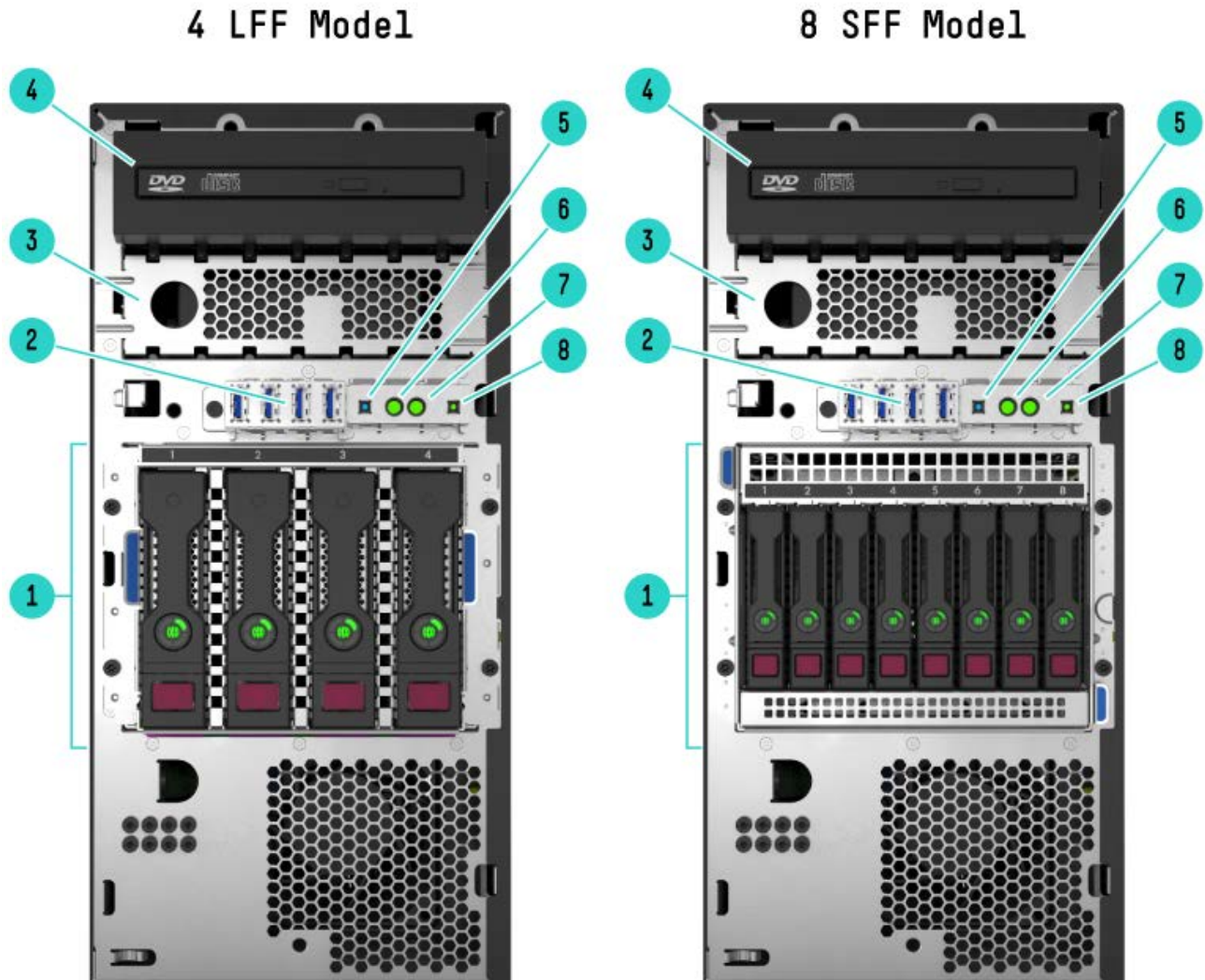


### Overview

#### HPE ProLiant ML30 Gen9 Server

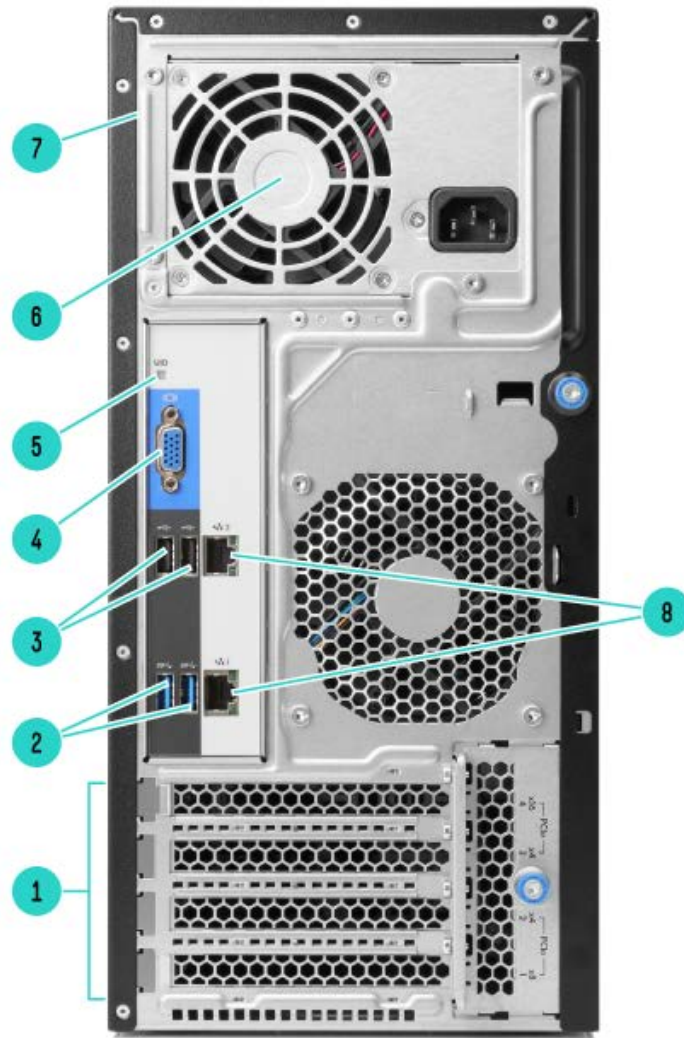
HPE ProLiant ML30 Gen9, delivers a full featured single-socket tower server with the right features at a competitive price, easy to use and maintain for growing small businesses and remote branch offices.



**Front View (details for 4LFF and 8SFF)**

- |  |  |
|--|--|
| 1. Four (4) LFF or Eight (8) SAS/SATA HDD cage         | 2. Four (4) USB 3.0 connectors                     |
| 3. Media Drive Blank                                   | 4. 9.5mm Slim SATA DVD-ROM or DVD RW Optical Drive |
| 5. Power On/Standby button and system power LED button | 6. NIC status LED                                  |
| 7. Health LED  | 8. UID (unit identification) button/LED            |

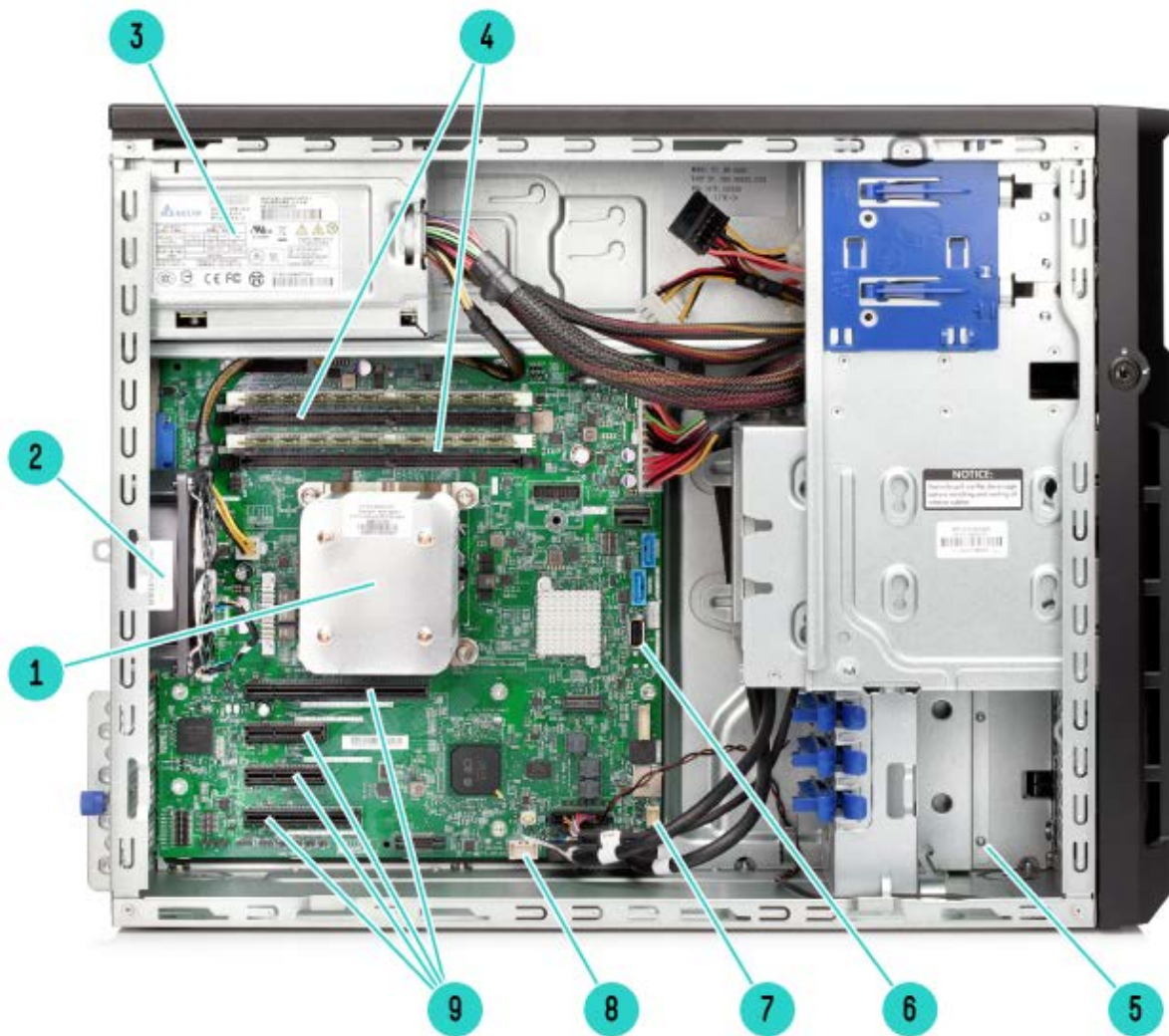
## Overview



### Rear View

- |                          |   |
|--------------------------|---|
| 1. PCI Slots (Slots 1-4) | 2. USB 3.0 (2)                                |
| 3. USB 2.0 (2)           | 4. Video Connector                            |
| 5. UID LED               | 6. Power Supply Power Fan                     |
| 7. HPE 350W Power Supply | 8. NIC1/shared iLO port (lower), NIC2 (upper) |

## Overview



### Internal View

1. One (1) processor and heatsink
2. System Fan
3. Power Supply
4. Four (4) DDR4 DIMM slots
5. Front PCIe fan (optional)
6. Two (2) Internal USB 2.0 connectors (USB Type A, Tape Drive Header)
7. Front PCIe fan connector
8. Smart Storage Battery connector
9. Four (4) PCIe expansion slots

### What's New

- ClearOS, an easy to use OS with an application marketplace, allows you to build a fully functional server that is just right for you at no upfront cost. To learn more on what you can do, please visit <http://www.hpe.com/servers/clearos>.

## Standard Features

**NOTE:** For more information regarding Intel Xeon processors, please see the following <http://www.intel.com/xeon>.

Intel® Xeon® processor E3-1200v5 and E3-1200v6 quad core processor family is designed to deliver the best combination of performance, built-in capabilities, and cost-effectiveness. The product also supports Intel® Pentium® and Intel® Core-i3 dual core processors. Choose one of the following processors based on the model:

### Processor

One of the following depending on model

Model	CPU frequency	Cores	L3 Cache	Power	DDR4 Hz
G4560	3.5 GHz	2	3MB	54W	2400
G4600	3.6 GHz	2	3MB	51W	2400
i3-7100	3.9 GHz	2	3MB	51W	2400
i3-7300	4.0 GHz	2	3MB	51W	2400
E3-1220v6	3.0 GHz	4	8MB	72W	2400
E3-1230v6	3.5 GHz	4	8MB	72W	2400
E3-1240v6	3.7 GHz	4	8MB	72W	2400
E3-1270v6	3.8 GHz	4	8MB	72W	2400
E3-1280v6	3.9 GHz	4	8MB	72W	2400

### Cache Memory

One of the following depending on model

8MB (1 x 8MB) Level 3 cache

**NOTE:** For Quad-core Intel Xeon® processors.

3MB (1 x 3MB) Level 3 cache

**NOTE:** For Dual-core Intel Pentium® Core™ i3 processors.

### Chipset

Intel® C236 Chipset

**NOTE:** For more information regarding Intel® chipsets, please see the following URL: <http://www.intel.com/products/server/chipsets/>

### On System

#### Management Chipset

HPE iLO (Firmware HPE iLO4 2.0 or later) 4GB NAND

**NOTE:** 1GB USB user space configurable via UEFI and accessible via iLO. Read and learn more in the [HPE iLO QuickSpecs](#).

### Memory

One of the following depending on model

Type:

DDR4 Unbuffered (UDIMM)

DIMM Slots Available 4 4 DIMMs (2 Channels/ 2 DIMMs per channel)

Maximum Capacity 64GB (4 x 16GB UDIMM @2400MHz)  
(UDIMM)

### Memory Protection

ECC

### Network Controller

HPE Ethernet 1Gb 2-port NC332i Adapter

## Standard Features

### Expansion Slots

Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
4	PCIe 3.0	x16	x16		Full length/full height	
3	PCIe 3.0	x1	x4		Full length/full height	
2	PCIe 3.0	x1	x4		Full length/full height	
1	PCIe 3.0	x4	x8		Half length/full height	

**NOTE:** Bus Width indicates the number of physical electrical lanes running to the connector.

### Storage Controller

One of the following depending on model

Base Models	HPE Dynamic Smart Array B140i Controller
<b>NOTE:</b> B140i can't mix with any standup internal controller.	
Performance Models	HPE Dynamic Smart Array B140i Controller
<b>NOTE:</b> B140i can't mix with any standup internal controller.	

### Internal Storage Devices

One of the following depending on model

Optical Drives	Optional SATA 9.5mm DVD-ROM Optical Drive Optional SATA 9.5mm DVD RW Optical Drive
Hard Drives	None ship standard
Hard Drive Bays	4 LFF drive bays (non-hot-plug and hot-plug) 8 SFF hot-plug drive bays

**NOTE:** HPE ProLiant ML30 Series servers offer both SFF and LFF versions.

**NOTE:** All Pre-configured Models come populated with some hard drive blanks installed. Should the customer need additional hard drive blanks, they can order more using either HPE SFF HDD Blank Kit (666987-B21) or HPE LFF HDD Blank Kit (666986-B21).

### Maximum Internal Storage

One of the following depending on model

	CAPACITY	CONFIGURATION
Hot Plug LFF SAS	48TB	4 x 12TB
Hot Plug SFF SAS	19.2TB	8 x 2.4TB
Hot Plug LFF SATA	48TB	4 x 12TB
Hot Plug SFF SATA	16TB	8 x 2TB
Non Hot Plug LFF SATA	16TB	4 x 4TB
Hot Plug SFF SATA SSD	30.72TB	8 x 3.84TB
Hot Plug LFF SATA SSD	7.68TB	4 x 1.92GB

### Power Supply

One of the following depending on model

HPE 350W ATX-Gen9 Power Supply FIO Kit
HPE 460W Redundant Power Supply
HPE Entry-Level Power Supplies provide lower-cost options for customers trying to balance their need for enterprise class efficiency and reliability while maintaining lowest possible hardware costs. All Entry-Level power supply options have been designed specifically for HPE ProLiant Gen9 Essential Series servers. The HPE 350W FIO Power Supply is the standard, non-redundant AC power supply option for most HPE ProLiant Gen9 Essential servers. It features Bronze-level (85%) certified power efficiency with a set of features optimized for the Gen9 Essential-series rack and tower servers.

## Standard Features

The HPE 460W (Redundant) AC Power Supply can be configured with redundancy enablement kit to support power redundancy in ProLiant ML30 Servers, providing additional protection against power loss. With an 80 Plus Gold power efficiency rating (up to 92%), this power option helps to reduce operating expenses while protecting against trapped power capacity in the data center.

All pre-configured servers ship with a standard 6-foot IEC C-13/C-14 jumper cord (A0K02A). This jumper cord is also included with each standard AC power supply option kit. If a different power cord is required, please check the ProLiant Power Cables web page.

To review the power requirements for your selected system, please use the HPE Power Advisor Tool located at <http://www.hpe.com/info/hppoweradvisor>.

Power Specification and Technical Content for supported power supplies can be found at: <https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111541>.

### Required Cabling

#### Server Power Cords

The ProLiant ML30 server is a tower server that ships standard with a 6-foot NEMA power cord that allows connection to wall outlets in a home or office. If customers require additional local power cords, they can check the power cord matrix for the appropriate SKU.

### System Fans

One of the following depending on model

1P model system fan

#### Non-redundant

One (1) Non-redundant system fan

#### Redundant

NA

1P model PCIe fan

#### Non-redundant

One (1) Non-redundant PCIe fan

#### Redundant

NA

### Interfaces

Video

1 (rear)

Network RJ-45 (Ethernet)

2 (1 shared for HPE Integrated Lights-Out)

Micro SD Slot

1 (internal)

**NOTE:** The Micro-SD slot is not a hot-pluggable device. Customers should not attempt to plug a Micro-SD card into the Micro-SD slot while the server is powered.

USB 3.0

6 (4 front, 2 rear)

USB 2.0

4 (2 rear, 1 internal standard USB, 1 internal USB header)

### Operating Systems and Virtualization Software Support for ProLiant Servers

#### Microsoft Windows Server

#### Red Hat Enterprise Linux (RHEL)

#### SUSE Linux Enterprise Server (SLES)

#### VMware

#### ClearOS

**NOTE:** ClearOS allows you to build a fully functional server that is just right for you at no upfront cost. It is available via CTO preload, Intelligent Provisioning or via download. For more information on ClearOS, please visit <http://www.hpe.com/servers/clearos>

**NOTE:** VMWare availability is dependent on General availability from the vendor. HPE ProLiant ML30 supports VMWare 5.5 U3 and 6.0 U1.

**NOTE:** For more information on HPE's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: <http://www.hpe.com/info/ossupport> and our [driver download page](#)

## Standard Features

### Upgradeability

Upgradeable to 4 cores

**NOTE:** Total 2 or 4 cores.

Up to 4 DIMM slots available for higher memory capacity

Up to 8 SFF Hard Drive Bays; or 4 LFF Hard Drive Bays

All PCIe 3.0 I/O slots for additional communications and storage expansion

Redundant Power Supply

Optical Drive Bay

**NOTE:** Up to 2.

### Industry Standard Compliance

ACPI 2.0b Compliant

PCIe 3.0 Compliant

PXE Support

WOL Support

Microsoft® Logo certifications

USB 2.0 /3.0 Support

### Graphics

Integrated Matrox G200 video standard

- 1280 x 1024 (32 bpp)
- 1920 x 1200 (16 bpp)

HPE iLO 4 On System Management Memory

- 16 MB Flash
- 256 MB DDR 3 with ECC (112 MB after ECC and video)

HPE NVIDIA Quadro M2000 GPU Module

### HPE Server UEFI/Legacy ROM

Unified Extensible Firmware Interface (UEFI) is an industry standard that provides better manageability and more secured configuration than the legacy ROM while interacting with your server at boot time. HPE ProLiant Gen9 platform defaults to UEFI and can be factory or field configured for Legacy BIOS Boot Mode.

**NOTE:** The UEFI System Utilities function is analogous to the HPE ROM-Based Setup Utility (RBSU) of legacy BIOS. For more information, please visit <http://www.hpe.com/servers/uefi>.

UEFI enables numerous new capabilities specific to HPE ProLiant servers such as:

- Secure Boot
- Operating system specific functionality
- Support for > 2.2 TB (using GPT) boot drives
- USB 3.0 Stack
- Embedded UEFI Shell
- Mass Configuration Deployment Tool using RESTful API for iLO 4
- PXE boot support for IPv6 networks
- Boot support for option cards that only support a UEFI option ROM
- Network Stack configurations

**NOTE:** For UEFI Boot Mode, boot environment and OS image installations should be configured properly to support UEFI.

**NOTE:** UEFI FIO Setting (758959-B22) can be selected to configure the system in Legacy mode in the factory for your HPE ProLiant Gen9 Server.

## Standard Features

**Form Factor** Micro ATX Tower (4U) chassis with feet/bezel: 14.5" (36.82cm) Height x 6.89" (17.5cm) Width x 18.71" (47.52cm) Length  
One of the following depending on model

8 SFF Drive Bay Cage: 4.6" (11.74cm) Height x 5.74" (14.57cm) Width x 4.79" (12.15cm) Length

4 LFF Drive Bay Cage: 4.6" (11.72cm) Height x 5.74" (14.57cm) Width x 6.90" (17.54cm) Length

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<b>Embedded Management</b>	<p><b>HPE Integrated Lights-Out (HPE iLO)</b> Monitor your servers for ongoing management, service alerting, reporting and remote management with HPE iLO. Learn more at <a href="http://www.hpe.com/info/ilo">http://www.hpe.com/info/ilo</a>.</p> <p><b>UEFI</b> Configure and boot your servers securely with industry standard Unified Extensible Firmware Interface (UEFI). Learn more at <a href="http://www.hpe.com/servers/uefi">http://www.hpe.com/servers/uefi</a>.</p> <p><b>RESTful API</b> RESTful API for iLO 4 is Redfish 1.0 conformance for simplified server management such as configuration and maintenance tasks based on modern industry standards. Learn more at <a href="http://www.hpe.com/info/restfulapi">http://www.hpe.com/info/restfulapi</a>.</p> <p><b>Intelligent Provisioning</b> Hassle free server and OS provisioning for 1 or few servers with Intelligent Provisioning. Learn more at <a href="http://www.hpe.com/servers/intelligentprovisioning">http://www.hpe.com/servers/intelligentprovisioning</a>.</p> <p><b>Embedded Remote Support</b> The Hewlett Packard Enterprise embedded remote support, when used with Insight Online direct connect or HPE Insight Remote Support, allows HPE ProLiant servers to transmit hardware events directly to Hewlett Packard Enterprise or a Hewlett Packard Enterprise Authorized Partner for automated phone home support. Learn more at <a href="http://www.hpe.com/info/insightonline/explore">http://www.hpe.com/info/insightonline/explore</a>.</p>
<b>Server utilities</b>	<p><b>Smart Update</b> Optimize firmware and driver updates with Smart Update solutions including Smart Update Manager (SUM) and Service Pack for ProLiant (SPP). Learn more at <a href="http://www.hpe.com/servers/smartupdatemanager">http://www.hpe.com/servers/smartupdatemanager</a>.</p> <p><b>HPE Systems Insight Manager (HPE SIM)</b> HPE SIM allows you to monitor the health of your HPE ProLiant Servers and HPE Integrity Servers, and also provides you with basic support for non-HPE servers. HPE SIM also integrates with Smart Update Manager to provide quick and seamless firmware updates. Learn more at <a href="http://www.hpe.com/servers/hpsim">http://www.hpe.com/servers/hpsim</a>.</p> <p><b>Scripting Tool Kit and Windows PowerShell</b> Provision 1 to many servers using your own scripts to discover and deploy them with Scripting Tool Kit (STK) for Windows and Linux or Scripting Tools for Windows PowerShell. Learn more at <a href="http://www.hpe.com/servers/proliant/stk">http://www.hpe.com/servers/proliant/stk</a> or <a href="http://www.hpe.com/servers/powershell">http://www.hpe.com/servers/powershell</a>.</p> <p><b>RESTful Interface Tool</b> RESTful Interface tool is a scripting tool to provision using RESTful API for iLO 4 to discover and deploy servers at scale. Learn more at <a href="http://www.hpe.com/info/resttool">http://www.hpe.com/info/resttool</a>.</p> <p><b>HPE iLO Mobile Application</b> Enables the ability to access, deploy, and manage your server anytime from anywhere from select smartphones and mobile devices. For additional information please visit: <a href="http://www.hpe.com/info/ilo/mobileapp">http://www.hpe.com/info/ilo/mobileapp</a>.</p>



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## Standard Features

**HPE Insight Online**

HPE Insight Online, available at no additional cost as part of your Hewlett Packard Enterprise warranty or contractual support agreement with Hewlett Packard Enterprise, is a personalized dashboard for simplified tracking of IT operations and support information from anywhere, anytime. Learn more at

<http://www.hpe.com/info/insightonline/explore>

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**Security**

Power-on password  
Setup password  
Power switch security  
Administrator's password  
TPM 1.2  
TPM 2.0  
UEFI

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**Warranty**

This product is covered by a global limited warranty and supported by HPE Services and a worldwide network of HPE Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HPE Pointnext operational services or customized service agreements. Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.

**NOTE:** Server Warranty includes 3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have Hewlett Packard Enterprise replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at:

<http://h17007.www1.hpe.com/us/en/enterprise/servers/warranty/>

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## Optional Features

### Embedded Management

**iLO Essentials** HPE iLO Essentials is the preferred license for small and medium business that offers full remote server management capabilities for small and medium business via the Integrated Remote Console (IRC), virtual media, and e-mail based alerts. Learn more about HPE iLO Essentials at <http://www.hpe.com/servers/iLO/essentials>.

**iLO Scale-Out** HPE iLO Scale-Out is the preferred license built for web hosting, cloud service providers, and high performance computing data centers, managing massive scale out environments for the DL 100 and 10 series servers, not available for ML servers. This license offers sophisticated scripting tools that provides remote access through Text Console via SSH, Dynamic power capping, Email-based Alerting and proactive notifications. For more information, visit <http://www.hpe.com/servers/iLO/scale-out>.

**iLO Advanced** HPE iLO Advanced licenses offer smart remote functionality without compromise, for all HPE ProLiant servers. The license includes the full integrated remote console, virtual keyboard, video, and mouse (KVM), multi-user collaboration, console record and replay, and GUI-based and scripted virtual media and virtual folders. You can also activate the enhanced security and power management functionality. Learn more about HPE iLO Advanced at <http://www.hpe.com/servers/ioloadvanced>.

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**Server Management** **HPE Insight Control** HPE Insight Control, lets you deploy, migrate, monitor, remote control, and optimize your IT infrastructure through a single, simple management console. For more information, see <http://www.hpe.com/info/insightcontrol>.

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**HPC Interconnects** **NOTE:** High Performance Computing (HPC) interconnect technologies are available for this server under the HPE Cluster Platform product portfolio. These high-speed interconnects are fully supported by Hewlett Packard Enterprise when they are part of these configure to order clusters. Solutions can be defined with a lot of flexibility with the help of configuration tools. Please visit the following URL to configure HPEC Clusters with InfiniBand Interconnects: <https://www.hpe.com/info/hpc/solutions>.

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## Optional Features

### Storage Software

Whether you need to solve a specific data protection, archiving, or storage command and control challenge, or deliver on strategic consolidation, compliance, or continuity initiatives, look no further than Hewlett Packard Enterprise storage software. Our storage software helps you reduce costs, simplify storage infrastructure, protect vital assets and respond faster to business opportunities.

Storage software that gets the job done:

- **Data Protection and Recovery Software**

Whether you're a large enterprise or a smaller business, Hewlett Packard Enterprise data protection and recovery software will cost-effectively protect you against disaster and ensure business continuity.

- **Data Archive and Migration Software**

Hewlett Packard Enterprise storage software enables you to comply with data retention and retrieval requirements, improve application performance, and reduce costs by efficiently migrating infrequently accessed or less valuable data to lower cost storage.

- **Storage Resource Management Software (SRM)**

Hewlett Packard Enterprise storage resource management software reduces operational costs and provides the command and control foundation you need to efficiently manage and visualize your physical and virtual environments.

- **Data Replication Software**

Hewlett Packard Enterprise offers array-based and host-based replication software for use in disaster recovery, testing, application development and reporting.

- **Storage Device Management Software**

Maximize your investment in Hewlett Packard Enterprise storage and networking with software that enables hardware-specific configuration, performance tuning and connectivity management.

- **HPE StoreVirtual VSA**

With HPE StoreVirtual VSA you can use the power of virtualization to create a virtual array within your host server. Manage it as a single pool of shared storage capacity, and scale it to match your evolving needs. HPE ProLiant Gen9 servers include a 3-year limited license for HPE StoreVirtual VSA software with 1TB of capacity at no extra cost. Simply select to install HPE StoreVirtual VSA software during server setup within Intelligent Provisioning. More information, instructional videos, and free console management software are available at <http://www.hpe.com/info/vsa1TB>.

**NOTE:** For more information about Storage Software including QuickSpecs, please see: <https://www.hpe.com/us/en/storage/software-defined.html>.

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### ClearOS

HPE and ClearCenter will help you lower the cost of building on-premise solutions without sacrificing security and ease of use. HPE ProLiant servers with ClearOS give you a simple, secure, and affordable operating system with an intuitive web based graphical user interface that provides a cloud-like experience on- premise, and an Application Marketplace with over 100 apps and growing. Whether you're starting out or scaling, you decide what applications you need and pay as you grow.

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### One Config Simple (SCE)

SCE is a guided self-service tool to help sales and non-technical people provide customers with initial configurations in 3 to 5 minutes. You may then send the configuration on for configuration help, or use in your existing ordering processes. If you require "custom" rack configuration or configuration for products not available in SCE, please contact Hewlett Packard Enterprise Customer Business Center or an Authorized Partner for assistance. <http://ocs.ext.hpe.com/>.

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## Service and Support

### HPE Support Services

HPE Technology Services delivers confidence, reduces risk and helps customers realize agility and stability. Connect to Hewlett Packard Enterprise to help prevent problems and solve issues faster. HPE Support Services enable you to choose the right service level, length of coverage and response time as you purchase your new server, giving you full entitlement to the support for need for your IT and business.

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### Connect your devices

Unlock all of the benefits of your technology investment by connecting your products to Hewlett Packard Enterprise. Achieve up to 77%<sup>1</sup> reduction in down time, near 100%<sup>2</sup> diagnostic accuracy and a single consolidated view of your environment. By connecting, you will receive 24x7 monitoring, pre-failure alerts, automatic call logging, and automatic parts dispatch. HPE Proactive Care Service and HPE Datacenter Care Service customers will also benefit from proactive activities to help prevent issues and increase optimization. All of these benefits are already available to you with your server storage and networking products, securely connected to Hewlett Packard Enterprise support.

1- IDC 2 - HP CSC reports 2014 - 2015

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### Recommended Support

#### **Basic: HPE Foundation Care NBD, three-year Support Service**

HPE Foundation Care Next Business Day connects you to Hewlett Packard Enterprise during business hours for assistance on resolving issues – This service features need based next business day hardware onsite response and software call back within two hours. In addition, Collaborative software support and provides troubleshooting assistance on industry leading software running on your HPE server. Simplify your support experience and make Hewlett Packard Enterprise your first call to help resolve hardware or software problems.

<https://www.hpe.com/h20195/V2/GetDocument.aspx?docname=4AA4-8876ENW&cc=us&lc=en>

#### **Standard: HPE Foundation Care 24x7, three-year Support Service**

HPE Foundation Care 24x7 gives you access to Hewlett Packard Enterprise 24 hours a day, seven days a week for assistance on resolving issues. This service includes need based Hardware onsite response within four hours. In addition, collaborative software support is included in this service that provides troubleshooting assistance on industry leading software running on your HPE server. Simplify your support experience and make Hewlett Packard Enterprise your first call to help resolve hardware or software problems.

<https://www.hpe.com/h20195/V2/GetDocument.aspx?docname=4AA4-8876ENW&cc=us&lc=en>

#### **Optimized: HPE Proactive Care\* with 24x7 coverage, three year Support Service**

HPE Proactive Care gives customers an enhanced call experience. When your products are connected to Hewlett Packard Enterprise, Proactive Care helps prevent problems and maintains IT stability by utilizing personalized proactive reports with recommendations and advice. This service combines three years proactive reporting and advice with our 24x7 coverage, four hour hardware response time when there is a problem. This service also includes collaborative software support for Independent Software Vendors (ISVs), (Red Hat, VMWare, Microsoft, etc.) running on your HPE servers.

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### Parts and Materials

Hewlett Packard Enterprise will provide HPE-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements.

Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product quick-specs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by Hewlett Packard Enterprise due to malfunction.

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## Service and Support

### Related Services

#### **HPE Server Hardware Installation**

Provides for the basic hardware installation of Hewlett Packard Enterprise branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner.

<https://www.hpe.com/h20195/V2/GetPDF.aspx/5981-9356EN.pdf>

#### **HPE Installation and Startup Service**

Provides for the installation and startup of Hewlett Packard Enterprise technology including BladeSystems, C-Class enclosure, HPE ProLiant c-Class and Integrity server blades, storage blades, SAN switch blades, HPE Virtual Connect modules (Ethernet and Fibre Channel), Ethernet network interconnects, and InfiniBand, as well as the installation of one supported operating system type (Windows® or Linux).

#### **HPE Technology Services Support Credits**

Offer flexible services and technical skills to meet your changing IT demands. With a menu of service that is tailored to suit your needs, you get additional resources and specialist skills to help you maintain peak performance of your IT. Offered as annual credits, you can plan your budgets while proactively responding to your dynamic business.

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### **HPE Education Services**

Keep your IT staff trained making sure they have the right skills to deliver on your business outcomes. Book on a class today and learn how to get the most from your technology investment. <http://www.hpe.com/ww/learn>

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### **HPE Support Center**

The HPE Support Center is a personalized online support portal with access to information, tools and experts to support Hewlett Packard Enterprise business products. Submit support cases online, chat with Hewlett Packard Enterprise experts, access support resources or collaborate with peers.

Learn more <http://www.hpe.com/support/hpesc>

The Hewlett Packard Enterprise Support Center Mobile App\* allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalized IT support anywhere, anytime.

HPE Insight Remote Support and HPE Support Center are available at no additional cost with a Hewlett Packard Enterprise warranty, HPE Support Service or Hewlett Packard Enterprise contractual support agreement.

HPE Support Center Mobile App is subject to local availability.

For more information: <http://www.hpe.com/services>

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## Service and Support

**HPE Support Center** The HPE Support Center is a personalized online support portal with access to information, tools and experts to support Hewlett Packard Enterprise business products. Submit support cases online, chat with Hewlett Packard Enterprise experts, access support resources or collaborate with peers.

Learn more <http://www.hpe.com/support/hpesc>

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\*HPE Support Center Mobile App is subject to local availability.

For more information: <http://www.hpe.com/services>

## Pre-configured Models

1. Pre-configured models ship with the configurations below. Options can be selected from the Core or Additional options section of this QuickSpecs.

2. If you desire a custom configuration please see “Configuration Information – Factory Integrated Models” section of this QuickSpecs.

	Entry Models	Performance Models		Solution Models
<b>[SKU Number]</b>	P03704-S01	P03705-S01	P03706-S01	P03707-S01
<b>Model Name</b>	HPE ProLiant ML30 Gen9 E3-1220v6 1P 8GB-U B140i 4LFF NHP SATA 350W PS Entry Server	HPE ProLiant ML30 Gen9 E3-1220v6 1P 8GB-U B140i 4LFF HP SATA 350W PS Perf Server	HPE ProLiant ML30 Gen9 E3-1230v6 1P 8GB-U B140i 4LFF HP SATA 460W RPS Perf Server	HPE ProLiant ML30 Gen9 E3-1240v6 1P 8GB-U B140i 8SFF SATA 460W RPS Perf Server
<b>Processor</b>	Intel® Xeon® E3-1220v6	Intel® Xeon® E3-1220v6	Intel® Xeon® E3-1230v6	Intel® Xeon® E3-1240v6
<b>Number of Processors</b>	One			
<b>Memory</b>	8GB (1x8GB UDIMMs, 2400 MHz)	8GB (1x8GB UDIMMs, 2400 MHz)	8GB (1x8GB UDIMMs, 2400 MHz)	16GB (1x16GB UDIMMs, 2400 MHz)
<b>Network Controller</b>	Broadcom 5720 Dual-port 1GbE			
<b>Storage Controller</b>	HPE Dynamic Smart Array B140i			
<b>Hard Drive</b>	None ship standard; includes 3 LFF hard drive blanks			None ship standard; includes 7SFF hard drive blanks
<b>Internal Storage</b>	4 LFF HDD Bays (Non Hot Plug)	4 LFF HDD Bays (Hot Plug)		8SFF HDD Bays (Hot Plug)
<b>Optical Drive Bay</b>	1 (Optional: DVD-ROM, DVD-RW)	1 (Optional: DVD-ROM, DVD-RW)		1 (Optional: DVD-ROM, DVD-RW)
<b>Optical Drive</b>	None	1 DVD RW		None
<b>PCI-Express Slots</b>	4 PCIe 3.0 slots			
<b>Power Supply</b>	(1) 350W ATX Power Supply		(1) 460W Redundant Power Supply	
<b>Fans</b>	1 non hot plug, non-redundant			
<b>Management</b>	iLO Management (standard), Intelligent Provisioning (standard), iLO Essentials (optional), iLO Scale-out (optional only for DL), iLO Advanced (optional)			
<b>Form Factor</b>	Tower (4U)			
<b>Warranty</b>	3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response.			

## Configuration Information - Factory Integrated Models

This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, Hewlett Packard Enterprise recommends the use of an HPE approved configurator. Contact your local sales representative for information on configurable product offerings and requirements.

1. Factory Integrated Models must start with a CTO Server.
2. 2. FIO indicates that this option is only available as a factory installable option.
3. 3. All Factory Integrated Models will be populated with sufficient hard drive blanks based on the number of initial hard drives ordered with the server.
4. 4. Some options may not be integrated at the factory. Contact your local sales representative for additional information.

### Step 1: Base Configuration (choose one of the following configurable models)

<b>CTO Server</b>	HPE ProLiant ML30 Gen9 Non-hot Plug 4LFF Configure-to-order Server	HPE ProLiant ML30 Gen9 Hot Plug 4LFF Configure-to-order Server	HPE ProLiant ML30 Gen9 Hot Plug 8SFF Configure-to-order Server
<b>SKU Number</b>	823401-B21	823402-B21	823403-B21
<b>Processor</b>	1	1	1
<b>DIMM Slots</b>	4 DIMM slots for UDIMM DDR4 Memory		
<b>Storage Controller</b>	HPE Dynamic Smart Array B140i with 4 SATA ports support	HPE Dynamic Smart Array B140i with 4 SATA ports support, choice of HPE SAS Controller or Smart HBA	
<b>PCIe</b>	4 PCIe 3.0 slots		
<b>Drive Cage</b>	4LFF Non Hot Plug	4LFF Hot Plug	8SFF Hot Plug
<b>Network Controller</b>	Broadcom 5720 Dual-port 1GbE		
<b>Fans</b>	1 non hot plug, non-redundant		
<b>Management</b>	iLO Management (standard), Intelligent Provisioning (standard)		
<b>USB</b>	4 front, 4 rear, 2 internal		

### Step 2: Choose Required Options (only one of the following from each list unless otherwise noted)

#### HPE Processors **E3-1200v6 series Processors**

HPE ML30 Gen9 Intel Xeon E3-1220v6 (3.0GHz/4-core/8MB/72W) FIO Processor Kit	871841-L21
HPE ML30 Gen9 Intel Xeon E3-1230v6 (3.5GHz/4-core/8MB/72W) FIO Processor Kit	871843-L21
HPE ML30 Gen9 Intel Xeon E3-1240v6 (3.7GHz/4-core/8MB/72W) FIO Processor Kit	871842-L21
HPE ML30 Gen9 Intel Xeon E3-1270v6 (3.8GHz/4-core/8MB/72W) FIO Processor Kit	871844-L21

#### **E3-1200v6 series Processors**

HPE ML30 Gen9 Intel Xeon E3-1280v6 (3.9GHz/4-core/8MB/72W) FIO Processor Kit	873298-L21
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#### **Intel® Core i3-6000 series Processors**

HPE ML30 Gen9 Intel Core i3-7100 (3.9GHz/2-core/3MB/51W) FIO Processor Kit	871847-L21
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#### **Intel® Core i3-6000 series Processors**

HPE ML30 Gen9 Intel Core i3-7300 (4.0GHz/2-core/4MB/51W) FIO Processor Kit	871848-L21
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#### **Intel® Pentium® G4000 series Processors**

HPE ML30 Gen9 Intel Pentium G4500 (3.5GHz/2-core/3MB/54W) FIO Processor Kit	871845-L21
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**NOTE:** DDR4 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.

**NOTE:** For the Intel® C236 Chipset E3-1200 Series, the letter preceding the model number indicates the Product Line (E3, E5, E7); 1200x v#, 1 is the number of CPU, 2 is socket type/segment designation, 00 = Processor SKU, x = L for low power SKUs and v# (not yet designated) is the version number



## Configuration Information - Factory Integrated Models

### HPE Memory

**NOTE:** Select one or more memory below

**NOTE:** HPE memory from previous generation servers are not qualified or warranted with this HPE ProLiant Server.

**NOTE:** HPE Standard Memory (UDIMM) is required to realize the memory performance improvements and enhanced functionality listed in this document for this HPE ProLiant Server.

**NOTE:** With one processor installed, four DIMMs slots are available.

**NOTE:** For more information on ProLiant Energy Efficient features, see: <http://www.hpe.com/go/proliant-energy-efficient>.

**NOTE:** Depending on the memory configuration and processor model, the memory speed would run at 2133MHz. Please see Memory Population Table or the Online Memory Configuration tool

at: <http://www.hpe.com/go/ddr4config>

#### Unbuffered DIMMs (UDIMMs)

HPE 16GB (1x16GB) Dual Rank x8 DDR4-2133 CAS-15-15-15 Unbuffered Standard Memory Kit 805671-B21

HPE 8GB (1x8GB) Single Rank x8 DDR4-2133 CAS-15-15-15 Unbuffered Standard Memory Kit 819880-B21

**NOTE:** The following memory is supported by the E3-1200v6 series, i3-7000 series, G4560 and G4600 processors only

HPE 8GB (1x8GB) Single Rank x8 DDR4-2400 CAS-17-17-17 Unbuffered Standard Memory Kit 862974-B21

HPE 16GB (1x16GB) Dual Rank x8 DDR4-2400 CAS-17-17-17 Unbuffered Standard Memory Kit 862976-B21

### HPE Power Supplies

**NOTE:** Prior to selecting a power supply option, it is highly recommended that you review your server configuration in the HPE Power Advisor tool to determine the right size power supply for your server configuration. The HPE Power Advisor is located at: <http://www.hpe.com/go/hppoweradvisor>.

**NOTE:** Mixing of power supplies in the same server is not supported. All power supplies must be of the same input voltage, output rating, and efficiency rating. If non-matching power supplies are installed, you may receive an error message and/or experience operational issues with your server

#### HPE Entry-Level Power Supplies

HPE 460W CS Gold Ht Plg Power Supply Kit 503296-B21

**NOTE:** Must select 4U RPS Enablement Kit (822607-B21).

Customer can select: 460W Hot Plug Power Supply x1 + 4U RPS Enablement Kit x1 or

Customer can select: 460W Hot Plug Power Supply x2 + 4U RPS Enablement Kit x1

HPE ML30 Gen9 350W E-Star 2.0 FIO Power Supply Kit 822384-B21

HPE ML30 Gen9 4U Redundant FIO Power Supply Enablement Kit 822607-B21

### Step 3: Choose Additional Factory Integratable Options (only one of the following from each list unless otherwise noted)

#### HPE Storage Controllers

**NOTE:** Required for Hot Plug 4LFF CTO Server (823402-B21) and Hot Plug 8SFF CTO Server (823403-B21) if selecting SAS Hard Drives in Step 4.

##### HPE Smart Array Controller

HP Smart Array P440/4GB FBWC 12Gb 1-port Int FIO SAS Controller 761872-B21

**NOTE:** This controller can support up to 8 internal SAS/SATA devices.

**NOTE: Must also** select P440/P840 Cable Kit (789651-B21) and one Megacell battery (727258-B21) and battery holder kit (786710-B21) if no other P-series controllers are selected.

##### HPE Smart Host Bus Adapter

HP H240 12Gb 2-ports Int FIO Smart Host Bus Adapter 761873-B21

**NOTE:** This controller can support up to 8 internal SAS/SATA devices.

## Configuration Information - Factory Integrated Models

**NOTE:** Must also select Mini-SAS H240 Cable Kit (789648-B21). One for 4LFF CTO Server models and two for 8SFF CTO Server models.

### Cable Kits

HP ML110 Gen9 Mini SAS P440/P840 Cable Kit 789651-B21

**NOTE:** Required if selecting HP Smart Array P440/4GB FBWC 12Gb 1-port Int FIO SAS Controller (761872-B21)

HP ML110 Gen9 Mini SAS H240 Cable Kit 789648-B21

**NOTE:** Required if selecting HP H240 12Gb 2-ports Int FIO Smart Host Bus Adapter (761873-B21). Two are required if using H240 with 8SFF CTO Server models.

### Controller Options

HP 96W Smart Storage Battery with 145mm Cable for DL/ML/SL Servers 727258-B21

**NOTE:** Required if selecting HP Smart Array P440/4GB FBWC 12Gb 1-port Int FIO SAS Controller (761872-B21)

**HPE Cooling Options** HPE ML30 Gen9 Front PCI FIO Redundant Fan Kit 820290-B21  
**NOTE:** Required for any PCI-E card.

**BIOS Mode** HP Legacy FIO Mode Setting 758959-B22  
**NOTE:** The Legacy Mode Setting and HP Dual 8GB microSD EM USB Kit (741279-B21) CANNOT be selected together.

**Controller State** HP Mfg FIO Enable HBA Mode Setting 792962-B21  
**NOTE:** If H240 is the primary controller with this option, then RAID is not allowed

HP AHCI-Enable FIO Setting 801845-B21

**NOTE:** If B140i is the primary controller with this option, then RAID is not allowed

**HPE Insight Software** HPE Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO License C6N36A

**Step 4: Choose Additional Options for Factory Integration from Core and Additional Options sections below**

## Core Options

**NOTE:** Some options may not be integrated at the factory. To ensure only valid configurations are ordered, Hewlett Packard Enterprise recommends the use of an HPE approved configurator. Contact your local sales representative for additional information.

### HPE Unique Options

HPE ML30 Gen9 Slim Optical Disk Drive Enablement Kit	820288-B21
HPE ML30 Gen9 Front PCI Fan Kit	820290-B21
<b>NOTE:</b> Required for any PCI-E card.	
HPE ML30 Gen9 350W E-star 2.0 Power Supply Kit	822384-B21
HPE ML30 Gen9 4U Redundant Power Supply Enablement Kit	822607-B21
HPE ML30 Gen9 4 Large Form Factor Hot Plug Hard Drive Cage Kit	822608-B21
<b>NOTE:</b> The LFF Kit is a backplane kit designed for going from NHP LFF to hot-plug LFF.	
HPE ML30 Gen9 8 Small Form Factor Hot Plug Hard Drive Cage Kit	822756-B21
<b>NOTE:</b> The SFF Kit is the cage plus backplane and designed to convert from any LFF configuration to SFF.	
HPE Tower to Rack Conversion Tray Universal Kit	417705-B21
<b>NOTE:</b> Require HPE ML30 Gen9 Front PCI Fan Kit (820290-B21).	
<b>NOTE:</b> ML30 Gen9 is not designed for a data center rack application environment, the Tower to Rack setting can be located in the office environment up to 35C ambient.	
HPE ML30 Gen9 Tape Drive Cable Kit	851615-B21
<b>NOTE:</b> A maximum of two is allowed. One is required per LTO int tape drive or per RDX USB int disk backup sys if selected together with 350W ES1.0 or ES2.0 power supply. One is required when two Optical Drives are selected together with 350W ES1.0 or ES2.0 power supply. This cable is not required when only one Optical drive is selected.	

### HPE Memory

#### Unbuffered DIMMs (UDIMMs)

HPE 8GB (1x8GB) Single Rank x8 DDR4-2400 CAS-17-17-17 Unbuffered Standard Memory Kit	862974-B21
HPE 8GB (1x8GB) Single Rank x8 DDR4-2133 CAS-15-15-15 Unbuffered Standard Memory Kit	819880-B21
HPE 16GB (1x16GB) Dual Rank x8 DDR4-2400 CAS-17-17-17 Unbuffered Standard Memory Kit	862976-B21
HPE 16GB (1x16GB) Dual Rank x8 DDR4-2133 CAS-15-15-15 Unbuffered Standard Memory Kit	805671-B21
<b>NOTE:</b> The following memory is supported by the E3-1200v6 series, i3-7000 series, G4560 and G4600 processors only.	

### HPE Optical Drives

HPE 9.5mm SATA DVD-ROM Optical Drive	726536-B21
HPE 9.5mm SATA DVD-RW Optical Drive	726537-B21
HPE ML30 Gen9 Slim Optical Disk Drive Enablement Kit	820288-B21
<b>NOTE:</b> Max=1 if selected together with 460W Hot Plug Power Supply.	

### HPE Drives

**NOTE:** The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

## Core Options

**NOTE:** Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.

### SAS Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives

HPE 2.4TB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty 512e Digitally Signed Firmware HDD	881457-B21
HPE 1.8TB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty 512e Digitally Signed Firmware HDD	872481-B21
HPE 1.2TB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	872479-B21
HPE 900GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	870759-B21
HPE 600GB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	872477-B21
HPE 300GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	870753-B21
HPE 300GB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	872475-B21

**NOTE:** User may select any combination of SAS or SATA Hard Drives. SAS drives require the selection of a SAS controller. See card lists in Controllers section. If B140i is the primary controller, user can only select SATA drives.

### SAS Hot Plug SFF (2.5-inch) Midline (MDL) Drives

HPE 2TB SAS 12G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e HDD	765466-B21
HPE 1TB SAS 12G Midline 7.2K SFF (2.5in) SC 1yr Wty Digitally Signed Firmware HDD	832514-B21
HPE 1TB SAS 12G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD	765464-B21

**NOTE:** User may select any combination of SAS or SATA Hard Drives. SAS drives require the selection of a SAS controller. See card lists in Controllers section. If B140i is the primary controller, user can only select SATA drives.

### SAS Hot Plug LFF (3.5-inch) Midline (MDL) Drives

HPE 10TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD	857644-B21
HPE 8TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD	819201-B21
HPE 6TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e HDD	861754-B21
HPE 6TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD	846514-B21
HPE 4TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD	872487-B21
HPE 2TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD	872485-B21
HPE 1TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD	846524-B21

**NOTE:** User may select any combination of SAS or SATA Hard Drives. SAS drives require the selection of a SAS controller. See card lists in Controllers section. If B140i is the primary controller, user can only select SATA drives.

### 12G SAS Hot Plug SFF (2.5-inch) Write Intensive Solid State Drives

HPE 400GB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04541-B21
HPE 400GB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	873351-B21

### 12G SAS Hot Plug SFF (2.5-inch) Mixed Use Solid State Drives

HPE 400GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09088-B21
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## Core Options

HPE 400GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04525-B21
HPE 400GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	873359-B21
<b>SATA Hot Plug SFF (2.5-inch) Midline (MDL) Drives</b>	
HPE 2TB SATA 6G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD	765455-B21
HPE 1TB SATA 6G Midline 7.2K SFF (2.5in) SC 1yr Wty Digitally Signed Firmware HDD	655710-B21
<b>NOTE: User may select any combination of SAS or SATA Hard Drives.</b>	
<b>SAS drives require the selection of a SAS controller. See card lists in Controllers section. If B140i is the primary controller, user can only select SATA drives.</b>	
<b>SATA Non-Hot Plug LFF (3.5-inch) Midline (MDL) Drives</b>	
HPE 1TB SATA 6G Midline 7.2K LFF (3.5in) RW 1yr Wty HDD	801882-B21
HPE 4TB SATA 6G Midline 7.2K LFF (3.5in) RW 1yr Wty HDD	801888-B21
<b>SATA Hot Plug LFF (3.5-inch) Midline (MDL) Drives</b>	
HPE 12TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD	881785-B21
HPE 10TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD	857648-B21
HPE 8TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD	819203-B21
HPE 6TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e HDD	861750-B21
HPE 4TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD	872491-B21
HPE 2TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD	872489-B21
HPE 1TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty HDD	861691-B21
<b>6G SATA Hot Plug SFF (2.5-inch) Read Intensive Solid State Drives</b>	
HPE 3.84TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P06200-B21
HPE 1.92TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	875513-B21
HPE 1.92TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P06198-B21
HPE 960GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	875511-B21
HPE 960GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P06196-B21
HPE 960GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	877752-B21
HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	875509-B21
HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P06194-B21
HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	877746-B21
HPE 240GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	875503-B21
HPE 240GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	877740-B21
<b>Read Intensive - 6G SATA - M.2 - Solid State Drives</b>	
HPE 480GB SATA 6G Read Intensive M.2 2280 3yr Wty Digitally Signed Firmware SSD	875498-B21

## Core Options

### 6G SATA Hot Plug SFF (2.5-inch) Mixed Use Solid State Drives

HPE 1.92TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09722-B21
HPE 1.92TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	875478-B21
HPE 1.92TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	877788-B21
HPE 960GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09716-B21
HPE 960GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	875474-B21
HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09712-B21
HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	875470-B21
HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	877776-B21
HPE 240GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	875483-B21
HPE 240GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	880295-B21

### 6G SATA Hot Plug LFF (3.5-inch) Read Intensive Solid State Drives

HPE 1.92TB SATA 6G Read Intensive LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	P09693-B21
HPE 960GB SATA 6G Read Intensive LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	P09689-B21
HPE 960GB SATA 6G Read Intensive LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	877754-B21
HPE 480GB SATA 6G Read Intensive LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	P09687-B21
HPE 480GB SATA 6G Read Intensive LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	877748-B21

### 6G SATA Hot Plug LFF (3.5-inch) Mixed Use Solid State Drives

HPE 1.92TB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	P09724-B21
HPE 1.92TB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	875480-B21
HPE 1.92TB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	877790-B21

### Mixed Use - 6G SATA - M.2 - Solid State Drives

HPE 480GB SATA 6G Mixed Use M.2 2280 3yr Wty Digitally Signed Firmware SSD	875490-B21
HPE 240GB SATA 6G Mixed Use M.2 2280 3yr Wty Digitally Signed Firmware SSD	875488-B21

### Hard Drive Kits

HPE ML30 Gen9 8 Small Form Factor Hot Plug Hard Drive Cage Kit	822756-B21
HPE ML30 Gen9 4 Large Form Factor Hot Plug Hard Drive Cage Kit	822608-B21
HPE Large Form Factor Hard Drive Blank Kit	666986-B21
HPE Small Form Factor Hard Drive Blank Kit	666987-B21
HPE ML10v2 Drive Enablement Kit	812248-B21

**NOTE:** Compatible with all chassis and supports NHP LFF Hard Disk. If ATX PSU is installed, system support up to 2x. If RPS is installed, system support up to 1x.

### M.2 SSD

HPE Universal SATA HDDL 3yr Wty M.2 Kit	878783-B21
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## HPE Networking

### 1 Gigabit Ethernet adapters

HPE Ethernet 1Gb 4-port 331T Adapter	647594-B21
HPE Ethernet 1Gb 4-port 366T Adapter	811546-B21
HPE Ethernet 1Gb 2-port 332T Adapter	615732-B21

## Core Options

HPE Ethernet 1Gb 2-port 361T Adapter 652497-B21

### 10 Gigabit Ethernet adapters

HPE Ethernet 10Gb 2-port 530SFP Adapter 652503-B21

HPE Ethernet 10Gb 2-port 530T Adapter 656596-B21

HPE Ethernet 10Gb 2-port 560SFP+ Adapter 665249-B21

HPE Ethernet 10Gb 2-port 561T Adapter 716591-B21

**NOTE:** Max=1 if selected with another x8 device.

## HPE Power Supplies

### HPE Entry-Level Power Supplies

HPE ML30 Gen9 350W E-star 2.0 Power Supply Kit 822384-B21

**NOTE:** The HPE ML30 Gen9 350W E-star 2.0 Power Supply Kit supports Silver-level efficiency (no less than 85%) at all load. Up to one is allowed.

HPE ML30 Gen9 4U Redundant Power Supply Enablement Kit 822607-B21

**NOTE:** Required for 460W Hot Plug Power Supply. Up to one is allowed.

HPE 460W Common Slot Gold Hot Plug Power Supply Kit 503296-B21

**NOTE:** Must select 4U RPS Enablement Kit. Up to two are allowed.

Customer can select:

460W Hot Plug Power Supply x1 + 4U RPS Enablement Kit x1

460W Hot Plug Power Supply x2 + 4U RPS Enablement Kit x1

## HPE Cooling Options

HPE ML30 Gen9 Front PCI Fan Kit 820290-B21

## HPE Computation and Graphics Accelerators

HPE NVIDIA Quadro P2000 Graphics Accelerator Q0V77A

HPE AMD Radeon Pro WX2100 Graphics Accelerator Q1P47A

## Additional Options

**NOTE:** Some options may not be integrated at the factory. To ensure only valid configurations are ordered, Hewlett Packard Enterprise recommends the use of an HPE approved configurator. Contact your local sales representative for additional information.

### HPE Insight Software

#### HPE Insight Control

HPE Insight Control including 1yr 24x7 Technical Support and Updates 1-server LTU C6N27A

HPE Insight Control including 1yr 24x7 TSU E-LTU C6N28ABE

HPE Insight Control Upgrade from iLO Advanced including 1yr 24x7 Support E-LTU C6N38ABE

**NOTE:** Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key.

**NOTE:** Customer will receive a license entitlement certificate. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24x7 HPE Software Technical Support and Update Service.

**NOTE:** Licenses ship without media. The HPE Insight Control Media Kit can be ordered separately, or can be downloaded at: <https://www.hpe.com/info/insightmanagement>.

**NOTE:** For additional license options please see the [HPE Insight Control QuickSpecs](#).

### Embedded Management

#### HPE iLO Advanced

HPE iLO Advanced 1-server License with 1yr Support on iLO Licensed Features 512485-B21

HPE iLO Advanced 1-server License with 3yr Support on iLO Licensed Features BD505A

HPE iLO Advanced Flexible Quantity License with 3yr Support on iLO Licensed Features BD506A

HPE iLO Advanced AKA Tracking License with 3yr Support on iLO Licensed Features BD507A

HPE iLO Advanced Electronic License with 1yr Support on iLO Licensed Features E6U59ABE

HPE iLO Advanced Electronic License with 3yr Support on iLO Licensed Features E6U64ABE

#### HPE iLO Essentials

HPE iLO Essentials Electronic License with 3yr Support on iLO Licensed Features E6U61ABE

HPE iLO Essentials License with 3yr Support on iLO Licensed Features BD774A

HPE iLO Essentials License with 1yr Support on iLO Licensed Features BD775A

HPE iLO Essentials Electronic License with 1yr Support on iLO Licensed Features E6U62ABE

### HPE Security

HPE Trusted Platform Module 2.0 Kit 745823-B21

**NOTE:** HPE Trusted Platform Module 2.0 Option works with Gen9 servers with UEFI Mode not Legacy Mode. It is not compatible with HPE ProLiant Gen8 servers or earlier generation variants.

**NOTE:** HPE Gen9 servers purchased earlier may need the latest firmware update to be compatible with the TPM 2.0 Option.

**NOTE:** HPE server systems can have a TPM module (of any type) installed only once. It cannot be replaced with any other TPM module.

### HPE Storage Controllers

#### SAS Controllers

HPE Smart Array P440/2GB FBWC 12Gb 1-port Int SAS Controller 820834-B21

**NOTE:** Device Count - This controller can support up to 8 internal SAS/SATA devices. Must also select one P440/P840 Cable Kit (P01366-B21) and one Megacell battery (727258-B21) + battery holder kit (786710-B21) if no other P-series controllers are selected.

HPE Smart Array P440/4GB FBWC 12Gb 1-port Int SAS Controller 726821-B21



## Additional Options

**NOTE:** Device Count - This controller can support up to 8 internal SAS/SATA devices  
Must select P440/P840 Cable Kit x1  
Must select Megacell battery x1 + battery holder kit x1 if no other P-series controllers are selected.

HPE Smart Array P441/4GB FBWC 12Gb 2-ports Ext SAS Controller 726825-B21

**NOTE:** Must select Megacell battery x1 + battery holder kit x1 if no other P-series controllers are selected.

### HPE Smart Host Bus Adapters

HPE H241 12Gb 2-ports Ext Smart Host Bus Adapter 726911-B21

HPE H240 12Gb 2-ports Int Smart Host Bus Adapter 726907-B21

**NOTE:** Device Count - This controller can support up to 8 internal SAS/SATA devices.

**NOTE:** Must select Mini SAS H240 Cable Kit (789648-B21) x1 for 4LFF model.

**NOTE:** Must select Mini SAS H240 Cable Kit (789648-B21) x2 for 8SFF model.

## HPE Tape Backup

**NOTE:** For the complete range of tape drives, autoloaders, libraries and media see: <http://www.hpe.com/storage/storeever>. For hardware and software compatibility of HPE tape backup products see: <http://www.hpe.com/storage/spock>.

**NOTE:** Must select SAS controller to support internal SAS tape drives.

**NOTE:** Tape drive and HDD total amount can't exceed SAS controller support qty.

**NOTE:** Limited to H240 when select Tape Drive.

### Tape Drives

HPE LTO-7 Ultrium 15000 Internal Tape Drive BB873A

HPE StoreEver LTO-7 Ultrium 15000 External Tape Drive BB874A

HPE StoreEver MSL LTO-7 Ultrium 15000 SAS Drive Upgrade Kit N7P37A

HPE StoreEver LTO-6 Ultrium 6250 External Tape Drive EH970A

HPE LTO-6 Ultrium 6250 Internal Tape Drive EH969A

HPE StoreEver MSL LTO-6 Ultrium 6250 SAS Drive Upgrade Kit COH27A

HPE StoreEver LTO-5 Ultrium 3000 SAS External Tape Drive EH958B

HPE StoreEver MSL LTO-5 Ultrium 3000 SAS Drive Upgrade Kit BL540B

HPE StoreEver LTO-5 Ultrium 3000 SAS Internal Tape Drive EH957B

HPE StoreEver Mini-SAS High Density to 4-lane Mini-SAS External Fanout 2m Cable K2R09A

HPE StoreEver Mini-SAS High Density to 4-lane Mini-SAS External Fanout 4m Cable K2R10A

HPE ML30 Gen9 Tape Drive Cable Kit 851615-B21

**NOTE:** Required per RDX/LTO internal disk backup system if selected together with 350W ES1.0 or ES2.0 power supply.

**NOTE:** HPE ML30 Gen9 server requires HPE ML30 Gen9 Tape Drive Cable Kit (851615-B21) for internal tape drive support.

### HPE DAT Autoloader

HPE StoreEver 1/8 G2 LTO-7 Ultrium 15000 SAS Tape Autoloader N7P35A

HPE StoreEver 1/8 G2 LTO-6 Ultrium 6250 Fibre Channel Tape Autoloader COH19A

HPE StoreEver 1/8 G2 LTO-5 Ultrium 3000 SAS Tape Autoloader BL536B

### HPE MSL2024 Tape Library

HPE StoreEver MSL2024 0-drive Tape Library AK379A

### HPE MSL4048 Tape Library

HPE StoreEver MSL4048 0-drive Tape Library AK381A

## Additional Options

<b>HPE Disk Backup</b>	<b>HPE RDX Removable Disk Backup System</b>	
	HPE RDX 1TB Internal Disk Backup System	B7B67A
	HPE RDX 1TB External Disk Backup System	B7B69B
	HPE RDX500 USB3.0 Internal Disk Backup System	B7B64A
	HPE RDX Internal Docking Station	C8S06A
	HPE RDX External Docking Station	C8S07B
	HPE RDX 2TB Internal Disk Backup System	E7X52A
	HPE RDX 2TB External Disk Backup System	E7X53B
	HPE RDX 3TB Internal Disk Backup System	P9L71A
	HPE RDX 3TB External Disk Backup System	P9L72A
	HPE RDX 4TB Internal Disk Backup System	Q2R32A
	HPE RDX 4TB External Disk Backup System	Q2R33A
	<p><b>NOTE:</b> HPE ML30 Gen9 server requires HPE ML30 Gen9 Tape Drive Cable Kit (851615-B21) for internal tape drive support.</p> <p><b>NOTE:</b> For the complete range of RDX drives and media see: <a href="https://www.hpe.com/us/en/product-catalog/storage/disk-based-backup-systems.html">https://www.hpe.com/us/en/product-catalog/storage/disk-based-backup-systems.html</a>. For hardware and software compatibility of HPE disk backup products see: <a href="http://www.hpe.com/storage/spock">http://www.hpe.com/storage/spock</a></p> <p><b>NOTE:</b> Please see the <a href="#">HPE RDX Removable Disk Backup System QuickSpecs</a> for additional part numbers, technical specifications, and additional information.</p>	
<b>HPE Uninterruptible Power Systems (UPS)</b>	<b>NOTE:</b> To learn more, please visit the <a href="#">HPE Uninterruptible Power Systems (UPS) web page</a> .	
<b>HPE USB and SD Options</b>	<b>HPE Enterprise Mainstream Flash Media Kits for Memory Cards</b>	
	HPE 32GB microSD Flash Memory Card	700139-B21
	HPE 8GB microSD Flash Memory Card	726116-B21
	HPE 8GB microSD Flash USB Drive	737953-B21
	HPE 8GB Dual microSD Flash USB Drive	741279-B21
<b>HPE Support Services</b>	<b>Installation &amp; Start-up Services</b>	
	HPE Installation ML/DL Series 10 Service	U7WZ5E
	HPE Startup ML/DL Series 10 Service	U7WZ7E
	<b>Foundation Care</b>	
	HPE 3 year Foundation Care Next business day ML30 Gen9 Service	H1AS0E
	HPE 3 year Foundation Care Next business day with DMR ML30 Gen9 Service	H1AS1E
	HPE 3 year Foundation Care 24x7 ML30 Gen9 Service	H1AS6E
	HPE 3 year Foundation Care 24x7 with DMR ML30 Gen9 Service	H1AS7E
	HPE 3 year Foundation Care Next business day with CDMR ML30 Gen9 Service	H1AX4E
	HPE 3 year Foundation Care 24x7 with CDMR ML30 Gen9 Service	H1AX7E
	<b>Proactive Care</b>	
	HPE 3 year Proactive Care 24x7 ML30 Gen9 Service	H1AS8E
HPE 3 year Proactive Care 24x7 with DMR ML30 Gen9 Service	H1AS9E	
HPE 3 year Proactive Care 24x7 with CDMR ML30 Gen9 Service	H1AX8E	

## Additional Options

**NOTE:** For a full list of packaged support services, please visit <http://www.hpe.com/services/ssc>.

## Memory

**NOTE:** Memory configurations listed do not apply to "Factory Integrated Models".

### HPE Standard Memory

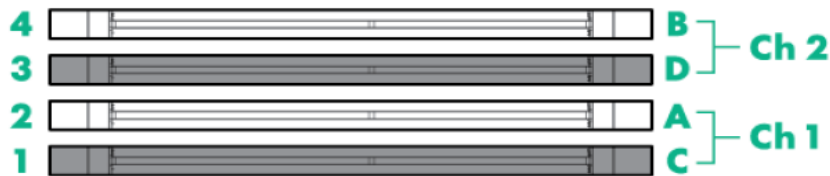
HPE Standard Memory is unique technology which is designed to work on 10/100 series Rack and Tower server. In Gen9 Server HPE Standard Memory has passed HPE's rigorous qualification and test processes. HPE Standard Memory is a certified HPE options and will provide a platform to allow future memory-related support enhancements through HPE Active Health System, System Insight Management and Insight Control management software.

### DDR4 memory population guidelines

For detailed memory configuration rules and guidelines, please use the Online DDR4 Memory Configuration

Tool: <http://www.hpe.com/servers/ddr4memoryconfig>.

### Memory Population guidelines



### General Memory Population Rules and Guidelines:

- . The HPE ProLiant ML30 Gen9 Server has four memory slots
- . There are two channels per server with two DIMM slots per channel
- . Memory channel 1 consists of the two (2) DIMMs that are closest to the processor
- . Memory channel 2 consists of the two (2) DIMMs that are furthest from the processor
- . Support for single/dual-rank 2133 MT/s ECC UDIMM (unbuffered DIMMS)
- . The server supports up to 64 GB (4 x 16-GB) for Unbuffered DIMMs
- . No support for LRDIMMs; RDIMMs; Non-ECC UDIMMs
- . Do not install DIMMs if the processor is not installed
- . Populate DIMMs from heaviest load (double-rank) to lightest load (single-rank)
- . Non-ECC DIMMs are not supported
- . Always use HPE qualified DIMMs

## Memory

### Intel Gen9 Supported Memory Bandwidth for HPE ProLiant Gen9 Intel® Xeon® E3-1200v5 Series Processor Family

Memory Bandwidth and Capacity				
[DIMM Type]	Unbuffered with ECC DIMMs (UDIMMs)			
HPE SKU P/N	819880-B21	805671-B21	862974-B21	862976-B21
DIMM Rank	Single Rank	Dual Rank	Single Rank	Dual Rank
DIMM Capacity	8GB	16GB	8GB	16GB
Voltage	Std Voltage 1.2V	Std Voltage 1.2V	Std Voltage 1.2V	Std Voltage 1.2V
DIMM Native Speed (MT/s)	2133	2133	2400	2400
SLOTS THAT CAN BE POPULATED				
4 slot servers	4	4	4	4
MAXIMUM CAPACITY (GB)				
	32	64	32	64
POPULATED DIMM SPEED (MT/s)				
1 DIMM Per Channel	2133	2133	2400	2400
2 DIMM Per Channel	2133	2133	2400	2400

#### DIMM slot and configuration diagram

#### Standard memory replaced with optional memory (1 CPU model)

- Population order; start with "A" first, "B" second, "C" third, etc.
- Population order; start with "A" first, "B" second, "C" third, etc.
- When two processors are installed, install DIMMs in sequential alphabetic order: CPU1-A, CPU2-A,CPU1-B,CPU2-B,CPU1-C, CP2-C

CPU 1		
	Slot #	Population order
Chnl 1	1	C
	2	A

CPU 1		
	Slot #	Population order
Chnl 2	3	D
	4	B

Memory Speed by Processor Model	Processor Models	Supported Memory Speeds
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Memory

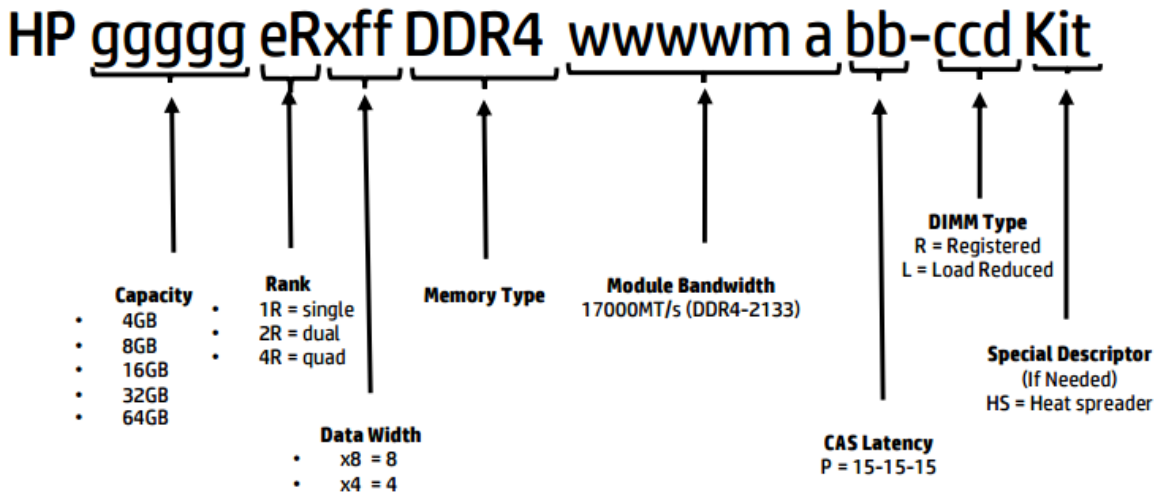
E3-1220v5, E3-1230v5, E3-1240Lv5, E3-1240v5, E3-1270v5, i3-6300, i3-6100, G4400, G4500	2133MT/s
E3-1220v6, E3-1230v6, E3-1240v6, E3-1270v6, E3-1278v6, i3-7300, i3-7100, G4560, G4600	2400MT/s

Standard and Maximum Memory Capacity (Pre-configured Models)	Pre-Configured Models	Standard Memory	Maximum Memory Plus Optional Memory	Standard Memory Replaced with Optional Memory
	E3-1240v5	8GB (1x8GB)	56GB (3x16GB, 1x8GB)	64GB (4x16GB)
	E3-1220v5	4GB (1x4GB)	52GB (3x16GB, 1x4GB)	64GB (4x16GB)
	E3-1240v6	8GB (1x8GB)	56GB (3x16GB, 1x8GB)	64GB (4x16GB)
	E3-1220v6	8GB (1x8GB)	56GB (3x16GB, 1x8GB)	64GB (4x16GB)

DDR4 memory options part number decoder

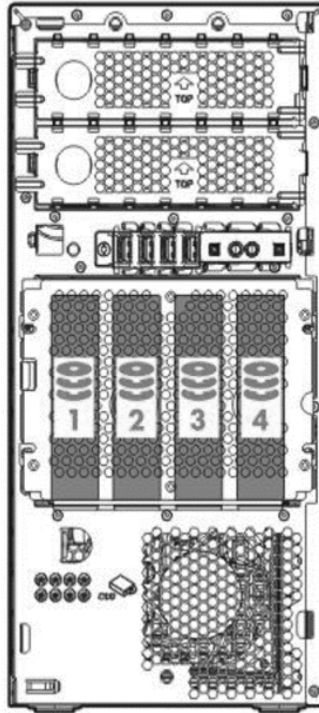
**NOTE:** Capacity references are rounded to the common gigabyte (GB) values:

- 2GB = 2,048MB
- 4GB = 4,096MB
- 8GB = 8,192MB
- 16GB = 16,384MB
- 32GB = 32,768MB
- 64GB = 65,536MB



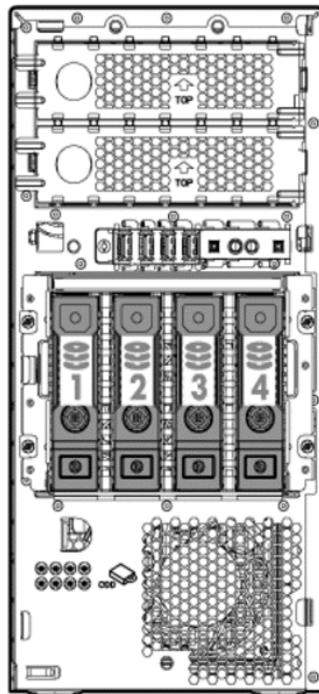
## Storage

### 4-Bay LFF non-hot-plug drive model



1-4 4 x LFF SATA/SSD Non-hot-plug Hard Drive Bays

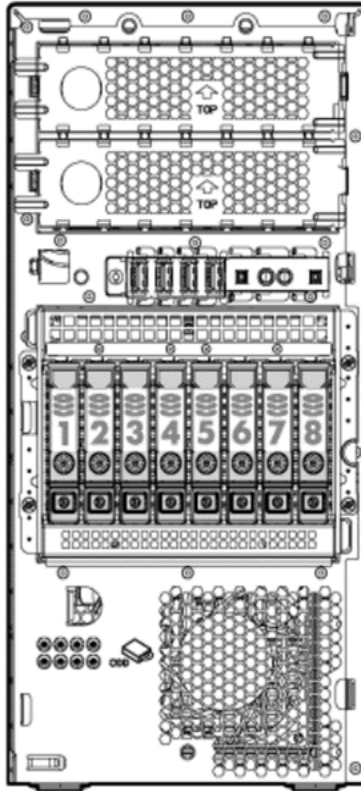
### 4-bay LFF hot-plug drive model



1-4 4 x LFF SAS/SSD Hot Pluggable Hard Drive Bays

## Storage

### 8-bay SFF hot-plug drive model



1-8 8 x SFF SATA/SSD Hot Pluggable Hard Drive Bays

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#### Maximum Storage Capacity

Total (4 LFF Drive) 32TB

Total (8 SFF Drive) 16TB

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## Technical Specifications

<b>System Unit</b>	<b>Tower Dimensions</b> (H x W x D)	14.50 x 6.89 x 18.7 in (36.82 x 17.5 x 47.52 cm)
	<b>Tower Weight</b>	Minimum: 27.1lb(13.56kg) Maximum: 30.8lb(15.4kg)
	<b>Input Requirements</b>	Range Line Voltage 100 to 120 VAC Rated Input Current 2.5 to 6 Amps Rated Input Frequency Range Line Voltage 47 to 63 Hz Rated Input Current 412W to 526W at 115 V AC input 412W to 523W at 230 V AC input
	<b>BTU Rating</b>	Maximum 460W - 1773 BTU / hr (at 120 VAC), 1715 (at 240 VAC)
	<b>Power Supply Output</b>	Rated Steady-State Power 350 W (at 115 VAC) 350 W (at 230 VAC) Maximum Peak Power 350 W (at 115 VAC) 350 W (at 230 VAC)
	<b>System Inlet Temperature</b>	Standard Support Operating 10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 304.8 m (1.8°F per every 1000 ft) above sea level to a maximum of 3048 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F). Non-operating -30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
	<b>Relative Humidity</b>	Operating 10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature. Non-operating 5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, noncondensing.
	<b>Altitude</b>	Operating 3048 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min). Non-operating 9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	<b>Acoustic Noise</b>	Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109). <b>Idle</b> LWAd 4.2 Bels (1P LFF Base) 3.7 Bels (1P LFF Performance) LpAm 27 dBA (1P LFF Base) 23 dBA (1P LFF Performance)

## Technical Specifications

### Operating

LWAd	4.2 Bels (1P LFF Base) 3.8 Bels (1P LFF Performance)
LpAm	27 dBA (1P LFF Base) 23 dBA (1P LFF Performance)

**NOTE:** Configurations tested for 1P LFF Base models include one (1) 1TB LFF SATA Midline HDD and Windows 2012 Enterprise 64-bit.

**NOTE:** Configurations tested for 1P LFF Performance models include one (1) 1TB LFF SATA Midline HDD and Windows 2012 Enterprise 64-bit.

**NOTE:** The Listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.

**NOTE:** Levels presented do not account for non-Hewlett Packard Enterprise installed hardware.

### Emissions Classification (EMC)

FCC Rating	Class B
Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1

**NOTE:** Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.

<b>HPE Dynamic Smart Array B140i Controller</b>	<b>Number of PCI links</b>	Four
	<b>PCI link rate</b>	4Gb/s
	<b>Storage protocol support</b>	SATA
	<b>SAS/SATA peak data transfer rate</b>	6Gb/s
	<b>Number of SAS/SATA links</b>	10 links
	<b>SAS/SATA connectivity</b>	2x4 connectors; 2x1 connectors
	<b>Expander support</b>	No
	<b>Drives supported (max)</b>	Up to 10 Internal Drives
	<b>RAID support</b>	0, 1, 10, 5 SATA
	<b>Software management</b>	HPE SSA, SMH, SIM
	<b>Warranty</b>	Server warranty
	<b>HPE Secure Encryption license</b>	Not Supported
	<b>HPE SmartCache License</b>	Not Supported
<b>HPE Smart Storage Administrator</b>	Supported	
<b>HPE Ethernet 1Gb 2-port 332i Adapter</b>	<b>Network Interface</b>	10Base-T/100Base-TX/1000Base-TX
	<b>Compatibility</b>	IEEE 802.3 10Base-T
		IEEE 802.3ab 1000Base-T
		IEEE 802.3u 100Base-TX
<b>Data Transfer Method</b>	PCI Express, two lanes (x2)	

## Technical Specifications

<b>Controller</b>	BCM5720	
<b>Network Transfer Rate</b>	10Base-T (Half-Duplex)	10 Mb/s per port, 40 Mb/s combined
	10Base-T (Full-Duplex)	20 Mb/s per port, 80 Mb/s combined
	100Base-TX (Half-Duplex)	100 Mb/s per port, 400 Mb/s combined
	100Base-TX (Full-Duplex)	200 Mb/s per port, 800 Mb/s combined
	1000Base-TX (Half-Duplex)	1000Mb/s per port, 4000 Mb/s combined
	1000Base-TX (Full-Duplex)	2000Mb/s per port, 8000 Mb/s combined
<b>Connector</b>	RJ-45	
<b>Cable Support</b>	10 Base-T	Categories 3, 4 or 5 UTP; up to 328 ft (100 m)
	10/100/1000 Base-TX	Category 5 or higher UTP; up to 328 ft (100 m)

**Environment-friendly Products and Approach**  
**End-of-life Management and Recycling**

Hewlett Packard Enterprise offers end-of-life product return, trade-in, and recycling programs, in many geographic areas, for our products. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner.

<http://www.hpe.com/recycle>

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard Enterprise web site. These instructions may be used by recyclers and other WEEE treatment facilities as well as Hewlett Packard Enterprise OEM customers who integrate and re-sell Hewlett Packard Enterprise equipment.

<http://www.hpe.com/recycle>

## Summary of Changes

Date	Version History	Action	Description of Change
03-Dec-2018	Version 28	Changed	Standard Features, SMB Models, Configuration Information and Core Options sections were updated
01-Oct-2018	Version 27	Changed	Models, Core Options and Additional Options sections were updated. SKU descriptions were updated. Obsolete SKUs were removed from the QuickSpecs. Removed MSL Base Modules.
06-Aug-2018	Version 26	Added	Added new Solid State Drives to the HPE Drives section.
		Changed	Core Options and Additional Options were revised.
		Removed	Obsolete SKUs were removed from the QuickSpecs.
04-Jun-2018	Version 25	Added	HPE AMD Radeon Pro WX2100 Graphics Accelerator was added.
02-Apr-2018	Version 24	Changed	SKU descriptions were revised.
05-Mar-2018	Version 23	Changed	Maximum Internal Storage and SMB Models were revised.
		Removed	Obsolete SKUs were removed from the QuickSpecs.
05-Feb-2018	Version 22	Added	Added new SMB Bundle offering.
04-Dec-2017	Version 21	Added	Added new HPE 12TB SATA 6G Midline 7.2K LFF (3.5in) LP 1yr Wty Helium 512e Digitally Signed Firmware HDD.
23-Oct-2017	Version 20	Changed	Care Pack naming and Service and Support- Parts and Materials updated.
25-Sep-2017	Version 19	Added	Added new Solid State Drives to the HPE Drives section. Added new Storage options.
		Changed	Core Options and Additional Options were revised.
		Removed	Obsolete SKUs were removed from the QuickSpecs.
07-Aug-2017	Version 18	Added	Added new Solid State Drives to the HPE Drives section.
11-Jul-2017	Version 17	Changed	HPE Disk Backup section was revised.
15-May-2017	Version 16	Added	Added support for E3-1200v6 processors. New memory options were added. Added new Pre-configured Models.
		Changed	Processors, Memory, and Pre-configured Models were revised.
08-May-2017	Version 15	Added	Added support for ClearOS.
		Changed	Operating Systems and Virtualization Software Support for ProLiant Servers and HPE Drives were revised.
		Removed	Obsolete SKUs were removed from the QuickSpecs.
27-Mar-2017	Version 14	Added	Added new Hard Drives.
13-Feb-2017	Version 13	Added	Added new HDD and SSD offering to the HPE Drives section.
06-Jan-2017	Version 12	Changed	HPE Drives and HPE Tape Backup sections were revised.
09-Dec-2016	Version 11	Changed	Smart Buy models section in the NA version was revised.
28-Nov-2016	Version 10	Added	Added new Hard Drives offering. Added new M2000 GPU option.
		Changed	HPE Unique Options and HPE Computation and Graphics Accelerators were revised.
		Removed	Obsolete SKUs were removed from the QuickSpecs.
28-Oct-2016	Version 9	Removed	Obsolete Hard Drives were removed from the QuickSpecs.
15-Aug-2016	Version 8	Added	Added HPE ML30 Gen9 Tape Drive Cable Kit to the Unique Options section. Added T750, T1000, and T1500 G4 Tower UPS models.
		Changed	HPE Hard Drives section was revised.
08-Jul-2016	Version 7	Changed	Smart Buy models section was revised for the NA version only.
06-Jun-2016	Version 6	Added	Added new HDD offering to the HPE Drives section.

## Summary of Changes

08-Apr-2016	Version 5	Changed	HPE Processors section was revised.
31-Mar-2016	Version 4	Added	Added new HPE TMP 2.0 module, and new RDX Disk Backup Systems.
		Changed	Embedded Management, Security, Service and Support, and Pre-configured Models sections were revised.
		Removed	Obsolete SKUs were removed from the QuickSpecs.
16-Feb-2016	Version 3	Added	New HDD offering was added to HPE Drives.
		Changed	HPE Unique Options and HPE Tape Backup were revised.
		Removed	Obsolete SKUs were removed from the QuickSpecs.
17-Dec-2015	Version 2	Added	Smart Buy models were added to the NA version.
		Changed	Chipset, Pre-configured Models, HPE Drives, HPE Power Supplies, HPE Tape Backup, Maximum Storage Capacity, and Technical Specifications were revised.
01-Dec-2015	Version 1	New	New QuickSpecs.



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For hard drives, 1GB = 1 billion bytes. Actual formatted capacity is less

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