



**Hewlett Packard  
Enterprise**

# **HPE ProLiant ML150 Gen9 Server Maintenance and Service Guide**

## **Abstract**

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

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# 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.

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**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.

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

For more information about the Hewlett Packard Enterprise CSR program, contact your local service provider. For the North American program, go to the [\*\*Hewlett Packard Enterprise CSR website\*\*](#).

## Parts only warranty service

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

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

## Réparation par le client (CSR)

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

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

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

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

Pour plus d'informations sur le programme CSR de Hewlett Packard Enterprise, contactez votre Mainteneur Agréé local. Pour plus d'informations sur ce programme en Amérique du Nord, consultez le site [\*\*Web Hewlett Packard Enterprise\*\*](#).

### **Service de garantie "pièces seules"**

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

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

### **Riparazione da parte del cliente**

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

- **Obbligatorie**—Parti che devono essere necessariamente riparate dal cliente. Se il cliente ne affida la riparazione ad Hewlett Packard Enterprise, deve sostenere le spese di spedizione e di manodopera per il servizio.
- **Opzionali**—Parti la cui riparazione da parte del cliente è facoltativa. Si tratta comunque di componenti progettati per questo scopo. Se tuttavia il cliente ne richiede la sostituzione ad Hewlett Packard Enterprise, potrebbe dover sostenere spese 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 componenti. Qualora sia richiesta la resa ad Hewlett Packard Enterprise del componente difettoso, lo si deve spedire ad Hewlett Packard Enterprise entro un determinato periodo di tempo, generalmente cinque (5) giorni lavorativi. Il componente difettoso deve essere restituito con la documentazione associata nell'imballo di spedizione fornito. La mancata restituzione del componente può comportare la fatturazione del ricambio da parte di Hewlett Packard Enterprise. Nel caso di riparazione da parte del cliente, Hewlett Packard Enterprise sostiene tutte le spese di spedizione e resa e sceglie il corriere/vettore da utilizzare.

Per ulteriori informazioni sul programma CSR di Hewlett Packard Enterprise, contattare il centro di assistenza di zona. Per il programma in Nord America fare riferimento **al sito Web**.

### **Servizio di garanzia per i soli componenti**

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

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

### **Customer Self Repair**

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

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

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

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

Weitere Informationen über das Hewlett Packard Enterprise Customer Self Repair Programm erhalten Sie von Ihrem Servicepartner vor Ort. Informationen über das CSR-Programm in Nordamerika finden Sie auf der **Hewlett Packard Enterprise Website unter**.

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

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

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

## Reparaciones del propio cliente

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

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

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

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

Para obtener más información acerca del programa de Reparaciones del propio cliente de Hewlett Packard Enterprise, póngase en contacto con su proveedor de servicios local. Si está interesado en el programa para Norteamérica, visite [la página web de Hewlett Packard Enterprise CSR](#).

## Servicio de garantía exclusivo de componentes

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

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

## Customer Self Repair

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

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

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

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

Neem contact op met een Service Partner voor meer informatie over het Customer Self Repair programma van Hewlett Packard Enterprise. Informatie over Service Partners vindt u op de [\*\*Hewlett Packard Enterprise website\*\*](#).

### Garanteservice "Parts Only"

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

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

### Reparo feito pelo cliente

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

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

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

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

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

### **Serviço de garantia apenas para peças**

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

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

## カスタマーセルフリペア

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

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

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

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

## 部品のみ保証サービス

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

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



# 客户自行维修

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

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

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

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

有关 Hewlett Packard Enterprise 客户自行维修计划的详细信息，请与您当地的服务提供商联系。有关北美地区的计划，请访问 Hewlett Packard Enterprise 网站 (<http://www.hpe.com/support/selfrepair>)。

## 仅部件保修服务

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

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

# 客戶自行維修

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

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

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

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

如需 Hewlett Packard Enterprise 的 CSR 方案詳細資訊，請連絡您當地的服務供應商。至於北美方案，請參閱 Hewlett Packard Enterprise 的 CSR 網站 <http://www.hpe.com/support/selfrepair>。

## 僅限零件的保固服務

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

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

## 고객 셀프 수리

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

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

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

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

Hewlett Packard Enterprise CSR 프로그램에 대한 자세한 내용은 가까운 서비스 제공업체에 문의하십시오. 북미 지역의 프로그램에 대해서는 Hewlett Packard Enterprise CSR 웹 사이트(<http://www.hpe.com/support/selfrepair>)를 참조하십시오.

## 부품 제공 보증 서비스

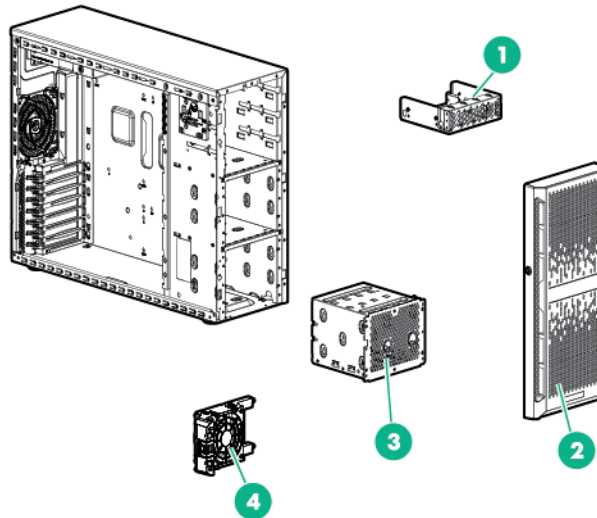
Hewlett Packard Enterprise 제한 보증에는 부품 제공 보증 서비스가 포함될 수 있습니다. 이러한 경우 Hewlett Packard Enterprise는 부품 제공 보증 서비스의 조건에 따라 교체 부품만을 무료로 제공합니다.

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

# 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	Spare part number	Customer self repair
1	LFF drive carrier	732593-001	Optional <sup>2</sup>
2	Tower bezel	792350-001	Mandatory <sup>1</sup>
3	Non-hot-plug drive cage	792353-001	Optional <sup>2</sup>
4	Fan	792347-001	Mandatory <sup>1</sup>

<sup>1</sup>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.

<sup>2</sup>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.

<sup>3</sup>No—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.

<sup>1</sup>Obligatoire—Pièces pour lesquelles le client doit procéder lui-même aux réparations. Si vous demandez à Hewlett Packard Enterprise de procéder au remplacement de ces pièces, les frais de transport et de main d'œuvre pour ce service vous seront facturés.

<sup>2</sup>Facultatif—Pièces pour lesquelles une réparation par le client est facultative. Ces pièces sont également conçues pour que le client puisse procéder lui-même aux réparations. Cependant, les frais supplémentaires engendrés par le remplacement de ces pièces par Hewlett Packard Enterprise dépendent du type de service de garantie désigné pour votre produit.

<sup>3</sup>Non—Certaines pièces Hewlett Packard Enterprise ne sont pas conçues pour être remplacées par le client. Afin de se conformer aux exigences de la garantie la garantie du client, Hewlett Packard Enterprise demande à un fournisseur de services agréé de procéder au remplacement de la pièce. Ces pièces sont signalées par le mot « Non » dans le Catalogue de pièces illustré.

<sup>1</sup>Obbligatorio—Parti per le quali il cliente è tenuto a effettuare autonomamente la riparazione. Se si richiede l'intervento di Hewlett Packard Enterprise per la sostituzione di queste parti, al cliente verranno addebitate le spese di viaggio e manodopera dell'operazione.

<sup>2</sup>Facoltativo—Parti per le quali la riparazione in autonomia da parte del cliente è facoltativa. Queste parti sono progettate per consentire anche la riparazione da parte del cliente. Tuttavia, se il cliente richiede l'intervento di Hewlett Packard Enterprise per la sostituzione, potrebbero essere addebitate spese aggiuntive a seconda del tipo di garanzia in assistenza previsto per il prodotto.

<sup>3</sup>No—Alcune parti Hewlett Packard Enterprise non sono progettate la riparazione in autonomia da parte del cliente. In base a quanto previsto dalla garanzia per il cliente, Hewlett Packard Enterprise richiede l'intervento di un tecnico autorizzato per la sostituzione della parte. Queste parti sono contrassegnate con "No" nel catalogo parti illustrato.

<sup>1</sup>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.

<sup>2</sup>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.

<sup>3</sup>Nein—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.

<sup>1</sup>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.

<sup>2</sup>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.

<sup>3</sup>No—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.

<sup>1</sup>Verplicht—Onderdelen die de klant zelf moet vervangen. Als u Hewlett Packard Enterprise vraagt deze onderdelen te vervangen, worden er reis- en arbeidskosten voor deze service in rekening gebracht.

<sup>2</sup>Optioneel—Onderdelen die de klant zelf kan vervangen. Deze onderdelen zijn ook ontworpen om door de klant zelf te worden vervangen. Als u Hewlett Packard Enterprise verzoekt om deze te vervangen, kan het zijn dat hiervoor extra kosten in rekening worden gebracht, afhankelijk van het soort garantie dat op uw product van toepassing is.

<sup>3</sup>Geen—Sommige onderdelen van Hewlett Packard Enterprise zijn niet ontworpen om door de klant zelf te worden vervangen. Om te voldoen aan de garantievoorwaarden eist Hewlett Packard Enterprise dat een geautoriseerde serviceverlener het onderdeel vervangt. Deze onderdelen worden aangeduid met 'Geen' in de geïllustreerde onderdelencatalogus.

<sup>1</sup>Obrigatório—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.



<sup>2</sup>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.

<sup>3</sup>Não—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.

<sup>1</sup>Mandatory : 必須 — カスタマーセルフリペアが必須の部品。当該部品について、もしもお客様がHewlett Packard Enterpriseに交換作業を依頼される場合には、その修理サービスに関する交通費および人件費がお客様に請求されます。

<sup>2</sup>Optional : 任意 — カスタマーセルフリペアが任意である部品。この部品もカスタマーセルフリペア用です。当該部品について、もしもお客様がHewlett Packard Enterpriseに交換作業を依頼される場合には、お買い上げの製品に適用される保証サービス内容の範囲内においては、別途費用を負担していただくことなく保証サービスを受けることができます。

<sup>3</sup>No : 除外 — Hewlett Packard Enterprise製品の一部の部品は、カスタマーセルフリペアの対象外です。製品の保証を継続するためには、Hewlett Packard EnterpriseまたはHewlett Packard Enterprise正規保守代理店による交換作業が必須となります。部品カタログには、当該部品がカスタマーセルフリペア除外品である旨が記載されています。

<sup>1</sup>Mandatory — 客户必须自行维修的部件。如果您请求 Hewlett Packard Enterprise 更换这些部件，则必须为该服务支付差旅费和人工费用。

<sup>2</sup>Optional — 客户可以选择是否自行维修的部件。这些部件也是为客户自行维修设计的。不过，如果您要求 Hewlett Packard Enterprise 为您更换这些部件，则根据为您的产品指定的保修服务类型，Hewlett Packard Enterprise 可能收取或不再收取任何附加费用。

<sup>3</sup>No — 某些 Hewlett Packard Enterprise 部件的设计并未考虑客户自行维修。为了满足客户保修的需要，Hewlett Packard Enterprise 要求授权服务提供商更换相关部件。这些部件在部件图解目录中标记为“否”。

<sup>1</sup>Mandatory — 客戶自行維修所使用的零件是強制性的。如果您要求 Hewlett Packard Enterprise 更換這些零件，Hewlett Packard Enterprise 將會向您收取此服務所需的外出費用與勞動成本。

<sup>2</sup>Optional — 客戶自行維修所使用的零件是選購的。這些零件也設計用於客戶自行維修之用。不過，如果您要求 Hewlett Packard Enterprise 為您更換，則可能需要也可能不需要負擔額外的費用，端視針對此產品指定的保固服務類型而定。

<sup>3</sup>No — 某些 Hewlett Packard Enterprise 零件沒有消費者可自行維修的設計。為符合客戶保固，Hewlett Packard Enterprise 需要授權的服務供應商更換零件。這些零件在圖示的零件目錄中，被標示為「否」。

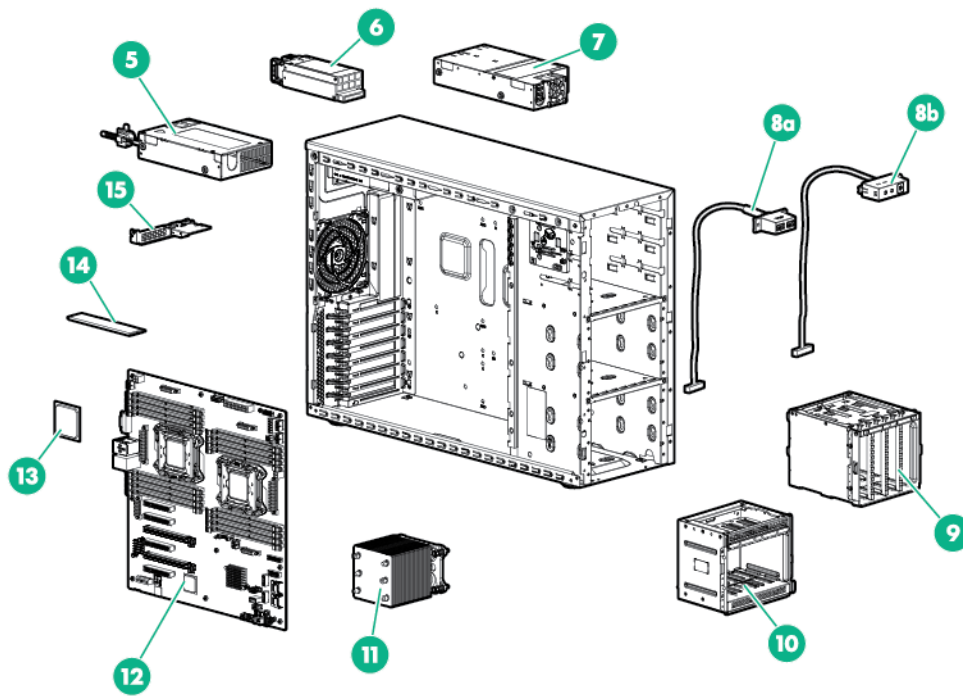
<sup>1</sup>Mandatory — 고객 셀프 수리가 의무 사항인 필수 부품. 사용자가 Hewlett Packard Enterprise에 이 부품의 교체를 요청할 경우 해당 서비스에 대한 출장비 및 작업비가 청구됩니다.

<sup>2</sup>Optional — 고객 셀프 수리가 선택 사항인 부품. 이러한 부품들도 고객 셀프 수리가 가능하도록 설계되었습니다. 하지만 사용자가 Hewlett Packard Enterprise에 이러한 부품의 교체를 요청할 경우 사용자가 구입한 제품에 해당하는 보증 서비스 유형에 따라 추가 비용 없이 교체가 가능할 수 있습니다.

<sup>3</sup>No — 일부 Hewlett Packard Enterprise 부품은 고객 셀프 수리가 불가능하도록 설계되었습니다. Hewlett Packard Enterprise는 만족스러운 고객 보증을 위해 공인 서비스 제공업체를 통해 부품을 교체하도록 요구하고 있습니다. 이러한 부품들은 Illustrated Parts Catalog에 "No"라고 표시되어 있습니다.

## 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	Spare part number	Customer self repair
5	HPE 550W power supply	766879-001	Optional <sup>2</sup>
6	Hot-plug power input modules	—	—
	a) HPE 800 W/900 W Gold AC Power Input Module*	754376-001	Mandatory <sup>1</sup>
	b) HPE 900 W AC 240V DC Power Input Module*	830219-001	Mandatory <sup>1</sup>
7	RPS backplane assemblies	—	—
	a) HPE RPS backplane*	784636-001	Optional <sup>2</sup>
	b) HPE 900 W AC 240VDC RPS Power Backplane*	830022-001	Optional <sup>2</sup>
8	Front cable kit	792355-001	Optional <sup>2</sup>
	a) Front panel USB	—	—
	b) Front panel LED	—	—
9	4 LFF hot-plug drive cage	792351-001	Optional <sup>2</sup>
10	8 SFF hot-plug drive cage	792352-001	Optional <sup>2</sup>

Table Continued

<b>Item</b>	<b>Description</b>	<b>Spare part number</b>	<b>Customer self repair</b>
11	Heatsink	780977-001	Optional <sup>2</sup>
12	System board (includes alcohol pad and thermal compound)	843671-001	Optional <sup>2</sup>
13	Processors (include alcohol pad and thermal compound)	—	—
	<b>Intel Xeon E5-2600 v3 processors</b>		
	a) 1.60-GHz Intel Xeon E5-2603 v3, 6C, 85 W	762441-001	Optional <sup>2</sup>
	b) 1.80-GHz Intel Xeon E5-2630L v3, 8C, 55 W*	762459-001	Optional <sup>2</sup>
	c) 1.80-GHz Intel Xeon E5-2650L v3, 12C, 65 W*	762461-001	Optional <sup>2</sup>
	d) 1.90-GHz Intel Xeon E5-2609 v3, 6C, 85 W*	762443-001	Optional <sup>2</sup>
	e) 2.30-GHz Intel Xeon E5-2650 v3, 10C, 105 W*	762448-001	Optional <sup>2</sup>
	f) 2.40-GHz Intel Xeon E5-2620 v3, 6C, 85 W*	762445-001	Optional <sup>2</sup>
	g) 2.40-GHz Intel Xeon E5-2630 v3, 8C, 85 W*	762446-001	Optional <sup>2</sup>
	h) 2.60-GHz Intel Xeon E5-2640 v3, 8C, 90 W*	762447-001	Optional <sup>2</sup>
	i) 2.60-GHz Intel Xeon E5-2660 v3, 10C, 105 W*	762449-001	Optional <sup>2</sup>
	<b>Intel Xeon E5-2600 v4 processors</b>		
	a) 1.70-GHz Intel Xeon E5-2650L v4, 14C, 65 W*	835609-001	Optional <sup>2</sup>
	b) 1.70-GHz Intel Xeon E5-2603 v4, 6C, 85 W*	835599-001	Optional <sup>2</sup>
	c) 1.70-GHz Intel Xeon E5-2609 v4, 8C, 85 W*	835600-001	Optional <sup>2</sup>
	d) 1.80-GHz Intel Xeon E5-2630L v4, 10C, 55 W*	835608-001	Optional <sup>2</sup>

*Table Continued*



Item	Description	Spare part number	Customer self repair
	e) 2.00-GHz Intel Xeon E5-2660 v4, 14C, 105 W*	835605-001	Optional <sup>2</sup>
	f) 2.10-GHz Intel Xeon E5-2620 v4, 8C, 85 W*	835601-001	Optional <sup>2</sup>
	g) 2.10-GHz Intel Xeon E5-2683 v4, 16C, 120 W*	835614-001	Optional <sup>2</sup>
	h) 2.10-GHz Intel Xeon E5-2695 v4, 18C, 120 W*	835615-001	Optional <sup>2</sup>
	i) 2.20-GHz Intel Xeon E5-2630 v4, 10C, 85 W*	835602-001	Optional <sup>2</sup>
	j) 2.20-GHz Intel Xeon E5-2650 v4, 12C, 105 W*	835604-001	Optional <sup>2</sup>
	k) 2.40-GHz Intel Xeon E5-2640 v4, 10C, 90 W*	835603-001	Optional <sup>2</sup>
	l) 2.40-GHz Intel Xeon E5-2680 v4, 14C, 120 W*	835606-001	Optional <sup>2</sup>
14	DIMM	—	—
	<b>DIMMs designed for Intel Xeon E5-2600 v3 processors</b>		
	a) 4 GB, single-rank x8 PC4-2133R-15	774169-001	Optional <sup>2</sup>
	b) 4 GB, single-rank x8 PC4-2133P-R STND*	804842-001	Optional <sup>2</sup>
	c) 8 GB, single-rank x4 PC4-2133R-15*	774170-001	Optional <sup>2</sup>
	d) 8 GB, single-rank x4 PC4-2133P-R STND*	804843-001	Optional <sup>2</sup>
	e) 8 GB, dual-rank x8 PC4-2133P-15*	774171-001	Optional <sup>2</sup>
	f) 16 GB, dual-rank x4 PC4-2133R-15*	774172-001	Optional <sup>2</sup>
	g) 16 GB, dual-rank x4 PC4-2133P-L-15*	774173-001	Optional <sup>2</sup>
	h) 32 GB, dual-rank x4 PC4-2133R-15*	774175-001	Optional <sup>2</sup>
	<b>DIMMs designed for Intel Xeon E5-2600 v4 processors</b>		
	a) 8 GB, single-rank x8 PC4-2400T-R*	819410-001	Optional <sup>2</sup>

Table Continued

Item	Description	Spare part number	Customer self repair
	b) 8 GB, single-rank x8 PC4-2400T-R STND*	852545-001	Optional <sup>2</sup>
	c) 16 GB, single-rank x4 PC4-2400T-R*	819411-001	Optional <sup>2</sup>
	d) 16 GB, dual-rank x4 PC4-2400T-R*	846740-001	Optional <sup>2</sup>
	e) 32 GB, dual-rank x4 PC4-2400T-R*	819412-001	Optional <sup>2</sup>
	f) 32 GB, dual-rank x4 PC4-2400T-L*	819414-001	Optional <sup>2</sup>
15	Dedicated iLO port management module	792354-001	Optional <sup>2</sup>
16	HPE 240 Host Bus Adapter*	779134-001	Optional <sup>2</sup>
17	Mini-SAS cable kit*	792356-001	Optional <sup>2</sup>
	a) 400 mm Mini-SAS cable	—	—
	b) 670 mm Mini-SAS H240 cable	—	—
	c) 670 mm Mini-SAS P440/ P840 Y-cable	—	—
	d) SATA to Mini-SAS cable	—	—
18	Power cable kit*	792357-001	Optional <sup>2</sup>
	a) 465 mm hot-plug drive cage power cable	—	—
	b) 480 mm system board power cable	—	—
19	610 mm SATA cable*	465661-001	Optional <sup>2</sup>
20	Smart Storage Battery*	871264-001	Mandatory <sup>1</sup>

\* - Not shown

<sup>1</sup>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.

<sup>2</sup>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.

<sup>3</sup>No—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.

<sup>1</sup>Obligatoire—Pièces pour lesquelles le client doit procéder lui-même aux réparations. Si vous demandez à Hewlett Packard Enterprise de procéder au remplacement de ces pièces, les frais de transport et de main d'œuvre pour ce service vous seront facturés.

<sup>2</sup>Facultatif—Pièces pour lesquelles une réparation par le client est facultative. Ces pièces sont également conçues pour que le client puisse procéder lui-même aux réparations. Cependant, les frais supplémentaires

engendrés par le remplacement de ces pièces par Hewlett Packard Enterprise dépendent du type de service de garantie désigné pour votre produit.

<sup>3</sup>Non—Certaines pièces Hewlett Packard Enterprise ne sont pas conçues pour être remplacées par le client. Afin de se conformer aux exigences de la garantie la garantie du client, Hewlett Packard Enterprise demande à un fournisseur de services agréé de procéder au remplacement de la pièce. Ces pièces sont signalées par le mot « Non » dans le Catalogue de pièces illustré.

<sup>1</sup>Obbligatorio—Parti per le quali il cliente è tenuto a effettuare autonomamente la riparazione. Se si richiede l'intervento di Hewlett Packard Enterprise per la sostituzione di queste parti, al cliente verranno addebitate le spese di viaggio e manodopera dell'operazione.

<sup>2</sup>Facoltativo—Parti per le quali la riparazione in autonomia da parte del cliente è facoltativa. Queste parti sono progettate per consentire anche la riparazione da parte del cliente. Tuttavia, se il cliente richiede l'intervento di Hewlett Packard Enterprise per la sostituzione, potrebbero essere addebitate spese aggiuntive a seconda del tipo di garanzia in assistenza previsto per il prodotto.

<sup>3</sup>No—Alcune parti Hewlett Packard Enterprise non sono progettate la riparazione in autonomia da parte del cliente. In base a quanto previsto dalla garanzia per il cliente, Hewlett Packard Enterprise richiede l'intervento di un tecnico autorizzato per la sostituzione della parte. Queste parti sono contrassegnate con "No" nel catalogo parti illustrato.

<sup>1</sup>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.

<sup>2</sup>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.

<sup>3</sup>Nein—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.

<sup>1</sup>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.

<sup>2</sup>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.

<sup>3</sup>No—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.

<sup>1</sup>Verplicht—Onderdelen die de klant zelf moet vervangen. Als u Hewlett Packard Enterprise vraagt deze onderdelen te vervangen, worden er reis- en arbeidskosten voor deze service in rekening gebracht.

<sup>2</sup>Optioneel—Onderdelen die de klant zelf kan vervangen. Deze onderdelen zijn ook ontworpen om door de klant zelf te worden vervangen. Als u Hewlett Packard Enterprise verzoekt om deze te vervangen, kan het zijn dat hiervoor extra kosten in rekening worden gebracht, afhankelijk van het soort garantie dat op uw product van toepassing is.

<sup>3</sup>Geen—Sommige onderdelen van Hewlett Packard Enterprise zijn niet ontworpen om door de klant zelf te worden vervangen. Om te voldoen aan de garantievoorwaarden eist Hewlett Packard Enterprise dat een geautoriseerde serviceverlener het onderdeel vervangt. Deze onderdelen worden aangeduid met 'Geen' in de geïllustreerde onderdelencatalogus.

<sup>1</sup>Obrigatório—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.

<sup>2</sup>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.

<sup>3</sup>Não—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.

<sup>1</sup>Mandatory : 必須 — カスタマーセルフリペアが必須の部品。当該部品について、もしもお客様がHewlett Packard Enterpriseに交換作業を依頼される場合には、その修理サービスに関する交通費および人件費がお客様に請求されます。

<sup>2</sup>Optional : 任意 — カスタマーセルフリペアが任意である部品。この部品もカスタマーセルフリペア用です。当該部品について、もしもお客様がHewlett Packard Enterpriseに交換作業を依頼される場合には、お買い上げの製品に適用される保証サービス内容の範囲内においては、別途費用を負担していただくことなく保証サービスを受けることができます。

<sup>3</sup>No : 除外 — Hewlett Packard Enterprise製品の一部の部品は、カスタマーセルフリペアの対象外です。製品の保証を継続するためには、Hewlett Packard EnterpriseまたはHewlett Packard Enterprise正規保守代理店による交換作業が必須となります。部品カタログには、当該部品がカスタマーセルフリペア除外品である旨が記載されています。

<sup>1</sup>Mandatory — 客户必须自行维修的部件。如果您请求 Hewlett Packard Enterprise 更换这些部件，则必须为该服务支付差旅费和人工费用。

<sup>2</sup>Optional — 客户可以选择是否自行维修的部件。这些部件也是为客户自行维修设计的。不过，如果您要求 Hewlett Packard Enterprise 为您更换这些部件，则根据您的产品指定的保修服务类型，Hewlett Packard Enterprise 可能收取或不再收取任何附加费用。

<sup>3</sup>No — 某些 Hewlett Packard Enterprise 部件的设计并未考虑客户自行维修。为了满足客户保修的需要，Hewlett Packard Enterprise 要求授权服务提供商更换相关部件。这些部件在部件图解目录中标记为“否”。

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<sup>2</sup>Optional — 客戶自行維修所使用的零件是選購的。這些零件也設計用於客戶自行維修之用。不過，如果您要求 Hewlett Packard Enterprise 為您更換，則可能需要也可能不需要負擔額外的費用，端視針對此產品指定的保固服務類型而定。

<sup>3</sup>No — 某些 Hewlett Packard Enterprise 零件沒有消費者可自行維修的設計。為符合客戶保固，Hewlett Packard Enterprise 需要授權的服務供應商更換零件。這些零件在圖示的零件目錄中，被標示為「否」。

<sup>1</sup>Mandatory — 고객 셀프 수리가 의무 사항인 필수 부품. 사용자가 Hewlett Packard Enterprise에 이 부품의 교체를 요청할 경우 해당 서비스에 대한 출장비 및 작업비가 청구됩니다.

<sup>2</sup>Optional — 고객 셀프 수리가 선택 사항인 부품. 이러한 부품들도 고객 셀프 수리가 가능하도록 설계되었습니다. 하지만 사용자가 Hewlett Packard Enterprise에 이러한 부품의 교체를 요청할 경우 사용자가 구입한 제품에 해당하는 보증 서비스 유형에 따라 추가 비용 없이 교체가 가능할 수 있습니다.

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# Removal and replacement procedures

## Required tools

You need the following items for some procedures:

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

## 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.

To prevent electrostatic damage:

#### Procedure

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

## Symbols on equipment

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



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

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

---



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

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

---



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

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

---



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

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

---



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

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

---



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

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

---

## Server warnings and cautions

---



**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 from hot surfaces, allow the drives and the internal system components to cool before touching them.

---



**WARNING:**

To reduce the risk of personal injury, electric shock, or damage to the equipment, remove the power cord to remove power from the server. 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.

---



**CAUTION:**

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

---



**CAUTION:**

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

---

# Preparation procedures

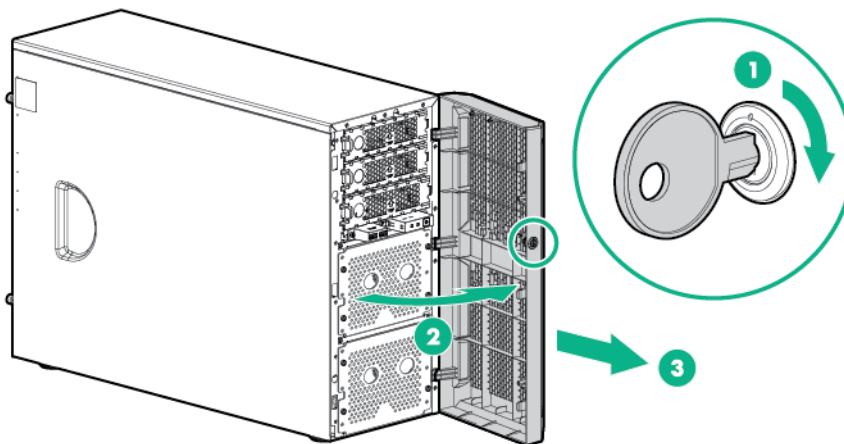
To access some components and perform certain service procedures, perform one or more of the following procedures:

- **Remove the tower bezel.**
- **Power down the server.**
- **Remove the access panel.**
- **Remove the system air baffle.**
- If installed, **remove the PCI air baffle.**
- **Remove the fans.**

## Remove the tower bezel

### Procedure

1. Using the key provided with the server, unlock the bezel with a clockwise turn.
2. Remove the tower bezel.



## Power down the server

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

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

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

- Press and release the Power On/Standby button.  
This method initiates a controlled shutdown of applications and the OS before the server enters standby mode.
- Press and hold the Power On/Standby button for more than 4 seconds to force the server to enter standby mode.  
This method forces the server to enter standby mode without properly exiting applications and the OS. If an application stops responding, you can use this method to force a shutdown.
- Use a virtual power button selection through iLO .

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

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

## Remove the access panel



### **WARNING:**

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

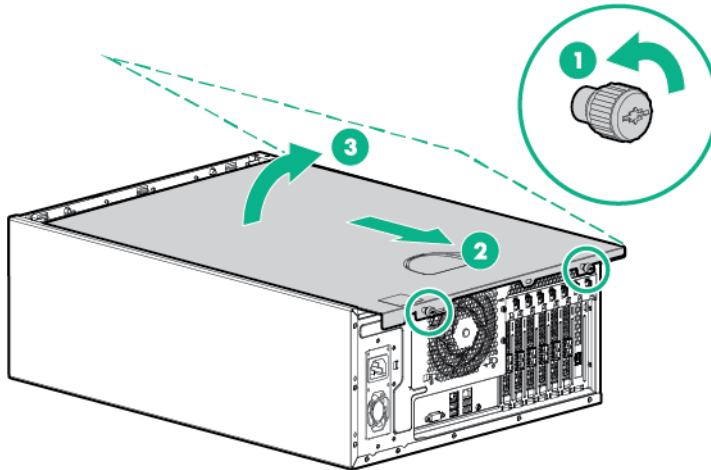


### **CAUTION:**

For proper cooling do not operate the server without the access panel, baffles, expansion slot covers, or blanks installed.

### Procedure

1. **Unlock and remove the tower bezel.**
2. **Power down the server.**
3. If a Kensington security cable is installed, disconnect it from the rear panel. See the security cable documentation for instructions.
4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Place the server on its side.
6. Remove the access panel:
  - a. Loosen the access panel thumb screws.
  - b. Lift the access panel and remove it from the server.



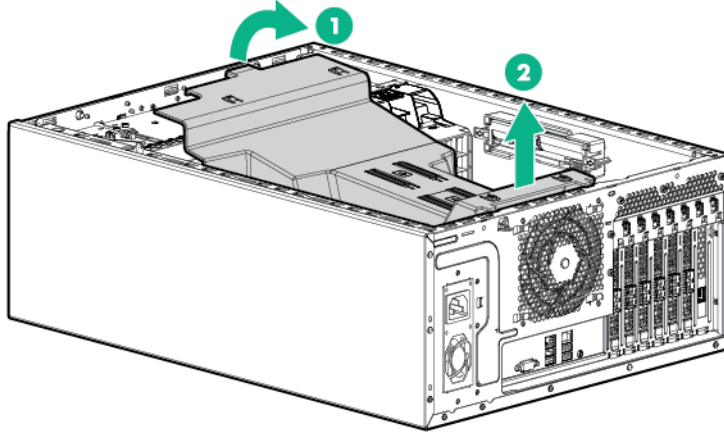
## Remove the system air baffle

### Procedure

1. **Unlock and remove the tower bezel.**
2. **Power down the server.**



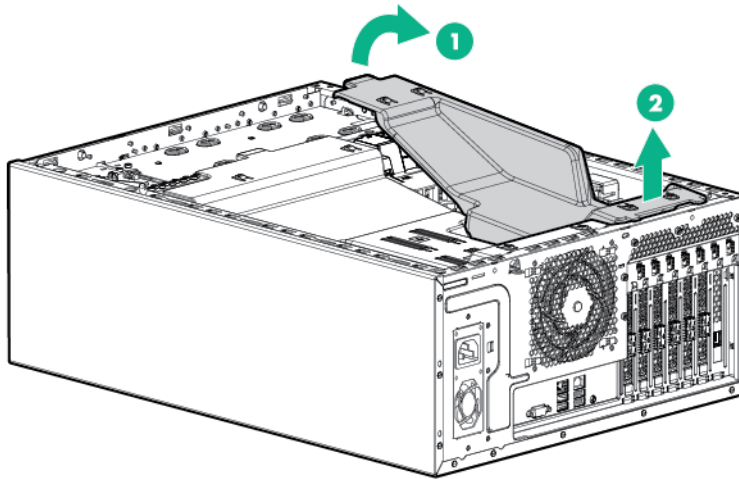
3. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
4. Place the server on its side.
5. **Remove the access panel.**
6. Remove the system air baffle.



## Remove the PCI air baffle

### Procedure

1. **Unlock and remove the tower bezel.**
2. **Power down the server.**
3. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
4. Place the server on its side.
5. **Remove the access panel.**
6. Remove the PCI air baffle.



## Remove the fans

---



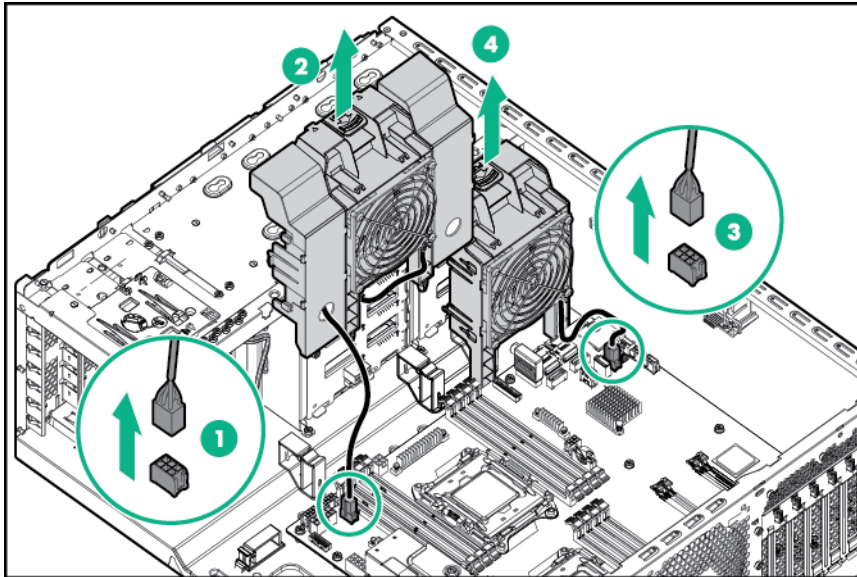
### CAUTION:

Caution: To prevent damage server, ensure that all DIMM latches are closed and locked before installing the fans.

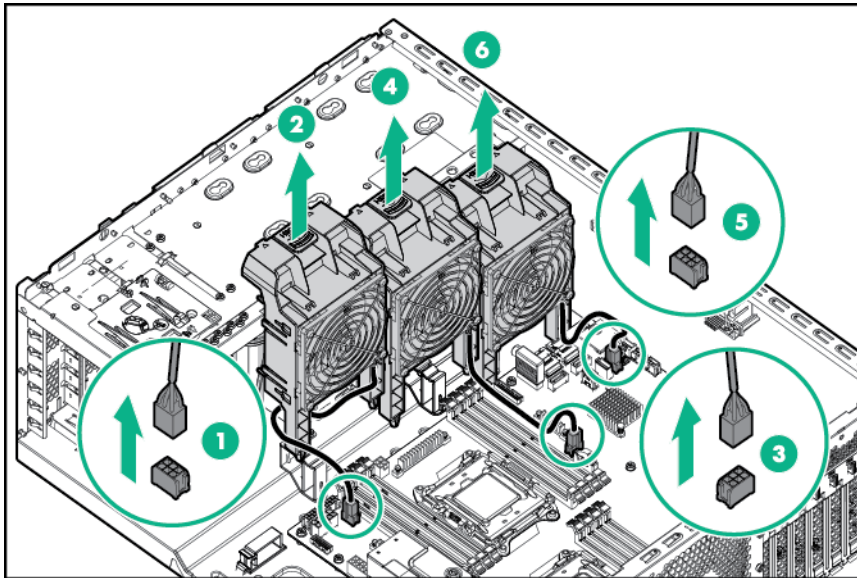
---

### Procedure

1. **Unlock and remove the tower bezel.**
2. **Power down the server.**
3. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
4. Place the server on its side.
5. **Remove the access panel.**
6. If installed, **remove the PCI air baffle.**
7. **Remove the system air baffle.**
8. Remove the fans.
  - Single-processor configuration



- Two-processor configuration



To replace the component, reverse the removal procedure.

## Storage drive

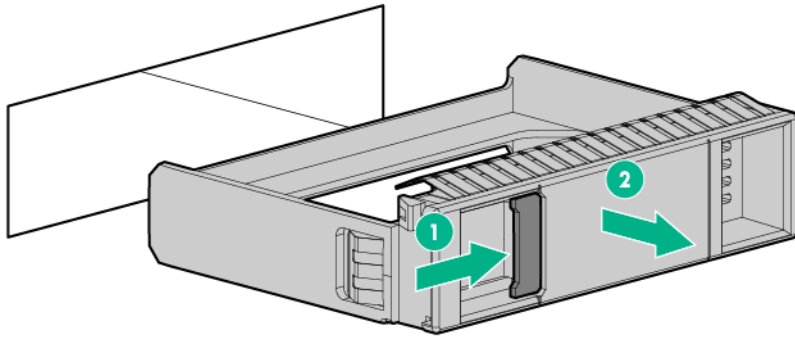
### Remove the hot-plug drive blank

#### ⚠ CAUTION:

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

#### Procedure

1. **Unlock and remove the tower bezel**
2. Remove the drive blank.



To replace the LFF drive blank, slide the component into the bay until it clicks.

To replace the SFF drive blank, while pressing the release latch, slide the component into the bay until it is fully seated.

## Remove the hot-plug drive

---

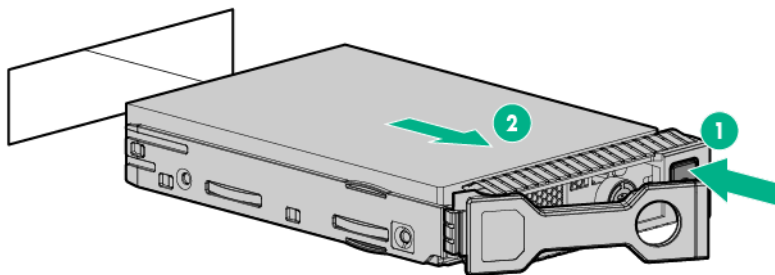
### CAUTION:

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

---

### Procedure

1. Back up all the server data on the drive.
2. **Unlock and remove the tower bezel**
3. Determine the status of the drive from the **hot-plug drive LED definitions**.
4. Remove the drive.



To replace the component, reverse the removal procedure.

## Remove the non-hot-plug drive

---

### CAUTION:

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

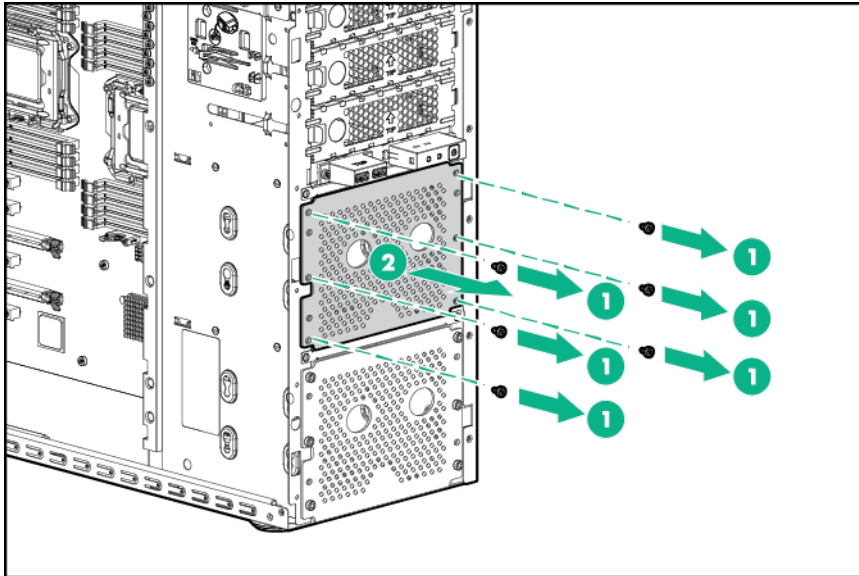
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### Procedure

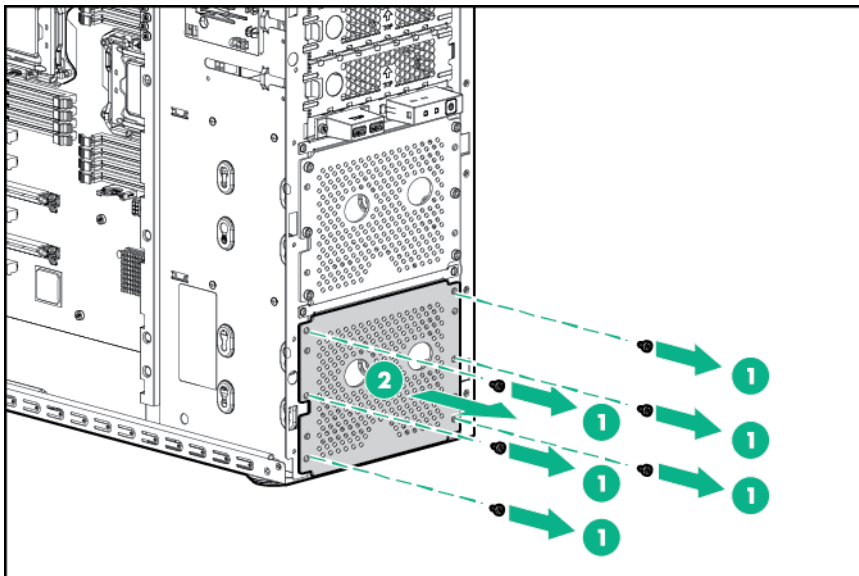
1. Back up all the server data on the drive.
2. **Unlock and remove the tower bezel**.
3. **Power down the server**.

4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Place the server on its side.
6. **Remove the access panel.**
7. If installed, **remove the PCI air baffle.**
8. **Remove the system air baffle.**
9. **Remove the fans.**
10. Disconnect the drive cables from the rear of the drives.
11. Remove the non-hot-plug drive cage from the server:

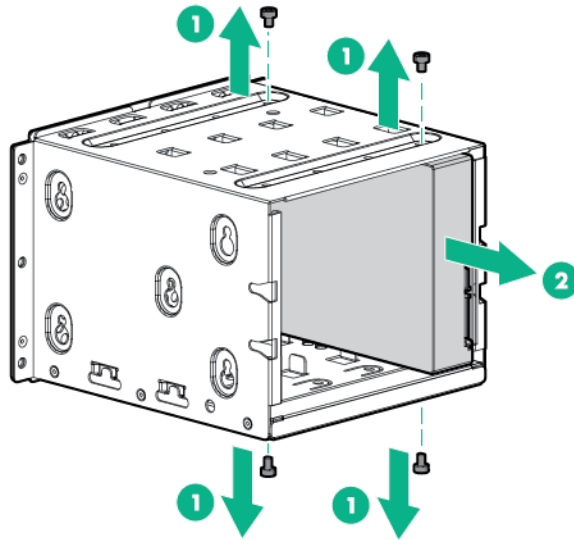
- Box2



- Box1



12. Remove the non-hot-plug drive.

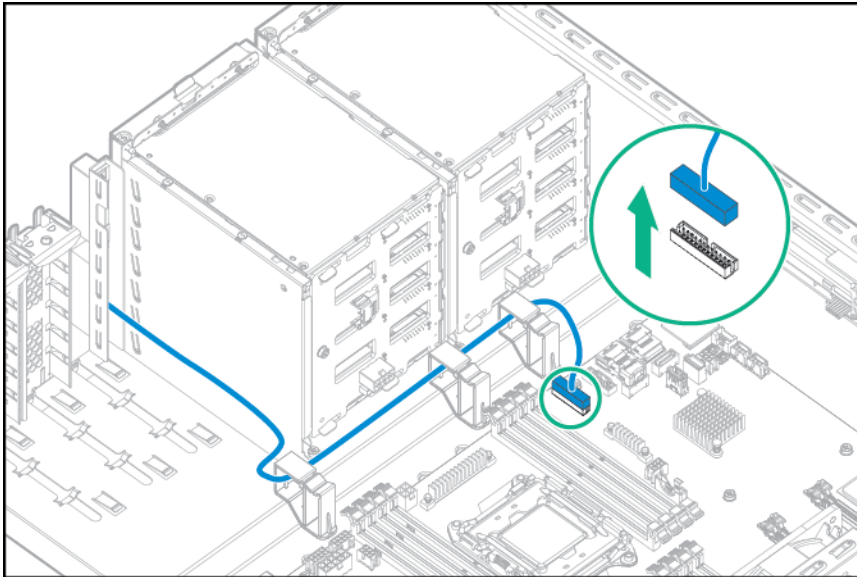


To replace the component, reverse the removal procedure.

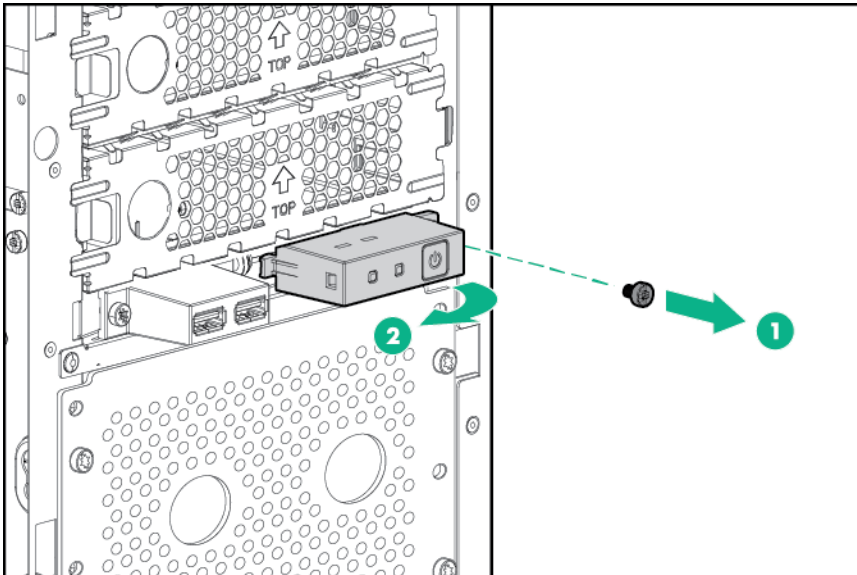
## Front panel LED

### Procedure

1. **Unlock and remove the tower bezel.**
2. **Power down the server .**
3. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server .
4. Place the server on its side.
5. **Remove the access panel.**
6. If installed, **remove the PCI air baffle.**
7. **Remove the system air baffle.**
8. **Remove the fans.**
9. Disconnect the front LED cable from the system board.



10. Remove the front panel LED module:
  - a. Remove the front panel LED module screw.
  - b. Pull the LED module out of the server .



To replace the component, reverse the removal procedure.

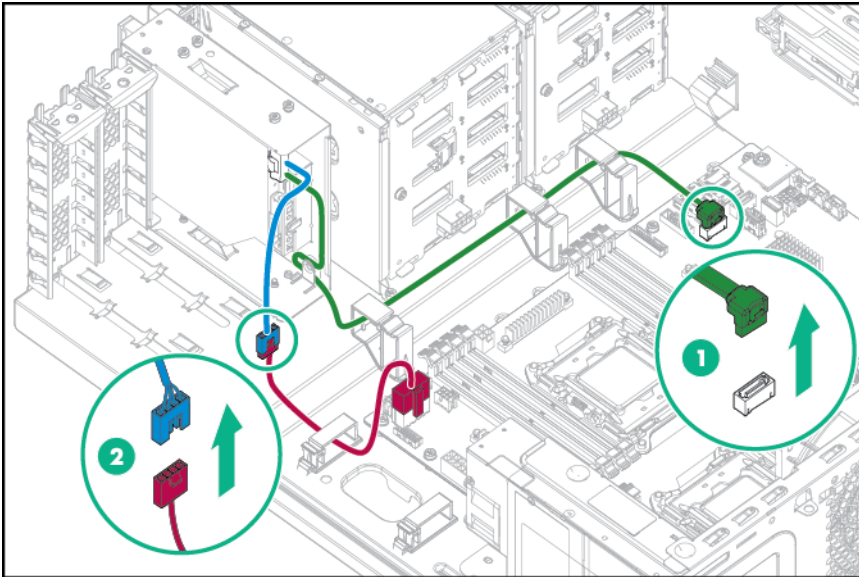
## Front panel USB

### Procedure

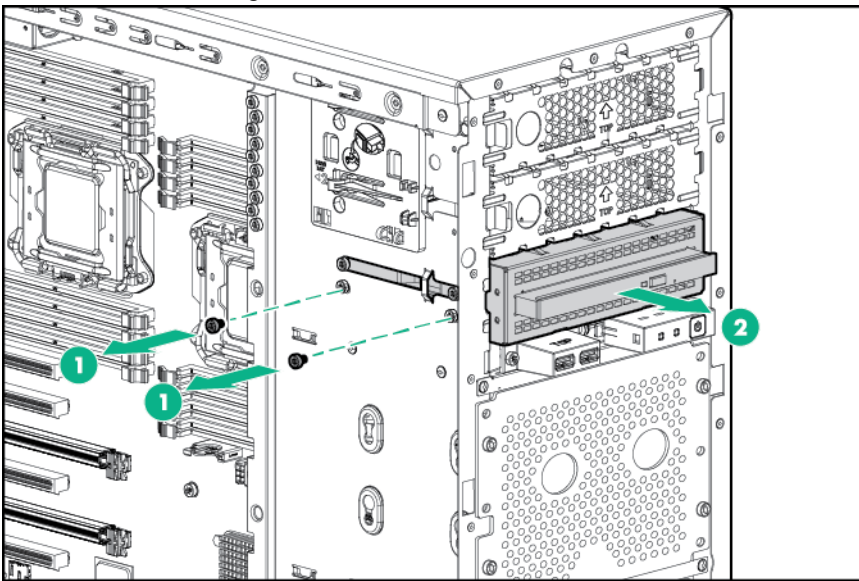
1. **Unlock and remove the tower bezel.**
2. **Power down the server .**
3. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server .
4. Place the server on its side.
5. **Remove the access panel.**
6. If installed, **remove the PCI air baffle.**



7. **Remove the system air baffle.**
8. **Remove the fans.**
9. If installed, remove the optical disk drive cage.
  - a. Disconnect the optical drive cables.

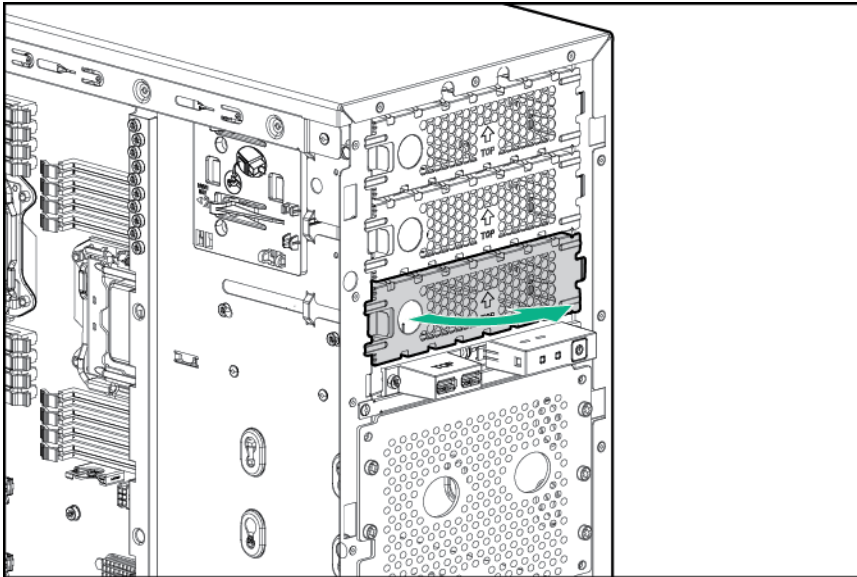


- b. Remove the drive cage from the server .

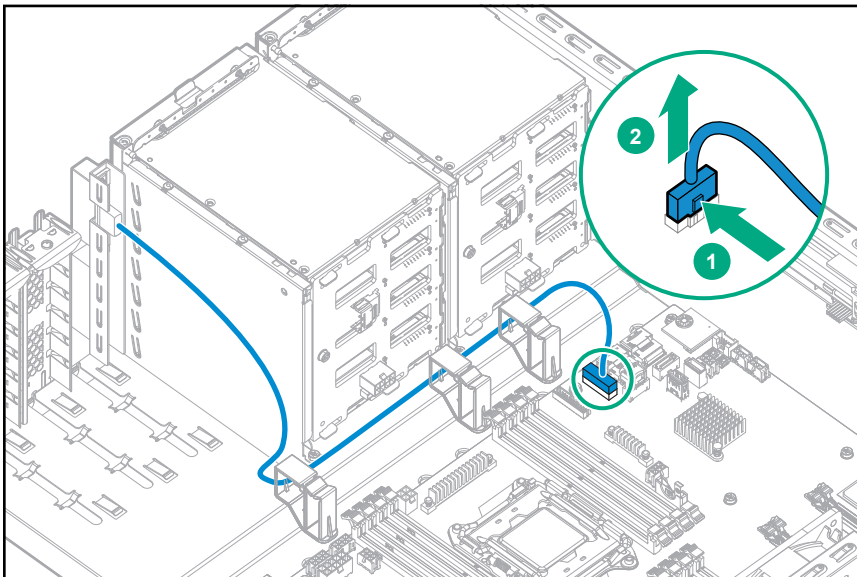


10. Remove the media bay blank.

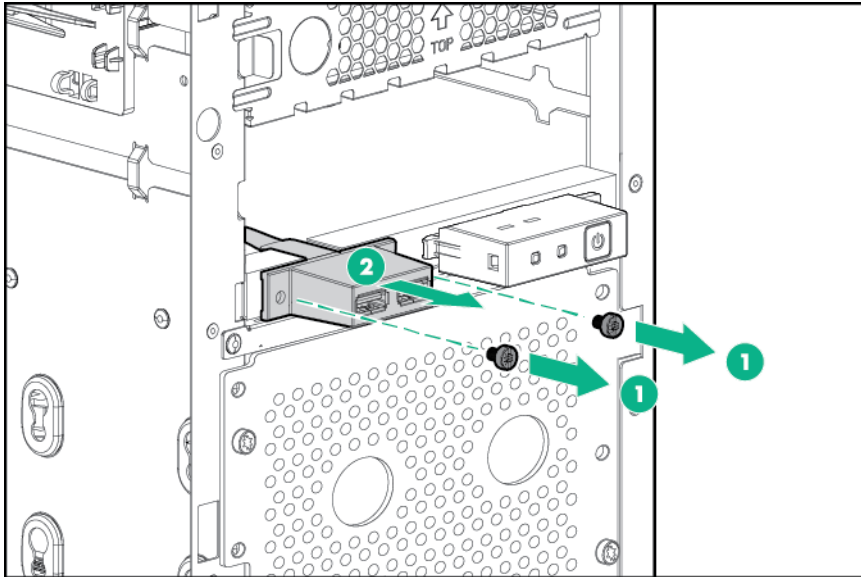




11. Press the latch of the front USB connector, and then disconnect the front USB cable from the system board.



12. Remove the front USB module:
  - a. Remove the front USB module screws.
  - b. Pull the front USB module out of the server .



To replace the component, reverse the removal procedure.

## DIMMs

### Memory and processor information

Intel Xeon E5-2600 v3 processors are optimized for:

- Single-rank and dual-rank PC4-2133 (DDR4-2133) RDIMMs operating at up to 2133 MT/s
- Dual-rank and quad-rank PC4-2133 (DDR4-2133) LRDIMMs operating at up to 2133 MT/s

Intel Xeon E5-2600 v4 processors are optimized for:

- Single-rank and dual-rank PC4-2400T (DDR4-2400) RDIMMs operating at up to 2400 MT/s
- Dual-rank and quad-rank PC4-2400T (DDR4-2400) LRDIMMs operating at up to 2400 MT/s

For the latest memory configuration information, see the product QuickSpecs on the [Hewlett Packard Enterprise website](#).

### Removing the 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.



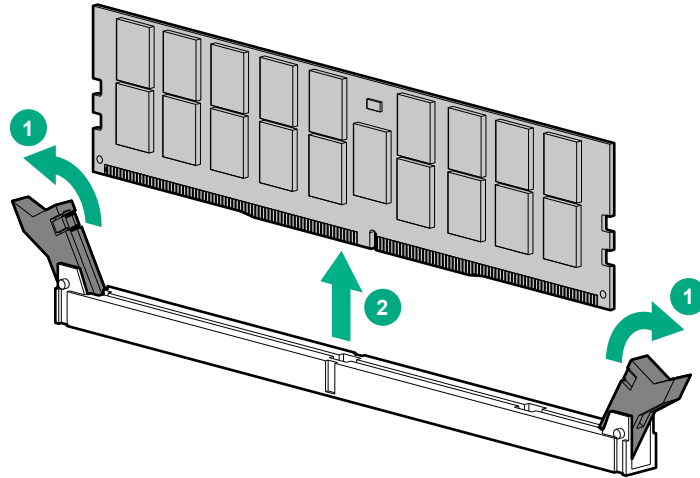
**CAUTION:**

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.

#### Procedure

1. Back up all the server data on the drive.
2. **Unlock and remove the tower bezel.**
3. **Power down the server.**
4. Remove all power:

- a. Disconnect each power cord from the power source.
- b. Disconnect each power cord from the server.
5. Place the server on its side.
6. **Remove the access panel.**
7. If installed, **remove the PCI air baffle.**
8. **Remove the system air baffle.**
9. Open the DIMM slot latches.
10. Remove the DIMM.

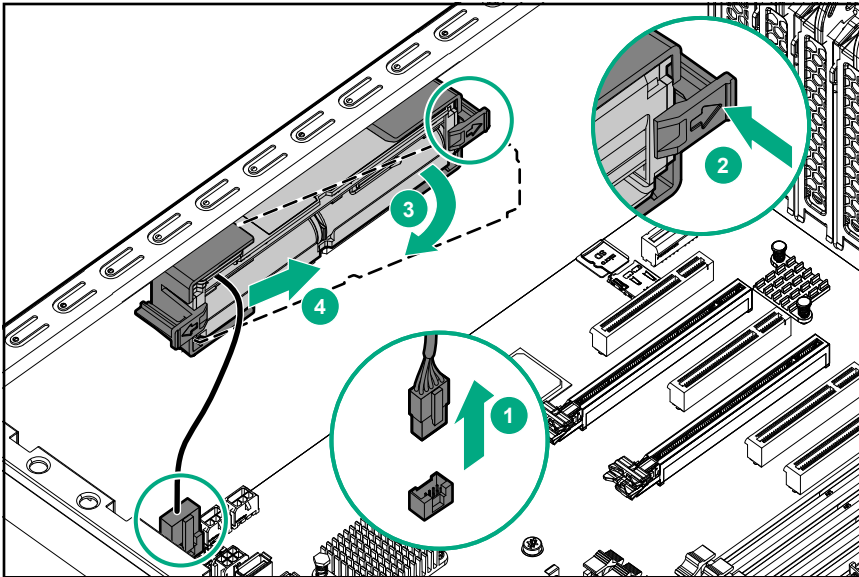


To replace the component, reverse the removal procedure.

## HPE Smart Storage Battery

### Procedure

1. **Unlock and remove the tower bezel.**
2. **Power down the server.**
3. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
4. Place the server on its side.
5. **Remove the access panel.**
6. If installed, **remove the PCI air baffle.**
7. **Remove the system air baffle.**
8. Remove the Smart Storage battery.
  - a. Remove the battery cable connected to the system board.
  - b. Press the latch and remove the Smart Storage Battery from the holder.

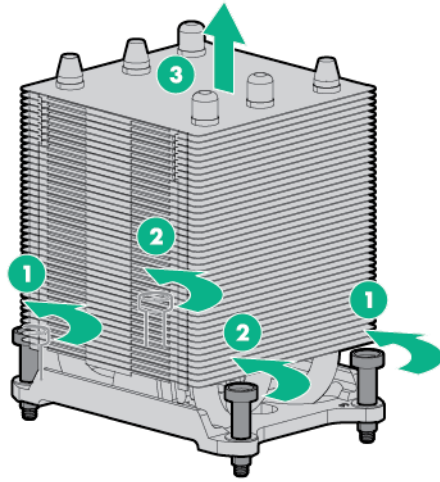


To replace the component, reverse the removal procedure.

## Heatsink

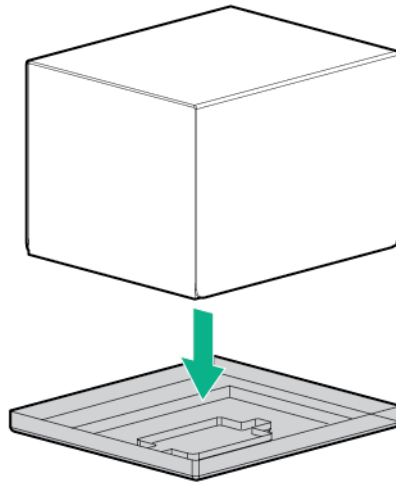
### Procedure

1. **Unlock and remove the tower bezel.**
2. **Power down the server.**
3. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
4. Place the server on its side.
5. **Remove the access panel.**
6. If installed, **remove the PCI air baffle.**
7. **Remove the system air baffle.**
8. Remove the heatsink:
  - a. Loosen one pair of diagonally opposite screws halfway, and then loosen the other pair of screws.
  - b. Completely loosen all screws in the same sequence.
  - c. Remove the heatsink from the processor backplate.

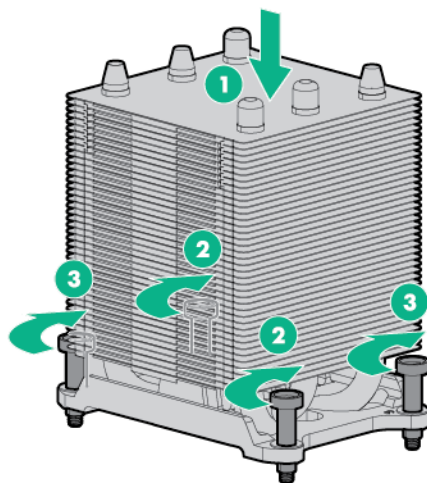


To replace the component:

1. Clean the old thermal grease from the processor with the alcohol swab. Allow the alcohol to evaporate before continuing.
2. Remove the thermal interface protective cover from the heatsink.



3. Install the heatsink:
  - a. Position the heatsink on the processor backplate.
  - b. Tighten one pair of diagonally opposite screws halfway, and then tighten the other pair of screws.
  - c. Finish the installation by completely tightening the screws in the same sequence.



4. Install the system air baffle.
5. If removed, install the PCI air baffle.
6. Install the access panel.
7. Return the server to an upright position.
8. Connect each power cord to the server.
9. Connect each power cord to the power source.
10. Power up the server.
11. Install and lock the tower bezel.

## Processor



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



**CAUTION:**

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



**CAUTION:**

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.

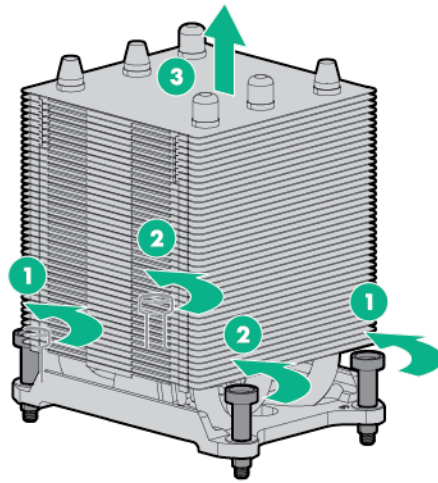


**CAUTION:**

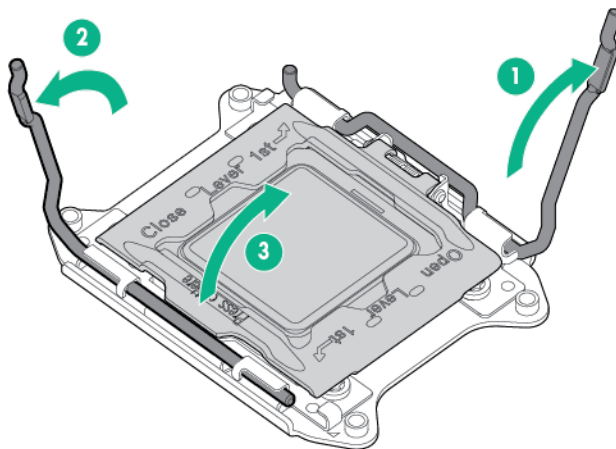
If installing a processor with a faster speed, update the system ROM before installing the processor.

## Procedure

1. **Unlock and remove the tower bezel.**
2. **Power down the server.**
3. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
4. Place the server on its side.
5. **Remove the access panel.**
6. If installed, **remove the PCI air baffle.**
7. **Remove the system air baffle.**
8. Remove the heatsink:
  - a. Loosen one pair of diagonally opposite screws halfway, and then loosen the other pair of screws.
  - b. Completely loosen all screws in the same sequence.
  - c. Remove the heatsink from the processor backplate.



9. Open each of the processor locking levers in the order indicated, and then open the processor retaining bracket.



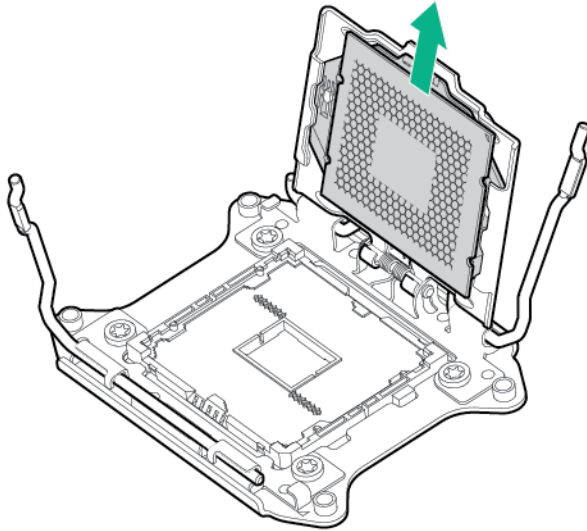


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**⚠ CAUTION:**  
**THE PINS ON THE SYSTEM BOARD ARE VERY FRAGILE AND EASILY DAMAGED.** To avoid damage to the system board, do not touch the processor or the processor socket contacts.

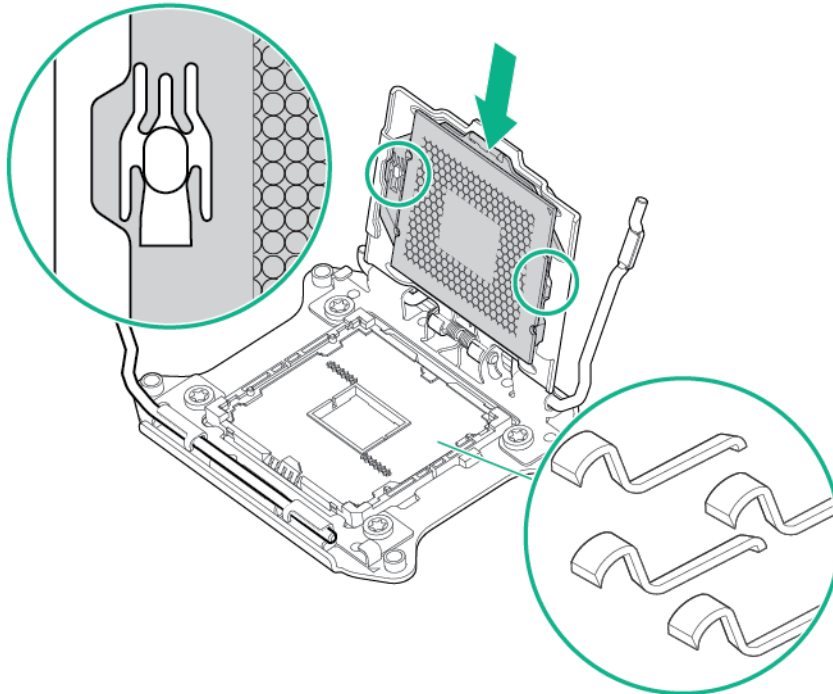
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10. Remove the processor from the processor retaining bracket.



To replace a processor:

1. Install the processor. Verify that the processor is fully seated in the processor retaining bracket by visually inspecting the processor installation guides on either side of the processor. **THE PINS ON THE SYSTEM BOARD ARE VERY FRAGILE AND EASILY DAMAGED.**



---

**⚠ CAUTION:**  
**THE PINS ON THE SYSTEM BOARD ARE VERY FRAGILE AND EASILY DAMAGED.** To avoid damage to the system board, do not touch the processor or the processor socket contacts.

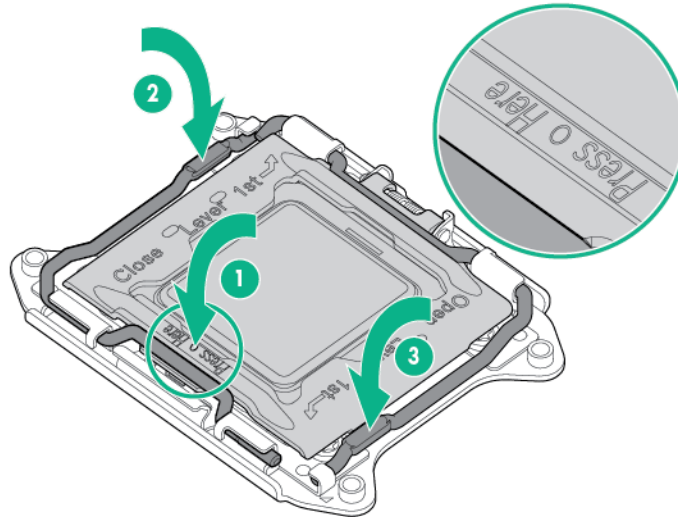
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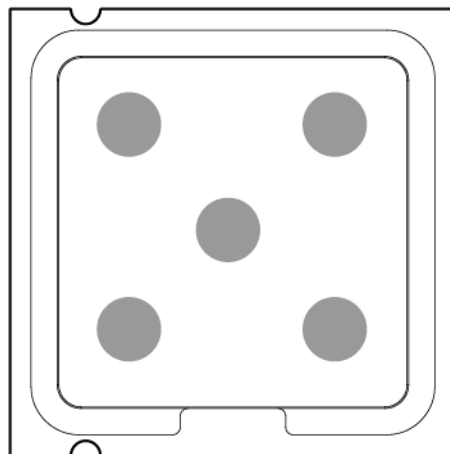
**CAUTION:**

Do not press down on the processor. Pressing down on the processor might damage the processor socket and the system board. Press only in the area indicated on the processor retaining bracket.

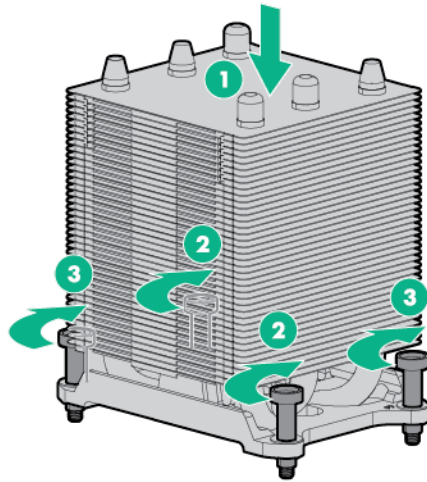
2. Close the processor retaining bracket. When the processor is installed properly inside the processor retaining bracket, the processor retaining bracket clears the flange on the front of the socket.
3. Press and hold the processor retaining bracket in place, and then close each processor locking lever. Press only in the area indicated on the processor retaining bracket.



4. Use the alcohol swab to remove all the existing thermal grease from the heatsink. Allow the alcohol to evaporate before continuing.
5. Apply all the grease to the top of the processor in the following pattern to ensure even distribution.



6. Install the heatsink:
  - a. Position the heatsink on the processor backplate.
  - b. Tighten one pair of diagonally opposite screws halfway, and then tighten the other pair of screws.
  - c. Finish the installation by completely tightening the screws in the same sequence.

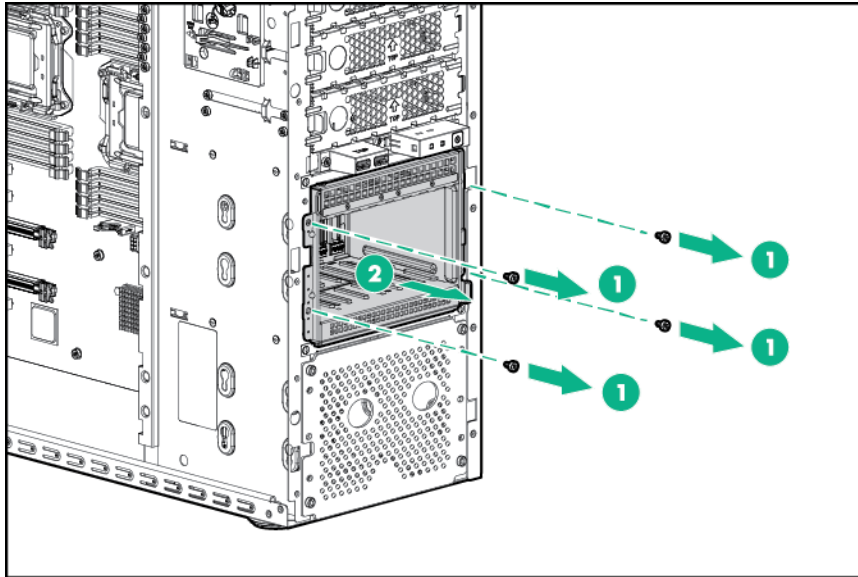


7. Install the system air baffle.
8. If removed, install the PCI air baffle.
9. Install the access panel.
10. Return the server to an upright position.
11. Connect each power cord to the server.
12. Connect each power cord to the power source.
13. Power up the server.
14. Install and lock the tower bezel.

## Eight-bay SFF hot-plug drive cage

### Procedure

1. **Unlock and remove the tower bezel.**
2. **Power down the server.**
3. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
4. Remove all **drives** and **drive blanks**.
5. Place the server on its side.
6. **Remove the access panel.**
7. If installed, **remove the PCI air baffle.**
8. **Remove the system air baffle.**
9. **Remove the fans.**
10. Disconnect the two Mini-SAS cables and the power cable from the drive cage backplane.
11. Remove the SFF drive cage.

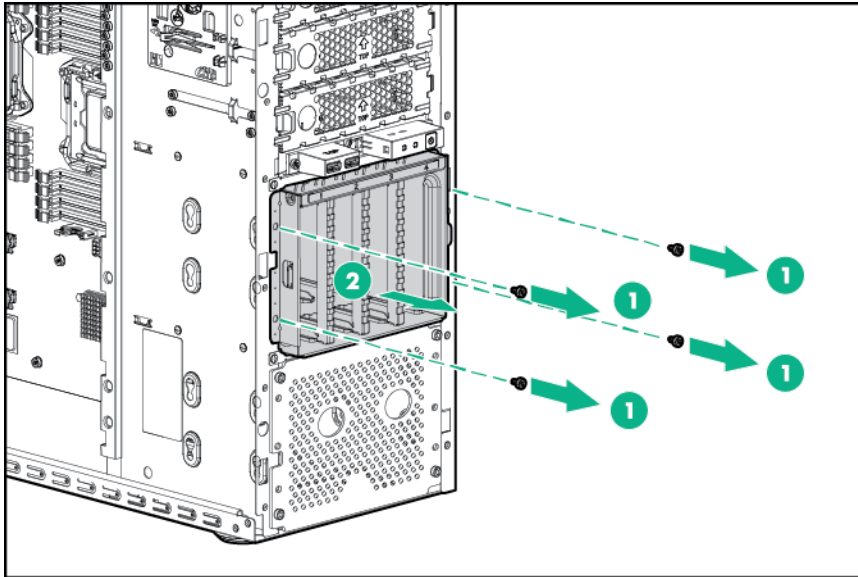


To replace the component, reverse the removal procedure.

## Four-bay LFF hot-plug drive cage

### Procedure

1. **Unlock and remove the tower bezel.**
2. **Power down the server.**
3. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
4. Remove all **drives** and **drive blanks**.
5. Place the server on its side.
6. **Remove the access panel.**
7. If installed, **remove the PCI air baffle.**
8. **Remove the system air baffle.**
9. **Remove the fans.**
10. Disconnect the two Mini-SAS cables and the power cable from the drive cage backplane.
11. Remove the LFF drive cage.

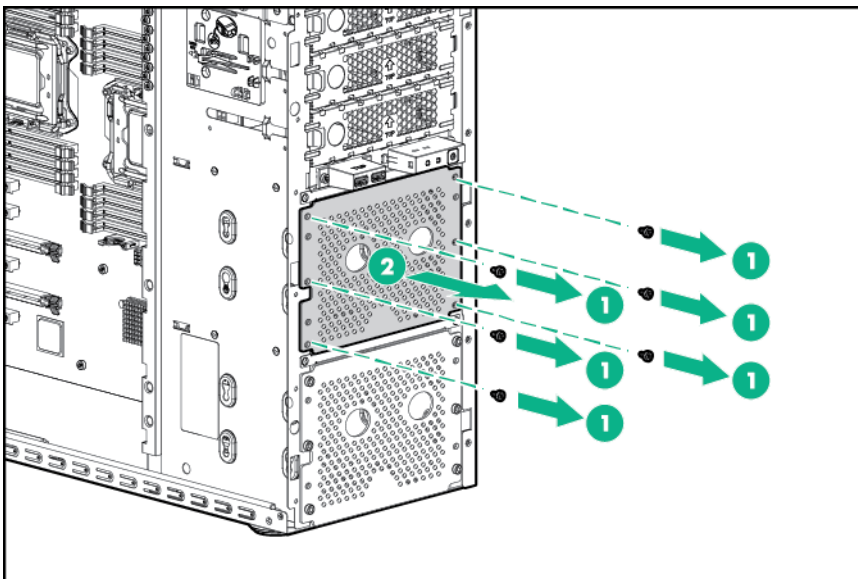


To replace the component, reverse the removal procedure.

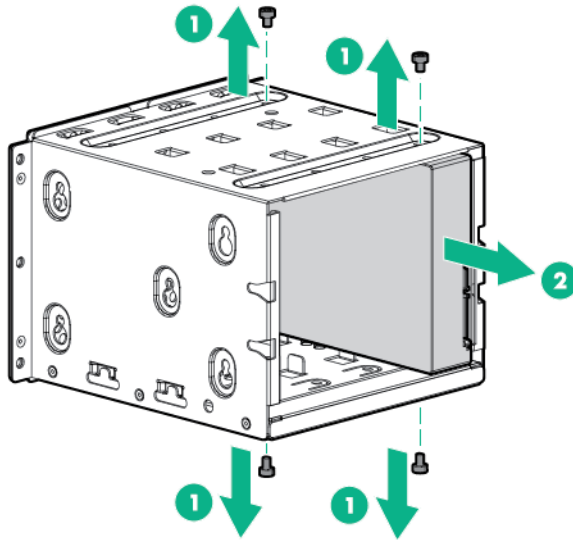
## Four-bay LFF non-hot-plug drive cage

### Procedure

1. **Unlock and remove the tower bezel.**
2. **Power down the server.**
3. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
4. Place the server on its side.
5. **Remove the access panel.**
6. **Remove the fans.**
7. Disconnect the drive cables from the rear of the drives.
8. Remove the drive cage.



9. Remove the non-hot-plug drives.

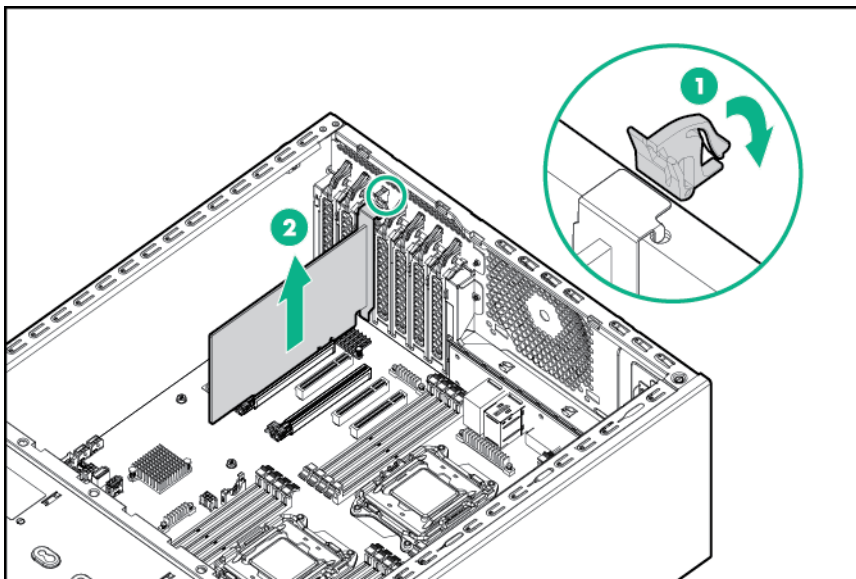


To replace the component, reverse the removal procedure.

## HPE H240 Smart Host Bus Adapter

### Procedure

1. **Unlock and remove the tower bezel.**
2. **Power down the server.**
3. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
4. Place the server on its side.
5. **Remove the access panel.**
6. If installed, **remove the PCI air baffle.**
7. **Remove the system air baffle.**
8. Disconnect the Mini-SAS cables from the HPE H240 Smart Host Bus Adapter.
9. Open the slot latch and remove the H240 Smart Host Bus Adapter.



To replace the component, reverse the removal procedure.

## System Battery

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



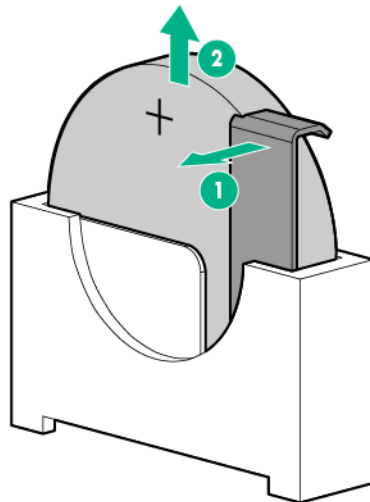
### WARNING:

The computer contains an internal lithium manganese dioxide, a vanadium pentoxide, or an alkaline battery pack. A risk of fire and burns exists if the battery pack is not properly handled. To reduce the risk of personal injury:

- Do not attempt to recharge the battery.
- Do not expose the battery to temperatures higher than 60°C (140°F).
- Do not disassemble, crush, puncture, short external contacts, or dispose of in fire or water.
- Replace only with the spare designated for this product.

### Procedure

1. **Unlock and remove the tower bezel.**
2. **Power down the server.**
3. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
4. Place the server on its side.
5. **Remove the access panel.**
6. If installed, **remove the PCI air baffle.**
7. **Remove the system air baffle.**
8. **Locate the battery on the system board.**
9. Remove the battery.



### IMPORTANT:

Replacing the system board battery resets the system ROM to its default configuration. After replacing the battery, reconfigure the system through UEFI System Utilities.

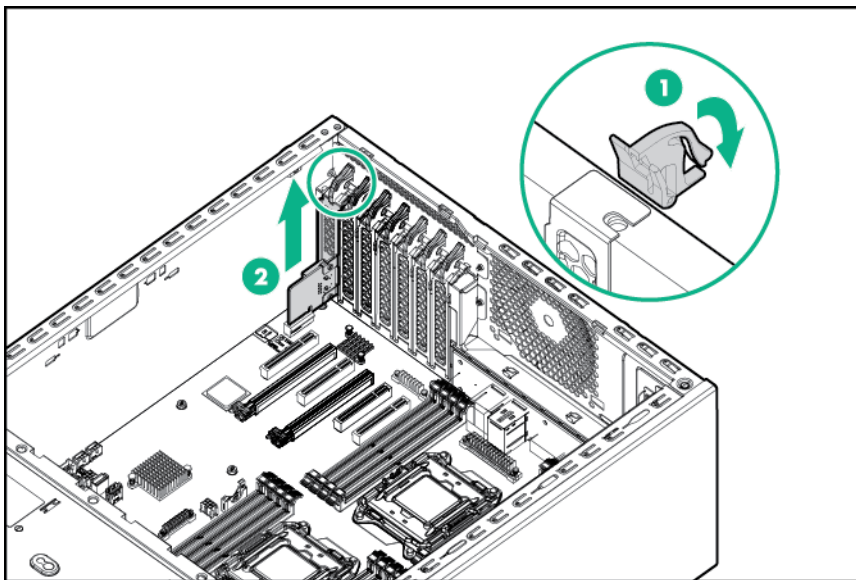
To replace the component, reverse the removal procedure.

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

## Dedicated iLO port management module

### Procedure

1. **Unlock and remove the tower bezel.**
2. **Power down the server.**
3. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
4. Place the server on its side.
5. **Remove the access panel.**
6. If installed, **remove the PCI air baffle.**
7. **Remove the system air baffle.**
8. Open the slot latch and remove the dedicated iLO port management module.



To replace the component, reverse the removal procedure.

After installing the new dedicated iLO management module, **enable the dedicated iLO connector.**

### Enabling the dedicated iLO management module

The onboard NIC 1/shared iLO connector is set as the default system iLO connector. To enable the dedicated iLO management module, use the iLO 4 Configuration Utility accessible within the HPE UEFI System Utilities.

For more information on the UEFI System Utilities, see the UEFI documentation on the **Hewlett Packard Enterprise website.**



#### **IMPORTANT:**

If the iLO configuration settings are reset to the default values, remote access to the machine will be lost. Access the physical machine and repeat the procedure described in this section to re-enable the dedicated iLO management connector.

To enable the dedicated iLO management module:

1. During the server startup sequence after installing the module, press **F9** in the POST screen.



The System Utilities screen appears.

2. Select **System Configuration | iLO 4 Configuration Utility**.

The iLO 4 Configuration Utility screen appears.

3. Select **Network Options**, and then press **Enter**.

The Network Options screen appears.

4. Set the **Network Interface Adapter** field to **ON**, and then press **Enter**.
5. Press **F10** to save your changes.

A message prompt to confirm the iLO settings reset appears.

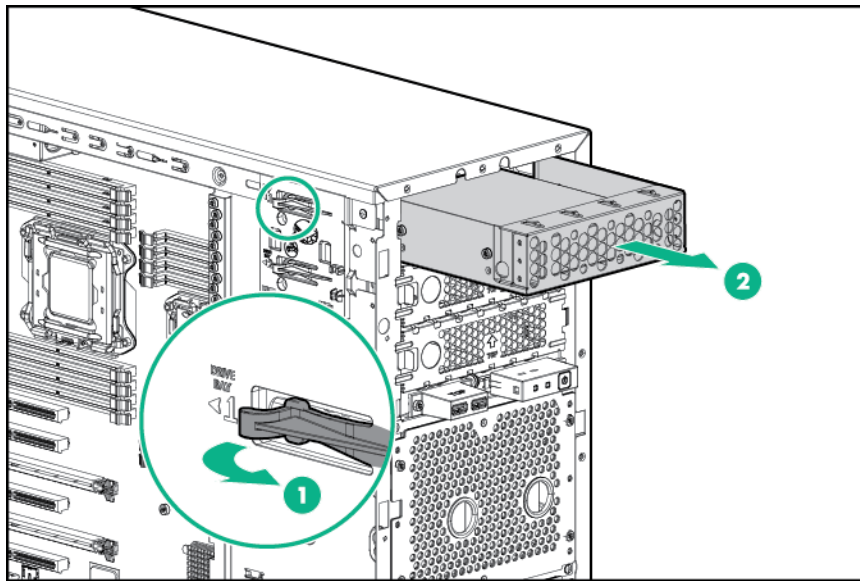
6. Press **Enter** to reboot the iLO settings.
7. Press **Esc** until the main menu is displayed.
8. Select **Reboot the System** to exit the utility and resume the boot process.

The IP address of the enabled dedicated iLO connector appears on the POST screen on the subsequent boot-up. Access the Network Options screen again to view this IP address for later reference.

## LFF drive carrier

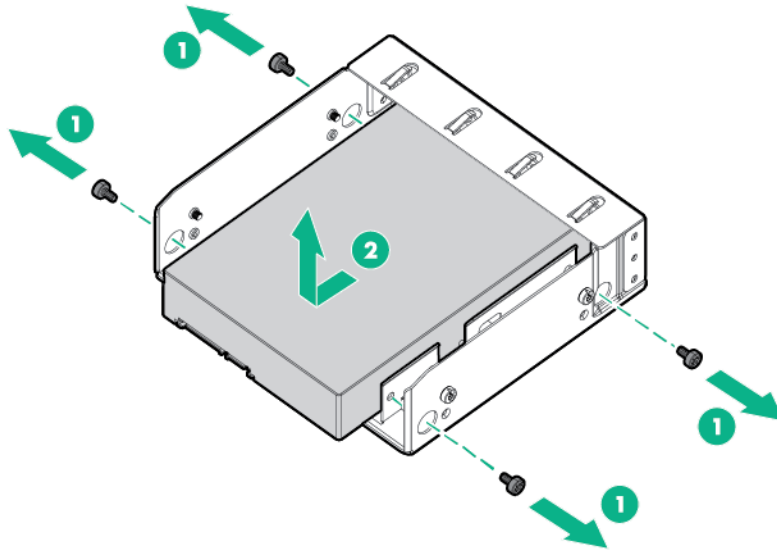
### Procedure

1. **Unlock and remove the tower bezel.**
2. **Power down the server.**
3. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
4. Place the server on its side.
5. **Remove the access panel.**
6. If installed, **remove the PCI air baffle.**
7. **Remove the system air baffle.**
8. **Remove the fans.**
9. Disconnect the drive cables from the drive.
10. Remove the drive carrier.



11. Remove the drive from the carrier.



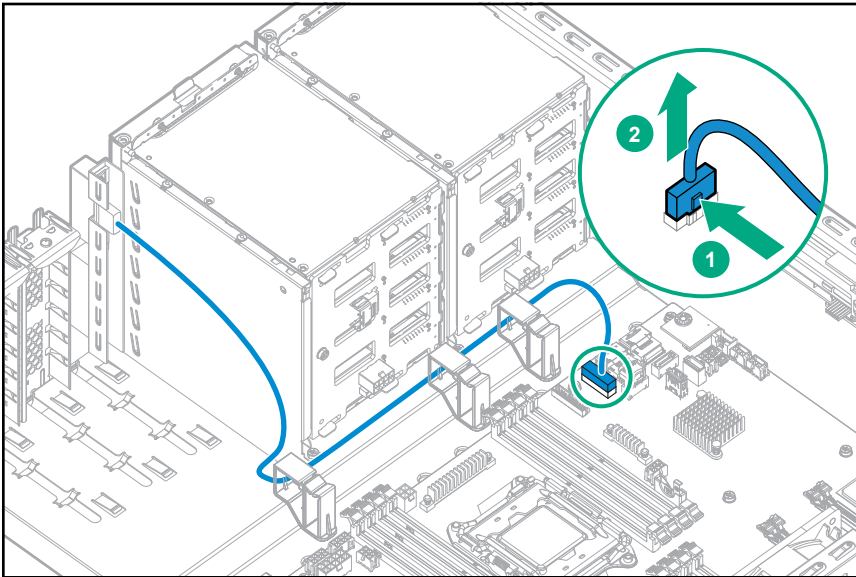


To replace the component, reverse the removal procedure.

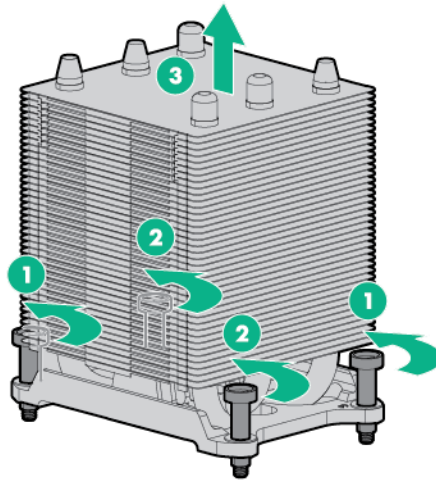
## System board

### Procedure

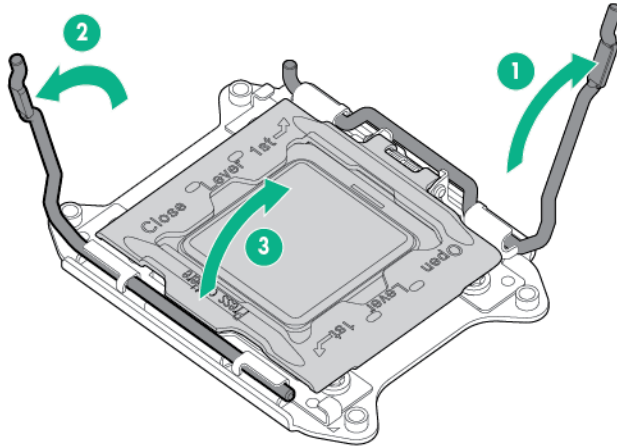
1. **Unlock and remove the tower bezel.**
2. **Power down the server .**
3. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server .
4. Place the server on its side.
5. **Remove the access panel.**
6. If installed, **remove the PCI air baffle.**
7. **Remove the system air baffle.**
8. **Remove all DIMMS.**
9. **Remove the fans.**
10. If installed, **remove the dedicated iLO port management module.**
11. Disconnect any cables connected to installed PCIe cards.
12. Remove any installed PCIe cards.
13. Press the latch of the front USB connector, and then disconnect the front USB cable from the system board.



14. Disconnect all other cables connected to the system board.
15. Remove the heatsink:
  - a. Loosen one pair of diagonally opposite screws halfway, and then loosen the other pair of screws.
  - b. Completely loosen all screws in the same sequence.
  - c. Remove the heatsink from the processor backplate.



16. Open each of the processor locking levers in the order indicated, and then open the processor retaining bracket.

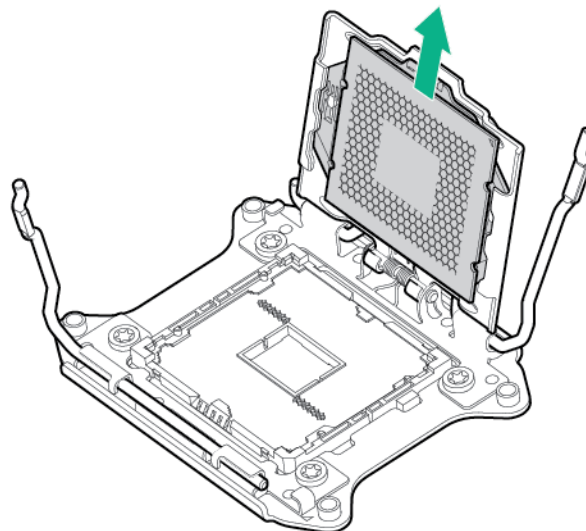


---

**⚠ CAUTION:**  
**THE PINS ON THE SYSTEM BOARD ARE VERY FRAGILE AND EASILY DAMAGED.** To avoid damage to the system board, do not touch the processor or the processor socket contacts.

---

17. Remove the processor from the processor retaining bracket.



---

**⚠ CAUTION:**  
Removal of the processor or heatsink renders the thermal layer between the processor and heatsink useless. Clean the component with the provided alcohol swab, then add thermal grease.

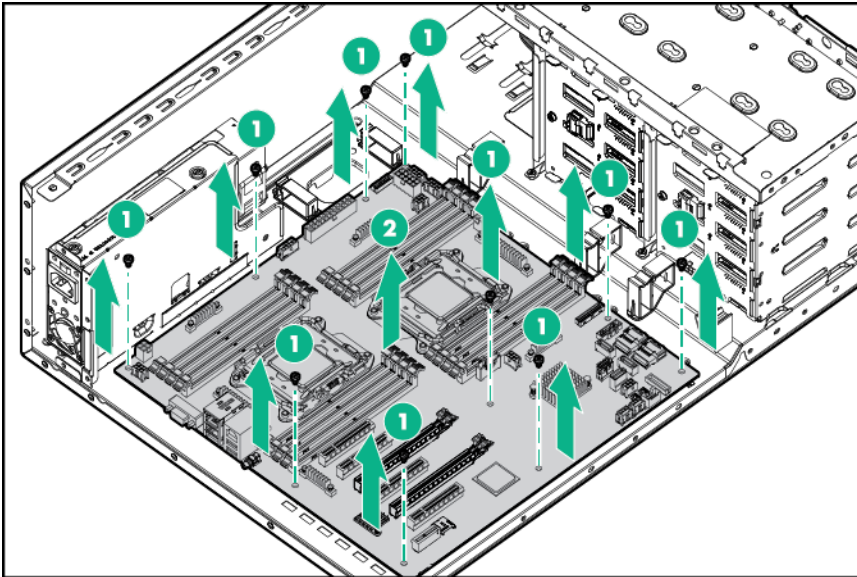
---

**⚠ CAUTION:**  
To avoid damage to the system board:

- Do not touch the processor socket contacts.
- Always install the processor socket cover after removing the processor from the socket.
- Do not tilt or slide the processor when lowering the processor into the socket.

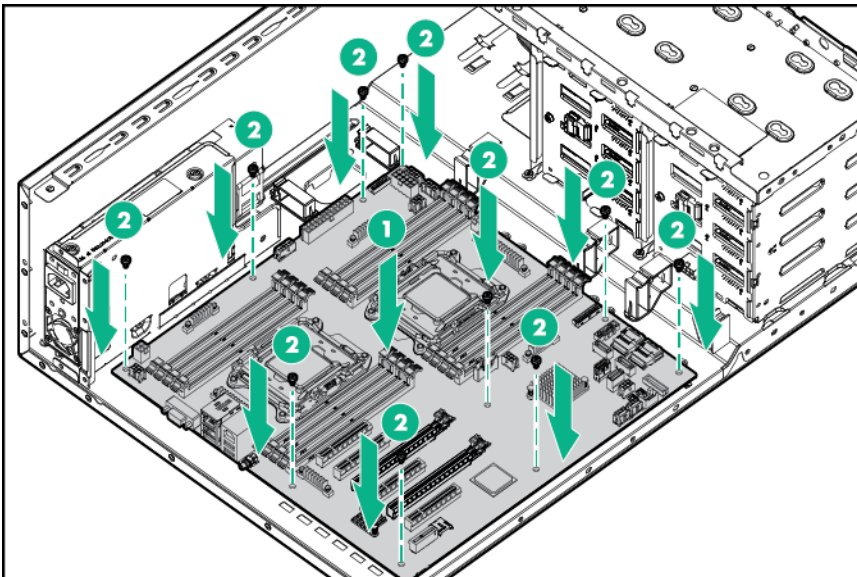
---

18. Place the processor on a static-dissipating work surface or inside an anti-static bag.  
19. Remove the failed system board.

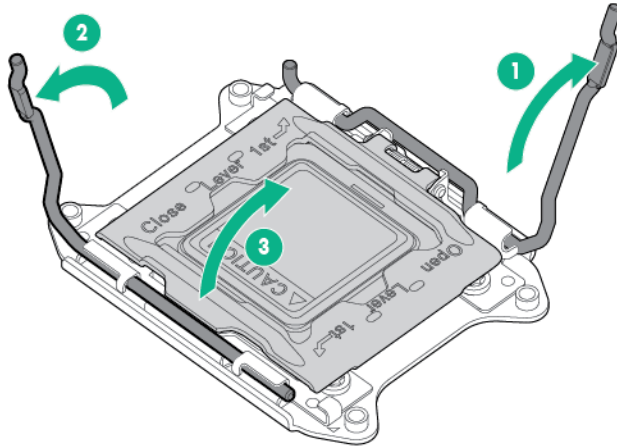


To replace the system board:

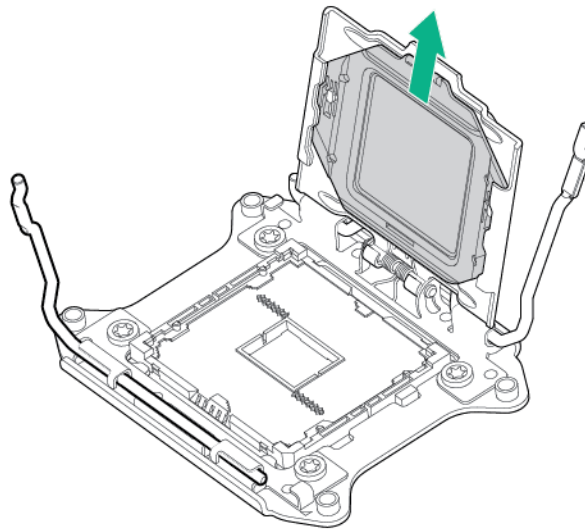
1. Install the system board.



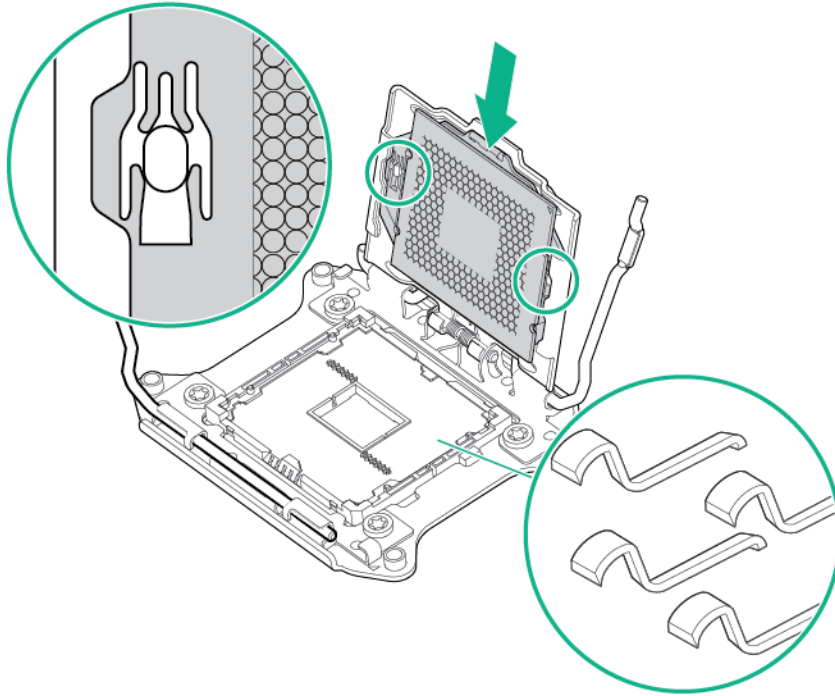
2. Open each of the processor locking levers in the order indicated, and then open the processor retaining bracket.



3. Remove the clear processor socket cover. Retain the processor socket cover for future use.



4. Install the processor. Verify that the processor is fully seated in the processor retaining bracket by visually inspecting the processor installation guides on either side of the processor. **THE PINS ON THE SYSTEM BOARD ARE VERY FRAGILE AND EASILY DAMAGED.**



---

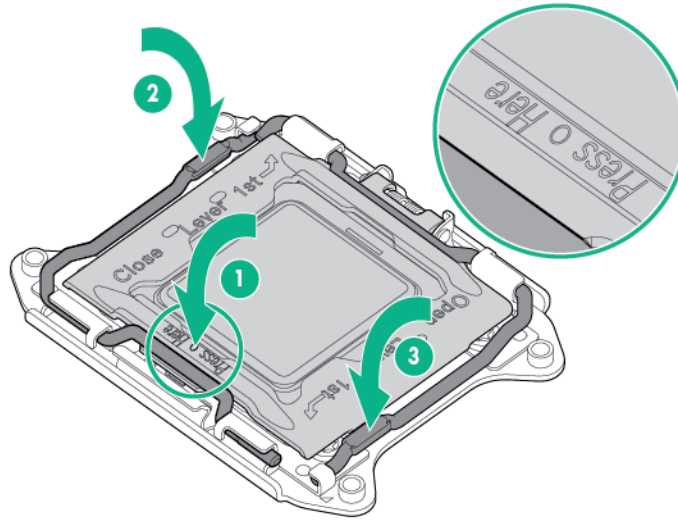
**⚠ CAUTION:**  
Do not press down on the processor. Pressing down on the processor may cause damage to the processor socket and the system board. Press only in the area indicated on the processor retaining bracket.

---

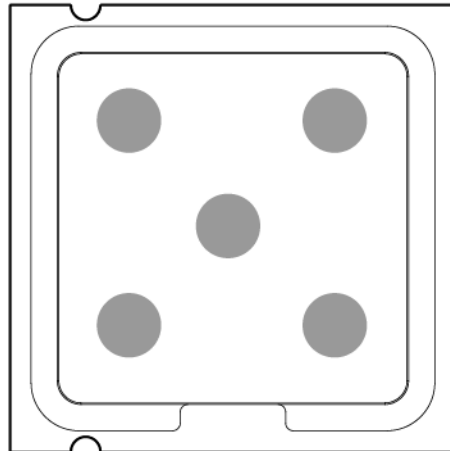
**⚠ CAUTION:**  
Close and hold down the processor cover socket while closing the processor locking levers. The levers should close without resistance. Forcing the levers closed can damage the processor and socket, requiring system board replacement.

---

5. Close the processor retaining bracket. When the processor is installed properly inside the processor retaining bracket, the processor retaining bracket clears the flange on the front of the socket.
6. Press and hold the processor retaining bracket in place, and then close each processor locking lever. Press only in the area indicated on the processor retaining bracket.

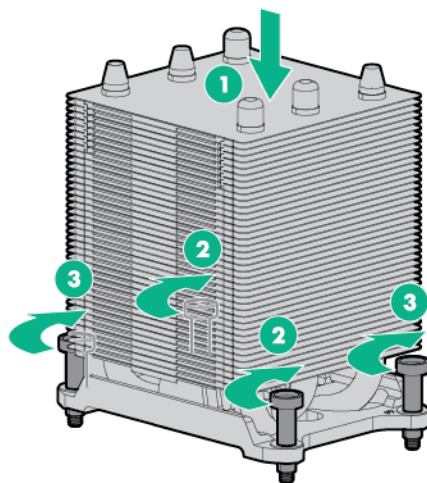


7. Clean the old thermal grease from the bottom of the heatsink with the alcohol swab. Allow the alcohol to evaporate before continuing.
8. Apply all the grease to the top of the processor in the following pattern to ensure even distribution.



9. Install the heatsink:
  - a. Position the heatsink on the processor backplate.
  - b. Tighten one pair of diagonally opposite screws halfway, and then tighten the other pair of screws.
  - c. Finish the installation by completely tightening the screws in the same sequence.





**IMPORTANT:**

Install all components with the same configuration that was used on the failed system board.

10. Install all components removed from the failed system board.
11. Connect all cables disconnected from the failed system board.
12. Install the fans.
13. Install the system air baffle.
14. If removed, install the PCI air baffle.
15. Install the access panel.
16. Return the server to an upright position.
17. Connect each power cord to the server.
18. Connect each power cord to the power source.
19. Power up the server.
20. Install and lock the tower bezel.

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

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

The following message appears:

```
The serial number should only be modified by qualified service personnel. This value should always match the serial number located on the chassis.
```

4. To clear the warning, press the **Enter** key.
5. Enter the serial number and press the **Enter** key.
6. Select **Product ID**.

The following warning appears:

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

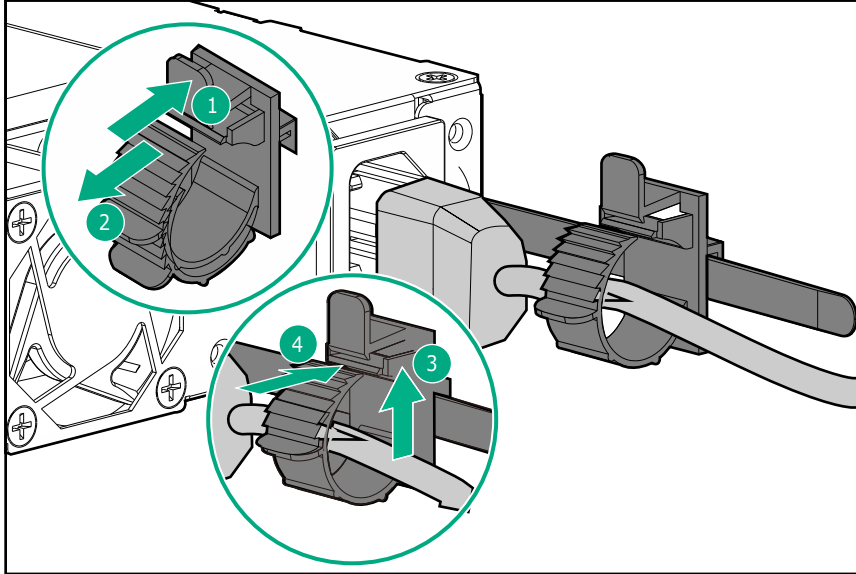
7. Enter the product ID and press the **Enter** key.
8. To confirm exiting System Utilities, press the **F10** key.
9. The server automatically reboots.



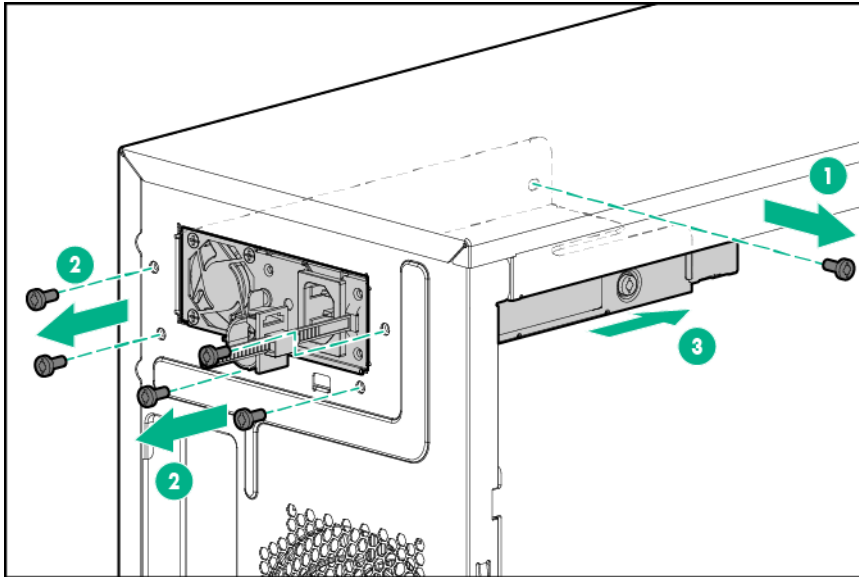
# HPE 550 W power supply

## Procedure

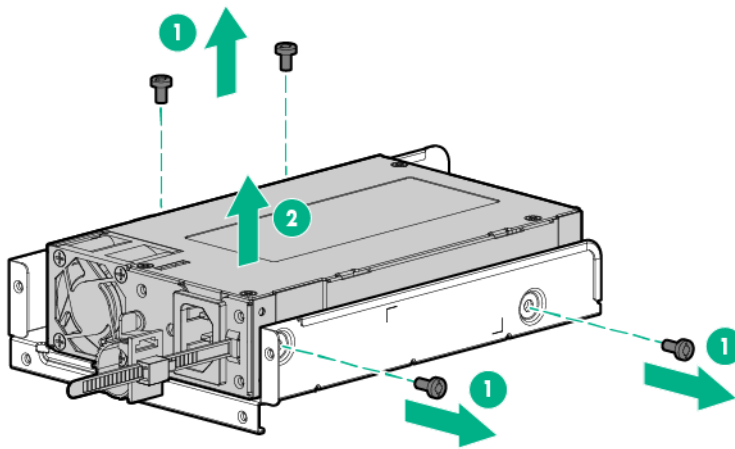
1. **Unlock and remove the tower bezel.**
2. **Power down the server.**
3. Access the product rear panel.
4. Release the power cord from the strain relief clip.



5. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
6. Place the server on a sturdy, level surface.
7. **Remove the access panel.**
8. Prepare the server for removal of the existing power supply:
  - a. Remove all server components that block access to the power supply cables and screws.
  - b. Disconnect all server cables that block access to the power supply cables and screws.
  - c. Disconnect all power supply cables from the system board.
9. In a tower server, remove the existing power supply:
  - a. Remove the power supply assembly from the server.



b. Remove the power supply from its tray.



To replace the component, reverse the removal procedure.

## Redundant power supply components

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

- HPE 800 W/900 W Gold AC Power Input Module
  - This module is compatible with the HPE RPS backplane.
- HPE 900 W AC 240VDC Power Input Module
  - This module is compatible with the HPE 900 W AC 240VDC RPS Power Backplane.

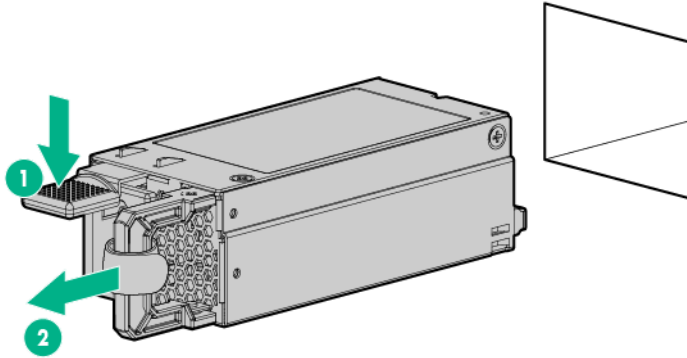
For more information about the power supply features, specifications, and compatibility, see the [Hewlett Packard Enterprise website](#).

## Hot-plug power input module

### Procedure

1. If the server is using a single power input module 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.
  - d. Disconnect the power cord from the power input module.
2. Remove the power input module.

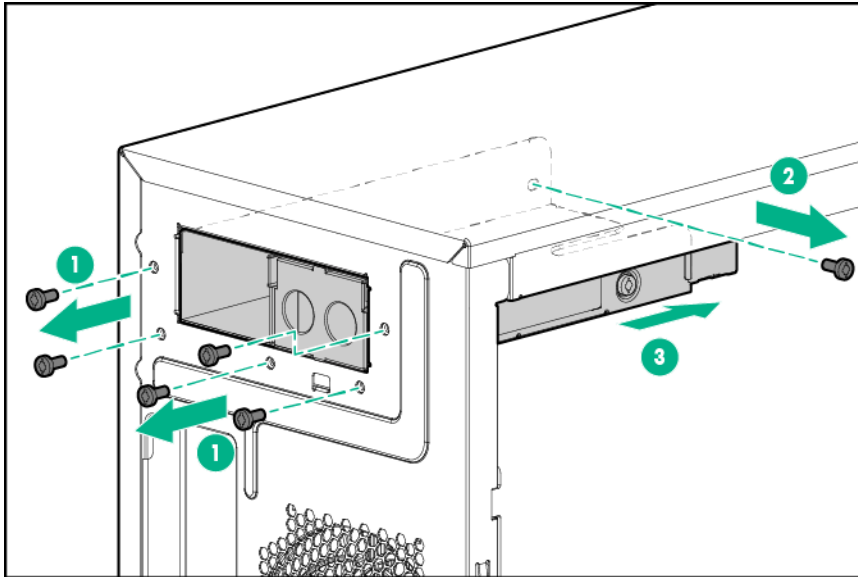


To replace the component, reverse the removal procedure.

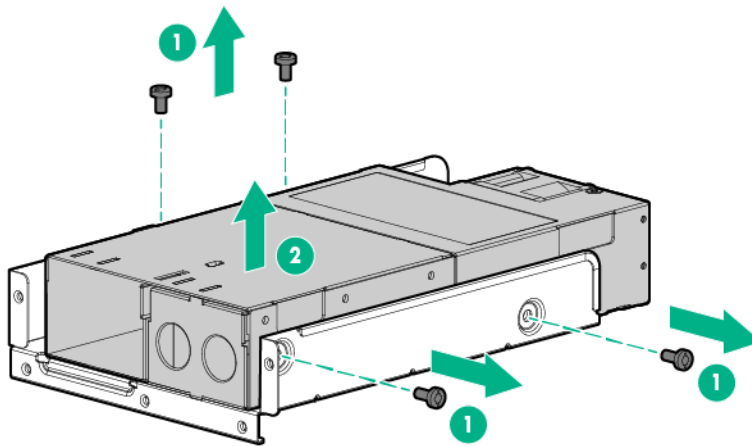
## RPS backplane

### Procedure

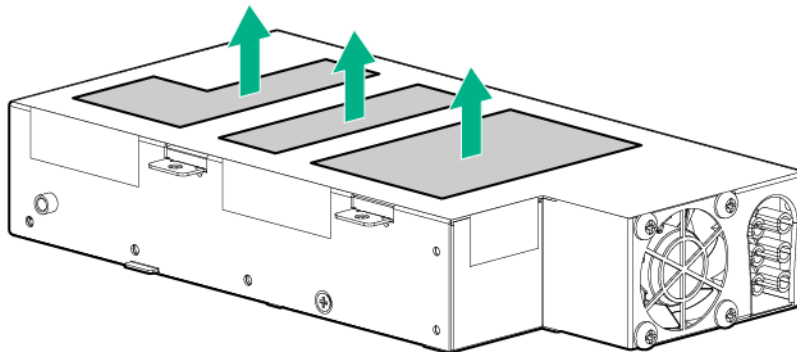
1. **Unlock and remove the tower bezel.**
2. **Power down the server.**
3. Access the product rear panel.
4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. **Remove all installed power input modules.**
6. Place the server on a sturdy, level surface.
7. **Remove the access panel.**
8. Prepare the server for removal of the existing power supply:
  - a. Remove all server components that block access to the power supply cables and screws.
  - b. Disconnect all server cables that block access to the power supply cables and screws.
  - c. Disconnect all power supply cables from the system board and drive cage.
9. Remove the power supply assembly from the server.



10. Remove the power supply from the tray.



11. Prepare the replacement power supply backplane:  
 a. Remove the EMI gaskets from the bottom of the backplane.



To replace the component, reverse the removal procedure.

## HP Trusted Platform Module

The TPM is not a customer-removable part.

**CAUTION:**

Any attempt to remove an installed TPM from the system board breaks or disfigures the TPM security rivet. Upon locating a broken or disfigured rivet on an installed TPM, administrators should consider the system compromised and take appropriate measures to ensure the integrity of the system data.

---

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

# Troubleshooting

## Troubleshooting resources

The HPE ProLiant Gen9 Troubleshooting Guide, Volume I: Troubleshooting provides procedures for resolving common problems and comprehensive courses of action for fault isolation and identification, issue resolution, and software maintenance on ProLiant servers and server blades. To view the guide, select a language:

- [English](#)
- [French](#)
- [Spanish](#)
- [German](#)
- [Japanese](#)
- [Simplified Chinese](#)

The HPE ProLiant Gen9 Troubleshooting Guide, Volume II: Error Messages provides a list of error messages and information to assist with interpreting and resolving error messages on ProLiant servers and server blades. To view the guide, select a language:

- [English](#)
- [French](#)
- [Spanish](#)
- [German](#)
- [Japanese](#)
- [Simplified Chinese](#)

# Diagnostic tools

## UEFI System Utilities

The UEFI System Utilities is embedded in the system ROM. The UEFI System Utilities 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
- Configuring memory options
- Selecting a language
- Launching other preboot environments such as the Embedded UEFI Shell and Intelligent Provisioning

For more information, see the UEFI System Utilities user guide for your product on the [Hewlett Packard Enterprise website](#).

To access mobile-ready online help for the UEFI System Utilities and UEFI Shell, scan the QR code at the bottom of the screen. For on-screen help, press the **F1** key.

## Using UEFI System Utilities

To use the System Utilities, use the following keys.

Action	Key
Access System Utilities	F9 during server POST
Navigate menus	Up and Down arrows
Select items	Enter
Save selections	F10
Access Help for a highlighted configuration option*	F1

\* Scan the QR code on the screen to access online help for the UEFI System Utilities and UEFI Shell.

Default configuration settings are applied to the server at one of the following times:

- Upon the first system power-up
- After defaults have been restored

Default configuration settings are sufficient for typical server operations; however, you can modify configuration settings as needed. The system prompts you for access to the UEFI System Utilities each time the system is powered up.

## Flexible boot control

This feature enables you to do the following:

- Add Boot Options:
  - Browse all FAT16 and FAT32 file systems.
  - To add a new UEFI boot option, select an X64 UEFI application with an .EFI extension. For example, adding an OS boot loader or other UEFI application as a new UEFI boot option.

The new boot option is appended to the boot-order list. When you select a file, you are prompted to enter the boot option description. This description, and any optional data to be passed to an .EFI application, is then displayed in the boot menu.

- Boot to System Utilities

After pre-POST, the boot options screen appears. During this time, you can access the UEFI System Utilities by pressing the **F9** key.

- Choose between supported modes:
  - Legacy BIOS Boot Mode
  - UEFI Boot Mode



**IMPORTANT:**

If the default boot mode settings are different than the user-defined settings, the system might not boot the OS installation if the defaults are restored. To avoid this issue, use the User Defined Defaults feature in UEFI System Utilities to override the factory default settings.

---

For more information, see the UEFI System Utilities user guide for your product on the [Hewlett Packard Enterprise Information Library](#).

## Restoring and customizing configuration settings

You can reset all configuration settings to the factory default settings, or you can restore and use the system default configuration settings.

You can also configure default settings as necessary, and then save the configuration as the custom default configuration. When the system loads the default settings, it uses the custom default settings instead of the factory defaults.

## Secure Boot configuration

Secure Boot is integrated in the UEFI specification on which the Hewlett Packard Enterprise implementation of UEFI is based. Secure Boot 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. Secure Boot also ensures 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 enabled, only firmware components and operating systems with boot loaders that have an appropriate digital signature can execute during the boot process. Only operating systems that support Secure Boot and have an EFI boot loader signed with one of the authorized keys can boot. For more information about supported operating systems, see the UEFI System Utilities and Shell release notes for your server on the [Hewlett Packard Enterprise website](#).

A physically present user can customize the certificates embedded in the UEFI BIOS by adding or removing their own certificates.

When Secure Boot is enabled, the System Maintenance Switch does not restore all manufacturing defaults when set to the ON position. For security reasons, the following are not restored to defaults when the System Maintenance Switch is in the ON position:

- Secure Boot is not disabled and remains enabled.
- The Boot Mode remains in UEFI Boot Mode even if the default boot mode is Legacy Boot Mode.
- The Secure Boot Database is not restored to its default state.
- iSCSI Software Initiator configuration settings are not restored to defaults.



## Embedded UEFI shell

The system BIOS in all ProLiant Gen9 servers includes an Embedded UEFI Shell in the ROM. The UEFI Shell environment provides an API, a command-line prompt, and a set of CLIs that allow scripting, file manipulation, and system information. These features enhance the capabilities of the UEFI System Utilities.

For more information, see the following documents:

- *UEFI Shell User Guide for HPE ProLiant Gen9 Servers* on the [Hewlett Packard Enterprise website](#)
- *UEFI Shell Specification* on the [UEFI website](#)

## Embedded Diagnostics option

The system BIOS in all ProLiant Gen9 servers includes an Embedded Diagnostics option in the ROM. The Embedded Diagnostics option can run comprehensive diagnostics of the server hardware, including processors, memory, drives, and other server components.

For more information on the Embedded Diagnostics option, see the UEFI System Utilities user guide for your server on the [Hewlett Packard Enterprise website](#).

## iLO RESTful API support for UEFI

The ProLiant Gen9 servers include support for a UEFI-compliant System BIOS, along with UEFI System Utilities and Embedded UEFI Shell preboot environments. ProLiant Gen9 servers also support configuring the UEFI BIOS settings using the iLO RESTful API, a management interface that server management tools can use to perform configuration, inventory, and monitoring of a ProLiant server. The iLO RESTful API uses basic HTTPS operations (GET, PUT, POST, DELETE, and PATCH) to submit or return JSON-formatted data with iLO web server.

For more information about the iLO RESTful API and the RESTful Interface Tool, see the [Hewlett Packard Enterprise website](#).

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

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

### Procedure

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

The following message appears:

```
The serial number should only be modified by qualified service personnel. This value should always match the serial number located on the chassis.
```

4. To clear the warning, press the **Enter** key.
5. Enter the serial number and press the **Enter** key.
6. Select **Product ID**.

The following warning appears:

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

7. Enter the product ID and press the **Enter** key.
8. To confirm exiting System Utilities, press the **F10** key.

The server automatically reboots.

# HPE ProLiant Pre-boot Health Summary

If the server will not start up, you can use iLO to display diagnostic information on an external monitor. This feature is supported on servers that support external video and have a UID button or an SUV connector. When power is available to the server but the server is not powered on, iLO runs on auxiliary power and can take control of the server video adapter to display the HPE ProLiant Pre-boot Health Summary.

For additional information, see the following documents:

- *iLO 4 User Guide* — See the [Hewlett Packard Enterprise website](#).
- ProLiant Gen9 Troubleshooting Guide, Volume I: Troubleshooting — See [Troubleshooting resources](#).

## Insight Diagnostics

The Insight Diagnostics is a proactive server management tool, available in both offline and online versions. The tool provides diagnostics and troubleshooting capabilities to assist IT administrators who verify server installations, troubleshoot problems, and perform repair validation.

The Insight Diagnostics Offline Edition performs various in-depth system and component testing while the OS is not running. To run this utility, boot the server using Intelligent Provisioning.

The Insight Diagnostics Online Edition is a web-based application that captures system configuration and other related data needed for effective server management. Available in Microsoft Windows and Linux versions, the utility helps to ensure proper system operation.

For more information or to download the utility, see the [Hewlett Packard Enterprise website](#). The Insight Diagnostics Online Edition is also available in the SPP.

## Insight Diagnostics survey functionality

**Insight Diagnostics** provides survey functionality that gathers critical hardware and software information on ProLiant servers.

This functionality supports operating systems that the server supports. For operating systems supported by the server, see the [Hewlett Packard Enterprise website](#).

If a significant change occurs between data-gathering intervals, the survey function marks the previous information and overwrites the survey data files to reflect the latest changes.

Survey functionality is installed with every Intelligent Provisioning-assisted Insight Diagnostics installation, or it can be installed through the SPP.

## Active Health System

The Active Health System monitors and records changes in the server hardware and system configuration.

The Active Health System provides:

- Continuous health monitoring of over 1600 system parameters
- Logging of all configuration changes
- Consolidated health and service alerts with precise time stamps
- Agentless monitoring that does not affect application performance

The Agentless Management Service is available in the SPP, which can be downloaded from the [Hewlett Packard Enterprise website](#). The Active Health System log can be downloaded manually from iLO 4 or Intelligent Provisioning and sent to Hewlett Packard Enterprise.

For more information, see the following documents:

- *iLO User Guide* on the [Hewlett Packard Enterprise website](#)
- *Intelligent Provisioning User Guide* on the [Hewlett Packard Enterprise website](#)

# Integrated Management Log

The IML records hundreds of events and stores them in an easy-to-view form. The IML timestamps each event with one-minute granularity.

You can view recorded events in the IML in several ways, including the following:

- From within HPE SIM
- From within the UEFI System Utilities
- From within the Embedded UEFI shell
- From within operating system-specific IML viewers:
  - For Windows: IML Viewer
  - For Linux: IML Viewer Application
- From within the iLO web interface
- From within Insight Diagnostics

## USB support

Hewlett Packard Enterprise provides both standard USB 2.0 support and legacy USB 2.0 support. Standard support is provided by the OS through the appropriate USB device drivers. Before the OS loads, Hewlett Packard Enterprise provides support for USB devices through legacy USB support, which is enabled by default in the system ROM.

Legacy USB support provides USB functionality in environments where USB support is not available normally. Specifically, Hewlett Packard Enterprise provides legacy USB functionality for the following:

- POST
- RBSU
- Diagnostics
- DOS
- Operating environments which do not provide native USB support

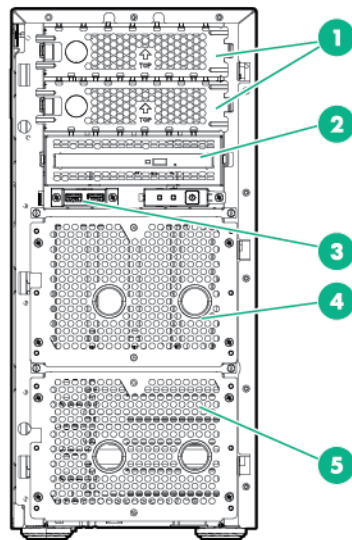
## External USB functionality

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.

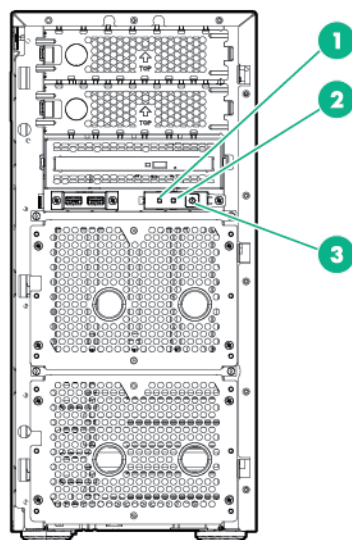
# Component identification

## Front panel components



Item	Description
1	Media bays (2)
2	Slim optical disk drive (optional)
3	USB 3.0 connectors
4	Box 2
5	Box 1

## Front panel LEDs and buttons

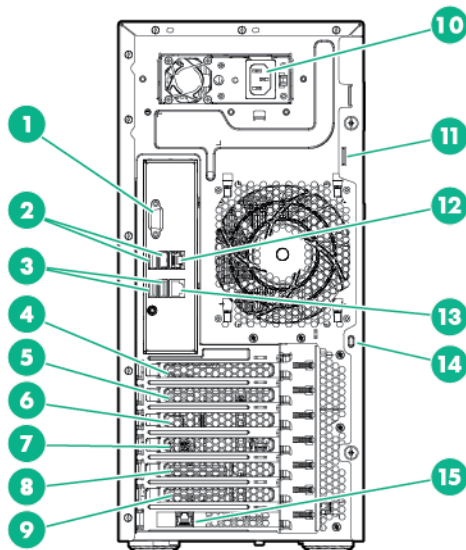


Item	Description	Status
1	Health LED	Solid green = Normal <sup>1</sup> Flashing green (1 flash per second) = iLO is rebooting Flashing amber = System degraded Flashing red (1 flash per second) = System critical
2	NIC status LED	Solid green = Link to network Flashing green (1 flash per second) = Network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

<sup>1</sup> To identify components in a degraded or critical state, review the system IML or use iLO to review the system health status

<sup>2</sup> Facility power is not present, power cord is not attached, no power supplies are installed, power supply failure has occurred, or the power button cable is disconnected.

## Rear panel components

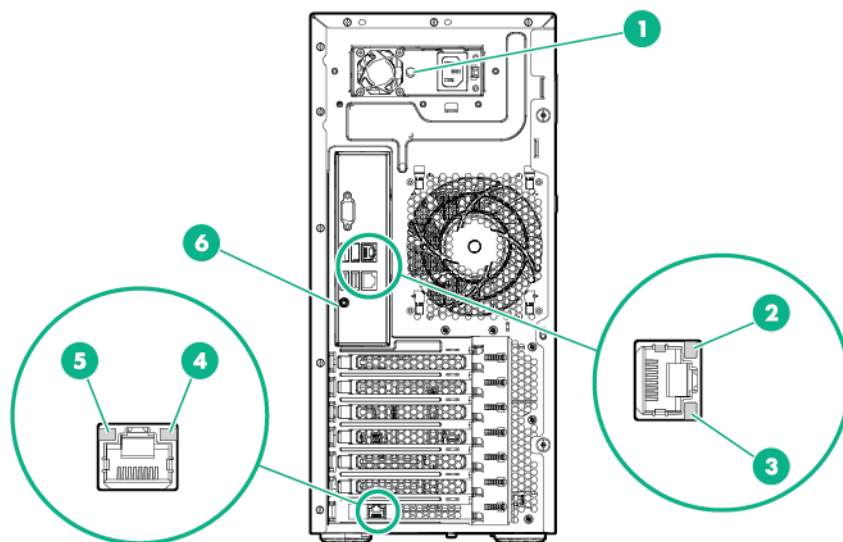


Item	Description
1	Video connector

Table Continued

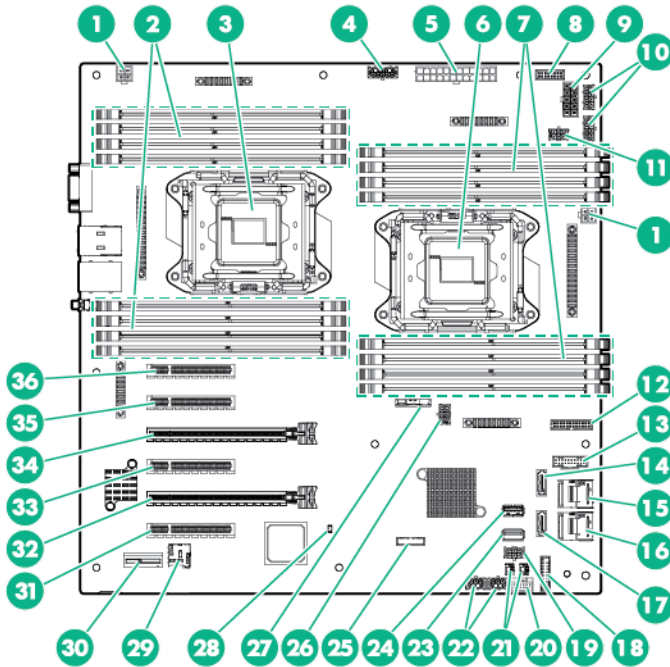
2	USB 3.0 connectors
3	USB 2.0 connectors
4	Slot 1 PCIe3 x8 (8, 4, 1), for Processor 2
5	Slot 2 PCIe3 x8 (8, 4, 1), for Processor 1
6	Slot 3 PCIe3 x16 (16, 8, 4, 1), for Processor 2
7	Slot 4 PCIe3 x8 (8, 4, 1), for Processor 1
8	Slot 5 PCIe3 x16 (16, 8, 4, 1), for Processor 1
9	Slot 6 PCIe3 x8 (8, 4, 1), for Processor 1
10	Power supply
11	Padlock slot
12	NIC connector 1
13	NIC connector 2
14	Kensington security slot
15	Dedicated iLO port (optional)

## Rear panel LEDs



<b>Item</b>	<b>Description</b>	<b>Status</b>
1	Power supply LED	Green = System on Off = No power present
2	NIC link LED	Green =Linked to network Off =No network connection
3	NIC activity LED	Green or flashing green = Network activity Off = No network activity
4	iLO link LED	Green =Linked to network Off =No network connection
5	iLO activity LED	Green or flashing green = Network activity Off = No network activity
6	UID LED	Solid blue = Activated Flashing blue 1 flash per second = Remote management or firmware upgrade in progress 4 flashes per second = iLO manual soft reboot sequence initiated 8 flashes per second = iLO manual hard reboot sequence in progress Off = Deactivated

# System board components



Item	Description
1	4-pin power supply connector
2	DIMM slots for processor 2
3	Processor 2
4	10-pin RPS connector
5	24-pin power supply connector
6	Processor 1
7	DIMM slots for processor 1
8	Power supply sideband signal connector
9	10-pin power supply connector
10	8-pin power supply connector
11	Fan connector 3
12	Front I/O connector
13	Front USB connector

*Table Continued*



14	SATA connector 1
15	Mini-SAS connector 1
16	Mini-SAS connector 2
17	SATA connector 2
18	TPM connector
19	Fan connector 1
20	HPE Smart Storage Battery connector
21	Storage backup power connectors
22	GPU power connectors
23	Internal USB 2.0 connector
24	Internal USB 3.0 connector
25	System maintenance switch
26	Fan connector 2
27	System battery
28	NMI header
29	microSD slot
30	Dedicated iLO port connector
31	Slot 6 PCIe3 x8 (8, 4, 1) for Processor 1
32	Slot 5 PCIe3 x16 (16, 8, 4, 1) for Processor 1
33	Slot 4 PCIe3 x8 (8, 4, 1) for Processor 1
34	Slot 3 PCIe3 x16 (16, 8, 4, 1) for Processor 2
35	Slot 2 PCIe3 x8 (8, 4, 1) for Processor 1
36	Slot 1 PCIe3 x8 (8, 4, 1) for Processor 2

## System maintenance switch

Position	Default	Function
S1	Off	Off = iLO security is enabled. On = iLO security is disabled.
S2	Off	Off = System configuration can be changed. On = System configuration is locked.
S3	Off	Reserved
S4	Off	Reserved
S5	Off	Off = Power-on password is enabled. On = Power-on password is disabled.
S6	Off	Off = No function On = ROM reads system configuration as invalid.
S7	Off	Off = Set default boot mode to UEFI. On = Set default boot mode to legacy.
S8	—	Reserved
S9	—	Reserved
S10	—	Reserved
S11	—	Reserved
S12	—	Reserved

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

When system maintenance switch S6 is set to the On position, the system is prepared to erase all system configuration settings from both CMOS and NVRAM.

---

**ⓘ IMPORTANT:**  
Before using the S7 switch to change to Legacy BIOS Boot Mode, be sure the HPE Dynamic Smart Array B140i Controller is disabled. Do not use the B140i controller when the server is in Legacy BIOS Boot Mode.

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## NMI functionality

An NMI crash dump creates a crash dump log before resetting a system which is not responding.

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

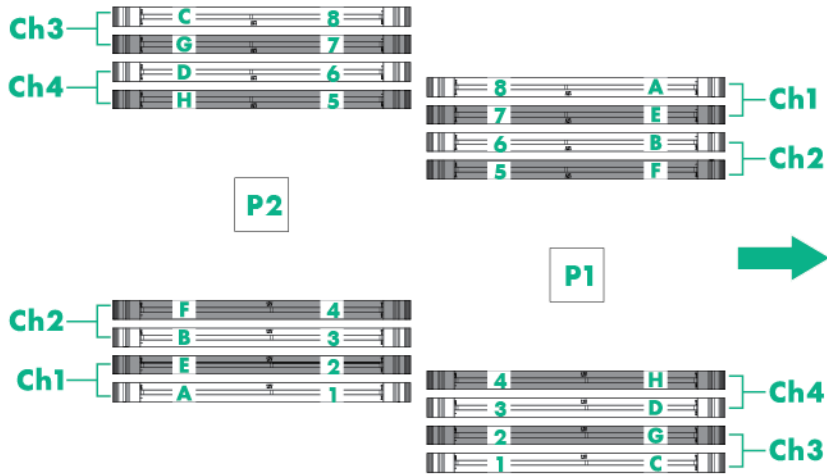
To force the system to invoke the NMI handler and generate a crash dump log, do one of the following:

- Use the iLO Virtual NMI feature.
- **Short the NMI header.**

For more information, see the [Hewlett Packard Enterprise website](#).

## DIMM slot locations

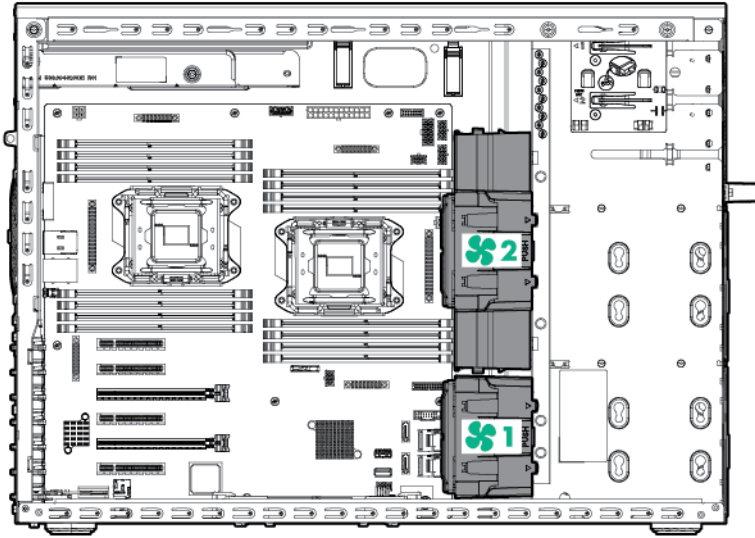
DIMM slots are numbered sequentially (1 through 8) for each processor. The supported AMP modes use the letter assignments for population guidelines.



**NOTE:** The arrow indicates the front of the server.

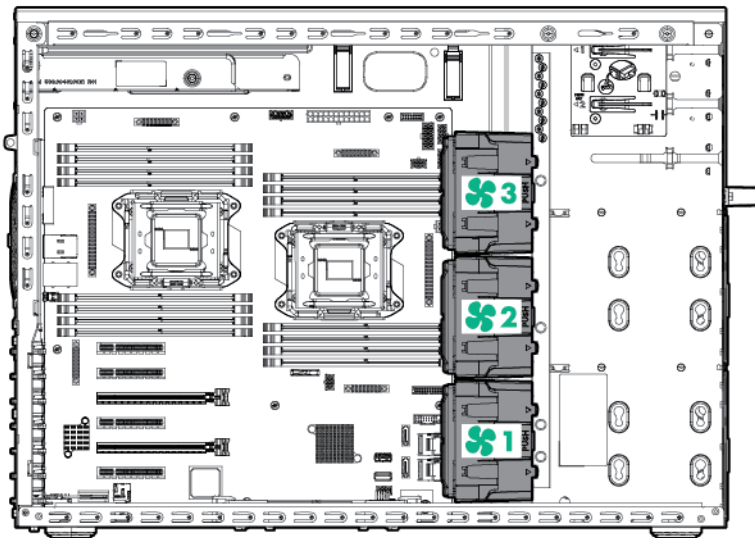
## Fan locations

- Single-processor configuration



Item	Description
1	Fan 1
2	Fan 2

- Two-processor configuration



Item	Description
1	Fan 1

*Table Continued*

2	Fan 2
3	Fan 3

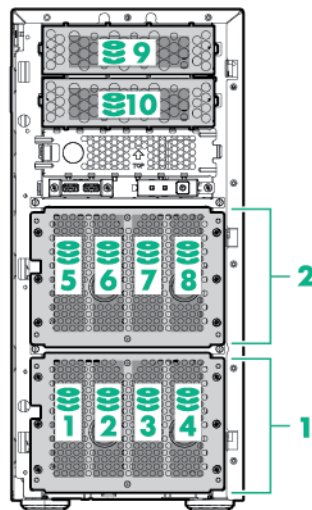
## Drive numbering

If only one drive cage is installed, it must be installed in box 2. With optional drive cages installed, the server supports up to 16 SFF hot-plug drives, up to 10 non-hot-plug LFF drives, or up to 8 LFF hot-plug drives. The server does not support mixing SFF and LFF drives.

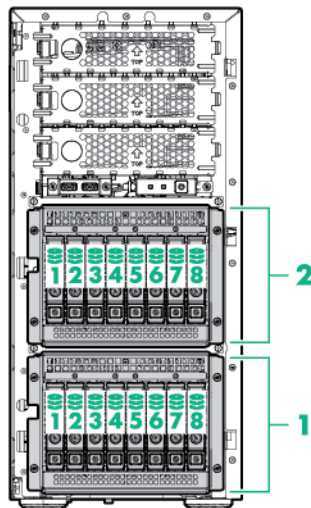
Hewlett Packard Enterprise recommends that you populate drive bays starting with the lowest SAS or SATA device number. Drives are numbered from left to right in each component box.

The following images show the drive numbering for each of the supported drive configurations. For drive box numbering information, see "**Front panel components**".

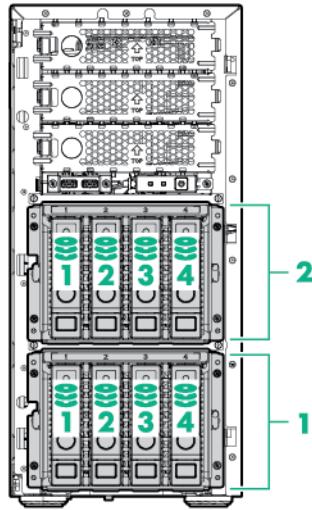
- LFF non-hot-plug drive model



- SFF hot-plug drive model

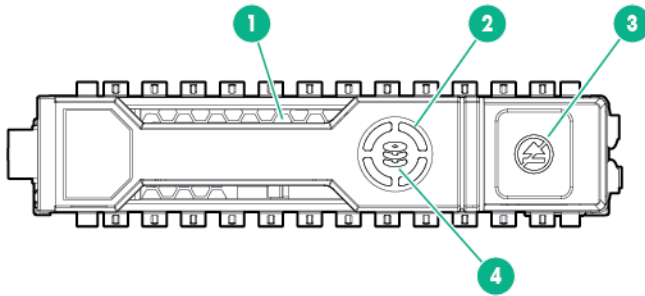


- LFF hot-plug drive model



## Hot-plug drive LED definitions

When a drive is configured as a part of an array and connected to a powered-up controller, the drive LEDs indicate the condition of the drive.



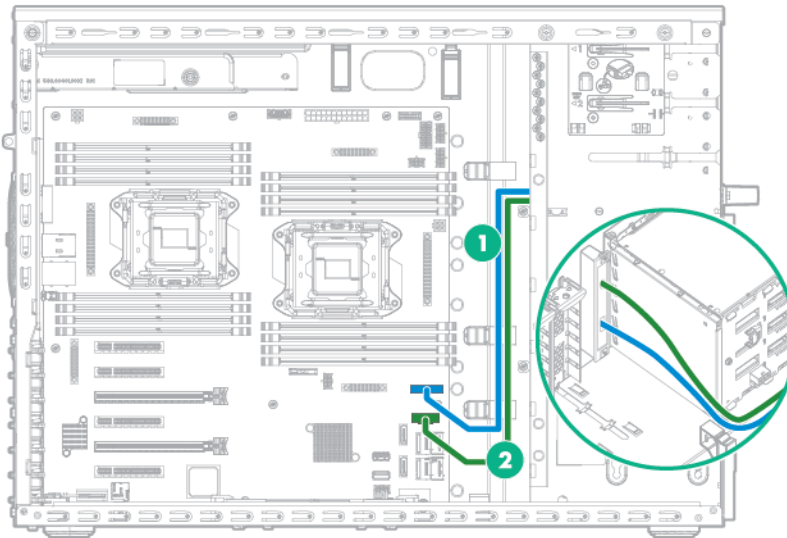
Item	LED	Status	Definition
1	Locate	Solid blue	The drive is being identified by a host application.
		Flashing blue	The drive carrier firmware is being updated or requires an update.
2	Activity ring	Rotating green	Drive activity
		Off	No drive activity
3	Do not remove	Solid white	Do not remove the drive. Removing the drive causes one or more of the logical drives to fail.
		Off	Removing the drive does not cause a logical drive to fail.

*Table Continued*

4	Drive status	Solid green	The drive is a member of one or more logical drives.
		Flashing green	The drive is rebuilding or performing a RAID migration, strip size migration, capacity expansion, or logical drive extension, or is erasing.
		Flashing amber/green	The drive is a member of one or more logical drives and predicts the drive will fail.
		Flashing amber	The drive is not configured and predicts the drive will fail.
		Solid amber	The drive has failed.
		Off	The drive is not configured by a RAID controller.

# Cabling

## Front panel cabling

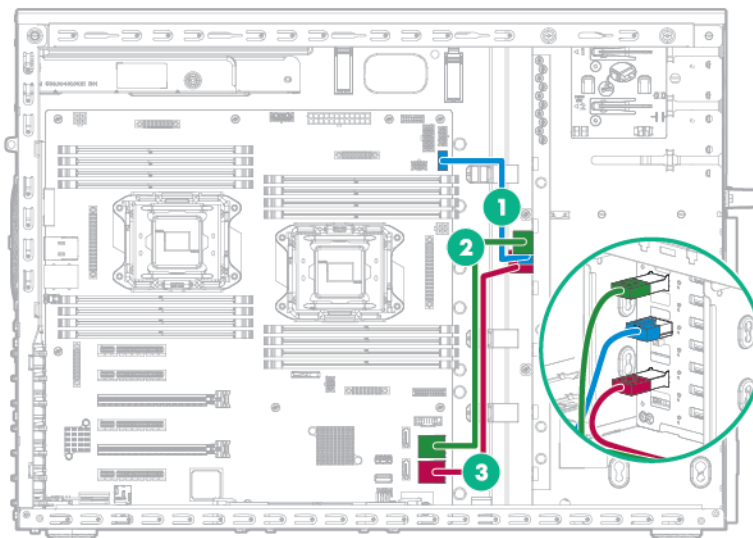


Item	Description
1	Front I/O cable
2	USB 3.0 connector cable

## Storage cabling

### Hot-plug SFF drive cabling

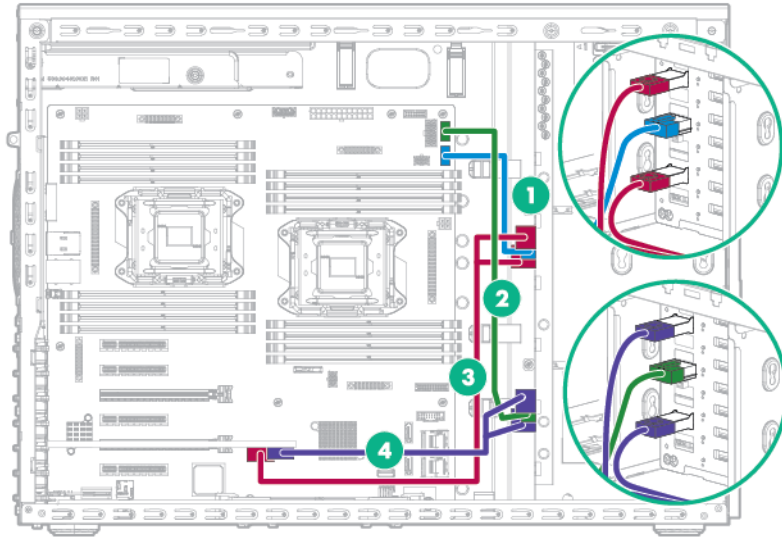
- Eight-bay SFF hot-plug drive cage (box 2)





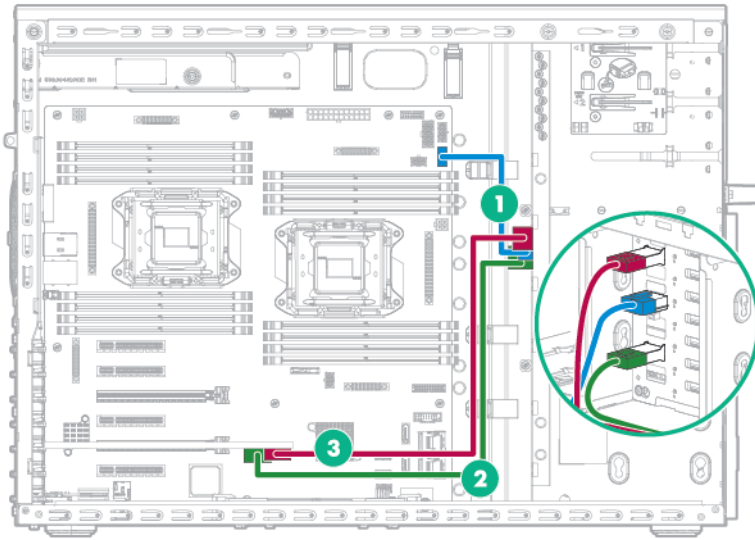
Item	Description
1	Box 2 power cable
2	Mini-SAS cable to system board SAS port 1
3	Mini-SAS cable to system board SAS port 2

- Two eight-bay SFF drive cages connected to a HPE P840 Smart Array controller



Item	Description
1	Box 2 power cable
2	Box 1 power cable
3	Box 2 Mini-SAS Y-cable
4	Box 1 Mini-SAS Y-cable

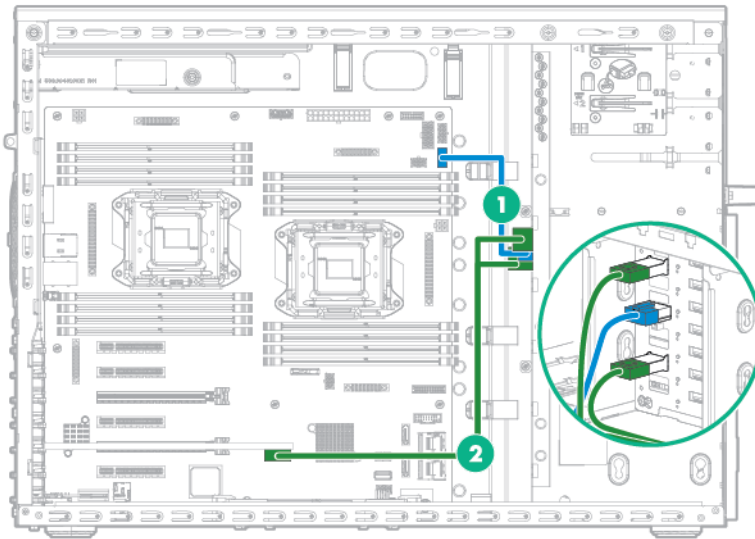
- Eight-bay SFF hot-plug drive cage connected to H240 host bus adapter (box 2)



Item	Description
------	-------------

1	Box 2 power cable
2	Mini-SAS cable to H240 port 2
3	Mini-SAS cable to H240 port 1

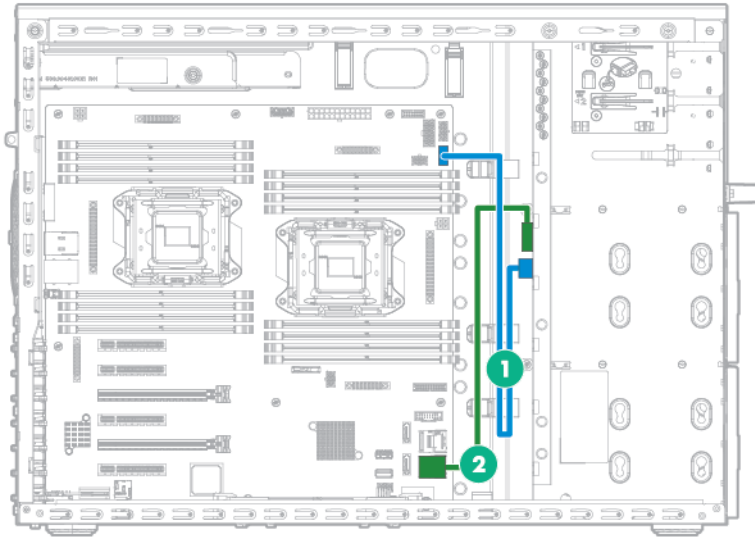
- Eight-bay SFF hot-plug drive cage connected to HPE P440 Smart Array controller (box 2)



Item	Description
1	Box 2 power cable
2	Mini-SAS Y-cable

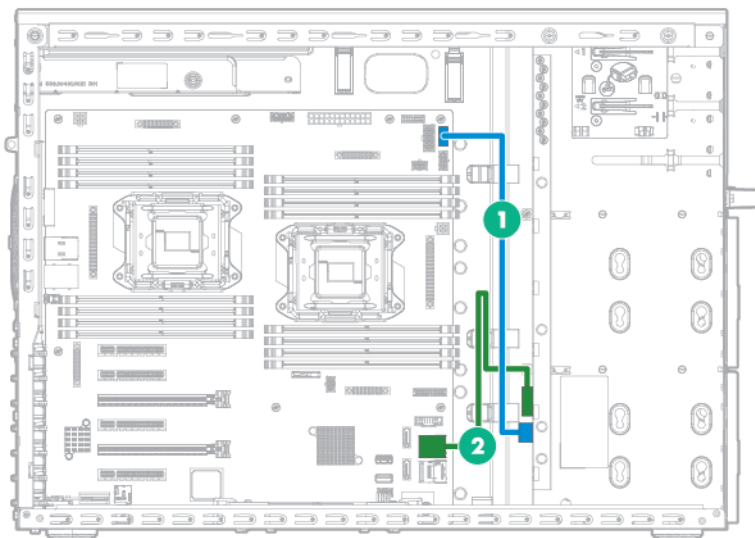
## Hot-plug LFF drive cabling

- Four-bay LFF hot-plug drive cabling (box 2)



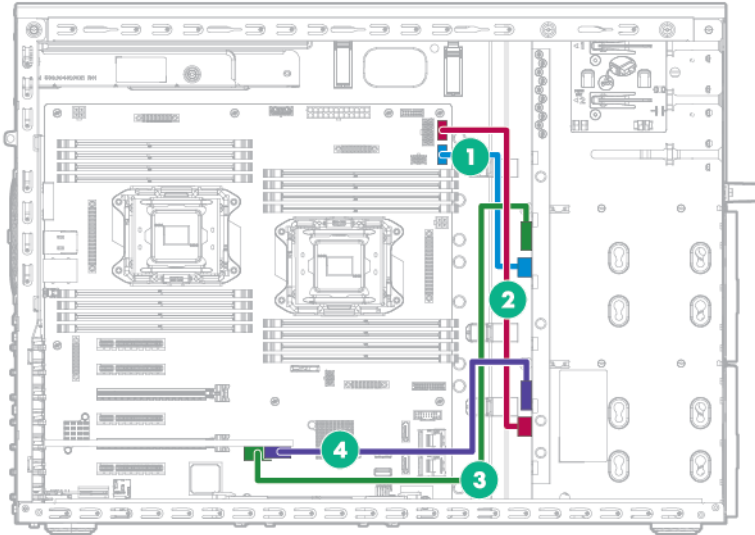
Item	Description
1	Box 2 power cable
2	Mini-SAS cable to system board SAS port 2

- Four-bay LFF hot-plug drive cabling (box 1)



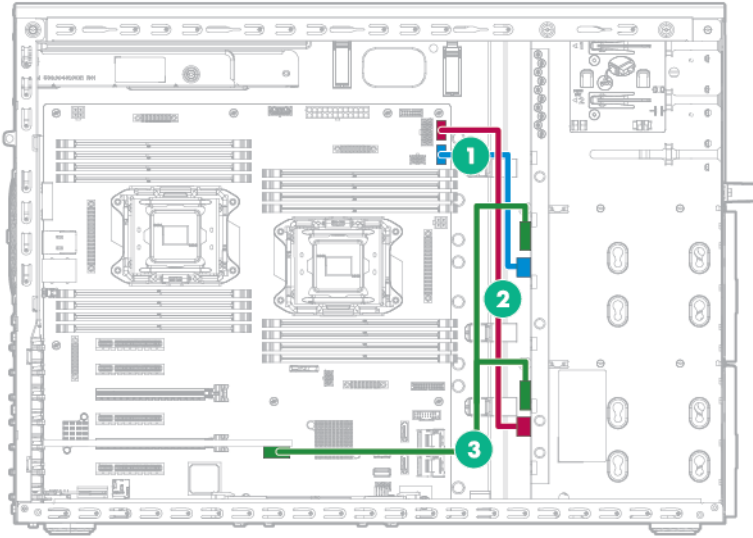
Item	Description
1	Box 1 power cable
2	Mini-SAS cable to system board SAS port 1

- Two four-bay LFF hot-plug drive cages connected to H240 host bus adapter



Item	Description
1	Box 2 power cable
2	Box 2 Mini-SAS cable to H240 host bus adapter
3	Box 1 power cable
4	Box 1 Mini-SAS cable to H240 host bus adapter

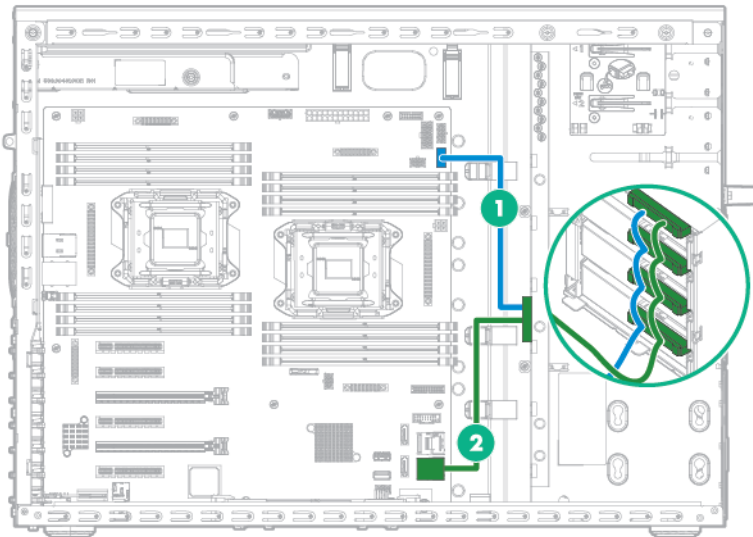
- Two four-bay LFF hot-plug drive cages connected to P440 Smart Array controller



Item	Description
1	Box 2 power cable
2	Mini-SAS Y-cable
3	Box 1 power cable

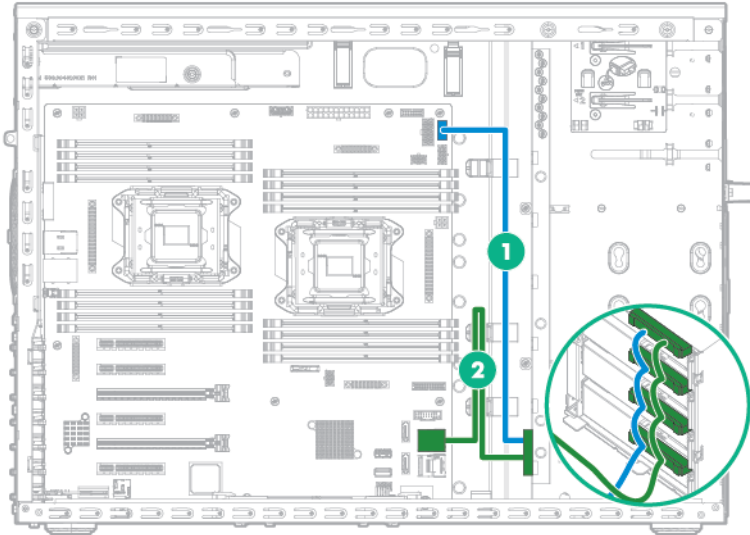
### Non-hot plug LFF drive cabling

- Four-bay LFF non-hot-plug drive cabling (box 2)



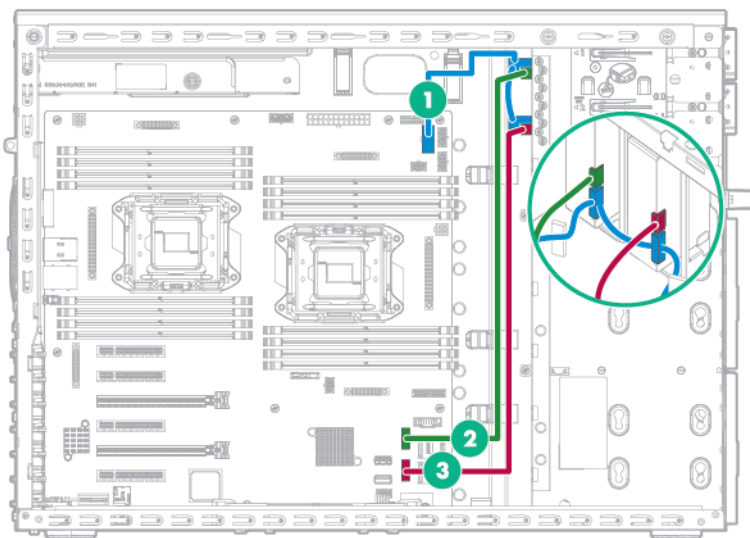
Item	Description
1	Box 2 power cable
2	SATA to Mini-SAS cable assembly

- Four-bay LFF non-hot-plug drive cabling (box 1)



Item	Description
1	Box 1 power cable
2	SATA to Mini-SAS cable assembly

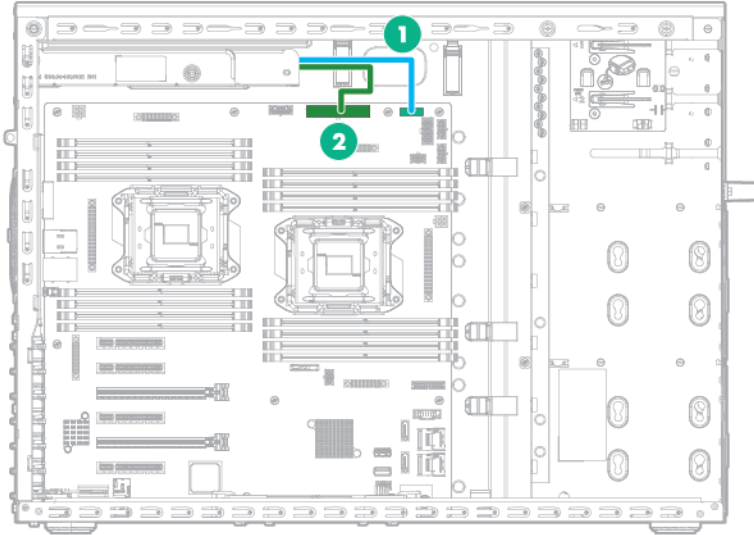
- LFF drive enablement cabling



Item	Description
1	System board power cable
2	Media bay 1 SATA cable to system board
3	Media bay 2 SATA cable to system board

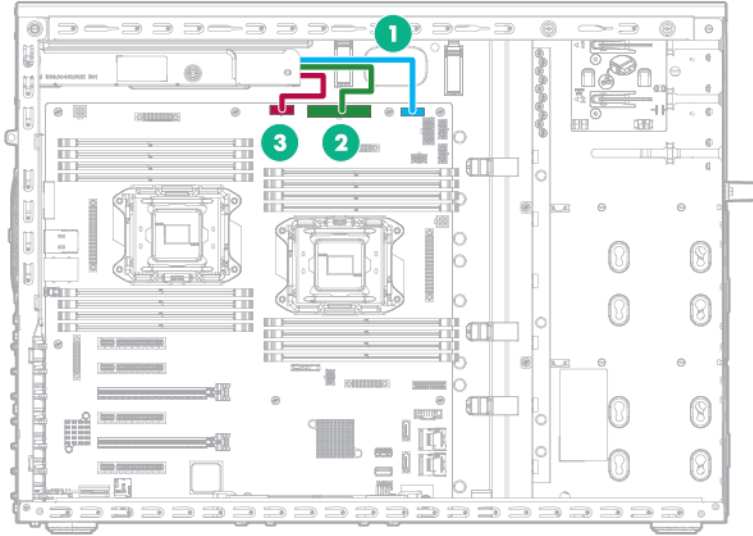
## Power cabling

### HPE 550 W Power Supply cabling (non-hot-plug)



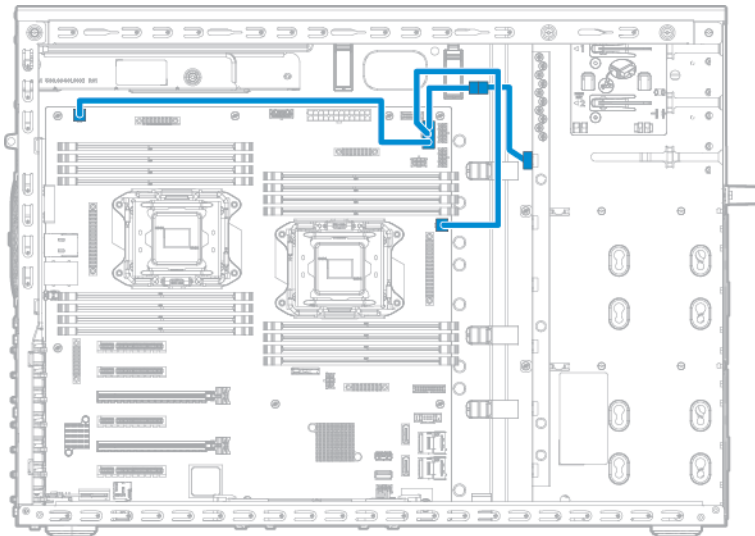
Item	Description
1	16-pin power supply sideband signal cable
2	24-pin power supply cable

## Redundant Power Supply backplane cabling



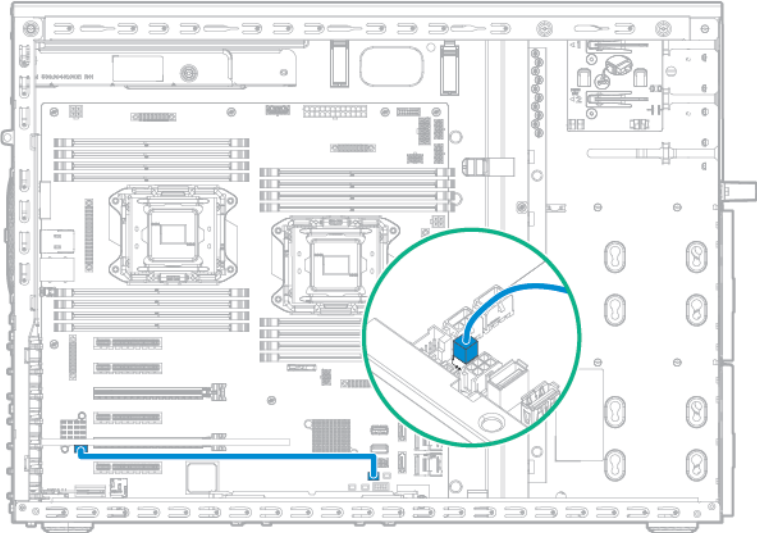
Item	Description
1	16-pin power supply sideband signal cable
2	24-pin power supply cable
3	10-pin RPS cable

## System board power cabling

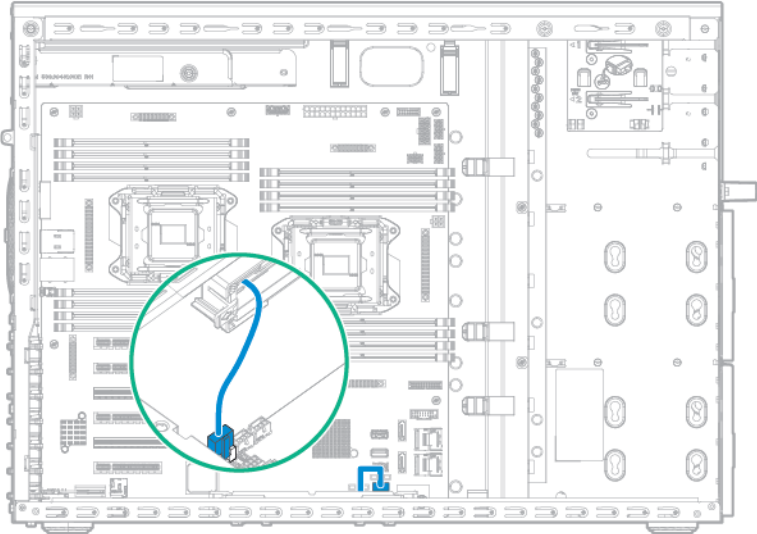




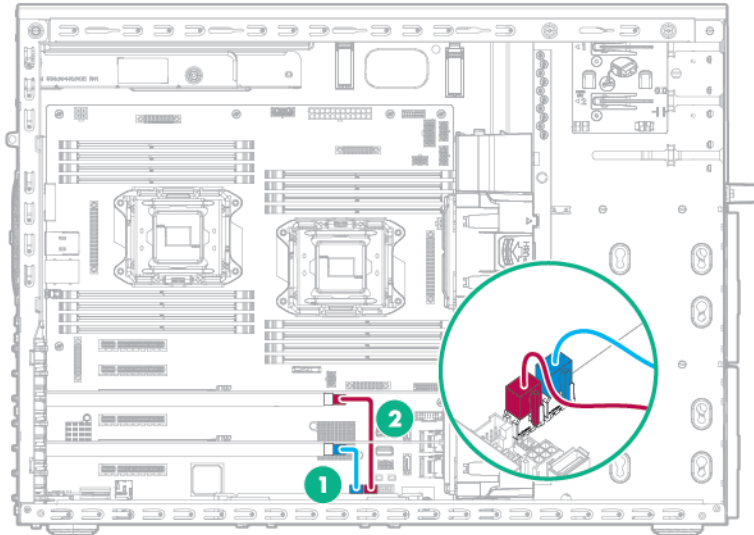
# Cache module backup power cabling



# HPE Smart Storage Battery cabling

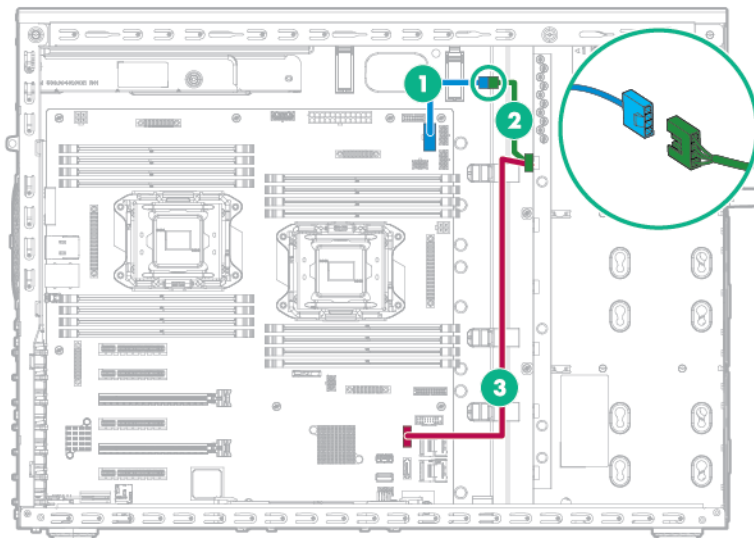


## Graphic card power cabling



Item	Description
1	Power cable for graphic card installed in PCIe slot 5
2	Power cable for graphic card installed in PCIe slot 3

## Optical drive cabling



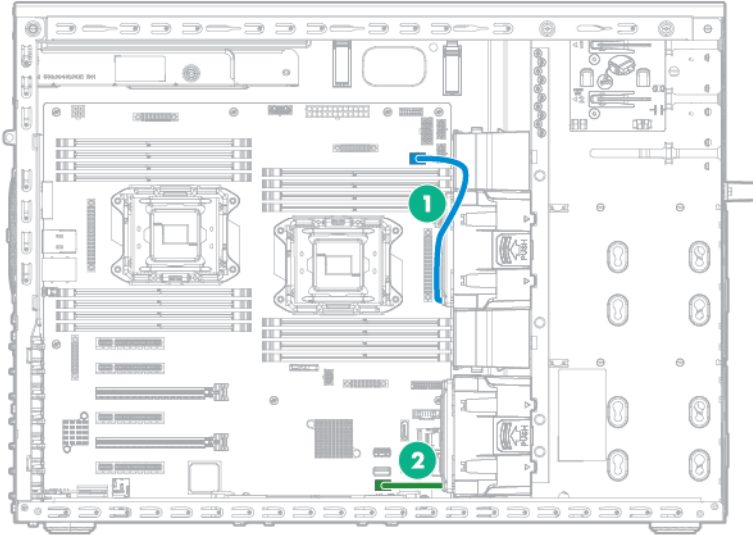
Item	Description
1	System board power cable

*Table Continued*

2	Optical drive power cable
3	SATA cable

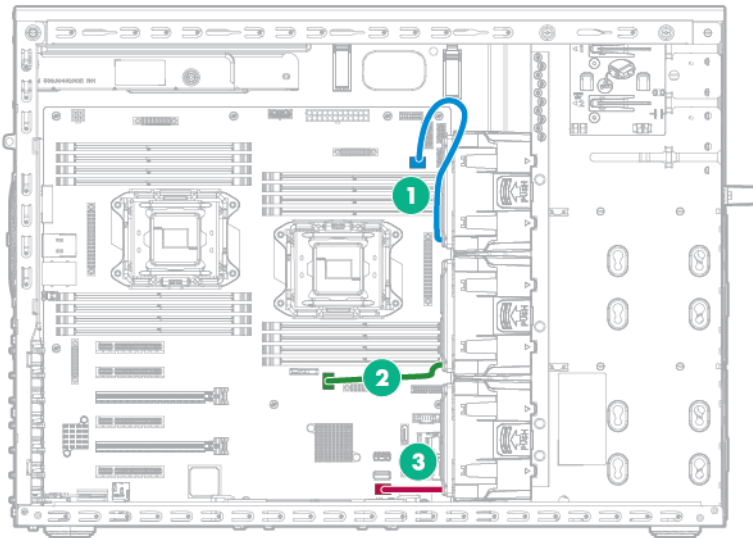
## Fan cabling

- Single-processor configuration



Item	Description
1	Fan 2 cable
2	Fan 1 cable

- Two-processor configuration



---

<b>Item</b>	<b>Description</b>
1	Fan 3 cable
2	Fan 2 cable
3	Fan 1 cable

---

# Specifications

## Environmental specifications

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

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

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

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

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

## Server specifications

Specification	Value
<b>Dimensions (with feet/bezel)</b>	—
Height	43.26 cm (17.03 in)
Depth	62 cm (24.41 in)
Width	20 cm (7.87 in)
<b>Weight (approximate)</b>	—

Table Continued

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Maximum (all drives, power supplies, and processors installed) 28 kg (61.73 lbs)

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Minimum (one drive, power supply, and processor installed) 16.9 kg (37.26 lbs)

---

## 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 550 W Power Supply
- HPE 800 W / 900 W Gold AC Power Input Module

This is supported when the two-bay HPE RPS Backplane is installed. The module wattage rating changes depending on whether one or two power input modules are installed in the server:

- One power input module installed (non-redundant): 900 W
- Two power input modules installed (redundant): 800 W
- HPE 900 W AC 240VDC Power Input Module

This is supported when the two-bay HPE 900 W AC 240VDC RPS Power Backplane option is installed.

- The 240 V DC function of this module is intended for server installations based in China.

These are Entry Level Power Supply products for ProLiant servers. For more information about the power supply features, specifications, and compatibility, see the [Hewlett Packard Enterprise website](#).

---

**⚠ CAUTION:**  
Check the system and power supply input ratings before powering up the server.

---

## 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](#).

# Acronyms and abbreviations

## Acronyms and abbreviations

### **ABEND**

abnormal end

### **ACU**

Array Configuration Utility

### **AMP**

Advanced Memory Protection

### **ASHRAE**

American Society of Heating, Refrigeration and Air-Conditioning Engineers

### **ASR**

Automatic Server Recovery

### **CSA**

Canadian Standards Association

### **CSR**

Customer Self Repair

### **DDR**

double data rate

### **DPC**

DIMMs per channel

### **FBWC**

flash-backed write cache

### **HP SUM**

HP Smart Update Manager

### **HPE SIM**

HPE Systems Insight Manager

### **HPE SSA**

HPE Smart Storage Administrator

### **IEC**

International Electrotechnical Commission

### **iLO**

Integrated Lights-Out

### **IML**

Integrated Management Log

**ISO**

International Organization for Standardization

**LFF**

large form factor

**NMI**

nonmaskable interrupt

**NVRAM**

nonvolatile memory

**OA**

Onboard Administrator

**PATA**

parallel ATA

**PCIe**

Peripheral Component Interconnect Express

**PDU**

power distribution unit

**POST**

Power-On Self-Test

**RBSU**

ROM-Based Setup Utility

**RDIMM**

registered dual in-line memory module

**RDP**

Remote Desktop Protocol

**RoHS**

Restriction of Hazardous Substances

**RPS**

redundant power supply

**SAS**

serial attached SCSI

**SATA**

serial ATA

**SD**

Secure Digital

**SFF**

small form factor



**SIM**

Systems Insight Manager

**SPP**

Service Pack for ProLiant

**TMRA**

recommended ambient operating temperature

**TPM**

Trusted Platform Module

**UDIMM**

unregistered dual in-line memory module

**UEFI**

Unified Extensible Firmware Interface

**UID**

unit identification

**USB**

universal serial bus

**VC**

Virtual Connect

**VCA**

Version Control Agent

**VCRM**

Version Control Repository Manager

# Documentation feedback

Hewlett Packard Enterprise is committed to providing documentation that meets your needs. To help us improve the documentation, send any errors, suggestions, or comments to **Documentation Feedback**. When submitting your feedback, include the document title, part number, edition, and publication date located on the front cover of the document. For online help content, include the product name, product version, help edition, and publication date located on the legal notices page.