enabled. • On = Power-on password is disabled.
S6 [1], [2], [3]	Off	• Off = No function • On = Restore default manufacturing settings
S7	Off	Reserved
S8	—	Reserved
S9	—	Reserved
S10	—	Reserved
S11	—	Reserved
S12	—	Reserved

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

[2] When the system maintenance switch position 6 is set to the On position, the system is prepared to restore all configuration settings

to their manufacturing defaults.

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

Disabling the HPE SR100i Gen10 Plus Software RAID

Before changing the boot mode to Legacy BIOS Mode, you must first disable the   HPE SR100i Gen10 Plus Software RAID.

> **NOTE:**
> When you use the software to update, maintain, or monitor the   HPE Apollo 4200 Gen10 Plus server, you will see **HPE ProLiant XL420 Gen10 Plus Server** as the product name in the interface.

Procedure

1. Reboot the server.

    The server restarts and the POST screen appears.

2. Press **F9.**

    The System Utilities screen appears.

3. Select System Configuration > BIOS/Platform Configuration (RBSU) > System Options > Storage Options > SATA Controller options, and then press **Enter.**

4. Select **HPE Smart Array SW RAID Support** , and then choose **Disable** from the drop-down menu.

5. To save the selection, press **F10.**

6. To save the changes, press **Yes-Save Changes**.

7. To exit, press **F12: Save and Exit** .

    The server continues the normal boot process.

For more information, see the product QuickSpecs on the   Hewlett Packard Enterprise website (**https://www.hpe.com/info/qs**).

Drive cage numbering
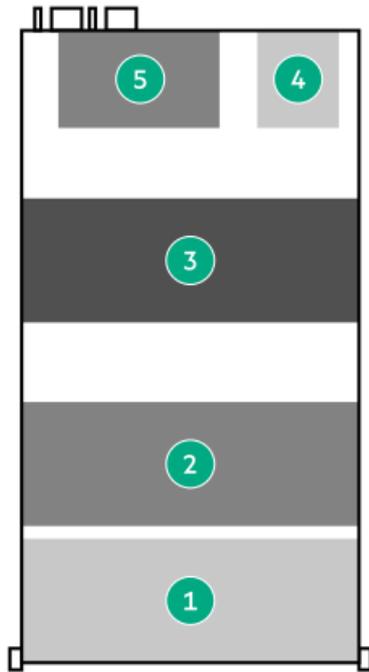
Item	Description
1	Drive cage 1
2	Drive cage 2
3	Drive cage 3
4	Drive cage 4
5	Drive cage 5

Drive numbering

24-bay SFF hot-plug drive cage 1 numbering

12-bay LFF hot-plug drive cage 1 numbering
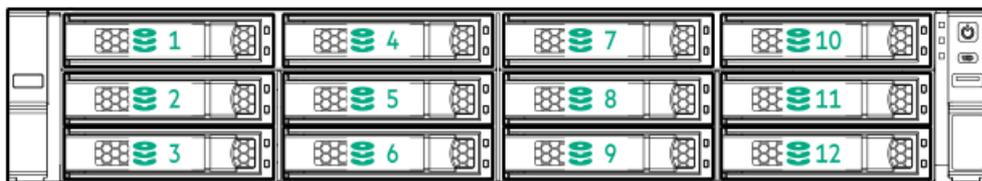
24-bay SFF hot-plug drive cage 2 numbering
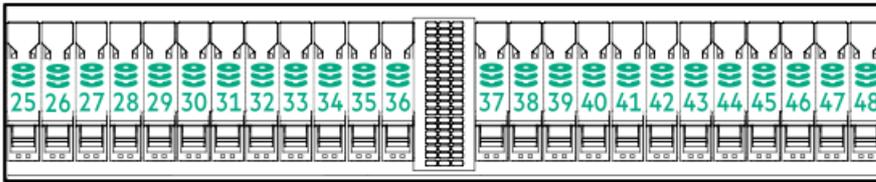
12-bay LFF hot-plug drive cage 2 numbering
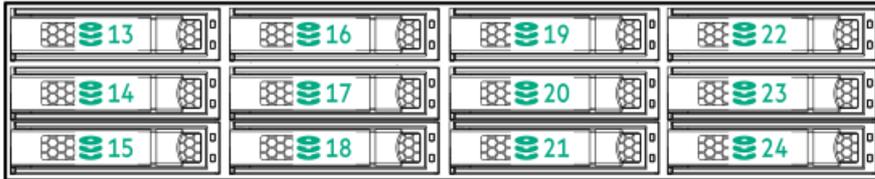
Four-bay LFF hot-plug drive cage 3 numbering

If there are LFF drives used in drive cage 1 and drive cage 2 in addition to drive cage 3, then these are numbered 49-52.
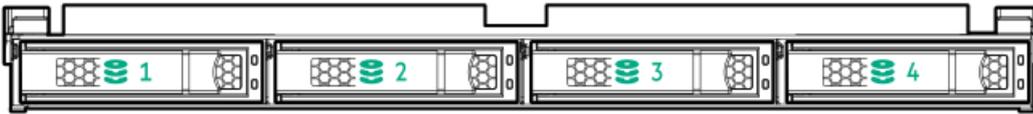
Eight-bay SFF hot-plug drive cage 3 numbering

Four-bay SFF hot-plug drive cage 4 and drive cage 5 numbering

Drive LEDs

LFF and SFF drives have different sets of LEDs to reflect the drive status.

Low-profile LFF drive LED definitions

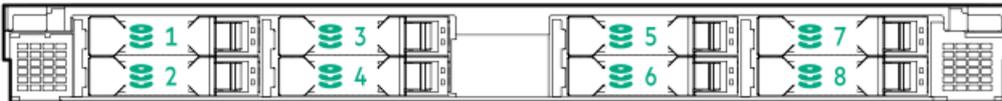| Item	LED	Status	Definition
1	Fault\Locate	Solid amber	The drive has failed.
		Solid blue	The drive is operating normally and being identified by a management application.
		Flashing amber/blue (1 flash per second)	The drive has failed, or a predictive failure alert has been received for this drive;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

Drive LED definitions

Item	LED	Status	Definition
1	Fault/Locate	Solid amber	The drive has failed, is unsupported, or is invalid.
		Solid blue	The drive is operating normally and is being identified by a management application.
		Flashing amber/blue (1Hz)	The drive has failed, or a predictive failure alert has been received for this drive; it also has been identified by a management application.
		Flashing amber (1Hz)	A predictive failure alert has been received for this drive. Replace the drive as soon as possible.
2	Online/Activity	Solid green	The drive is online and has no activity.

Item	LED	Status	Definition
		Flashing green (4Hz)	The drive is operating normally and has activity.
		Flashing green (1Hz)	The drive is rebuilding, RAID migration, stripe size migration, capacity expansion, logical drive extension, erasing, or spare activation.
		Off	The drive is not configured by a RAID controller or a spare drive.

Drive cage backplane identification

4LFF drive cage backplane
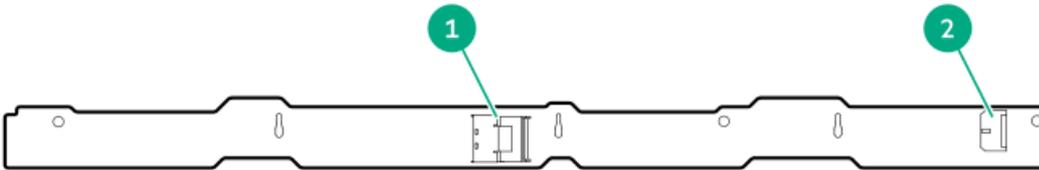
Item	Description
1	x4 Mini SAS connector
2	Power input connector

2SFF rear drive cage backplane
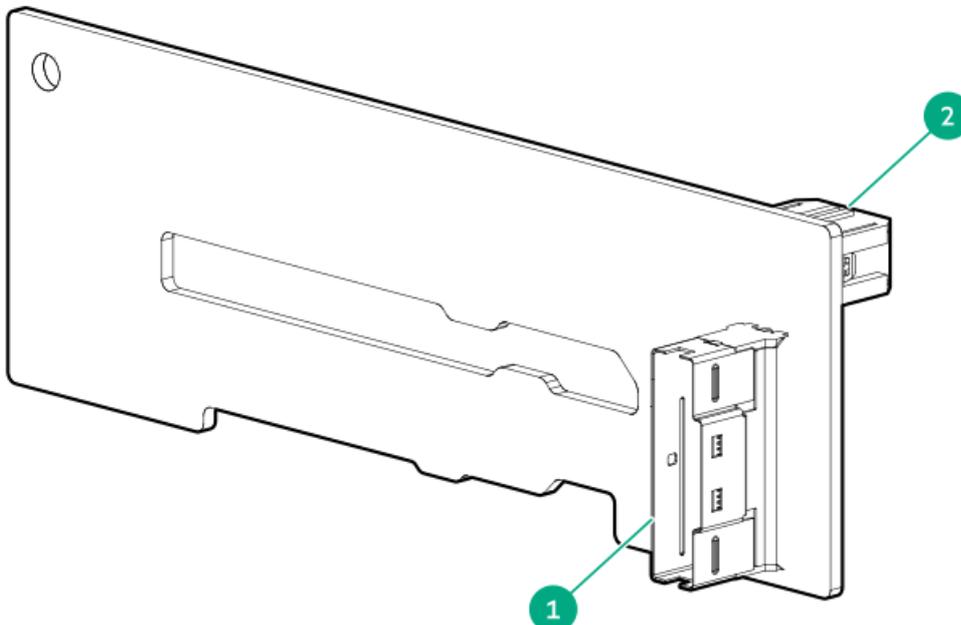
Item	Description
1	x8 SlimSAS connector
2	Power input connector

8 SFF drive cage backplane
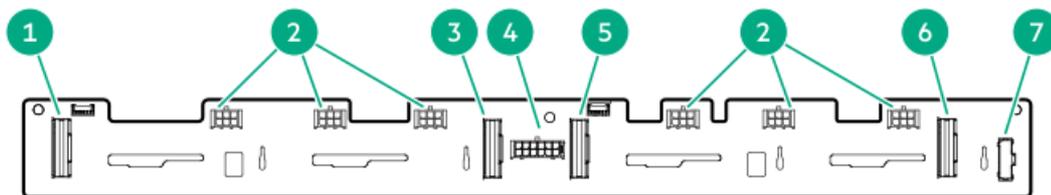
Item	Description
1	x8 SlimSAS connector
2	Fan power connectors
3	x8 SlimSAS connector
4	Power input connector
5	x8 SlimSAS connector
6	x8 SlimSAS connector
7	Drive cage 3 signal connector

24 SFF drive cage backplane
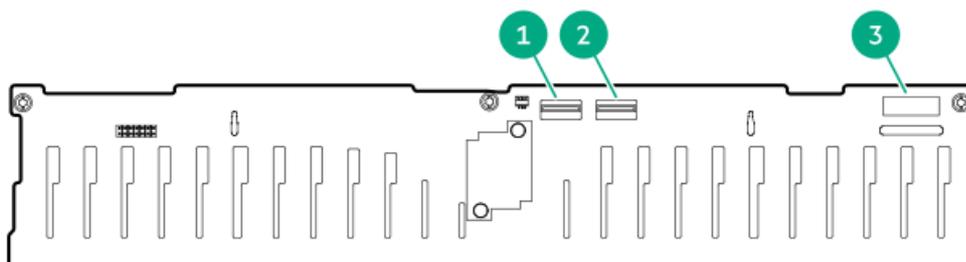
Item	Description
1	x4 Mini SAS connector
2	x4 Mini SAS connector
3	Power input connector

12 LFF drive cage backplane
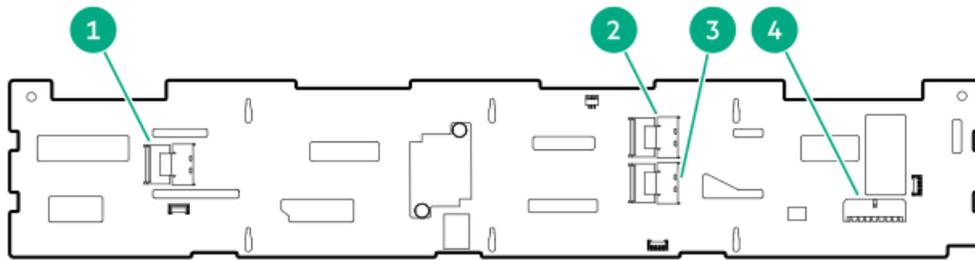
Item	Description
1	P3 connector
2	P1 connector
3	P2 connector
4	Power input connector

Storage controller components

For component and LED identification, see the user guide for your storage controller series on the Hewlett Packard Enterprise website (https://www.hpe.com/info/smartstorage-docs).

For a complete list of supported storage controller models, see the server QuickSpecs on the Hewlett Packard Enterprise website (https://www.hpe.com/info/qs).

HPE NS204i-p NVMe OS Boot Device components

Item	Description
1	Drive bay 1
2	Drive bay 2
3	Thermal interface pad with removable liner
4	M.2 drive retaining latches

HPE NS204i-p NVMe OS Boot Device LED definitions

Item	Description	Fault LED status

Item	Description	Fault LED status
1	Bay 1 LED	Off: Normal
2	Bay 2 LED	Flashing 1Hz: Drive predictive failure
		Amber: Drive failure

DSC-25 2-port SFP28 card ports and LEDs

Ports
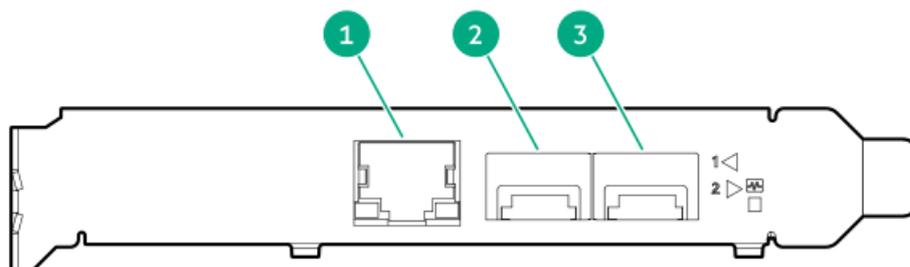
Table 1: Ports

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

Fan numbering

System fan numbering
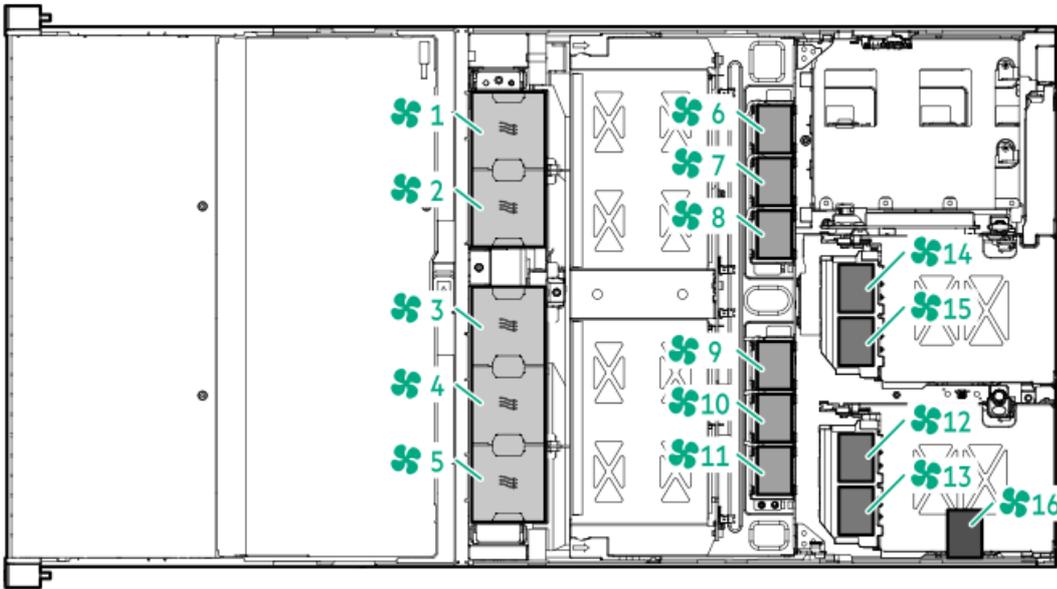
Specifications

For more information on cable, power, environmental, compliance, and general specifications, see the **HPE Compute Transceiver and Cable Hardware Matrix**.

Environmental specifications

Specification	Value
Temperature range [1]	—
Operating	10°C to 35°C (50°F to 95°F)
Nonoperating	-30°C to 60°C (-22°F to 140°F)
Relative humidity (noncondensing)	—
Operating	8% to 90%. 28°C (82.4°F), maximum wet bulb temperature
Nonoperating	5% to 95% 38.7°C (101.7°F), maximum wet bulb temperature
Altitude	—
Operating	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
Non-operating	9144 m (30,000 ft). Maximum allowable altitude change is 457 m/min (1500 ft/min).

[1] All temperature ratings shown are for sea level. An altitude derating of 1.0°C per 305 m (1.8°F per 1,000 ft) to 3,050 m (10,000 ft) is applicable. No direct sunlight allowed. Maximum rate of change is 20°C per hour (36°F per hour). The upper limit and rate of change might be limited by the type and number of options installed.

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 1000 ft) above sea level up to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 20°C/hr (36°F/hr). The upper limit and rate of change may be limited by the type and number of options installed.

System performance during standard operating support may be reduced if operating with a fan fault or above 30°C (86°F).

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

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

The approved hardware configurations for this system are listed on the Hewlett Packard Enterprise website (http://www.hpe.com/servers/ASHRAE).

Mechanical specifications

Specification	Value
Height	87.50 mm (3.44 in)
Depth	837.90 mm (33.00 in)
Width	448.0 mm (17.63 in)
Weight (approximate values)	—
24-bay LFF drive models (12 LFF in drive cage 1 and 12 LFF in drive cage 2)	—
Without the 4 LFF or 8 SFF drive cage 3 option, minimum	18.80 kg (41.45 lb)
Without the 4 LFF or 8 SFF drive cage 3 option, maximum	41.56 kg (91.64 lb)
With the 4 LFF or 8 SFF drive cage 3 option, minimum	20.21 kg (44.56 lb)
With the 4 LFF or 8 SFF drive cage 3 option, maximum	45.35 kg (100.00 lb)
Without the two-bay SFF drive cage 4 option, minimum	20.21 kg (44.56 lb)
Without the two-bay SFF drive cage 4 option, maximum	45.35 kg (100.00 lb)
With the two-bay SFF drive cage 4 option, minimum	20.86 kg (46.00 lb)
With the two-bay SFF drive cage 4 option, maximum	46.75 kg (103.08 lb)
Without the two-bay SFF drive cage 4 and two-bay SFF drive cage 5 options, minimum	20.21 kg (44.56 lb)
Without the two-bay SFF drive cage 4 and two-bay SFF drive cage 5 options, maximum	45.35 kg (100.00 lb)
With the two-bay SFF drive cage 4 and two-bay SFF drive cage 5 options, minimum	21.59 kg (47.61 lb)
With the two-bay SFF drive cage 4 and two-bay SFF drive cage 5 options, maximum	48.35 kg (106.61 lb)
48-bay SFF drive models (24 SFF in drive cage 1 and 24 SFF in drive cage 2)	—

Specification	Value
Without the 4 LFF or 8 SFF drive cage 3 option, minimum	17.21 kg (37.95 lb)
Without the 4 LFF or 8 SFF drive cage 3 option, maximum	35.21 (77.64 lb)
With the 4 LFF or 8 SFF drive cage 3 option, minimum	18.62 kg (41.06 lb)
With the 4 LFF or 8 SFF drive cage 3 option, maximum	39.00 kg (86.00 lb)
Without the two-bay SFF drive cage 4 option, minimum	18.62 kg (41.06 lb)
Without the two-bay SFF drive cage 4 option, maximum	39.00 kg (86.00 lb)
With the two-bay SFF drive cage 4 option, minimum	19.27 kg (42.49 lb)
With the two-bay SFF drive cage 4 option, maximum	40.40 kg (89.08 lb)
Without the two-bay SFF drive cage 4 and two-bay SFF drive cage 5 options, minimum	18.62 kg (41.06 lb)
Without the two-bay SFF drive cage 4 and two-bay SFF drive cage 5 options, maximum	39.00 kg (86.00 lb)
With the two-bay SFF drive cage 4 and two-bay SFF drive cage 5 options, minimum	20.00 kg (44.1 lb)
With the two-bay SFF drive cage 4 and two-bay SFF drive cage 5 options, maximum	42.00 kg (92.61 lb)

Power supply specifications

Depending on the installed options and/or the regional location where the server was purchased, the server is configured with one of the following power supplies:

- HPE 800 W Flex Slot Titanium Hot-plug Power Supply

- HPE 800 W Flex Slot -48 V DC Hot-plug Power Supply

- HPE 800 W Flex Slot Universal Hot-plug Power Supply

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

- HPE 1600 W Flex Slot Platinum Plus Hot-plug Power Supply

- HPE 1600 W Flex Slot -48 VDC Hot-Plug Power Supply

These power supplies are Flexible Slot Power Supply products for ProLiant servers. For more information about the power supply features, specifications, and compatibility, see the Hewlett Packard Enterprise website (http://www.hpe.com/servers/powersupplies).

⚠ **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.

Hot-plug power supply calculations

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

Repair and replacement videos

As a complement to the written procedures, videos are available that demonstrate the removal and replacement of the customer replaceable parts. The videos are grouped by the main components of cages, chassis cables, and additional parts, and then organized in the order in which each element must be removed and replaced.

- Cage 3
- Cages 4 and 5
- Other replaceable parts

Additionally, there are videos illustrating procedures that are common to the components,

- Common removal
- Common replacement

Cage 3 videos

The procedures that are common to all removals and replacements are only summarized in the following videos. To see the complete details, view the applicable common procedure video.

Cage 3 data cables

Cage 3 power cable

LFF cage 3 backplane

LFF cage 2 to LFF cage 3 data cable

SFF cage 3 backplane

SFF cage 3 signal cable

Cage 4 and Cage 5 videos

The procedures that are common to all removals and replacements are only summarized in the following videos. To see the complete details, view the applicable common procedure video.

Cage 4 data cable

Cage 5 data cable

Other replaceable parts

These are individual parts that can be removed and replaced separately.

The procedures that are common to all removals and replacements are only summarized in the following videos. To see the complete details, view the applicable common procedure video.

AC power module

OCP NIC adapter

Large air baffle

DIMM

System fan

Fan cage

Fan module

Configuration overviews

Configuration 1: LFF chassis, P816i-a system board, Cage 1 LFF

Configuration 1: LFF chassis, P816i-a system board, Cage 2 LFF

Configuration 1: LFF chassis, Cage 2 LFF backplane connection to Cage 3 LFF backplane via mini-SAS

Configuration 3 or Configuration 4: LFF chassis, P408i-p riser 3-Tertiary, Cage 2 LFF

Configuration 4 or Configuration 5: LFF chassis, P408i-p riser1-Primary, Cage 3 LFF

Configuration 1-1: SFF Chassis, P816i-a system board riser 1, Cage 1 SFF

Configuration 1-1: SFF Chassis, P832i-p riser 1-Primary, Cage 3 SFF

Configuration 2-1 or Configuration: 2-2 SFF Chassis, system board, Cage 3 SFF

Configuration 8 or Configuration 8-1: SFF Chassis, P832i-p riser 1-Primary and P832i-p riser 3-Tertiary Cage 3 SFF

Common removal videos

Several removal procedures are common to all components. Select the applicable procedure to view the video.

Top cover

Large air baffle

LFF drive cage 3

SFF drive cage 3

System fans and fan cage

Left cable arm

Right cable arm

Common replacement videos

Several replacement procedures are common to all components. Select the applicable procedure to view the video.

Top cover

Large air baffle

LFF drive cage 3

SFF drive cage 3

System fans and fan cage

Left cable arm

Right cable arm

Support and other resources

Accessing Hewlett Packard Enterprise Support

- For live assistance, go to the Contact Hewlett Packard Enterprise Worldwide website:

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

- To access documentation and support services, go to the Hewlett Packard Enterprise Support Center website:

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

Information to collect

- Technical support registration number (if applicable)

- Product name, model or version, and serial number

- Operating system name and version

- Firmware version

- Error messages

- Product-specific reports and logs

- Add-on products or components

- Third-party products or components

Accessing updates

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

- To download product updates:

  Hewlett Packard Enterprise Support Center

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

Hewlett Packard Enterprise Support Center: Software downloads

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

My HPE Software Center

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

- To subscribe to eNewsletters and alerts:

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

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

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

(i) **IMPORTANT:**

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

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/completecare

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.