Hewlett Packard Enterprise

HPE ProLiant DL360 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 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.

NOTE: Some Hewlett Packard Enterprise parts are not designed for customer self repair. In order to satisfy the customer warranty, Hewlett Packard Enterprise requires that an authorized service provider replace the part. These parts are identified as "No" in the Illustrated Parts Catalog.

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

For more information about the Hewlett Packard Enterprise CSR program, contact your local service provider. For the North American program, go to the Hewlett Packard Enterprise CSR website (**http://www.hpe.com/support/selfrepair**).

Parts only warranty service

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

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

Réparation par le client (CSR)

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

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

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

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

Pour plus d'informations sur le programme CSR de Hewlett Packard Enterprise, contactez votre Mainteneur Agrée local. Pour plus d'informations sur ce programme en Amérique du Nord, consultez le site Web Hewlett Packard Enterprise (**http://www.hpe.com/support/selfrepair**).

Service de garantie "pièces seules"

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

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

Riparazione da parte del cliente

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

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

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

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

Per ulteriori informazioni sul programma CSR di Hewlett Packard Enterprise, contattare il centro di assistenza di zona. Per il programma in Nord America fare riferimento al sito Web (**http://www.hpe.com/support/selfrepair**).

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 (**http://www.hpe.com/support/selfrepair**).

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 (**http://www.hpe.com/support/selfrepair**).

Servicio de garantía exclusivo de componentes

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

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

Customer Self Repair

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

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

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

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

Enterprise u voor het vervangende onderdeel kosten in rekening brengen. Bij reparatie door de klant betaalt Hewlett Packard Enterprise alle verzendkosten voor het vervangende en geretourneerde onderdeel en kiest Hewlett Packard Enterprise zelf welke koerier/transportonderneming hiervoor wordt gebruikt.

Neem contact op met een Service Partner voor meer informatie over het Customer Self Repair programma van Hewlett Packard Enterprise. Informatie over Service Partners vindt u op de Hewlett Packard Enterprise website (**http://www.hpe.com/support/selfrepair**).

Garantieservice "Parts Only"

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

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

Reparo feito pelo cliente

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

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

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

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

Para obter mais informações sobre o programa de reparo feito pelo cliente da Hewlett Packard Enterprise, entre em contato com o fornecedor de serviços local. Para o programa norte-americano, visite o site da Hewlett Packard Enterprise (**http://www.hpe.com/support/selfrepair**).

Serviço de garantia apenas para peças

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

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

カスタマーセルフリペア

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

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

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

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

部品のみ保証サービス

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

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

客户自行维修

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

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

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

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

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

仅部件保修服务

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

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

客戶自行維修

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

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

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

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

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

僅限零件的保固服務

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

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

고객 셀프 수리

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

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

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

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

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

부품 제공 보증 서비스

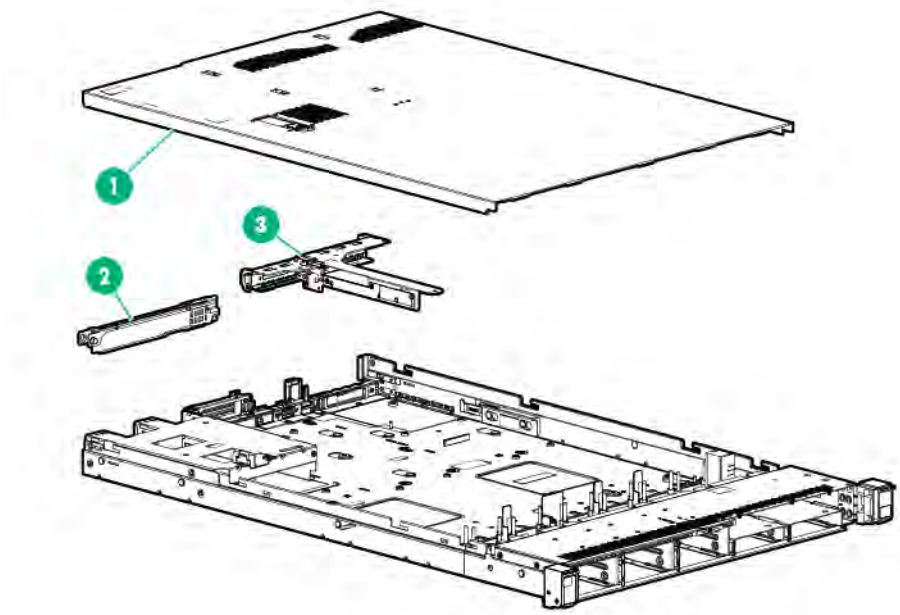
Hewlett Packard Enterprise 제한 보증에는 부품 제공 보증 서비스가 포함될 수 있습니다. 이러한 경우 Hewlett Packard Enterprise는 부품 제공 보증 서비스의 조건에 따라 교체 부품만을 무료로 제공합니다.

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

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 (**http://www.hpe.com/info/partssurfer**).



Item	Description	Spare part number	Customer self repair (on page 6)
1	Access panel	775425-001	Mandatory[1]
2	PCI riser blank	—	—
	a) PCI riser blank, full height	775431-001	Mandatory[1]
	b) PCI riser blank, low profile	785499-001	Mandatory[1]
3	PCI riser cage	—	—
	a) PCI riser cage, standard primary	775421-001	Optional[2]
	b) PCI riser cage, secondary, full height*	775419-001	Optional[2]
	c) PCI riser cage, secondary, low profile*	775420-001	Optional[2]
4	Miscellaneous blanks kit*	775423-001	
	a) Power supply blank	—	Mandatory[1]
	b) Heatsink blank	—	Mandatory[1]
	c) Fan blank	—	Mandatory[1]

Item	Description	Spare part number	Customer self repair (on page 6)
	d) FlexibleLOM blank	—	Mandatory[1]
5	Standard right ear	775417-001	Mandatory[1]
6	Standard left ear	795214-001	Mandatory[1]
	Rack mounting hardware	—	—
7	Rack mounting hardware kit*	—	—
	a) SFF Easy Install Rail	744111-001	Mandatory[1]
	b) LFF Easy Install Rail	744112-001	Mandatory[1]
	c) SFF Ball Bearing Rail	675042-001	Mandatory[1]
	d) LFF Ball Bearing Rail	675041-001	Mandatory[1]
8	Cable management arm*	—	—
	a) Cable management arm, easy install	744113-001	Mandatory[1]
	b) Cable management arm, ball bearing	675043-001	Mandatory[1]

*Not shown
[1]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.
[2]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.
[3]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.

[1]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.
[2]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.
[3]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 signaléespar le mot « Non » dans le Catalogue de pièces illustré.

[1]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.
[2]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 richiedel'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.
[3]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.

[1]Zwingend—Teile, für die das Customer Self Repair-Verfahren zwingend vorgegeben ist. Wenn Sie den Austausch dieser Teile von Hewlett Packard Enterprisevornehmen lassen, werden Ihnen die Anfahrt- und Arbeitskosten für diesen Service berechnet.
[2]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 Enterprisevornehmen lassen möchten, können bei diesem Service je nach den für Ihr Produkt vorgesehenen Garantiebedingungen zusätzliche Kosten anfallen.

[3]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.

[1]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.
[2]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.
[3]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.

[1]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.
[2]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.
[3]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.

[1]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.
[2]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.
[3]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.

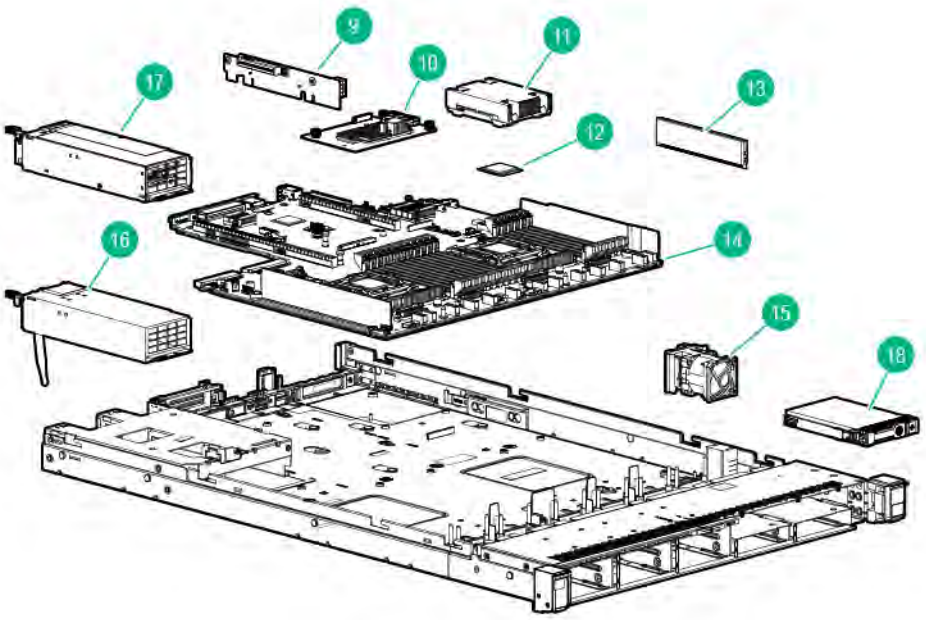
[1]Mandatory：必須 — カスタマーセルフリペアが必須の部品。当該部品について、もしもお客様がHewlett Packard Enterpriseに交換作業を依頼される場合には、その修理サービスに関する交通費および人件費がお客様に請求されます。
[2]Optional：任意 — カスタマーセルフリペアが任意である部品。この部品もカスタマーセルフリペア用です。当該部品について、もしもお客様がHewlett Packard Enterpriseに交換作業を依頼される場合には、お買い上げの製品に適用される保証サービス内容の範囲内においては、別途費用を負担していただくことなく保証サービスを受けることができます。
[3]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。

[1]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。
[2]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。
[3]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”。

[1]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。
[2]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。
[3]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」。

[1]Mandatory — 고객 셀프 수리가 의무 사항인 필수 부품. 사용자가 Hewlett Packard Enterprise에 이 부품의 교체를 요청할 경우 해당 서비스에 대한 출장비 및 작업비가 청구됩니다.
[2]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.
[3]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



Item	Description	Spare part number	Customer self repair (on page 6)
9	PCIe riser boards	—	—
	a) Primary PCIe riser board	785497-001	Optional[2]
	b) Low-profile Secondary PCIe riser board*	785498-001	Optional[2]
	c) Full-height Secondary PCIe riser board*	775419-001	Optional[2]
10	Controller options	—	—
	a) HPE Smart Array P440ar Controller	775413-001	Mandatory[1]
	b) HPE Smart Array P440ar Controller with cut heatsink*	786760-001	Mandatory[1]
	c) HPE H240ar Smart Host Bus Adapter*	749997-001	Mandatory[1]
	d) HPE Smart Array P840ar Controller*	848147-001	Mandatory[1]
11	Heatsink	—	—
	a) Standard efficiency heatsink	775403-001	Optional[2]
	b) High-performance heatsink*	775404-001	Optional[2]
12	Processor	—	—
	a) 1.90-GHz Intel Xeon E5-2609 v3 processor* **	762443-001	Optional[2]
	b) 2.40-GHz Intel Xeon E5-2620 v3 processor* **	762445-001	Optional[2]
	c) 2.60-GHz Intel Xeon E5-2640 v3 processor* **	762447-001	Optional[2]
	d) 2.60-GHz Intel Xeon E5-2660 v3 processor* **	762449-001	Optional[2]
	e) 2.30-GHz Intel Xeon E5-2670 v3 processor* **	762450-001	Optional[2]

Item	Description	Spare part number	Customer self repair (on page 6)
	f) 2.50-GHz Intel Xeon E5-2680 v3 processor* **	762451-001	Optional[2]
	g) 2.60-GHz Intel Xeon E5-2690 v3 processor	762452-001	Optional[2]
	h) 2.00-GHz Intel Xeon E5-2683 v3 processor* **	762453-001	Optional[2]
	i) 2.30-GHz Intel Xeon E5-2695 v3 processor* **	762454-001	Optional[2]
	j) 3.50-GHz Intel Xeon E5-2637 v3 processor* **	762455-001	Optional[2]
	k) 3.40-GHz Intel Xeon E5-2643 v3 processor* **	762456-001	Optional[2]
	l) 3.20-GHz Intel Xeon E5-2667 v3 processor* **	762457-001	Optional[2]
	m) 3.10-GHz Intel Xeon E5-2687W v3 processor* **	762458-001	Optional[2]
	n) 1.80-GHz Intel Xeon E5-2630L v3 processor* **	762459-001	Optional[2]
	o) 2.60-GHz Intel Xeon E5-2697 v3 processor* **	765154-001	Optional[2]
	p) 2.30-GHz Intel Xeon E5-2698 v3 processor* **	780760-001	Optional[2]
	q) 2.30-GHz Intel Xeon E5-2699 v3 processor* **	780761-001	Optional[2]
	r) 3.00-GHz Intel Xeon E5-2623v3 processor* **	780762-001	Optional[2]
	s) 1.70-GHz Intel Xeon E5-2603 v4 processor**	835599-001	Optional[2]
	t) 1.70-GHz Intel Xeon E5-2609 v4 processor* **	835600-001	Optional[2]
	u) 2.40-GHz Intel Xeon E5-2620 v4 processor* **	835601-001	Optional[2]
	v) 2.20-GHz Intel Xeon E5-2630 v4 processor* **	835602-001	Optional[2]
	w) 2.40-GHz Intel Xeon E5-2640 v4 processor* **	835603-001	Optional[2]
	x) 2.20-GHz Intel Xeon E5-2650 v4 processor* **	835604-001	Optional[2]
	y) 2.00-GHz Intel Xeon E5-2660 v4 processor* **	835605-001	Optional[2]
	z) 2.40-GHz Intel Xeon E5-2680 v4 processor* **	835606-001	Optional[2]
	aa) 2.60-GHz Intel Xeon E5-2690 v4 processor* **	835607-001	Optional[2]
	bb) 1.80-GHz Intel Xeon E5-2630L v4 processor* **	835608-001	Optional[2]
	cc) 1.70-GHz Intel Xeon E5-2650L v4 processor* **	835609-001	Optional[2]
	dd) 2.60-GHz Intel Xeon E5-2623 v4 processor* **	835610-001	Optional[2]
	ee) 3.40-GHz Intel Xeon E5-2637 v4 processor* **	835611-001	Optional[2]
	hh) 2.10-GHz Intel Xeon E5-2683 v4 processor* **	835614-001	Optional[2]
	ii) 2.10-GHz Intel Xeon E5-2695 v4 processor* **	835615-001	Optional[2]
	jj) 2.30-GHz Intel Xeon E5-2697 v4 processor* **	835616-001	Optional[2]
	kk) 2.10-GHz Intel Xeon E5-2698 v4 processor* **	835617-001	Optional[2]
	ll) 2.30-GHz Intel Xeon E5-2699 v4 processor* **	835618-001	Optional[2]
	mm) 3.00-GHz Intel Xeon E5-2687W v4 processor* **	841034-001	Optional[2]

Item	Description	Spare part number	Customer self repair (on page 6)
	nn) 2.6-GHz Intel Zeon E5-2697A v4 processor* **	841035-001	Optional[2]
	oo) 2.4-GHz Intel Zeon E5-2699A v4 processor * **	872020-001	Optional[2]
13	DIMM	—	—
	a) 8-GB, 1Rx4, PC4-2133R	774170-001	Mandatory[1]
	b) 8-GB, 2Rx8, PC4-2133R*	774171-001	Mandatory[1]
	c) 16-GB, 2Rx4, PC4-2133R*	774172-001	Mandatory[1]
	d) 16-GB, 2Rx4, PC4-2133L*	774173-001	Mandatory[1]
	e) 32-GB, 4Rx4, PC4-2133L*	774174-001	Mandatory[1]
	f) 8-GB, 1Gx8, PC4-2400R*	852545-001	Mandatory[1]
	g) 4-GB, 1Rx8, PC4-2400T-R*	819409-001	Mandatory[1]
	h) 8-GB, 1Gx8, PC4-2400R*	819410-001	Mandatory[1]
	i) 16-GB, 1Gx4, PC4-2400R*	846740-001	Mandatory[1]
	j) 16-GB, 2Gx4, PC4-2400R*	819411-001	Mandatory[1]
	k) 32-GB, 2Gx4, PC4-2400R*	819412-001	Mandatory[1]
	l) 64-GB, 2Gx4, PC4-2400L*	819413-001	Mandatory[1]
	m) 32-GB, 2Gx4, PC4-2400L*	819414-001	Mandatory[1]
	n) 128-GB, 8Rx4, PC4-2400T-L*	819415-001	Mandatory[1]
	o) 8-GB, 1Rx4, DDR4-2133*	832961-001	Mandatory[1]
14	System board assembly	—	—
	a) System board assembly	775400-001	Optional[2]
	b) System board assembly- BRDWL	843307-001	Optional[2]
15	Hot plug fans	—	—
	a) Standard fan module	775415-001	Mandatory[1]
	b) High-efficiency fan module*	775416-001	Mandatory[1]
16	Hot-plug power supplies	—	—
	a) 500 W, Flex Slot Platinum	754377-001	Mandatory[1]
	b) 800 W, Flex Slot Platinum*	754381-001	Mandatory[1]
	c) 800 W, Flex Slot Titanium*	754378-001	Mandatory[1]
	d) 800 W, Flex Slot Universal*	754379-001	Mandatory[1]
	e) 800 W, Flex Slot –48Vdc*	754382-001	Mandatory[1]
	f) 1400 W, Flex Slot Platinum*	754383-001	Mandatory[1]
17	HPE 750W Flex Slot Hot-Plug Battery Backup Module	754380-001	Mandatory[1]
18	Hot-plug drives	—	—
	a) 146-GB, SAS, SFF, 15,000-rpm, 6G	653950-001	Mandatory[1]

Item	Description	Spare part number	Customer self repair (on page 6)
	b) 300-GB, SAS, SFF, 10,000-rpm, 6G*	653955-001	Mandatory[1]
	c) 450-GB, SAS, SFF, 10,000-rpm, 6G*	653956-001	Mandatory[1]
	d) 500-GB, SAS, SFF, 7,200-rpm, 6G*	653953-001	Mandatory[1]
	e) 600-GB, SAS, SFF, 10,000-rpm, 6G*	653957-001	Mandatory[1]
	f) 900-GB, SAS, SFF, 10,000-rpm, 6G*	653971-001	Mandatory[1]
	g) 1-TB, SAS, SFF, 7,200-rpm, 6G*	653954-001	Mandatory[1]
	h) 1-TB, SAS, LFF, 7,200-rpm, 6G*	653947-001	Mandatory[1]
	i) 1.2-TB, SAS, SFF, 10,000-rpm, 6G*	718292-001	Mandatory[1]
	j) 2-TB, SAS, LFF, 7,200-rpm, 6G*	653948-001	Mandatory[1]
	k) 3-TB, SAS, LFF, 7,200-rpm, 6G*	653959-001	Mandatory[1]
	l) 500-GB, SATA, LFF, 7,200-rpm, 6G*	658103-001	Mandatory[1]
	m) 1-TB, SATA, SFF, 7,200-rpm, 6G*	656108-001	Mandatory[1]
	n) 1-TB, SATA, LFF, 7,200-rpm, 6G*	657739-001	Mandatory[1]
	o) 2-TB, SATA, LFF, 7,200-rpm, 6G*	658102-001	Mandatory[1]
	p) 3-TB, SATA, LFF, 7,200-rpm, 6G*	628182-001	Mandatory[1]
	q) 4-TB, SATA, LFF, 7,200-rpm, 6G*	693720-001	Mandatory[1]
19	Solid state drives, SAS*	—	—
	a) 200-GB, SAS, ME, SFF, 12G	741224-001	Mandatory[1]
	b) 200-GB, SAS, HE, SFF, 12G	741230-001	Mandatory[1]
	c) 400-GB, SAS, ME, SFF, 12G	741226-001	Mandatory[1]
	d) 400-GB, SAS, HE, SFF, 12G	741232-001	Mandatory[1]
	e) 800-GB, SAS, VE, SFF, 12G	762749-001	Mandatory[1]
	f) 800-GB, SAS, ME, SFF, 12G	741228-001	Mandatory[1]
	g) 800-GB, SAS, HE, SFF, 12G	741234-001	Mandatory[1]
	h) 800-GB, SAS, VE, LFF, 12G	762750-001	Mandatory[1]
	i) 800-GB, SAS, ME, LFF, 12G*	692163-001	Mandatory[1]
	j) 1.6-TB, SAS, VE, SFF, 12G	762751-001	Mandatory[1]
	k) 1.6-TB, SAS, VE, LFF, 12G	762752-001	Mandatory[1]
20	Solid state drives, SATA*	—	—
	a) 80-GB, SATA, VE, SFF, 6G	734562-001	Mandatory[1]
	b) 80-GB, SATA, VE, SFF, 6G	734563-001	Mandatory[1]
	c) 100-GB, SATA, ME, SFF, 6G	692164-001	Mandatory[1]
	d) 100-GB, SATA, ME, LFF, 6G	692160-001	Mandatory[1]

Item	Description	Spare part number	Customer self repair (on page 6)
	e) 120-GB, SATA, VE, SFF, 6G	718163-001	Mandatory[1]
	f) 120-GB, SATA, VE, LFF, 6G	718300-001	Mandatory[1]
	g) 200-GB, SATA, ME, SFF, 6G	692165-001	Mandatory[1]
	h) 200-GB, SATA, ME, LFF, 6G	692161-001	Mandatory[1]
	i) 240-GB, SATA, VE, SFF, 6G	718137-001	Mandatory[1]
	j) 240-GB, SATA, VE, LFF, 6G	718294-001	Mandatory[1]
	k) 300-GB, SATA, VE, SFF, 6G	739954-001	Mandatory[1]
	l) 300-GB, SATA, VE, LFF, 6G	739955-001	Mandatory[1]
	m) 400-GB, SATA, ME, SFF, 6G	692166-001	Mandatory[1]
	n) 400-GB, SATA, ME, LFF, 6G	692162-001	Mandatory[1]
	o) 480-GB, SATA, VE, SFF, 6G	718138-001	Mandatory[1]
	p) 480-GB, SATA, VE, LFF, 6G	718296-001	Mandatory[1]
	q) 600-GB, SATA, VE, SFF, 6G	739959-001	Mandatory[1]
	r) 600-GB, SATA, VE, LFF, 6G	739960-001	Mandatory[1]
	s) 800-GB, SATA, VE, SFF, 6G	718139-001	Mandatory[1]
	t) 800-GB, SATA, VE, LFF, 6G	718298-001	Mandatory[1]
	u) 800-GB, SATA, ME, SFF, 6G	692167-001	Mandatory[1]
	v) 800-GB, SATA, ME, LFF, 6G	692163-001	Mandatory[1]
	w) 960 - GB, SATA, VE, SFF, 6G*	789631-001	Mandatory[1]
21	Solid state drives, NVMe*	—	—
	a) 400-GB, NVMe, VE, SFF	765076-001	Mandatory[1]
	b) 400-GB, NVMe, LE, SFF	765063-001	Mandatory[1]
	c) 400-GB, NVMe, ME, SFF	765059-001	Mandatory[1]
	d) 800-GB, NVMe, LE, SFF	765064-001	Mandatory[1]
	e) 800-GB, NVMe, ME, SFF	765060-001	Mandatory[1]
	f) 1.2-TB, NVMe, VE, SFF	765068-001	Mandatory[1]
	g) 1.6-TB, NVMe, LE, SFF	765065-001	Mandatory[1]
	h) 1.6-TB, NVMe, ME, SFF	765061-001	Mandatory[1]
	i) 2.0-TB, NVMe, VE, SFF	765069-001	Mandatory[1]
	j) 2.0-TB, NVMe, LE, SFF	765066-001	Mandatory[1]
	k) 2.0-TB, NVMe, ME, SFF	765062-001	Mandatory[1]
22	Systems Insight Display power switch modules	—	—
	a) SFF Systems Insight Display power switch module*	775418-001	Mandatory[1]

Item	Description	Spare part number	Customer self repair (on page 6)
	b) LFF Systems Insight Display power switch module*	775412-001	Mandatory[1]
23	Backplane boards	—	—
	a) 8SFF backplane board*	780428-001	Optional[2]
	b) 2SFF backplane board*	775401-001	Optional[2]
	c) 4LFF backplane board*	775402-001	Optional[2]
	d) 2SFF Express Bay drive backplane*	812791-001	Optional[2]
	e) 10SFF (6 NVMe + 4 SAS/SATA) Express Bay drive backplane and drive cage*	823792-001	Optional[2]
24	HPE Express Bay Bridge Card*	824019-001	Optional[2]
25	GPU options	—	—
	a) NVIDIA Quadro K2200 3GB GPU*	783874-001	Mandatory[1]
	b) NVIDIA Quadro K4200 4GB GPU*	783875-001	Mandatory[1]
	c) NVIDIA Quadro M4000 8GB GPU*	841576-001	Mandatory[1]
26	Standard cabled power switch modules	—	—
	a) SFF Standard cabled power switch module*	783290-001	Mandatory[1]
	b) LFF Standard cabled power switch module*	783291-001	Mandatory[1]
27	HPE Smart Storage Battery*	815983-001	Mandatory[1]
28	Optical media assemblies	—	—
	a) SFF DVD-RW/USB/VGA assembly*	775427-001	Mandatory[1]
	b) SFF USB/VGA assembly*	775426-001	Mandatory[1]
	c) LFF USB/VGA assembly*	775411-001	Mandatory[1]
29	M.2 SSD enablement board	—	—
	a) HPE 120GB M.2 SSD Enablement Board*	797908-001	Mandatory[1]
	b) HPE Dual 120GB M.2 SSD Enablement Board*	797907-001	Mandatory[1]
30	Cables	—	—
	a) 8SFF power cable*	780418-001	Mandatory[1]
	b) 4LFF power cable*	780423-001	Mandatory[1]
	c) 8SFF x4 Mini-SAS cable for P440ar, H240ar, and H240 for Slot 1*	780421-001	Mandatory[1]
	d) 8SFF Embedded SATA cable*	780420-001	Mandatory[1]
	e) 8SFF x8 Mini-SAS cable for P840ar, P440, and P840 for Slot 1*	780421-001	Mandatory[1]
	f) 4LFF Embedded SATA cable*	780424-001	Mandatory[1]
	g) 4LFF x4 Mini-SAS cable for P440ar and H240ar*	780425-001	Mandatory[1]
	h) 2SFF H240ar internal SAS cable*	787305-001	Mandatory[1]
	i) 2SFF P440ar internal SAS cable*	787306-001	Mandatory[1]
	j) 8SFF P440ar internal SAS cable*	787307-001	Mandatory[1]

Item	Description	Spare part number	Customer self repair (on page 6)
	k) 4LFF P440ar internal SAS cable*	787308-001	Mandatory[1]
	l) GPU cable, secondary riser*	780426-001	Mandatory[1]
	m) GPU cable, primary riser*	780427-001	Mandatory[1]

*Not shown
**All processors in this HPE ProLiant server must have the same cache size, speed, number of cores, and rated maximum power consumption.
[1]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.
[2]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.
[3]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.

[1]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.
[2]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.
[3]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 signaléespar le mot « Non » dans le Catalogue de pièces illustré.

[1]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.
[2]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 richiedel'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.
[3]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.

[1]Zwingend—Teile, für die das Customer Self Repair-Verfahren zwingend vorgegeben ist. Wenn Sie den Austausch dieser Teile von Hewlett Packard Enterprisevornehmen lassen, werden Ihnen die Anfahrt- und Arbeitskosten für diesen Service berechnet.
[2]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 Enterprisevornehmen lassen möchten, können bei diesem Service je nach den für Ihr Produkt vorgesehenen Garantiebedingungen zusätzliche Kosten anfallen.
[3]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.

[1]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.
[2]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.

[3]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.

[1]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.
[2]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.
[3]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.

[1]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.
[2]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.
[3]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.

[1]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。
[2]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。
[3]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。

[1]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。
[2]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。
[3]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”。

[1]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。
[2]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。
[3]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」。

[1]Mandatory — 고객 셀프 수리가 의무 사항인 필수 부품. 사용자가 Hewlett Packard Enterprise에 이 부품의 교체를 요청할 경우 해당 서비스에 대한 출장비 및 작업비가 청구됩니다.
[2]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.
[3]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.

Removal and replacement procedures

Required tools

You need the following items for some procedures:

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

Preparation procedures

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

- Extend the server from the rack (on page 28).

  If you are performing service procedures in a Hewlett Packard Enterprise, Compaq branded, Telco, or third-party rack cabinet, you can use the locking feature of the rack rails to support the server and gain access to internal components.

  For more information about Telco rack solutions, refer to the RackSolutions.com website (**http://www.racksolutions.com/hpe**).

- Power down the server (on page 27).

  If you must remove a server from a rack or a non-hot-plug component from a server, power down the server.

- Remove the server from the rack (on page 28).

  If the rack environment, cabling configuration, or the server location in the rack creates awkward conditions, remove the server from the rack.

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 HPE iLO 4.

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

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

Extend the server from the rack

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

1. Power down the server (on page 27).
2. Disconnect all peripheral cables and power cords.
3. Loosen the front panel thumbscrews.
4. Extend the server on the rack rails until the server rail-release latches engage.

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

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

5. After performing the installation or maintenance procedure, slide the server into the rack:
   a. Slide the server fully into the rack.
   b. Secure the server by tightening the thumbscrews.
6. Connect the peripheral cables and power cords.

Remove the server from the rack

To remove the server from a Hewlett Packard Enterprise, Compaq branded, Telco, or third-party rack:

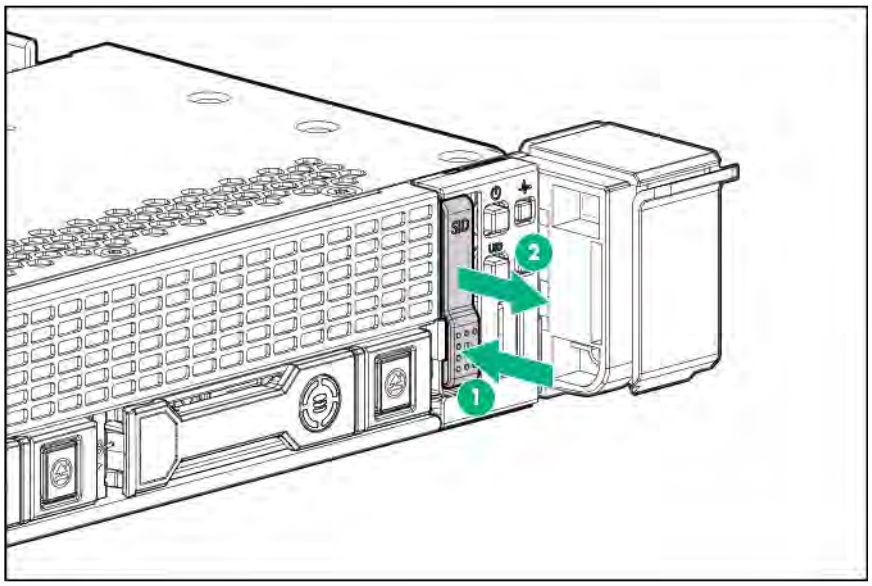
1. Power down the server (on page 27).
2. Extend the server from the rack (on page 28).
3. Disconnect the cabling and remove the server from the rack. For more information, refer to the documentation that ships with the rack mounting option.
4. Place the server on a sturdy, level surface.

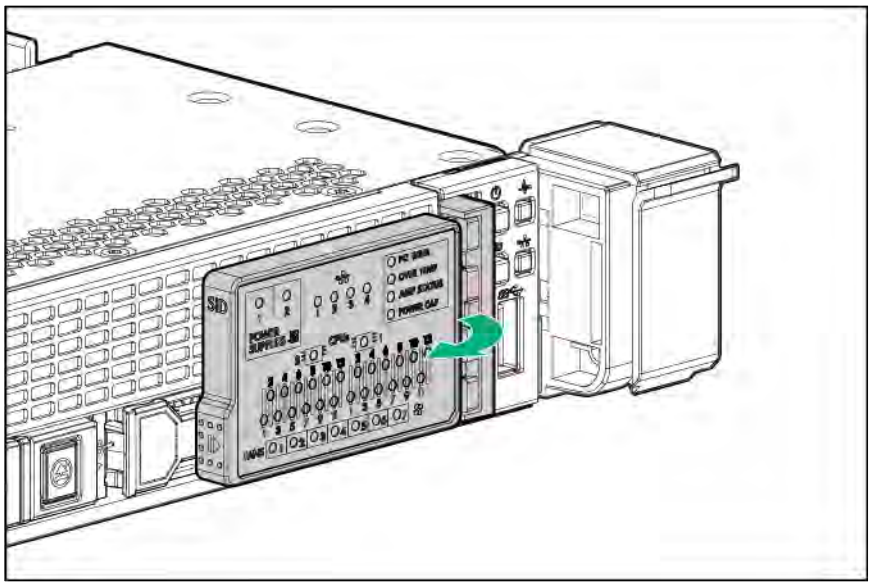
Access the Systems Insight Display

To access the optional pop-out HPE Systems Insight Display:

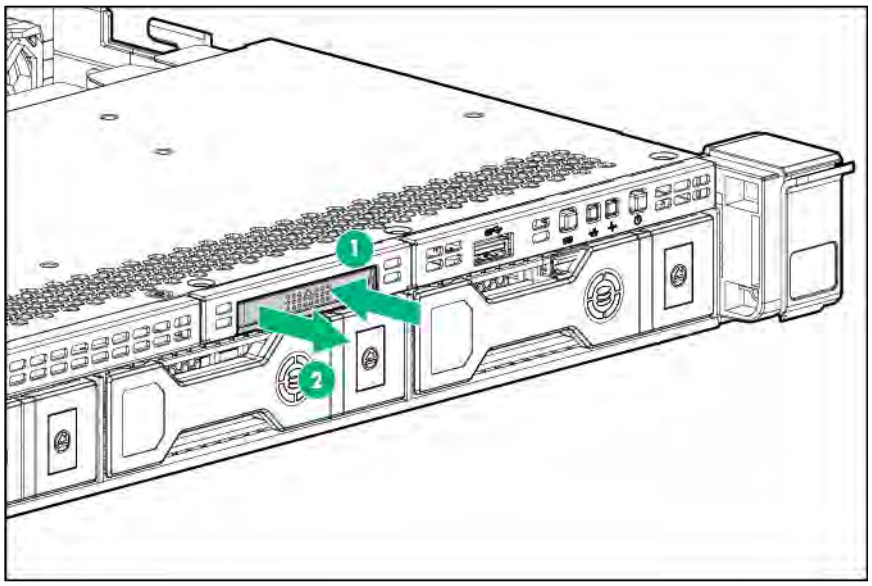
1. Press and release the panel.
2. After the display fully ejects, rotate the display to view the LEDs.

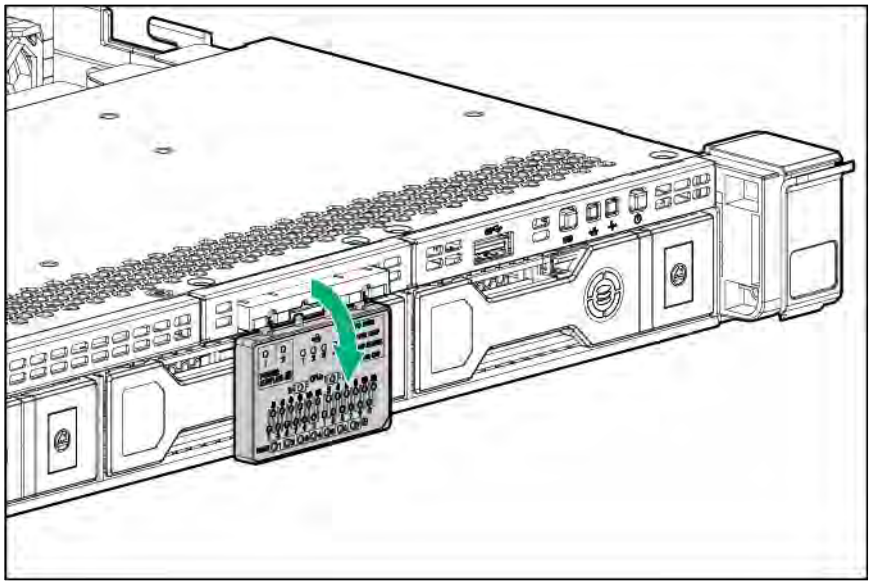
- 8SFF





- 4LFF





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.

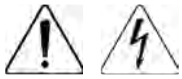
To prevent electrostatic damage:

- Avoid hand contact by transporting and storing products in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.

- Place parts on a grounded surface before removing them from their containers.
- Avoid touching pins, leads, or circuitry.
- Always be properly grounded when touching a static-sensitive component or assembly.

Symbols on equipment

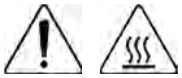
The following symbols may be placed on equipment to indicate the presence of potentially hazardous conditions.



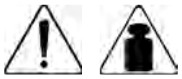
This symbol indicates the presence of hazardous energy circuits or electric shock hazards. Refer all servicing to qualified personnel.
WARNING: To reduce the risk of injury from electric shock hazards, do not open this enclosure. Refer all maintenance, upgrades, and servicing to qualified personnel.

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.



12.25 kg - 15.31 kg
27.00 lb - 33.76 lb

This symbol indicates that the component exceeds the recommended weight for one individual to handle safely.
WARNING: To reduce the risk of personal injury or damage to the equipment, observe local occupational health and safety requirements and guidelines for manual material handling.

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

Before installing a server, be sure that you understand the following warnings and cautions.

WARNING: To reduce the risk of electric shock, personal injury, and damage to the equipment:

- Do not attempt to service any parts of the equipment other than those specified in the following procedure. Any other activities may require that you shut down the server and remove the power cord.
- Installation and maintenance of this product must be performed by individuals who are knowledgeable about the procedures, precautions and hazards associated with the product.

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

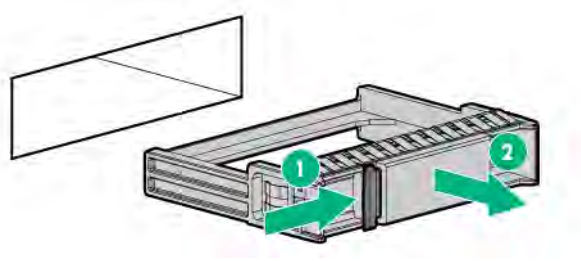
CAUTION: Do not operate the server for long periods with the access panel open or removed. Operating the server in this manner results in improper airflow and improper cooling that can lead to thermal damage.

Drive blank

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

To remove the component:

1. Remove the drive blank.



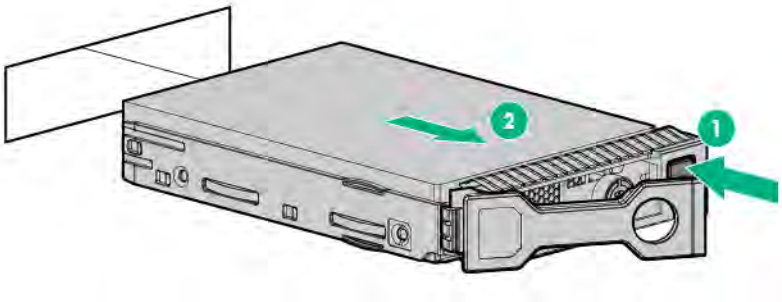
To replace the blank, slide the blank into the bay until it locks into place.

Hot-plug SAS/SATA drives and SSDs

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

To remove the component:

1. Back up all server data on the drive.
2. Determine the status of the drive from the drive LED definitions ("Hot-plug drive LED definitions" on page 96).
3. Remove the drive.



To replace the component, reverse the removal procedure.

NVMe drives

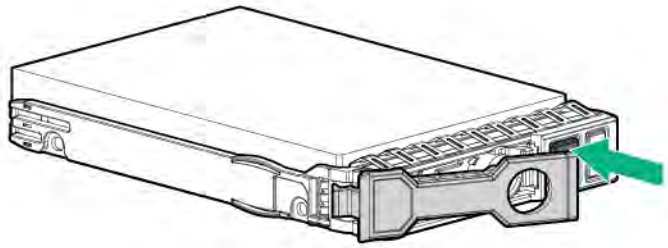
NVMe drives are supported on this server when the HPE 10SFF (6 NVMe + 4 SAS/SATA) Express Bay Enablement Option or the 2SFF HPE Express Bay Drive Cage is installed. For more information on which bays support NVMe drives, see "Device numbers (on page 95)."

CAUTION: Do not remove an NVMe SSD from the drive bay while the Do Not Remove button LED is flashing. The Do Not Remove button LED flashes to indicate the device is still in use. Removal of the NVMe SSD before the device has completed and ceased signal/traffic flow can cause loss of data.

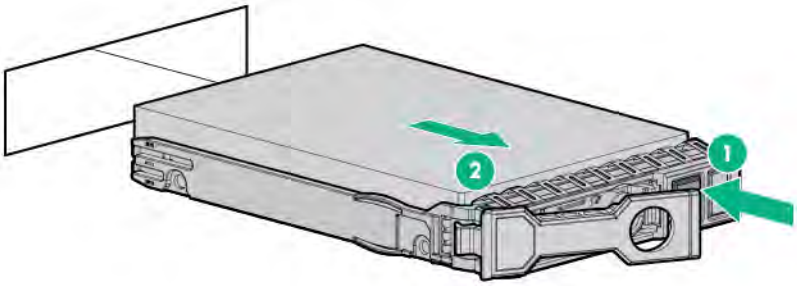
To remove the component:

1. Press the Power button.

   The Do Not Remove button LED illuminates and flashes. Do not press the button while the LED is illuminated.
2. When the Do Not Remove button LED is no longer flashing or illuminated, press the Do Not Remove button to open the release lever.

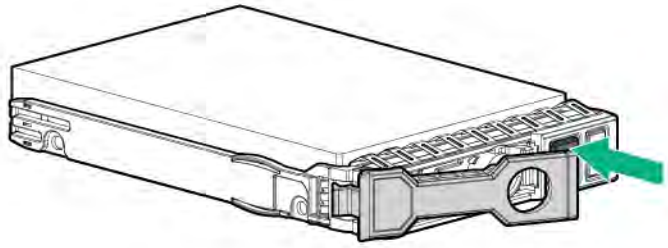


3. Remove the drive.

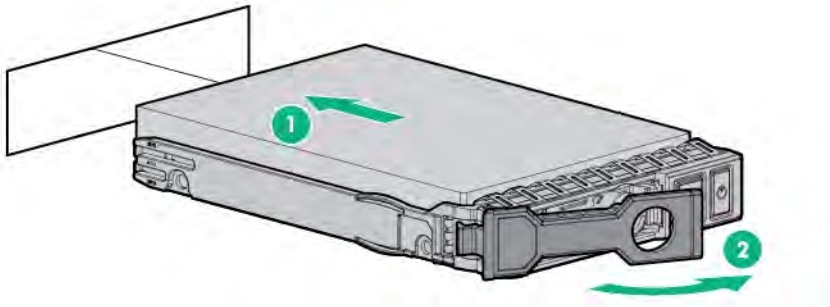


To replace the component:

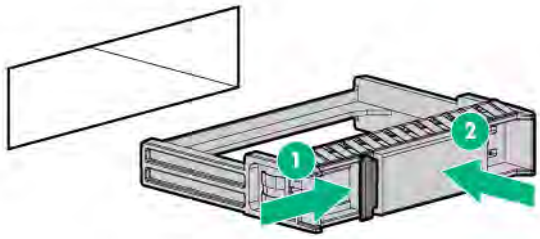
1. Press the Do Not Remove button to open the release handle.



2. Install the drives.

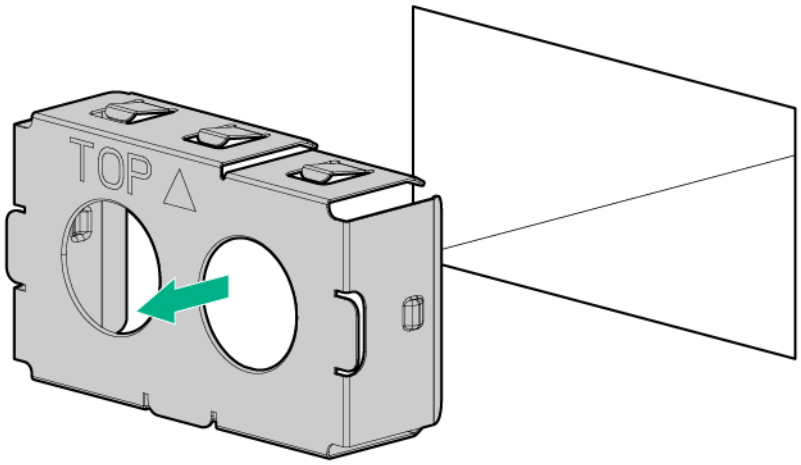


3. Install an SFF drive blank in any unused drive bays.



Power supply blank

Remove the component as indicated.



To replace the component, reverse the removal procedure.

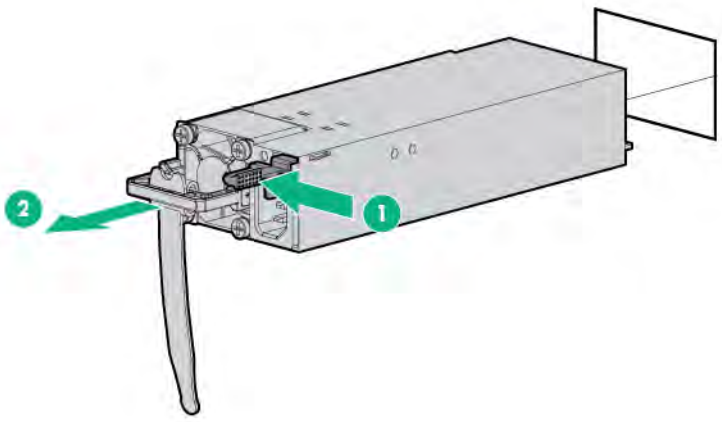
AC power supply

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

To remove the component:

1. Power down the server (on page 27).
2. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
3. Access the product rear panel.
4. Remove the power supply.

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



To replace the component, reverse the removal procedure.

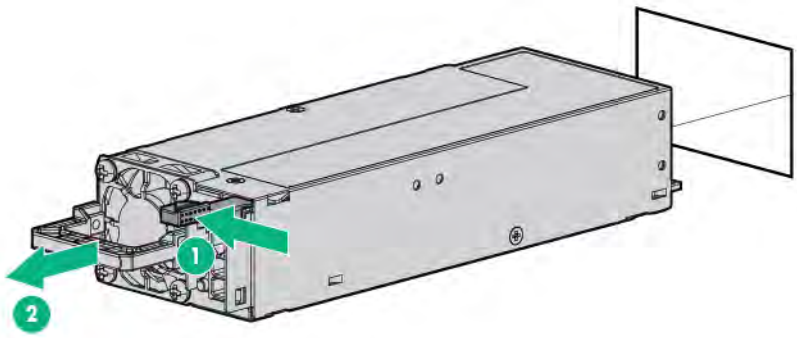
HPE 750W Flex Slot Hot Plug Battery Backup Module

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

To remove the component:

1. Access the product rear panel.
2. If the FSBBU is cabled to a second FSBBU, disconnect the FSBBU jumper cable from the second FSBBU.
3. Remove the FSBBU.

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



To replace the component, reverse the removal procedure.

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: 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.

To remove the component:

1. Power down the server (on page 27).
2. Extend the server from the rack (on page 28).

   Open or unlock the locking latch, slide the access panel to the rear of the chassis, and remove the access panel.

To replace the component:

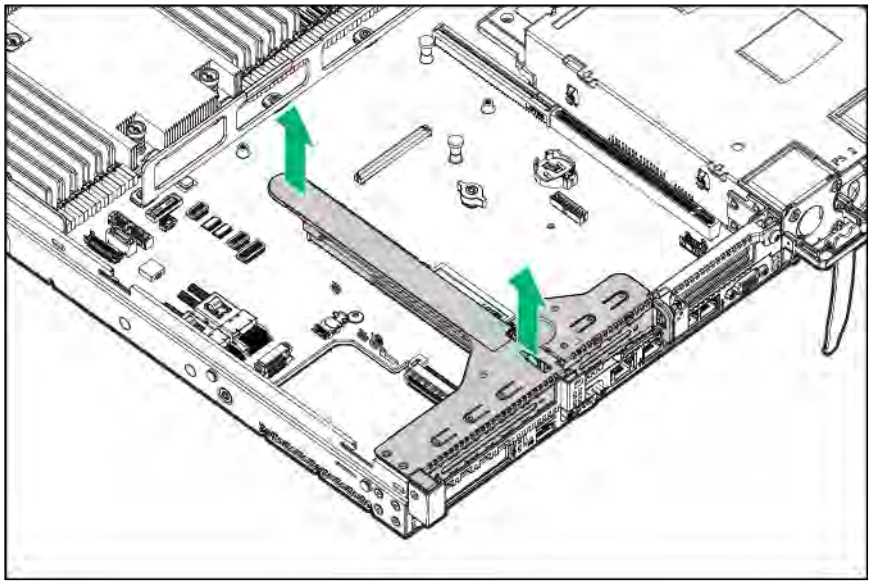
1. Place the access panel on top of the server with the hood latch open. Allow the panel to extend past the rear of the server approximately 1.25 cm (0.5 inch).
2. Push down on the hood latch. The access panel slides to a closed position.

Primary PCI riser cage

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

1. Power down the server (on page 27).
2. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
3. Do one of the following:
   - Extend the server from the rack (on page 28).
   - Remove the server from the rack (on page 28).
4. Remove the access panel ("Access panel" on page 36).

5. Remove the primary PCI riser cage.



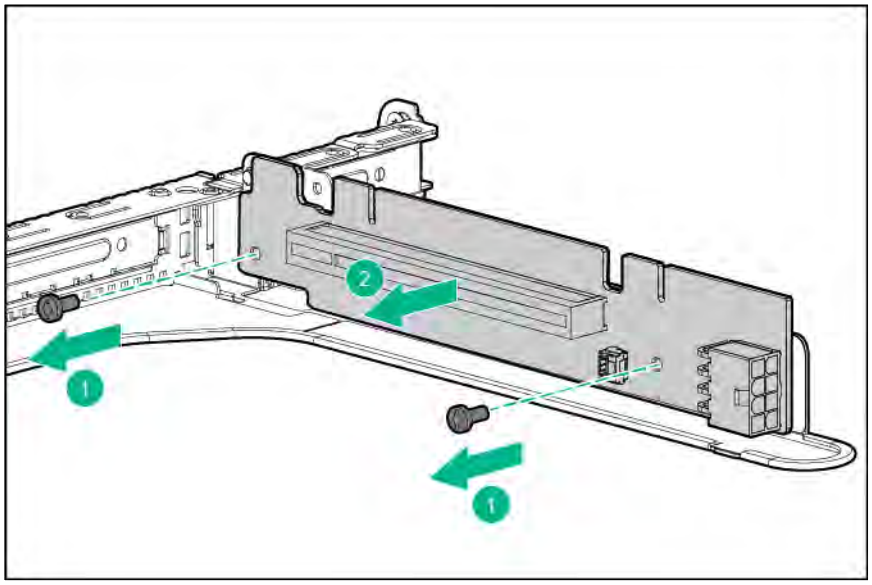
To replace the component, reverse the removal procedure.

PCIe riser board

To remove the component:

1. Power down the server (on page 27).
2. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
3. Do one of the following:
   - Extend the server from the rack (on page 28).
   - Remove the server from the rack (on page 28).
4. Remove the access panel ("Access panel" on page 36).
5. Remove the PCIe riser cage:
   - Primary PCIe riser cage ("Primary PCI riser cage" on page 36, "2SFF Express Bay drive backplane" on page 54)
   - Secondary PCIe riser cage ("Secondary PCI riser cage" on page 38)
6. Remove any expansion boards from the PCIe riser cage ("Expansion boards" on page 61).

7. Remove the PCIe riser board.



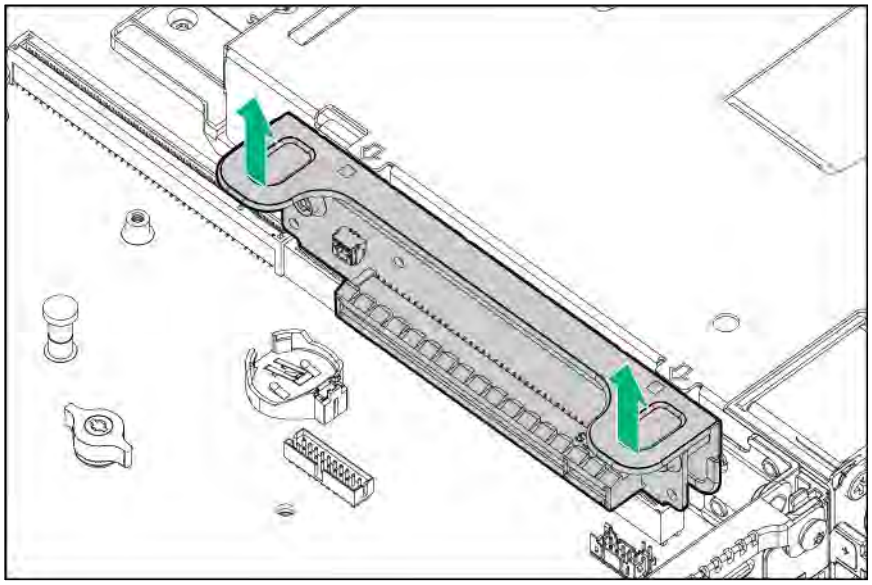
To replace the component, reverse the removal procedure.

Secondary PCI riser cage

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

1. Power down the server (on page 27).
2. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
3. Do one of the following:
   - Extend the server from the rack (on page 28).
   - Remove the server from the rack (on page 28).
4. Remove the access panel ("Access panel" on page 36).

5. Remove the secondary PCI riser cage.



To replace the component, reverse the removal procedure.

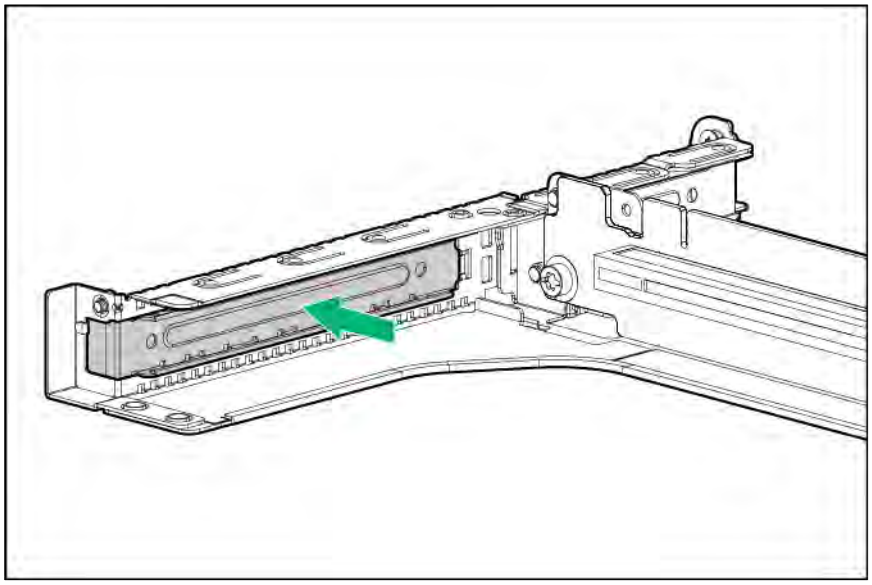
Primary PCIe riser blank

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

To remove the component:

1. Power down the server (on page 27).
2. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
3. Do one of the following:
   - Extend the server from the rack (on page 28).
   - Remove the server from the rack (on page 28).
4. Remove the access panel ("Access panel" on page 36).
5. Remove the PCI riser cage ("Primary PCI riser cage" on page 36, "2SFF Express Bay drive backplane" on page 54).

6. Remove the primary PCIe riser blank.



To replace the component, reverse the removal procedure.

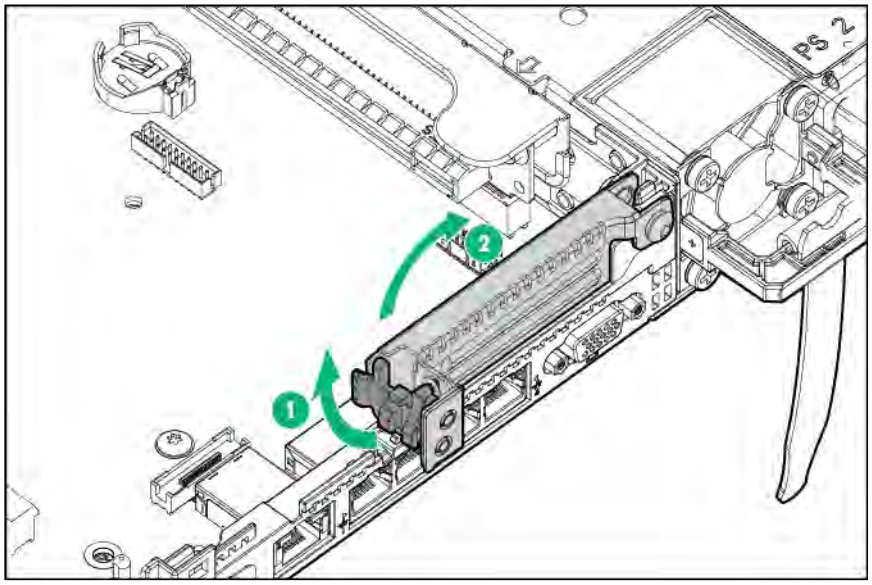
Secondary PCIe riser blank

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

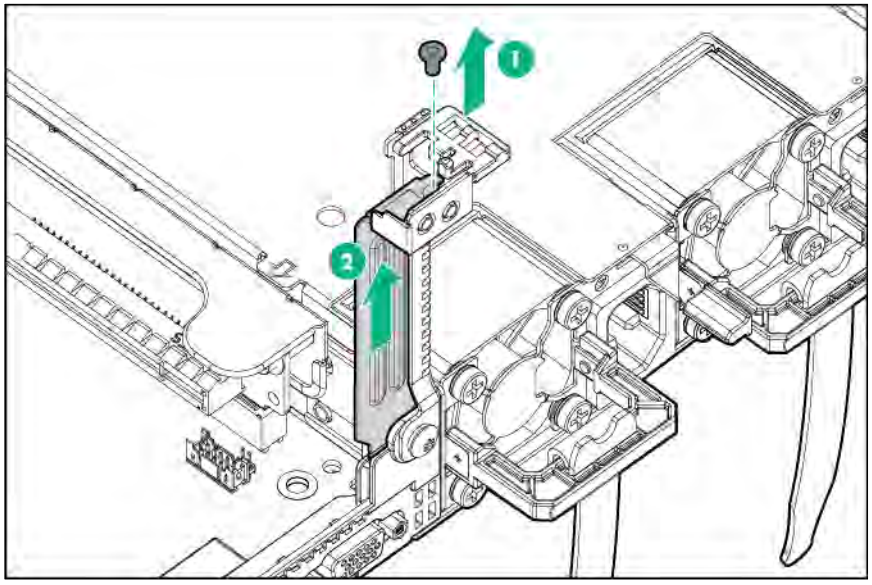
To remove the component:

1. Power down the server (on page 27).
2. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
3. Do one of the following:
   - Extend the server from the rack (on page 28).
   - Remove the server from the rack (on page 28).
4. Remove the access panel ("Access panel" on page 36).

5. Lift the rear wall latch.



6. Remove the secondary PCIe riser blank.



To replace the component, reverse the removal procedure.

GPU riser and cable option

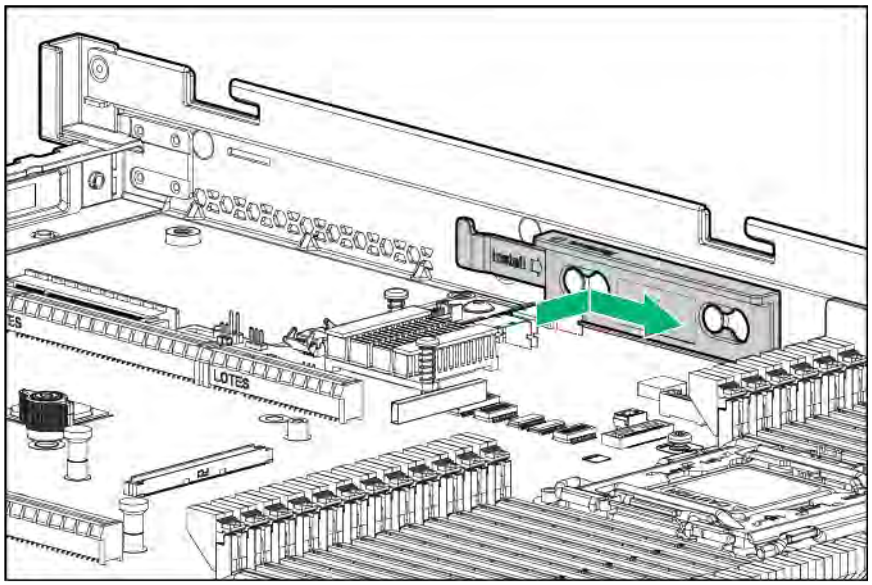
WARNING: To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

CAUTION: To prevent damage to electrical components, properly ground the server before beginning any installation procedure. Improper grounding can cause ESD.

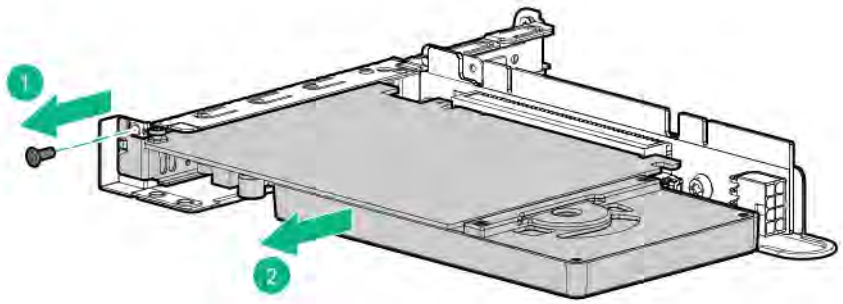
1. Back up all server data.
2. Power down the server (on page 27).
3. Do one of the following:
   - Extend the server from the rack (on page 28).

- Remove the server from the rack (on page 28).

4. Remove the access panel ("Access panel" on page 36).
5. Remove the PCIe riser cage ("Primary PCI riser cage" on page 36, "2SFF Express Bay drive backplane" on page 54).
6. Remove the GPU support bracket.



7. Disconnect the GPU riser cable from the GPU and the primary riser cage PCA ("GPU cabling" on page 109).
8. Remove the GPU from the 16x slot in the primary PCI riser cage position.



To replace the component, reverse the removal procedure.

Fan module

The server supports up to seven standard or high-performance fans. Install fans 1 and 2 only when processor 2 is installed. When only one processor is installed, install the fan blanks in bays 1 and 2.

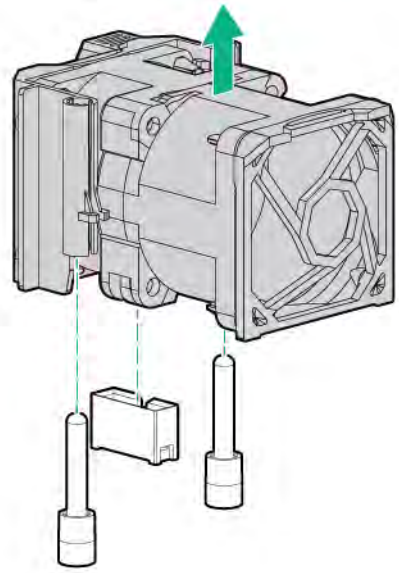
To remove the component:

1. Extend the server from the rack (on page 28).
2. Remove the access panel ("Access panel" on page 36).

IMPORTANT: When a hot-plug fan is removed, the other fans in the server will increase speed to compensate.

CAUTION: To avoid server shutdown, a fan must be replaced within 60 seconds of being removed.

3. Remove the fan module.



To replace the component, reverse the removal procedure.

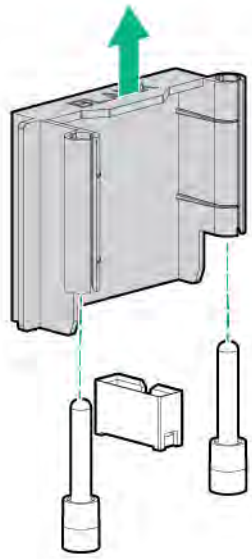
Fan blank

Install fans 1 and 2 only when processor 2 is installed. When only one processor is installed, install the fan blanks in bays 1 and 2.

To remove the component:

1. Extend the server from the rack (on page 28).
2. Remove the access panel ("Access panel" on page 36).

3. Remove the fan blank.

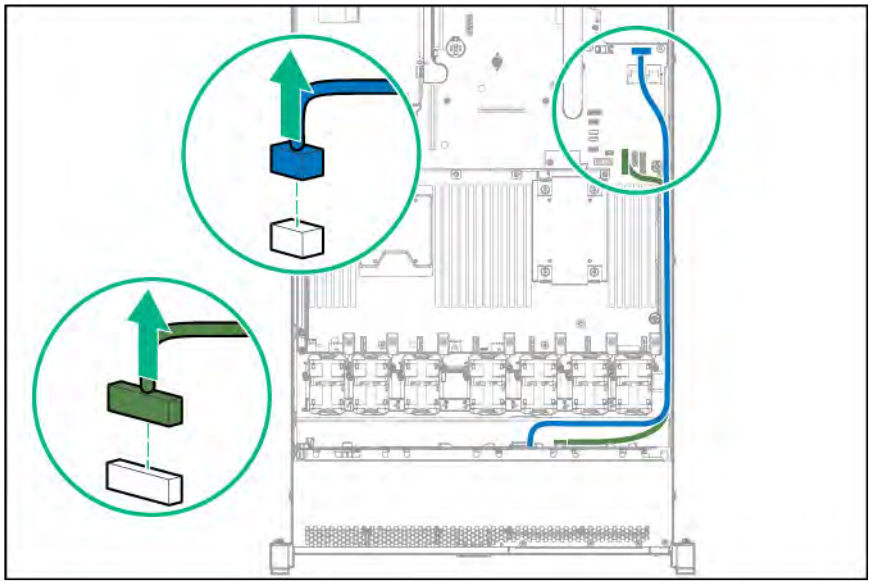


To replace the component, reverse the removal procedure.

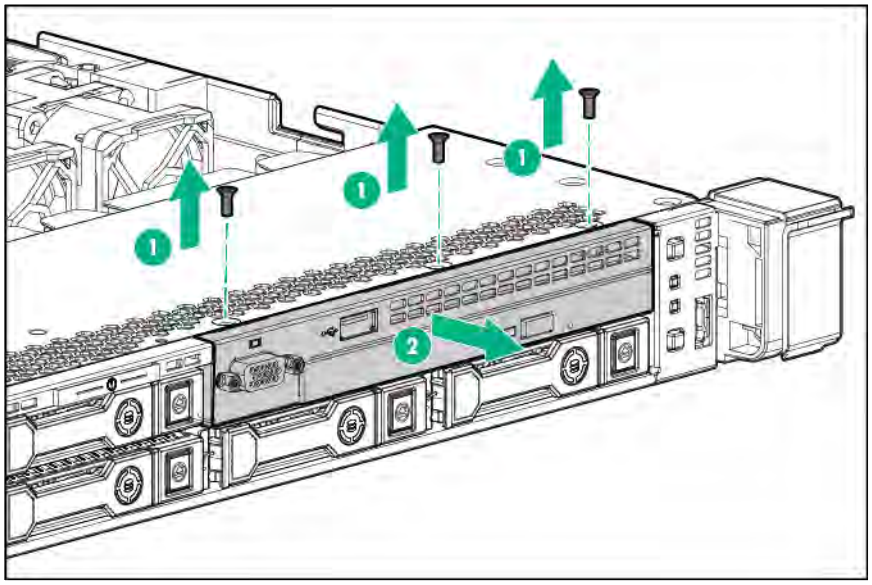
8SFF Optical/USB/VGA assembly

To remove the component:

1. Power down the server (on page 27).
2. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
3. Do one of the following:
   - Extend the server from the rack (on page 28).
   - Remove the server from the rack (on page 28).
4. Remove the access panel ("Access panel" on page 36).
5. Disconnect the optical drive cable.



6. Remove the optical drive.



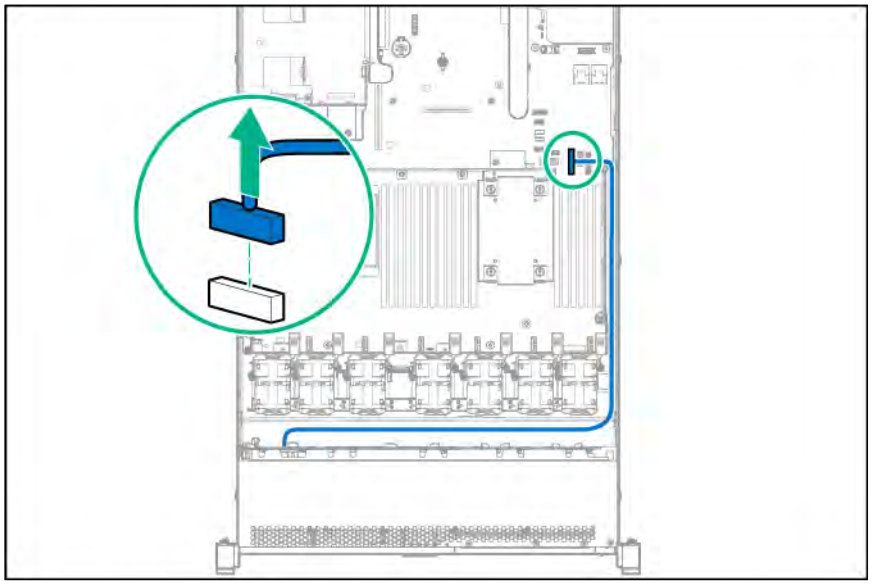
To replace the component, reverse the removal procedure.

4LFF Optical/USB/VGA assembly

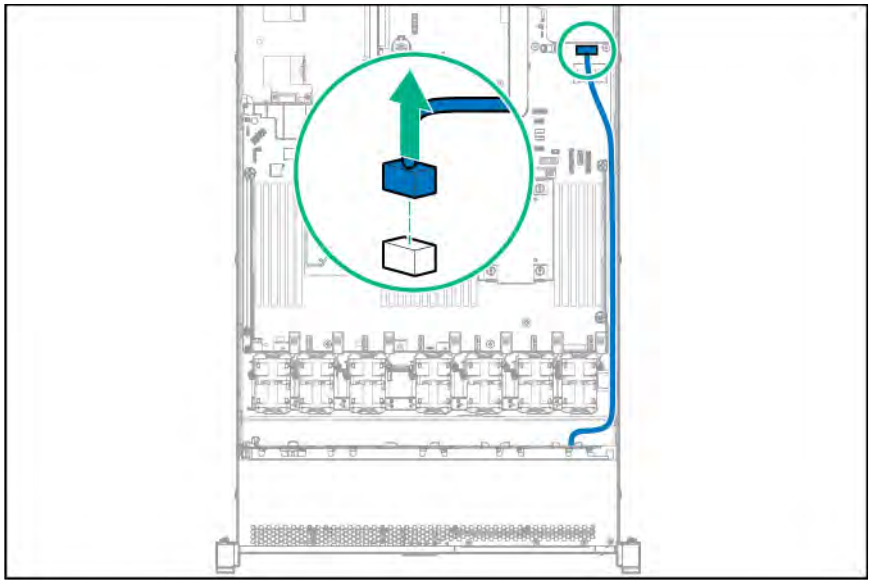
To remove the component:

1. Power down the server (on page 27).
2. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
3. Do one of the following:
   - Extend the server from the rack (on page 28).
   - Remove the server from the rack (on page 28).
4. Remove the access panel ("Access panel" on page 36).
5. Disconnect the cables:

- Optical drive cabling

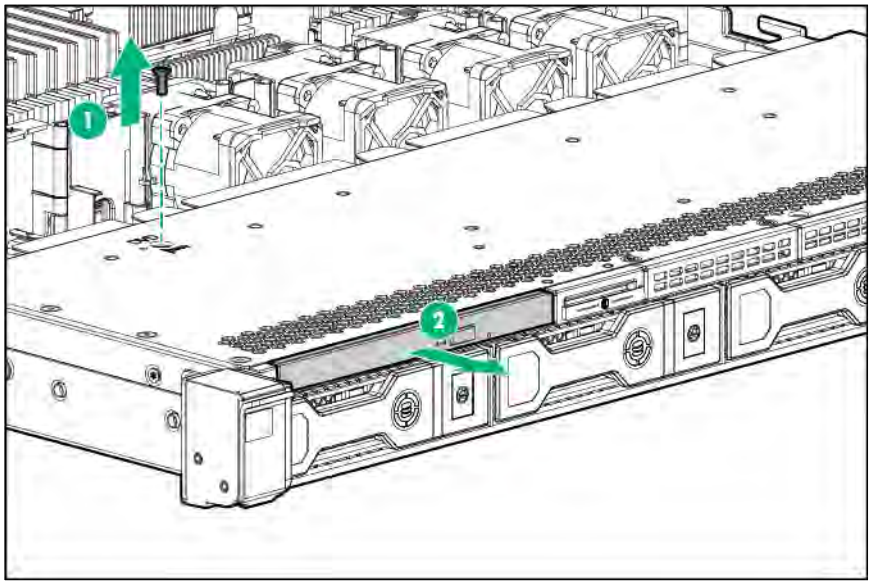


- USB/VGA cabling

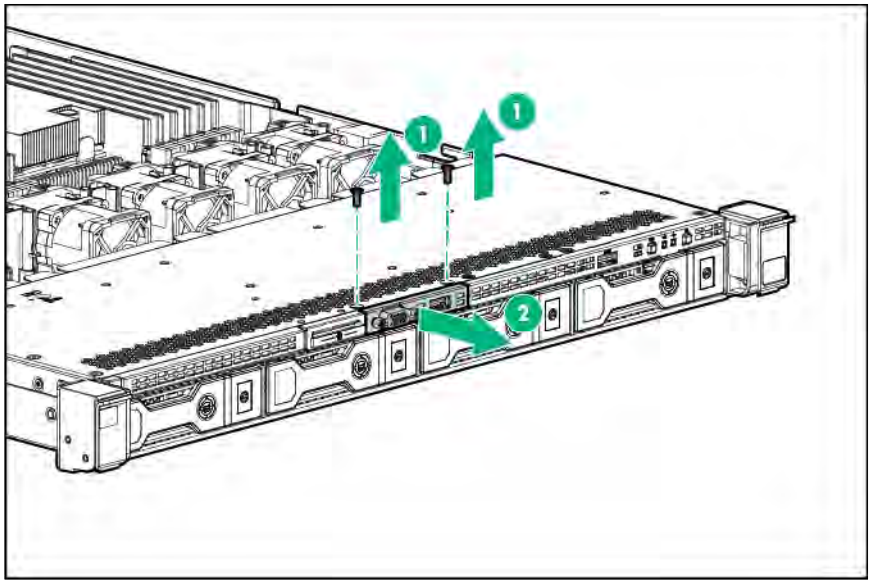


6. Remove the assembly:

- Optical drive assembly



- USB/VGA assembly



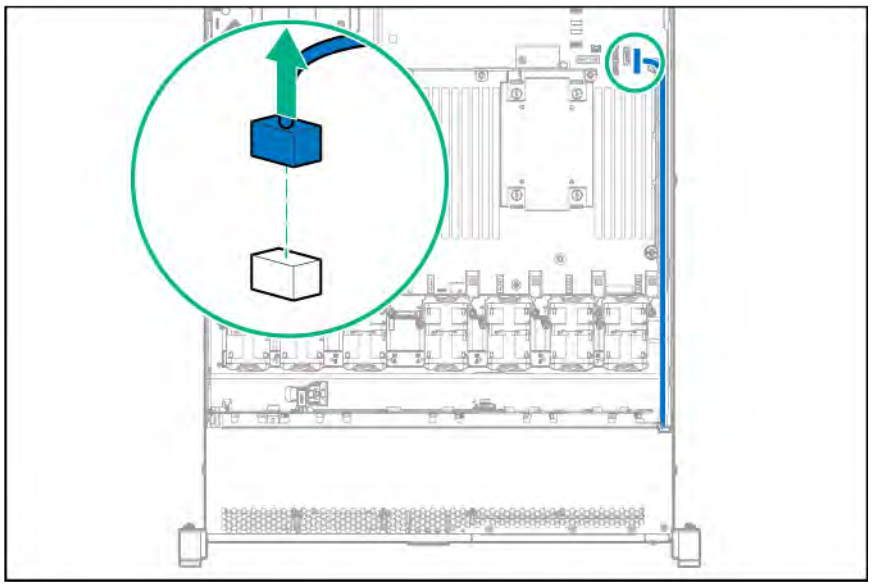
To replace the component, reverse the removal procedure.

8SFF Systems Insight Display

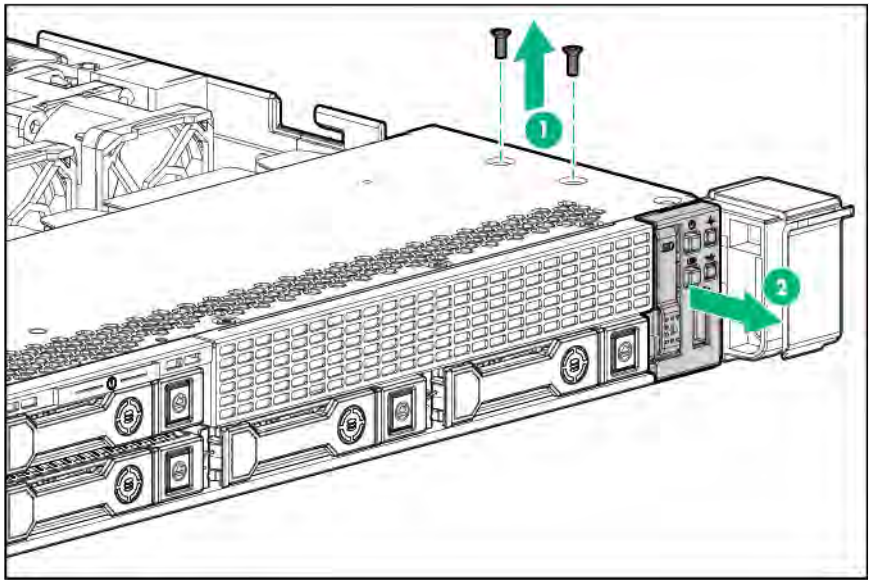
To remove the component:

1. Power down the server (on page 27).
2. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
3. Do one of the following:
   - Extend the server from the rack (on page 28).
   - Remove the server from the rack (on page 28).
4. Remove the access panel ("Access panel" on page 36).

5. Disconnect the Systems Insight Display cable and the USB cable from the system board, and then disconnect the USB cable from the front of the Systems Insight Display.



6. Remove the screw securing the Systems Insight Display, and then remove the Systems Insight Display.



To replace the component, reverse the removal procedure.

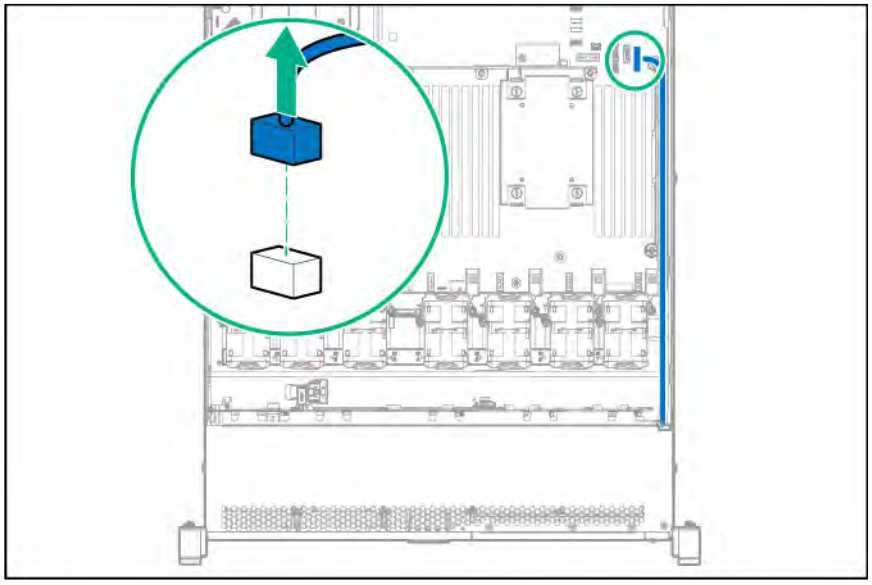
4LFF Systems Insight Display

To remove the component:

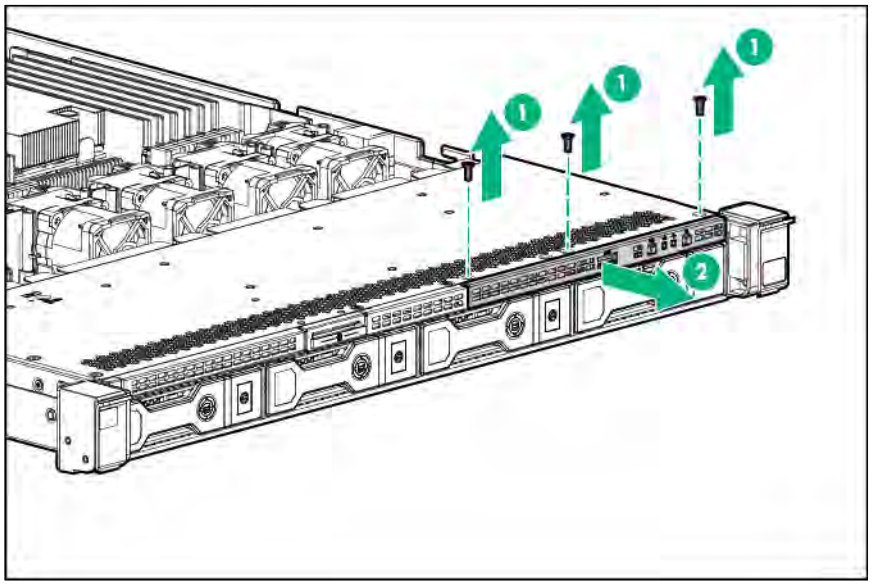
1. Power down the server (on page 27).
2. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
3. Do one of the following:
   - Extend the server from the rack (on page 28).

- Remove the server from the rack (on page 28).

4. Remove the access panel ("Access panel" on page 36).
5. Disconnect the Systems Insight Display cable and the USB cable from the system board, and then disconnect the USB cable from the front of the Systems Insight Display.



6. Remove the screw securing the Systems Insight Display, and then remove the Systems Insight Display.



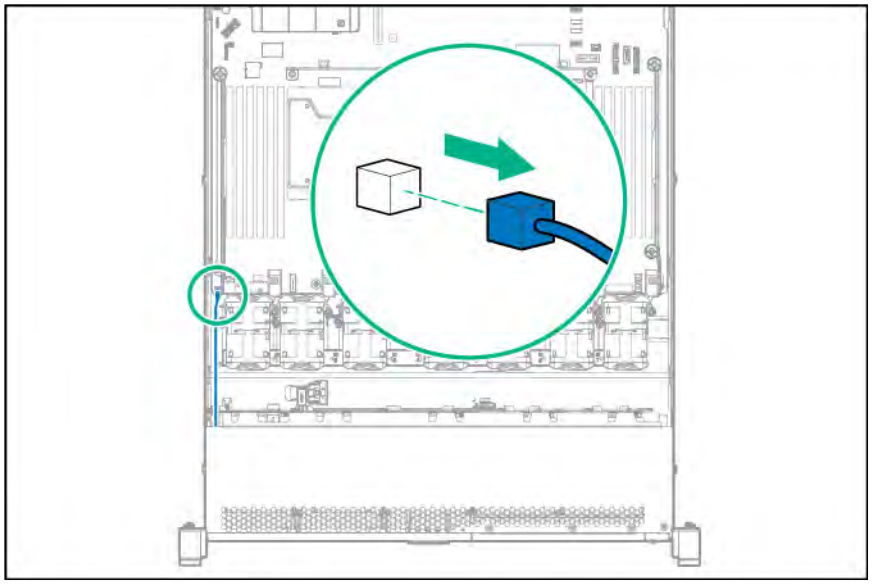
To replace the component, reverse the removal procedure.

Location discovery services ear

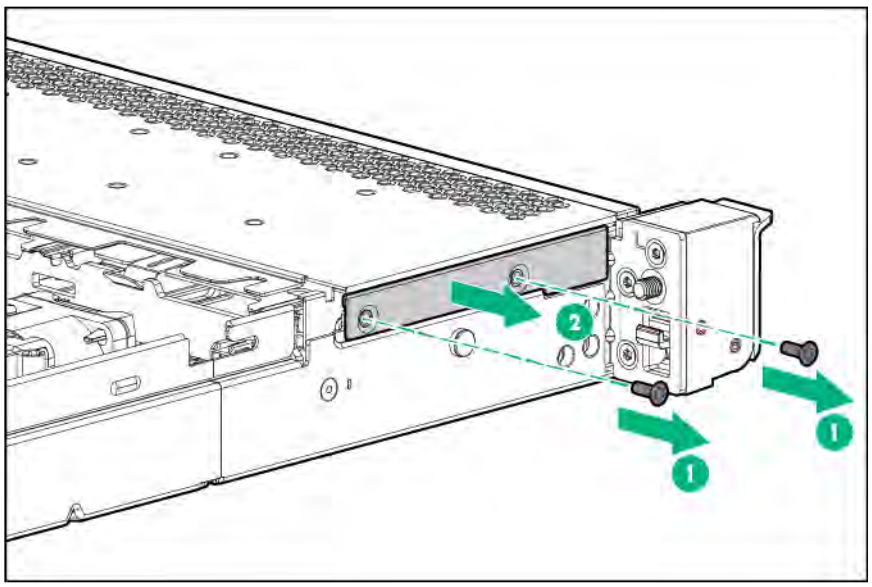
To remove the component:

1. Power down the server (on page 27).
2. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.

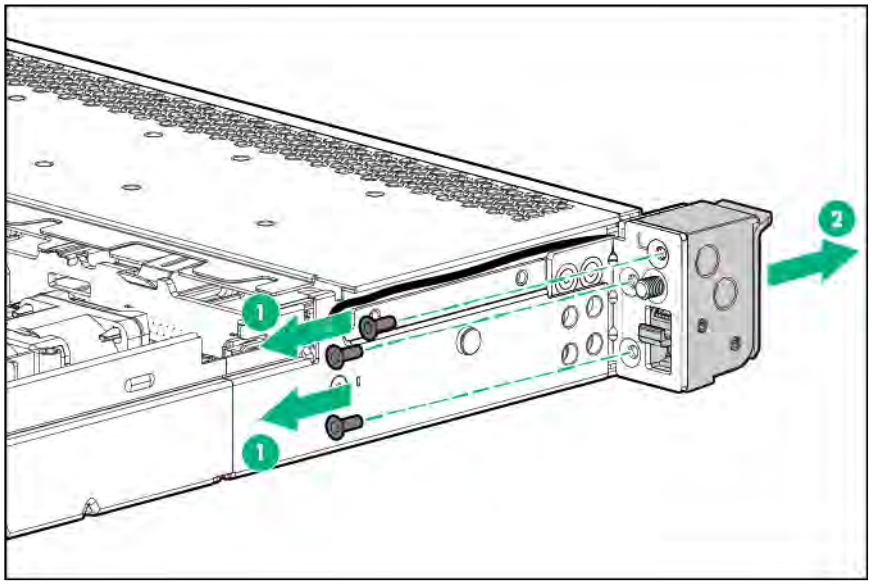
3. Do one of the following:
   - Extend the server from the rack (on page 28).
   - Remove the server from the rack (on page 28).
4. Remove the access panel ("Access panel" on page 36).
5. Remove the hot-plug fan or fan blank from fan bay 1 ("Fan module" on page 42).
6. Disconnect the discovery services cable.



7. Remove the discovery cable cover.



8. Remove the location discovery services ear.



To replace the component, reverse the removal procedure.

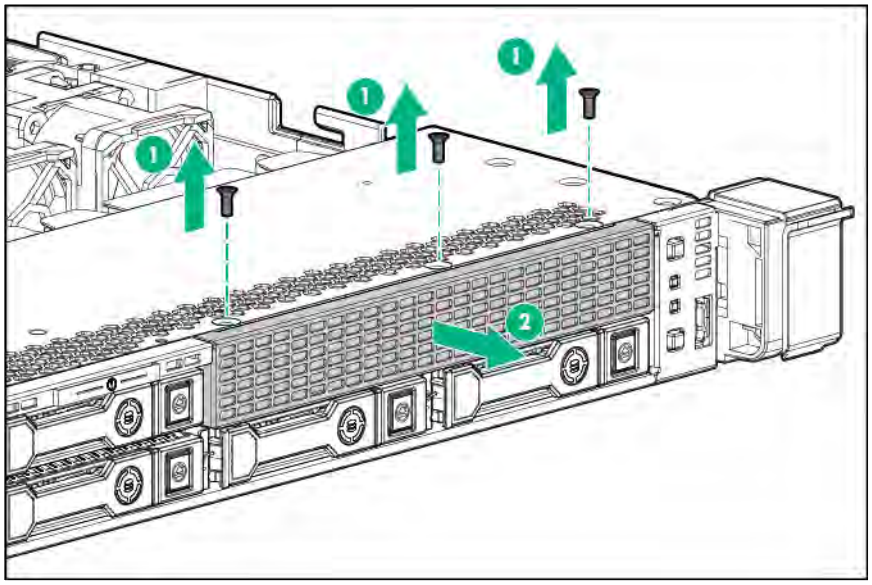
2SFF SAS/SATA drive cage assembly option

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

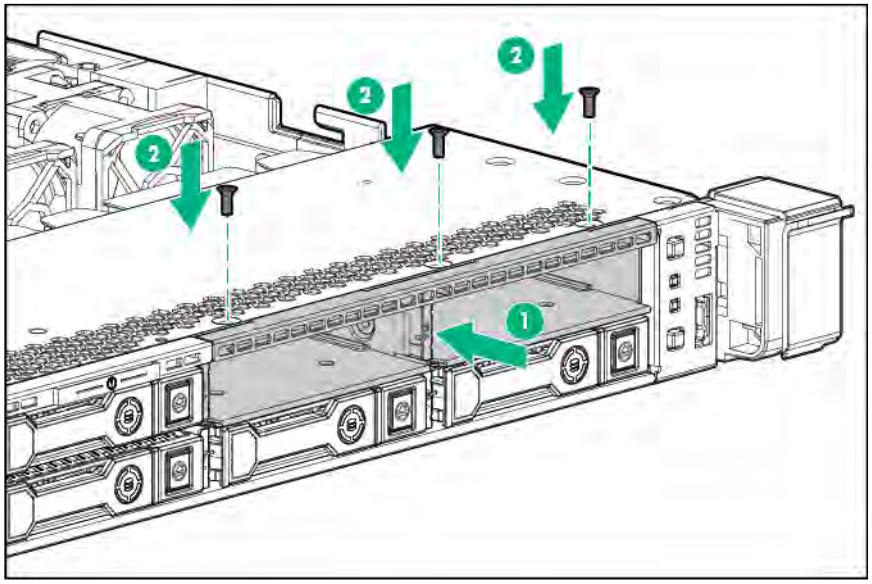
CAUTION: To prevent damage to electrical components, properly ground the server before beginning any installation procedure. Improper grounding can cause ESD.

1. Back up all server data.
2. Power down the server (on page 27).
3. Do one of the following:
   - Extend the server from the rack (on page 28).
   - Remove the server from the rack (on page 28).
4. Remove the access panel ("Access panel" on page 36).

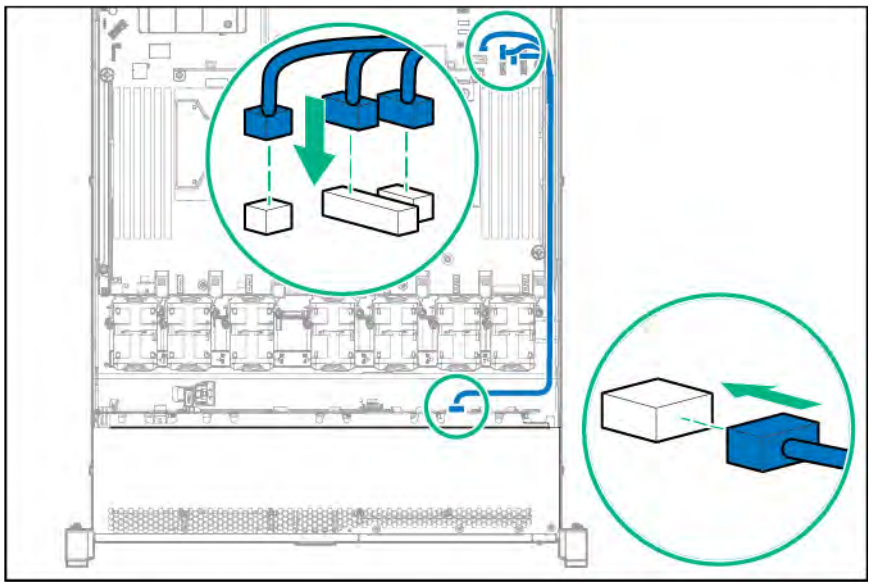
5. Remove the universal media bay blank.



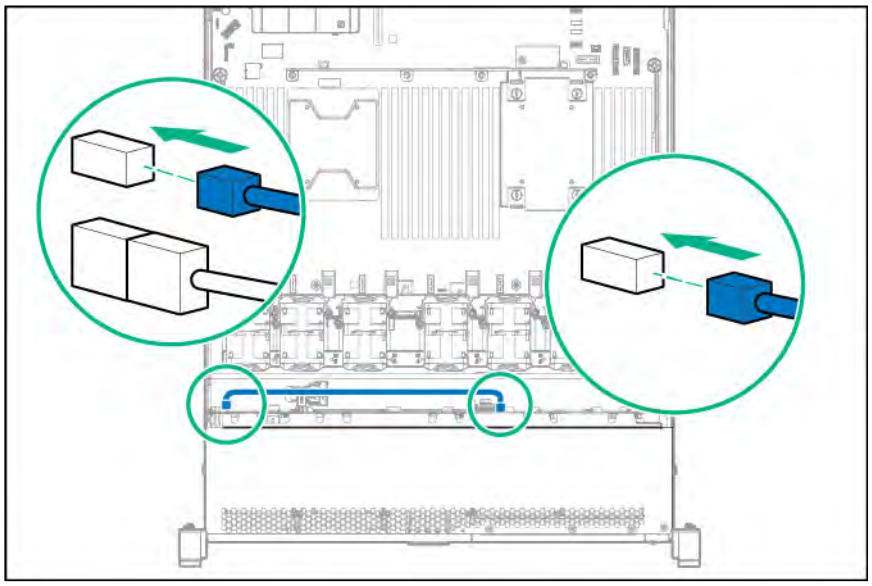
6. Install the drive cage assembly, and then tighten the three screws.



7. Connect the data cables to the SATA storage connector, the SATA optical/storage drive connector, and the backplane presence detect connector.

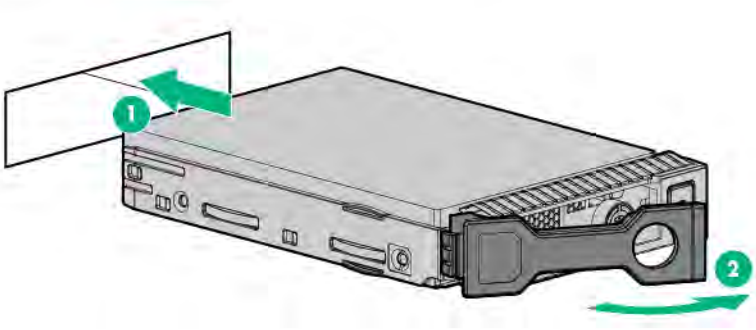


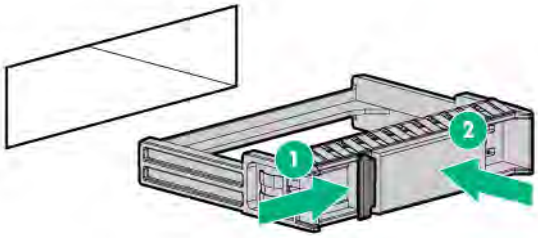
8. Connect the power cable to the left power connector on the backplane.



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

9. Install drives or blanks in the empty drive bays.





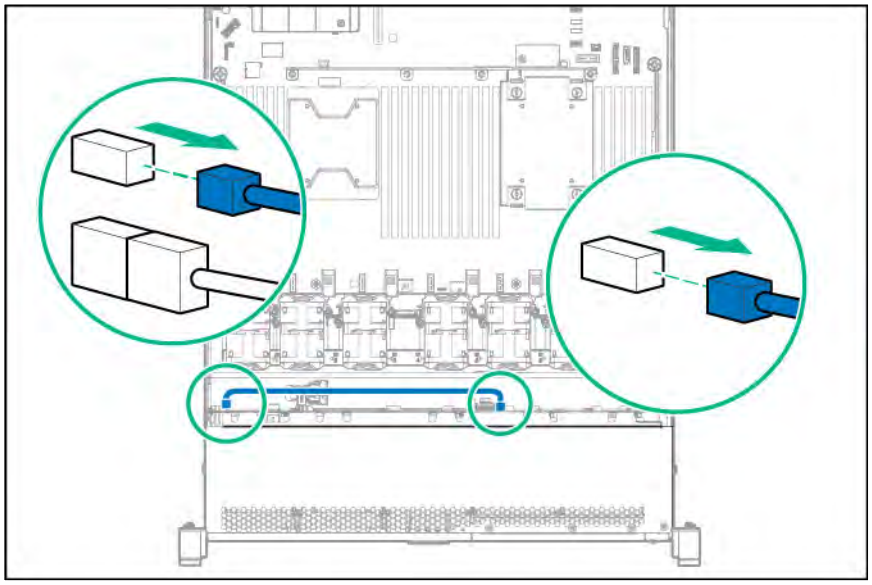
2SFF Express Bay drive backplane

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

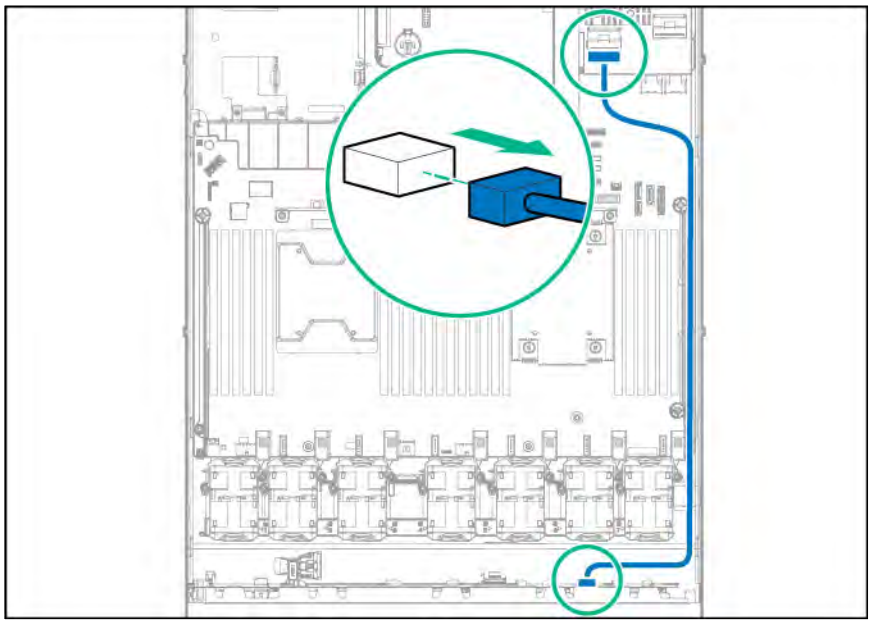
To remove the component:

1. Back up all server data.
2. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
3. Do one of the following:
   - Extend the server from the rack (on page 28).
   - Remove the server from the rack (on page 28).
4. Remove the access panel ("Access panel" on page 36).
5. Remove all drives and drive blanks.

6. Disconnect the power cable from the left power connector on the backplane.

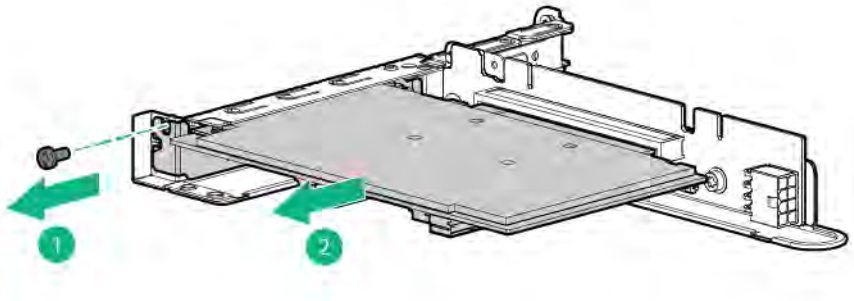


7. Disconnect the data cables on the Express bay drive cage from port 3 on the Express bay bridge card.

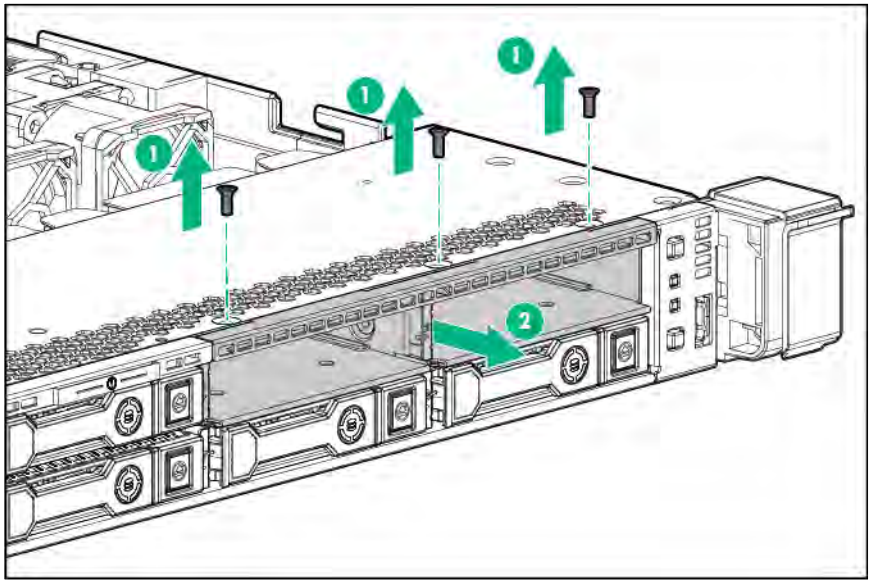


8. Remove the primary PCI riser cage ("Primary PCI riser cage" on page 36, "2SFF Express Bay drive backplane" on page 54).

9. Remove the Express bay bridge card from slot 1.



10. Loosen the three screws, then remove the drive cage assembly.



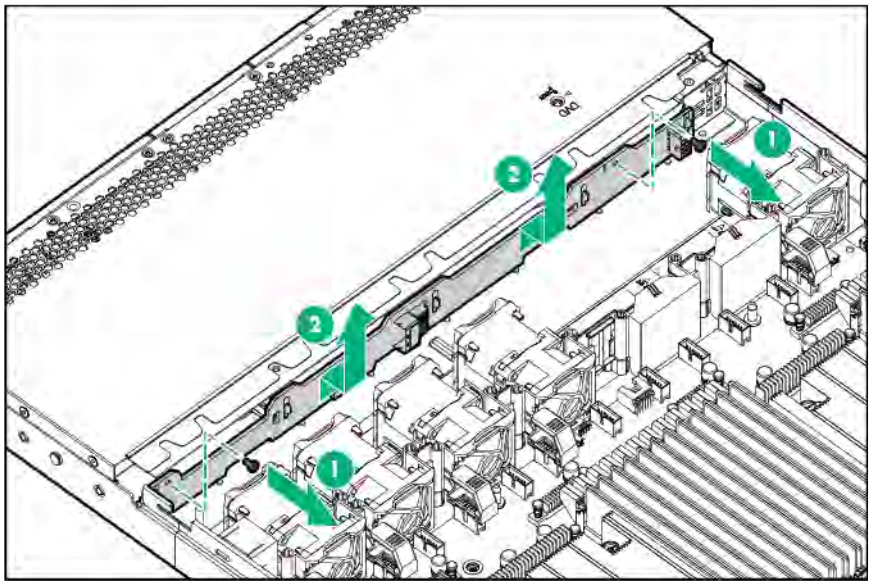
To replace the component, reverse the removal procedure.

4LFF hard drive backplane

To remove the component:

1. Power down the server (on page 27).
2. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
3. Do one of the following:
   - Extend the server from the rack (on page 28).
   - Remove the server from the rack (on page 28).
4. Remove the access panel ("Access panel" on page 36).

5. Remove all hot-plug hard drives ("Hot-plug SAS/SATA drives and SSDs" on page 32).
6. Disconnect all cables from the hard drive backplane.
7. Remove the hard drive backplane.



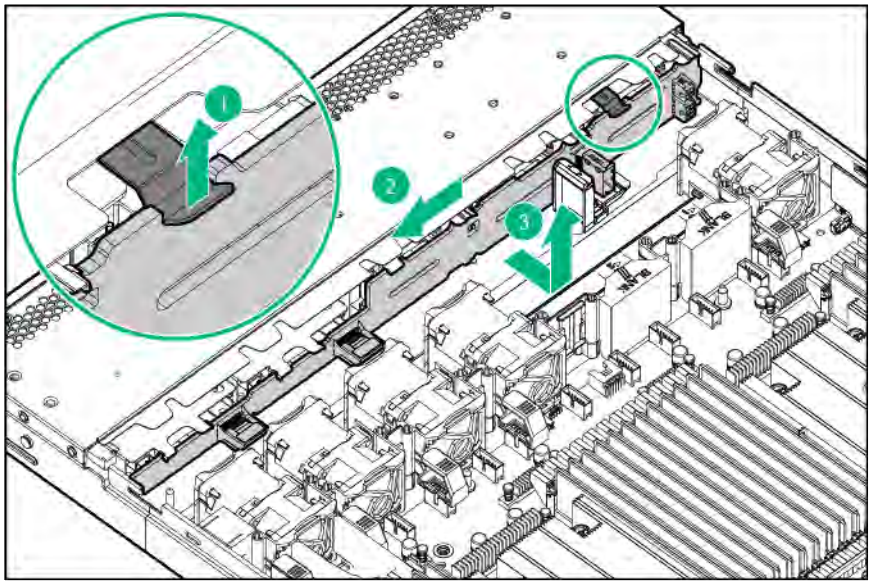
To replace the component, reverse the removal procedure.

8SFF hard drive backplane

To remove the component:

1. Power down the server (on page 27).
2. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
3. Do one of the following:
   - Extend the server from the rack (on page 28).
   - Remove the server from the rack (on page 28).
4. Remove the access panel ("Access panel" on page 36).
5. Remove all hot-plug hard drives ("Hot-plug SAS/SATA drives and SSDs" on page 32).
6. Disconnect all cables from the hard drive backplane.

7. Remove the hard drive backplane.



To replace the component, reverse the removal procedure.

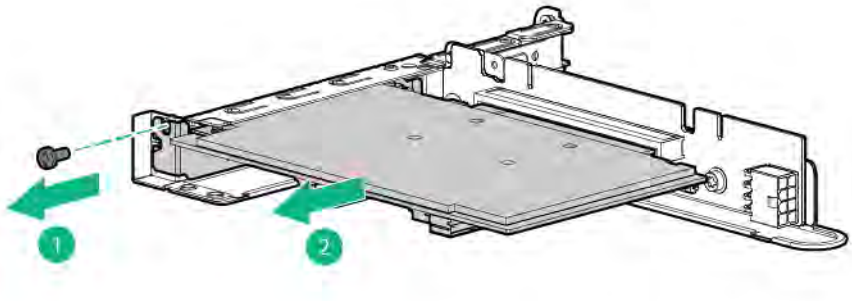
10SFF (6 NVMe + 4 SAS/SATA) Express Bay drive backplane

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

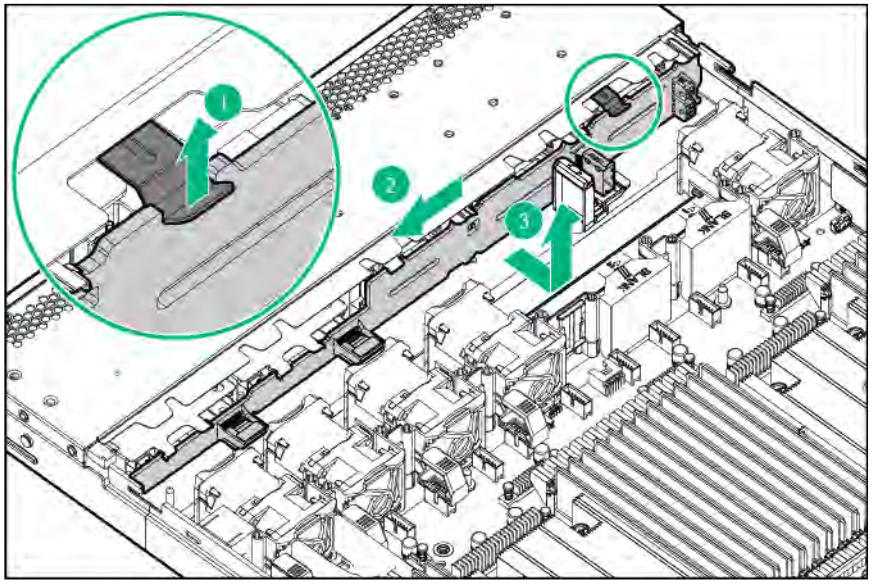
To remove the component:

1. Back up all server data.
2. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
3. Do one of the following:
   - Extend the server from the rack (on page 28).
   - Remove the server from the rack (on page 28).
4. Remove the access panel ("Access panel" on page 36).
5. Remove all drives and drive blanks.
6. Disconnect all power and data cables from the drive backplane.
7. Remove the primary PCIe riser cage ("Primary PCI riser cage" on page 36, "2SFF Express Bay drive backplane" on page 54).

8. Remove the Express bay bridge card from slot 1.



9. Remove the 8SFF Express Bay drive backplane.



10. Remove the 2SFF Express Bay drive backplane ("2SFF Express Bay drive backplane" on page 54).

To replace the component, reverse the removal procedure.

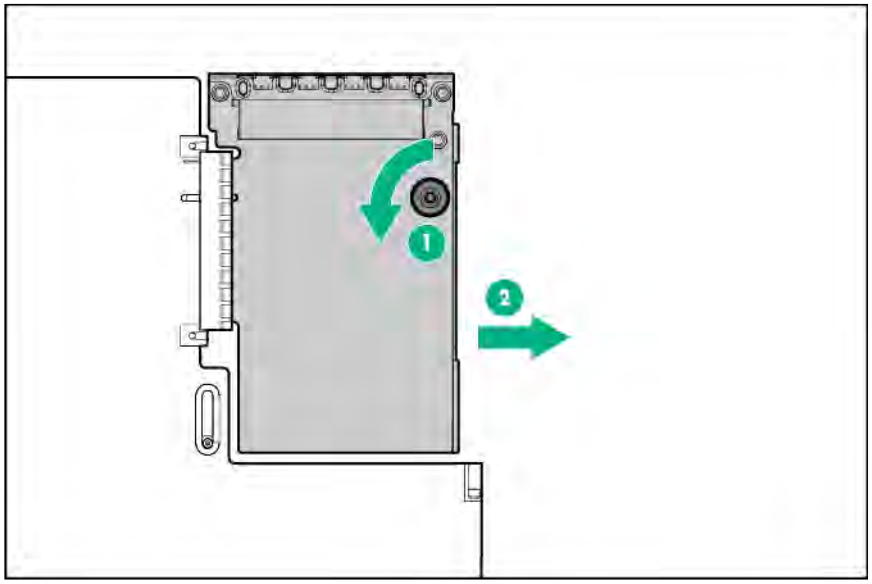
FlexibleLOM

To remove the component:

1. Power down the server (on page 27).
2. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
3. Disconnect the LAN segment cables.
4. Do one of the following:
   - Extend the server from the rack (on page 28).

- Remove the server from the rack (on page 28).

5. Remove the FlexibleLOM.



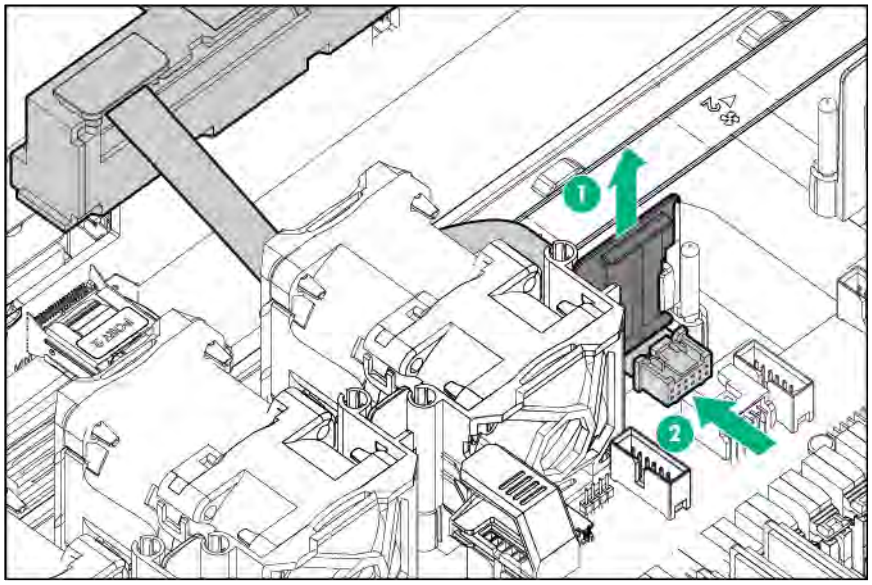
To replace the component, reverse the removal procedure.

Smart Storage Battery

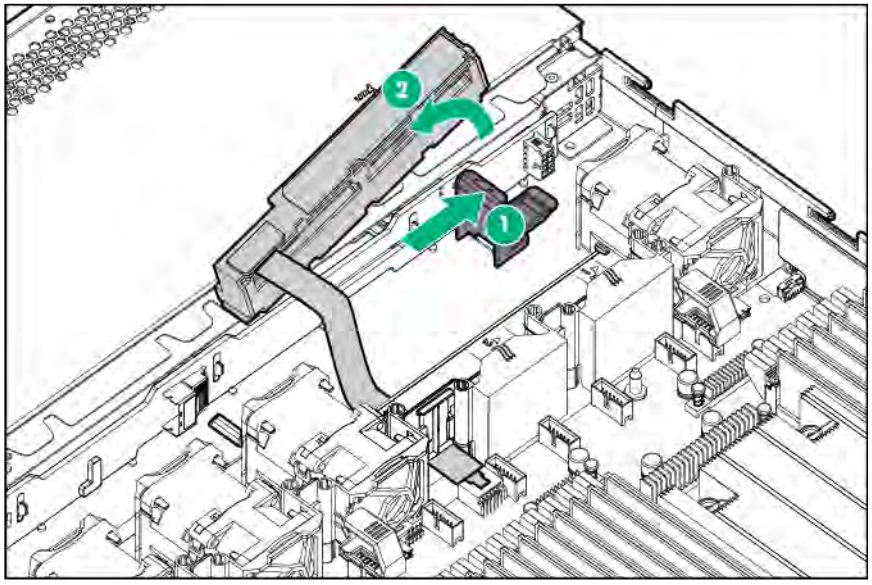
To remove the component:

1. Power down the server (on page 27).
2. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
3. Do one of the following:
   - Extend the server from the rack (on page 28).
   - Remove the server from the rack (on page 28).
4. Remove the access panel ("Access panel" on page 36).

5. Disconnect the Smart Storage Battery cable.



6. Remove the Smart Storage Battery.



To replace the component, reverse the removal procedure.

Expansion boards

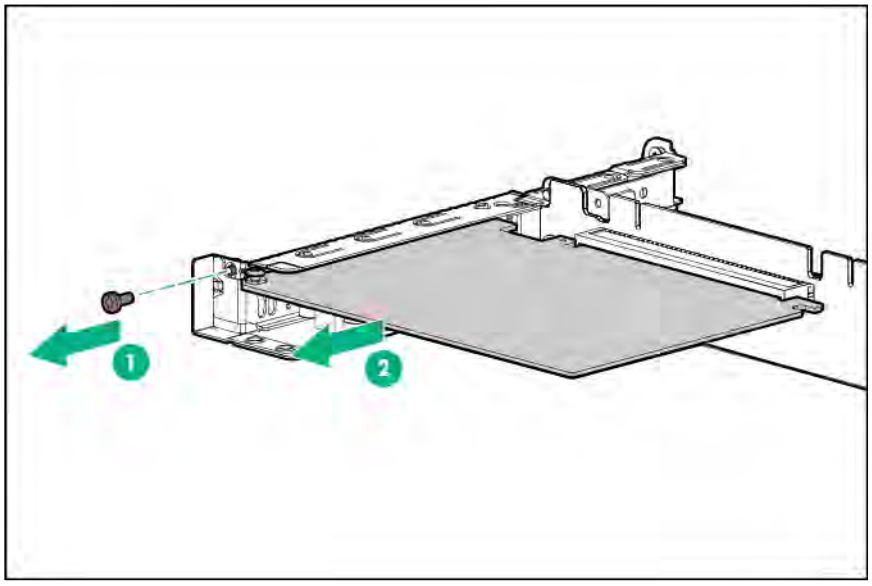
Expansion boards supported with this server include any board installed in the PCIe riser board assembly, controllers, and the Express Bay bridge card.

To remove the component:

1. Power down the server (on page 27).
2. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
3. Do one of the following:
   - Extend the server from the rack (on page 28).

- Remove the server from the rack (on page 28).

4. Remove the access panel ("Access panel" on page 36).
5. Remove the PCIe riser cage ("Primary PCI riser cage" on page 36).
6. Remove the expansion board.



To replace the component, reverse the removal procedure.

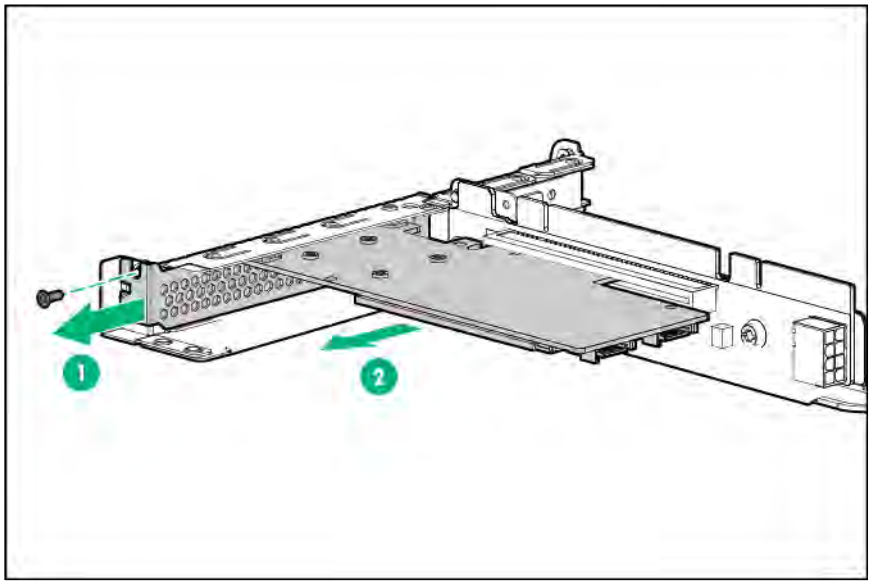
If you are not replacing the expansion board, install the screw back into the PCIe riser cage before installing the PCIe riser cage back into the server.

M.2 SSD enablement board

To remove the component:

1. Power down the server (on page 27).
2. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
3. Do one of the following:
   - Extend the server from the rack (on page 28).
   - Remove the server from the rack (on page 28).
4. Remove the access panel ("Access panel" on page 36).
5. Remove the PCIe riser cage ("Primary PCI riser cage" on page 36).
6. Disconnect the M.2 SSD cables from the M.2 enablement boards. For more information, see "M.2 SSD Enablement Board option cabling (on page 108)."

7. Remove the M.2 SSD enablement board.



To replace the component, reverse the removal procedure.

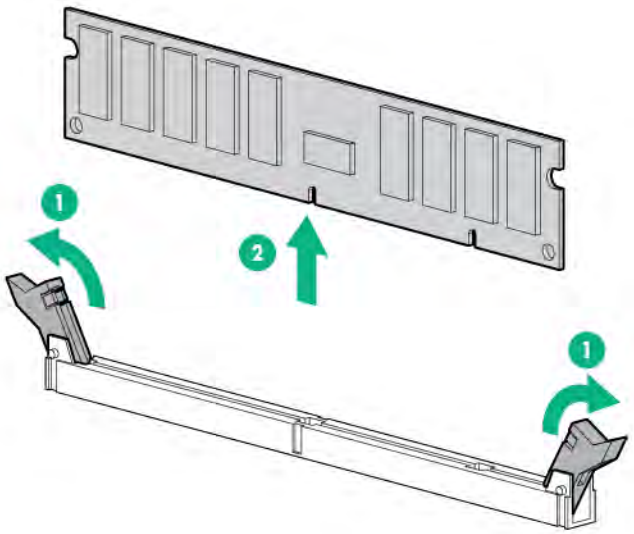
If you are not replacing the enablement board, install the screw and the PCIe blank into the PCIe riser cage before installing the PCIe riser cage back into the server.

DIMMs

To remove the component:

1. Power down the server (on page 27).
2. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
3. Do one of the following:
   - Extend the server from the rack (on page 28).
   - Remove the server from the rack (on page 28).
4. Remove the access panel ("Access panel" on page 36).

5. Remove the DIMM.



To replace the component, reverse the removal procedure.

Removing and replacing an NVDIMM

CAUTION: Do not remove an NVDIMM when any LEDs on any NVDIMM in the system are illuminated. Removing an NVDIMM when an LED is illuminated might cause a loss of data.

CAUTION: Electrostatic discharge can damage electronic components. Be sure you are properly grounded before beginning this procedure.

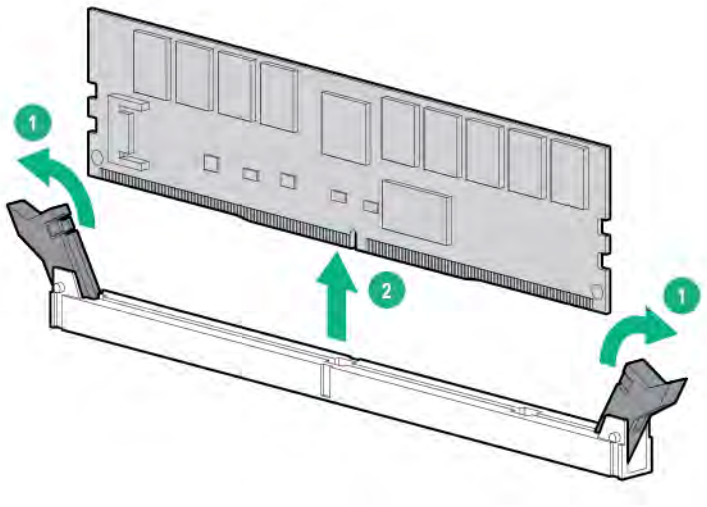
CAUTION: Failure to properly handle DIMMs can cause damage to DIMM components and the system board connector.

Before handling or installing the DIMMs, see the "DIMM handling guidelines."

For server-specific procedures, see the server user guide on the Hewlett Packard Enterprise website (**http://www.hpe.com/info/proliantgen9/docs**).

1. Sanitize/erase any NVDIMMs being removed or relocated as necessary. For more information, see "NVDIMM relocation guidelines (on page 67)."
2. Power down the server (on page 27).
3. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
4. Do one of the following:
   - Extend the server from the rack (on page 28).
   a. Remove the server from the rack (on page 28).
5. Remove the access panel ("Access panel" on page 36).
6. Observe the NVDIMM LEDs. Do not remove an NVDIMM when any NVDIMM LED in the system is illuminated. For more information, see "NVDIMM LEDs (on page 93)."

7. Remove the NVDIMM-N.



To replace the component, reverse the removal procedure.

NVDIMM sanitization

Media sanitization is defined by NIST SP800-88 *Guidelines for Media Sanitization* (Rev 1, Dec 2014) as "a general term referring to the actions taken to render data written on media unrecoverable by both ordinary and extraordinary means."

The specification defines the following levels:

- Clear — Overwrite user-addressable storage space using standard write commands; might not sanitize data in areas not currently user-addressable (such as bad blocks and overprovisioned areas)
- Purge — Overwrite or erase all storage space that might have been used to store data using dedicated device sanitize commands, such that data retrieval is "infeasible using state of the art laboratory techniques"
- Destroy — Ensure that data retrieval is "infeasible using state of the art laboratory techniques" and render the media unable to store data (such as disintegrate, pulverize, melt, incinerate, or shred)

The NVDIMM-N Sanitize options are intended to meet the Purge level.

For more information about configuring the Sanitize/Erase settings, see "Setting the NVDIMM-N Sanitize/Erase on Next Reboot Policy (on page 66)."

NIST SP800-88 *Guidelines for Media Sanitization* (Rev 1, Dec 2014) is available for download from the NIST website (**http://nvlpubs.nist.gov/nistpubs/SpecialPublications/NIST.SP.800-88r1.pdf**).

NVDIMM sanitize policies

The System Utilities menu item for NVDIMM-N Sanitize/Erase on Next Reboot policy provides the following options:

- Sanitize/Erase and Boot to Operating System — Use this policy for the following scenarios:
  - After adding a new NVDIMM-N to a system
  - If an NVDIMM-N was mapped out due to errors and you want to use the NVDIMM again (for example, you removed an NVDIMM-N while the LEDs were still illuminated, causing backup errors)
  - After moving NVDIMM-Ns previously used in another system to a new system (unless everything is an exact match)

- Sanitize/Erase and Power System Off — Use this policy for the following scenarios:
  - Decommissioning an NVDIMM-N
  - Recommissioning an NVDIMM-N (move to another server with no requirement to preserve the data)
  - Before returning the NVDIMM-N to Hewlett Packard Enterprise (service replacement)
- Sanitize/Erase and Boot to System Utilities — Use this policy to change any BIOS/Platform Configuration (RBSU) setting that results in the data on the NVDIMM-N no longer being interpreted the same way. Examples include NVDIMM-N Memory Interleaving and QPI Snoop Configuration of cluster-on-die.

After selecting a sanitize policy and one or more NVDIMM-Ns to sanitize, the system upgrades all warm reset requests into cold resets. The first cold reset:

1. Flushes any write data still pending in processor write buffers to DRAM.
2. Maps out the NVDIMM-Ns.
3. Sends the sanitize command to the NVDIMM-Ns.

For Sanitize/Erase and Power System Off, the system powers off after completing the Sanitize commands. For Sanitize/Erase and Boot to Operating System or Sanitize/Erase and Boot to System Utilities, the system performs another cold reset to map in the NVDIMM-Ns again.

For more information about configuring the Sanitize/Erase settings, see "Setting the NVDIMM-N Sanitize/Erase on Next Reboot Policy (on page 66)."

NVDIMM sanitization guidelines

NVDIMM sanitization is required in the following scenarios:

- When a new NVDIMM-N is added to the system, you must sanitize all NVDIMM-Ns in the system before the NVDIMM-Ns can be used.
- When an NVDIMM-N is removed from the system and NVDIMM-N Memory Interleaving is set to **Enabled**, you must sanitize all the NVDIMM-Ns connected to a processor from which the NVDIMM-N was removed before the NVDIMM-Ns can be used.
- When a previously used NVDIMM-N is added to the system, you must sanitize all the NVDIMM-Ns in the system before the NVDIMM-Ns can be used.
- When any of the following settings are changed, you must sanitize all the NVDIMM-Ns in the system before the NVDIMM-Ns can be used:
  - Channel Interleaving
  - NVDIMM-N Memory Interleaving
  - QPI Snoop Configuration
- When NVDIMM-Ns used in one model of HPE ProLiant server are moved to another model of HPE ProLiant server, you must sanitize the NVDIMM-Ns before the NVDIMM-Ns can be used.

NVDIMM sanitization might not be required if the following are true:

- The NVDIMM-N was already in use in another server that matches the new server in both hardware and System Utilities settings.
- The NVDIMM-N is installed in the new server in the same DIMM slot as in the original server.

Setting the NVDIMM-N Sanitize/Erase on Next Reboot Policy

1. From the System Utilities screen, select **System Configuration** → **BIOS/Platform Configuration (RBSU)** → **System Options** → **Memory Operations** → **NVDIMM Memory Options**.
2. Select **NVDIMM-N Sanitize/Erase on Next Reboot Policy**.

The following alert is displayed.

IMPORTANT: Sanitizing/Erasing an NVDIMM-N will result in the loss of ALL user data saved in the NVDIMM-N. It is strongly recommended that manual backup of all user data in the NVDIMM-N(s) be performed before sanitizing/erasing the NVDIMM-N(s).

3. Press any key to proceed.
4. Select one of the following menu items:
   - **Sanitize/Erase and Boot to Operating System**
   - **Sanitize/Erase and Power System Off**
   - **Sanitize/Erase and Boot to System Utilities**

   For more information about the menu items above, see "NVDIMM sanitize policies (on page 65)."
5. Select one of the following menu items based on the NVDIMM-Ns to be sanitized/erased:
   - **Sanitize/Erase all NVDIMM-N in the System** — Use this option for major system reconfigurations.
   - **Sanitize/Erase all NVDIMM-N on Processor 1** — Use this option when all the NVDIMM-Ns on a processor must be sanitized together, such as when enabling NVDIMM-N Memory Interleaving.
   - **Sanitize/Erase Processor 1 DIMM X** — This option is available only when NVDIMM-N Memory Interleaving is disabled. Use this option for adding individual NVDIMM-Ns, or for using an NVDIMM-N again after errors occur.
   - **Sanitize/Erase all NVDIMM-N on Processor 2** — Use this option when all the NVDIMM-Ns on a processor must be sanitized together, such as when enabling NVDIMM-N Memory Interleaving.
   - **Sanitize/Erase Processor 2 DIMM X** — This option is available only when NVDIMM-N Memory Interleaving is disabled. Use this option for adding individual NVDIMM-Ns, or for using an NVDIMM-N again after errors occur.

   When enabled, all user data in the selected NVDIMM-N is erased on the next reboot. The Sanitize NVDIMM-N scope selections are available only after a sanitize policy is selected.
6. Press the **F10** key to save the changes.
7. Reboot the server.

The server will reboot multiple times as part of the sanitize process. POST messages will also display to indicate the NVDIMM-Ns that are being sanitized.

NVDIMM relocation guidelines

When relocating NVDIMM-Ns to another DIMM slot on the server or to another server, observe the following guidelines:

- If data on the NVDIMM-N or set of NVDIMM-Ns must be preserved, then observe the following requirements:
  - The destination server hardware must match the original server hardware.
  - All System Utilities settings must match the original System Utilities settings.
  - All NVDIMM-Ns are installed in the same locations as in the original server.

    This guideline would apply when replacing a system board due to system failure.
- If data on the NVDIMM-N or set of NVDIMM-Ns does not have to be preserved, then move the NVDIMM-Ns to the new location and sanitize all NVDIMM-Ns after installing them to the new location. For more information, see "NVDIMM sanitization (on page 65)."
- Observe all population guidelines. For more information, see "General DIMM and NVDIMM-N slot population guidelines."

- Observe the process for removing an NVDIMM. For more information, see "Removing an NVDIMM ("Removing and replacing an NVDIMM" on page 64)."
- Observe the process for installing an NVDIMM. For more information, see "Installing an NVDIMM."
- Review and configure the system settings for NVDIMMs. For more information, see "Configuring NVDIMM Memory Options."

Heatsink

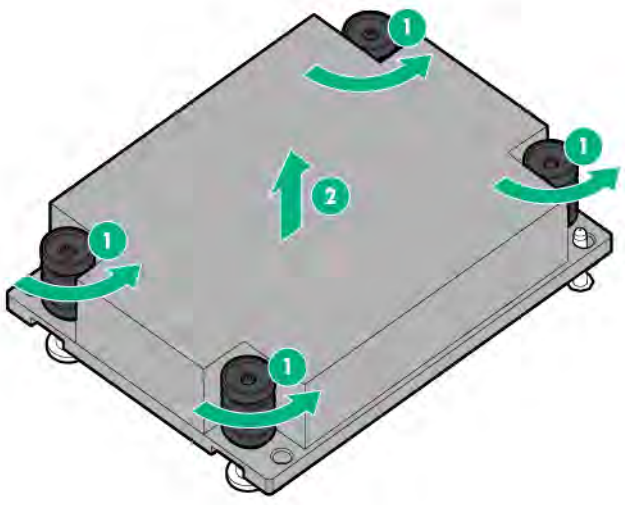
WARNING: To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

CAUTION: The heatsink thermal interface media is not reusable and must be replaced if the heatsink is removed from the processor after it has been installed.

CAUTION: To avoid thermal shutdown, all fans must be installed in a dual processor configuration.

To remove the component:

1. Power down the server (on page 27).
2. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
3. Do one of the following:
   - Extend the server from the rack (on page 28).
   - Remove the server from the rack (on page 28).
4. Remove the access panel ("Access panel" on page 36).
5. Remove the heatsink.



To replace the component, reverse the removal procedure.

High-performance heatsink

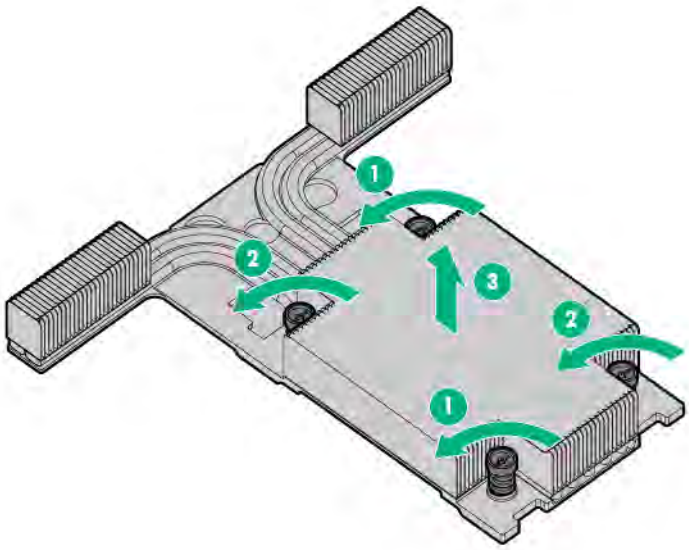
WARNING: To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

CAUTION: The heatsink thermal interface media is not reusable and must be replaced if the heatsink is removed from the processor after it has been installed.

CAUTION: To avoid thermal shutdown, all fans must be installed in a dual processor configuration.

To remove the component:

1. Power down the server (on page 27).
2. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
3. Do one of the following:
   - Extend the server from the rack (on page 28).
   - Remove the server from the rack (on page 28).
4. Remove the access panel ("Access panel" on page 36).
5. Remove the heatsink.



To replace the component, reverse the removal procedure.

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 prevent possible server malfunction, do not mix processors of different speeds or cache sizes. Refer to the label on the processor heatsink for a description of the processor.

CAUTION: To prevent possible server overheating, always populate each processor socket with a processor socket cover and a heatsink blank or a processor and a heatsink.

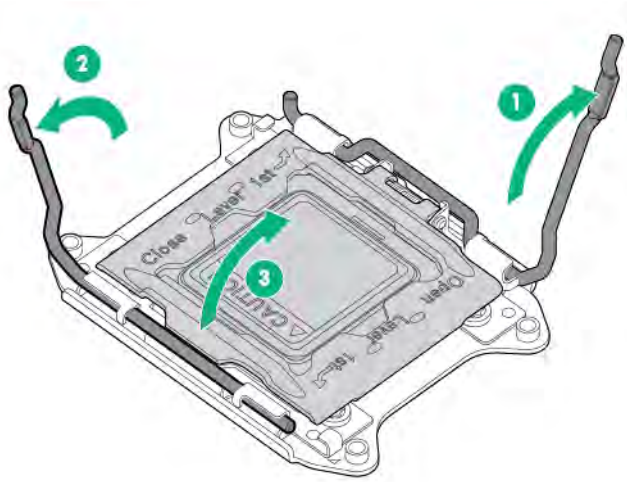
IMPORTANT: Processor socket 1 must always be populated. If processor socket 1 is empty, the server does not power up.

Depending on the memory configuration and processor model, the memory speed may run at 1600MHz, 1866MHz, or 2133MHz.

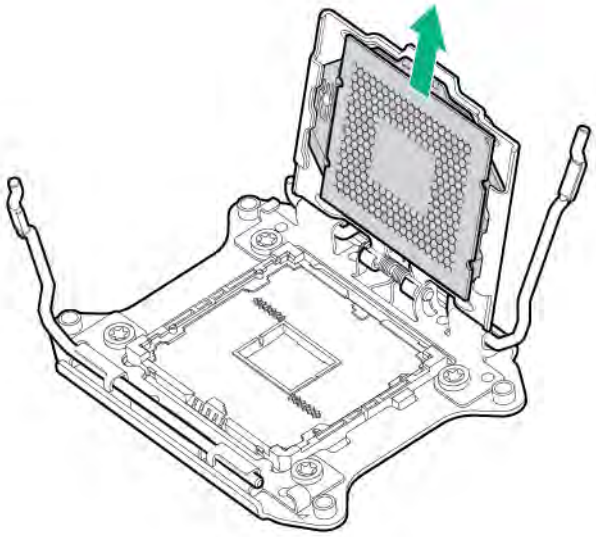
To remove the component:

1. Update the system ROM.

   Locate and download the latest ROM version from the Hewlett Packard Enterprise website (**http://www.hpe.com/support**). Follow the instructions on the website to update the system ROM.
2. Power down the server (on page 27).
3. Do one of the following:
   - Extend the server from the rack (on page 28).
   - Remove the server from the rack (on page 28).
4. Remove the access panel ("Access panel" on page 36).
5. Remove the heatsink ("Heatsink" on page 68).
6. Open each of the processor locking levers in the order indicated, and then open the processor retaining bracket.



7. Remove the processor from the processor retaining bracket.

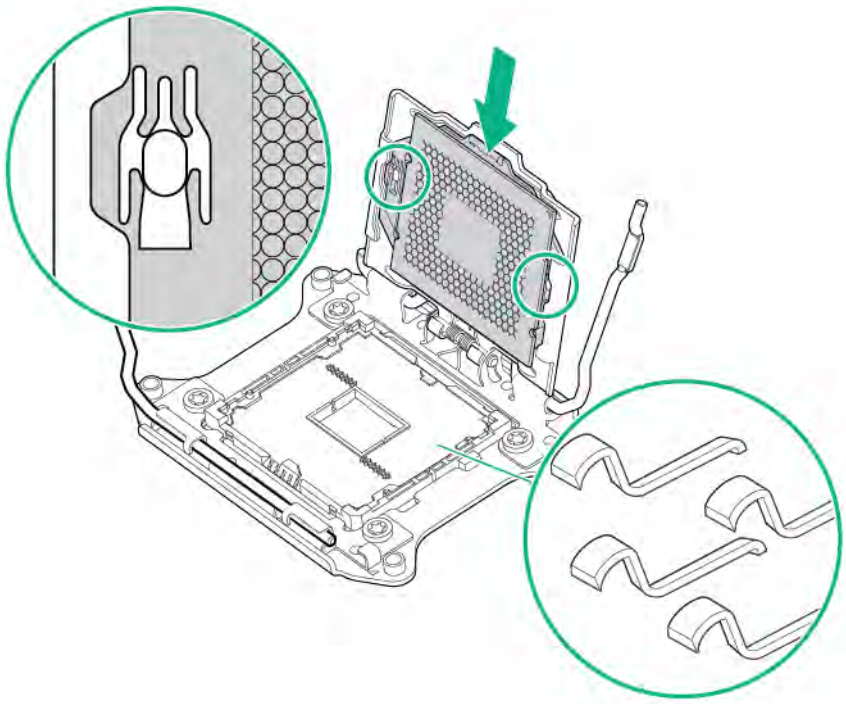


△ **CAUTION:** To avoid damage to the processor, do not touch the bottom of the processor, especially the contact area.

To replace the component:

△ **CAUTION:** To avoid damage to the system board, processor socket, and screws, do not overtighten the heatsink screws.

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**.

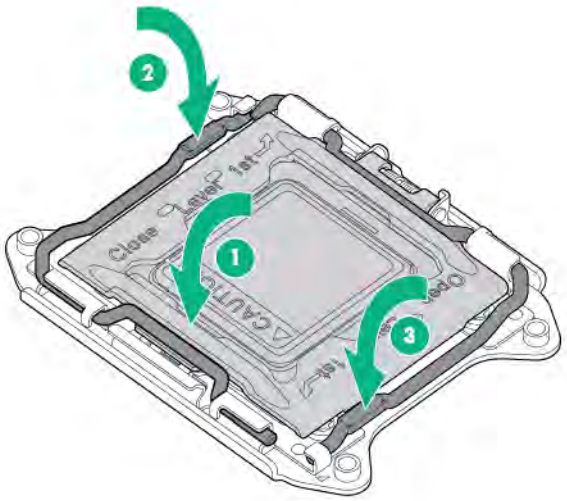


△ **CAUTION: THE PINS ON THE SYSTEM BOARD ARE VERY FRAGILE AND EASILY DAMAGED.** To avoid damage to the system board, do not touch the processor or the processor socket contacts.

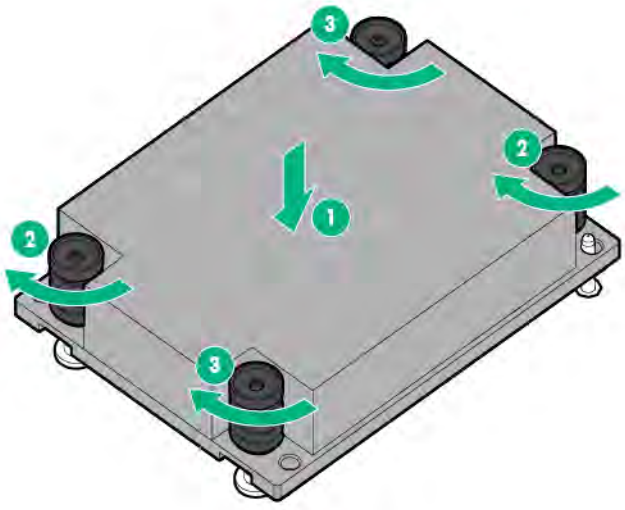
2. Close the processor retaining bracket. When the processor is installed properly inside the processor retaining bracket, the processor retaining bracket clears the flange on the front of the socket.

△ **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.

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. Align and install the heatsink.



5. Install the access panel.

System battery

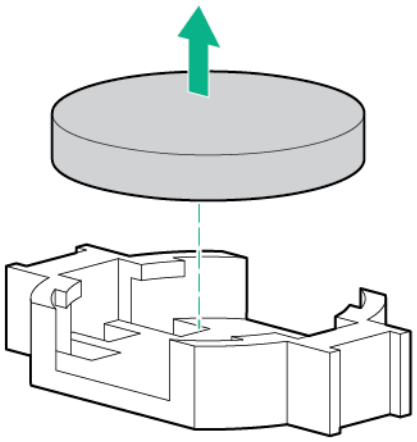
If the server no longer automatically displays the correct date and time, you may need to replace the battery that provides power to the real-time clock.

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.

To remove the component:

1. Power down the server (on page 27).
2. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
3. Do one of the following:
   - Extend the server from the rack (on page 28).
   - Remove the server from the rack (on page 28).
4. Remove the access panel ("Access panel" on page 36).
5. Locate the battery ("System board components" on page 91).
6. Remove the battery.



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.

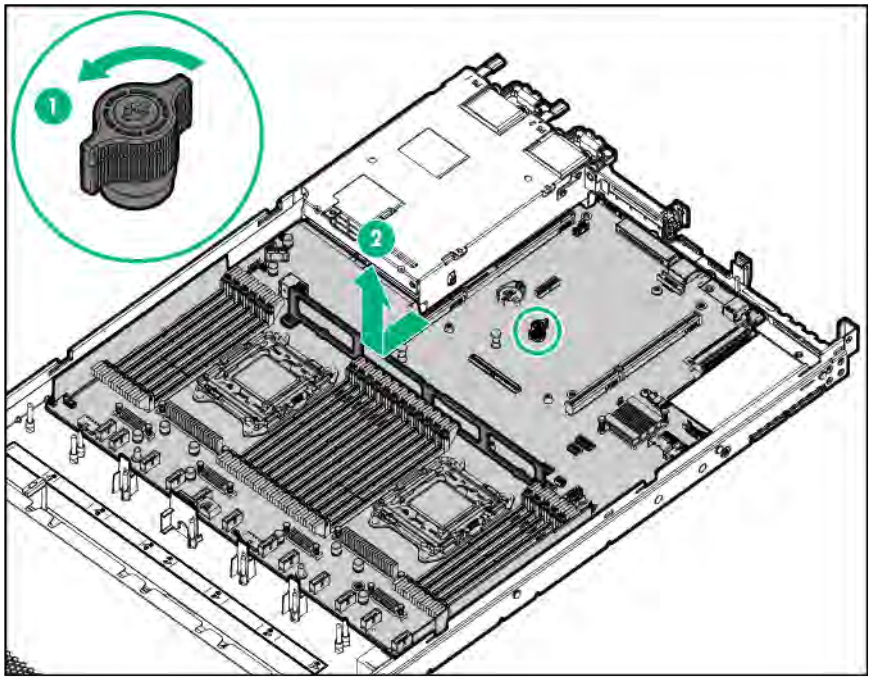
System board

To remove the component:

1. Power down the server (on page 27).
2. Remove all power:

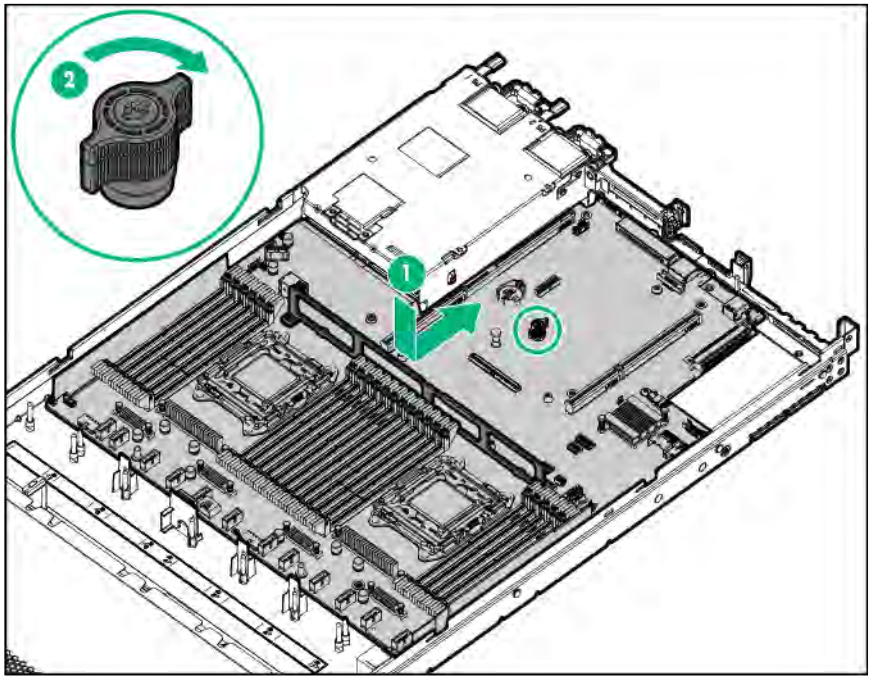
a. Disconnect each power cord from the power source.
b. Disconnect each power cord from the server.

3. Do one of the following:
   - Extend the server from the rack (on page 28).
   - Remove the server from the rack (on page 28).
4. Remove all power supplies ("AC power supply" on page 34).
5. Remove the access panel ("Access panel" on page 36).
6. Remove the PCIe riser cage ("Primary PCI riser cage" on page 36).
7. If installed, remove the secondary PCIe riser cage ("Secondary PCI riser cage" on page 38).
8. Remove the fan module.
9. Remove the fan blanks.
10. Remove the FlexibleLOM ("FlexibleLOM" on page 59).
11. Remove all DIMMs ("DIMMs" on page 63).
12. Disconnect all cables connected to the system board.
13. Remove the heatsink ("Heatsink" on page 68).
14. Remove the processor ("Processor" on page 69).
15. Loosen the system board thumbscrews.
16. Remove the system board, using the handle to lift it out of the chassis.

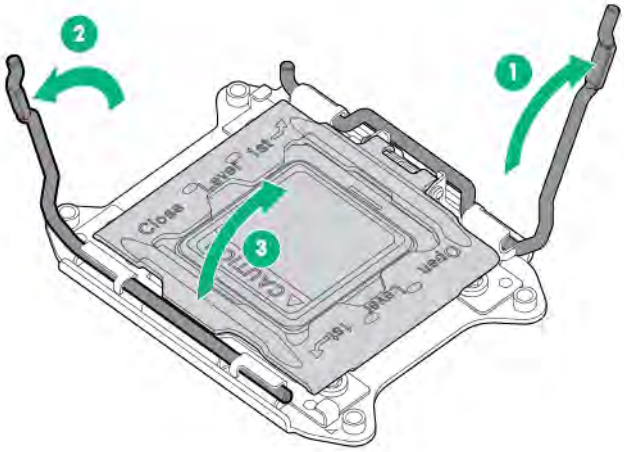


To replace the component:

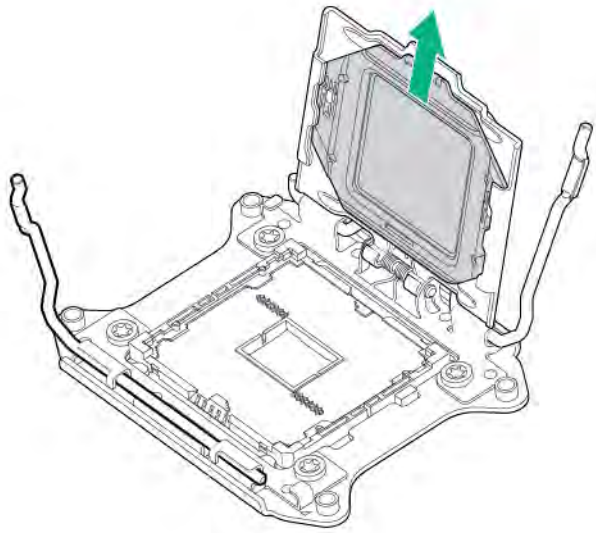
1. Install the spare system board.



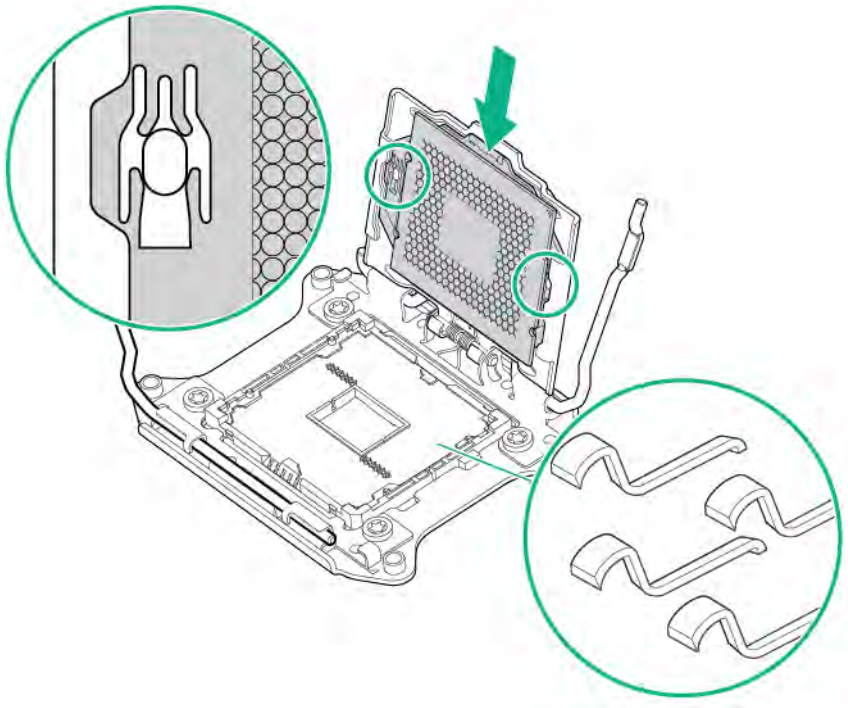
2. Open each of the processor locking levers in the order indicated, and then open the processor retaining bracket.



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.**

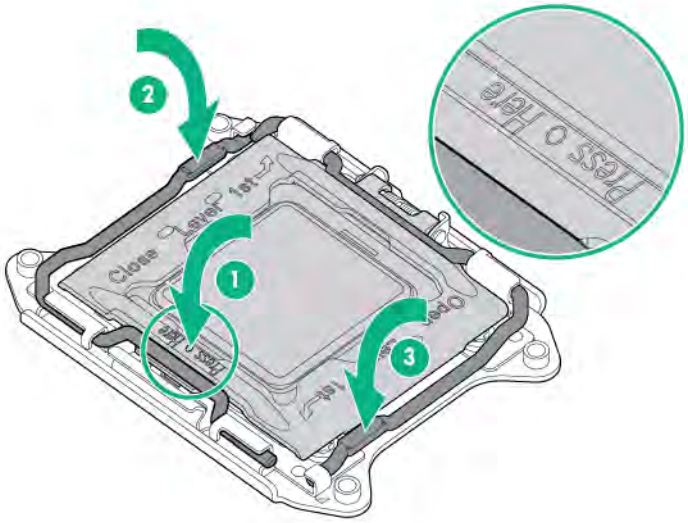


△ **CAUTION:** Do not press down on the processor. Pressing down on the processor might damage the processor socket and the system board. Press only in the area indicated on the processor retaining bracket.

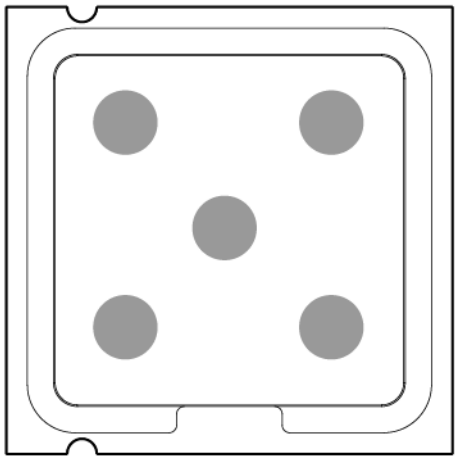
△ **CAUTION:** Close and hold down the processor cover socket while closing the processor locking levers. The levers should close without resistance. Forcing the levers closed can damage the processor and socket, requiring system board replacement.

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.

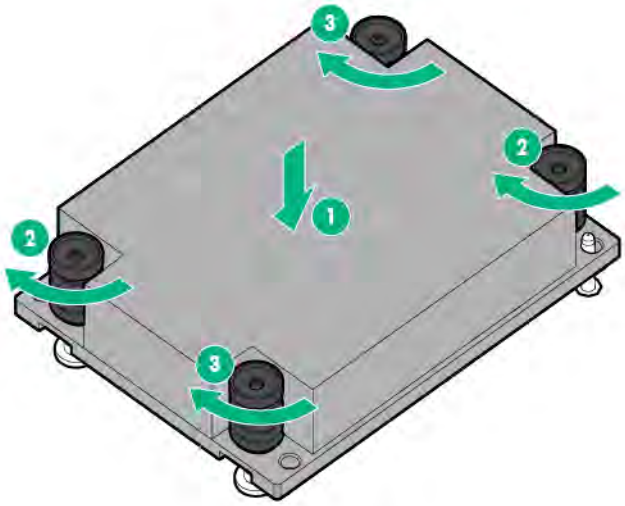
6. Press and hold the processor retaining bracket in place, and then close each processor locking lever. Press only in the area indicated on the processor retaining bracket.



7. Install the processor socket cover on the failed system board.
8. Clean the old thermal grease from the heatsink and the top of the processor with the alcohol swab. Allow the alcohol to evaporate before continuing.
9. Apply all the grease to the top of the processor in the following pattern to ensure even distribution.



10. Install the heatsink.



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

11. Install all components removed from the failed system board.
12. Install the access panel.
13. Install the power supplies ("AC power supply" on page 34).
14. Power up the server.

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

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

   The following message appears:

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

   The following warning appears:

   ```
   Warning: The Product ID should ONLY be modified by qualified service
   personnel. This value should always match the Product ID located on the
   chassis.
   ```
7. Enter the product ID and press the **Enter** key.
8. To confirm exiting System Utilities, press the **F10** key.
9. The server automatically reboots.

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 (**http://www.hpe.com/support/Gen9_TSG_en**)
- French (**http://www.hpe.com/support/Gen9_TSG_fr**)
- Spanish (**http://www.hpe.com/support/Gen9_TSG_es**)
- German (**http://www.hpe.com/support/Gen9_TSG_de**)
- Japanese (**http://www.hpe.com/support/Gen9_TSG_ja**)
- Simplified Chinese (**http://www.hpe.com/support/Gen9_TSG_zh_cn**)

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 (**http://www.hpe.com/support/Gen9_EMG_en**)
- French (**http://www.hpe.com/support/Gen9_EMG_fr**)
- Spanish (**http://www.hpe.com/support/Gen9_EMG_es**)
- German (**http://www.hpe.com/support/Gen9_EMG_de**)
- Japanese (**http://www.hpe.com/support/Gen9_EMG_ja**)
- Simplified Chinese (**http://www.hpe.com/support/Gen9_EMG_zh_cn**)

Diagnostic tools

Product QuickSpecs

For more information about product features, specifications, options, configurations, and compatibility, see the product QuickSpecs on the Hewlett Packard Enterprise website (**http://www.hpe.com/info/qs**).

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 (**http://www.hpe.com/servers/spp/download**). 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 (**http://www.hpe.com/info/ilo/docs**)
- *Intelligent Provisioning User Guide* on the Hewlett Packard Enterprise website (**http://www.hpe.com/info/intelligentprovisioning/docs**)

HPE iLO

iLO is a remote server management processor embedded on the system boards of HPE ProLiant and Synergy servers. iLO enables the monitoring and controlling of servers from remote locations. HPE iLO management is a powerful tool that provides multiple ways to configure, update, monitor, and repair servers remotely. iLO (Standard) comes preconfigured on HPE servers **without an additional cost or license**.

Features that enhance server administrator productivity are licensed. For more information, see the HPE iLO 4 documentation on the Hewlett Packard Enterprise website (**http://www.hpe.com/info/ilo-docs**).

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 (**http://www.hpe.com/info/ilo/docs**).
- *ProLiant Gen9 Troubleshooting Guide, Volume I: Troubleshooting* — See "Troubleshooting Resources (on page 80)."

Integrated Management Log

The IML records hundreds of events and stores them in an easy-to-view form. The IML timestamps each event with 1-minute granularity.

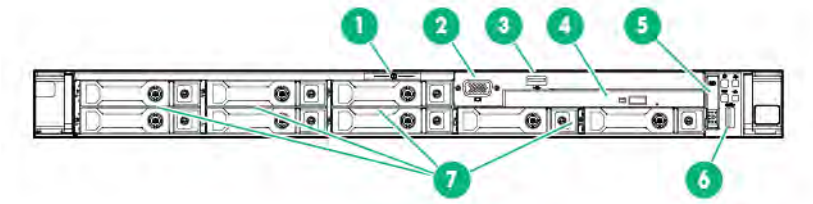
You can view recorded events in the IML in several ways, including the following:

- 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

Component identification

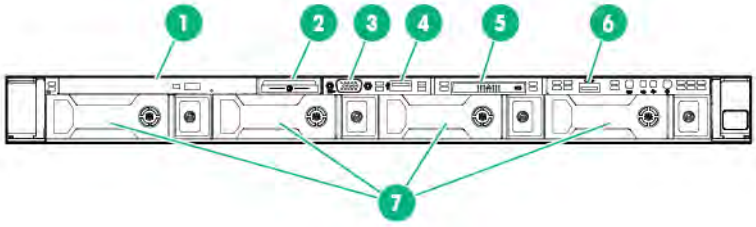
Front panel components

- 8SFF



Item	Description
1	Serial label pull tab
2	Front video connector (optional)
3	USB 2.0 connector (optional)
4	Optical drive (optional)
5	Systems Insight Display (optional)
6	USB 3.0 connector
7	SAS/SATA/SSD drive bays

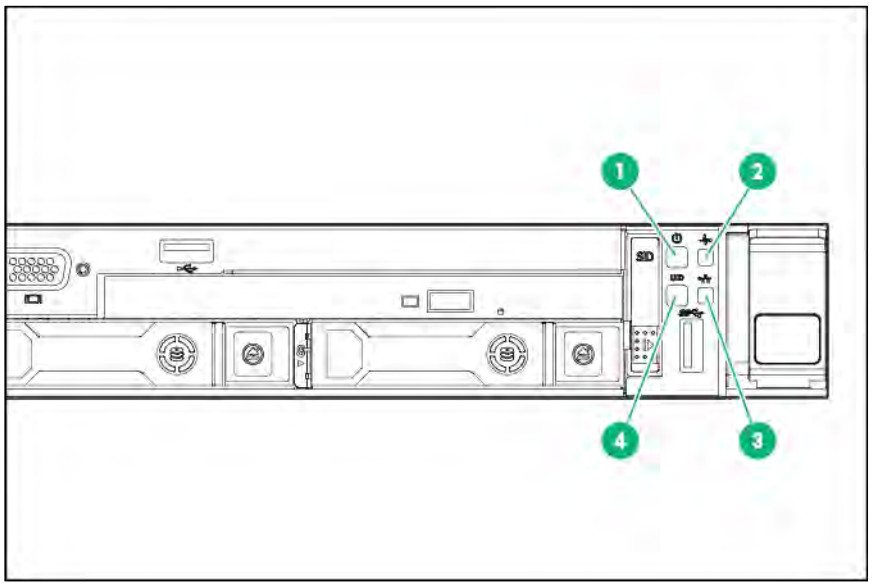
- 4LFF



Item	Description
1	Optical drive (optional)
2	Serial label pull tab
3	Front video connector (optional)
4	USB 2.0 connector (optional)
5	Systems Insight Display (optional)
6	USB 3.0 connector
7	SAS/SATA/SSD drive bays

Front panel LEDs and buttons

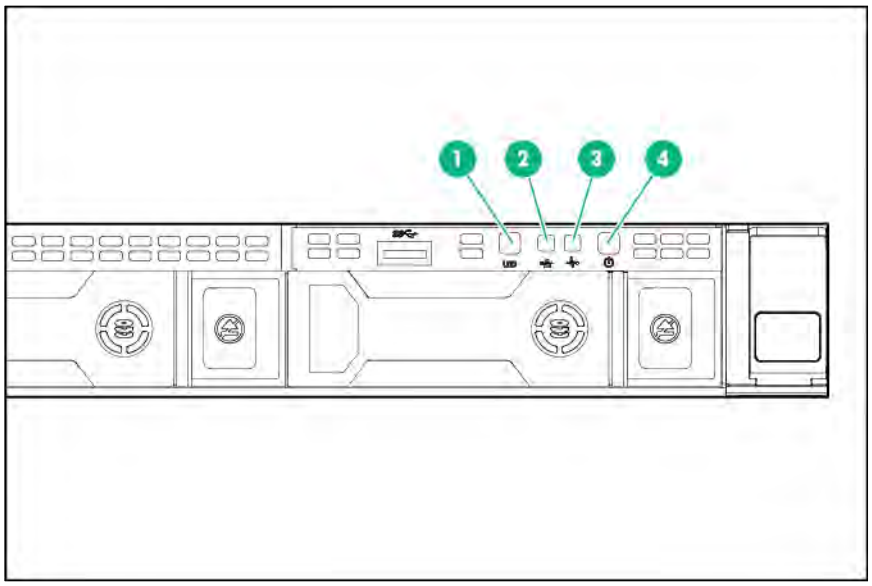
- 8SFF



Item	Description	Status
1	Power On/Standby button and system power LED*	Solid green = System on Flashing green (1 Hz/cycle per sec) = Performing power on sequence Solid amber = System in standby Off = No power present**
2	Health LED*	Solid green = Normal Flashing green (1 Hz/cycle per sec) = iLO is rebooting. Flashing amber = System degraded Flashing red (1 Hz/cycle per sec) = System critical†
3	NIC status LED*	Solid green = Link to network Flashing green (1 Hz/cycle per sec) = Network active Off = No network activity
4	UID button/LED*	Solid blue = Activated Flashing blue: • 1 Hz/cycle per sec = Remote management or firmware upgrade in progress • 4 Hz/cycle per sec = iLO manual reboot sequence initiated • 8 Hz/cycle per sec = iLO manual reboot sequence in progress Off = Deactivated

*When all four LEDs described in this table flash simultaneously, a power fault has occurred. For more information, see "Power fault LEDs (on page 86)."
**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.
†If the health LED indicates a degraded or critical state, review the system IML or use iLO to review the system health status.

- 4LFF



Item	Description	Status
1	UID button/LED*	Solid blue = Activated Flashing blue: • 1 Hz/cycle per sec = Remote management or firmware upgrade in progress • 4 Hz/cycle per sec = iLO manual reboot sequence initiated • 8 Hz/cycle per sec = iLO manual reboot sequence in progress Off = Deactivated
2	NIC status LED*	Solid green = Link to network Flashing green (1 Hz/cycle per sec) = Network active Off = No network activity
3	Health LED*	Solid green = Normal Flashing green (1 Hz/cycle per sec) = iLO is rebooting. Flashing amber = System degraded Flashing red (1 Hz/cycle per sec) = System critical†
4	Power On/Standby button and system power LED*	Solid green = System on Flashing green (1 Hz/cycle per sec) = Performing power on sequence Solid amber = System in standby Off = No power present**

*When all four LEDs described in this table flash simultaneously, a power fault has occurred. For more information, see "Power fault LEDs (on page 86)."
**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.
†To identify components in a degraded or critical state, see the Systems Insight Display LEDs, check iLO/BIOS logs, and reference the server troubleshooting guide.

UID button functionality

The UID button can be used to display the HPE ProLiant Pre-boot Health Summary when the server will not power on. For more information, see the *HPE iLO 4 User Guide* on the Hewlett Packard Enterprise website (**http://www.hpe.com/info/ilo/docs**).

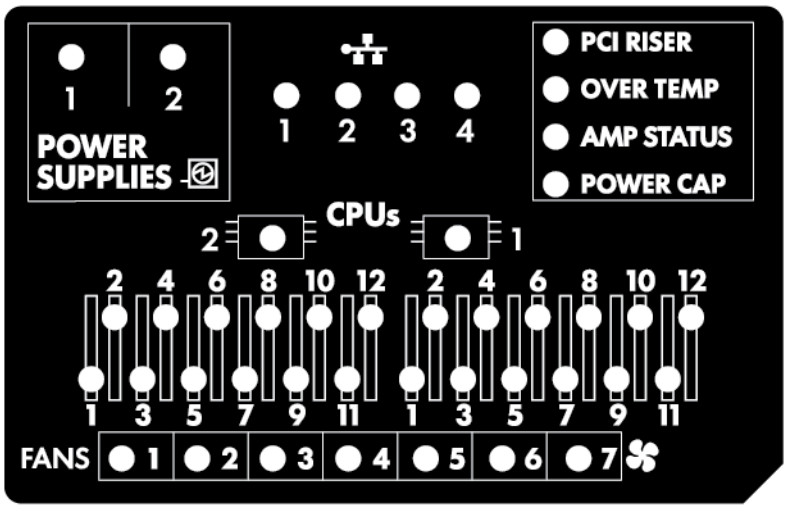
Power fault LEDs

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

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

Systems Insight Display LEDs

The Systems Insight Display LEDs represent the system board layout. The display provides status for all internal LEDs and enables diagnosis with the access panel installed. To view the LEDs, access the Systems Insight Display.



Description	Status
Processor LEDs	Off = Normal Amber = Failed processor
DIMM LEDs	Off = Normal Amber = Failed DIMM or configuration issue
Fan LEDs	Off = Normal Amber = Failed fan or missing fan

Description	Status
NIC LEDs	Off = No link to network Solid green = Network link Flashing green = Network link with activity If power is off, the front panel LED is not active. For status, see "Rear panel LEDS and buttons (on page 89)."
Power supply LEDs	Off = Normal Solid amber = Power subsystem degraded, power supply failure, or input power lost.
PCI riser LED	Off = Normal Amber = Incorrectly installed PCI riser cage
Over temp LED	Off = Normal Amber = High system temperature detected
Amp Status LED	Off = AMP modes disabled Solid green = AMP mode enabled Solid amber = Failover Flashing amber = Invalid configuration
Power cap LED	Off = System is in standby, or no cap is set. Solid green = Power cap applied

For more information, see "Systems Insight Display LED combinations (on page 87)."

Systems Insight Display LED combinations

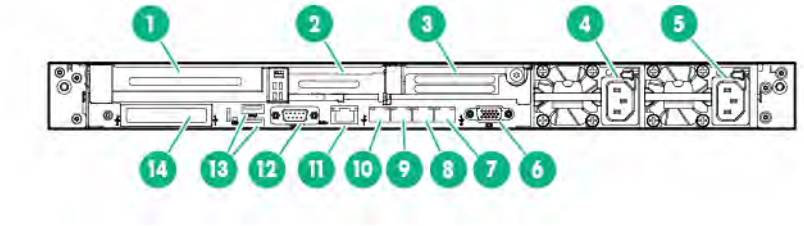
When the health LED on the front panel illuminates either amber or red, the server is experiencing a health event. Combinations of illuminated Systems Insight Display LEDs, the system power LED, and the health LED indicate system status.

Systems Insight Display LED and color	Health LED	System power LED	Status
Processor (amber)	Red	Amber	One or more of the following conditions may exist: • Processor in socket *X* has failed. • Processor *X* is not installed in the socket. • Processor *X* is unsupported. • ROM detects a failed processor during POST.
Processor (amber)	Amber	Green	Processor in socket *X* is in a pre-failure condition.
DIMM (amber)	Red	Green	One or more DIMMs have failed.
DIMM (amber)	Amber	Green	DIMM in slot *X* is in a pre-failure condition.
Over temp (amber)	Amber	Green	The Health Driver has detected a cautionary temperature level.
Over temp (amber)	Red	Amber	The server has detected a hardware critical temperature level.
PCI riser (amber)	Red	Green	The PCI riser cage is not seated properly.
Fan (amber)	Amber	Green	One fan has failed or has been removed.
Fan (amber)	Red	Green	Two or more fans have failed or been removed.
Power supply (amber)	Red	Amber	One or more of the following conditions may exist: • Only one power supply is installed and

Systems Insight Display LED and color	Health LED	System power LED	Status
			that power supply is in standby. • Power supply fault • System board fault
Power supply (amber)	Amber	Green	One or more of the following conditions may exist: • Redundant power supply is installed and only one power supply is functional. • AC power cord is not plugged into redundant power supply. • Redundant power supply fault • Power supply mismatch at POST or power supply mismatch through hot-plug addition
Power cap (off)	—	Amber	Standby
Power cap (green)	—	Flashing green	Waiting for power
Power cap (green)	—	Green	Power is available.
Power cap (flashing amber)	—	Amber	Power is not available.

IMPORTANT: If more than one DIMM slot LED is illuminated, further troubleshooting is required. Test each bank of DIMMs by removing all other DIMMs. Isolate the failed DIMM by replacing each DIMM in a bank with a known working DIMM.

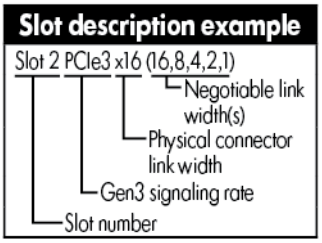
Rear panel components



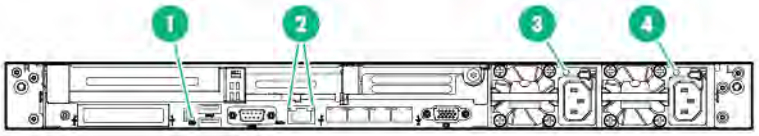
Item	Description
1	Slot 1 PCIe3 x16 (16, 8, 4, 1)
2	Slot 2 PCIe 3 x8 (8, 4, 1)
3	Slot 3 PCIe 3 x16 (16, 8, 4, 1)*
4	Power supply 2
5	Power supply 1
6	Video connector
7	NIC connector 4
8	NIC connector 3
9	NIC connector 2
10	NIC connector 1

Item	Description
11	iLO 4 connector
12	Serial connector (optional)
13	USB 3.0 connectors
14	FlexibleLOM bay

*The slot 3 PCIe 3 riser is optional and requires a second processor before installation.



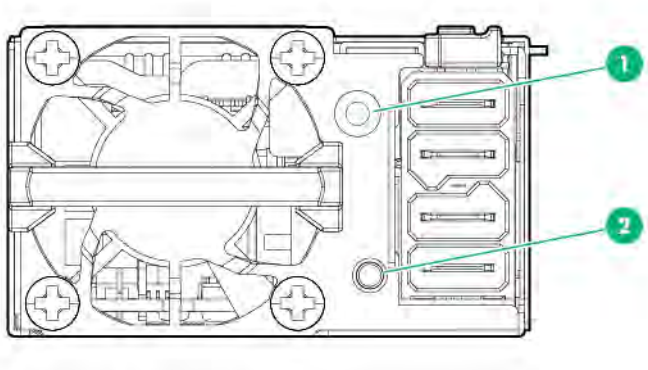
Rear panel LEDs and buttons



Item	Description	Status
1	UID LED	Solid blue = Identification is activated. Flashing blue = System is being managed remotely. Off = Identification is deactivated.
2L	HPE iLO 4/standard NIC activity LED	Solid green = Activity exists. Flashing green = Activity exists. Off = No activity exists.
2R	HPE iLO 4/standard NIC link LED	Solid green = Link exists. Off = No link exists.
3	Power supply 2 LED	Solid green = Normal Off = One or more of the following conditions exists: • AC power unavailable • Power supply failed • Power supply in standby mode • Power supply exceeded current limit
4	Power supply 1 LED	Solid green = Normal Off = One or more of the following conditions exists: • AC power unavailable

Item	Description	Status
		• Power supply failed • Power supply in standby mode • Power supply exceeded current limit

Flex slot battery backup module LEDs and buttons



Item	Description
1	FSBBU module LED
2	Battery check button

When the battery check button is pressed, the LED indicates the state of the battery. The number of times that the LED flashes indicates the state of charge.

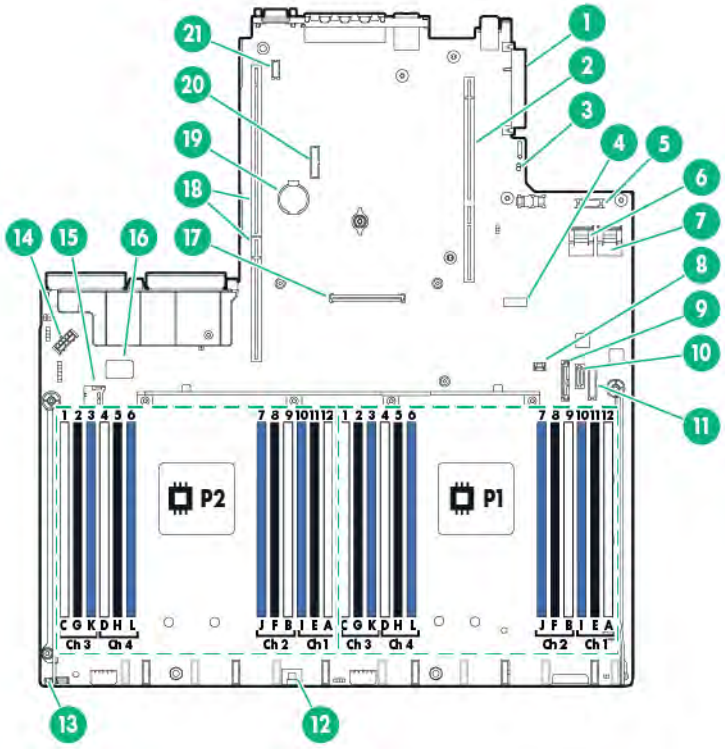
# of LED flashes	State of charge (%)
0	< 5
1	<= 30
2	31 – 69
3	>= 70

The state of the LED indicates the FSBBU operating mode.

LED	Mode/State
Off	• Ship/storage mode • Cycle power operating
Flashing amber	• Battery diagnostic • Active mode
Solid amber	Online mode and charger is ON
Flashing green	Discharge mode • RSOC—70-100% frequency=0.5Hz; duty=0.5 • RSOC—31-69% frequency=1Hz; duty=0.5 • RSOC—0-30% frequency=1.5Hz; duty=0.5
Solid green	• Online mode and charger is OFF • Battery is fully charged
Flashing red	Auxiliary path A/B protection
Solid red	FSBBU fault or other protections

For more information about the FSBBU module, see "750 W Flex Slot Hot Plug Battery Backup Module ("HPE 750W Flex Slot Hot Plug Battery Backup Module" on page 35)."

System board components



Item	Description
1	FlexibleLOM connector
2	Primary (processor 1) PCI riser connector
3	NMI jumper
4	System maintenance switch
5	Front VGA/USB 2.0 connector
6	x4 SATA port 1
7	x4 SATA port 2
8	Backplane presence detect connector
9	Optical/SATA port 5
10	SATA port 4
11	Front power/USB 3.0 connector
12	HPE Smart Storage Battery connector
13	Optional Location Discovery Services connector
14	Drive backplane power connector
15	microSD card slot
16	Dual internal USB 3.0 connector
17	Smart Array/HBA connector
18	Secondary (processor 2) PCI riser connector
19	System battery
20	TPM connector
21	Optional serial port connector

System maintenance switch

Position	Default	Function
S1	Off	Off = HPE iLO 4 security is enabled. On = HPE iLO 4 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 the system maintenance switch position 6 is set to the On position, the system is prepared to erase all system configuration settings from CMOS.

CAUTION: Clearing CMOS deletes configuration information. Be sure to properly configure the server or data loss could occur.

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.

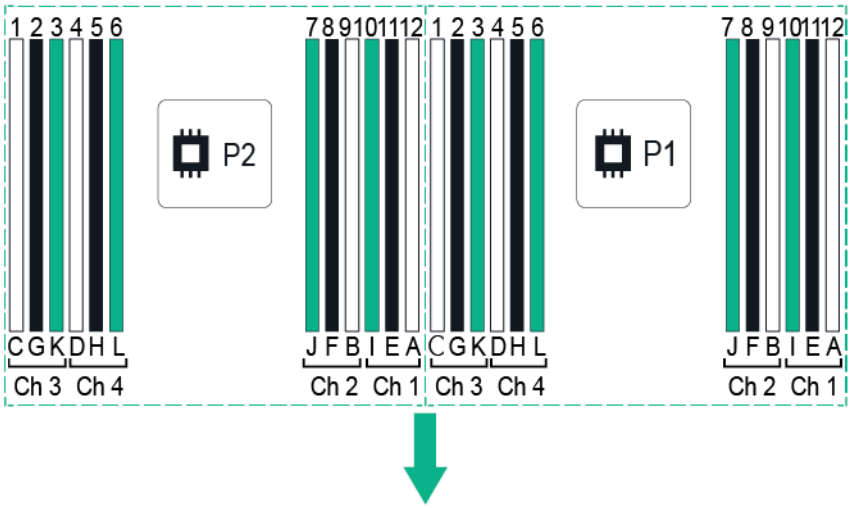
NMI jumper

The NMI jumper allows administrators to perform a memory dump before performing a hard reset. Crash dump analysis is an essential part of eliminating reliability problems, such as hangs or crashes in OSs, device drivers, and applications. Many crashes can freeze a system, requiring you to do a hard reset. Resetting the system erases any information that would support root cause analysis.

Systems running Microsoft® Windows® experience a blue-screen trap when the OS crashes. When this happens, Microsoft® recommends that system administrators perform an NMI event by temporarily shorting the NMI header with a jumper. The NMI event enables a hung system to become responsive again.

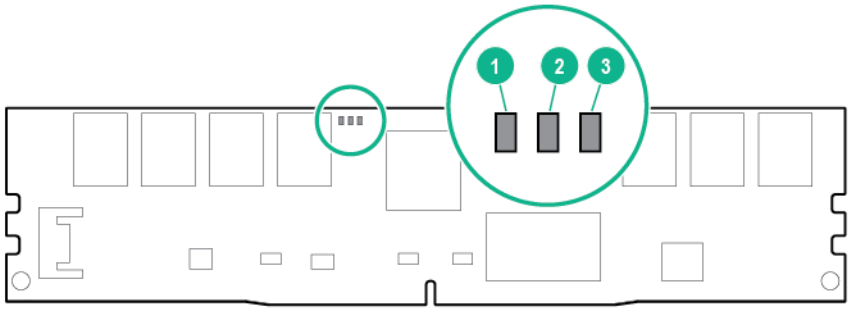
DIMM slots

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



NVDIMM LEDs

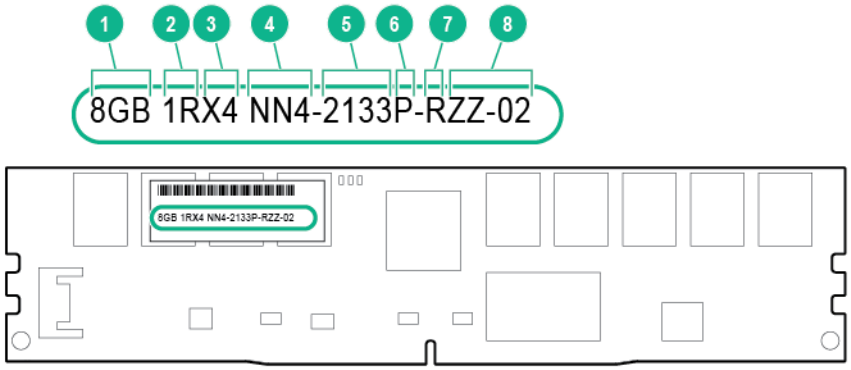
When the server boots up, all LEDs flash three times. Any LED activity not described in this section indicates a possible error.



Item	LED definitions
1	• Fast-flashing blue = A backup is in progress. Do not remove the NVDIMM. • Slow-flashing blue (1 flash/15 seconds) = Normal operation.
2	Reserved
3	• Solid or flashing green = Power is available to the NVDIMM. Do not remove the NVDIMM. • Off = Power is not available to the NVDIMM.

NVDIMM identification

To determine NVDIMM characteristics, see the full product description as shown in the following example:



Item	Description	Definition
1	Capacity	8GB
2	Rank	1R (Single rank)
3	Data width	x4 (4 bit)
4	Memory type	NVDIMM-N
5	Maximum memory speed	2133 MT/s
6	Speed grade	P (CAS 15-15-15)
7	DIMM type	RDIMM (registered)
8	Reserved	—

For more information about product features, specifications, options, configurations, and compatibility, see the product QuickSpecs on the Hewlett Packard Enterprise website (**http://www.hpe.com/info/qs**).

Non-hot-plug PCI riser board slot definitions

Primary riser cage connector, connected to processor 1 or the southbridge

	PCIe 3-slot riser cage	PCIe 2-slot x16 riser cage*
1 - 3/4L/FH	PCIe3 x16 (16, 8,4,2,1)	PCIe3 x16 (16,8,4,2,1)
2 - LP	PCIe3 x8 (8,4,2,1)	PCIe3* x8 (8,4,2,1)
3 - LP/3/4L/FH	PCIe3 x16 (16, 8,4,2,1)**	—

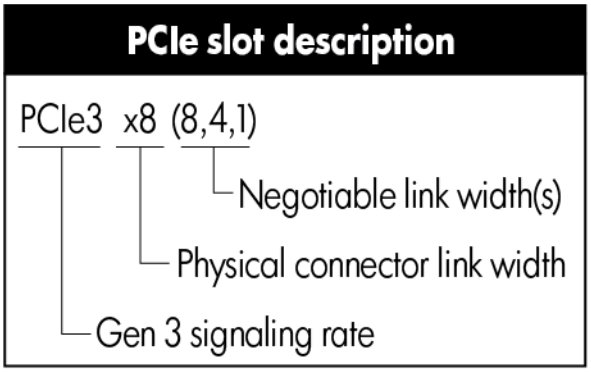
*The server ships with one PCIe3 riser cage installed in the primary riser cage connector.

**The x16 PCIe3 riser cage is optional and can be converted to a FH riser. This conversion requires a second processor to be installed.

Notes:

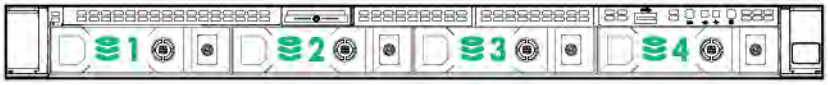
- "Primary" denotes the riser cage is installed in the primary riser connector.
- "Secondary" denotes the riser cage is installed in the secondary riser connector.
- Installing the riser cages listed in the table above in either the primary or secondary riser connectors determines the form factor of the PCI cards supported by those riser cages.

- FL/FH denotes full-length, full-height. HL/FH denotes half-length, full-height. LP denotes low profile.



Device numbers

- 4LFF configuration



- 8SFF configuration

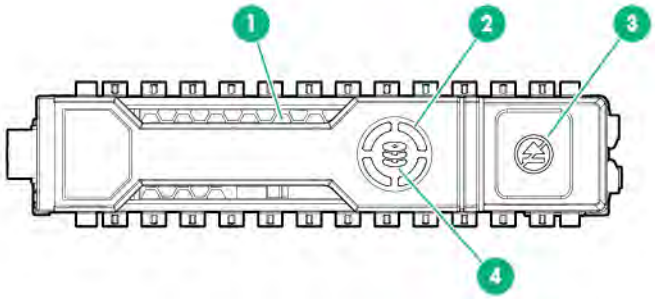
- 10SFF configurations

With the 10SFF (6 NVMe + 4 SAS/SATA) Express Bay Enablement Option, the server supports SAS, SATA, and PCIe-based NVMe drives in the following locations:

  - Bays 1 through 4 support SFF SAS and SATA drives only

- Bays 5 through 10 support SFF PCIe-based NVMe drives only

Hot-plug drive LED definitions

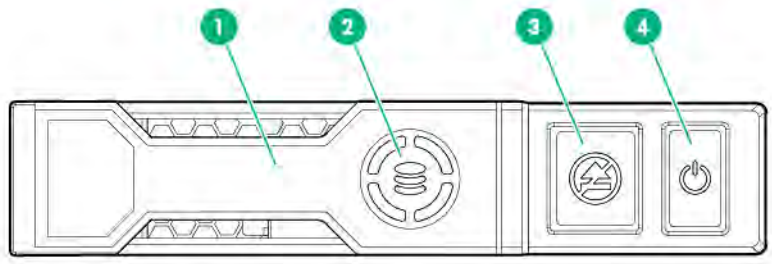


Item	LED	Status	Definition
1	Locate	Solid blue	The drive is being identified by a host application.
		Flashing blue	The drive carrier firmware is being updated or requires an update.
2	Activity ring	Rotating green	Drive activity
		Off	No drive activity
3	Do not remove	Solid white	Do not remove the drive.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

NVMe SSD components

The NVMe SSD is a PCIe bus device. A device attached to a PCIe bus cannot be removed without allowing the device and bus to complete and cease the signal/traffic flow.

CAUTION: Do not remove an NVMe SSD from the drive bay while the Do Not Remove button LED is flashing. The Do Not Remove button LED flashes to indicate the device is still in use. Removal of the NVMe SSD before the device has completed and ceased signal/traffic flow can cause loss of data.



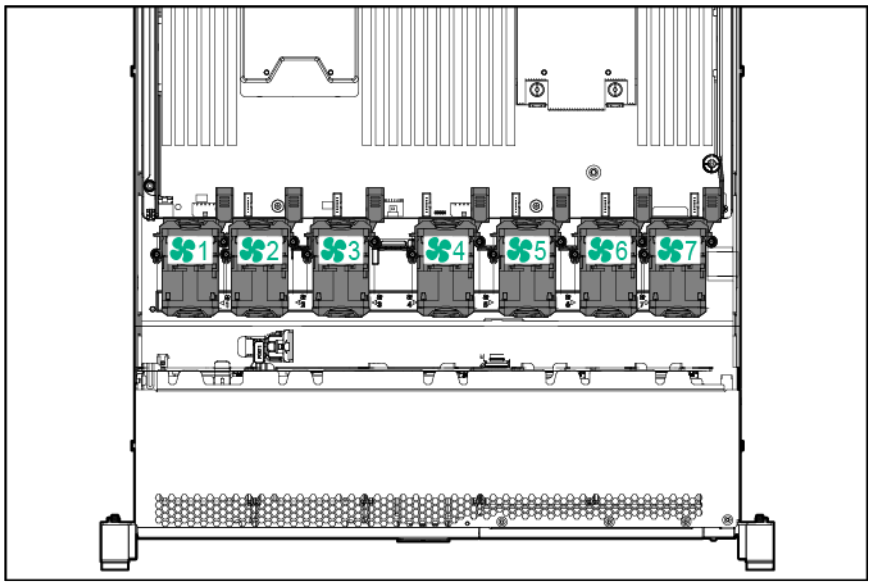
Item	Description
1	Release lever
2	Activity ring
3	Do Not Remove button
4	Power button

Hot-plug fans

CAUTION: To avoid damage to server components, fan blanks must be installed in fan bays 1 and 2 in a single-processor configuration.

The only two valid fan configurations are listed in the following table.

Configuration	Fan bay 1	Fan bay 2	Fan bay 3	Fan bay 4	Fan bay 5	Fan bay 6	Fan bay 7
1 processor	Fan blank	Fan blank	Fan	Fan	Fan	Fan	Fan
2 processors	Fan	Fan	Fan	Fan	Fan	Fan	Fan



For a single-processor configuration, five fans and two blanks are required in specific fan bays for redundancy.

For a dual-processor configuration, seven fans are required for redundancy. A fan failure or missing fan causes a loss of redundancy. A second fan failure or missing fan causes an orderly shutdown of the server.

The high performance fan option might be necessary for the following installations:

- LR DIMM configuration
- ASHRAE compliant configurations

  For more information, see the Hewlett Packard Enterprise website (**http://www.hpe.com/servers/ASHRAE**).

The server supports variable fan speeds. The fans operate at minimum speed until a temperature change requires a fan speed increase to cool the server. The server shuts down during the following temperature-related scenarios:

- At POST and in the OS, HPE iLO 4 performs an orderly shutdown if a cautionary temperature level is detected. If the server hardware detects a critical temperature level before an orderly shutdown occurs, the server performs an immediate shutdown.
- When the Thermal Shutdown feature is disabled in RBSU, HPE iLO 4 does not perform an orderly shutdown when a cautionary temperature level is detected. Disabling this feature does not disable the server hardware from performing an immediate shutdown when a critical temperature level is detected.

  △ **CAUTION:** A thermal event can damage server components when the Thermal Shutdown feature is disabled in RBSU.

Cabling

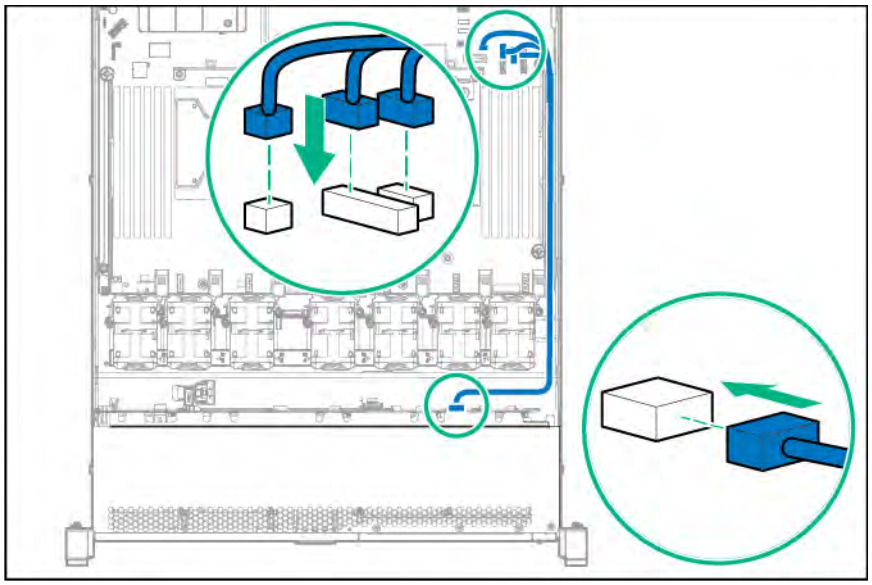
Cabling overview

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

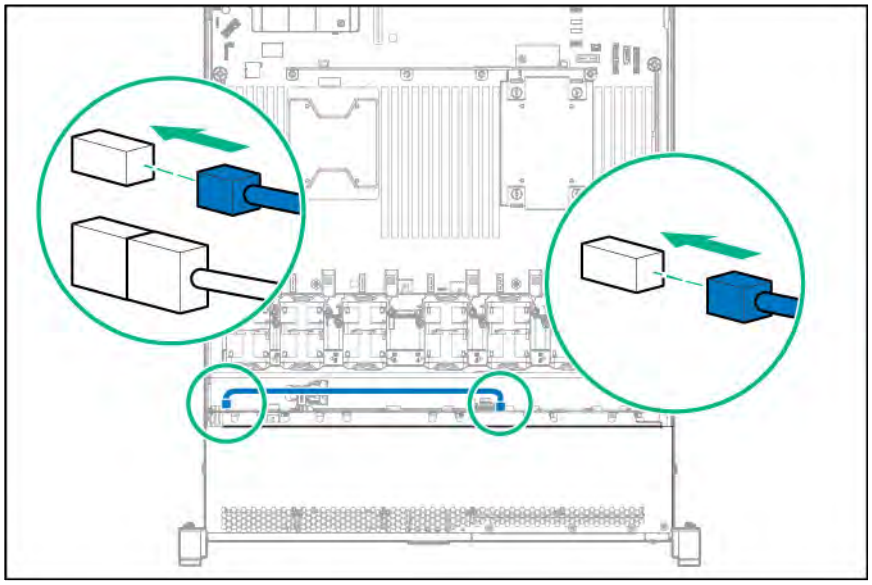
> △ **CAUTION:** When routing cables, always be sure that the cables are not in a position where they can be pinched or crimped.

2SFF embedded SATA backplane cabling

1. Connect the data cables to the SATA storage connector, the SATA optical/storage drive connector, and the backplane presence detect connector.



2. Connect the power cable to the left power connector on the backplane.



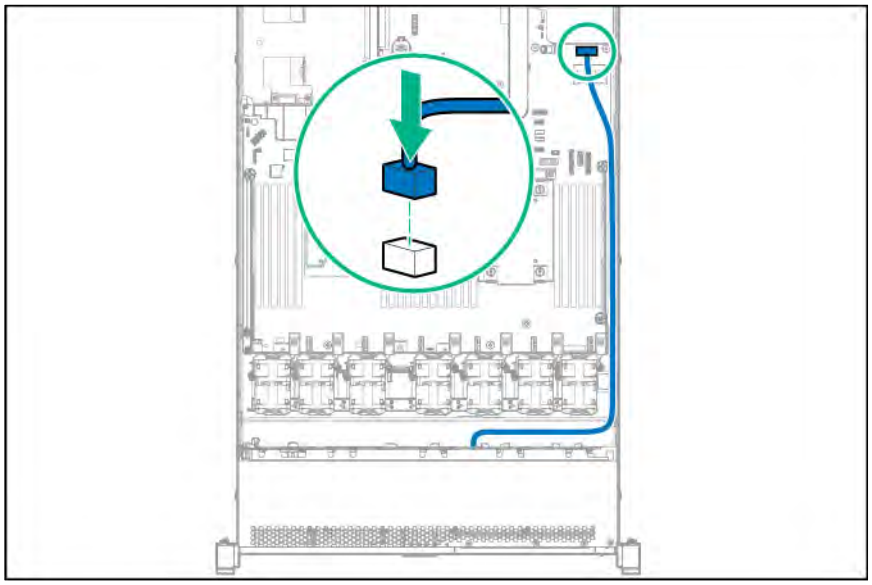
NOTE: Cabling from the 2SFF SAS/SATA backplane will vary if a PCIe storage controller is installed.

4LFF Universal Media Bay cabling

Route the cables along the edge of the system board, and then connect the cables to the system board:

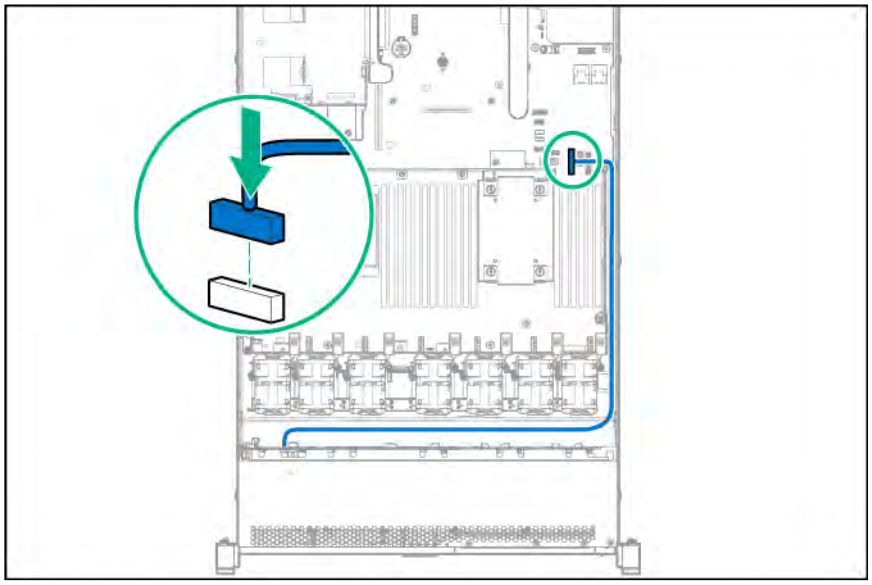
- **4LFF VGA/USB connections**

  Connect the VGA/USB cable to the front VGA/USB connector toward the rear of the system board.



- **4LFF optical drive connection**

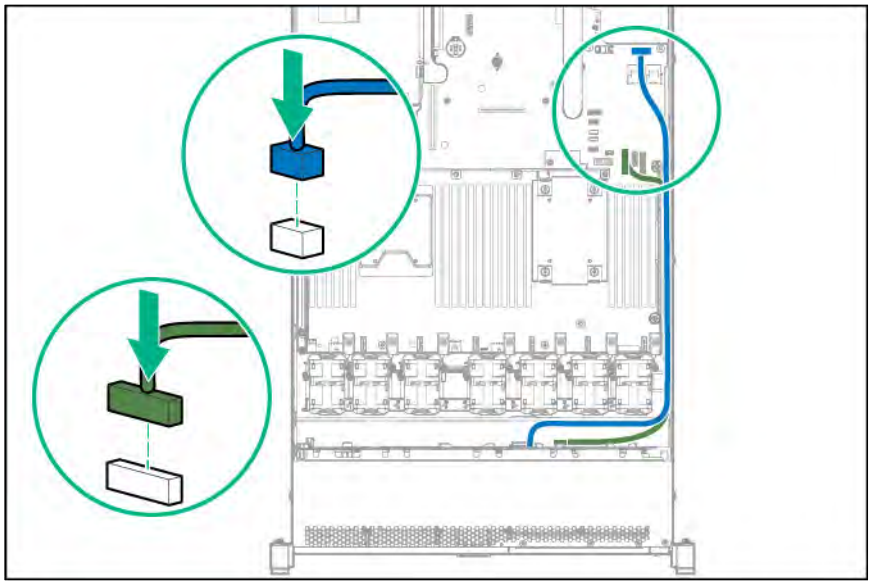
Connect the SATA optical cable to the SATA optical/storage drive connector.



8SFF Universal Media Bay cabling

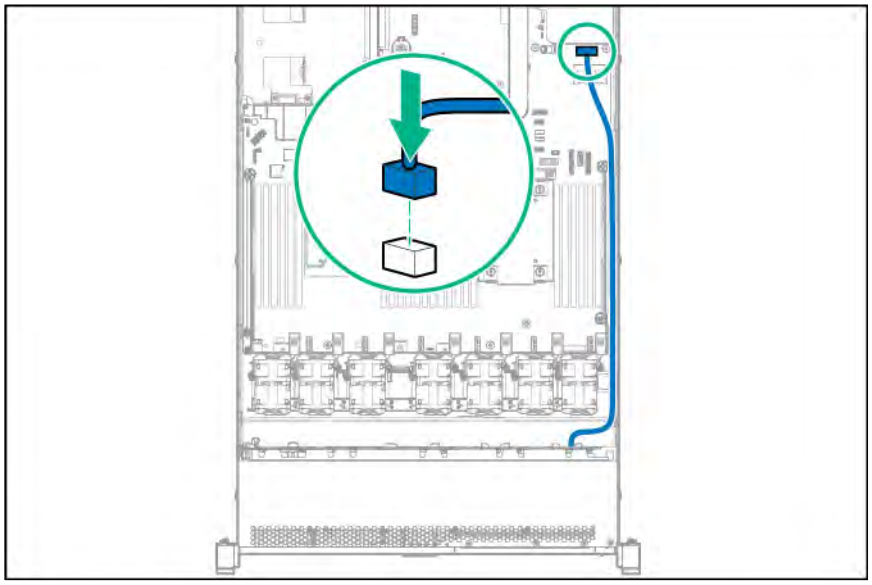
Route the cables along the edge of the system board, and then connect the cables to the system board:

- **8SFF DVD-RW/VGA/USB connections**
  - Connect the VGA/USB cable to the front VGA/USB connector toward the rear of the system board.
  - Connect the SATA optical cable to the SATA optical/storage drive connector.



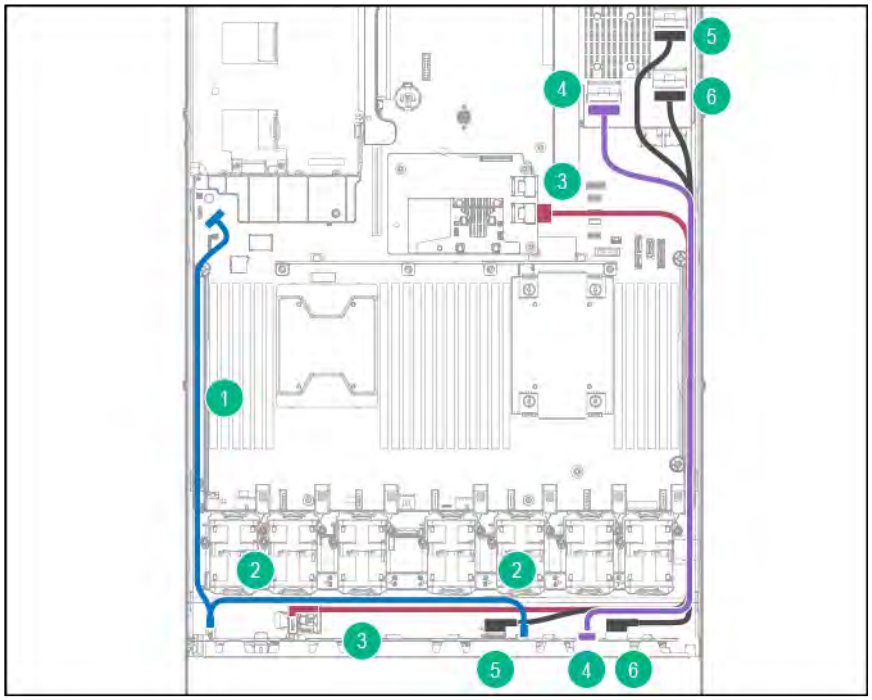
- **8SFF VGA/USB connections**

Connect the VGA/USB cable to the front VGA/USB connector toward the rear of the system board.



10SFF (6 NVMe + 4 SAS/SATA) Express Bay Enablement Option cabling

The Smart Array P440ar Controller is shown in the cabling diagram, but other controllers may be supported. For a list of supported controllers, see the product QuickSpecs on the Hewlett Packard Enterprise website (**http://www.hpe.com/info/qs**).



Item	Description
1	Connect the power cable from the 10SFF Express Bay backplane to the system board.

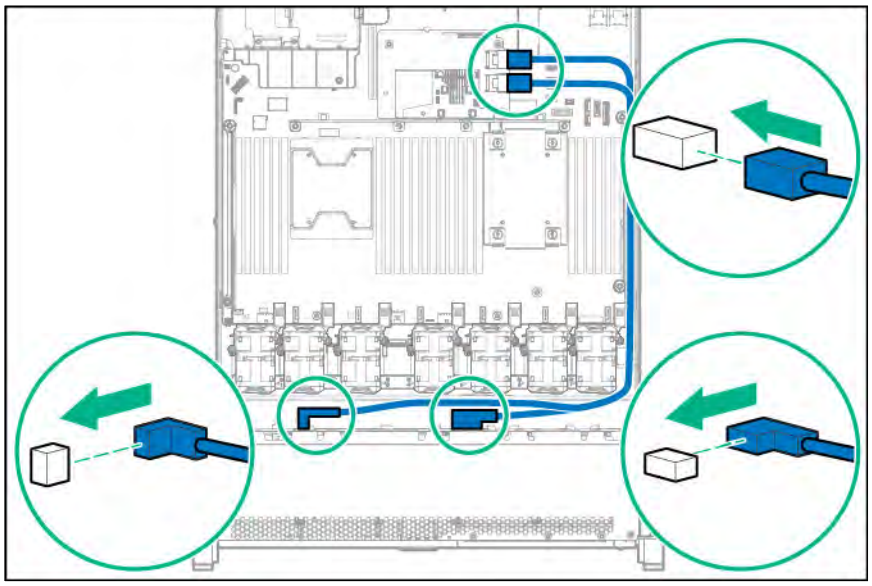
Item	Description
2	Connect the power cable from the 10SFF Express Bay backplane to the 2SFF Express Bay backplane.*
3	Connect the mini-SAS cable from the 10SFF Express Bay backplane to Port 1 on the controller (HPE Smart Array P440ar Controller shown).
4	Connect the 2SFF Express bay data cable from 2SFF Express Bay backplane to Port 3 on the HPE Express Bay Bridge Card.*
5–6	Connect the 10SFF Express bay data cable from 10SFF Express Bay backplane to Ports 1 and 2 on the HPE Express Bay Bridge Card.

*If the 2SFF Express Bay Enablement option is not installed, then this cable is not required.

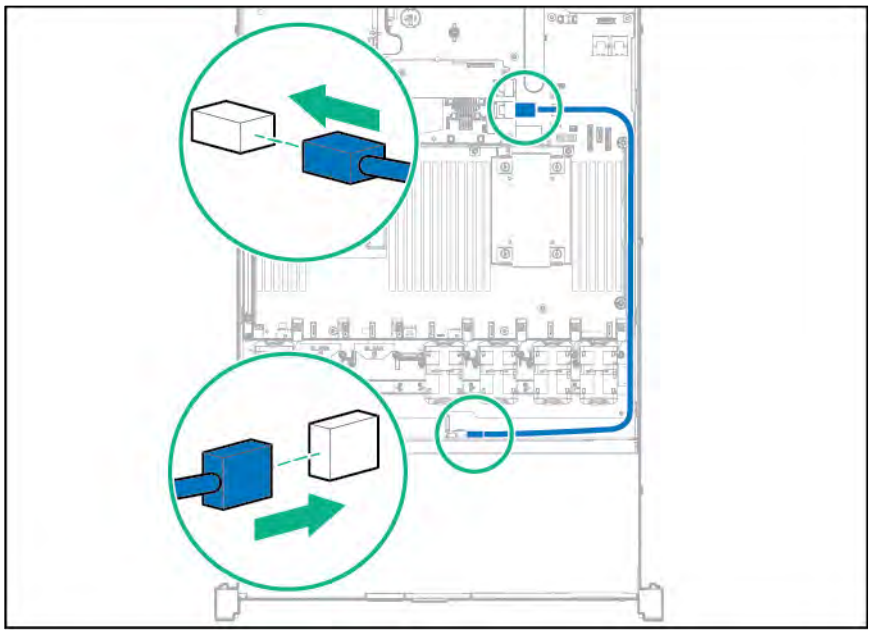
HPE Smart Array P440ar controller cabling

Connect the SAS/SATA cables to the backplane and Smart Array controller. Install the SAS/SATA cables according to their labels as Port 1 or Port 2. These labels are on the cables and their connections.

- **8SFF**



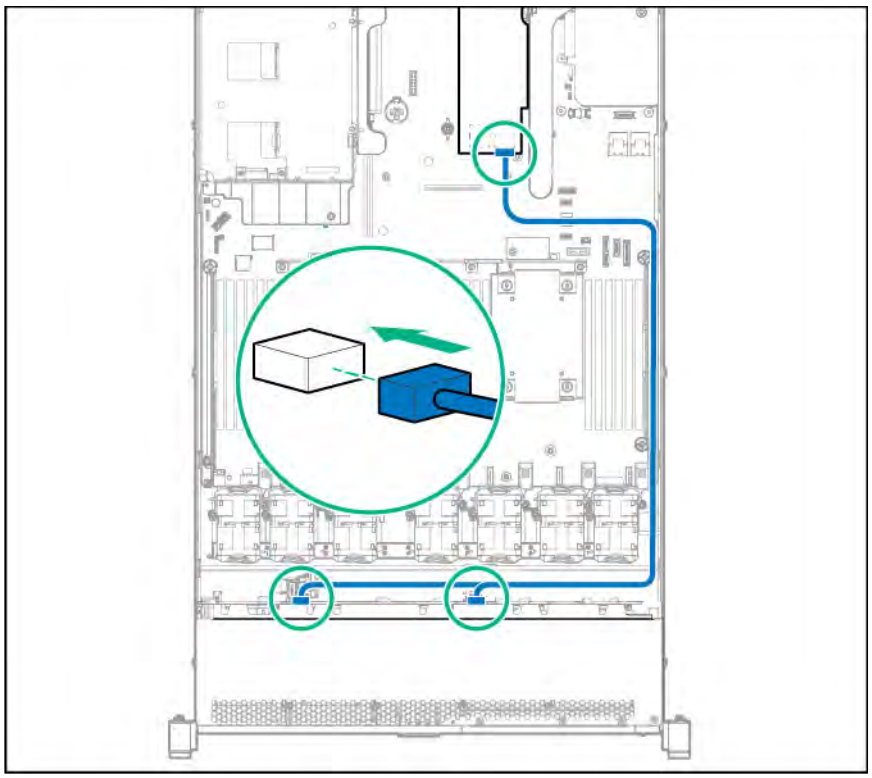
- **4LFF**



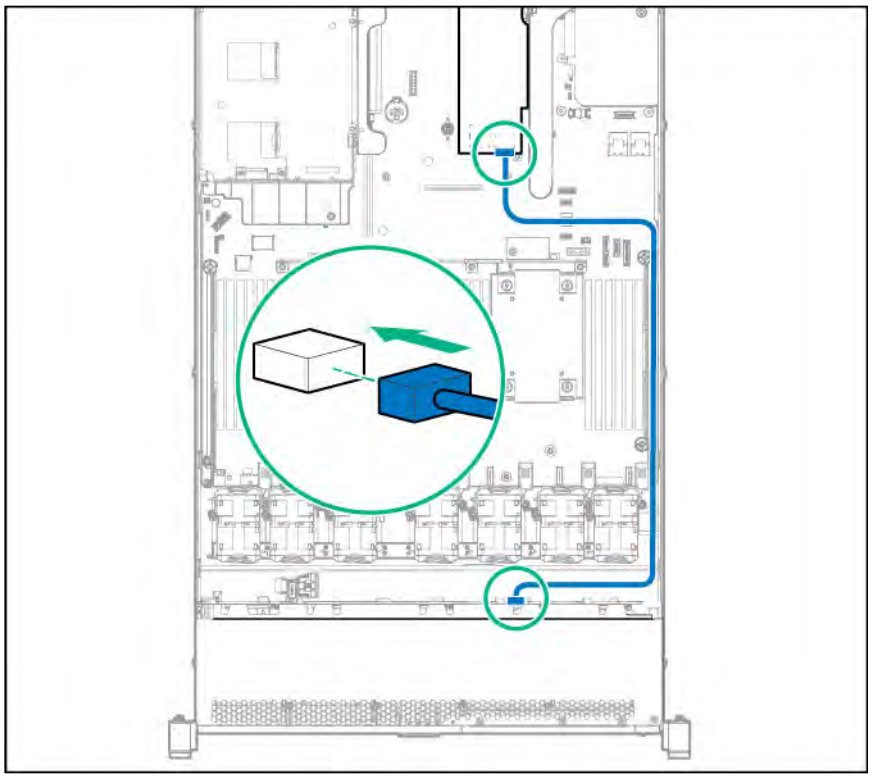
HPE Smart Array P440 Controller cabling

Connect the cables from port one and two on the backplane to port one on the P440 controller board. If the H240 controller board is installed, the SAS cables will use both ports.

- **8SFF**

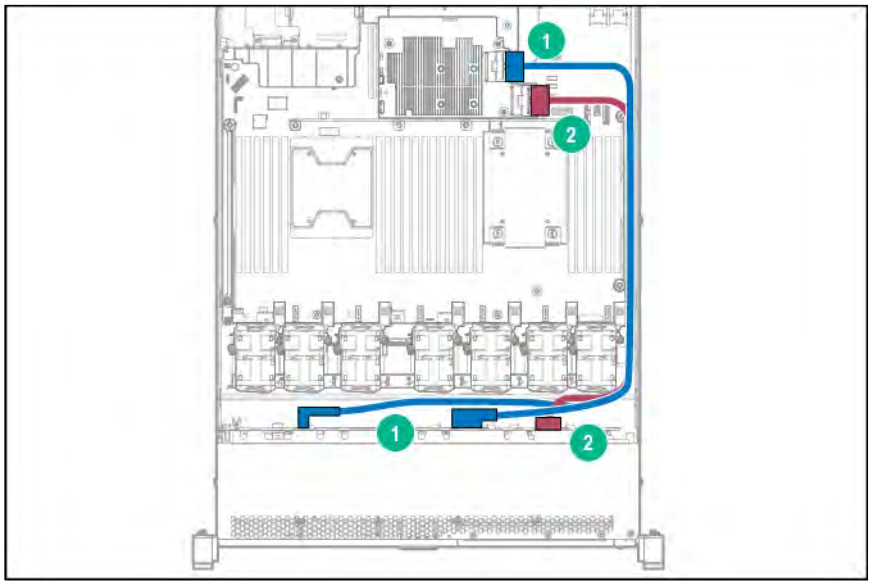


- **4LFF**



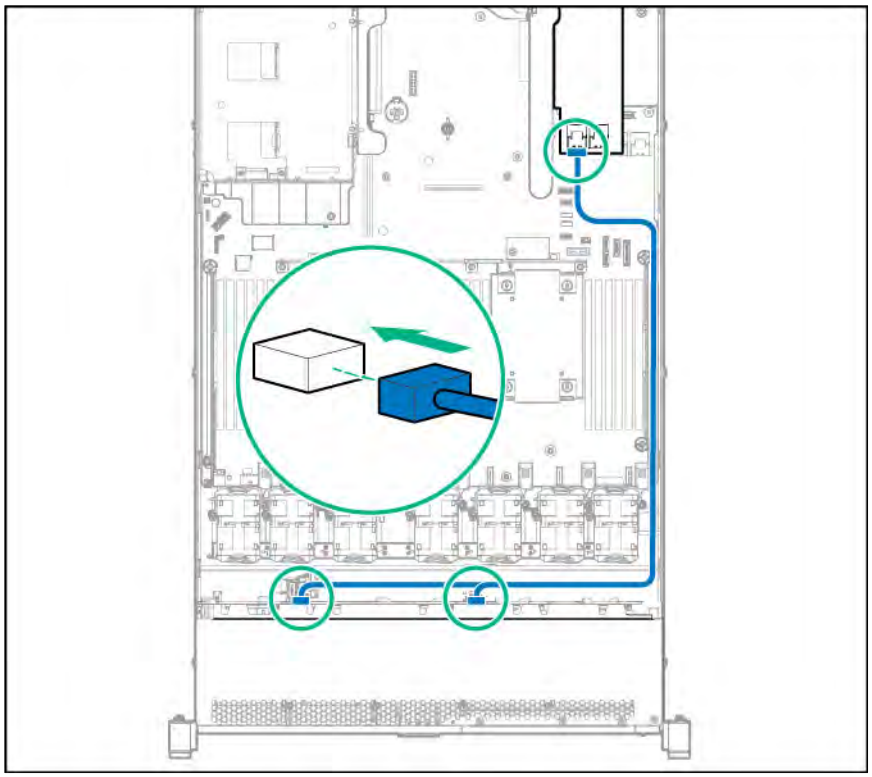
HPE Smart Array P840ar controller cabling

1. Connect both the Mini-SAS connectors from the 8SFF backplane to controller port 1.
2. If the optional 2SFF backplane is installed, connect the Mini-SAS cable to controller port 2.

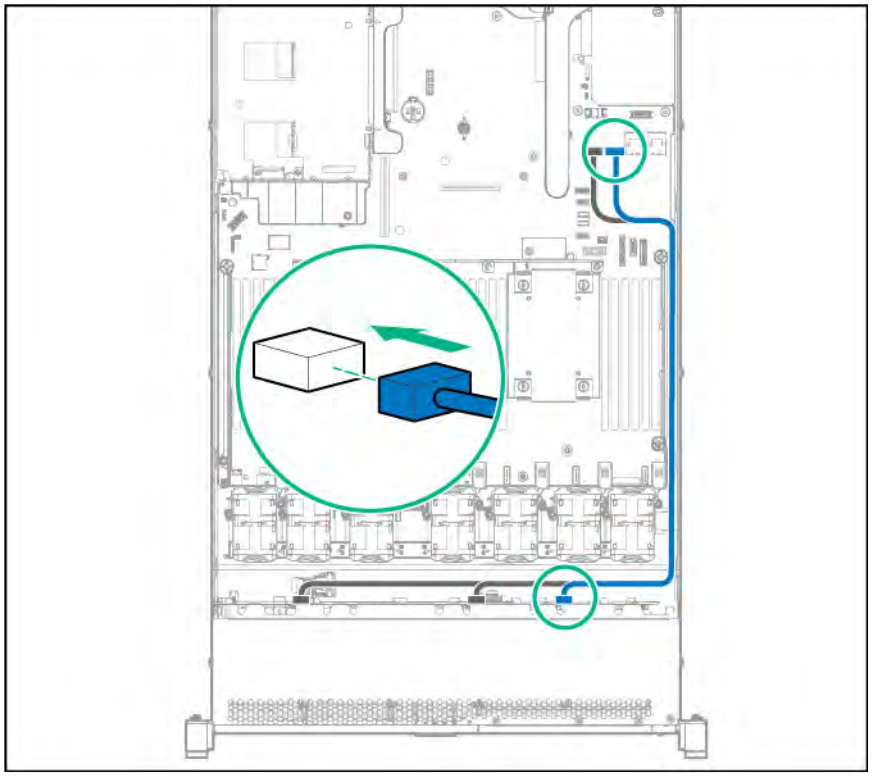


HPE Smart Array P840 Controller cabling

1. Connect the Mini-SAS cables from the standard backplane to port one on the optional P840 controller board.



2. If the 2SFF SAS/SATA backplane is installed, connect the Mini-SAS cable from the optional backplane to port 2 on the P840 controller board.

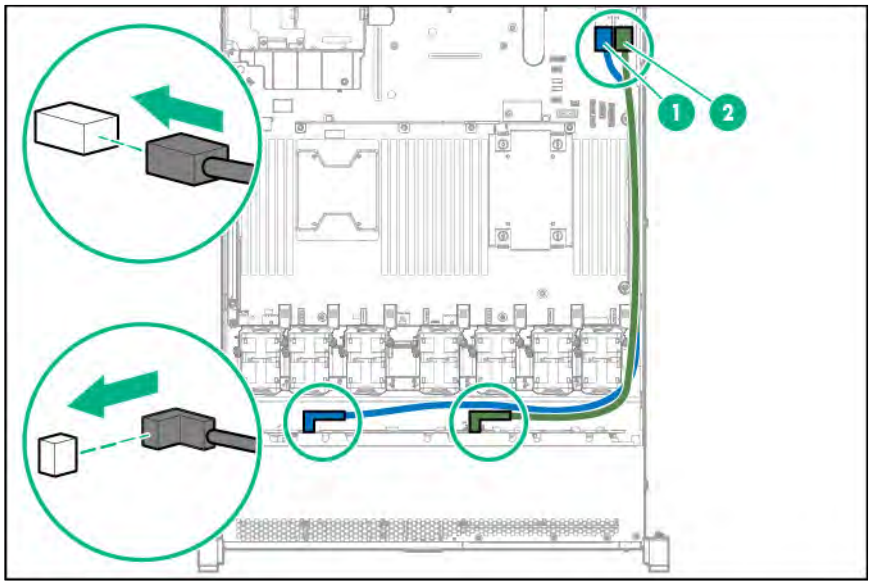


Embedded SATA cabling

WARNING: Eliminate the risk of electric shock by removing all AC power from the system before installing or replacing any non-hot-plug hardware option. Disconnect all power cords to completely remove power from the server.

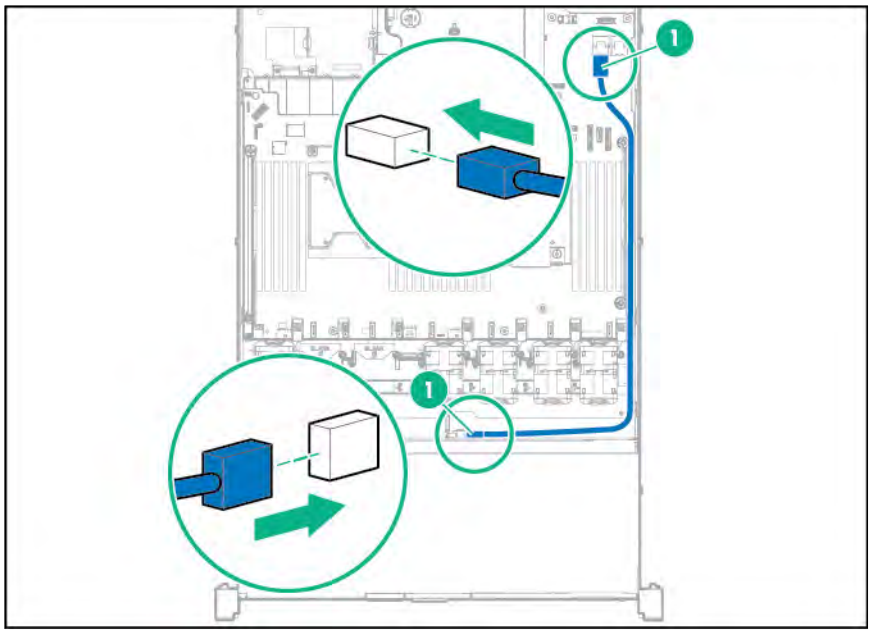
Connect the SATA cables from the backplane to the Mini-SAS/SATA connectors on the system board according to their labels as Port 1 or Port 2. These labels are on the cables and their connections.

- **8SFF**



- **4LFF**

  Connect the SATA cable from port one on the backplane to port one on the system board as indicated on the connectors.

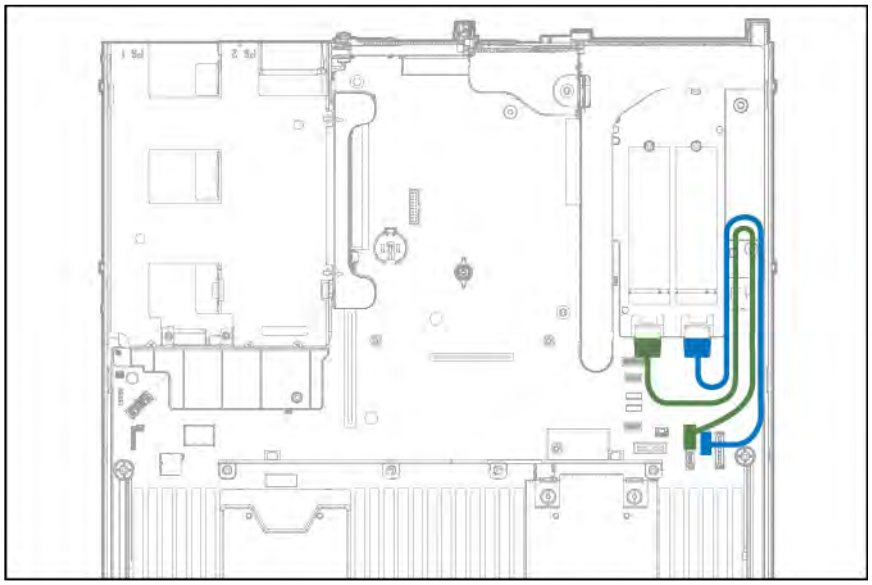


M.2 SSD Enablement Board option cabling

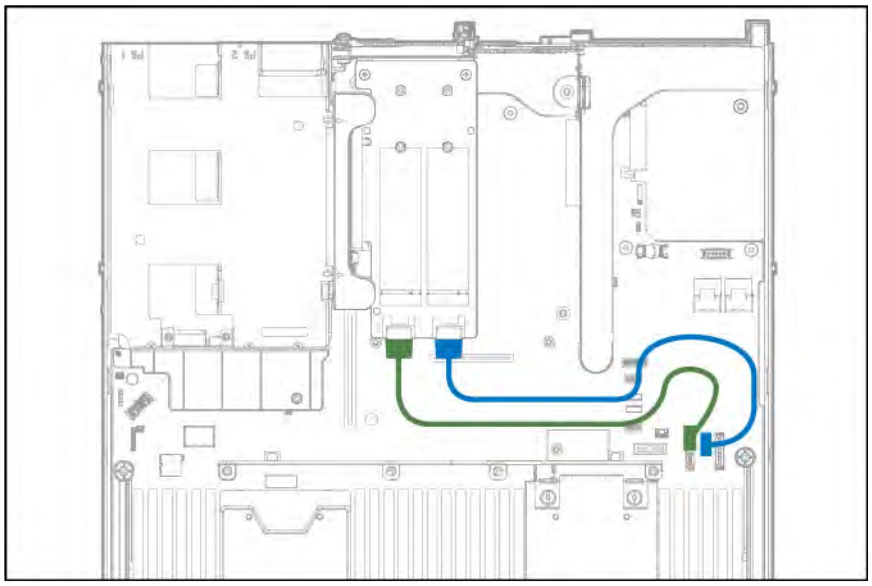
The M.2 SSD enablement board option is supported in both the primary and the secondary PCI riser cage.

Cable the option according to the location in the server:

- **Primary PCI riser cage**

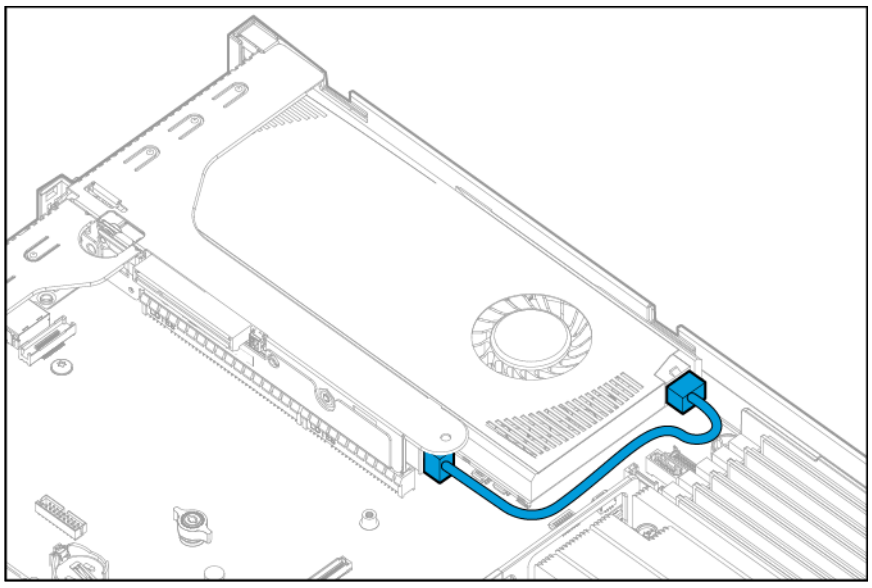


- **Secondary PCI riser cage**



GPU cabling

Connect the GPU riser cable to the GPU and the primary riser cage PCA.



Specifications

Environmental specifications

Specification	Value
Temperature range*	—
Operating	10°C to 35°C (50°F to 95°F)
Nonoperating	-30°C to 60°C (-22°F to 140°F)
Relative humidity (noncondensing)	—
Operating	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

* 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 (**http://www.hpe.com/servers/ASHRAE**).

Server specifications

Specification	Value
Height	4.29 cm (1.69 in)
Depth (chassis with SFF drive cage)	69.90 cm (27.50 in)
Depth (chassis with LFF drive cage)	74.98 cm (29.50 in)
Width	43.46 cm (17.11 in)
Weights	
SFF minimum (one drive, one processor, one power supply, two heatsinks, one Smart Array controller, five fans)	12.25 kg (27.00 lb)
SFF maximum (10 drives, two processors, two power supplies, two heatsinks, one Smart Array	15.31 kg (33.36 lb)

Specification	Value
controller, seven fans)	
LFF minimum (one drive, one processor, one power supply, two heatsinks, one Smart Array controller, five fans)	13.77 kg (30.36 lb)
LFF maximum (Four drives, two processors, two power supplies, two heatsinks, one Smart Array controller, seven fans)	16.78 kg (37 lb)

Power supply specifications

Depending on installed options, the server is configured with one of the following power supplies:

- HPE 500W Flex Slot Platinum Hot-plug Power Supply
- HPE 800W Flex Slot Platinum Hot-plug Power Supply (on page 112)
- HPE 800W Flex Slot Titanium Plus Hot-plug Power Supply (on page 112)
- HPE 800W Flex Slot Universal Hot-plug Power Supply (on page 113)
- HPE 800W Flex Slot -48VDC Hot-plug Power Supply (on page 113)
- HPE 1400W Flex Slot Platinum Plus Hot-plug Power Supply (on page 114)

For detailed power supply specifications, see the QuickSpecs on the Hewlett Packard Enterprise website (**http://www.hpe.com/info/proliant/powersupply**).

HPE 500W Flex Slot Platinum Hot-plug Power Supply

Specification	Value
Input requirements	
Rated input voltage	100 to 127 VAC 200 to 240 VAC 240 VDC for China only
Rated input frequency	50 Hz to 60 Hz Not applicable to 240 VDC
Rated input current	5.8 A at 100 VAC 2.8 A at 200 VAC 2.4 A at 240 VDC for China only
Maximum rated input power	580 W at 100 VAC 560 W at 200 VAC 576 W at 240 VDC for China only
BTUs per hour	1979 at 100 VAC 1911 at 200 VAC 1965 at 240 VDC for China only
Power supply output	
Rated steady-state power	500 W at 100 VAC to 127 VAC input 500 W at 200 VAC to 240 VAC input 500 W at 240 VDC input for China only
Maximum peak power	500 W at 100 VAC to 127 VAC input

	500 W at 200 VAC to 240 VAC input 500 W at 240 VDC input for China only

HPE 800W Flex Slot Platinum Hot-plug Power Supply

Specification	Value
Input requirements	
Rated input voltage	100 to 127 VAC 200 to 240 VAC 240 VDC for China only
Rated input frequency	50 Hz to 60 Hz Not applicable to 240VDC
Rated input current	9.4 A at 100 VAC 4.5 A at 200 VAC 3.8 A at 240 VDC for China only
Maximum rated input power	940 W at 100 VAC 900 W at 200 VAC 912 W at 240 VDC for China only
BTUs per hour	3207 at 100 VAC 3071 at 200 VAC 3112 at 240 for China only
Power supply output	
Rated steady-state power	800 W at 100 VAC to 127 VAC input 800 W at 200 VAC to 240 VAC input 800 W at 240 VDC input for China only
Maximum peak power	800 W at 100 VAC to 127 VAC input 800 W at 200 VAC to 240 VAC input 800 W at 240 VDC input for China only

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

Specification	Value
Input requirements	
Rated input voltage	200 to 240 V AC 240 VDC for China only
Rated input frequency	50 Hz to 60 Hz Not applicable to 240 VDC
Rated input current	4.35 A at 200 VAC 3.62 A at 240 VAC 3.62 A at 240 VDC for China only
Maximum rated input power	870 W at 200 VAC 870 W at 240 VAC 870 W at 240 VDC for China only
BTUs per hour	2969 at 200 VAC 2969 at 240 VAC 2969 at 240 VDC for China only

Power supply output	
Rated steady-state power	800 W at 200 VAC to 240 VAC input 800 W at 240 VDC input for China only
Maximum peak power	800 W at 200 VAC to 240 VAC input 800 W at 240 VDC input for China only

HPE 800W Flex Slot Universal Hot-plug Power Supply

Specification	Value
Input requirements	
Rated input voltage	200 V to 277 V AC 380 VDC
Rated input frequency	50 Hz–60 Hz
Rated input current	4.5 A at 200 V AC 3.2 A at 277 V AC 2.3 A at 380 VDC
Maximum rated input power	900 W at 200 VAC 887 W at 277 VAC 874 W at 380 VDC
BTUs per hour	3071 at 200 VAC 3026 at 277 VAC 2982 at 380 VDC
Power supply output	
Rated steady-state power	800 W at 200 VAC to 277 VAC input 800 W at 380 VDC input
Maximum peak power	800 W at 200 VAC to 277 VAC input 800 W at 380 VDC input

HPE 800W Flex Slot -48VDC Hot-plug Power Supply

Specification	Value
Input requirements	
Rated input voltage	-40 VDC to -72 VDC -48 VDC nominal input
Rated input current	26 A at -40 VDC input 19 A at -48 VDC input, nominal input 12.4 A at -72 VDC input
Rated input power (W)	936 W at -40 VDC input 912 W at -48 VDC input, nominal input 900 W at -72 VDC input
Rated input power (BTUs per hour)	3194 at -40 VDC input 3112 at -48 VDC input, nominal input 3071 at -72 VDC input

Power supply output	
Rated steady-state power (W)	800 W at -40 VDC to -72 VDC
Maximum peak power (W)	800 W at -40 VDC to -72 VDC

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

- This equipment must be installed by trained service personnel, as defined by the NEC and IEC 60950-1, Second Edition, the standard for Safety of Information Technology Equipment.
- Connect the equipment to a reliably grounded Secondary circuit source. A Secondary circuit has no direct connection to a Primary circuit and derives its power from a transformer, converter, or equivalent isolation device.
- The branch circuit overcurrent protection must be rated 27 A.

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

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

HPE 1400W Flex Slot Platinum Plus Hot-plug Power Supply

Specification	Value
Input requirements	
Rated input voltage	200 to 240 VAC 240 VDC for China only
Rated input frequency	50 Hz to 60 Hz Not applicable to 240 VDC
Rated input current	8.0 A at 200 VAC 6.7 A at 240 VAC 6.7 A at 240 VDC for China only
Maximum rated input power	1600 W at 200 VAC 1600 W at 240 VAC 1600 W at 240 VDC for China only
BTUs per hour	5459 at 200 VAC 5459 at 240 VAC 5459 at 240 VDC for China only
Power supply output	
Rated steady-state power	1400 W at 200 VAC to 240 VAC input 1400 W at 240 VDC input for China only
Maximum peak power	1400 W at 200 VAC to 240 VAC input 1400 W at 240 VDC input for

	China only

HPE 750W Flex Slot Hot-plug Battery Backup Module

Specification	Value
Rated input voltage	12 V DC
Dual input	Yes
Battery replaceable	No
Built-in power supply	No
Nominal charge current	0.77 A
Maximum discharge current	62.50 A
Maximum discharge power	750 W
Maximum runtime – Full load, 750 W – 75% load, 564 W – 50% load, 375 W – 25% load, 187 W	 >60 seconds 145 seconds 220 seconds 300 seconds (limited by user)

Hot-plug power supply calculations

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

Acronyms and abbreviations

AMP

Advanced Memory Protection

API

application program interface

ASHRAE

American Society of Heating, Refrigerating and Air-Conditioning Engineers

CSR

Customer Self Repair

FLR

FlexibleLOM for rack servers

FSBBU

Flex slot battery backup

GPU

graphics processing unit

HBA

host bus adapter

HPE SIM

HPE Systems Insight Manager

IEC

International Electrotechnical Commission

iLO

Integrated Lights-Out

IML

Integrated Management Log

LFF

large form factor

NMI

nonmaskable interrupt

NVDIMM

non-volatile dual in-line memory module

NVDIMM-N

non-volatile dual in-line memory module with byte-addressable interface to DRAM

NVMe

non-volatile memory express

NVRAM

nonvolatile memory

PCIe

Peripheral Component Interconnect Express

POST

Power-On Self-Test

RBSU

ROM-Based Setup Utility

REST

representational state transfer

RSOC

relative state of change

SAS

serial attached SCSI

SATA

serial ATA

SD

Secure Digital

SFF

small form factor

SPP

Standard Parallel Port Mode

SSD

solid-state drive

SUV

serial, USB, video

TPM

Trusted Platform Module

UEFI

Unified Extensible Firmware Interface

UID

unit identification

USB

universal serial bus

VDC

voltage direct-current

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