Hewlett Packard Enterprise

HPE ProLiant XL170r Gen10 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**

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**.

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**.

Servizio di garanzia per i soli componenti

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

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

Customer Self Repair

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

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

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

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

Ersatzteil in Rechnung stellen. Im Falle von Customer Self Repair kommt Hewlett Packard Enterprise für alle Kosten für die Lieferung und Rücksendung auf und bestimmt den Kurier-/Frachtdienst.

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

Parts-only Warranty Service (Garantieservice ausschließlich für Teile)

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

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

Reparaciones del propio cliente

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

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

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

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

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

Servicio de garantía exclusivo de componentes

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

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

Customer Self Repair

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

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

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**.

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。

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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

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- **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.

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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

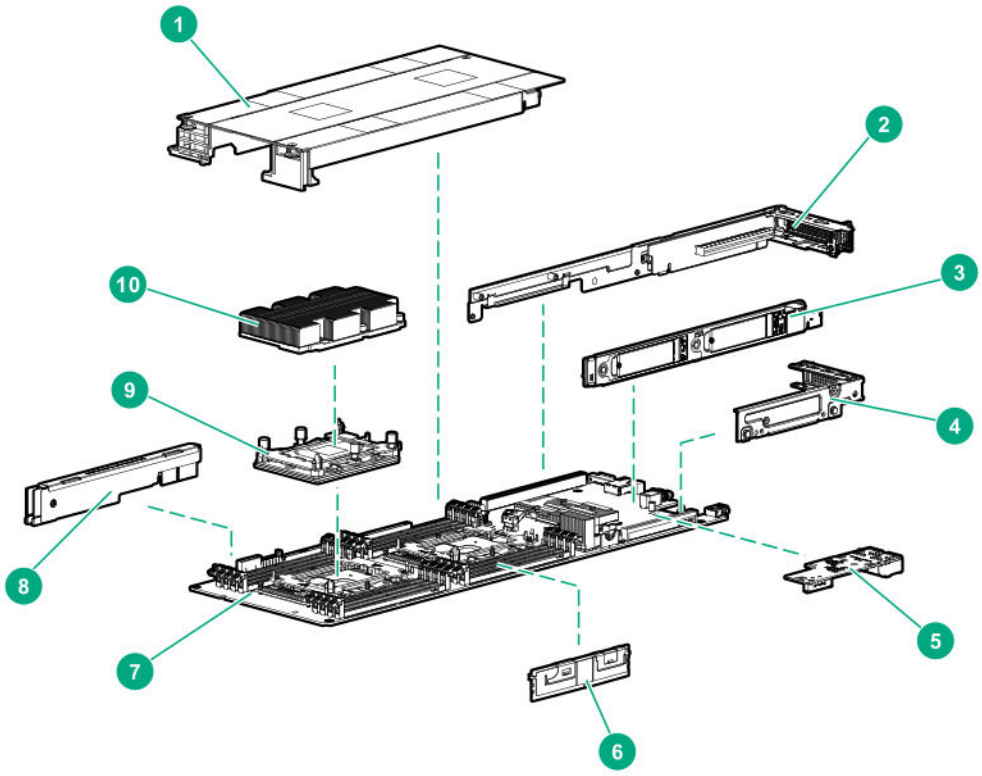
Hewlett Packard Enterprise 제한 보증에는 부품 제공 보증 서비스가 포함될 수 있습니다. 이러한 경우 Hewlett Packard Enterprise는 부품 제공 보증 서비스의 조건에 따라 교체 부품만을 무료로 제공합니다.

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

System components

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



Item	Description
1	**Air baffle spare part** on page 16
2	**Secondary PCI riser cage spare parts** on page 16
3	**M.2 SSD riser spare part** on page 16
4	**Primary PCI riser cage spare part** on page 16
5	**Media Module spare parts** on page 16
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7	**System board spare parts** on page 17
8	**Bayonet board spare parts** on page 17
9	**Processor spare parts** on page 17
10	**Heatsink spare parts** on page 19
11	**System battery spare part** on page 20[1]

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Item	Description
12	**Smart Array controller spare parts** on page 20[1]
13	**NIC card spare part** on page 20[1]
14	**Fabric processor enablement board spare part** on page 20[1]
15	**HPE Trusted Platform Module 2.0 spare part** on page 20[1]
16	**Cable spare parts** on page 20[1]

[1] Not shown

Air baffle spare part

Customer self repair on page 6: **mandatory**

Description	Spare part number
1U server air baffle	879858-001

Secondary PCI riser cage spare parts

Customer self repair on page 6: **optional**

Description	Spare part number
1U FlexibleLOM riser board	879854-001
1U right riser board for processor 1	879856-001
1U right riser board for processor 2	879857-001

M.2 SSD riser spare part

Customer self repair on page 6: **optional**

Description	Spare part number
M.2 SSD riser	879849-001

Primary PCI riser cage spare part

Customer self repair on page 6: **optional**

Description	Spare part number
Left low-profile riser board	879846-001

Media Module spare parts

Customer self repair on page 6: **optional**

Description	Spare part number
Media Module Eth 10Gb 2p 568FLR-MMT Adptr	879847-001
Media Module Eth 1Gb 2p 368FLR-MMT Adptr	872161-001
Media Module Eth 10Gb 2p 568FLR-MMSFP+ Adptr	872162-001

DIMM spare parts

Customer self repair on page 6: **mandatory**

Description	Spare part number
8GB, 1Gx8, PC4-2666V-R	850879-001
16GB, 2Gx4, PC4-2666V-R	850880-001
32GB, 2Gx4, PC4-2666V-R	850881-001
64GB, 2Gx4, PC4-2666V-L	850882-001
16GB, 1Gx8, PC4-2666V-R	868846-001
8GB, 512Mx8, PC4-2666V-R	878490-001
8GB, 1Rx8, PC4-2933Y-R	P06186-001
16GB, 1Rx4, PC4-2933Y-R	P06187-001
16GB 2Rx8 PC4-2933Y-R	P06188-001
32GB 2Rx4 PC4-2933Y-R	P06189-001
64GB 4Rx4 PC4- 2933Y-L	P06190-001
64GB 2Rx4 PC4-2933Y-R	P06192-001

System board spare parts

Customer self repair on page 6: **optional**

Description	Spare part number
System board for Intel Xeon Scalable processors	879847-001
System Board for Intel Xeon Scalable and Intel Xeon Scalable Advanced Performance processors	P11391-001

Bayonet board spare parts

Customer self repair on page 6: **optional**

Description	Spare part number
1U bayonet large board	879855-001
Bayonet small board	879845-001

Processor spare parts

Intel Xeon Scalable Processor spare parts (Models 31xx, 41xx, 51xx, 61xx, and 81xx)

Customer self repair on page 6: **No**

Description	Spare part number
Intel Xeon Bronze series processors	—
1.70 GHz Intel Xeon Bronze 3104, 6C, 85 W	875709-001
1.70 GHz Intel Xeon Bronze 3106, 8C, 85 W	875710-001
Intel Xeon Silver series processors	—
1.80 GHz Intel Xeon Silver 4108, 8C, 85 W	875712-001
2.00 GHz Intel Xeon Silver 4109T, 8C, 70 W	880185-001
2.10 GHz Intel Xeon Silver 4110, 8C, 85 W	875711-001
2.10 GHz Intel Xeon Silver 4116, 12C, 85 W	875716-001
2.20 GHz Intel Xeon Silver 4114, 10C, 85 W	875713-001
2.60 GHz Intel Xeon Silver 4112, 4C, 85 W	875714-001
Intel Xeon Gold series processors	—
2.00 GHz Intel Xeon Gold 6138, 20C, 125 W	874735-001
2.00 GHz Intel Xeon Gold 6138F, 20C, 135 W (for processor 1 only)	878095-001
2.10 GHz Intel Xeon Gold 6130, 16C, 125 W	874736-001
2.10 GHz Intel Xeon Gold 6130F, 16C, 135 W (for processor 1 only)	878096-001
2.10 GHz Intel Xeon Gold 6152, 22C, 140 W	874730-001
2.20 GHz Intel Xeon Gold 5120, 14C, 105 W	875718-001
2.30 GHz Intel Xeon Gold 6140, 18C, 140 W	874734-001
2.30 GHz Intel Xeon Gold 5118, 12C, 105 W	875717-001
2.40 GHz Intel Xeon Gold 5115, 10C, 85 W	875715-001
2.40 GHz Intel Xeon Gold 6148, 20C, 150 W	874732-001
2.60 GHz Intel Xeon Gold 6126, 12C, 125 W	875720-001
2.60 GHz Intel Xeon Gold 6126F, 12C, 135 W (for processor 1 only)	878097-001
2.60 GHz Intel Xeon Gold 6132, 14C, 140 W	875722-001
2.60 GHz Intel Xeon Gold 6142, 16C, 150 W	874733-001
3.00 GHz Intel Xeon Gold 6136, 12C, 150 W	875724-001
3.20 GHz Intel Xeon Gold 6134, 8C, 130 W	875723-001
3.40 GHz Intel Xeon Gold 6128, 6C, 115 W	875721-001
3.60 GHz Intel Xeon Gold 5122, 4C, 105 W	875719-001
Intel Xeon Platinum series processors	—
2.00 GHz Intel Xeon Platinum 8153, 16C, 125 W	875728-001
2.00 GHz Intel Xeon Platinum 8164, 26C, 150 W	875729-001
2.10 GHz Intel Xeon Platinum 8160, 24C, 150 W	874729-001

Table Continued

Description	Spare part number
3.00 GHz Intel Xeon Platinum 8158, 12C, 150 W	875733-001
3.60 GHz Intel Xeon Platinum 8156, 4C, 105 W	875732-001

Intel Xeon Scalable Processor spare parts (Models 32xx, 42xx, 52xx, 62xx, and 82xx)

Customer self repair on page 6: **No**

Description	Spare part number
Intel Xeon Bronze series processor	—
1.90 GHz Intel Xeon Bronze 3204, 6C, 85 W	P11604-001
Intel Xeon Silver series processors	—
2.10 GHz Intel Xeon Silver 4208, 8C, 85 W	P11605-001
2.10 GHz Intel Xeon Silver 4216, 16C, 100 W	P11609-001
2.20 GHz Intel Xeon Silver 4210, 10C, 85 W	P11606-001
2.20 GHz Intel Xeon Silver 4214, 12C, 85 W	P11607-001
2.50 GHz Intel Xeon Silver 4215, 8C, 85 W	P11608-001
Intel Xeon Gold series processors	—
2.10 GHz Intel Xeon Gold 6230, 20C, 125 W	P11614-001
2.10 GHz Intel Xeon Gold 6252, 24C, 150 W	P11619-001
2.20 GHz Intel Xeon Gold 5220, 18C, 125 W	P11613-001
2.30 GHz Intel Xeon Gold 5218, 16C, 125 W	P11612-001
2.50 GHz Intel Xeon Gold 5215, 10C, 85 W	P11610-001
2.50 GHz Intel Xeon Gold 6248, 20C, 150 W	P11618-001
2.60 GHz Intel Xeon Gold 6240, 18C, 150 W	P11615-001
2.80 GHz Intel Xeon Gold 6242, 16C, 150 W	P11616-001
3.00 GHz Intel Xeon Gold 5217, 8C, 125 W	P11611-001
3.60 GHz Intel Xeon Gold 6244, 8C, 150 W	P11617-001
3.80 GHz Intel Xeon Gold 5222, 4C, 105 W	P11632-001
Intel Xeon Platinum series processors	—
2.20 GHz Intel Xeon Platinum 8253, 16C, 125 W	P12011-001

Heatsink spare parts

Customer self repair on page 6: **no**

Description	Spare part number
Heatsink for processor 1 (42 fins)	879851-001
Heatsink for processor 2 (16 fins)	879852-001

System battery spare part

Customer self repair on page 6: **mandatory**

Description	Spare part number
System battery	319603-001

Smart Array controller spare parts

Customer self repair on page 6: **optional**

Description	Spare part number
HPE Smart Array E208i-p Controller	836266-001
HPE Smart Array E208e-p Controller	836267-001
HPE Smart Array P408i-p Controller	836269-001
HPE Smart Array P408e-p Controller	836270-001

NIC card spare part

Customer self repair on page 6: **optional**

Description	Spare part number
HPE Eth 100Gb 1p 842QSFP28 Adptr	877697-001

Fabric processor enablement board spare part

Customer self repair on page 6: **optional**

Description	Spare part number
Fabric processor enablement board	879850-001

HPE Trusted Platform Module 2.0 spare part

Customer self repair on page 6: **no**

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

Cable spare parts

Customer self repair on page 6: **optional**

Description	Spare part number
Secondary PCI riser NVMe cable kit for servers installed in Apollo r2600 Gen10 Chassis and Apollo r2800 Gen10 Chassis with 16 NVMe Includes: • 1U FlexibleLOM riser board NVMe cable • 1U right riser board for processor 2 short NVMe cable • 2U FlexibleLOM riser board short NVMe cable	879838-001
r2600/r2800 Gen10 Chassis power cable and server NVMe cable kit Includes: • r2600/r2800 Gen10 Chassis power cable for server 1 and server 2 • 1U right riser board for processor 2 long NVMe cable • 2U FlexibleLOM riser board long NVMe cable	879840-001
Fabric enablement board cable kit Includes: • Fabric processor enablement board to processor 1 cable • Fabric processor enablement board to system board cable	P01290-001
1U server storage cable kit Includes: • 1U server S100i SATA cable assembly • Slot 1 1U server E208i-p/P408i-p Mini-SAS cable • Slot 2 1U server E208i-p/P408i-p Mini-SAS cable	879853-001

Removal and replacement procedures

Required tools

The following tools might be required to perform some procedures:

- T-10/T-15/T-30 Torx screwdriver
- HPE Insight Diagnostics software

Safety considerations

Before performing service procedures, review all the safety information.

Electrostatic discharge

Be aware of the precautions you must follow when setting up the system or handling components. A discharge of static electricity from a finger or other conductor may damage system boards or other static-sensitive devices. This type of damage may reduce the life expectancy of the system or component.

To prevent electrostatic damage:

- Avoid hand contact by transporting and storing products in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.
- Place parts on a grounded surface before removing them from their containers.
- Avoid touching pins, leads, or circuitry.
- Always be properly grounded when touching a static-sensitive component or assembly. Use one or more of the following methods when handling or installing electrostatic-sensitive parts:
  - Use a wrist strap connected by a ground cord to a grounded workstation or computer chassis. Wrist straps are flexible straps with a minimum of 1 megohm ±10 percent resistance in the ground cords. To provide proper ground, wear the strap snug against the skin.
  - Use heel straps, toe straps, or boot straps at standing workstations. Wear the straps on both feet when standing on conductive floors or dissipating floor mats.
  - Use conductive field service tools.
  - Use a portable field service kit with a folding static-dissipating work mat.

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

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

Server warnings and cautions

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

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

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

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

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

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

Rack warnings

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

- The leveling jacks are extended to the floor.
- The full weight of the rack rests on the leveling jacks.
- The stabilizing feet are attached to the rack if it is a single-rack installation.
- The racks are coupled together in multiple-rack installations.
- Only one component is extended at a time. A rack may become unstable if more than one component is extended for any reason.

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

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

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

WARNING: When installing a server in a telco rack, be sure that the rack frame is adequately secured at the top and bottom to the building structure.

Preparation procedures

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

- **Power down the server**
- **Remove the server from the chassis**
- **Remove the server tray blank**
- **Remove the air baffle**
- **Remove the bayonet board**
- **Remove the secondary PCI riser blank**
- **Remove the secondary PCI riser cage**
- **Remove the primary PCI riser blank**
- **Remove the primary PCI riser cage**

Powering down the server

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

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

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

- Press and release the Power On/Standby button.

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

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

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

- Use a virtual power button selection through iLO.

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

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

Removing the server from the chassis

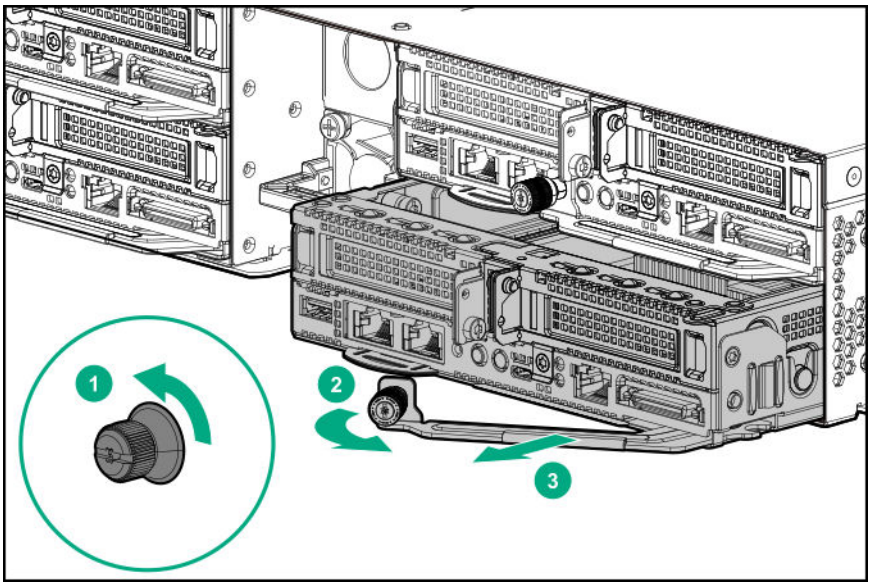
CAUTION: Before powering down the server, perform a backup of critical server data and programs. Removing the server while the Do not remove LED is on may result in data loss or corruption.

CAUTION: To avoid damage to the server, always support the bottom of the server when removing it from the chassis.

CAUTION: To ensure proper thermal cooling, all server tray slots must be populated with servers or server tray blanks.

Procedure

1. Back up all server data.
2. **Power down the server**.
3. Disconnect all peripheral cables from the server.
4. Remove the server from the chassis:
   a. Loosen the thumbscrew.
   b. Open the locking lever.
   c. Slide out the server.



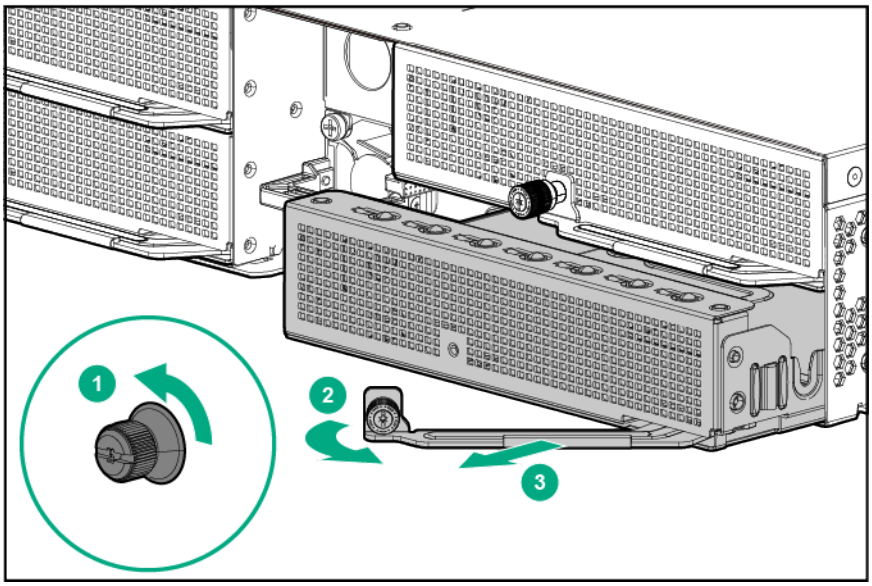
CAUTION: To avoid damage to the device, do not use the removal handle to carry the server.

Removing the server tray blank

CAUTION: To ensure proper thermal cooling, all server tray slots must be populated with servers or server tray blanks.

Procedure

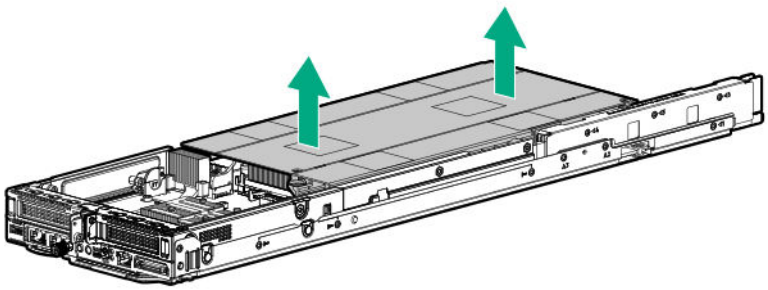
Remove the server tray blank.



Removing the air baffle

Procedure

1. Back up all server data.
2. **Power down the server**.
3. Disconnect all peripheral cables from the server.
4. **Remove the server from the chassis**.
5. Remove the air baffle.



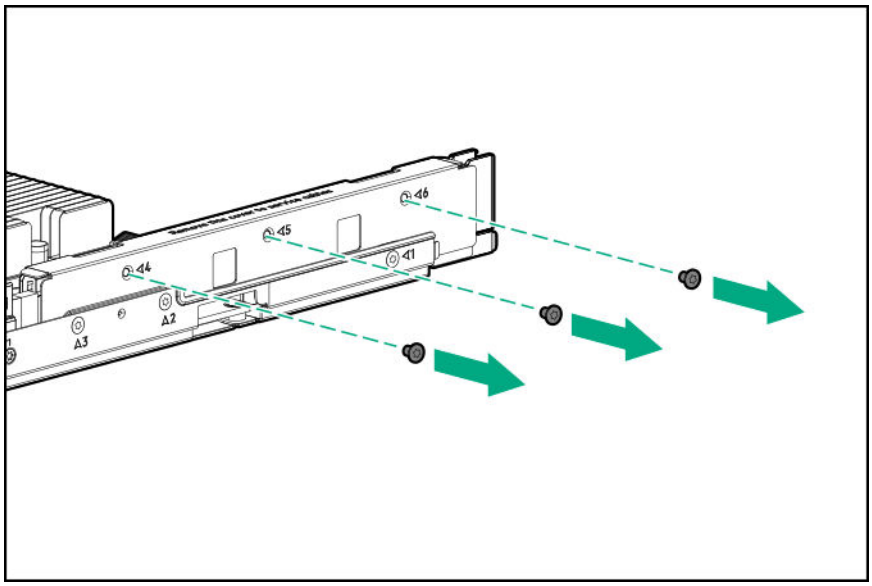
Removing the bayonet board

Prerequisites

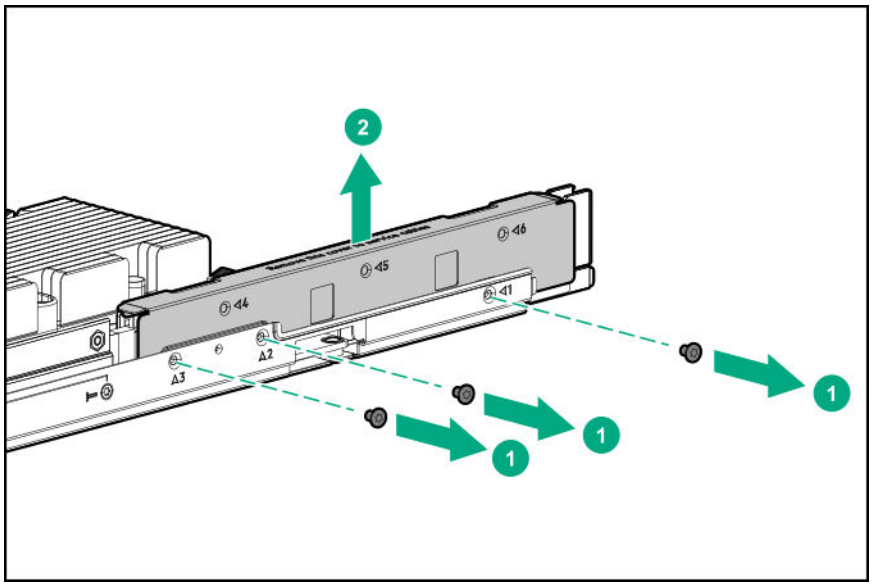
Before you perform this procedure, make sure that you have a T-10 Torx screwdriver available.

Procedure

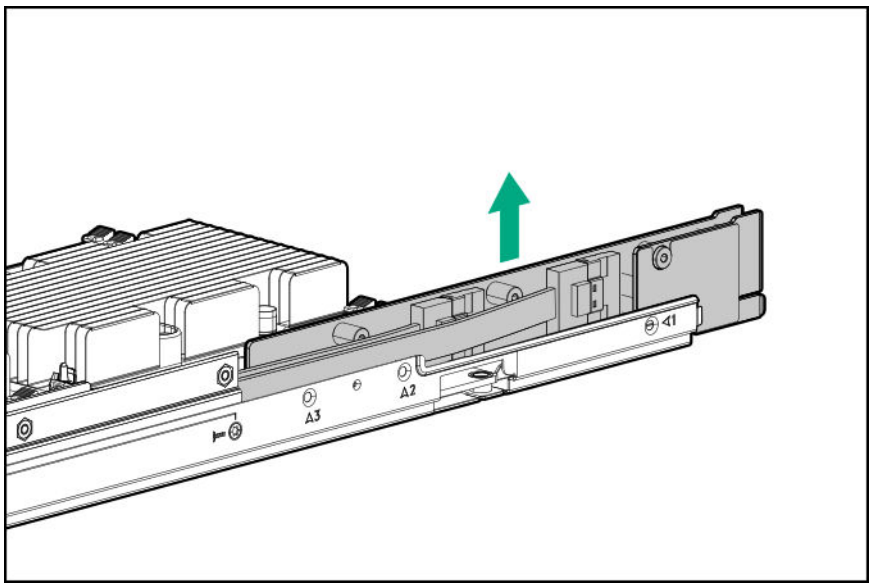
1. Back up all server data.
2. **Power down the server**.
3. Disconnect all peripheral cables from the server.
4. **Remove the server from the chassis**.
5. **Remove the air baffle**.
6. Remove the bayonet board:
   a. Remove the top screws from the cover.



   b. Remove the bottom screws from the cover and lift the cover up.



   c. Gently lift up the bayonet board and disconnect the cables.

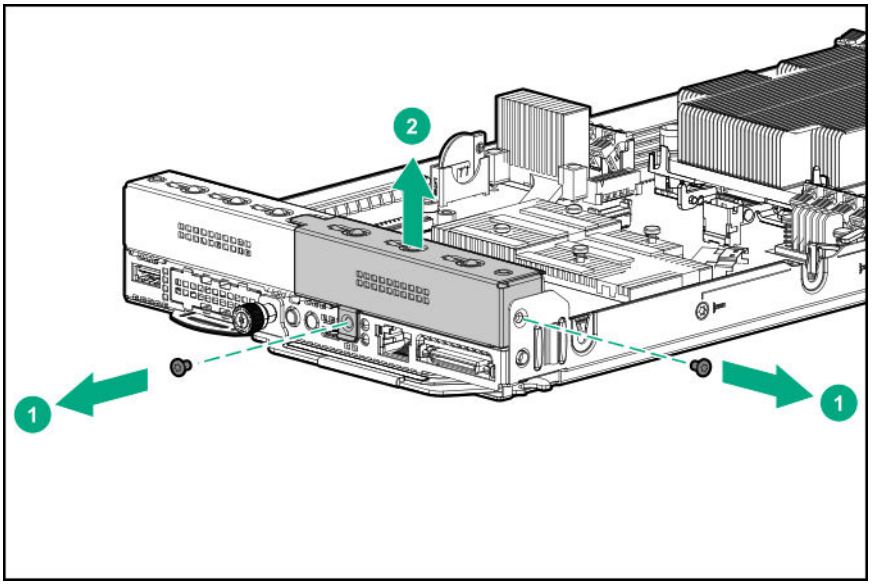


Removing the secondary PCI riser blank

CAUTION: To prevent improper cooling and thermal damage, do not operate the server unless either riser blanks or riser cages are installed.

Procedure

1. Back up all server data.
2. **Power down the server**.
3. Disconnect all peripheral cables from the server.
4. **Remove the server from the chassis**.
5. **Remove the air baffle**.
6. Remove the secondary PCI riser blank.

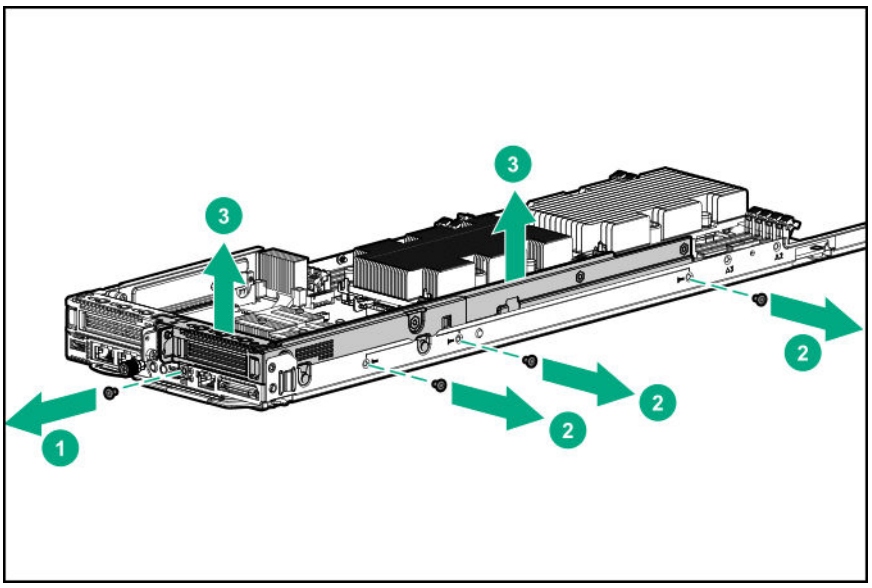


Removing the secondary PCI riser cage

CAUTION: To prevent improper cooling and thermal damage, do not operate the server unless either riser blanks or riser cages are installed.

Procedure

1. Back up all server data.
2. **Power down the server**.
3. Disconnect all peripheral cables from the server.
4. **Remove the server from the chassis**.
5. **Remove the air baffle.**
6. **Remove the bayonet board**.
7. Remove the secondary PCI riser cage.

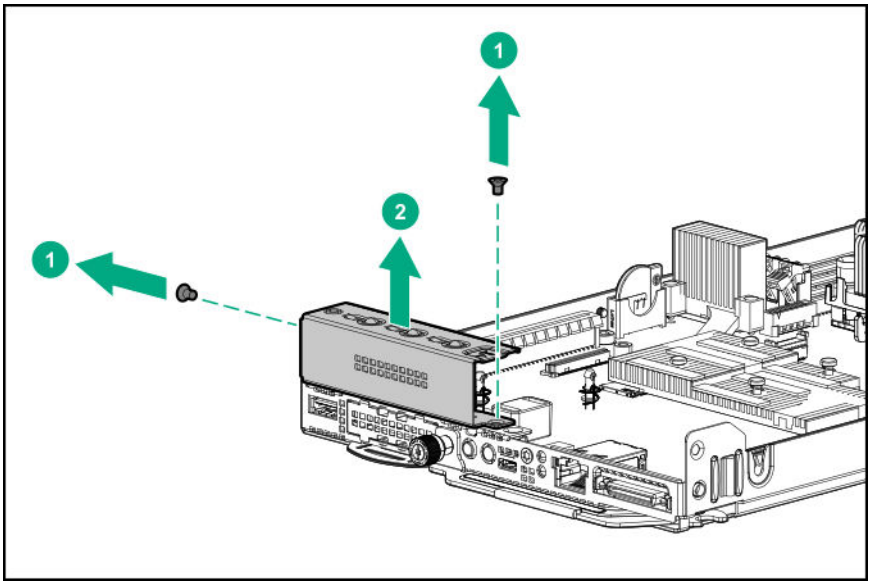


Removing the primary PCI riser blank

CAUTION: To prevent improper cooling and thermal damage, do not operate the server unless either riser blanks or riser cages are installed.

Procedure

1. Back up all server data.
2. **Power down the server**.
3. Disconnect the peripheral cables from the server.
4. **Remove the server from the chassis**.
5. **Remove the air baffle**.
6. If a secondary PCI riser cage is installed, **remove the bayonet board**.
7. Do one of the following:
   - **Remove the secondary PCI riser blank**.
   - **Remove the secondary PCI riser cage**.
8. Remove the primary PCI riser blank.

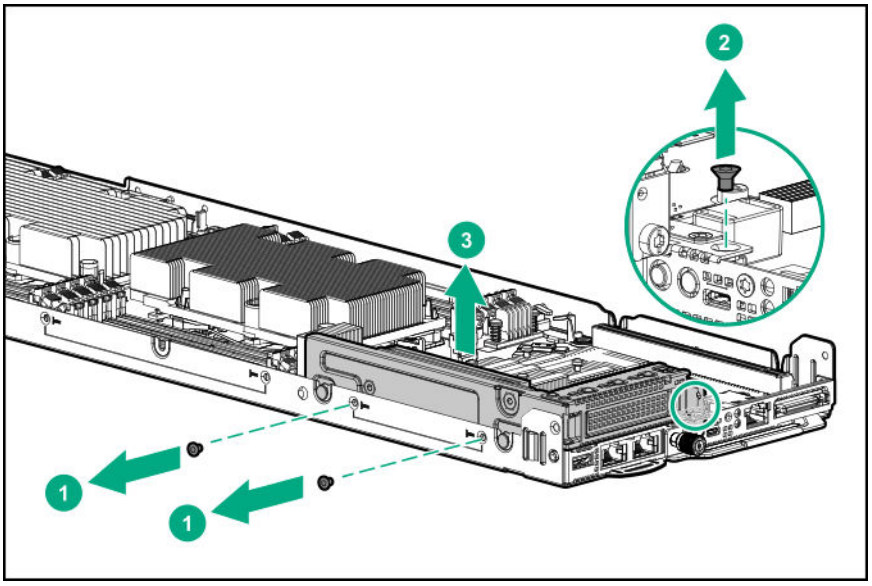


Removing the primary PCI riser cage

CAUTION: To prevent improper cooling and thermal damage, do not operate the server unless either riser blanks or riser cages are installed.

Procedure

1. Back up all server data.
2. **Power down the server**.
3. Disconnect all peripheral cables from the server.
4. **Remove the server from the chassis**.
5. **Remove the air baffle**.
6. If a secondary PCI riser cage is installed, **remove the bayonet board**.
7. Do one of the following:
   - **Remove the secondary PCI riser blank**.
   - **Remove the secondary PCI riser cage**.
8. Remove the primary PCI riser cage.



DIMM-processor compatibility

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

- First Generation Intel Xeon Scalable Processors support DDR4-2666 DIMMs.
- Second Generation Intel Xeon Scalable Processors support DDR4-2666 DIMMs or DDR4-2933 DIMMs.

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

Removing and replacing a DIMM

Determine if there are temperature requirements for the component. For more information, see **Temperature requirements**.

Depending on the chassis configuration and the component being installed in the server, it might be necessary to limit the number of drives installed in the chassis. For more information, see **List of components with temperature requirements in the HPE ProLiant XL170r Gen10 Server** on page 72.

CAUTION: Before replacing the component due to a perceived hardware error, make sure first that the component is firmly seated in the slot. Do not bend or flex circuit boards when re-seating components.

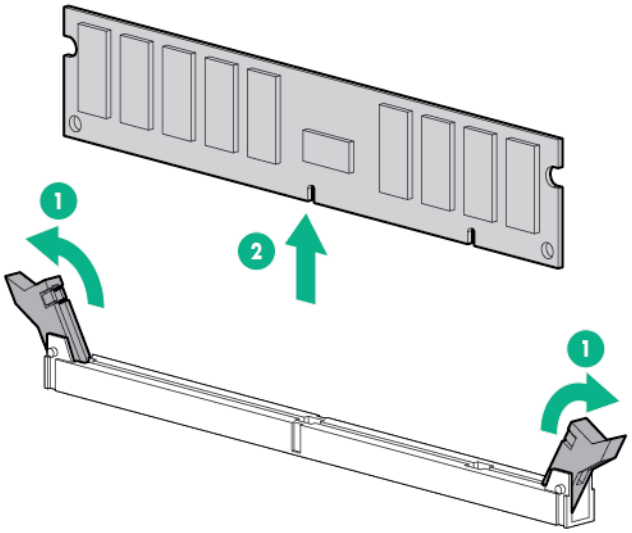
Prerequisites

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

Procedure

1. **Power down the server**.
2. Disconnect all peripheral cables from the server.
3. **Remove the server from the chassis**.

4. **Remove the air baffle**.
5. Remove the DIMM.



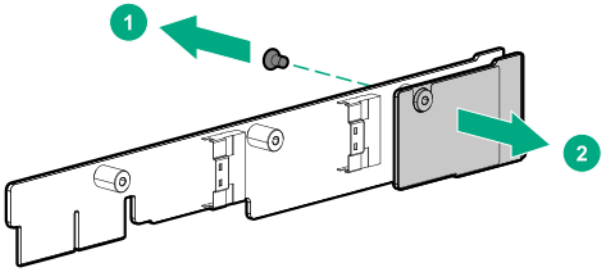
To replace the component, reverse the removal procedure.

Removing and replacing the bayonet board

CAUTION: Before replacing the component due to a perceived hardware error, make sure first that the component is firmly seated in the slot. Do not bend or flex circuit boards when re-seating components.

Procedure

1. Back up all server data.
2. **Power down the server**.
3. Disconnect all peripheral cables from the server.
4. **Remove the server from the chassis**.
5. **Remove the air baffle**.
6. **Remove the bayonet board**.
7. Separate the bayonet small board from the bayonet large board.



To replace the component, reverse the removal procedure.

Removing and replacing an expansion board

Determine if there are temperature requirements for the component. For more information, see **Temperature requirements**.

Depending on the chassis configuration and the component being installed in the server, it might be necessary to limit the number of drives installed in the chassis. For more information, see **List of components with temperature requirements in the HPE ProLiant XL170r Gen10 Server** on page 72.

CAUTION: Before replacing the component due to a perceived hardware error, make sure first that the component is firmly seated in the slot. Do not bend or flex circuit boards when re-seating components.

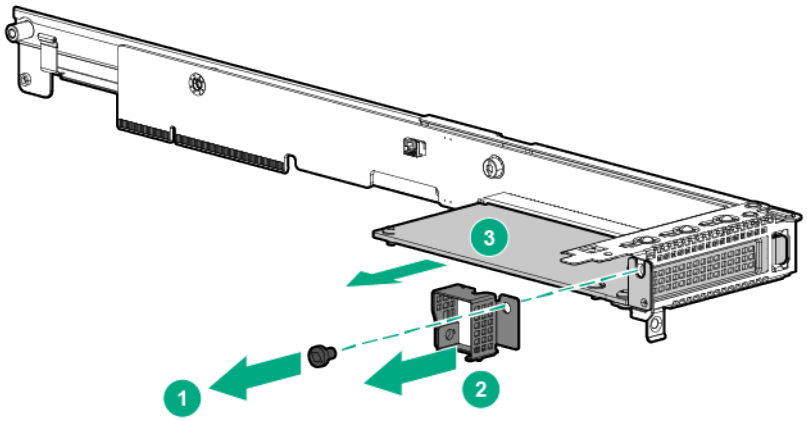
IMPORTANT: The HPE Apollo r2800 Gen10 Chassis with 16 NVMe does not support servers using the embedded SATA HPE Dynamic Smart Array S100i Controller or any type-p plug-in Smart Array Controller with internal ports and cables.

Procedure

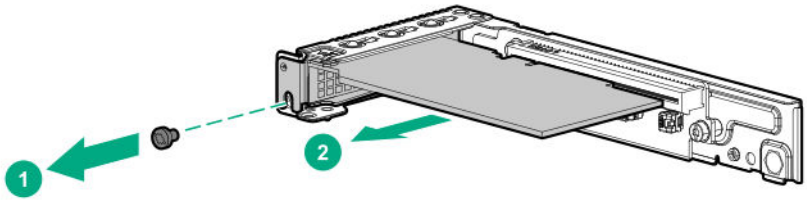
1. Back up all server data.
2. **Power down the server**.
3. Disconnect all peripheral cables from the server.
4. **Remove the server from the chassis**.
5. **Remove the air baffle**.
6. If a secondary PCI riser cage is installed, **remove the bayonet board**.
7. Do one of the following:

- **Remove the secondary PCI riser blank**.
- **Remove the secondary PCI riser cage**.

8. If replacing the expansion board installed in slot 1, **remove the primary PCI riser cage**.
9. Disconnect all cables connecting the expansion board to the riser board.
10. Remove the expansion board and disconnect all cables.
    - Expansion board removal from slot 2



    - Expansion board removal from slot 1



To replace the component, reverse the removal procedure.

Removing and replacing a Smart Array standup controller

If you are removing a Smart Array P-class SR Gen10 controller, see "**Removing and replacing an expansion board** on page 34".

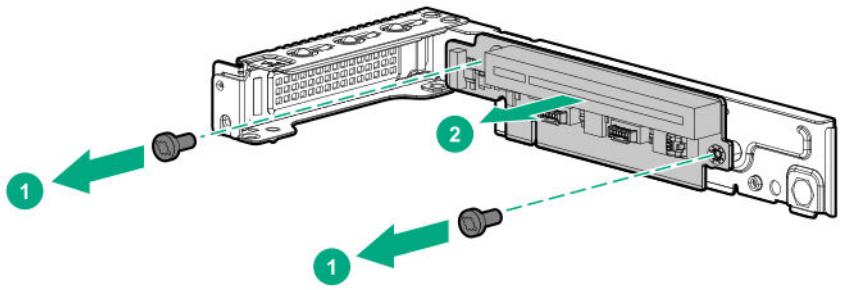
To replace the component, reverse the removal procedure.

Removing and replacing a riser board

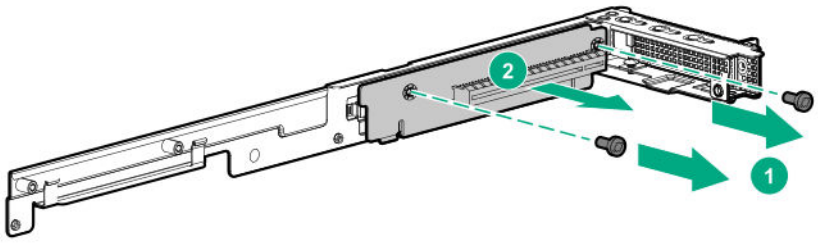
CAUTION: Before replacing the component due to a perceived hardware error, make sure that the component is firmly seated in the slot. Do not bend or flex circuit boards when re-seating components.

Procedure

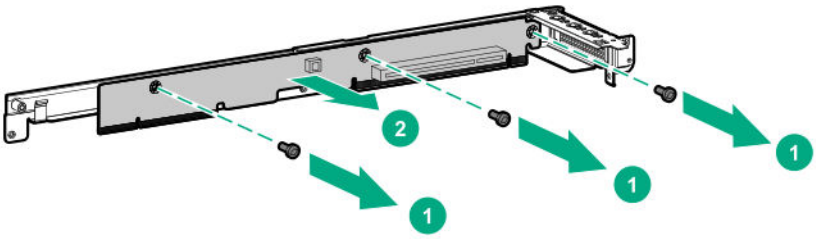
1. **Power down the server**.
2. Disconnect all peripheral cables from the server.
3. **Remove the server from the chassis**.
4. **Remove the air baffle**.
5. **Remove the bayonet board**.
6. **Remove the secondary PCI riser cage**.
7. **Remove the primary PCI riser cage**.
8. Disconnect any cables connecting the expansion board to the riser board.
9. **Remove the expansion board**.
10. Disconnect all cables from the riser board.
11. Remove the riser board.
    - Left low-profile riser board



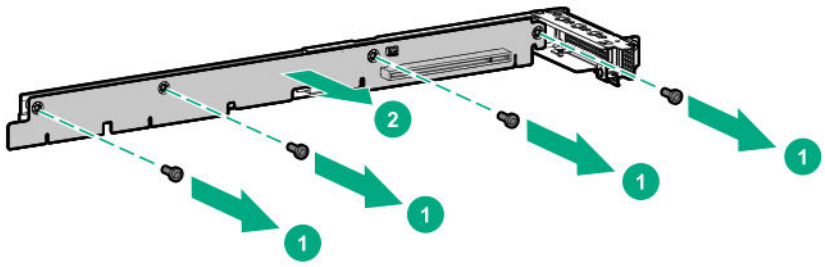
    - 1U FlexibleLOM riser board



- 1U right riser board for processor 1



- 1U right riser board for processor 2



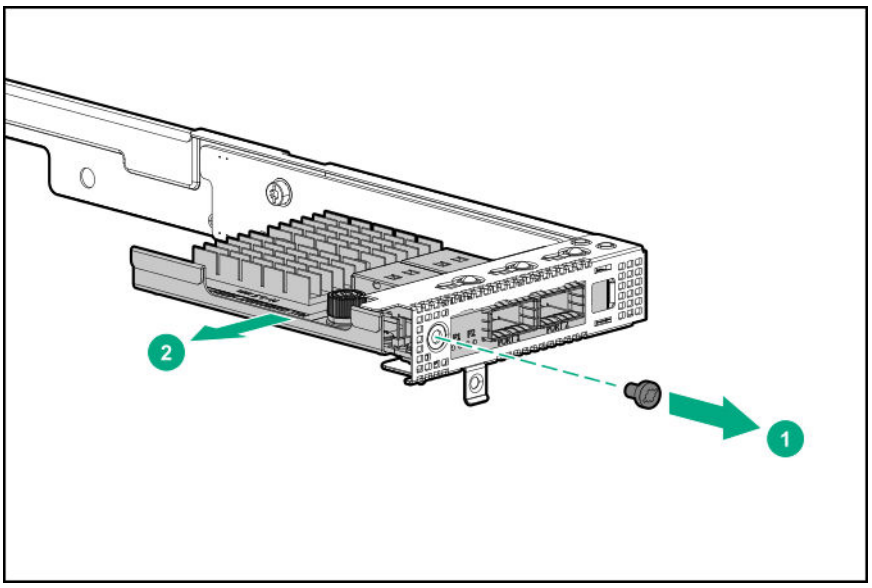
To replace the component, reverse the removal procedure.

Removing and replacing the FlexibleLOM

CAUTION: Before replacing the component due to a perceived hardware error, make sure that the component is firmly seated in the slot. Do not bend or flex circuit boards when re-seating components.

Procedure

1. Back up all server data.
2. **Power down the server**.
3. Disconnect all peripheral cables from the server.
4. **Remove the server from the chassis**.
5. **Remove the air baffle**.
6. **Remove the bayonet board**.
7. **Remove the secondary PCI riser cage**.
8. Remove the FlexibleLOM.



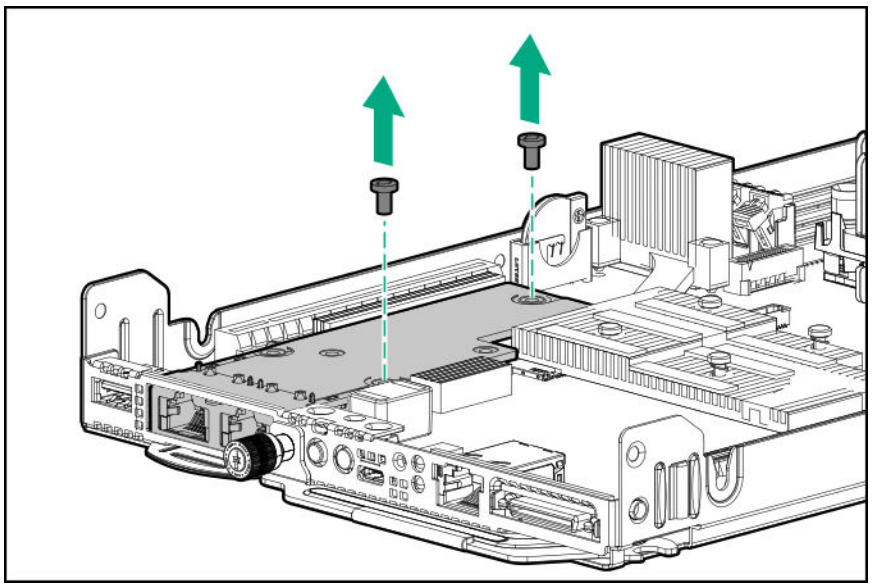
To replace the component, reverse the removal procedure.

Removing and replacing the Media Module

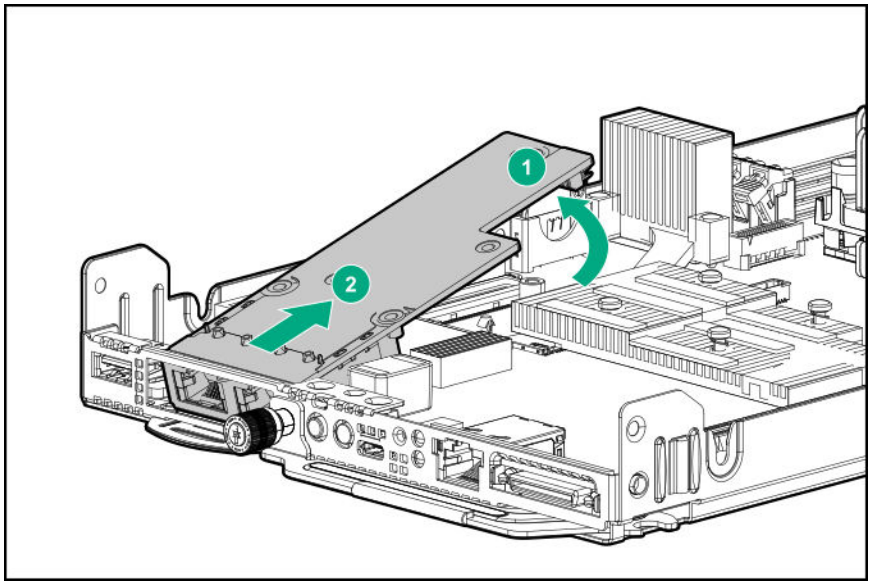
CAUTION: Before replacing the component due to a perceived hardware error, make sure that the component is firmly seated in the slot. Do not bend or flex circuit boards when re-seating components.

Procedure

1. Back up all server data.
2. **Power down the server**.
3. Disconnect all peripheral cables from the server.
4. **Remove the server from the chassis**.
5. **Remove the air baffle.**
6. If a secondary PCI riser cage is installed, **remove the bayonet board**.
7. Do one of the following:
   - **Remove the secondary PCI riser blank**.
   - **Remove the secondary PCI riser cage**.
8. Do one of the following:
   - **Remove the primary PCI riser blank**.
   - **Remove the primary PCI riser cage**.
9. Remove the T-15 screws securing the Media Module.



10. Remove the Media Module.



To replace the component, reverse the removal procedure.

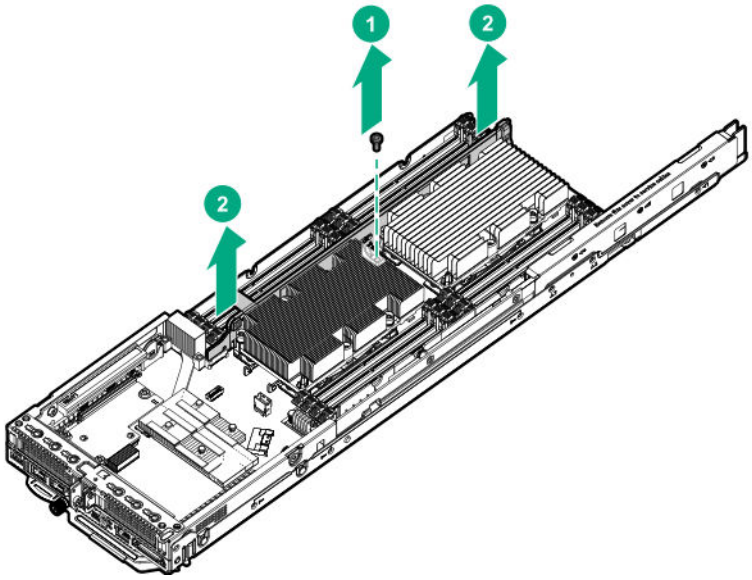
Removing and replacing the M.2 SSD riser

CAUTION: Before replacing the component due to a perceived hardware error, make sure that the component is firmly seated in the slot. Do not bend or flex circuit boards when re-seating components.

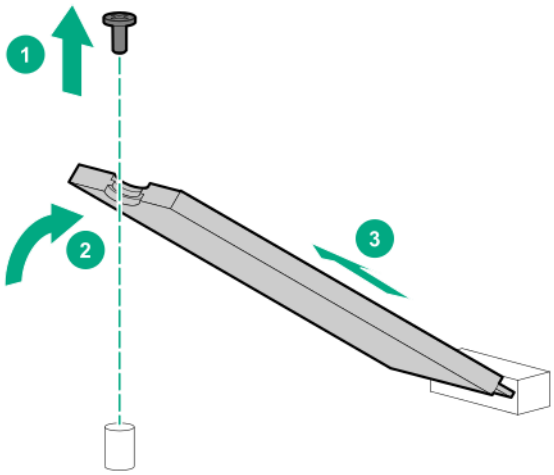
Procedure

1. Back up all server data.
2. **Power down the server**.
3. Disconnect all peripheral cables from the server.
4. **Remove the server from the chassis**.

5. **Remove the air baffle.**
6. Remove the M.2 SSD riser.



7. Remove all SSD modules.



To replace the component, reverse the removal procedure.

Removing and replacing the system battery

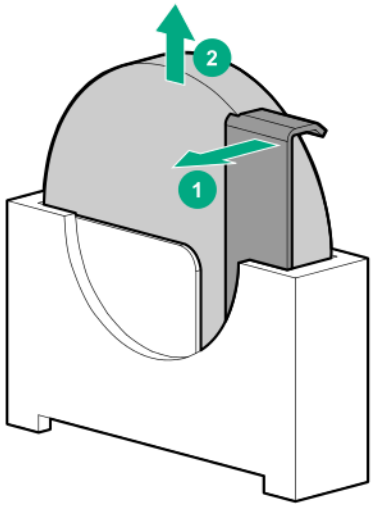
The system battery provides power to the real-time clock. If the server no longer automatically displays the correct date and time, you might need to replace the system battery.

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

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

Procedure

1. Back up all server data.
2. **Power down the server**.
3. Disconnect all peripheral cables from the server.
4. **Remove the server from the chassis**.
5. **Remove the air baffle**.
6. If a secondary PCI riser cage is installed, **remove the bayonet board**.
7. Do one of the following:
   - **Remove the secondary PCI riser blank**.
   - **Remove the secondary PCI riser cage**.
8. If installed, **remove the primary PCI riser cage**.
9. **Locate the battery**.
10. Remove the battery.



11. To replace the component, reverse the removal procedure.
12. Properly dispose of the old battery.

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

Removing and replacing a processor heatsink assembly

Determine if there are temperature requirements for the component. For more information, see **Temperature requirements**.

Procedure

1. Observe the following alerts:

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

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

   To download firmware and view installation instructions, see the **Hewlett Packard Enterprise Support Center website**.

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

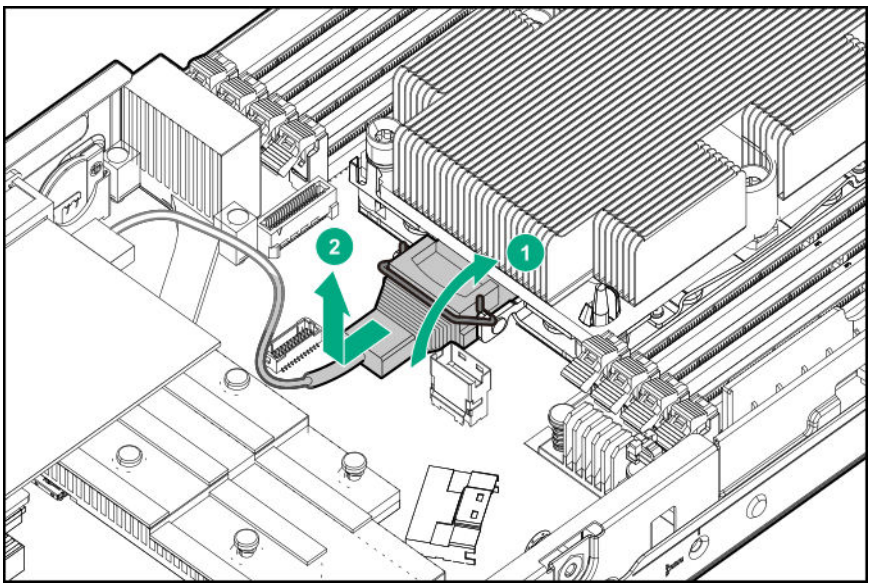
   CAUTION: THE CONTACTS ARE VERY FRAGILE AND EASILY DAMAGED. To avoid damage to the socket or processor, do not touch the contacts.

   CAUTION: When handling the heatsink, always hold it along the top and bottom of the fins. Holding it from the sides can damage the fins.

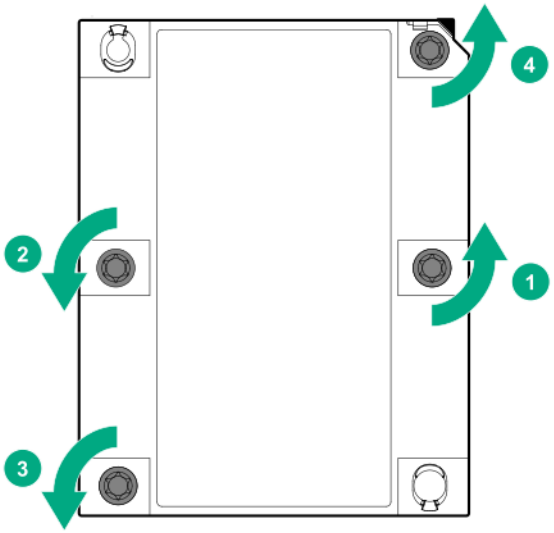
   CAUTION: Observe the label on the heatsink. Tightening or loosening the screws in the wrong order can damage the heatsink.

   NOTE: Heatsink processor assemblies specified for processor 1 and 2 are not interchangeable. Be sure to note the appropriate orientation on the heatsink label.

2. **Power down the server**.
3. Disconnect all peripheral cables from the server.
4. **Remove the server from the chassis**.
5. **Remove the air baffle**.
6. If replacing a fabric processor, disconnect the cable from processor 1.



7. Remove the processor heatsink assembly:
   a. Allow the heatsink to cool.
   b. Loosen the heatsink nuts in the order specified by the label on the heatsink.



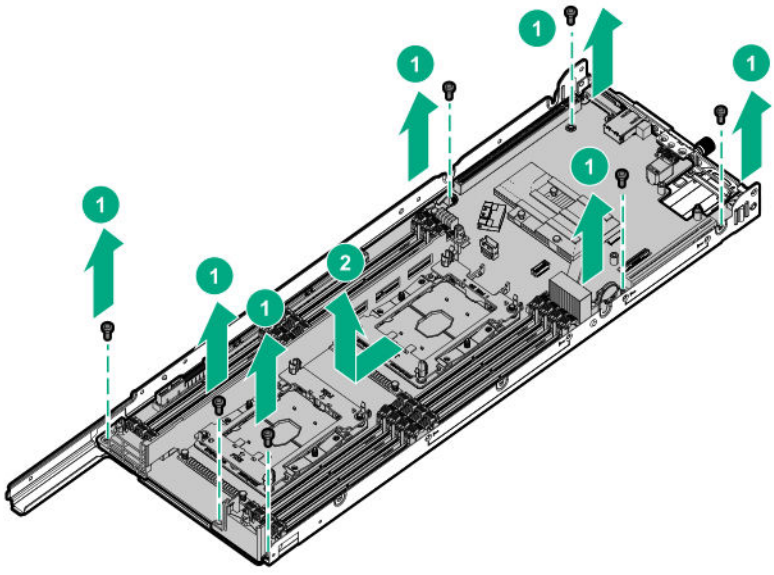
   c. Lift the processor heatsink assembly and move it away from the system board.
   d. Turn the assembly over and place it on a work surface with the processor facing up.
   e. Install the dust cover.

To replace the component, reverse the removal procedure.

Removing and replacing the system board

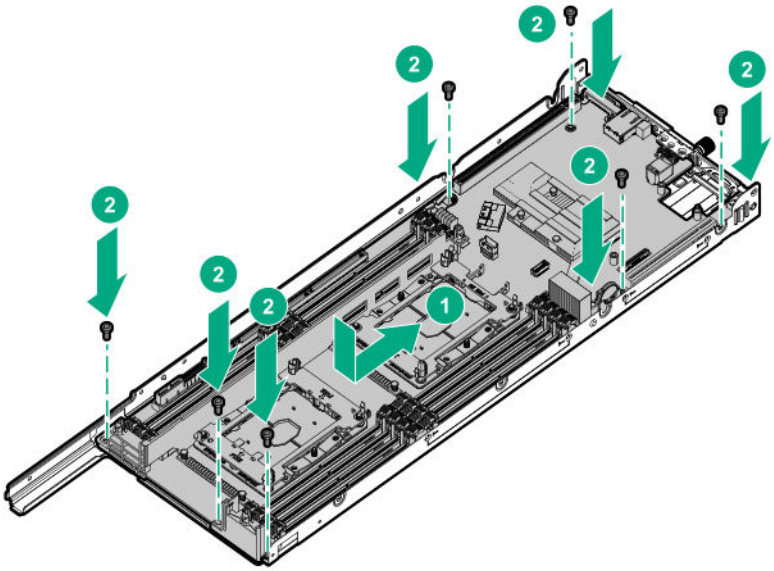
Procedure

1. **Power down the server**.
2. Disconnect all peripheral cables from the server.
3. **Remove the server from the chassis**.
4. **Remove the air baffle.**
5. **Remove the bayonet board**.
6. Do one of the following:
   - **Remove the secondary PCI riser blank**.
   - **Remove the secondary PCI riser cage**.
7. Do one of the following:
   - **Remove the primary PCI riser blank**.
   - **Remove the primary PCI riser cage**.
8. **Remove the Media Module**.
9. If installed, **remove the M.2 SSD rider**.
10. Make a note of the port number and cable connections to riser boards and the system board.
11. Disconnect and remove all cables that are connected to the system board.
12. **Remove all DIMMs**.
13. **Remove the processor heatsink assembly**.
14. Remove the system board.



To replace the component:

1. Install the spare system board.



2. Install all components removed from the failed system board.
3. 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 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 on the chassis.
7. Enter the product ID and press the **Enter** key.
8. To confirm exiting System Utilities, press the **F10** key.
9. The server automatically reboots.

HPE Trusted Platform Module 2.0 Gen10 Option

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

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

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

Troubleshooting

NMI functionality

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

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

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

Troubleshooting resources

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

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

To access the troubleshooting resources, see the Hewlett Packard Enterprise Information Library (**http://www.hpe.com/info/gen10-troubleshooting**).

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**).

UEFI System Utilities

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

- Configuring system devices and installed options.
- Enabling and disabling system features.
- Displaying system information.
- Selecting the primary boot controller or partition.
- Configuring memory options.
- Launching other preboot environments.

HPE servers with UEFI can provide:

- Support for boot partitions larger than 2.2 TB. Such configurations could previously only be used for boot drives when using RAID solutions.
- Secure Boot that enables the system firmware, option card firmware, operating systems, and software collaborate to enhance platform security.
- UEFI Graphical User Interface (GUI)
- An Embedded UEFI Shell that provides a preboot environment for running scripts and tools.
- Boot support for option cards that only support a UEFI option ROM.

Selecting the boot mode

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

- Secure Boot, UEFI Optimized Boot, Generic USB Boot, IPv6 PXE Boot, iSCSI Boot, and Boot from URL
- Fibre Channel/FCoE Scan Policy

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

Prerequisite

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

Procedure

1. From the **System Utilities** screen, select **System Configuration** > **BIOS/Platform Configuration (RBSU)** > **Boot Options** > **Boot Mode**.
2. Select a setting.
   - **UEFI Mode** (default)—Configures the system to boot to a UEFI compatible operating system.
   - **Legacy BIOS Mode**—Configures the system to boot to a traditional operating system in Legacy BIOS compatibility mode.
3. Save your setting.
4. Reboot the server.

Secure Boot

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

- UEFI drivers loaded from PCIe cards
- UEFI drivers loaded from mass storage devices
- Preboot UEFI Shell applications
- OS UEFI boot loaders

When Secure Boot is enabled:

- Firmware components and operating systems with boot loaders must have an appropriate digital signature to execute during the boot process.
- Operating systems must support Secure Boot and have an EFI boot loader signed with one of the authorized keys to boot. For more information about supported operating systems, see **http://www.hpe.com/servers/ossupport**.

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

You can configure Secure Boot:

- Using the **System Utilities** options described in the following sections.
- Using the iLO RESTful API to clear and restore certificates. For more information, see the Hewlett Packard Enterprise website (**http://www.hpe.com/info/redfish**).
- Using the `secboot` command in the Embedded UEFI Shell to display Secure Boot databases, keys, and security reports.

Launching the Embedded UEFI Shell

Use the **Embedded UEFI Shell** option to launch the Embedded UEFI Shell. The Embedded UEFI Shell is a preboot command-line environment for scripting and running UEFI applications, including UEFI boot

loaders. The Shell also provides CLI-based commands you can use to obtain system information, and to configure and update the system BIOS.

Prerequisites

Embedded UEFI Shell is set to **Enabled**.

Procedure

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

   The **Embedded UEFI Shell** screen appears.

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

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

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

   The `Shell>` prompt appears.

4. Enter the commands required to complete your task.

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

Intelligent Provisioning

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

Intelligent Provisioning 3.30 and later includes HPE SMB Setup. When you launch F10 mode from the POST screen, you are prompted to select whether you want to enter the Intelligent Provisioning or HPE SMB Setup mode.

NOTE: After you have selected a mode, you must reprovision the server to change the mode that launches when you boot to F10.

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

IMPORTANT: HPE ProLiant XL servers do not support operating system installation with Intelligent Provisioning, but they do support the maintenance features. For more information, see "Performing Maintenance" in the Intelligent Provisioning user guide and online help.

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

To access Intelligent Provisioning:

- Press **F10** from the POST screen and enter either Intelligent Provisioning or HPE SMB Setup.
- From the iLO web interface using **Always On**. **Always On** allows you to access Intelligent Provisioning without rebooting your server.

HPE Insight Remote Support

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

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

USB support

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

External USB functionality

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

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

HPE Smart Storage Administrator

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

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

During the initial provisioning of the server or compute module, an array is required to be configured before the operating system can be installed. You can configure the array using SSA.

HPE SSA is accessible both offline (either through HPE Intelligent Provisioning or as a standalone bootable ISO image) and online:

- Accessing HPE SSA in the offline environment

  IMPORTANT: If you are updating an existing server in an offline environment, obtain the latest version of HPE SSA through Service Pack for ProLiant before performing configuration procedures.

  Using one of multiple methods, you can run HPE SSA before launching the host operating system. In offline mode, users can configure or maintain detected and supported devices, such as optional Smart Array controllers and integrated Smart Array controllers. Some HPE SSA features are only available in the offline environment, such as setting the boot controller and boot volume.

- Accessing HPE SSA in the online environment

  This method requires an administrator to download the HPE SSA executables and install them. You can run HPE SSA online after launching the host operating system.

For more information, see *HPE Smart Array SR Gen10 Configuration Guide* at the **Hewlett Packard Enterprise website**.

HPE InfoSight for servers overview

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

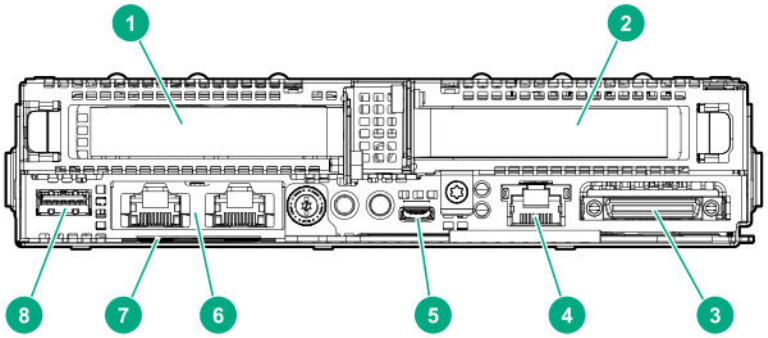
HPE InfoSight for servers:

- Combines the machine learning and predictive analytics of HPE InfoSight with the health and performance monitoring of Active Health System (AHS) and HPE iLO to optimize performance and performance monitoring of Active Health System (AHS) and HPE iLO to optimize performance and predict and prevent problems
- Provides automatic collection and analysis of the sensor and telemetry data from AHS to derive insights from the behaviors of the install base to provide recommendations to resolve problems and improve performance

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

Component identification

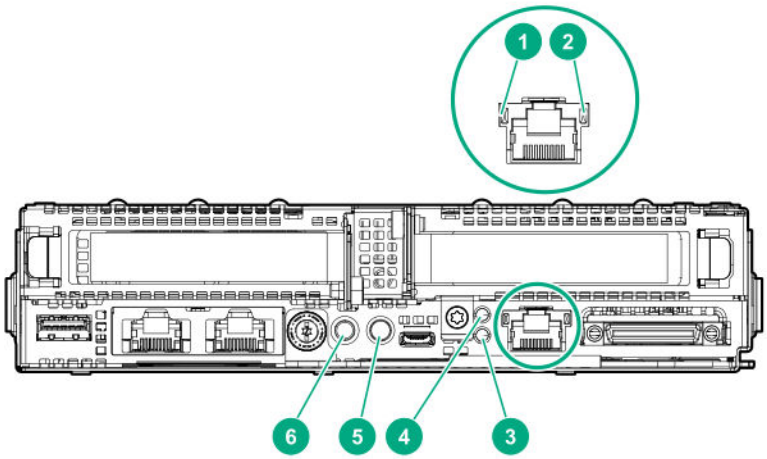
Rear panel components



Item	Description
1	Slot 1 PCIe3 x16 (16, 8, 4, 1)
2	Slot 2 PCIe3 x16 (16, 8, 4, 1) or FlexibleLOM
3	SUV connector
4	iLO Management Port[1]
5	iLO Service Port with micro USB connector
6	Media Module (optional - NIC ports)
7	Server serial number and iLO label pull tab
8	USB 3.0 port

[1] If the RCM module is installed on the chassis, the iLO Management Port is automatically disabled. For more information, see the HPE Apollo 2000 Gen10 Chassis User Guide on the **Hewlett Packard Enterprise website**.

Rear panel LEDs and buttons



Item	Description	Status
1	NIC link LED[1]	Green = Linked to network Off = No network connection
2	NIC activity LED[1]	Green or flashing green = Network activity Off = No network activity
3	Health LED[1]	Solid green = Normal Flashing green = iLO rebooting Flashing amber = System degraded Flashing red = System critical[1]
4	Do not remove LED	Flashing white = Do not remove the server. Removing the server may terminate the current operation and cause data loss. Off = The server can be removed.
5	UID button/LED[1]	Solid blue = Activated • 1 flash per second = Remote management or firmware upgrade in progress • 4 flashes per second = iLO manual soft reboot sequence initiated • 8 flashes per second = iLO manual hard reboot sequence in progress Off = Deactivated
6	Power button/LED[2]	Solid green = System on Flashing green = Performing power on sequence Solid amber = System in standby Off = No power present[3]

[1] If the health LED indicates a degraded or critical state, review the system IML or use iLO to review the system health status.

[2] When the LEDs described in this table flash simultaneously, a power fault has occurred. For more information, see "**Power fault LEDs** on page 55."

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

UID button functionality

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

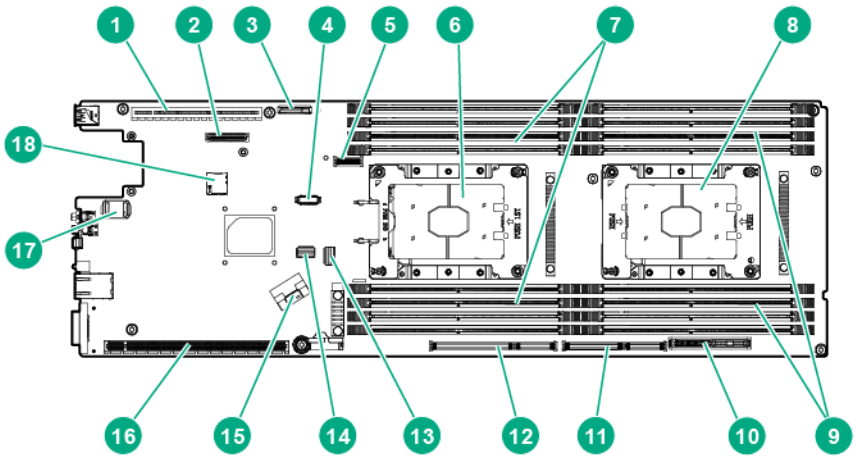
Power fault LEDs

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	6 flashes
System board PCIe slots	7 flashes
Power backplane or storage backplane	8 flashes
Power supply	9 flashes

System board components

NOTE: HPE ProLiant XL170r and XL190r Gen10 Servers share the same system board.

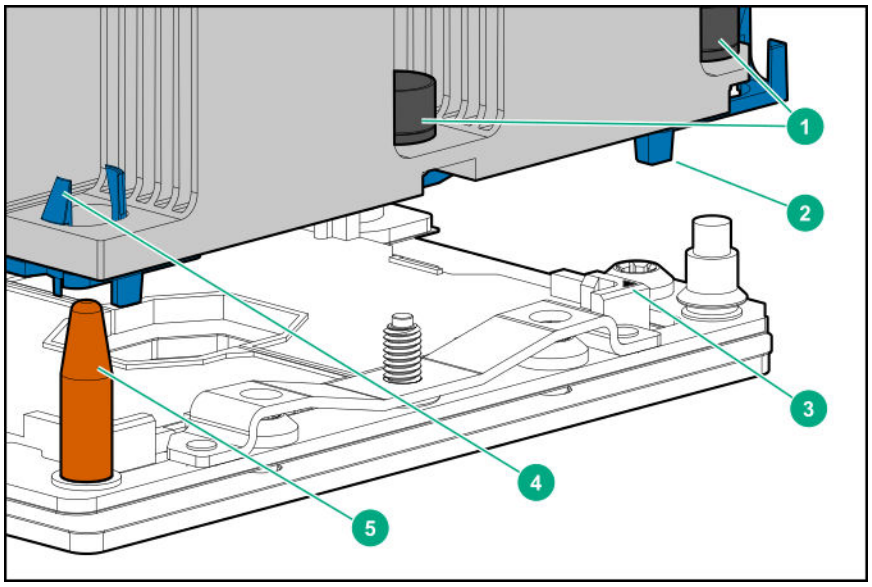


Item	Description
1	Primary riser slot 1
2	Media Module connector
3	System battery
4	Fabric carrier sideband signal connector
5	M.2 SSD riser connector
6	Processor 1
7	DIMMs for processor 1

Table Continued

Item	Description
8	Processor 2
9	DIMMs for processor 2
10	Bayonet board slot
11	Secondary riser slot 4
12	Secondary riser slot 3
13	Slimline SATA x4 connector
14	System maintenance switch
15	Slimline SATA x8 connector
16	Secondary riser slot 2
17	TPM connector
18	microSD slot

Processor, heatsink, and socket components



Item	Description
1	Heatsink nuts
2	Processor carrier
3	Pin 1 indicator[1]
4	Heatsink latch
5	Alignment post

[1] Symbol also on the processor and frame.

System maintenance switch descriptions

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

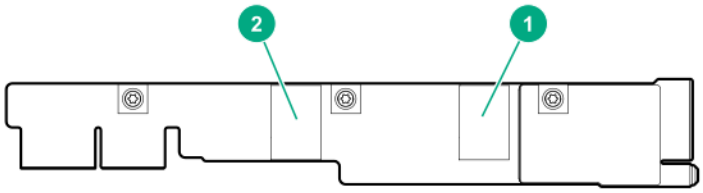
1 To access the redundant ROM, set S1, S5, and S6 to On.

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

3 When the system maintenance switch position 6 is set to the On position and Secure Boot is enabled, some configurations cannot be restored. For more information, see **Secure Boot** on page 50.

Bayonet board components

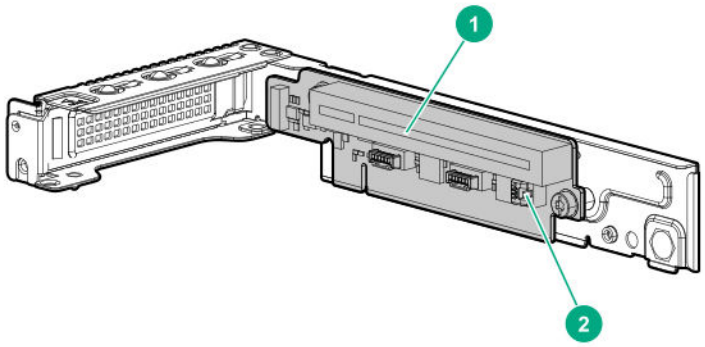
1U bayonet board



Item	Description
1	Port 1
2	Port 2

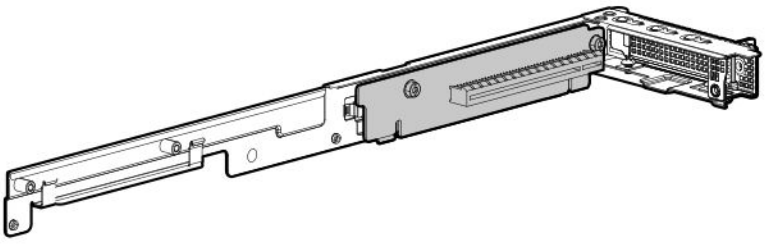
PCIe riser board slot definitions

Primary riser components



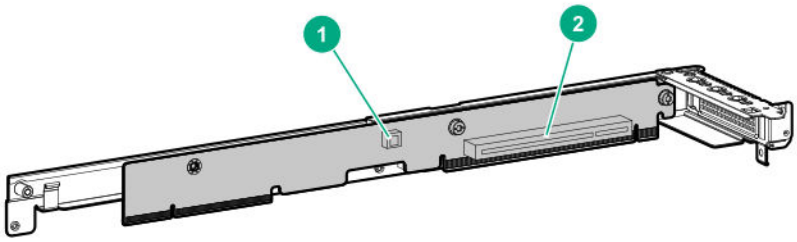
Item	Form Factor	Slot number	Description
1	Storage controller or low-profile PCIe expansion board	1	PCIe3 x16 (16, 8, 4, 1) for Processor 1
2	—	—	Storage backup power connector

FlexibleLOM 1U riser



Item	Form Factor	Slot number	Description
1	FlexibleLOM	FlexibleLOM slot	PCIe3 x16 for Processor 1

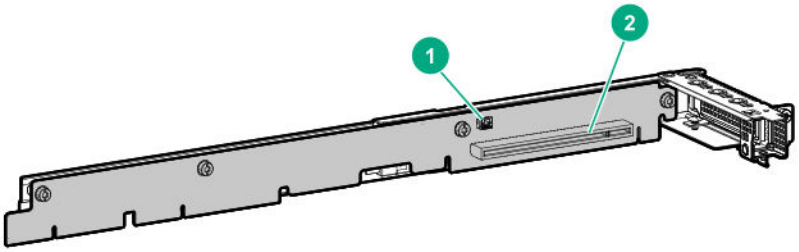
1U secondary riser for processor 1



Item	Form Factor	Slot number	Description
1	—	—	Storage backup power connector
2	Storage controller or low-profile PCIe expansion board	2	PCIe3 x16 (16, 8, 4, 1) for Processor 1

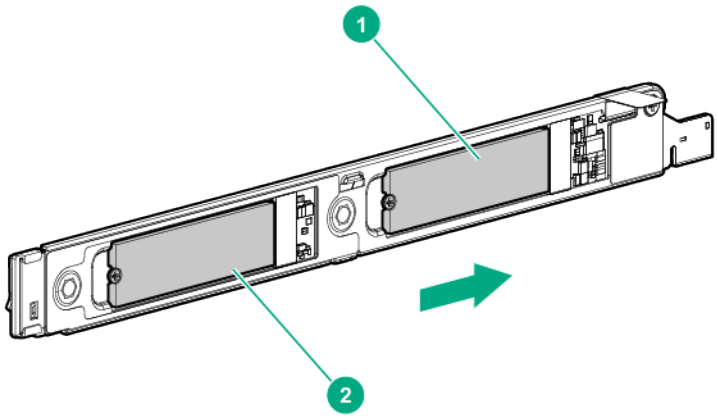
1U secondary riser for processor 2

NOTE: The HPE XL170r 16NVMe Gen10 P2 LP Riser Kit (PN 874304-B21) is only for use in servers that are installed in the HPE Apollo r2800 Gen10 Chassis with 16 NVMe. For more information, see **Cabling** on page 62.



Item	Form Factor	Slot number	Description
1	—	—	Storage backup power connector
2	Storage controller or low-profile PCIe expansion board	2	PCIe3 x16 (16, 8, 4, 1) for Processor 2

M.2 SSD riser bay numbering



The arrow points toward the server tray handle.

Item	Description
1	Bay 7
2	Bay 8

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.

When installing cables, observe the following:

- All ports are labeled:
  - System board ports
  - Bayonet board ports
  - Riser board ports
  - Controller ports
- Most data cables have labels near each connector with destination port information.
- Some data cables are pre-bent. Do not unbend or manipulate the cables.
- Before connecting a cable to a port, lay the cable in place to verify the length of the cable.
- Before disconnecting a cable, check whether there is a release latch. Do not forcibly disconnect cables from the ports.

Cabling guidelines

The cable colors in the cabling diagrams used in this chapter are for illustration purposes only. Most of the server cables are black.

Observe the following guidelines when working with server cables.

Before connecting cables

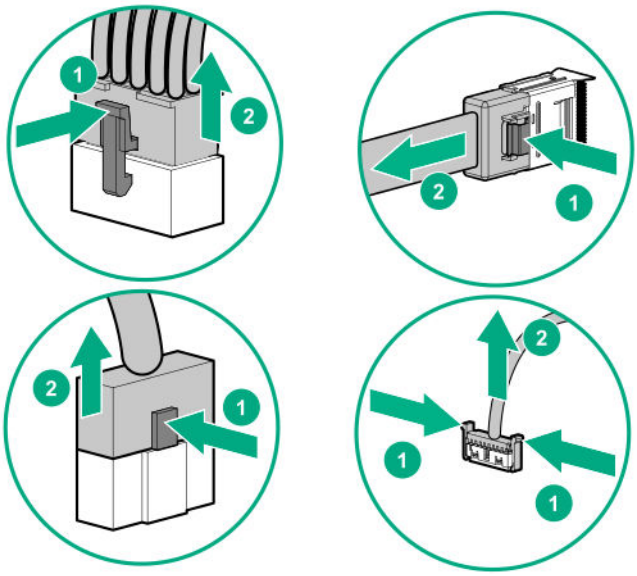
- Note the port labels on the PCA components. Not all of these components are used by all servers:
  - System board ports
  - Drive and power supply backplane ports
  - Expansion board ports (controllers, adapters, expanders, risers, and similar boards)
- Note the label near each cable connector. This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

When connecting cables

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

When disconnecting cables

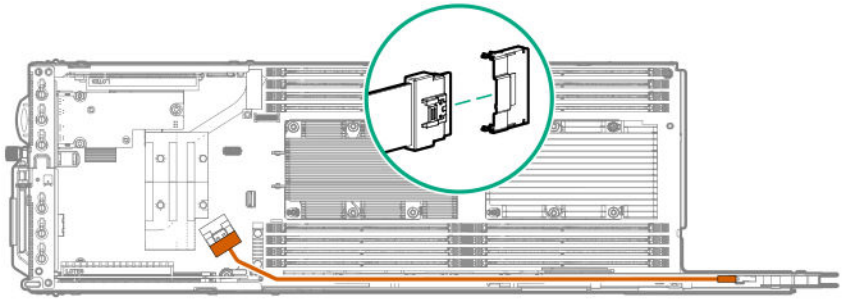
- Grip the body of the cable connector. Do not pull on the cable itself because this action can damage the internal wires of the cable or the pins on the port.
- If a cable does not disconnect easily, check for any release latch that must be pressed to disconnect the cable.



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

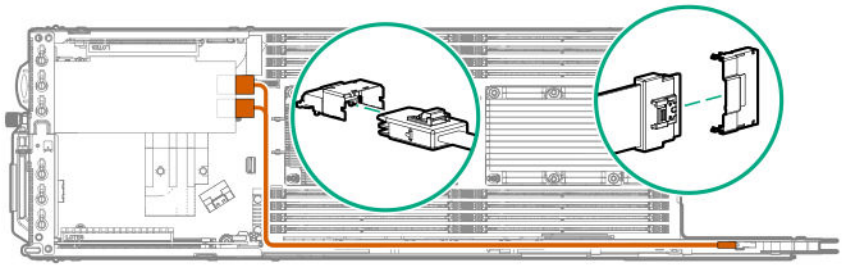
Storage cabling

S100i SATA controller



Type-p plug-in controller

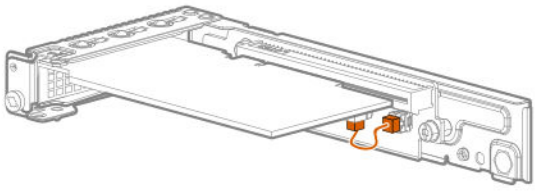
Slot 1



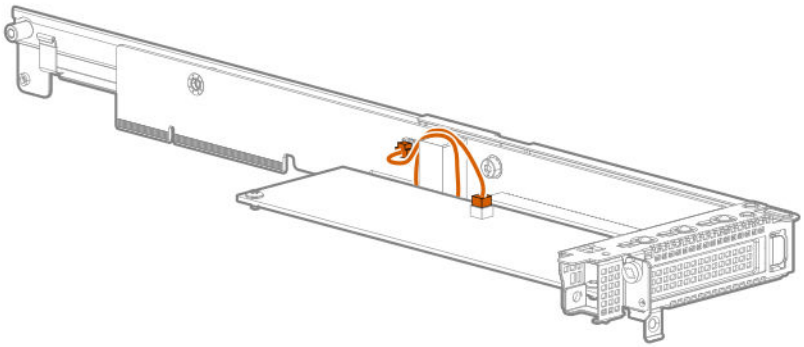
Slot 2

Controller backup power cable

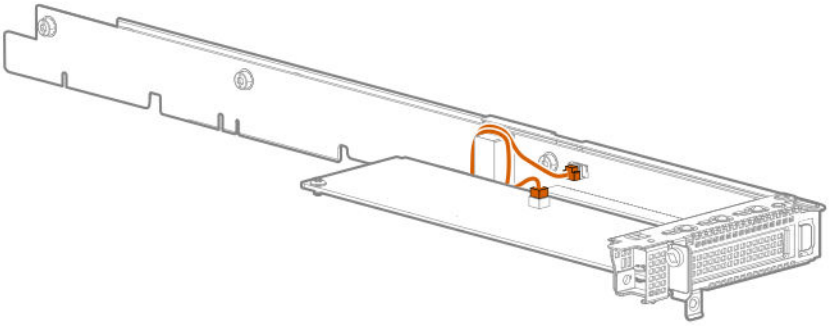
Slot 1 of the primary PCI riser cage



Slot 2 of the 1U secondary riser for processor 1



Slot 2 of the 1U secondary riser for processor 2

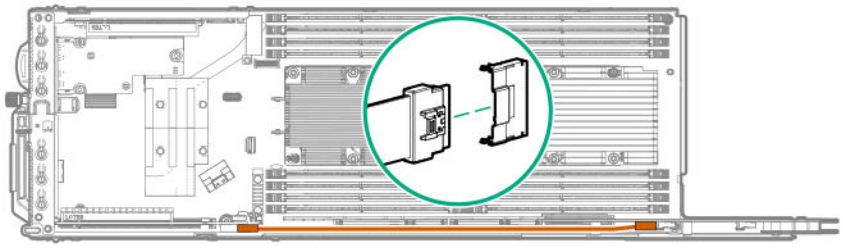


Fabric processor enablement board cabling

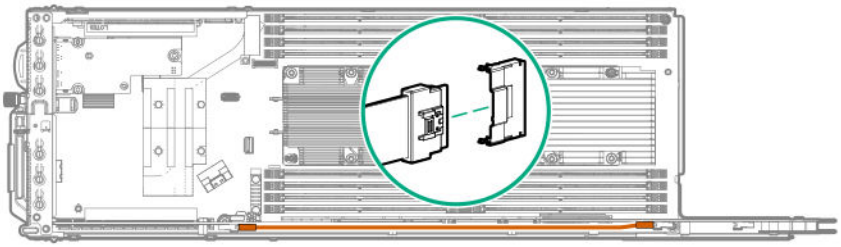
Cable color	Description
Blue	Fabric processor enablement board to system board
Orange	Fabric processor to fabric processor enablement board

Secondary PCI riser board NVMe cabling

1U FlexibleLOM riser

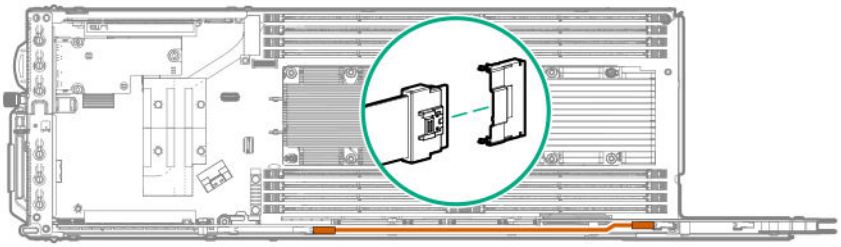


1U secondary riser for processor 1

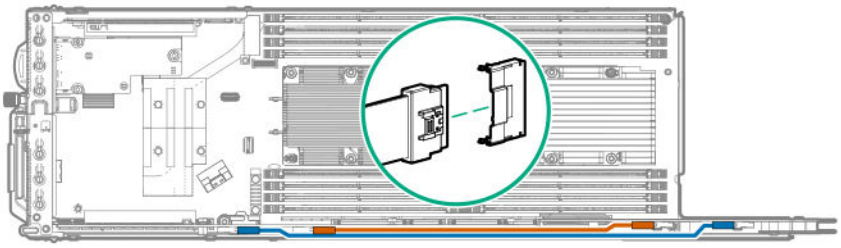


1U secondary riser for processor 2

Installed in HPE Apollo r2200 Gen10 Chassis or HPE Apollo r2600 Gen10 Chassis



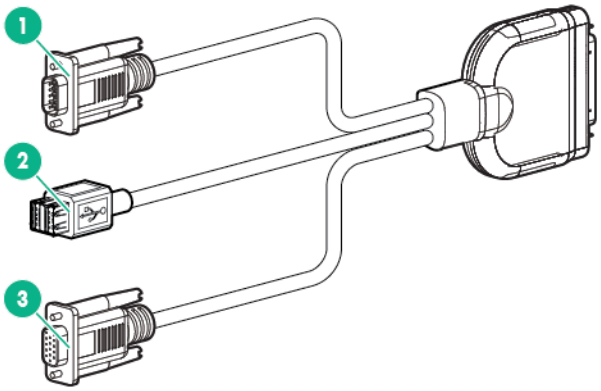
Installed in HPE Apollo r2800 Gen10 Chassis with 16 NVMe



SUV cable connectors

CAUTION: Before disconnecting the SUV cable from the connector, always squeeze the release buttons on the sides of the connector. Failure to do so can result in damage to the equipment.

NOTE: If all server tray slots in the chassis are populated with servers, connect a SUV cable for maintenance purposes only.



Item	Connector	Description
1	Serial	For trained personnel to connect a null modem serial cable and perform advanced diagnostic procedures
2	USB[1]	For connecting up to two USB 2.0 devices
3	Video	For connecting a video monitor

[1] The USB connectors on the SUV cable do not support devices that require greater than a 500mA power source.

Specifications

Environmental specifications

Specification	Value
Temperature range[1]	—
Operating	10°C to 35°C (50°F to 95°F)
Non-operating	-30°C to 60°C (-22°F to 140°F)
Relative humidity (noncondensing)	—
Operating	8% to 90% 28°C (82.4°F), maximum wet bulb temperature
Non-operating	5% to 95% 38.7°C (101.7°F), maximum wet bulb temperature

[1] All temperature ratings shown are for sea level. An altitude derating of 1.0°C per 305 m (1.8°F per 1000 ft) to 3050 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 3050 m (10,000 ft).
- 40°C to 45°C (104°F to 113°F) at sea level with an altitude derating of 1.0°C per every 125 m (1.8°F per every 410 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft).

Mechanical specifications

Specification	Value
Height	4.13 cm (1.63 in)
Depth	65.80 cm (25.91 in)
Width	18.45 cm (7.27 in)
Weight (approximate values)	
Weight (maximum)	4.61 kg (10.17 lb)
Weight (minimum)	3.30 kg (7.27 lb)

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**).

Temperature requirements for the HPE ProLiant XL170r Gen10 Server

To ensure continued safe and reliable equipment operation, install or position the rack in a well-ventilated, climate-controlled environment.

The operating temperature inside the rack is always higher than the room temperature and is dependent on the configuration of equipment in the rack. Check the TMRA for each piece of equipment before installation.

CAUTION: To reduce the risk of damage to the equipment when installing third-party options:

- Do not permit optional equipment to impede airflow around the server or to increase the internal rack temperature beyond the maximum allowable limits.
- Do not exceed the manufacturer's TMRA.

NOTE: The removable drive blanks are recommended to be installed in the empty drive bays, unless otherwise specified.

The hard drive kits (PN 857646-B21, 857650-B21, 878562-B21, and 878566-B21) have drive capacities greater than or equal to 10 TB, but their thermal conditions are the same as drives with drive capacities less than 10 TB.

Thermal limitations for different options installed in the servers may differ depending on the chassis configuration. 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**).

Determine if there are temperature requirements for the component. For more information, see **List of components with temperature requirements in the HPE ProLiant XL170r Gen10 Server** on page 72.

If necessary, populate drive bays in the chassis with drive blanks. For more information, see **Drive blank installation guidelines for the HPE ProLiant XL170r Gen10 Server** on page 96.

List of components with temperature requirements in the HPE ProLiant XL170r Gen10 Server

The maximum inlet ambient temperature for most components installed in the server is 35°C (95°F). Some components, however, are subject to thermal limitations depending on the chassis model and the fan configuration. If two or more components with temperature requirements are installed in the server, observe the lowest maximum inlet ambient temperature.

Thermal limitations without Processor Power Adjustment (PPA) Processors

NOTE: Make sure to note the following requirements for the Intel Xeon Gold 6244 (G6244) processor:

- The processor does not support PPA.
- The enhanced cooling or max cooling mode must be chosen at RBSU.
- LFF drives with drive capacities greater than or equal to 10 TB are not supported for the Apollo r2200 Gen10 Chassis series with three drives per node.

Description	Chassis	Fan configuration	Number of drives that correspond to the server	Maximum inlet ambient temperature
Processor with a TDP (thermal design power) of 125 W or more, except G6244	Apollo r2200 Gen10 Chassis (12 LFF backplane)	Redundant and non-redundant	3 drives[1]	30°C (86°F)
			3 drives[2]	25°C (77°F)
			0 to 2 drives[3, 4]	35°C (95°F)
	Apollo r2600 Gen10 Chassis (24 SFF combo backplane)	Redundant and non-redundant	0 to 6 drives	35°C (95°F)
	Apollo r2800 Gen10 Chassis (24 SFF backplane with SAS expander)	Redundant and non-redundant	0 to 24 drives	35°C (95°F)
	Apollo r2800 Gen10 Chassis (16 NVMe backplane)	Redundant and non-redundant	0 to 4 drives	35°C (95°F)
G6244	Apollo r2200 Gen10 Chassis (12 LFF backplane)	Redundant and non-redundant	3 drives[1]	25°C (77°F)
			3 drives[2]	Not supported
			0 to 2 drives[3, 4]	30°C (86°F)
	Apollo r2600 Gen10 Chassis (24 SFF combo backplane)	Redundant and non-redundant	0 to 6 drives	28°C (82.4°F)

Table Continued

Description	Chassis	Fan configuration	Number of drives that correspond to the server	Maximum inlet ambient temperature
	Apollo r2800 Gen10 Chassis (24 SFF backplane with SAS expander)	Redundant and non-redundant	0 to 24 drives	28°C (82.4°F)
	Apollo r2800 Gen10 Chassis (16 NVMe backplane)	Redundant and non-redundant	0 to 4 drives	30°C (86°F)

[1] The drive capacity must be less than 10 TB.

[2] The drive capacity must be greater than or equal to 10 TB.

[3] If the component is installed in server 1 or server 2, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 1-2 and 2-2. Similarly, if the component is installed in server 3 or server 4, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 3-2 and 4-2. For more information, see **Drive blank installation guidelines for the HPE ProLiant XL170r Gen10 Server** on page 96.

[4] The first removable drive blank is populated at bay 2.

DIMMs

NOTE: In non-redundant fan configuration, 32 GB RDIMM, 64 GB LRDIMM, and 128GB LRDIMM can support up to 35°C (95°F) temperature.

Description	Chassis	Fan configuration	Number of drives that correspond to the server	Maximum inlet ambient temperature
32 GB RDIMM	Apollo r2200 Gen10 Chassis (12 LFF backplane)	Redundant	3 drives[1]	30°C (86°F)
			3 drives[2]	30°C (86°F)
			0 to 2 drives[3, 4]	35°C (95°F)
	Apollo r2600 Gen10 Chassis (24 SFF combo backplane)	Redundant	0 to 6 drives	35°C (95°F)

Table Continued

Description	Chassis	Fan configuration	Number of drives that correspond to the server	Maximum inlet ambient temperature
	Apollo r2800 Gen10 Chassis (24 SFF backplane with SAS expander)	Redundant	0 to 24 drives	35°C (95°F)
	Apollo r2800 Gen10 Chassis (16 NVMe backplane)	Redundant	0 to 4 drives	35°C (95°F)
64 GB LRDIMM	Apollo r2200 Gen10 Chassis (12 LFF backplane)	Redundant	3 drives[1]	Not supported
			3 drives[2]	Not supported
			0 to 2 drives[3, 4]	35°C (95°F)
	Apollo r2600 Gen10 Chassis (24 SFF combo backplane)	Redundant	0 to 6 drives	35°C (95°F)
	Apollo r2800 Gen10 Chassis (24 SFF backplane with SAS expander)	Redundant	0 to 24 drives	35°C (95°F)
	Apollo r2800 Gen10 Chassis (16 NVMe backplane)	Redundant	0 to 4 drives	35°C (95°F)
128 GB LRDIMM	Apollo r2200 Gen10 Chassis (12 LFF backplane)	Redundant	3 drives[1]	Not supported
			3 drives[2]	Not supported
			0 to 2 drives[3, 4]	30°C (86°F)

Table Continued

Description	Chassis	Fan configuration	Number of drives that correspond to the server	Maximum inlet ambient temperature
	Apollo r2600 Gen10 Chassis (24 SFF combo backplane)	Redundant	0 to 6 drives	30°C (86°F)
	Apollo r2800 Gen10 Chassis (24 SFF backplane with SAS expander)	Redundant	0 to 24 drives	35°C (95°F)
	Apollo r2800 Gen10 Chassis (16 NVMe backplane)	Redundant	0 to 4 drives	35°C (95°F)

1 The drive capacity must be less than 10 TB.

2 The drive capacity must be greater than or equal to 10 TB.

3 If the component is installed in server 1 or server 2, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 1-2 and 2-2. Similarly, if the component is installed in server 3 or server 4, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 3-2 and 4-2. For more information, see **Drive blank installation guidelines for the HPE ProLiant XL170r Gen10 Server** on page 96.

4 The first removable drive blank is populated at bay 2.

Storage controllers

Description	Chassis	Fan configuration	Number of drives that correspond to the server	Maximum inlet ambient temperature
HPE Smart Array P408i-p Controller[1]	Apollo r2200 Gen10 Chassis (12 LFF backplane)	Redundant and non-redundant	3 drives[2]	22°C (71.6°F)
			3 drives[3]	Not supported
			0 to 2 drives[4, 5]	30°C (86°F)
	Apollo r2600 Gen10 Chassis (24 SFF combo backplane)	Redundant and non-redundant	0 to 6 drives	28°C (82.4°F)

Table Continued

Description	Chassis	Fan configuration	Number of drives that correspond to the server	Maximum inlet ambient temperature
	Apollo r2800 Gen10 Chassis (24 SFF backplane with SAS expander)	Redundant and non-redundant	0 to 24 drives	28°C (82.4°F)
	Apollo r2800 Gen10 Chassis (16 NVMe backplane)	Redundant and non-redundant	0 to 4 drives	Not supported
HPE Smart Array P408e-p Controller[1]	Apollo r2200 Gen10 Chassis (12 LFF backplane)	Redundant and non-redundant	3 drives[2]	22°C (71.6°F)
			3 drives[3]	22°C (71.6°F)
			0 to 2 drives[4, 5]	30°C (86°F)
	Apollo r2600 Gen10 Chassis (24 SFF combo backplane)	Redundant and non-redundant	0 to 6 drives	30°C (86°F)
	Apollo r2800 Gen10 Chassis (24 SFF backplane with SAS expander)	Redundant and non-redundant	0 to 24 drives	30°C (86°F)
	Apollo r2800 Gen10 Chassis (16 NVMe backplane)	Redundant and non-redundant	0 to 4 drives	30°C (86°F)
HPE Smart Array E208i-p Controller[6]	Apollo r2200 Gen10 Chassis (12 LFF backplane)	Redundant and non-redundant	3 drives[2]	35°C (95°F)
			3 drives[3]	28°C (82.4°F)
			0 to 2 drives[4, 5]	35°C (95°F)

Table Continued

Description	Chassis	Fan configuration	Number of drives that correspond to the server	Maximum inlet ambient temperature
	Apollo r2600 Gen10 Chassis (24 SFF combo backplane)	Redundant and non-redundant	0 to 6 drives	35°C (95°F)
	Apollo r2800 Gen10 Chassis (24 SFF backplane with SAS expander)	Redundant and non-redundant	0 to 24 drives	35°C (95°F)
	Apollo r2800 Gen10 Chassis (16 NVMe backplane)	Redundant and non-redundant	0 to 4 drives	35°C (95°F)
HPE Smart Array E208e-p Controller[6]	Apollo r2200 Gen10 Chassis (12 LFF backplane)	Redundant and non-redundant	3 drives[2]	30°C (86°F)
			3 drives[3]	28°C (82.4°F)
			0 to 2 drives[4, 5]	35°C (95°F)
	Apollo r2600 Gen10 Chassis (24 SFF combo backplane)	Redundant and non-redundant	0 to 6 drives	35°C (95°F)
	Apollo r2800 Gen10 Chassis (24 SFF backplane with SAS expander)	Redundant and non-redundant	0 to 24 drives	35°C (95°F)
	Apollo r2800 Gen10 Chassis (16 NVMe backplane)	Redundant and non-redundant	0 to 4 drives	35°C (95°F)

Table Continued

Description	Chassis	Fan configuration	Number of drives that correspond to the server	Maximum inlet ambient temperature
Fibre channel host bus adapter	Apollo r2200 Gen10 Chassis (12 LFF backplane)	Redundant and non-redundant	3 drives[2]	Not supported
			3 drives[3]	Not supported
			0 to 2 drives[4, 5]	28°C (82.4°F)
	Apollo r2600 Gen10 Chassis (24 SFF combo backplane)	Redundant and non-redundant	0 to 6 drives	25°C (77°F)
	Apollo r2800 Gen10 Chassis (24 SFF backplane with SAS expander)	Redundant and non-redundant	0 to 24 drives	25°C (77°F)
	Apollo r2800 Gen10 Chassis (16 NVMe backplane)	Redundant and non-redundant	0 to 4 drives	25°C (77°F)
Converged network adapter	Apollo r2200 Gen10 Chassis (12 LFF backplane)	Redundant and non-redundant	3 drives[2]	Optical cable: Not supported Copper cable: 30°C (86°F)
			3 drives[3]	Optical cable: Not supported Copper cable: 25°C (77°F)
			0 to 2 drives[4, 5]	Optical cable: 28°C (82.4°F) Copper cable: 35°C (95°F)

Table Continued

Description	Chassis	Fan configuration	Number of drives that correspond to the server	Maximum inlet ambient temperature
	Apollo r2600 Gen10 Chassis (24 SFF combo backplane)	Redundant and non-redundant	0 to 6 drives	Optical cable: 25°C (77°F) Copper cable: 35°C (95°F)
	Apollo r2800 Gen10 Chassis (24 SFF backplane with SAS expander)	Redundant and non-redundant	0 to 24 drives	Optical cable: 25°C (77°F) Copper cable: 35°C (95°F)
	Apollo r2800 Gen10 Chassis (16 NVMe backplane)	Redundant and non-redundant	0 to 4 drives	Optical cable: 25°C (77°F) Copper cable: 35°C (95°F)

[1] The Smart Storage Battery is supported with P408i-p and P408e-p controllers only. Due to thermal concerns on some configurations, you are recommended to remove the Smart Storage Battery if these cards are not installed in the chassis.

[2] The drive capacity must be less than 10 TB.

[3] The drive capacity must be greater than or equal to 10 TB.

[4] If the component is installed in server 1 or server 2, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 1-2 and 2-2. Similarly, if the component is installed in server 3 or server 4, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 3-2 and 4-2. For more information, see **Drive blank installation guidelines for the HPE ProLiant XL170r Gen10 Server** on page 96.

[5] The first removable drive blank is populated at bay 2.

[6] A Smart Storage Battery is not needed for the HPE Smart Array E208i-p and E208e-p controllers.

PCIe NIC cards/Infiniband Adapters

Description	Chassis	Fan configuration	Number of drives that correspond to the server	Maximum inlet ambient temperature
NIC cards with SFP+, SFP28 or QSFP transceiver / InfiniBand adapters with QDR or FDR speed	Apollo r2200 Gen10 Chassis (12 LFF backplane)	Redundant and non-redundant	3 drives[1]	Optical cable: Not supported Copper cable: 30°C (86°F)
			3 drives[2]	Optical cable: Not supported Copper cable: 25°C (77°F)

Table Continued

Description	Chassis	Fan configuration	Number of drives that correspond to the server	Maximum inlet ambient temperature
			0 to 2 drives[3, 4]	Optical cable: 28°C (82.4°F) Copper cable: 35°C (95°F)
	Apollo r2600 Gen10 Chassis (24 SFF combo backplane)	Redundant and non-redundant	0 to 6 drives	Optical cable: 25°C (77°F) Copper cable: 35°C (95°F)
	Apollo r2800 Gen10 Chassis (24 SFF backplane with SAS expander)	Redundant and non-redundant	0 to 24 drives	Optical cable: 25°C (77°F) Copper cable: 35°C (95°F)
	Apollo r2800 Gen10 Chassis (16 NVMe backplane)	Redundant and non-redundant	0 to 4 drives	Optical cable: 25°C (77°F) Copper cable: 35°C (95°F)
NIC cards with QSFP28 transceiver / InfiniBand adapters with EDR speed	Apollo r2200 Gen10 Chassis (12 LFF backplane)	Redundant and non-redundant	3 drives[1]	Optical cable: Not supported Copper cable: 25°C (77°F)
			3 drives[2]	Optical cable: Not supported Copper cable: 22°C (71.6°F)
			0 to 2 drives[3, 4]	Optical cable: 22°C (71.6°F) Copper cable: 35°C (95°F)
	Apollo r2600 Gen10 Chassis (24 SFF combo backplane)	Redundant and non-redundant	0 to 6 drives	Optical cable: 22°C (71.6°F) Copper cable: 35°C (95°F)

Table Continued

Description	Chassis	Fan configuration	Number of drives that correspond to the server	Maximum inlet ambient temperature
	Apollo r2800 Gen10 Chassis (24 SFF backplane with SAS expander)	Redundant and non-redundant	0 to 24 drives	Optical cable: 22°C (71.6°F) Copper cable: 35°C (95°F)
	Apollo r2800 Gen10 Chassis (16 NVMe backplane)	Redundant and non-redundant	0 to 4 drives	Optical cable: 22°C (71.6°F) Copper cable: 35°C (95°F)

1 The drive capacity must be less than 10 TB.

2 The drive capacity must be greater than or equal to 10 TB.

3 If the component is installed in server 1 or server 2, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 1-2 and 2-2. Similarly, if the component is installed in server 3 or server 4, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 3-2 and 4-2. For more information, see **Drive blank installation guidelines for the HPE ProLiant XL170r Gen10 Server** on page 96.

4 The first removable drive blank is populated at bay 2.

FlexibleLOM adapters

Description	Chassis	Fan configuration	Number of drives that correspond to the server	Maximum inlet ambient temperature
FlexibleLOM adapters with SFP+, SFP28 or QSFP transceivers	Apollo r2200 Gen10 Chassis (12 LFF backplane)	Redundant and non-redundant	3 drives[1]	Optical cable: Not supported Copper cable: 30°C (86°F)
			3 drives[2]	Optical cable: Not supported Copper cable: 25°C (77°F)
			0 to 2 drives[3, 4]	Optical cable: 25°C (77°F) Copper cable: 35°C (95°F)

Table Continued

Description	Chassis	Fan configuration	Number of drives that correspond to the server	Maximum inlet ambient temperature
	Apollo r2600 Gen10 Chassis (24 SFF combo backplane)	Redundant and non-redundant	0 to 6 drives	Optical cable: 25°C (77°F) Copper cable: 35°C (95°F)
	Apollo r2800 Gen10 Chassis (24 SFF backplane with SAS expander)	Redundant and non-redundant	0 to 24 drives	Optical cable: 25°C (77°F) Copper cable: 35°C (95°F)
	Apollo r2800 Gen10 Chassis (16 NVMe backplane)	Redundant and non-redundant	0 to 4 drives	Optical cable: 25°C (77°F) Copper cable: 35°C (95°F)

1 The drive capacity must be less than 10 TB.

2 The drive capacity must be greater than or equal to 10 TB.

3 If the component is installed in server 1 or server 2, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 1-2 and 2-2. Similarly, if the component is installed in server 3 or server 4, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 3-2 and 4-2. For more information, see **Drive blank installation guidelines for the HPE ProLiant XL170r Gen10 Server** on page 96.

4 The first removable drive blank is populated at bay 2.

Media Modules

Description	Chassis	Fan configuration	Number of drives that correspond to the server	Maximum inlet ambient temperature
Media Module 10Gb 2p 568FLR-MMSFP+	Apollo r2200 Gen10 Chassis (12 LFF backplane)	Redundant and non-redundant	3 drives[1]	30°C (86°F)
			3 drives[2]	30°C (86°F)
			0 to 2 drives[3, 4]	35°C (95°F)
	Apollo r2600 Gen10 Chassis (24 SFF combo backplane)	Redundant and non-redundant	0 to 6 drives	35°C (95°F)

Table Continued

Description	Chassis	Fan configuration	Number of drives that correspond to the server	Maximum inlet ambient temperature
	Apollo r2800 Gen10 Chassis (24 SFF backplane with SAS expander)	Redundant and non-redundant	0 to 24 drives	35°C (95°F)
	Apollo r2800 Gen10 Chassis (16 NVMe backplane)	Redundant and non-redundant	0 to 4 drives	35°C (95°F)
Media Module 10Gb 2p 568FLR-MMT	Apollo r2200 Gen10 Chassis (12 LFF backplane)	Redundant and non-redundant	3 drives[1]	30°C (86°F)
			3 drives[2]	30°C (86°F)
			0 to 2 drives[3, 4]	35°C (95°F)
	Apollo r2600 Gen10 Chassis (24 SFF combo backplane)	Redundant and non-redundant	0 to 6 drives	30°C (86°F)
	Apollo r2800 Gen10 Chassis (24 SFF backplane with SAS expander)	Redundant and non-redundant	0 to 24 drives	30°C (86°F)
	Apollo r2800 Gen10 Chassis (16 NVMe backplane)	Redundant and non-redundant	0 to 4 drives	30°C (86°F)

1 The drive capacity must be less than 10 TB.

2 The drive capacity must be greater than or equal to 10 TB.

3 If the component is installed in server 1 or server 2, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 1-2 and 2-2. Similarly, if the component is installed in server 3 or server 4, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 3-2 and 4-2. For more information, see **Drive blank installation guidelines for the HPE ProLiant XL170r Gen10 Server** on page 96.

4 The first removable drive blank is populated at bay 2.

Thermal limitations with Processor Power Adjustment (PPA)

Processors

NOTE: Make sure to note the following requirements for the Intel Xeon Gold 6244 (G6244) processor:

- The processor does not support PPA.
- The enhanced cooling or max cooling mode must be chosen at RBSU.
- LFF drives with drive capacities greater than or equal to 10 TB are not supported for the Apollo r2200 Gen10 Chassis series with three drives per node.

Description	Chassis	Fan configuration	Number of drives that correspond to the server	Maximum inlet ambient temperature
Processor with a TDP (thermal design power) of 135 W or more, except G6244	Apollo r2200 Gen10 Chassis (12 LFF backplane)	Redundant and non-redundant	3 drives[1]	28°C (82.4°F)
			3 drives[2]	Not supported
			0 to 2 drives[3, 4]	35°C (95°F)
	Apollo r2600 Gen10 Chassis (24 SFF combo backplane)	Redundant and non-redundant	0 to 6 drives	30°C (86°F)
	Apollo r2800 Gen10 Chassis (24 SFF backplane with SAS expander)	Redundant and non-redundant	0 to 24 drives	30°C (86°F)
	Apollo r2800 Gen10 Chassis (16 NVMe backplane)	Redundant and non-redundant	0 to 4 drives	30°C (86°F)
G6244	Apollo r2200 Gen10 Chassis (12 LFF backplane)	Redundant and non-redundant	3 drives[1]	Not supported
			3 drives[2]	Not supported
			0 to 2 drives[3, 4]	Not supported
	Apollo r2600 Gen10 Chassis (24 SFF combo backplane)	Redundant and non-redundant	0 to 6 drives	Not supported
	Apollo r2800 Gen10 Chassis (24 SFF backplane with SAS expander)	Redundant and non-redundant	0 to 24 drives	Not supported
	Apollo r2800 Gen10 Chassis (16 NVMe backplane)	Redundant and non-redundant	0 to 4 drives	Not supported
Processor with a TDP (thermal design power) between 115 W and 130 W	Apollo r2200 Gen10 Chassis (12 LFF backplane)	Redundant and non-redundant	3 drives[1]	30°C (86°F)
			3 drives[2]	Not supported
			0 to 2 drives[3, 4]	35°C (95°F)

Table Continued

Description	Chassis	Fan configuration	Number of drives that correspond to the server	Maximum inlet ambient temperature
	Apollo r2600 Gen10 Chassis (24 SFF combo backplane)	Redundant and non-redundant	0 to 6 drives	35°C (95°F)
	Apollo r2800 Gen10 Chassis (24 SFF backplane with SAS expander)	Redundant and non-redundant	0 to 24 drives	35°C (95°F)
	Apollo r2800 Gen10 Chassis (16 NVMe backplane)	Redundant and non-redundant	0 to 4 drives	35°C (95°F)

1 The drive capacity must be less than 10 TB.

2 The drive capacity must be greater than or equal to 10 TB.

3 If the component is installed in server 1 or server 2, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 1-2 and 2-2. Similarly, if the component is installed in server 3 or server 4, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 3-2 and 4-2. For more information, see **Drive blank installation guidelines for the HPE ProLiant XL170r Gen10 Server** on page 96.

4 The first removable drive blank is populated at bay 2.

DIMMs

NOTE: In non-redundant fan configuration, 32 GB RDIMM and 64 GB LRDIMM can support up to 35°C (95°F) temperature.

Description	Chassis	Fan configuration	Number of drives that correspond to the server	Maximum inlet ambient temperature
32 GB RDIMM	Apollo r2200 Gen10 Chassis (12 LFF backplane)	Redundant	3 drives[1]	30°C (86°F)
			3 drives[2]	Not supported
			0 to 2 drives[3, 4]	35°C (95°F)
	Apollo r2600 Gen10 Chassis (24 SFF combo backplane)	Redundant	0 to 6 drives	35°C (95°F)
	Apollo r2800 Gen10 Chassis (24 SFF backplane with SAS expander)	Redundant	0 to 24 drives	35°C (95°F)

Table Continued

Description	Chassis	Fan configuration	Number of drives that correspond to the server	Maximum inlet ambient temperature
	Apollo r2800 Gen10 Chassis (16 NVMe backplane)	Redundant	0 to 4 drives	35°C (95°F)
64 GB LRDIMM	Apollo r2200 Gen10 Chassis (12 LFF backplane)	Redundant	3 drives[1]	Not supported
			3 drives[2]	Not supported
			0 to 2 drives[3, 4]	35°C (95°F)
	Apollo r2600 Gen10 Chassis (24 SFF combo backplane)	Redundant	0 to 6 drives	35°C (95°F)
	Apollo r2800 Gen10 Chassis (24 SFF backplane with SAS expander)	Redundant	0 to 24 drives	35°C (95°F)
	Apollo r2800 Gen10 Chassis (16 NVMe backplane)	Redundant	0 to 4 drives	35°C (95°F)
128 GB LRDIMM	Apollo r2200 Gen10 Chassis (12 LFF backplane)	Redundant and non-redundant	3 drives[1]	Not supported
			3 drives[2]	Not supported
			0 to 2 drives[3, 4]	Not supported
	Apollo r2600 Gen10 Chassis (24 SFF combo backplane)	Redundant and non-redundant	0 to 6 drives	Not supported

Table Continued

Description	Chassis	Fan configuration	Number of drives that correspond to the server	Maximum inlet ambient temperature
	Apollo r2800 Gen10 Chassis (24 SFF backplane with SAS expander)	Redundant and non-redundant	0 to 24 drives	Not supported
	Apollo r2800 Gen10 Chassis (16 NVMe backplane)	Redundant and non-redundant	0 to 4 drives	Not supported

1 The drive capacity must be less than 10 TB.

2 The drive capacity must be greater than or equal to 10 TB.

3 If the component is installed in server 1 or server 2, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 1-2 and 2-2. Similarly, if the component is installed in server 3 or server 4, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 3-2 and 4-2. For more information, see **Drive blank installation guidelines for the HPE ProLiant XL170r Gen10 Server** on page 96.

4 The first removable drive blank is populated at bay 2.

Storage controllers

Description	Chassis	Fan configuration	Number of drives that correspond to the server	Maximum inlet ambient temperature
HPE Smart Array P408i-p Controller[1]	Apollo r2200 Gen10 Chassis (12 LFF backplane)	Redundant and non-redundant	3 drives[2]	Not supported
			3 drives[3]	Not supported
			0 to 2 drives[4, 5]	28°C (82.4°F)
	Apollo r2600 Gen10 Chassis (24 SFF combo backplane)	Redundant and non-redundant	0 to 6 drives	22°C (71.6°F)
	Apollo r2800 Gen10 Chassis (24 SFF backplane with SAS expander)	Redundant and non-redundant	0 to 24 drives	22°C (71.6°F)

Table Continued

Description	Chassis	Fan configuration	Number of drives that correspond to the server	Maximum inlet ambient temperature
	Apollo r2800 Gen10 Chassis (16 NVMe backplane)	Redundant and non-redundant	0 to 4 drives	Not supported
HPE Smart Array P408e-p Controller[1]	Apollo r2200 Gen10 Chassis (12 LFF backplane)	Redundant and non-redundant	3 drives[2]	Not supported
			3 drives[3]	Not supported
			0 to 2 drives[4, 5]	28°C (82.4°F)
	Apollo r2600 Gen10 Chassis (24 SFF combo backplane)	Redundant and non-redundant	0 to 6 drives	25°C (77°F)
	Apollo r2800 Gen10 Chassis (24 SFF backplane with SAS expander)	Redundant and non-redundant	0 to 24 drives	25°C (77°F)
	Apollo r2800 Gen10 Chassis (16 NVMe backplane)	Redundant and non-redundant	0 to 4 drives	25°C (77°F)
HPE Smart Array E208i-p Controller[6]	Apollo r2200 Gen10 Chassis (12 LFF backplane)	Redundant and non-redundant	3 drives[2]	30°C (86°F)
			3 drives[3]	Not supported
			0 to 2 drives[4, 5]	35°C (95°F)
	Apollo r2600 Gen10 Chassis (24 SFF combo backplane)	Redundant and non-redundant	0 to 6 drives	30°C (86°F)

Table Continued

Description	Chassis	Fan configuration	Number of drives that correspond to the server	Maximum inlet ambient temperature
	Apollo r2800 Gen10 Chassis (24 SFF backplane with SAS expander)	Redundant and non-redundant	0 to 24 drives	30°C (86°F)
	Apollo r2800 Gen10 Chassis (16 NVMe backplane)	Redundant and non-redundant	0 to 4 drives	Not supported
HPE Smart Array E208e-p Controller[6]	Apollo r2200 Gen10 Chassis (12 LFF backplane)	Redundant and non-redundant	3 drives[2]	28°C (82.4°F)
			3 drives[3]	Not supported
			0 to 2 drives[4, 5]	35°C (95°F)
	Apollo r2600 Gen10 Chassis (24 SFF combo backplane)	Redundant and non-redundant	0 to 6 drives	30°C (86°F)
	Apollo r2800 Gen10 Chassis (24 SFF backplane with SAS expander)	Redundant and non-redundant	0 to 24 drives	30°C (86°F)
	Apollo r2800 Gen10 Chassis (16 NVMe backplane)	Redundant and non-redundant	0 to 4 drives	30°C (86°F)
Fibre channel host bus adapter	Apollo r2200 Gen10 Chassis (12 LFF backplane)	Redundant and non-redundant	3 drives[2]	Not supported
			3 drives[3]	Not supported
			0 to 2 drives[4, 5]	22°C (71°F)

Table Continued

Description	Chassis	Fan configuration	Number of drives that correspond to the server	Maximum inlet ambient temperature
	Apollo r2600 Gen10 Chassis (24 SFF combo backplane)	Redundant and non-redundant	0 to 6 drives	Not supported
	Apollo r2800 Gen10 Chassis (24 SFF backplane with SAS expander)	Redundant and non-redundant	0 to 24 drives	Not supported
	Apollo r2800 Gen10 Chassis (16 NVMe backplane)	Redundant and non-redundant	0 to 4 drives	Not supported
Converged network adapter	Apollo r2200 Gen10 Chassis (12 LFF backplane)	Redundant and non-redundant	3 drives[2]	Optical cable: Not supported Copper cable: 28°C (82.4°F)
			3 drives[3]	Not supported
			0 to 2 drives[4, 5]	Optical cable: 22°C (71°F) Copper cable: 35°C (95°F)
	Apollo r2600 Gen10 Chassis (24 SFF combo backplane)	Redundant and non-redundant	0 to 6 drives	Optical cable: Not supported Copper cable: 30°C (86°F)

Table Continued

Description	Chassis	Fan configuration	Number of drives that correspond to the server	Maximum inlet ambient temperature
	Apollo r2800 Gen10 Chassis (24 SFF backplane with SAS expander)	Redundant and non-redundant	0 to 24 drives	Optical cable: Not supported Copper cable: 30°C (86°F)
	Apollo r2800 Gen10 Chassis (16 NVMe backplane)	Redundant and non-redundant	0 to 4 drives	Optical cable: Not supported Copper cable: 30°C (86°F)

1 The drive capacity must be less than 10 TB.

2 The drive capacity must be greater than or equal to 10 TB.

3 If the component is installed in server 1 or server 2, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 1-2 and 2-2. Similarly, if the component is installed in server 3 or server 4, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 3-2 and 4-2. For more information, see **Drive blank installation guidelines for the HPE ProLiant XL170r Gen10 Server** on page 96.

4 The first removable drive blank is populated at bay 2.

5 A Smart Storage Battery is not needed for the HPE Smart Array E208i-p and E208e-p controllers.

PCIe NIC cards/Infiniband Adapters

Description	Chassis	Fan configuration	Number of drives that correspond to the server	Maximum inlet ambient temperature
NIC cards with SFP+, SFP28 or QSFP transceivers/ InfiniBand adapters with QDR or FDR speed	Apollo r2200 Gen10 Chassis (12 LFF backplane)	Redundant and non-redundant	3 drives[1]	Optical cable: Not supported Copper cable: 28°C (82.4°F)
			3 drives[2]	Not supported
			0 to 2 drives[3, 4]	Optical cable: 22°C (71.6°F) Copper cable: 35°C (95°F)
	Apollo r2600 Gen10 Chassis (24 SFF combo backplane)	Redundant and non-redundant	0 to 6 drives	Optical cable: Not supported Copper cable: 30°C (86°F)

Table Continued

Description	Chassis	Fan configuration	Number of drives that correspond to the server	Maximum inlet ambient temperature
	Apollo r2800 Gen10 Chassis (24 SFF backplane with SAS expander)	Redundant and non-redundant	0 to 24 drives	Optical cable: Not supported Copper cable: 30°C (86°F)
	Apollo r2800 Gen10 Chassis (16 NVMe backplane)	Redundant and non-redundant	0 to 4 drives	Optical cable: Not supported Using a copper cable: 30°C (86°F)
NIC cards with QSFP28 transceiver / InfiniBand adapters with EDR speed	Apollo r2200 Gen10 Chassis (12 LFF backplane)	Redundant and non-redundant	3 drives[1]	Optical cable: Not supported Copper cable: 25°C (77°F)
			3 drives[2]	Not supported
			0 to 2 drives[3, 4]	Optical cable: Not supported Copper cable: 28°C (82.4°F)
	Apollo r2600 Gen10 Chassis (24 SFF combo backplane)	Redundant and non-redundant	0 to 6 drives	Optical cable: Not supported Copper cable: 28°C (82.4°F)
	Apollo r2800 Gen10 Chassis (24 SFF backplane with SAS expander)	Redundant and non-redundant	0 to 24 drives	Optical cable: Not supported Copper cable: 28°C (82.4°F)
	Apollo r2800 Gen10 Chassis (16 NVMe backplane)	Redundant and non-redundant	0 to 4 drives	Optical cable: Not supported Copper cable: 28°C (82.4°F)

1 The drive capacity must be less than 10 TB.

2 The drive capacity must be greater than or equal to 10 TB.

[3] If the component is installed in server 1 or server 2, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 1-2 and 2-2. Similarly, if the component is installed in server 3 or server 4, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 3-2 and 4-2. For more information, see **Drive blank installation guidelines for the HPE ProLiant XL170r Gen10 Server** on page 96.

[4] The first removable drive blank is populated at bay 2.

FlexibleLOM adapters

Description	Chassis	Fan configuration	Number of drives that correspond to the server	Maximum inlet ambient temperature
FlexibleLOM adapters with SFP +, SFP28 or QSFP transceivers	Apollo r2200 Gen10 Chassis (12 LFF backplane)	Redundant and non-redundant	3 drives[1]	Optical cable: Not supported Copper cable: 28°C (82.4°F)
			3 drives[2]	Not supported
			0 to 2 drives[3, 4]	Optical cable: Not supported Copper cable: 30°C (86°F)
	Apollo r2600 Gen10 Chassis (24 SFF combo backplane)	Redundant and non-redundant	0 to 6 drives	Optical cable: Not supported Copper cable: 30°C (86°F)
	Apollo r2800 Gen10 Chassis (24 SFF backplane with SAS expander)	Redundant and non-redundant	0 to 24 drives	Optical cable: Not supported Copper cable: 30°C (86°F)
	Apollo r2800 Gen10 Chassis (16 NVMe backplane)	Redundant and non-redundant	0 to 4 drives	Optical cable: Not supported Copper cable: 30°C (86°F)

[1] The drive capacity must be less than 10 TB.

[2] The drive capacity must be greater than or equal to 10 TB.

[3] If the component is installed in server 1 or server 2, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 1-2 and 2-2. Similarly, if the component is installed in server 3 or server 4, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 3-2 and 4-2. For more information, see **Drive blank installation guidelines for the HPE ProLiant XL170r Gen10 Server** on page 96.

[4] The first removable drive blank is populated at bay 2.

Media Modules

Description	Chassis	Fan configuration	Number of drives that correspond to the server	Maximum inlet ambient temperature
Media Module 10Gb 2p 568FLR-MMSFP+	Apollo r2200 Gen10 Chassis (12 LFF backplane)	Redundant and non-redundant	3 drives[1]	30°C (86°F)
			3 drives, [2]	Not supported
			0 to 2 drives[3, 4]	30°C (86°F)
	Apollo r2600 Gen10 Chassis (24 SFF combo backplane)	Redundant and non-redundant	0 to 6 drives	30°C (86°F)
	Apollo r2800 Gen10 Chassis (24 SFF backplane with SAS expander)	Redundant and non-redundant	0 to 24 drives	30°C (86°F)
	Apollo r2800 Gen10 Chassis (16 NVMe backplane)	Redundant and non-redundant	0 to 4 drives	30°C (86°F)
Media Module 10Gb 2p 568FLR-MMT	Apollo r2200 Gen10 Chassis (12 LFF backplane)	Redundant and non-redundant	3 drives[1]	30°C (86°F)
			3 drives[2]	Not supported
			0 to 2 drives[3, 4]	30°C (86°F)
	Apollo r2600 Gen10 Chassis (24 SFF combo backplane)	Redundant and non-redundant	0 to 6 drives	30°C (86°F)
	Apollo r2800 Gen10 Chassis (24 SFF backplane with SAS expander)	Redundant and non-redundant	0 to 24 drives	30°C (86°F)
	Apollo r2800 Gen10 Chassis (16 NVMe backplane)	Redundant and non-redundant	0 to 4 drives	30°C (86°F)

1 The drive capacity must be less than 10 TB.

2 The drive capacity must be greater than or equal to 10 TB.

[3] If the component is installed in server 1 or server 2, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 1-2 and 2-2. Similarly, if the component is installed in server 3 or server 4, and the server is installed in the Apollo r2200 Gen10 Chassis, drive blanks must be installed in drive bays 3-2 and 4-2. For more information, see **Drive blank installation guidelines for the HPE ProLiant XL170r Gen10 Server** on page 96.

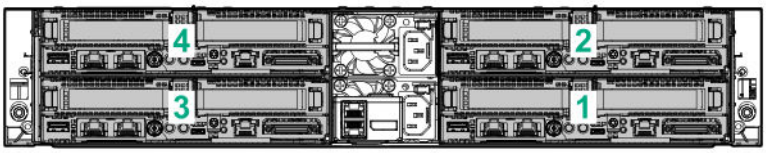
[4] The first removable drive blank is populated at bay 2.

Drive blank installation guidelines for the HPE ProLiant XL170r Gen10 Server

Depending on the chassis configuration and the component being installed in the server, it might be necessary to limit the number of drives installed in the chassis. For more information, see **List of components with temperature requirements in the HPE ProLiant XL170r Gen10 Server** on page 72.

Procedure

1. Note the server number.



2. Note the drive bays that correspond to the server.

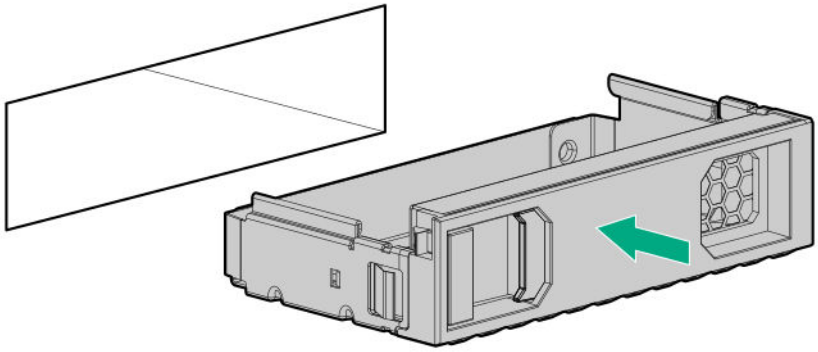
   HPE Apollo r2200 Gen10 Chassis

3. Do the following:

   a. If the component is installed in server 1 or server 2, remove the drives from drive bays 1-2 and 2-2.

   b. If the component is installed in server 3 or server 4, remove the drives from drive bays 3-2 and 4-2.

4. Install the drive blanks.



Websites

General websites

Hewlett Packard Enterprise Information Library

www.hpe.com/info/EIL

Subscription Service/Support Alerts

www.hpe.com/support/e-updates

Single Point of Connectivity Knowledge (SPOCK) Storage compatibility matrix

www.hpe.com/storage/spock

Storage white papers and analyst reports

www.hpe.com/storage/whitepapers

For additional general support websites, see **Support and other resources**.

Product websites

HPE ProLiant XL170r Gen10 product page

http://www.hpe.com/servers/xl170r-gen10

HPE ProLiant XL170r Gen10 support page

http://www.hpe.com/info/Apollo2000-Gen10-docs

HPE ProLiant XL170r Gen10 user documents

http://www.hpe.com/info/XL170r-Gen10-UG-en

Support and other resources

Accessing Hewlett Packard Enterprise Support

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

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

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

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

Information to collect

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

Accessing updates

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

  Hewlett Packard Enterprise Support Center

  www.hpe.com/support/hpesc

  Hewlett Packard Enterprise Support Center: Software downloads

  www.hpe.com/support/downloads

  Software Depot

  www.hpe.com/support/softwaredepot

- To subscribe to eNewsletters and alerts:

  www.hpe.com/support/e-updates

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

  www.hpe.com/support/AccessToSupportMaterials

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

Customer self repair

Hewlett Packard Enterprise customer self repair (CSR) programs allow you to repair your product. If a CSR part needs to be replaced, it will be shipped directly to you so that you can install it at your convenience. Some parts do not qualify for CSR. Your Hewlett Packard Enterprise authorized service provider will determine whether a repair can be accomplished by CSR.

For more information about CSR, contact your local service provider or go to the CSR website:

http://www.hpe.com/support/selfrepair

Remote support

Remote support is available with supported devices as part of your warranty or contractual support agreement. It provides intelligent event diagnosis, and automatic, secure submission of hardware event notifications to Hewlett Packard Enterprise, which will initiate a fast and accurate resolution based on your product's service level. Hewlett Packard Enterprise strongly recommends that you register your device for remote support.

If your product includes additional remote support details, use search to locate that information.

Remote support and Proactive Care information

HPE Get Connected

www.hpe.com/services/getconnected

HPE Proactive Care services

www.hpe.com/services/proactivecare

HPE Proactive Care service: Supported products list

www.hpe.com/services/proactivecaresupportedproducts

HPE Proactive Care advanced service: Supported products list

www.hpe.com/services/proactivecareadvancedsupportedproducts

Proactive Care customer information

Proactive Care central

www.hpe.com/services/proactivecarecentral

Proactive Care service activation

www.hpe.com/services/proactivecarecentralgetstarted

Warranty information

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

HPE ProLiant and IA-32 Servers and Options

www.hpe.com/support/ProLiantServers-Warranties

HPE Enterprise and Cloudline Servers

www.hpe.com/support/EnterpriseServers-Warranties

HPE Storage Products

www.hpe.com/support/Storage-Warranties

HPE Networking Products

www.hpe.com/support/Networking-Warranties

Regulatory information

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

www.hpe.com/support/Safety-Compliance-EnterpriseProducts

Additional regulatory information

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

www.hpe.com/info/reach

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

www.hpe.com/info/ecodata

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

www.hpe.com/info/environment

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Acronyms and abbreviations

AHCI

Advanced Host Controller Interface

CSR

Customer Self Repair

DDR

double data rate

GPU

graphics processing unit

HP SUM

HP Smart Update Manager

HPE APM

HPE Advanced Power Manager

HPE SSA

HPE Smart Storage Administrator

IEC

International Electrotechnical Commission

iLO

Integrated Lights-Out

IML

Integrated Management Log

ISO

International Organization for Standardization

LFF

large form factor

LOM

LAN on Motherboard

LRDIMM

load reduced dual in-line memory module

NIC

network interface controller

NMI

nonmaskable interrupt

NVRAM

nonvolatile memory

PCIe

Peripheral Component Interconnect Express

PDU

power distribution unit

POST

Power-On Self-Test

RBSU

ROM-Based Setup Utility

RCM

Rack Consolidation Management

RDIMM

registered dual in-line memory module

RDP

Remote Desktop Protocol

RoHS

Restriction of Hazardous Substances

SAS

serial attached SCSI

SATA

serial ATA

SFF

small form factor

SPP

Service Pack for ProLiant

SUV

serial, USB, video

TMRA

recommended ambient operating temperature

TPM

Trusted Platform Module

UEFI

Unified Extensible Firmware Interface

UID

unit identification

USB

universal serial bus