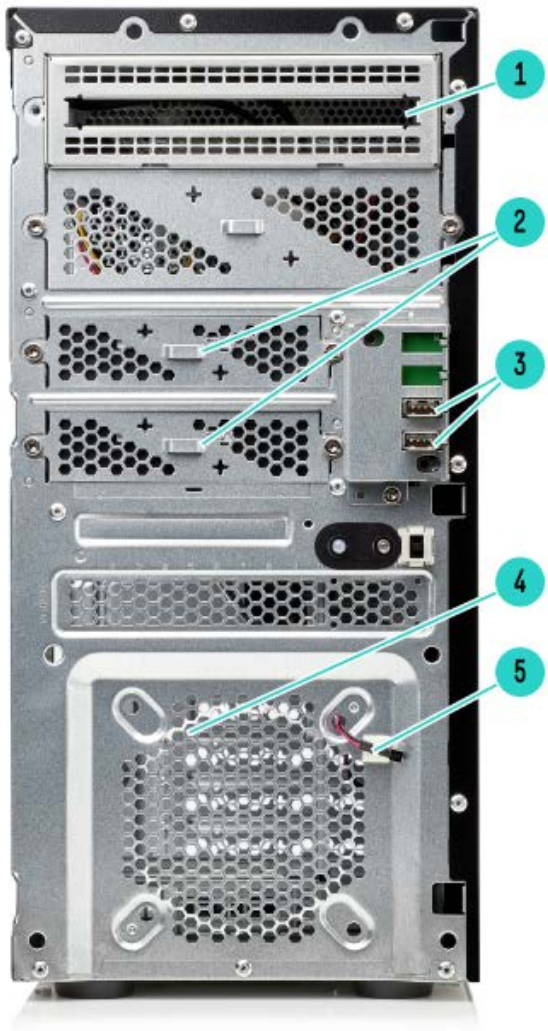
RETIRED: This document has been officially retired, and the base products listed herein are now considered obsolete and are no longer available for sale. Consequently, the information contained within may no longer be current. This document is provided exclusively for reference and informational purposes.

Overview

HPE ProLiant ML10 Generation9 (Gen9)

HPE ProLiant ML10 Gen9, delivers a full featured single-socket tower server with the right features at a competitive price, easy to use and maintain for growing small businesses and remote branch offices.



Front View (details for 4LFF)

1. Media Bay
2. Hard drive bays

Overview

NOTE: To install HDD, must:

a. Power down the server.
b. Remove all power.
c. Disconnect each power cord from the power source.
d. Remove the access panel.
e. Remove the tower bezel.
f. Remove the EMI shield.

3. USB 2.0 connectors
5. Ambient temperature sensor

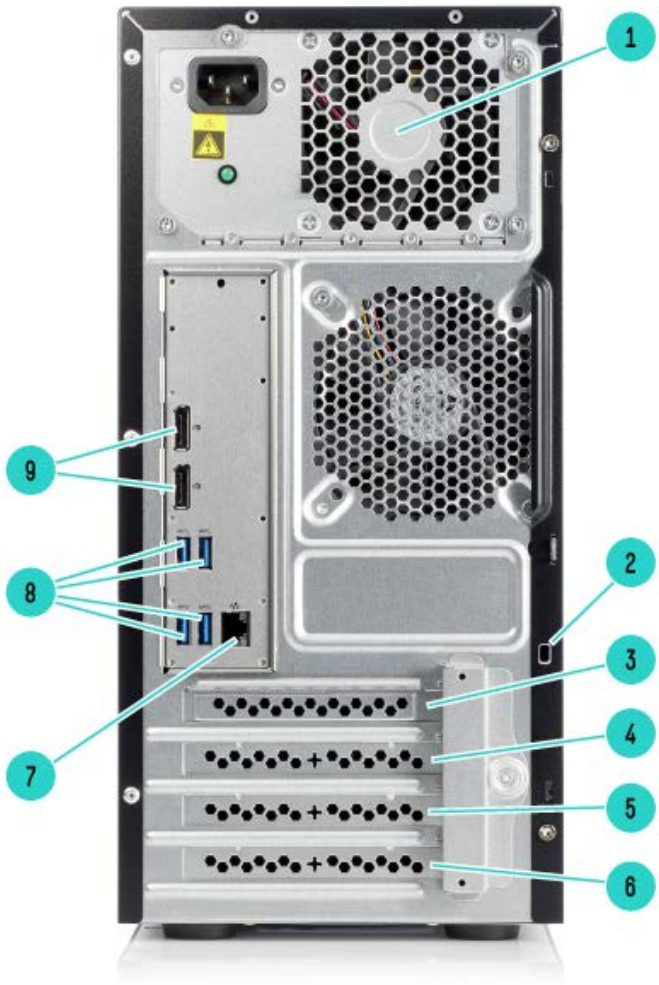
4. Drive cage

NOTE: To install HDD, must:

a. Power down the server.
b. Remove all power.
c. Disconnect each power cord from the power source.
d. Remove the access panel.
e. Remove the tower bezel.

Remove the EMI shield.

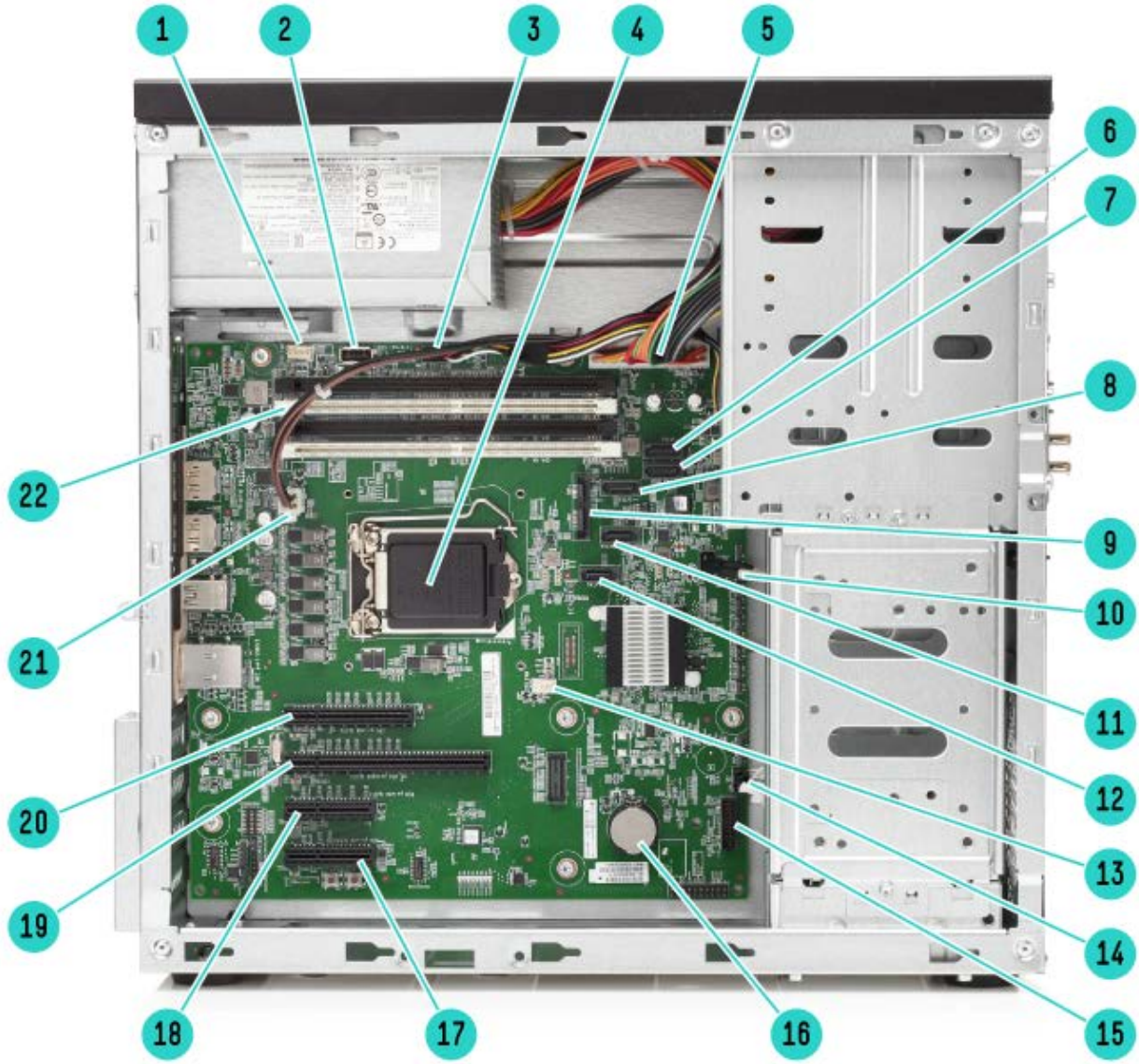
Overview



Rear View

1. Power Supply
2. Kensington security slot
3. Slot 1, PCIe3 x 8 (8,4,1)
   NOTE: For more information on the expansion slot specifications, see PCIe expansion slot definitions.
4. Slot 2, PCIe3 x 16 (16, 8, 4, 1)
   NOTE: For more information on the expansion slot specifications, see PCIe expansion slot definitions.
5. Slot 3, PCIe3 x 4 (4,1)
   NOTE: For more information on the expansion slot specifications, see PCIe expansion slot definitions.
6. Slot 4, PCIe3 x 4 (1)
   NOTE: For more information on the expansion slot specifications, see PCIe expansion slot definitions.
7. NIC connector
8. USB 3.0 connectors
9. Display ports
   NOTE: To connect to a VGA monitor, a DisplayPort to VGA Active Dongle is required.
   NOTE: Video output is design for DisplayPort 1.2.

Overview



Internal View

1. System fan connector
2. Internal USB 2.0 connector
3. Front LEDs and power button module connector
4. Processor
5. 24-pin power supply connector
6. SATA connector 1
7. SATA connector 2
8. SATA connector 3
9. Optical drive connector
10. Front USB connector
11. SATA connector 4
12. SATA connector 5
13. Heatsink fan connector
14. Ambient temperature sensor connector
15. TPM connector
16. System battery
17. Slot 4, PCIe3 x 4 (1)
    NOTE: For more information on the expansion slot specifications, see PCIe expansion slot definitions.
18. Slot 3, PCIe3 x 4 (4,1)
    NOTE: For more information on the expansion slot specifications, see PCIe expansion slot definitions.
19. Slot 2, PCIe3 x 16 (16,8,4,1)
    NOTE: For more information on the expansion slot specifications, see PCIe expansion slot definitions.
20. Slot 1, PCIe3 x 8 (8,4,1)
    NOTE: For more information on the expansion slot specifications, see PCIe expansion slot definitions.
21. 4-pin power connector
22. DIMM slots

Overview

What's New

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

Standard Features

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

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

Processor
One of the following depending on model

Model	CPU frequency	Cores	L3 Cache	Power	DDR4 Hz
G4400	3.3GHz	2	3MB	54W	2133
E3-1225v5	3.3GHz	4	8MB	80W	2133

Cache Memory
One of the following depending on model

8MB (1 x 8MB) Level 3 cache

NOTE: For Quad-core Intel Xeon® processors.

3MB (1 x 3MB) Level 3 cache

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

Chipset

Intel® C236 Chipset

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

On System Management Chipset

Intel® Active Management Technology (Intel® AMT 11.0)

NOTE: The server supports the Intel Standard Manageability when the Intel Pentium or Core i3 processor is installed. The server supports Intel AMT when the Intel Xeon processor is installed in the system.

NOTE: For more information, visit: **http://www.intel.com/technology/platform-technology/intel-amt**

Memory

Type:
DDR4 Unbuffered (UDIMM)

DIMM Slots Available	4	4 DIMMs (2 Channels/ 2 DIMMs per channel)
Maximum Capacity (UDIMM)	64GB	(4 x 16GB UDIMM @2133MHz)

NOTE: For information regarding HPE Server Memory visit: **http://www.hp.com/go/memory**.

Memory Protection

ECC

Network Controller

Intel® Ethernet Connection I219-LM

Expansion Slots

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

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

Storage Controller
One of the following depending on model

Entry Models	Intel RST SATA RAID
Performance Models	Intel RST SATA RAID

Standard Features

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:** When install ODD, HDD can support up to 5 drives. **NOTE:** To install ODD, must purchase HPE ML10 Gen9 Slim ODD Enablement Kit (#836742-B21).
	Hard Drives	1 x1TB HPE LFF SATA HDD included in Performance Model
	Hard Drive Bays	4 LFF Non-hot plug SATA 3.5" drives Up to 6 LFF Non-hot plug SATA 3.5" drives **NOTE:** HPE ML10 Gen9 HDD Cable Screw Kit (#841425-B21) is required if install the 5th drive. If the 6th drive is required, must purchase HPE ML10 Drive Enablement Kit (#836739-B21).

Maximum Internal Storage		**CAPACITY**	**CONFIGURATION**
	Non Hot Plug LFF SATA	24TB	6x4 TB

Power Supply	300W Multi-Output Power Supply **NOTE:** HPE Entry-Level Power Supplies provide lower-cost options for customers trying to balance their need for enterprise class efficiency and reliability while maintaining lowest possible hardware costs. All Entry-Level power supply options have been designed specifically for HPE ProLiant Gen9 Essential Series servers. Power Specification and Technical Content for supported power supplies can be found at: **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111541**.

Required Cabling	**Server Power Cords** The ProLiant ML10 Gen9 server is a tower server that ships standard with below power cords: AMS: US AP: AU/UK/India/Taiwan/Thailand Japan: JP CN: CN EMEA: EU/UK If customers require additional local power cords, they can check the power cord matrix for the appropriatecountry specific SKU.

System Fans One of the following depending on model		**Non-redundant**	**Redundant**
	1P model	One (1) Non-redundant system fan	

Interfaces	Display Port	2 (rear)
	NOTE: To connect to a VGA monitor, a DisplayPort to VGA Active Dongle is required. **NOTE:** Video output is design for DisplayPort 1.2.	
	Network RJ-45 (Ethernet)	1 (rear)
	USB 3.0	4 (4 rear)
	USB 2.0	3 (2 front, 1 internal)

Operating Systems and Virtualization	**Microsoft Windows Server** **Red Hat Enterprise Linux (RHEL)**

Standard Features

Software Support for ProLiant Servers	**SUSE Linux Enterprise Server (SLES)** **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 HPE's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: **http://www.hpe.com/info/ossupport** and our **driver download page**.
Upgradeability	Up to 6LFF Non-hot plug SATA 3.5" drives **NOTE:** HPE ML10 Gen9 HDD Cable Screw Kit (#841425-B21) is required if install the 5th drive. If the 6th drive is required, must purchase HPE ML10 Drive Enablement Kit (#836739-B21). Optical Drive Bay **NOTE:** When install ODD, HDD can support up to 5 drives. **NOTE:** To install ODD, must purchase HPE ML10 Gen9 Slim ODD Enablement Kit (#836742-B21).
Industry Standard Compliance	PCIe 3.0 Compliant PXE Support Microsoft® Logo certifications USB 2.0 /3.0 Support
Graphics	GPU Support (Xeon Only) **NOTE:** Embedded GPU support for Xeon processor only.
Form Factor	Up to 6LFF Drive
Security	Power-on password Setup password Power switch security Administrator's password TPM 1.2 TPM 2.0 **NOTE:** HPE Trusted Platform Module 2.0 Option (745823-B21) works with Gen9 servers with UEFI Mode not Legacy Mode. It is not compatible with HPE ProLiant Gen8 servers or earlier generation variants. HPE Gen9 servers purchased earlier may need the latest firmware update to be compatible with the TPM 2.0 Option. The earlier HPE Trusted Platform Module Option (488069-B21) is the TPM 1.2 version, which is also available however TPM 2.0 has newer technology standards incorporated. The TPM 1.2 compatible server platforms include Gen8 and Gen9 servers. HPE server systems can have a TPM module (of any type) installed only once. It cannot be replaced with any other TPM module. UEFI
Warranty	**NOTE:** Server Warranty includes 1-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

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: **http://www.hp.com/techservers/clusters/ucp/index.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. **NOTE:** For more information on ClearOS, please visit **http://www.hpe.com/servers/clearos**.
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 – HPE CSC reports 2014 - 2015

Recommended Support

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

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

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

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

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

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

Optimized: HPE Foundation Care CTR, three-year Support Service

HPE Foundation Care Call-To-Repair Service connects you to Hewlett Packard Enterprise 24 hours a day, seven days a week for assistance on resolving issues -this includes our highest level commitment to repair hardware within six hours after opening your case and respond to software questions within two hours. Hewlett Packard Enterprise is the only leading manufacturer who makes this level of coverage available as a standard service offering for your most valuable servers. In addition, Collaborative software support is included and provides troubleshooting assistance on industry leading software running on your 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

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.

Service and Support

Related Services

HPE Server Hardware Installation
Provides for the basic hardware installation of Hewlett Packard Enterprise branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner.
https://www.hpe.com/h20195/V2/GetPDF.aspx/5981-9356EN.pdf

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

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

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

For more information: **http://www.hpe.com/services**

Pre-configured Models

1. Pre-configured models ship with the configurations below. Options can be selected from the Core or Additional options section of this QuickSpecs.
2. Not all models are available in all regions. Check with your local country Hewlett Packard Enterprise offices for availability.

	Entry Models	Performance Models
[SKU Number]	837826-xx1	837829-xx1
Model Name	HPE ProLiant ML10 Gen9 G4400 4GB-R Non-hot Plug 4LFF SATA 300W Entry Svr	HPE ProLiant ML10 Gen9 E3-1225 v5 8GB-R 1TB Non-hot Plug 4LFF SATA 300W Perf Svr
Processor	Intel® Pentium® G4400	Intel® Xeon® E3-1225v5
Number of Processors	One	
Memory	4GB (1x4GB UDIMMs, 2133 MHz)	8GB (1x8GB UDIMMs, 2133 MHz)
Network Controller	Intel® Ethernet Connection I219-LM	
Storage Controller	Intel RST SATA RAID	
Hard Drive	None ship standard	1 x 1TB
Internal Storage	4 LFF HDD Bays (Non Hot Plug)	
Optical Drive Bay	Optional Slim Optical Bay (SATA DVD-RW/ROM Optical Drive)	
Optical Drive	HPE Half-Height SATA DVD-RW/ROM Optical Drive	Optional Slim Optical Bay (SATA DVD-RW/ROM Optical Drive)
PCI-Express Slots	4 PCIe 3.0 slots	
Power Supply	300W Multi-Output Power Supply	
Fans	1 non hot plug, non-redundant	
Management	Intel Standard Management	Intel® Active Management Technology (Intel AMT 11.0)
Form Factor	Tower (4U)	
Warranty	Server Warranty includes 1-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response	

Country Code Key

xx1 = B21	Worldwide
xx1 = 001	US
xx1 = 421	EU
xx1 = 371	AP
xx1 = 291	Japan
xx1 = AA1	PRC

NOTE: Not all models are available in all regions. Check with your local country Hewlett Packard Enterprise offices for availability.

Core Options

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

HPE Unique Options	HPE ML10 Gen9 Drive Enablement Kit	836739-B21
	NOTE: HPE ML10 Gen9 Drive Enablement Kit is required if install 6th HDD.	
	HPE ML10 Gen9 Slim ODD Enablement Kit	836742-B21
	NOTE: HPE ML10 Gen9 Slim ODD Enablement Kit is required if install ODD.	
	HPE ML10 Gen9 HDD Cable Screw Kit	841425-B21
	NOTE: HPE ML10 Gen9 HDD Cable Screw Kit (#841425-B21) is required if install the 5th drive. If the 6th drive is required, must purchase HPE ML10 Drive Enablement Kit (#836739-B21).	
HPE Memory	**NOTE:** For information regarding HPE Server Memory visit: **http://www.hp.com/products/memory**.	
	Unbuffered DIMMs (UDIMMs)	
	HPE 4GB (1x4GB) Single Rank x8 DDR4-2133 CAS-15-15-15 Unbuffered Standard Memory Kit	805667-B21
	HPE 8GB (1x8GB) Dual Rank x8 DDR4-2133 CAS-15-15-15 Unbuffered Standard Memory Kit	805669-B21
	HPE 16GB (1x16GB) Dual Rank x8 DDR4-2133 CAS-15-15-15 Unbuffered Standard Memory Kit	805671-B21
	HPE 8GB (1x8GB) Single Rank x8 DDR4-2133 CAS-15-15-15 Unbuffered Standard Memory Kit	819880-B21
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
	HPE ML10 Gen9 Slim ODD Enablement Kit	836742-B21
HPE Drives	**NOTE:** The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components. **NOTE:** Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details. **NOTE:** HPE ML10 Gen9 HDD Cable Screw Kit (#841425-B21) is required if install the 5th drive. **NOTE:** HPE ML10 Gen9 Drive Enablement Kit (#836739-B21) is required if install the 6th drive.	
	6G SATA Non-hot Plug LFF 7.2K (3.5-inch) Entry Drives	
	HPE 500GB SATA 6G Midline 7.2K LFF (3.5in) RW 1yr Wty HDD	843264-B21
	HPE 1TB SATA 6G Midline 7.2K LFF (3.5in) RW 1yr Wty HDD	843266-B21
	HPE 2TB SATA 6G Midline 7.2K LFF (3.5in) RW 1yr Wty HDD	843268-B21
	HPE 3TB SATA 6G Midline 7.2K LFF (3.5in) RW 1yr Wty HDD	843270-B21
	6G SATA Non-hot Plug LFF 7.2K (3.5-inch) Standard Drives	
	HPE 1TB SATA 6G Midline 7.2K LFF (3.5in) RW 1yr Wty HDD	801882-B21
	HPE 2TB SATA 6G Midline 7.2K LFF (3.5in) RW 1yr Wty HDD	801884-B21
	HPE 4TB SATA 6G Midline 7.2K LFF (3.5in) RW 1yr Wty HDD	801888-B21

Core Options

	6G SATA Non-hot Plug LFF 5.9K (3.5-inch) Entry Drives	
	HPE 4TB SATA 6G Entry 5.9K LFF (3.5in) RW 1yr Wty HDD	815635-B21
	Hard Drive Kits	
	HPE ML10 Gen9 Drive Enablement Kit	836739-B21
	HPE ML10 Gen9 HDD Cable Screw Kit	841425-B21
HPE Networking	**1 Gigabit Ethernet adapters**	
	HPE Ethernet 1Gb 4-port 331T Adapter	647594-B21
	HPE Ethernet 1Gb 2-port 332T Adapter	615732-B21
	HPE Ethernet 1Gb 2-port 361T Adapter	652497-B21

Additional Options

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

HPE Security	HPE Trusted Platform Module 2.0 Kit	745823-B21
	HPE Trusted Platform Module Option	488069-B21
	NOTE: HPE Trusted Platform Module 2.0 Option (745823-B21) works with Gen9 servers with UEFI Mode not Legacy Mode. It is not compatible with HPE ProLiant Gen8 servers or earlier generation variants. HPE Gen9 servers purchased earlier may need the latest firmware update to be compatible with the TPM 2.0 Option. The earlier HPE Trusted Platform Module Option (488069-B21) is the TPM 1.2 version, which is also available however TPM 2.0 has newer technology standards incorporated. The TPM 1.2 compatible server platforms include Gen8 and Gen9 servers. 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	**HPE Host Bus Adapters**	
	HPE H241 12Gb 2-ports Ext Smart Host Bus Adapter	726911-B21
	NOTE: Only require when install External Tape Drive.	
HPE Tape Backup	**NOTE:** For the complete range of tape drives, autoloaders, libraries and media see: **http://www.hp.com/go/tape**. For hardware and software compatibility of HPE tape backup products see: **http://www.hp.com/storage/SPOCK** and **http://www.hp.com/go/ebs**.	
	NOTE: Limited to H241 when select Tape Drive.	
	Tape Drives	
	HPE StoreEver LTO-6 Ultrium 6250 External Tape Drive	EH970A
	HPE StoreEver LTO-5 Ultrium 3000 SAS External Tape Drive	EH958B
HPE Uninterruptible Power Systems (UPS)	**HPE Tower UPS**	
	HPE T750 G4 UPS Models	
	HPE T750 G4 NA/JP Uninterruptible Power System	J2P85A
	HPE T1000 G4 UPS Models	
	HPE T1000 G4 NA/JP Uninterruptible Power System	J2P86A
	HPE T1500 G4 UPS Models	
	HPE T1500 G4 NA/JP Uninterruptible Power System	J2P87A
	NOTE: To learn more, please visit the **HPE Uninterruptible Power Systems (UPS) web page**.	
HPE Rack Mount Consoles, KVM Switches, and Keyboards	**HPE USB Keyboard and Mouse**	
	HPE USB US Keyboard/Mouse Kit	631341-B21
	HPE USB UK Keyboard/Mouse Kit	631344-B21
	HPE USB FR Keyboard/Mouse Kit	631346-B21
	HPE USB ES Keyboard/Mouse Kit	631348-B21

Additional Options

HPE USB DE Keyboard/Mouse Kit	631358-B21
HPE USB JP Keyboard/Mouse Kit	631360-B21
HPE USB IT Keyboard/Mouse Kit	631362-B21
HPE USB CN Keyboard/Mouse Kit	631364-B21
HPE USB AE Keyboard/Mouse Kit	638212-B21
HPE USB RU Keyboard/Mouse Kit	638214-B21
HPE USB IN Keyboard/Mouse Kit	672097-D63
HPE USB AP/INTL Keyboard/Mouse Kit	672097-373
HPE USB INTL Keyboard/Mouse Kit	672097-B33
HPE USB PT Keyboard/Mouse Kit	672097-133
HPE USB TR Keyboard/Mouse Kit	672097-143
HPE USB CZ Keyboard/Mouse Kit	672097-223
HPE USB FI Keyboard/Mouse Kit	672097-353
HPE USB SE Keyboard/Mouse Kit	672097-103
HPE USB CH Keyboard/Mouse Kit	672097-113
HPE USB KR Keyboard/Mouse Kit	672097-KD3

HPE Support Services

Foundation Care	
HPE 3 year Foundation Care Next business day ML10 Gen9 Service	H1RN5E
HPE 3 year Foundation Care Next business day with DMR ML10 Gen9 Service	H1RN6E
HPE 3 year Foundation Care 24x7 ML10 Gen9 Service	H1RN7E
HPE 3 year Foundation Care 24x7 with DMR ML10 Gen9 Service	H1RN8E
HPE 3 year Foundation Care Call to Repair ML10 Gen9 Service	H1RN9E
HPE 3 year Foundation Care Call to Repair with DMR ML10 Gen9 Service	H1RP0E
HPE 3 year Foundation Care Next business day with CDMR ML10 Gen9 Service	H1RQ3E
HPE 3 year Foundation Care 24x7 with CDMR ML10 Gen9 Service	H1RQ4E
HPE 3 year Foundation Care Call to Repair with CDMR ML10 Gen9 Service	H1RQ5E
HPE 3 year Foundation Care Next business day ML10v2 Service	U2GU0E
HPE 3 year Foundation Care Next business day with DMR ML10v2 Service	U2GU1E
HPE 3 year Foundation Care Next business day with CDMR ML10v2 Service	U2GU2E
HPE 3 year Foundation Care 24x7 ML10v2 Service	U2GU3E
HPE 3 year Foundation Care 24x7 wDMR ML10v2 Service	U2GU4E
HPE 3 year Foundation Care 24x7 wCDMR ML10v2 Service	U2GU5E
Proactive Care	
HPE 3 year Proactive Care 24x7 ML10v2 Service	U0SC5E
Installation Services	
HPE Install ProLiant ML110 Service	U4444E

Memory

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

HPE Standard Memory

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

DDR4 memory population guidelines

For detailed memory configuration rules and guidelines, please use the Online DDR4 Memory Configuration Tool: **http://h22195.www2.hp.com/MemoryTool/Home/SelectServer**.

Memory Population guidelines



General Memory Population Rules and Guidelines:

- The HPE ProLiant ML10 Gen9 Server has four memory slots
- There are two channels per server with two DIMM slots per channel
- Memory channel consists of the two (2) DIMMs that are closest to the processor
- Memory channel consists of the two (2) DIMMs that are furthest from the processor
- Support for single/dual-rank 2133 MT/s ECC UDIMM (unbuffered DIMMS)
- The server supports up to 64 GB (4 x 16-GB) for Unbuffered DIMMs
- When only one processor is installed, install DIMMs in sequential alphabetic order: 3C, 1D, 4A, 2B
- No support for LRDIMMs; RDIMMs; Non-ECC UDIMMs
- Do not install DIMMs if the processor is not installed
- Populate DIMMs from heaviest load (double-rank) to lightest load (single-rank)
- DIMMs should be populated starting farthest from the processor on each channel
- Non-ECC DIMMs are not supported
- Always use HPE qualified DIMMs

Memory

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

Memory Bandwidth and Capacity				
[DIMM Type]	**Unbuffered with ECC DIMMs (UDIMMs)**			
HPE SKU P/N	805667-B21	819880-B21	805669-B21	805671-B21
DIMM Rank	Single Rank	Single Rank	Dual Rank	Dual Rank
DIMM Capacity	4GB	8GB	8GB	16GB
Voltage	Std Voltage 1.2V	Std Voltage 1.2V	Std Voltage 1.2V	Std Voltage 1.2V
DIMM Native Speed (MT/s)	2133	2133	2133	2133
SLOTS THAT CAN BE POPULATED				
4 slot servers	4	4	4	4
MAXIMUM CAPACITY (GB)				
	16	32	32	64
POPULATED DIMM SPEED (MT/s)				
1 DIMM Per Channel	2133	2133	2133	2133
2 DIMM Per Channel	2133	2133	2133	2133
3 DIMM Per Channel				

DIMM slot and configuration diagram

Standard memory replaced with optional memory (1 CPU model)

- When one processor is installed, install DIMMs in sequential alphabetic order: 3C, 1D, 4A, 2B

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

	CPU 1		CPU 2	
	Slot #	Population order	Slot #	Population order
Chnl 2	3	C	3	C
	4	A	4	A

Memory Speed by Processor Model

Processor Models	Supported Memory Speeds
G4400, E3-1225v5	2133MT/s

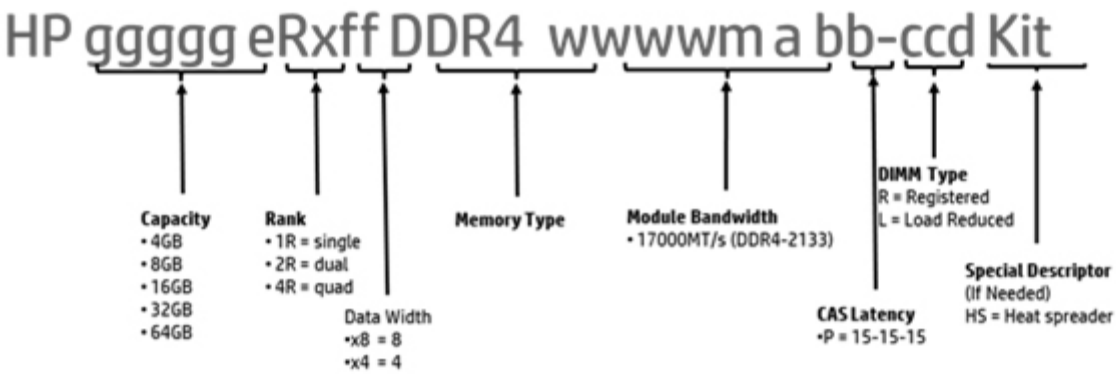
Memory

Standard and Maximum Memory Capacity (Pre-configured Models)	Pre Configured Models	Standard Memory	Maximum Memory Plus Optional Memory	Standard Memory Replaced with Optional Memory
	G4400	4GB (1x4GB)	52GB (3x16GB, 1x4GB)	64GB (4x16GB)
	E3-1225v5	8GB (1x8GB)	56GB (3x16GB, 1x8GB)	64GB (4x16GB)

DDR4 memory options part number decoder

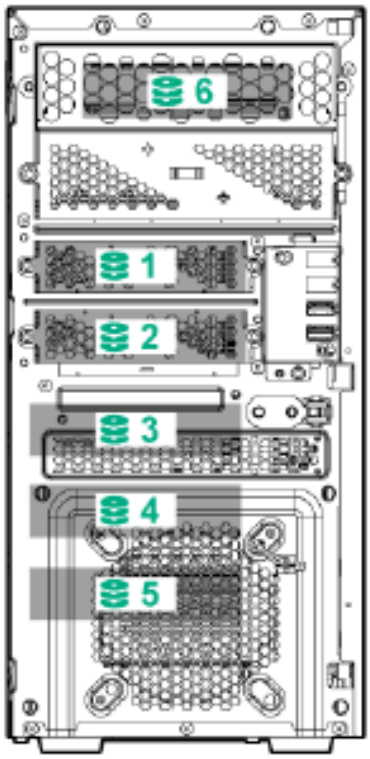
NOTE: Capacity references are rounded to the common gigabyte (GB) values.

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



Storage

Max 6 LFF non-hot-plug drive model



1-5	5 x LFF SATA Non-hot-plug Hard Drive Bays **NOTE:** HPE ML10 Gen9 HDD Cable Screw Kit (#841425-B21) is required if install the 5th drive.
6	6 LFF SATA Non-hot plug Hard Drive Bay **NOTE:** If requires the 6th drive, must purchase HPE ML10 Drive Enablement Kit (#836739-B21). **NOTE:** When install ODD, HDD can support up to 5 drives. **NOTE:** To install ODD, must purchase HPE ML10 Gen9 Slim ODD Enablement Kit (#836742-B21).

Maximum Storage Capacity

Total (4 LFF Drive)	16 TB
Max (6 LFF Drive)	24 TB

Technical Specifications

System Unit	**Tower Dimensions**	14.47(H) x 6.89(W) x 15.79(D) in (36.76 x 17.5 x 40.13 cm)	
	Tower Weight	Minimum:	14.7lb(6.68kg)
		Maximum:	24.29lb(11.04kg)
	Input Requirements	Rated Line Voltage	100-120 VAC/200-240 VAC
		Rated Input Current	6 A/ 4 A
		Rated Input Frequency	50/60 Hz
		Rated Input Power	333W at 115 V AC input
			333W at 230 V AC input
	BTU Rating	Maximum	1133.33 at 115 VAC /1133.33 at 230 VAC
	Power Supply Output	Rated Steady-State Power	300 W (at 115 VAC)
			300 W (at 230 VAC)
		Maximum Peak Power	300 W (at 115 VAC)
			300 W (at 230 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).
		Non-operating	-30C to 60C (-22F to 140F)
	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 24°C (75.2°F) dew point or 90% relative humidity.
		Non-operating	5% to 95% 38.7C (101.7F), maximum wet bulb temperature.
	Altitude	Operating	An altitude derating of 1.0°C per 304.8 m (1.8°F per 1000 ft) to3048 m (10,000 ft) is applicable. No direct sunlight allowed. Maximum rate of change is 20°C per hour (36°F per hour). The upper limit and rate of change might be limited by the type and number of options installed.
		Non-operating	
	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	
		LWAd	3.8 Bels
		LpAm	22 dBA
		Operating	
		LWAd	3.8 Bels

Technical Specifications

		LpAm	22 dBA
		NOTE: Configurations tested for LFF Pmodels include one (1) 1TB LFF SATA Midline HDD and Windows 2012 R2 64-bit.	
		NOTE: The Listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.	
	Emissions Classification (EMC)	FCC Rating	Class B
		Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1
		NOTE: Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.	
Intel RSTe SATA RAID	**Storage protocol support**	SATA	
	SAS/SATA peak data transfer rate	6Gb/s	
	Number of SAS/SATA links	6 links	
	SAS/SATA connectivity	6 connectors	
	Expander support	No	
	Drives supported (max)	Up to 6 Internal Drives	
	RAID support	0, 1, 10, 5 SATA	
	Software management	Intel RST utility	
	Warranty	Server warranty	
	HPE Secure Encryption license	Not Supported	
	HPE SmartCache License	Not Supported	
Intel® Ethernet Connection I219-LM	**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	Intel Ethernet Connection I219-LM	
	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
		1000Base-TX (Half and Full-Duplex)	1000 Mb/s per port, 4000 Mb/s combined
		1000Base-TX (Full-Duplex)	2000 Mb/s per port, 8000 Mb/s combined
	Connector	RJ-45	

Technical Specifications

	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)
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
11-Jul-2017	From Version 7 to 8	Changed	Operating Systems and Virtualization Software Support for ProLiant Servers section was revised.
8-May-2017	From Version 6 to 7	Added	Added ClearOS support.
13-Feb-2017	From Version 5 to 6	Changed	Smart Buy Models sections was revised for the NA version only.
28-Nov-2016	From Version 4 to 5	Changed	Maximum Storage Capacity and Internal Storage Devices were revised.
15-Aug-2016	From Version 3 to 4	Added	Added T750, T1000, T1500 G4 Tower UPS models.
		Changed	Interfaces section was revised.
6-Jun-2016	From Version 2 to 3	Changed	Memory, Upgradeability, and Storage were revised.
31-Mar-2016	From Version 1 to 2	Added	Added new Security TMP option.
		Changed	Security, Service and Support, and Pre-configured Models sections were revised.
		Removed	Obsolete SKUs were removed from the QuickSpecs.

hpe.com/qref/ml10gen9

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

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