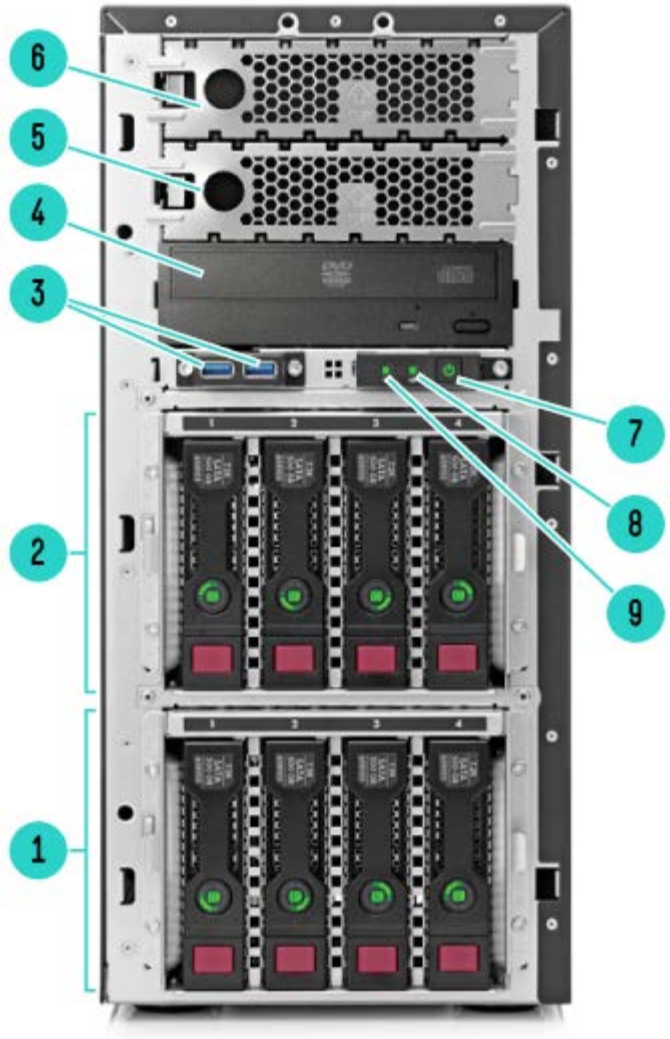
RETIRED: This document has been officially retired, and the base products listed herein are now considered obsolete and are no longer available for sale. Consequently, the information contained within may no longer be current. This document is provided exclusively for reference and informational purposes.

Overview

HPE ProLiant ML150 Generation9 (Gen9)

The HPE ProLiant ML150 Gen9 Server delivers the essential mix of performance, price and expandability to fit the needs of growing budget conscious businesses. Designed as a dual-socket tower server, it is a right size tower with performance and expandability. With expansion options, it allows you to grow as needed with a low initial capital outlay. Covering a wide range of applications and workloads and addressing our customers from sophisticated SMB to large enterprise class server environments.



Front View details for Tower (LFF)

1 Drive Cage (4 LFF shown) Alternative server choice would offer 8 SFF

2 Drive Cage (4 LFF shown) Alternative server choice would offer 8 SFF

3 USB 3.0 (2)

4 Media bay, Optional SATA 9.5mm DVD-ROM shown

5 Media bay, blank shown*
NOTE: Optional choices: SATA 9.5mm DVD-ROM or DVD RW Optical Drive, Tape Drive, or LFF.
NOTE: When populating 10 LFF, not able to install Tape Drive or Optical Drive. Possible

6 Media bay, blank shown*
NOTE: Optional choices: SATA 9.5mm DVD-ROM or DVD RW Optical Drive, Tape Drive, or LFF.

Overview

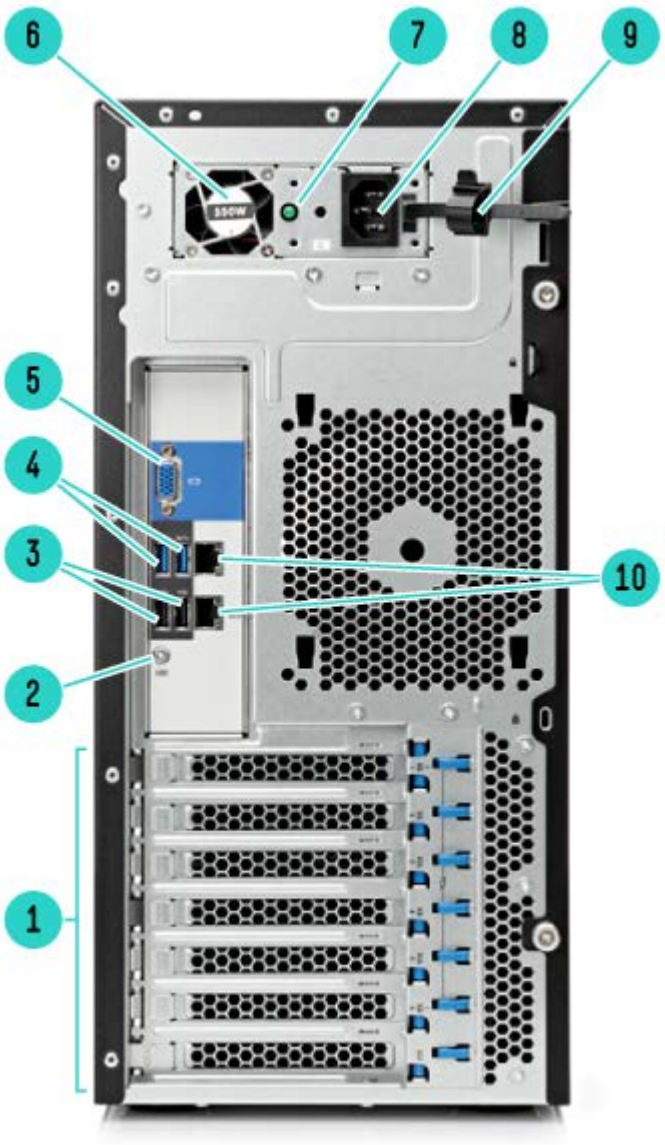
Configurations: 1) 8LFF +1 ODD + 1 Tape Drive (Full/Half), or 2) 9LFF + 1 ODD, or 3) 9LFF + 1 Tape Drive (Full/Half).

7 Power On/Standby button and system power LED button

9 Health LED

NOTE: When populating 10 LFF, not able to install Tape Drive or Optical Drive. Possible Configurations: 1) 8LFF +1 ODD + 1 Tape Drive (Full/Half), or 2) 9LFF + 1 ODD, or 3) 9LFF + 1 Tape Drive (Full/Half).

8 NIC status



Rear View (Tower Model)

1 PCI Slots (Slots 1-6) Slot 3 and 5 can support Optional GPU

2 Unit ID LED

3 USB 2.0 (2)

4 USB 3.0 (2)

5 Video Connector

6 HPE 550W Power Supply

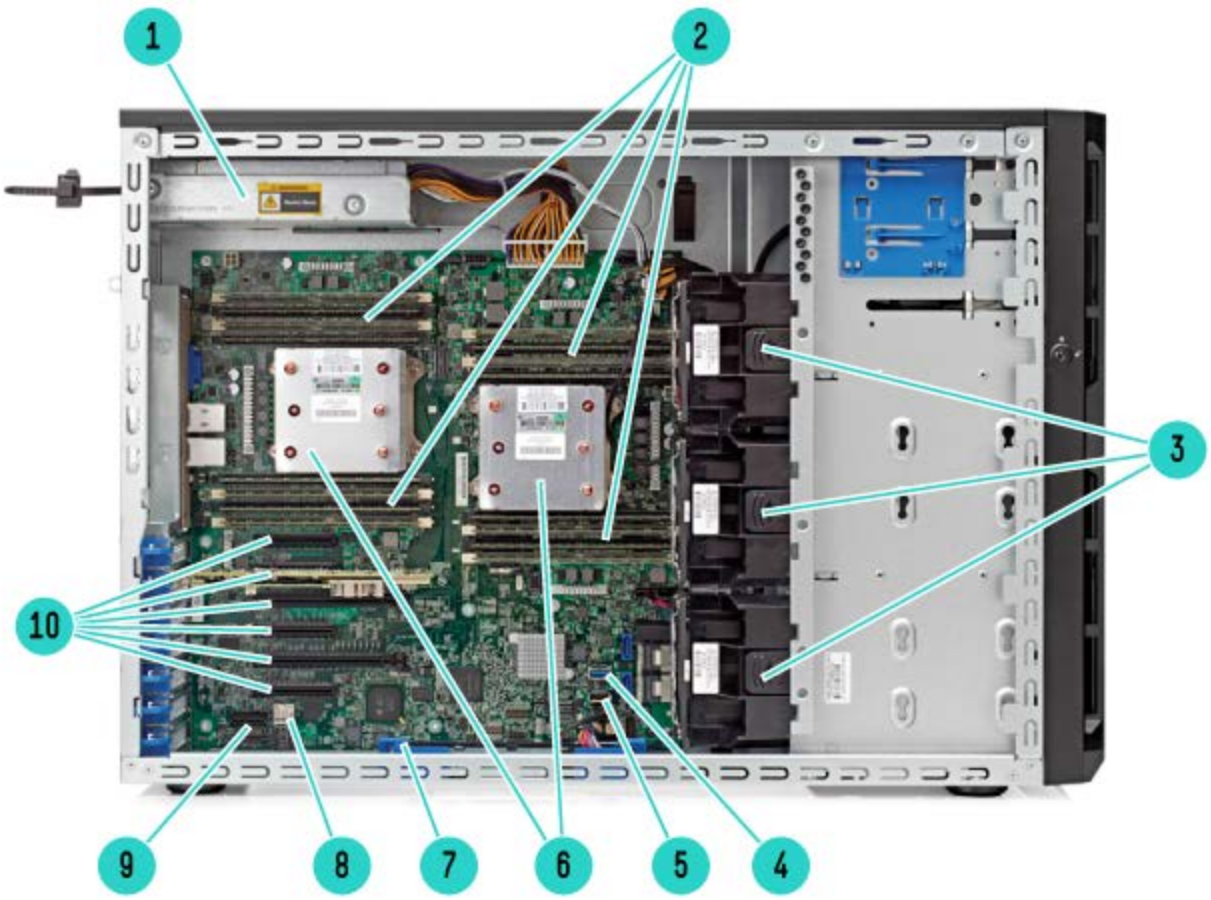
7 Power supply Power LED

8 Power Supply Power connection

9 Cable tie back

10 Network RJ-45 Ports (2)

Overview



Internal View (Tower Model)

1	Power Supply
2	Sixteen (16) DDR4 DIMM slots. Shown fully populated in 16 slots (8 per processor)
3	System Fans: Three fans for 2P SKU
4	Internal USB 3.0 connector
5	Internal USB 2.0 connector
6	Two (2) processors and heatsinks with HPE Smart Socket Guide (Second Processor is Optional)
7	Gen9 Smart Storage Battery Holder Kit
8	MicroSD slot
9	Dedicated iLO module slot (optional)
10	Six (6) PCIe expansion slots

What's New

- HPE 12TB SATA 7.2K LFF HDD
- HPE RDX 4TB USB 3.0 External/ Internal Disk Backup System
- 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**.

Processor
One of the following depending on model

Model	CPU frequency	Cores	L3 Cache	Power	QPI	DDR4 Hz
E5-2660v3	2.6GHz	10	25MB	105W	9.6GT/s	2133
E5-2650v3	2.3GHz	10	25MB	105W	9.6GT/s	2133
E5-2650Lv3	1.8GHz	12	30MB	65W	9.6GT/s	2133
E5-2640v3	2.6GHz	8	20MB	90W	8.0GT/s	1866
E5-2630v3	2.4GHz	8	20MB	85W	8.0GT/s	1866
E5-2630Lv3	1.8GHz	8	20MB	55W	8.0GT/s	1866
E5-2609v3	1.9GHz	6	15MB	85W	6.4GT/s	1600
E5-2620v3	2.4GHz	6	15MB	85W	8.0GT/s	1866
E5-2603v3	1.6GHz	6	15MB	85W	6.4GT/s	1600
E5-2660v4	2.0GHz	14	35MB	105W	9.6GT/s	2400
E5-2650v4	2.2GHz	12	30MB	105W	9.6GT/s	2400
E5-2650Lv4	1.7GHz	14	35MB	65W	9.6GT/s	2400
E5-2640v4	2.4GHz	10	25MB	90W	8.0GT/s	2133
E5-2630v4	2.2GHz	10	25MB	85W	8.0GT/s	2133
E5-2630Lv4	1.8GHz	10	25MB	55W	8.0GT/s	2133
E5-2620v4	2.1GHz	8	20MB	85W	8.0GT/s	2133
E5-2609v4	1.7GHz	8	20MB	85W	6.4GT/s	1866
E5-2603v4	1.7GHz	6	15MB	85W	6.4GT/s	1866
E5-2695v4	2.1GHz	18	45MB	120W	9.6GT/s	2400
E5-2683v4	2.1GHz	16	40MB	120W	9.6GT/s	2400
E5-2680v4	2.4GHz	14	35MB	120W	9.6GT/s	2400

NOTE: Up to 2 processors supported. Mixing different processor models is not supported.
NOTE: Recommend to select 900W for 2P config. or check power advisor for power consumption for the customer usage case.

Cache Memory
One of the following depending on model

15MB (1 x 15MB) Level 3 cache
NOTE: For Six-core processors.
20MB (1 x 20MB) Level 3 cache
NOTE: For Eight-core processors.
25MB (1 x 25MB) Level 3 cache
NOTE: For Ten-core processors.
30MB (1 x 30MB) Level 3 cache
NOTE: For Twelve-core processors.
35MB (1 x 35MB) Level 3 cache
NOTE: For Fourteen-core processors.

Chipset

Intel® C610 Series Chipset
Intel® E5-2600v4 Processor Family
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) with NAND
NOTE: Read and learn more in the **iLO QuickSpecs**.

Standard Features

Memory

Type:
HPE SmartMemory
DDR4 Registered (RDIMM) or Load Reduced (LRDIMM)

DIMM Slots Available	16	
Maximum Capacity (LRDIMM)	512GB	(16 x 32GB LRDIMM @2400MHz)
Maximum Capacity (RDIMM)	512GB	(16 x 32GB RDIMM @2400MHz)

NOTE: This server does not support mixing LRDIMMs or RDIMMs. Attempting to mix any combination of these DIMMs can cause the server to halt during BIOS installation.

Memory Protection

Advanced ECC	Advanced ECC uses single device data correction to detect and correct single and all multibit error that occurs within a single DRAM chip.
Online spare	Memory online spare mode detects a rank that is degrading and switches operation to the spare rank.

Network Controller

Broadcom 5717 Dual-port 1Gb

Expansion Slots

Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
6	PCIe 3.0	x8	x8		Full length/full height	For processor 1
5	PCIe 3.0	x16	x16		Full length/full height	For processor 1
4	PCIe 3.0	x8	x8		Half length/full height	For processor 1
3	PCIe 3.0	x16	x16		Full-height, full-length slot	For processor 2
2	PCIe 3.0	x8	x8		Half length/full height	For processor 1
1	PCIe 3.0	x8	x8		Half length/full height	For processor 2

NOTE: Bus number - Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number.
NOTE: Six total expansion PCIe 3.0 slots. Two PCIe 3.0 x16 (x16 speed); Four PCIe 3.0 x 8 (x8 speed).

Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Device Number	Form Factor	Notes
7	HPE ML Gen9 Dedicated iLO Port Kit	x1	x1			Dedicate for ML Series	

Storage Controller
One of the following depending on model

Entry Models	HPE Dynamic Smart Array B140i Controller

NOTE: B140i can't mix with any standup internal controller.

Base Models	HPE Dynamic Smart Array B140i Controller

NOTE: B140i can't mix with any standup internal controller.

Performance Models	HPE H240 FIO Smart Host Bus Adapter

Internal Storage Devices
One of the following depending on model

Optical Drive	Optional SATA 9.5mm DVD-ROM Optical Drive Optional SATA 9.5mm DVD RW Optical Drive

NOTE: Optical is optional in entry, base and performance models.
NOTE: ML150 Gen9 Slim ODD Enablement Kit (784603-B21) is required for any DVD options.

Standard Features

Hard Drives	None ship standard
Hard Drive Bays	Up to 10 Non-hot plug SATA 3.5" drives **NOTE:** Mixing drive cage types is not allowed. **NOTE:** All Pre-configured Models come populated with hard drive blanks installed. The 4LFF configurations includes 2 blanks and 8SFF includes 6 blanks. Additional hard drive blanks can be ordered using either the HPE LFF HDD Blank Kit (654963-B21) or the HPE SFF HDD Blank Kit (654961-B21). These part numbers for single HDD blanks below are also provided should you require replacement HDD blanks for your server. **NOTE:** NHP SATA is limited to B140i controller. **NOTE:** When populate 10 LFF, not able to install any Tape Drive and Optical Drive. Possible Configurations: 1) 8LFF +1 ODD + 1 Tape Drive (Full/Half), or 2) 9LFF + 1 ODD, or 3) 9LFF + 1 Tape Drive (Full/Half). **NOTE:** Must select two 4LFF NHP drive cage and 10LFF enablement kit if customer wants to support 10 LFF drives. 4 Hot plug LFF SAS/SATA HDD bays; upgradable to 8 8 Hot plug SFF SAS/SATA HDD bays; upgradable to 16 **NOTE:** 16SFF is limited to P840 controller. **NOTE:** 10LFF is limited to H140i controller **NOTE:** H240 8LFF/8SFF require 2 cable kits (784606-B21). **NOTE:** P840 16SFF require 2 cable kits (784608-B21).

Maximum Internal Storage One of the following depending on model		**CAPACITY**	**CONFIGURATION**
	Hot Plug LFF SAS	80TB	8x10TB
	Hot Plug LFF SATA	80TB	8x10TB
	Hot Plug SFF SAS	32TB	16x2TB
	Hot Plug SFF SATA	32TB	16x2TB
	Non Hot Plug LFF SATA	40TB	10x4TB
	Hot Plug LFF SAS SSD	12.8TB	8x1.6TB
	Hot Plug LFF SATA SSD	30.72TB	8x3.84TB
	Hot Plug SFF SAS SSD	30.72TB	16x1.92TB
	Hot Plug SFF SATA SSD	61.44TB	16x3.84TB

Power Supply One of the following depending on model	HPE 550W FIO Power Supply HPE 900W AC 240V DC Redundant Power Supply **NOTE:** Each Redundant Power Supply Backplane can support up to two (2) power input modules. Non-redundant configurations with a single power input module installed can provide up to 900W (200 – 240VAC) and up to 550W (100 – 127VAC) of power. Redundant configurations with two power input modules installed can provide up to 800W (200 – 240VAC) and up to 550W (100 – 127VAC) of power. Looking for high-efficiency power solutions at an entry-level price for your ProLiant Gen9 Essential Server? HPE Entry-Level Power Supplies offer an optimized set of features with options for both redundant and non-redundant power configurations. The HPE 550W FIO Power Supply offers Silver-certified 80 Plus power efficiency (up to 89%) with an optimized set of features for non-redundant power configurations. The HPE 900W AC 240VDC Power Input Module with Power Backplane can be configured to support power redundancy in ProLiant servers that offer only a single power supply bay, 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

Standard Features

center. Hot-plug AC power input modules allow for better serviceability with fast and easy deployment and replacement.

Rack Options
One of the following depending on model

HPE T/R CONV TRAY UNIVERSAL KIT

System Fans
One of the following depending on model

	Non-redundant	Redundant
1P model	2 fans	NA

NOTE: Two (2) Non-hot plug, non-redundant fans ship as standard.

	Non-redundant	Redundant
2P model	3 fans	NA

NOTE: Third fan is shipped with 2nd CPU Kit. Third fan is only required in 2P configurations.

Interfaces

Video	1 (rear)
Network RJ-45 (Ethernet)	2
HPE iLO Remote Management Network Port	2GB NAND

NOTE: Dedicated Port for iLO is Optional.

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	5 (2 rear, 1 internal, 2 front)
USB 2.0	3 (2 rear, 1 internal)

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: For more information on Hewlett Packard Enterprise 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**.

Upgradeability

Upgradeable to 2 processors (36 Cores)
NOTE: Total 6, 8, 10, 12, 14, 16, 18 cores.
Up to 16 SFF Hard Drive Bays; Or 10 LFF Hard Drive Bays
Up to 16 DIMM slots
Redundant Power Supply
Tower to rack conversion
Optional optical drive (up to 1)
NOTE: When populate 10 LFF, not able to install Optical Drive. Possible Configurations: 1) 8LFF +1 ODD + 1 Tape Drive (Full/Half), or 2) 9LFF + 1 ODD, or 3) 9LFF + 1 Tape Drive (Full/Half).

Standard Features

Industry Standard Compliance

ACPI 2.0b Compliant
PCIe 3.0 Compliant
PXE Support
WOL Support
Novell Certified
IPMI 2.0, SMASH CLP, DCMI 1.0 compliant
Microsoft® Logo certifications
USB 3.0 Support
SMBIOS 2.7.1
ASHRAE A3

Graphics

Integrated Matrox G200 video standard

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

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.

Form Factor

Tower or Rack (5U)

Embedded Management

HPE Integrated Lights-Out (HPE iLO)

Monitor your servers for ongoing management, service alerting, reporting and remote management with HPE iLO. Not available on ML10 Gen9. Learn more at **http://www.hpe.com/info/ilo**.

UEFI

Configure and boot your servers securely with industry standard Unified Extensible Firmware Interface (UEFI). Learn more at **http://www.hpe.com/servers/uefi**.

Standard Features

	RESTful API	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 **http://www.hpe.com/info/restfulapi**.
	Intelligent Provisioning	Hassle free server and OS provisioning for 1 or few servers with Intelligent Provisioning. Learn more at **http://www.hpe.com/servers/intelligentprovisioning**.
	Embedded Remote Support	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 **http://www.hpe.com/info/insightonline/explore**.
Server utilities	**Smart Update**	Optimize firmware and driver updates with Smart Update solutions including Smart Update Manager (SUM) and Service Pack for ProLiant (SPP) and smart components. Learn more at **http://www.hpe.com/servers/smartupdatemanager**.
	HPE Systems Insight Manager (HPE SIM)	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 **http://www.hpe.com/servers/hpsim**.
	Scripting Tool Kit and Windows PowerShell	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 **http://www.hpe.com/servers/proliant/stk** or **http://www.hpe.com/servers/powershell**.
	RESTful Interface Tool	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 **http://www.hpe.com/info/resttool**.
	HPE iLO Mobile Application	Enables the ability to access, deploy, and manage your server anytime from anywhere from select smartphones and mobile devices. For additional information please visit: **http://www.hpe.com/info/ilo/mobileapp**.
	HPE Insight Online	HPE Insight Online, available at no additional cost as part of your Hewlett Packard Enterprise warranty, HPE Pointnext operational services 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**.
	NOTE: More information can be found: **https://www.hpe.com/us/en/product-catalog/detail/pip.5182020.html**, **http://www.hp.com/go/spp** and **https://www.hpe.com/us/en/product-catalog/detail/pip.5182020.html**.	
Security	Power-on password Setup password	

Standard Features

Serial interface control
Power switch security
Administrator's password
TPM 1.2
UEFI

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/**.

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/iloadvanced**.
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**.
High Performance Clusters	HPE Insight Cluster Management Utility (CMU) is a Hewlett Packard Enterprise licensed and supported suite of tools that are used for lifecycle management of hyperscale clusters of Linux ProLiant systems. CMU includes software for the centralized provisioning, management and monitoring of nodes. CMU makes the administration of clusters user friendly, efficient, and effective. **https://www.hpe.com/us/en/product-catalog/detail/pip.3296361.html**. HPE Cluster Platforms are specifically engineered, factory-integrated large-scale ProLiant clusters optimized for High Performance Computing, with a choice of servers, networks and software. Operating system options include specially priced offerings for Red Hat Enterprise Linux and SUSE Linux Enterprise Server, as well as Microsoft Windows HPEC Server. A Cluster Platform Configurator simplifies ordering. **https://www.hpe.com/us/en/solutions/hpc-high-performance-computing.html**.	
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/us/en/solutions/hpc-high-performance-computing.html**.	
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	

Optional Features

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.

NOTE: For more information about Storage Software including QuickSpecs, please see: **https://www.hpe.com/us/en/product-catalog/storage/storage-software.hits-12.html**.

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.
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/**.

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.

Connect your devices

Unlock all of the benefits of your technology investment by connecting your products to Hewlett Packard Enterprise. Achieve up to 77%[1] reduction in down time, near 100%[2] diagnostic accuracy and a single consolidated view of your environment. By connecting, you will receive 24x7monitoring, 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

Recommended Support

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.

https://www.hpe.com/h20195/v2/GetPDF.aspx/4AA3-8855ENW.pdf

Parts and Materials

Hewlett Packard Enterprise will provide Hewlett Packard Enterprise-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 QuickSpecs, 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.

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).

Service and Support

	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.
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**
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**

Pre-configured Models

For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.
1. Pre-configured models ship with the configurations below. Options can be selected from the Core or Additional options section of this QuickSpecs.
2. Hewlett Packard Enterprise does not allow factory integration of options into pre-configured models. Any additional options purchased will be shipped separately.
3. If you desire a custom configuration please see "Configuration Information - Factory Integrated Models" section of this QuickSpecs.

NOTE: All Pre-configured Models come populated with hard drive blanks installed. The 4LFF configurations includes 2 blanks and 8SFF includes 6 blanks. Additional hard drive blanks can be ordered using either HPE LFF HDD Blank Kit (666986-B21) or HPE SFF HDD Blank Kit (666987-B21). These part numbers for single HDD blanks below are also provided should you require replacement HDD blanks for your server.
NOTE: 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 **https://www.hpe.com/us/en/integrated-systems/rack-power-cooling.html** web page.

CAUTION: Hewlett Packard Enterprise recommends that a minimum of two people are required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.

	Entry Models	Base Models
[SKU Number]	834606-001	834607-001
Model Name	HPE ProLiant ML150 Gen9 E5-2603v4 8GB-R B140i NHP 4LFF SATA 550W Entry Svr	HPE ProLiant ML150 Gen9 E5-2609v4 8GB-R B140i Hot Plug 4LFF SATA 550W Base Svr
Processor	Intel® Xeon® E5-2603v4	Intel® Xeon® E5-2609v4
Number of Processors	One	
Memory	8GB (1x8GB Registered DIMMs, 2400 MHz)	8GB (1x8GB Registered DIMMs, 2400 MHz)
Network Controller	Broadcom 5717 Dual-port 1GbE	
Storage Controller	HPE Dynamic Smart Array B140i	
Hard Drive	None ship standard	
Internal Storage	4 LFF HDD Bays (Non Hot Plug)	4 LFF HDD Bays
Optical Drive Bay	1; (Optional: DVD-ROM, DVD-RW)	
Optical Drive	Optional Slim Optical Bay (SATA DVD-RW/ROM Optical Drive)	
PCI-Express Slots	6 PCIe slots	
Power Supply	(1) HPE 550W FIO Power Supply	
Fans	2 non hot plug, non-redundant fans	
Management	iLO Management (standard), Intelligent Provisioning (standard), iLO Essentials (optional), iLO Advanced (optional), HPE OneView (standard)	
Form Factor	Tower (5U)	
Warranty	Server Warranty includes 3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response.	

	Performance Models
[SKU Number]	834608-001
Model Name	HPE ProLiant ML150 Gen9 E5-2620v4 16GB-R H240 Hot Plug 8SFF SAS 900W Perf Svr
Processor	Intel® Xeon® E5-2620v4
Number of Processors	One

Pre-configured Models

Memory	16GB (1x16GB Registered DIMMs, 2400 MHz)
Network Controller	Broadcom 5717 Dual-port 1GbE
Storage Controller	HPE H240 Smart Host Bus Adapter **NOTE:** HPE ML150 Gen9 PCI BAFFLE Kit (779861-B21) is included while order Performance Model with H240 Storage Controller.
Hard Drive	None ship standard
Internal Storage	8 SFF HDD Bays
Optical Drive Bay	1; (Optional: DVD-ROM, DVD-RW)
Optical Drive	Optional Slim Optical Bay (SATA DVD-RW/ROM Optical Drive)
PCI-Express Slots	6 PCIe slots
Power Supply	900W AC 240VDC Power Supply
Fans	2 non hot plug, non-redundant fans
Management	iLO Management (standard), Intelligent Provisioning (standard), iLO Essentials (optional), iLO Scale-out (optional only for DL), iLO Advanced (optional)
Form Factor	Tower (5U)
Warranty	Server Warranty includes 3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response.

Smart Buy Models

	E5-2600v4 Series Smart Buys		
[SKU Number]	834616-S01	834619-S01	834620-S01
Model Name	HPE ProLiant ML150 Gen9 E5-2609v4 US Srvr/S-Buy	HPE ProLiant ML150 Gen9 E5-2620v4 US Svr/S-Buy	HPE ProLiant ML150 Gen9 E5-2640v4 US Svr/S-Buy
Processor	Intel® Xeon® E5-2609v4	Intel® Xeon® E5-2620v4	Intel® Xeon® E5-2640v4
Number of Processors	One	Two	
Memory	8GB (1x8GB Registered DIMMs, 2400 MHz) **NOTE:** DIMMs will operate at 1866MHz with this processor	16GB (2x8GB Registered DIMMs, 2400 MHz) **NOTE:** DIMMs will operate at 2133MHz with this processor	32GB (2x16GB Registered DIMMs, 2400MHz) **NOTE:** DIMMs will operate at 2133MHz with this processor
Network Controller	Broadcom 5717 Dual-port 1GbE		
Storage Controller	HPE Dynamic Smart Array B140i	HPE H240 Smart Host Bus Adapter	
Hard Drive	None ship standard		
Internal Storage	4 LFF HDD Bays	8 SFF HDD Bays	
Optical Drive	None included (Optional: DVD-ROM, DVD-RW)		
PCI-Express Slots	6 PCIe slots		
Power Supply	One (1) 550W Non Redundant Power Supply	One (1) 900W Redundant Capable Power Supply Kit	
Fans	2 non hot plug, non-redundant fans	3 non hot plug, redundant fans	
Management	Standard: iLO Management Optional: iLO Essentials, iLO Advanced, Insight Control		
Form Factor	Tower (5U)		
Warranty	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. FIO indicates that this option is only available as a factory installable option.
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. 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)

CTO Server	HP ProLiant ML150 Gen9 Non-hot Plug 4LFF Configure-to-order Server	HP ProLiant ML150 Gen9 Hot Plug 4LFF Configure-to-order Server	HP ProLiant ML150 Gen9 Hot Plug 8SFF Configure-to-order Server
SKU Number	767062-B21	767063-B21	767064-B21
Processor	2 (optional) x HPE Smart Socket Guide		
DIMM Slots	16 DIMM slots for RDIMM, LRDIMM DDR4 Memory		
Storage Controller	HPE Dynamic Smart Array B140i		
PCIe	6 Standard (4FH/HL, 2FH/FL)		
Drive Cage	4LFF Non Hot Plug	4LFF Hot Plug	8SFF Hot Plug
Network Controller	Broadcom 5717 Dual-port 1GbE		
Fans	2 non hot plug, non-redundant fans		
Management	iLO Management (standard), Intelligent Provisioning (standard)		
USB	2 front, 2 internal, 4 rear		

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

HPE Processors	**E5-2600v4 series Processors**	
	HPE ML150 Gen9 Intel® Xeon® E5-2620v4 (2.1GHz/8-core/20MB/85W) FIO Processor Kit	828355-L21
	HPE ML150 Gen9 Intel® Xeon® E5-2609v4 (1.7GHz/8-core/20MB/85W) FIO Processor Kit	828356-L21
	HPE ML150 Gen9 Intel® Xeon® E5-2603v4 (1.7GHz/6-core/15MB/85W) FIO Processor Kit	828357-L21
	HPE ML150 Gen9 Intel® Xeon® E5-2650Lv4 (1.71GHz/14-core/35MB/65W) FIO Processor Kit	828358-L21
	HPE ML150 Gen9 Intel® Xeon® E5-2630Lv4 (1.8GHz/10-core/25MB/55W) FIO Processor Kit	828361-L21
	HPE ML150 Gen9 Intel® Xeon® E5-2695v4 (2.1GHz/18-core/45MB/120W) FIO Processor Kit	860716-L21
	HPE ML150 Gen9 Intel® Xeon® E5-2683v4 (2.1GHz/16-core/40MB/120W) FIO Processor Kit	860715-L21
	HPE ML150 Gen9 Intel® Xeon® E5-2680v4 (2.4GHz/14-core/35MB/120W) FIO Processor Kit	860714-L21
	HPE ML150 Gen9 Intel® Xeon® E5-2640v4 (2.4GHz/10-core/25MB/90W) FIO Processor Kit	828353-L21
	HPE ML150 Gen9 Intel® Xeon® E5-2660v4 (2.0GHz/14-core/35MB/105W) FIO Processor Kit	828359-L21

Configuration Information - Factory Integrated Models

	HPE ML150 Gen9 Intel® Xeon® E5-2650v4 (2.2GHz/12-core/30MB/105W) FIO Processor Kit	828360-L21
	HPE ML150 Gen9 Intel® Xeon® E5-2630v4 (2.2GHz/10-core/25MB/85W) FIO Processor Kit	828354-L21
	NOTE: If two processors are desired, select one xxxxxx-L21 and one xxxxxx-B21.	
	NOTE: Up to 2 processors supported. Mixing different processor models is not supported.	
	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: When v4 Processor is selected, then only PC4-2400T Memory Kit can be selected.	
	NOTE: For the Intel® C600 Chipset E5-2600 Series, the letter preceding the model number indicates the Product Line (E3, E5, E7); 2600x v#, 2= number of CPUs in a Node, 6 is socket/segment designation, 00= Processor SKU, x= L for low power SKUs and v# (not yet designated)= version number.	
HPE Memory	**NOTE:** Select one or more memory from section below.	
	NOTE: LRDIMM and RDIMM are distinct technologies and cannot be mixed within a server. The majority of ProLiant Gen9 servers support LRDIMM and RDIMM.	
	NOTE: HPE memory from previous generation servers are not qualified or warranted with this HPE ProLiant server. HPE SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen9.	
	NOTE: If only one processor is installed, only half of the total DIMM slots are available. When populating with two processors all DIMM slots are available.	
	NOTE: Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features see: **http://www.hp.com/go/proliant-energy-efficient** .	
	NOTE: Depending on the memory configuration and processor model, the memory speed may run at 2400MHz, 2133MHz, 1866MHz, 1600MHz, or 1333MHz. Please see Memory Population Table or Online Memory Configuration Tool at: **http://www.hp.com/go/ddr4config** .	
	Registered DIMMs (RDIMMs) for E5-2600v4 Series	
	HP 8GB (1x8GB) Single Rank x8 DDR4-2400 CAS-17-17-17 Registered Memory Kit	805347-B21
	HP 16GB (1x16GB) Single Rank x4 DDR4-2400 CAS-17-17-17 Registered Memory Kit	805349-B21
	HP 16GB (1x16GB) Dual Rank x4 DDR4-2400 CAS-17-17-17 Registered Memory Kit	836220-B21
	HP 32GB (1x32GB) Dual Rank x4 DDR4-2400 CAS-17-17-17 Registered Memory Kit	805351-B21
	Load Reduced DIMMs (RDIMMs) for E5-2600v4 Series	
	HP 32GB (1x32GB) Dual Rank x4 DDR4-2400 CAS-17-17-17 Load Reduced Memory Kit	805353-B21
	HPE Standard Memory for E5-2600v4 Series	
	NOTE: These are standard memory DIMMs with no SmartMemory features.	
	HPE 8GB (1x8GB) Single Rank x8 DDR4-2400 CAS-17-17-17 Standard Registered Memory Kit	851353-B21
HPE Power Supplies	**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.	
	NOTE: Prior to selecting a power supply option, it is highly recommended that you review your server configuration in the HP Power Advisor Tool to determine the right size power supply for your server configuration. The HP Power Advisor is located at: **http://www.hp.com/go/hppoweradvisor**	
	HP Entry-Level Power Supplies	
	HP 550W FIO Power Supply Kit	730941-B21
	NOTE: The above power supply is 80Plus Silver-certified with an efficiency rating of up to 89%. Power specifications and technical content for all HPE Server power supplies can be found at: **http://www.hp.com/go/proliant/powersupply** .	

Configuration Information - Factory Integrated Models

	HPE 900W AC 240VDC FIO Power Input Module **NOTE:** HPE Power Backplane FIO Kit (828735-B21) is required for this power supply. **NOTE:** Up to two of these option kits can be installed in one system.	828734-B21
	HPE 900W AC 240VDC Power Backplane FIO Kit **NOTE:** Required with HPE 900W AC 240VDC FIO Power Input Module (828734-B21).	828735-B21
HPE Storage Controllers	**HPE Smart Array Controllers**	
	HP Smart Array P440/4GB FBWC 12Gb 1-port Int FIO SAS Controller **NOTE:** May only be selected if HP ProLiant ML150 Gen9 4LFF CTO Server or HP ProLiant ML150 Gen9 8SFF CTO Server is selected in Step 1. **NOTE:** Must also select Smart Storage Battery Holder Kit (786710-B21). **NOTE:** Must also select HP ML150 Gen9 Mini SAS P440/P840 Cable Kit (784608-B21). **NOTE:** Must also select one HP ML150 Gen9 PCI Baffle Kit (779861-B21).	761872-B21
	HP Smart Array P840/4GB FBWC 12Gb 2-ports Int FIO SAS Controller **NOTE:** Required if HP ProLiant ML150 Gen9 8SFF CTO Server is selected in Step 1. **NOTE:** Must also select Smart Storage Battery Holder Kit (786710-B21). **NOTE:** Must also select HP ML150 Gen9 Mini SAS P440/P840 Cable Kit (784608-B21). **NOTE:** Must also select one HP ML150 Gen9 PCI Baffle Kit (779861-B21).	761874-B21
	HPE Smart Host Bus Adapters	
	HP H240 12Gb 2-ports Int FIO Smart Host Bus Adapter **NOTE:** May only be selected if HP ProLiant ML150 Gen9 4LFF CTO Server or HP ProLiant ML150 Gen9 8SFF CTO Server is selected in Step 1. **NOTE:** Must also select one HP ML150 Gen9 Mini SAS H240 Cable Kit (784606-B21) to support the HP ML150 Gen9 4LFF CTO Server or two Cable Kits to support the HP ML150 Gen9 8SFF CTO Server of if adding HP ML150 Gen9 4LFF Hot Plug Drive Cage (725872-B21) to the configuration.	761873-B21
	HPE Cable Options	
	HP ML150 Gen9 Mini SAS H240 Cable Kit	784606-B21
	HP ML150 Gen9 Mini SAS P440/P840 Cable Kit	784608-B21
	Battery Holder	
	HP ML150 Gen9 Smart Storage Battery Holder Kit	786710-B21

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

BIOS Mode	HP Legacy FIO Mode Setting **NOTE:** If B140i is the primary controller, then this option cannot be selected. Selecting this option will change the default UEFI BIOS Setting into Legacy BIOS setting.	758959-B22
Controller State	HP Mfg FIO Enable HBA Mode **NOTE:** May only be selected with H240 FIO Smart Host Bus Adapter. **NOTE:** If H240 is the primary controller then RAID is not allowed with this selection.	792962-B21
	HP AHCI-Enable FIO Setting **NOTE:** If B140i is the primary controller then RAID is not allowed with this selection.	801845-B21
HPE Insight Software	HP 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.

Configuration Information - Factory Integrated Models

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	HP ML150 Gen9 4LFF Hot Plug Drive Cage **NOTE:** Adding 4LFF Hard Drive Cage allow up to 8FF Drive Bays.	725872-B21
	HP ML150 Gen9 8SFF Hot Plug Drive Cage **NOTE:** Adding 8SFF Hard Drive backplane allow up to 16SFF Drive Bays.	725874-B21
	HP ML150 Gen9 4LFF Non-hot Plug Drive Cage **NOTE:** Adding 4LFF Hard Drive Cage allow for up to 8LFF Drive Bays.	779859-B21
	HP ML150 Gen9 PCI Baffle Kit **NOTE:** Must select when a PCIe card is installed with any Networking, Controllers (SAS, SCSI and Fiber Channel), and Graphic options. **NOTE:** HPE ML150 Gen9 PCI BAFFLE Kit (779861-B21) is included while order Performance Model with H240 Storage Controller.	779861-B21
	HP ML150 Gen9 Slim ODD Enablement Kit **NOTE:** Must select with the ODD option.	784603-B21
	HP ML150 Gen9 Smart Storage Battery Holder Kit **NOTE:** Must select when install Smart Store Battery P/N: 727258-B21. **NOTE:** Must select when install P440/840 FIO controller P/N: 761872-B21/761874-B21. **NOTE:** Must select when support upgrade battery.	786710-B21
	HP ML150 Gen9 9/10LFF Drive Enablement Kit **NOTE:** When populate 10 LFF, not able to install any Tape Drive or Optical Drive. Possible Configurations: 1) 8LFF +1 ODD + 1 Tape Drive (Full/Half), or 2) 9LFF + 1 ODD, or 3) 9LFF + 1 Tape Drive (Full/Half). **NOTE:** 10LFF is limited to B140i controller. **NOTE:** Must select both 4LFF NHPE drive cage and 10LFF enablement kit if plan to expand to 10LFF. **NOTE:** Only support NHPE SATA HDD. **NOTE:** Must select B140i controller.	788567-B21
	HP ML150 Gen9 Dedicated iLO Management Port Kit	780310-B21
	HP ML150 Gen9 Mini SAS H240 Cable Kit **NOTE:** Must be selected for H240 controller. 1 cable kit is required for Hot Plug 4LFF. 2 cable kits are required for below: - Hot Plug 4+4 LFF (with additional drive cage) - 8 SFF	784606-B21
	HP ML150 Gen9 Mini SAS P440/P840 Cable Kit **NOTE:** Must be selected for P440/P840 controller. 1 cable kit is required for P440x1. 2 cable kits are required for P840x1.	784608-B21
	HP Tower to Rack Conversion Tray Universal Kit	417705-B21
	HP ML150 Gen9 GPU Enablement Kit	779863-B21

Core Options

HPE Processors

E5-2600v4 series Processors

HPE ML150 Gen9 Intel® Xeon® E5-2620v4 (2.1GHz/8-core/20MB/85W) Processor Kit	828355-B21
HPE ML150 Gen9 Intel® Xeon® E5-2609v4 (1.7GHz/8-core/20MB/85W) Processor Kit	828356-B21
HPE ML150 Gen9 Intel® Xeon® E5-2603v4 (1.7GHz/6-core/15MB/85W) Processor Kit	828357-B21
HPE ML150 Gen9 Intel® Xeon® E5-2650Lv4 (1.7GHz/14-core/35MB/65W) Processor Kit	828358-B21
HPE ML150 Gen9 Intel® Xeon® E5-2630Lv4 (1.8GHz/10-core/25MB/55W) Processor Kit	828361-B21
HPE ML150 Gen9 Intel® Xeon® E5-2640v4 (2.4GHz/10-core/25MB/90W) Processor Kit	828353-B21
HPE ML150 Gen9 Intel® Xeon® E5-2660v4 (2.0GHz/14-core/35MB/105W) Processor Kit	828359-B21
HPE ML150 Gen9 Intel® Xeon® E5-2650v4 (2.2GHz/12-core/30MB/105W) Processor Kit	828360-B21
HPE ML150 Gen9 Intel® Xeon® E5-2630v4 (2.2GHz/10-core/25MB/85W) Processor Kit	828354-B21
HPE ML150 Gen9 Intel® Xeon® E5-2680v4 (2.4GHz/14-core/35MB/120W) Processor Kit	860714-B21
HPE ML150 Gen9 Intel® Xeon® E5-2683v4 (2.1GHz/16-core/40MB/120W) Processor Kit	860715-B21
HPE ML150 Gen9 Intel® Xeon® E5-2695v4 (2.1GHz/18-core/45MB/120W) Processor Kit	860716-B21

E5-2600v3 series Processors

HP ML150 Gen9 Intel® Xeon® E5-2609v3 (1.9GHz/6-core/15MB/85W) Processor Kit	726660-B21
HP ML150 Gen9 Intel® Xeon® E5-2603v3 (1.6GHz/6-core/15MB/85W) Processor Kit	726663-B21
HP ML150 Gen9 Intel® Xeon® E5-2640v3 (2.6GHz/8-core/20MB/90W) Processor Kit	726650-B21
HP ML150 Gen9 Intel® Xeon® E5-2630v3 (2.4GHz/8-core/20MB/85W) Processor Kit	726653-B21
HP ML150 Gen9 Intel® Xeon® E5-2620v3 (2.4GHz/6-core/15MB/85W) Processor Kit	726657-B21
HP ML150 Gen9 Intel® Xeon® E5-2660v3 (2.6GHz/10-core/25MB/105W) Processor Kit	726644-B21
HP ML150 Gen9 Intel® Xeon® E5-2650v3 (2.3GHz/10-core/25MB/105W) Processor Kit	726647-B21
HP ML150 Gen9 Intel® Xeon® E5-2630Lv3 (1.8GHz/8-core/20MB/55W) Processor Kit	726670-B21

NOTE: Recommend to select 900W for 2P configurations or check power advisor for power consumption for the customer usage case.

HPE Memory

Registered DIMMs (RDIMMs)

HP 4GB (1x4GB) Single Rank x8 DDR4-2133 CAS-15-15-15 Registered Memory Kit	726717-B21

Core Options

	HP 4GB (1x4GB) Single Rank x8 DDR4-2133 CAS-15-15-15 Registered Standard Memory Kit **NOTE:** Available WW except EMEA.	803026-B21
	HP 8GB (1x8GB) Single Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit	726718-B21
	HP 8GB (1x8GB) Dual Rank x8 DDR4-2133 CAS-15-15-15 Registered Memory Kit	759934-B21
	HP 8GB (1x8GB) Single Rank x4 DDR4-2133 CAS-15-15-15 Registered Standard Memory Kit **NOTE:** Available WW except EMEA.	803028-B21
	HP 16GB (1x16GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit	726719-B21
	HP 32GB (1x32GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit	728629-B21
	HP 8GB (1x8GB) Single Rank x8 DDR4-2400 CAS-17-17-17 Registered Memory Kit	805347-B21
	HP 16GB (1x16GB) Single Rank x4 DDR4-2400 CAS-17-17-17 Registered Memory Kit	805349-B21
	HP 32GB (1x32GB) Dual Rank x4 DDR4-2400 CAS-17-17-17 Registered Memory Kit	805351-B21
	HPE 16GB (1x16GB) Dual Rank x4 DDR4-2400 CAS-17-17-17 Registered Memory Kit	836220-B21
	HPE 8GB (1x8GB) Single Rank x8 DDR4-2400 CAS-17-17-17 Registered Standard Memory Kit	851353-B21
	Load Reduced DIMMs (LRDIMMs) for E5-2600v3 Series	
	HP 16GB (1x16GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Load Reduced Memory Kit	726720-B21
	HPE 32GB (1x32GB) Dual Rank x4 DDR4-2400 CAS-17-17-17 Load Reduced Memory Kit	805353-B21
HPE Optical Drives	HP 9.5mm SATA DVD-ROM JackBlack Gen9 Optical Drive	726536-B21
	HP 9.5mm SATA DVD-RW JackBlack G9 Optical Drive	726537-B21
	HP ML150 Gen9 Slim ODD Enablement Kit **NOTE:** Must be selected with the ODD option. **NOTE:** Must select ODD enablement kit, one kit per ODD.	784603-B21
HPE Drives	**NOTE:** User may select any combination of SAS or SATA Hard Drives. However, if RAID is selected and both SAS and SATA Hard Drives have been selected, then only the SAS Drives will be used in the RAID set. **NOTE:** If B140i is the primary controller, user can only select SATA drives. **NOTE:** SAS drives require the selection of a SAS controller. See card lists in Controllers section.	
	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

Core Options

HPE 900GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty 512e Digitally Signed Firmware HDD	870765-B21
HPE 600GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	870757-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
SAS Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives	
HPE 600GB SAS 12G Enterprise 15K LFF (3.5in) SC 3yr Wty HDD	765424-B21
HPE 300GB SAS 12G Enterprise 15K LFF (3.5in) SCC 3yr Wty HDD	737261-B21
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 8TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD	861590-B21
HPE 6TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD	846514-B21
HPE 1TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD	846524-B21
SATA Hot Plug LFF (3.5-inch) Midline (MDL) Drives	
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 Helium 512e Digitally Signed Firmware HDD	861594-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 Digitally Signed Firmware HDD	846510-B21
HPE 3TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD	861693-B21
HPE 1TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty HDD	861691-B21
SATA Hot Plug SFF (2.5-inch) Midline (MDL) Drives	
HPE 2TB SATA 6G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD	765455-B21
HPE 2TB SAS 12G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e HDD	765466-B21
HPE 1TB SATA 6G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD	765453-B21
HPE 1TB SATA 6G Midline 7.2K SFF (2.5in) SC 1yr Wty Digitally Signed Firmware HDD	655710-B21
HPE 1TB SAS 12G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD	765464-B21
HPE 1TB SAS 12G Midline 7.2K SFF (2.5in) SC 1yr Wty Digitally Signed Firmware HDD	832514-B21

Core Options

SATA Non-Hot Plug LFF (3.5-inch) Midline (MDL) Drives	
HPE 4TB SATA 6G Midline 7.2K LFF (3.5in) RW 1yr Wty HDD	801888-B21
HPE 1TB SATA 6G Midline 7.2K LFF (3.5in) RW 1yr Wty HDD	801882-B21
12G SAS Hot Plug SFF (2.5-inch) Read Intensive Solid State Drives	
HPE 7.68TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	870144-B21
HPE 3.84TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	872394-B21
HPE 3.84TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	875330-B21
HPE 1.92TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	872392-B21
HPE 1.92TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	875326-B21
HPE 960GB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	872390-B21
HPE 960GB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	875313-B21
HPE 480GB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	875311-B21
12G SAS Hot Plug SFF (2.5-inch) Write Intensive Solid State Drives	
HPE 1.6TB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	873357-B21
HPE 800GB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	873355-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 3.2TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	873367-B21
HPE 3.2TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	872386-B21
HPE 1.6TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	873365-B21
HPE 1.6TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	872382-B21
HPE 800GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	873363-B21
HPE 800GB SAS 12G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	872378-B21
HPE 400GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	873359-B21
HPE 400GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	872374-B21
12G SAS Hot Plug LFF (3.5-inch) Mixed Use Solid State Drives	
HPE 800GB SAS 12G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	872378-B21
6G SATA Hot Plug SFF (2.5-inch) SC Read Intensive Solid State Drives	
HPE 3.84TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	877764-B21

Core Options

HPE 3.8TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	868830-B21
HPE 1.92TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	877758-B21
HPE 1.92TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	868826-B21
HPE 1.92TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	875513-B21
HPE 960GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	877752-B21
HPE 960GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	868822-B21
HPE 960GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	875511-B21
HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	877746-B21
HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	868818-B21
HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	875509-B21
HPE 240GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	877740-B21
HPE 240GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	868814-B21
HPE 240GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	875503-B21
6G SATA Hot Plug SFF (2.5-inch) SC Write Intensive Solid State Drives	
HPE 800GB SATA 6G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	872359-B21
HPE 400GB SATA 6G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	872355-B21
6G SATA Hot Plug SFF (2.5-inch) SC Mixed Use Solid State Drives	
HPE 1.92TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	877788-B21
HPE 1.92TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	872352-B21
HPE 1.92TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	875478-B21
HPE 960GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	877782-B21
HPE 960GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	872348-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	877776-B21
HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	872344-B21
HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	875470-B21

Core Options

	HPE 240GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	880295-B21
	HPE 240GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	875483-B21
	6G SATA Hot Plug LFF (3.5-inch) SC Read Intensive Solid State Drives	
	HPE 1.92TB SATA 6G Read Intensive LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	877760-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	877748-B21
	6G SATA Hot Plug LFF (3.5-inch) SC Mixed Use Solid State Drives	
	HPE 1.92TB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	877790-B21
	HPE 1.92TB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	875480-B21
	HPE 960GB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	877784-B21
	HPE 960GB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	875476-B21
	HPE 960GB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	872350-B21
	HPE 480GB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	875472-B21
	HPE 480GB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	872346-B21
	Hard Drive Blank Kits	
	HPE Large Form Factor Hard Drive Blank Kit	666986-B21
	HPE Small Form Factor Hard Drive Blank Kit	666987-B21
HPE Networking	**1 Gigabit Ethernet adapters**	
	HP Ethernet 1Gb 4-port 331T Adapter	647594-B21
	HP Ethernet 1Gb 2-port 361T Adapter	652497-B21
	HP Ethernet 1Gb 2-port 332T Adapter	615732-B21
	HP Ethernet 1Gb 4-port 366T Adapter	811546-B21
	10 Gigabit Ethernet adapters	
	HP Ethernet 10Gb 2-port 560SFP+ Adapter	665249-B21
	HP Ethernet 10Gb 2-port 561T Adapter	716591-B21
	HPE Ethernet 10Gb 2-port 562SFP+ Adapter	727055-B21
HPE Power Supplies	**HPE Entry-Level Power Supplies**	
	HPE 900W Standard AC 240VDC Power Input Module **NOTE:** This part number can only be bought standalone and is for field integration only. **NOTE:** HPE 900W Gold (Redundant) AC 240VDC Power Input Module (775595-B21) must be used with Power Backplane (814835-B21).	775595-B21
	HPE 900W Standard AC 240VDC RPS Power Backplane **NOTE:** This part number can only be bought standalone and is for field integration only.	814835-B21

Core Options

NOTE: This RPS backplane is mandatorily needed with 900W RPS input module.
NOTE: Each Redundant Power Supply Backplane can support up to two (2) power input modules.
NOTE: When purchase HPE 900W AC 240VDC RPS Power Backplane (814835-B21) + HPE 900W AC 240VDC Power Input Module (775595-B21), it supports 900W non-redundant PS.

HPE 900W Standard AC 240VDC Redundant Power Supply Kit 820792-B21
NOTE: This Redundant Power supply kit includes 2 power supply input module and 1 backplane kit.
NOTE: This part number is both factory installed option and field integratable option.

NOTE: Redundant AC Power Input Modules do not share power. Redundant AC Power Input Module #1 is the primary AC Power Input Module. Redundant AC Power Input Module #2 is the backup AC Power Input Module.
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.
NOTE: Recommend to select 900W for 2P configurations or check power advisor for power consumption for the customer usage case. Power specifications and technical content for all HPE Server power supplies can be found at **https://www.hpe.com/us/en/product-catalog/servers/power-supplies.hits-12.html**.

HPE Computation and Graphics Accelerators

HP AMD FirePro W7100 Accelerator Kit J0H10A
NOTE: Must select HPE ML150 Gen9 GPU Enablement Kit (779863-B21) if W7100 Accelerator Kit (J0H10A) is selected.

HP ML150 Gen9 GPU Enablement Kit 779863-B21

NOTE: Only the above listed Graphics cards are HPE standard supported options in this server.
NOTE: The NVIDIA Quadro modules and AMD FirePro W7100 are supported only on 64-bit versions of Linux and Windows operating systems as well as on Virtual Machine client operating systems. The supported bare metal operating systems are RHEL6, SLES 11 and Windows Server 2012 R2.
NOTE: Please see the HPE Power Advisor for estimated power consumption of your individual system configuration prior to installing GPUs. The HPE Power Advisor is located at: **http://www.hpe.com/info/hppoweradvisor**.

HPE Cooling Options

HP ML150 Gen9 PCI Baffle Kit 779861-B21
NOTE: Must be selected when a PCIe card is installed with any Networking, Controllers (SAS, SCSI and Fiber Channel), and Graphic options.
NOTE: HPE ML150 Gen9 PCI BAFFLE Kit (779861-B21) is included while order Performance Model with H240 Storage Controller.

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.

Embedded Management	**HPE iLO Advanced**	
	HPE iLO Advanced including 3yr 24x7 Tech Support and Updates 1-server LTU	BD505A
	HPE iLO Advanced including 1yr 24x7 Technical Support and Updates E-LTU	E6U59ABE
	HPE iLO Advanced including 1yr 24x7 Technical Support and Updates 1-server LTU	512485-B21
	HPE iLO Advanced including 3yr 24x7 Technical Support and Updates E-LTU	E6U64ABE
	HPE Insight Control including 1yr 24x7 Technical Support and Updates 1-server LTU	C6N27A
	HPE Insight Management Media Kit	C6N31A
	HPE iLO Essentials	
	HPE iLO Essentials including 3yr 24x7 Tech Support and Updates 1-server LTU	BD774A
	HPE iLO Essentials including 1yr 24x7 Tech Support and Updates 1-server LTU	BD775A
	HPE iLO Essentials including 3yr 24x7 Technical Support and Updates E-LTU	E6U61ABE
	HPE iLO Essentials including 1yr 24x7 Technical Support and Updates E-LTU	E6U62ABE
High Performance Clusters	**HPE Insight Cluster Management Utility**	
	HPE Insight Cluster Management Utility 3yr 24x7 Flexible LTU	BD476A
	HPE Insight Cluster Management Utility 1yr 24x7 Flexible LTU	QL803B
	NOTE: These part numbers can be used to purchase one certificate for multiple licenses and support with a single activation key. Each license is for one node (server). Customer will receive a printed end user license agreement and license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online in order to obtain a license key. Customer also will receive a support agreement.	
	HPE Insight Cluster Management Utility Media	BD477A
HPE Security	HP 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 Controllers	
	HP Smart Array P440/2GB FBWC 12Gb 1-port Int SAS Controller	820834-B21
	HP Smart Array P440/4GB FBWC 12Gb 1-port Int SAS Controller	726821-B21
	HP Smart Array P441/4GB FBWC 12Gb 2-ports Ext SAS Controller	726825-B21
	HP Smart Array P840/4GB FBWC 12Gb 2-ports Int SAS Controller	726897-B21
	NOTE: 16SFF is limited to P840.	
	HP Smart Array P841/4GB FBWC 12Gb 4-ports Ext SAS Controller	726903-B21
	SAS Controller Options	
	HP 96W Smart Storage Battery with 145mm Cable for DL/ML/SL Servers	727258-B21
	HPE Host Bus Adapter	
	HP H240 12Gb 2-ports Int Smart Host Bus Adapter	726907-B21

Additional Options

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

NOTE: If H240 is the primary controller and if HPE Mfg FIO Enable HBA Mode Setting is selected, then RAID is not allowed.

NOTE: B140i can't mix with any standup internal controller.

NOTE: HPE ML150 Gen9 PCI BAFFLE Kit (779861-B21) is required when ordering a controller card.

HPE Cable Options

HP ML150 Gen9 Mini SAS H240 Cable Kit	784606-B21
HP ML150 Gen9 Mini SAS P440/P840 Cable Kit	784608-B21

Optional Software

HPE SmartCache No Media 24x7 Technical Support 1-server LTU	D7S26A
HPE SmartCache No Media 24x7 Technical Support Flexible LTU	D7S27A
HPE SmartCache No Media 24x7 Technical Support E-LTU	D7S27AAE

NOTE: HPE SmartCache is supported when one of the supported Smart Array Controllers is installed in the server.

NOTE: HPE SmartCache comes standard (no licensing is required) if the HPE Smart Array P840 Controller is installed in the server.

Battery Holder

HP ML150 Gen9 Smart Storage Battery Holder Kit	786710-B21

HPE Tape Backup

NOTE: For the complete range of tape drives, autoloaders, libraries and media see: **https://www.hpe.com/us/en/storage/storeever-tape-storage.html**. For hardware and software compatibility of HPE tape backup products **http://www.hpe.com/storage/BURAcompatibility**.

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 StoreEver LTO-7 Ultrium 15000 External Tape Drive	BB874A
HPE StoreEver LTO-7 Ultrium 15000 Internal Tape Drive	BB873A
HPE StoreEver LTO-6 Ultrium 6250 Tape Drive in a 1U Rack Mount Kit	C0L99A
HPE StoreEver LTO-6 Ultrium 6250 External Tape Drive	EH970A
HPE StoreEver LTO-6 Ultrium 6250 Internal Tape Drive	EH969A
HPE StoreEver LTO-5 Ultrium 3000 SAS Tape Drive in a 1U Rack Mount Kit	EJ014B
HPE StoreEver LTO-5 Ultrium 3000 SAS External Tape Drive	EH958B
HPE StoreEver LTO-5 Ultrium 3000 SAS Internal Tape Drive	EH957B
HPE StoreEver LTO-4 Ultrium 1760 SAS (1) in a 1U Rack Mount Kit	EH946C
HPE StoreEver LTO-4 Ultrium 1760 SAS External Tape Drive	EH920B
HPE StoreEver LTO-4 Ultrium 1760 SAS Internal WW Tape Drive	EH919B
HPE StoreEver 1U SAS Rack Mount Kit	AE459B
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 Tape Storage Systems HPE StoreEver MSL6480

HPE StoreEver MSL6480 Scaleable Expansion Module	QU626A
HPE StoreEver MSL6480 Scalable Base Module	QU625A
HPE StoreEver MSL2024 0-drive Tape Library	AK379A
HPE StoreEver MSL4048 0-drive Tape Library	AK381A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information: **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111416**.

Additional Options

HPE Disk Backup	**HPE RDX Removable Disk Backup System**	
	HPE RDX500 USB3.0 Internal Disk Backup System	B7B64A
	HPE RDX1000 USB3.0 Internal Disk Backup System	B7B67A
	HPE RDX USB 3.0 Internal Docking Station	C8S06A
	HPE RDX 2TB USB3.0 Internal Disk Backup System	E7X52A
	HPE RDX 3TB USB 3.0 Internal Disk Backup System	P9L71A
	HPE RDX 4TB USB 3.0 Internal Disk Backup System	Q2R32A
	HPE RDX+ External Docking System	C8S07B
	HP RDX+ 500GB External Backup System	B7B66B
	HP RDX+ 1TB External Backup System	B7B69B
	HP RDX 2TB USB3.0 External Disk Backup System	E7X53B
	HPE RDX+ 3TB USB 3.0 External Disk Backup System	P9L72A
	HPE RDX 4TB USB 3.0 External Disk Backup System	Q2R33A
	NOTE: For the complete range of RDX drives and media see: **https://www.hpe.com/us/en/product-catalog/storage/disk-based-backup-systems/pip.hpe-rdx-removable-disk-backup-system.3741006.html**. For hardware and software compatibility of HPE disk backup products see: **http://www.hpe.com/storage/spock**.	
HPE Power Distribution Units (PDUs)	**HPE Basic Power Distribution Units (PDU)**	
	HP 800VA - 277V Input / 230V Output NA Rack Mount Transformer	H3X09A
	NOTE: Please see the **HPE Basic Power Distribution Units (PDU) QuickSpecs** for information on additional options and product specifications.	
	HPE Metered Power Distribution Units (PDU)	
	HPE Metered 2.8kVA/L5-30P 24A/120V Outlets (12) 5-20R/Horizontal NA/JP PDU	D9N43A
	HPE Metered 3.6kVA/60320 C20 Detachable 16A/230V Outlets (12) C13/Horizontal WW PDU	D9N46A
	HPE Metered 4.9kVA/L6-30P 24A/208V Outlets (12) C13/Horizontal NA/JP PDU	D9N44A
	HPE Metered 3.6kVA/60320 C20 Detachable 16A/230V Outlets (16) C13/Vertical WW PDU	D9N45A
	HPE Metered 4.9kVA/L6-30P 24A/208V Outlets (12) C13/Vertical NA/JP PDU	G9Z05A
	HPE Metered 4.9kVA/L6-30P 24A/208V Outlets (20) C13 (4) C19/Vertical NA/JP PDU	D9N47A
	HPE Metered 3Ph 8.6kVA/L15-30P 24A/208V Outlets (18) C13 (3) C19/Vertical NA/JP PDU	D9N51A
	HPE Metered 3Ph 8.6kVA/L21-30P 24A/120-208V Outlets (18) C13 (3) C19 (3) 5-20R/Vertical NA/JP PDU	D9N53A
	HPE Metered 8.3kVA/CS8265C 40A/208V Outlets (30) C13 (3) C19/Vertical NA PDU	D9N49A
	HPE Metered 3Ph 14.4kVA/CS8365C 40A/208V Outlets (12) C13 (12) C19/Vertical NA/JP PDU	D9N58A
	HPE Metered 3Ph 16.6kVA/60309 32A-30A 5-wire 24A/230V Outlets (30) C13 (3) C19/Vertical NA/JP PDU	D9N61A
	HPE Metered 3Ph 16.6kVA/60309 32A-30A 5-wire 24A/230V Outlets (12) C13 (12) C19/Vertical NA/JP PDU	D9N62A
	HPE Metered 3Ph 17.3kVA/60309 60A 4-wire 48A/208V Outlets (24) C13 (3) C19/Vertical NA/JP PDU	D9N54A
	HPE Metered 3Ph 17.3kVA/60309 60A 4-wire 48A/208V Outlets (12) C13 (12) C19/Vertical NA/JP PDU	D9N59A

Additional Options

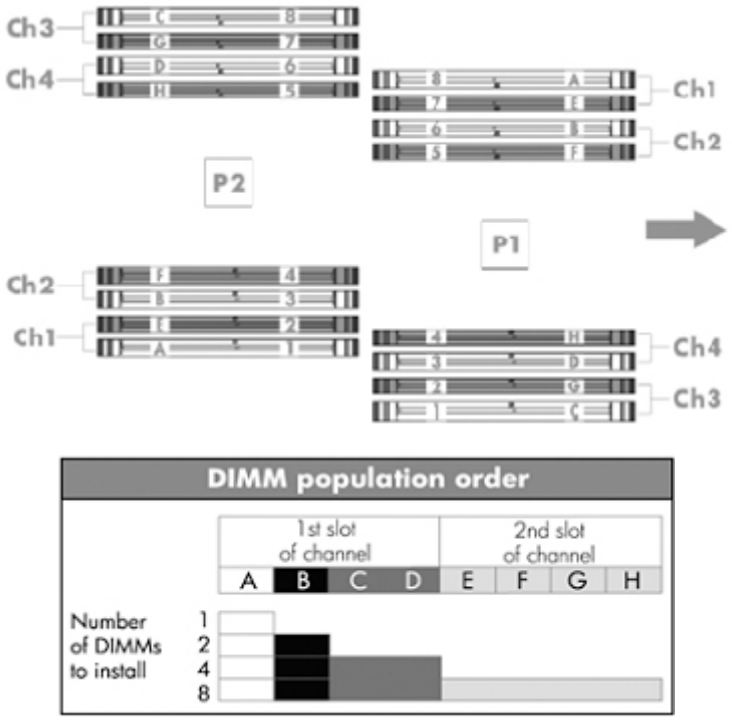
	HPE Metered 3Ph 17.3kVA/60309 60A 4-wire 48A/208V Outlets (12) C13 (12) C19/Vertical NA/JP PDU	G9Z07A
	HPE Metered 3Ph 19.9kVA/L22-30P 24A/277V Outlets (30) RF-203P-HP/Vertical NA PDU	D9N63A
	HP Environmental Sensor for Remote Monitored and Managed PDUs	E2D53A
	NOTE: Please see the **HPE Metered Power Distribution Units (PDU) QuickSpecs** for information on additional options and product specifications.	
	HPE Intelligent Power Distribution Unit (PDU)	
	HPE Intelligent Modular 4.9kVA/L6-30P 24A/208V Outlets (6) C19/Horizontal NA/JP PDU	AF520A
	HPE Intelligent Modular 8.3kVA/CS8265C 40A/208V Outlets (6) C19/Horizontal NA/JP PDU	AF521A
	HPE Intelligent Modular 3Ph 8.6kVA/L15-30P 24A/208V Outlets (6) C19/Horizontal NA/JP PDU	AF522A
	HPE Intelligent Modular 3Ph 17.3kVA/60309 60A 4-wire 48A/208V (6) C19/Horizontal NA/JP PDU	AF523A
	HPE Intelligent Modular 3Ph 17.3kVA/60309 30A 5-wire 24A/240V (6) C19/Horizontal NA/JP PDU	AF901A
	HPE Intelligent Modular 3Ph 17.3kVA/IEC 60309 60A 4-wire 48A/208V (12) C19/Horizontal NA/JP PDU	AF535A
	HPE Intelligent Modular 4.9kVA/L6-30P 24A/208V Outlets (20) C13 (6) C19/Horizontal NA/JP PDU	AF531A
	HPE Intelligent Modular 3Ph 8.6kVA/L15-30P 24A/208V Outlets (20) C13 (6) C19/Horizontal NA/JP PDU	AF532A
	HPE Intelligent Modular 3Ph 14.4kVA/CS8365C 40A/208V Outlets (6) C19/Horizontal NA/JP PDU	AF533A
	HP 5xC13 Intelligent PDU Extension Bar G2 Kit	AF547A
	HP 5xC13 Outlets Power and UID LEDs Pair Standard Extension Bar	AF528A
	NOTE: Please see the **HPE Intelligent Power Distribution Unit (PDU) QuickSpecs** for information on additional options and product specifications.	
	NOTE: To learn more, please visit the **HPE Uninterruptible Power Systems (UPS) web page**.	
HPE Rack Mount Consoles, KVM Switches, and Keyboards	**HPE Location Discovery Services**	
	HPE Location Discovery Services LCD8500 Kit	TL052A
	NOTE: Please see the **HPE Location Discovery Services QuickSpecs** for information on additional options and product specifications.	
	HPE Rack Mount Consoles	
	HP LCD8500 1U US Rackmount Console Kit	AF630A
	HP LCD8500 1U US TAA Rackmount Console Kit	AF645A
	HPE KVM Switches	
	HP 0x1x8 G3 KVM Console Switch	AF651A
	HP 0x2x16 G3 KVM Console Switch	AF652A
	HP TAA 0x2x16 G3 KVM Console Switch	AF653A
	HP USB Remote Access Key for G3 KVM Console Switches	AF650A
	HP KVM Console USB Interface Adapter	AF628A
	HP 0x2x16 KVM Server Console Switch G2 with Virtual Media CAC Software	AF618A
	HP 0x2x32 KVM Server Console Switch G2 with Virtual Media CAC Software	AF619A
	HP KVM Console USB 2.0 Virtual Media CAC Interface Adapter	AF629A
	HP 1x4 USB/PS2 KVM Console Switch	AF611A
	HP 1x1Ex8 KVM IP Console Switch G2 with Virtual Media CAC Software	AF620A
	HP 2x1Ex16 KVM IP Console Switch G2 with Virtual Media CAC Software	AF621A

Additional Options

	HP 4x1Ex32 KVM IP Console Switch G2 with Virtual Media CAC Software	AF622A
	NOTE: To learn more, please visit the **HPE KVM Switches web page**.	
	HPE USB Keyboard and Mouse	
	HP USB BFR with PVC Free US Keyboard/Mouse Kit	631341-B21
	HPE Other Options	
	HPE Rack LED Light Kit	BW939A
	HP Kit LCD 1.83m Latch Display Port Cable	G7T29A
	HP ConvergedSystem Door Branding Kit	TK815A
	HP ConvergedSystem Rack Light Kit	TK816A
	HP ConvergedSystem Rack Side Panel 1075mm Kit	TK817A
	HP Tower to Rack Conversion Tray Universal Kit	417705-B21
HPE Uninterruptible Power Systems (UPS)	**HPE Tower UPS**	
	HPE Rack/Tower UPS	
	HPE R/T2200 G4 UPS Models	
	HPE R/T2200 G4 NA/JP Uninterruptible Power System	J2R00A
	HPE R/T3000 G4 UPS Models	
	HPE R/T3000 G4 Low Voltage NA/JP Uninterruptible Power System	J2R01A
	HPE R/T3000 G4 High Voltage NA/JP Uninterruptible Power System	J2R02A
	R1500 G4 Models	
	HPE R1500 G4 NA Uninterruptible Power System	J2Q99A
	R7000 Uninterruptible Power System (UPS)	
	HPE R7000 4U 50A High Voltage NA/JP Uninterruptible Power System	AF462A
	R5000 Uninterruptible Power System (UPS)	
	HPE R5000 3U L630 High Voltage NA/JP Uninterruptible Power System	AF460A
	NOTE: To learn more, please visit the **HPE Uninterruptible Power Systems (UPS) web page**.	
HPE USB and SD Options	**HPE Enterprise Mainstream Flash Media Kits for Memory Cards**	
	HPE 32GB microSD Mainstream Flash Media Kit	700139-B21
	HPE 8GB microSD Enterprise Mainstream Flash Media Kit	726116-B21
	HP 8GB USB Enterprise Mainstream Flash Media Drive Key Kit	737953-B21
	HP Dual 8GB microSD Enterprise Midline USB Kit	741279-B21
HPE Support Services	**Installation & Start-up Services**	
	HPE Installation ML350e/ML150 Service	U6D41E
	HPE Startup ML350e/ML150 Service	U6D43E
	Foundation Care	
	HPE 3 year Foundation Care 24x7 ML150 Gen9 Service	U7WR1E
	HPE 3 year Foundation Care 24x7 wDMR ML150 Gen9 Service	U7WR2E
	HPE 3 year Foundation Care 24x7 wCDMR ML150 Gen9 Service	U7WR3E
	Proactive Care	
	HPE 3 year Proactive Care 24x7 ML150 Gen9 Service	U7WT8E
	HPE 3 year Proactive Care 24x7 with DMR ML150 Gen9 Service	U7WT9E
	HPE 3 year Proactive Care 24x7 with CDMR ML150 Gen9 Service	U7WU0E

Memory

Memory Population guidelines



General Memory Population Rules and Guidelines:

- Install DIMMs only if the corresponding processor is installed.
- If only one processor is installed in a two processor system, only half of the DIMM slots are available.
- To maximize performance, it is recommended to balance the total memory capacity between all installed processors and load the channels similarly whenever possible.
- When two processors are installed, balance the DIMMs across the two processors.
- White DIMM slots denote the first slot to be populated in a channel.
- Place the DIMMs with the highest number of ranks in the white slot when mixing DIMMs of different ranks on the same channel.
- Do not mix RDIMMs or LRDIMMs.
- Quad rank RDIMMs are not supported in HPE ProLiant ML150 Gen9 servers.
- Quad rank LRDIMMs are capable of up to three DIMMs per channel.
- RDIMMs operating at 1.2V.
- DIMMs of different speeds may be mixed in any order; the server will select a common optimal speed.
- The maximum memory speed is a function of the memory type, memory configuration, and processor model.
- The maximum memory capacity is a function of the memory type and number of installed processors.
- To realize the performance memory capabilities listed in this document, HPE SmartMemory is required.
- There are four (4) channels per processor; eight (8) channels per server. There are three (2) DIMM slots for each memory channel; twenty-four (16) total slots. Memory channels1 and 3 consists of the two (2) DIMMs that are furthest from the processor. Memory channel 2 and 4 consists of the two (2) DIMMs that are closest to the processor.

Memory

Intel Gen9 Supported Memory Bandwidth for HPE ProLiant Gen9 Intel® Xeon® E5-2600v4 Series Processor Family

Memory Bandwidth and Capacity					
[DIMM Type]	**Registered DIMMs (RDIMMs)**				**Load Reduced (LRDIMMs)**
HPE SKU P/N	805347-B21	805349-B21	836220-B21	805351-B21	805353-B21
DIMM Rank	Single Rank	Single Rank	Dual Rank	Dual Rank	Dual Rank
DIMM Capacity	8GB	16GB	16GB	32GB	32GB
Voltage	Std Voltage 1.2V	Std Voltage 1.2V	Std Voltage 1.2V	Std Voltage 1.2V	Std Voltage 1.2V
DRAM Depth [bit]	1G	2G	1G	2G	2G
DRAM Width [bit]	x8	x4	x4	x4	x4
DRAM Density	8Gb	8Gb	4Gb	8Gb	8Gb
CAS Latency	17-17-17	17-17-17	17-17-17	17-17-17	17-17-17
DIMM Native Speed (MT/s)	2400	2400	2400	2400	2400
SLOTS THAT CAN BE POPULATED					
16 slot servers	16	16	16	16	16
MAXIMUM CAPACITY (GB)					
	128	256	256	512	512
POPULATED DIMM SPEED (MT/s)					
1 DIMM Per Channel	2400	2400	2400	2400	2400
2 DIMM Per Channel	2133	2133	2133	2133	2400
3 DIMM Per Channel	n/a	n/a	n/a	n/a	n/a

DIMM slot and configuration diagram

DIMM slot and configuration diagrams

- Population order; start with "A" first, "B" second, "C" third, etc.
- When one processor is installed, install DIMMs in sequential alphabetic order: A, B, C, D, E, F.
- 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		CPU 2		
	Slot #	population order	Slot #	population order	
Chnl 3	1	C	1	A	Chnl 1
	2	G	2	E	

	CPU 1		CPU 2		
	Slot #	population order	Slot #	population order	
Chnl 4	3	D	3	B	Chnl 2
	4	H	4	F	

	CPU 1	

Memory

	Slot #	population order	CPU 2		
			Slot #	population order	
Chnl 2	5	F	5	H	Chnl 4
	6	B	6	D	

	CPU 1		CPU 2		
	Slot #	population order	Slot #	population order	
Chnl 1	7	E	7	G	Chnl 3
	8	A	8	C	

Memory Speed by Processor Model

Processor Models	Supported Memory Speeds
E5-2609v3, E5-2603v3	1600MT/s
E5-2640v3, E5-2630v3, E5-2620v3, E5-2630Lv3	1866MT/s
E5-2650Lv3, E5-2660v3, E5-2650v3	2133MT/s
E5-2609v4, E5-2603v4	1866MT/s
E5-2620v4, E5-2630Lv4, E5-2640v4, E5-2630v4	2133MT/s
E5-2650Lv4, E5-2660v4, E5-2650v4, E5-2680v4, E5-2683v4, E5-2695v4	2400MT/s

Standard and Maximum Memory Capacity (Pre-configured Models)

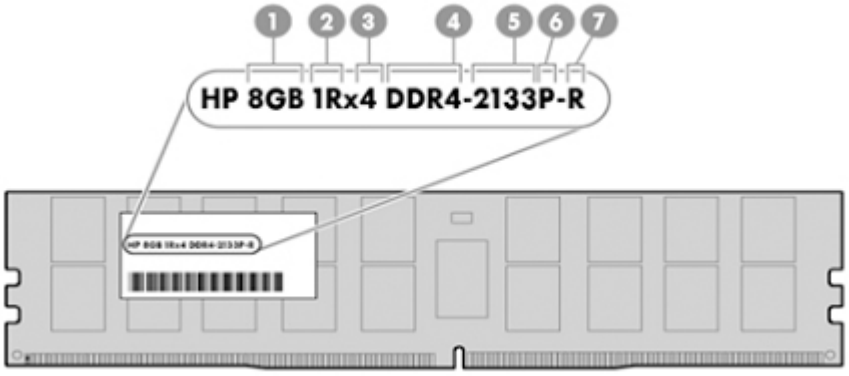
Pre Configured Models	Standard Memory	Maximum Memory Plus Optional Memory	Standard Memory Replaced with Optional Memory
E5-2620v4	16GB (1x16GB)	496GB (15x32GB, 1x16GB)	512GB (16x32GB)
E5-2609v4, E5-2609v3, E5-2603v4	8GB (1x8GB)	488GB (15x32GB, 1x8GB)	512GB (16x32GB)
E5-2603v3	4GB (1x4GB)	484GB (15x32GB, 1x4GB)	512GB (16x32GB)

DDR4 memory options part number decoder

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

- 4GB = 4,096MB
- 8GB = 8,192MB
- 16GB = 16,384MB

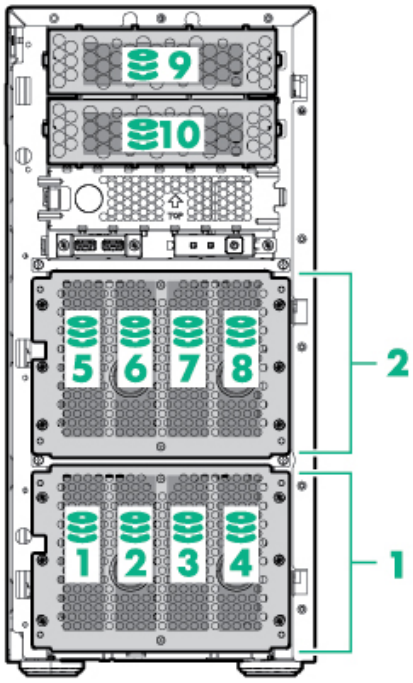
Memory



1. Capacity: 4GB/8GB/16GB/32GB
2. Rank: 1R = Single-rank; 2R = Dual-rank; 4R = Quad-rank
3. Data width: x4 = 4-bit; x8 = 8-bit
4. Memory generation: DDR4
5. Maximum memory speed: 2133 MT/s
6. CAS latency: P = 15
7. DIMM type: R = RDIMM (registered); L = LRDIMM (load reduced)

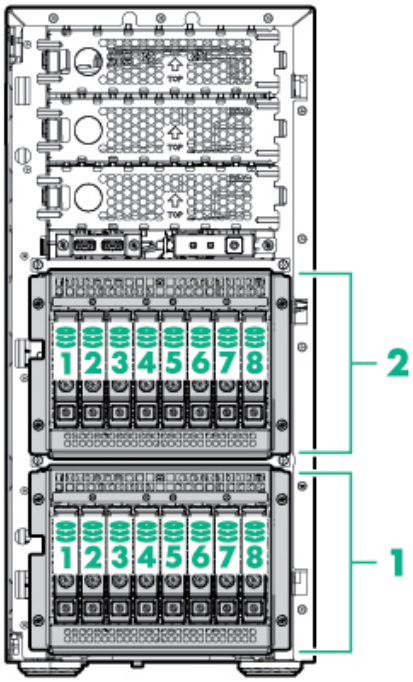
Storage

4-bay LFF non-hot-plug drive model



1-8	8 x LFF SATA/SSD Non-hot-plug Hard Drive Bays
9-10	Media Bays **NOTE:** When populating 10 LFF, not able to install Tape Drive or Optical Drive. Possible Configurations: 1) 8LFF +1 ODD+ 1 Tape Drive (Full/Half), or 2) 9LFF + 1ODD, or 3) 9LFF + 1 Tape Drive (Full/Half).

8-bay SFF hot-plug drive model

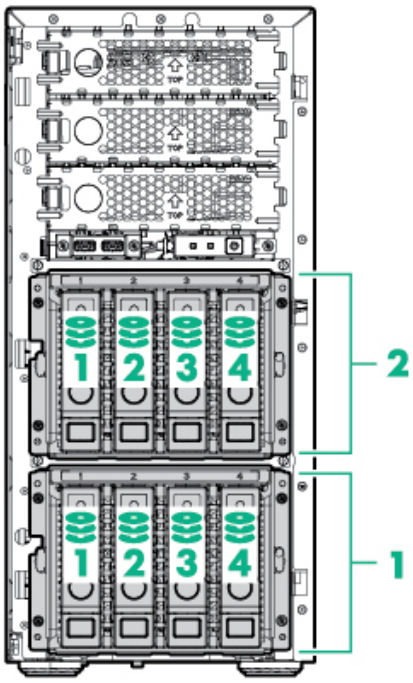


1 x 1-8	8 x SFF SAS/SSD Hot Pluggable Hard Drive Bays
2 x 1-8	8 x SFF SAS/SSD Hot Pluggable Hard Drive Bays

4-bay LFF hot-plug drive model

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

Storage



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

Maximum Storage Capacity -

Total (10 LFF Drive)	80 TB
Total (16 SFF Drive)	61.44 TB

Technical Specifications

System Unit	**Tower Dimensions**	17.03(H) x 7.87(W) x 24.41(D) in (43.26 x 20 x 62 cm)	
	Tower Weight	Minimum:	32lb (14.51kg)
		Maximum:	64lb (29.10kg)
	Input Requirements (for Standard 460W PSU, see power specifications tables for detail on 460W, 750W and 1200W power supplies)	Range Line Voltage	100 to 240 VAC
		Rated Input Current	For 550W Power Supply:6.7 A (at 100 VAC)3.3 A (at 200 VAC)
		Rated Input Frequency	47 to 63 Hz
		Rated Input Power	For 550 W Power Supply:< 670 W (at 100 VAC),< 660 W (at 200 VAC),
	BTU Rating	Maximum	For 550 W Power Supply:2201 BTU/hr (at 100 VAC),2153 BTU/hr (at 200 VAC)
	Power Specifications	To review typical system power ratings use the Power Advisor which is available via the online tool located at: **http://www.hpe.com/info/hppoweradvisor** - Click on the system of interest. Example: ML150 Gen9-Follow the instructions of the next screens.	
	Power Supply Output	Rated Steady-State Power	For 550 W Power Supply:550 W (at 100 VAC),550 W (at 200 VAC)
		Maximum Peak Power	For 550 W Power Supply:550 W (at 100 VAC),550 W (at 200 VAC)
	System Inlet Temperature	Standard Operating Support	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°Cper 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 20°C/hr (36°F/hr). The upper limit and rate of change may be limited by the type and number of options installed. System performance during standard operating support may be reduced if operating with a fan fault or above 30°C (86°F).
		Extended Ambient Operating Support	For approved hardware configurations, the supported system inlet range is extended to be: 5° to 10°C (41° to 50°F) and 35° to 40°C (95° to 104°F) at sea level with an altitude derating of 1.0°C per every 175m (1.8°F per every 574 ft) above 900 m (2953 ft) to a maximum of 3048m (10,000 ft). The approved hardware configurations for this system are listed at the URL: **http://www.hpe.com/servers/ashrae** For approved hardware configurations, the supported system inlet range is extended to be: 40° to 45°C (104° to 113°F) at sea level with an altitude derating of 1.0°C per every 125 m (1.8°F per every 410 ft) above 900 m (2953 ft) to a maximum of 3048 m (10,000 ft). The approved hardware configurations for this system are listed at the URL: **http://www.hpe.com/servers/ashrae** System performance may be reduced if operating in the extended ambient operating range or with a fan fault.

Technical Specifications

		NOTE: Supports A3 extended ambient, A4 extended ambience will be available in early 2015.
	Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
Relative Humidity	Operating	Minimum to be the higher (more moisture) of -12°C (10.4°F) dew point or 8% relative humidity. Maximum to be the lower (less moisture) of24°C (75.2°F) dew point or 90% relative humidity.
	Non-operating	5% to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
Altitude	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 457m/min (1500 ft/min).
	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457m/min (1500 ft/min).
Acoustic Noise	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).	
	Idle	
	L WAd	3.8 Bels (1P LFF Non Hot-Plug Entry) 3.8 Bels (1P LFF Hot-plug Base) 4.3 Bels (1P SFF Hot-plug Performance)
	L pAm	22 dBA (1P LFF Non Hot-Plug Entry) 22 dBA (1P LFF Hot-plug Base) 25 dBA (1P SFF Hot-plug Performance)
	Operating	
	L WAd	3.8 Bels (1P LFF Non Hot-Plug Entry) 3.8 Bels (1P LFF Hot-plug Base) 4.1 Bels (1P SFF Hot-plug Performance)
	L pAm	23 dBA (1P LFF Non Hot-Plug Entry) 22 dBA (1P LFF Hot-plug Base) 25 dBA (1P SFF Hot-plug Performance)
	NOTE: Configurations tested for 1P LFF Entry models included two (2) 500GB LFF SATA Midline HDD and Windows 2012 Enterprise 64-bit. **NOTE:** Configurations tested for 1P and 2P SFF models included two (2) 500GB SFF 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.	
Emissions Classification	FCC Rating	Class A
	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.	

HPE Dynamic Smart Array B140i Controller	**Number of PCI links**	Four
	PCI link rate	4Gb/s

Technical Specifications

	Storage protocol support	SATA
	SAS/SATA peak data transfer rate	6Gb/s
	Number of SAS/SATA links	10 links
	SAS/SATA connectivity	2x4 connectors; 2x1 connectors
	Expander support	No
	Drives supported (max)	Up to 10 Internal Drives
	RAID support	0, 1, 10, 5 SATA
	Software management	HPE SSA, SMH, SIM
	Warranty	Server warranty
	HPE Secure Encryption license	Not Supported
	HPE SmartCache License	Not Supported
	HPE Smart Storage Administrator	Supported
HPE Ethernet 1Gb 4-port 331i Adapter	**Network Interface**	10Base-T/100Base-TX/1000Base-TX
	Compatibility	IEEE 802.3 10Base-T IEEE 802.3ab 1000Base-T IEEE 802.3u 100Base-TX
	Data Transfer Method	PCI Express, two lanes (x2)
	Controller	BCM5717
	Network Transfer Rate	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 100Base-TX (Half-Duplex) 1000 Mb/s per port, 4000 Mb/s combined 100Base-TX (Full-Duplex) 2000 Mb/s per port, 8000 Mb/s combined
	Connector	RJ-45
	Cable Support	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)

Technical Specifications

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
2-Apr-2018	Version 28	Removed	Obsolete SKUs were removed from the QuickSpecs.
4-Dec-2017	Version 27	Added	Added new HPE 12TB SATA 7.2K LFF HDD and HPE RDX 4TB USB 3.0 External/ Internal Disk Backup System.
25-Sep-2017	Version 26	Added	Added new Solid State Drives offering to the HPE Drives section.
		Changed	Obsolete SKUs were removed from the QuickSpecs.
7-Aug-2017	Version 25	Added	Added new Solid State Drives offering to the HPE Drives section.
11-Jul-2017	Version 24	Added	Added support for HPE OneView Standard version 3.1.
5-Jun-2017	Version 23	Added	Added new Solid State Drives offering to the HPE Drives section.
8-May-2017	Version 22	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 21	Added	Added new Hard Drives.
13-Feb-2017	Version 20	Added	Added new HDD and SSD offering to the HPE Drives section.
28-Nov-2016	Version 19	Added	Added new Hard Drives offering.
		Changed	Maximum Internal Storage was revised.
		Removed	Obsolete SKUs were removed from the QuickSpecs.
28-Oct-2016	Version 18	Removed	Obsolete Hard Drives were removed from the QuickSpecs.
26-Sep-2016	Version 17	Added	Added new SATA LFF hard drives offering.
		Changed	Maximum Internal Storage and Pre-configured Models were revised.
		Removed	Obsolete SKUs were removed from the QuickSpecs.
15-Aug-2016	Version 16	Changed	SmartBuy model 860119-S01 was revised.
24-Jun-2016	Version 15	Changed	Tower weight under Technical Specifications was revised.
6-Jun-2016	Version 14	Added	Added new HPE Drives, and HPE Disk Backup options.
		Changed	Maximum Internal Storage, Upgradeability, HPE Power Supplies, and Storage were revised.
6-May-2016	Version 13	Changed	Maximum Internal Storage, Upgradeability, Memory, and HPE Drives were revised.
8-Apr-2016	Version 12	Changed	HPE Processors section was revised.
31-Mar-2016	Version 11	Added	Added Intel Xeon E5-2600 v4 Processor support, new HPE Gen9 Standard Memory, and new HPE 900W AC 240VDC Redundant Power.
		Changed	Maximum Internal Storage, Power Supplies, Embedded Management, Service and Support, Pre-configured Models, and Memory were revised.
		Removed	Obsolete SKUs were removed from the QuickSpecs.
16-Feb-2016	Version 10	Added	New HDD offering was added to HPE Drives.
		Changed	HPE Power Supplies, HPE Disk Backup, and HPE Power Distribution Units (PDUs) were revised.
		Removed	Obsolete SKUs were removed from the QuickSpecs.
8-Jan-2016	Version 9	Added	New Smart Buy model was added to the NA version only.
1-Dec-2015	Version 8	Changed	On System Management Chipset, Embedded Management, Server utilities, and HPE Tape Backup were revised. Product images were updated.
		Removed	Obsolete SKUs were removed from the QuickSpecs.
28-Sep-2015	Version 7	Added	Added new 6Gb SATA Solid State Drives.
		Removed	Obsolete SKUs were removed from the QuickSpecs.
17-Aug-2015	Version 6	Added	New Solid State Drives offering.

Summary of Changes

			Added new graphic options.
		Changed	Service and Support was updated. Maximum Storage was revised.
		Removed	Obsolete SKUs were removed from the QuickSpecs.
1-Jun-2015	Version 5	Added	New Hard Drives were added to Core Options. New RDX+ external backup options were added.
		Changed	Standard Features and HPE Power Supplies were revised.
		Removed	Obsolete SKUs were removed from the QuickSpecs.
24-Apr-2015	Version 4	Added	Added 813534-B21 and 813535-B21 to HPE Power Supplies.
30-Mar-2015	Version 3	Added	New Hard Drives offering. Optional Software added to HPE Storage Controllers. Added HPE Smart Array P841/4GB FBWC 12Gb 4-ports Ext SAS Controller.
		Changed	HPE Memory and HPE Disk Storage Systems were updated.
2-Sep-2014	Version 2	Added	Added HPE Insight Software section and Network controller sections. Added new HPE Drives and new G4 UPS models.
		Changed	HPE Processors, HPE Memory, HPE Drives, HPE Tape Backup, HPE Disk Backup, HPE Rack Mount Consoles, KVM Switches, and Keyboards, HPE Uninterruptible Power Systems (UPS), and HPE USB and SD Options were updated.
1-Dec-2014	Version 1	New	New QuickSpecs.

hpe.com/qref/ml150gen9

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Hewlett Packard Enterprise

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

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