# QuickSpecs

Overview

## HPE ProLiant ML110 Generation9 (Gen9)

The HPE ProLiant ML110 Gen9 Server is a 1P/ 4.5U affordable single-socket tower server featuring better performance, expansion, and growth than previous 1P single-socket tower models. Designed to meet small and midsized businesses' performance compute demands the ML110 Gen9 delivers exceptional value at an affordable price.
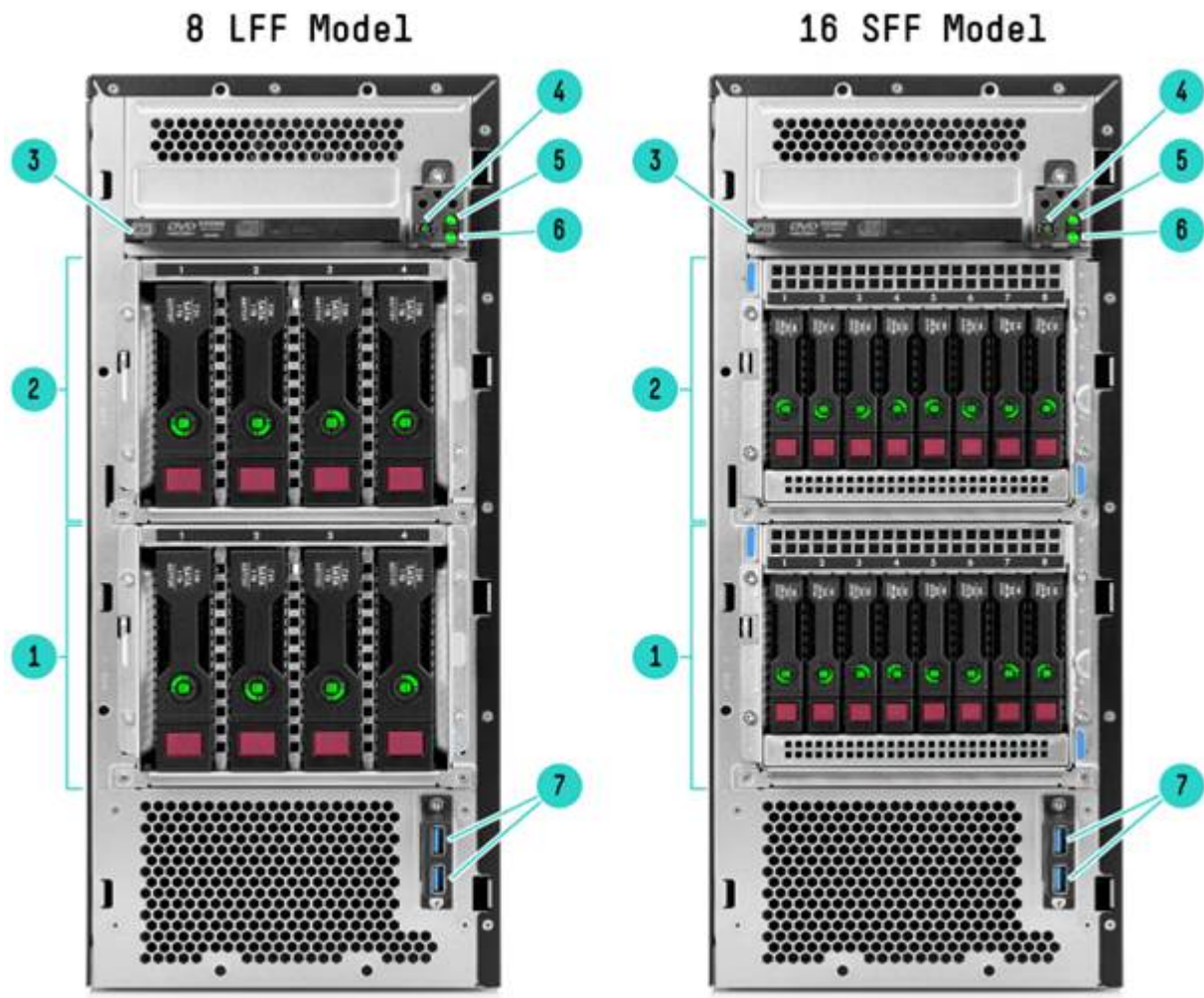
Front View (details for 8LFF and 16SFF)

1	Drive cage	2	Drive cage
3	Optical drive (optional)	4	Power button/LED
5	Health LED	6	NIC status LED
7	USB 3.0 (2) connectors		

QuickSpecs
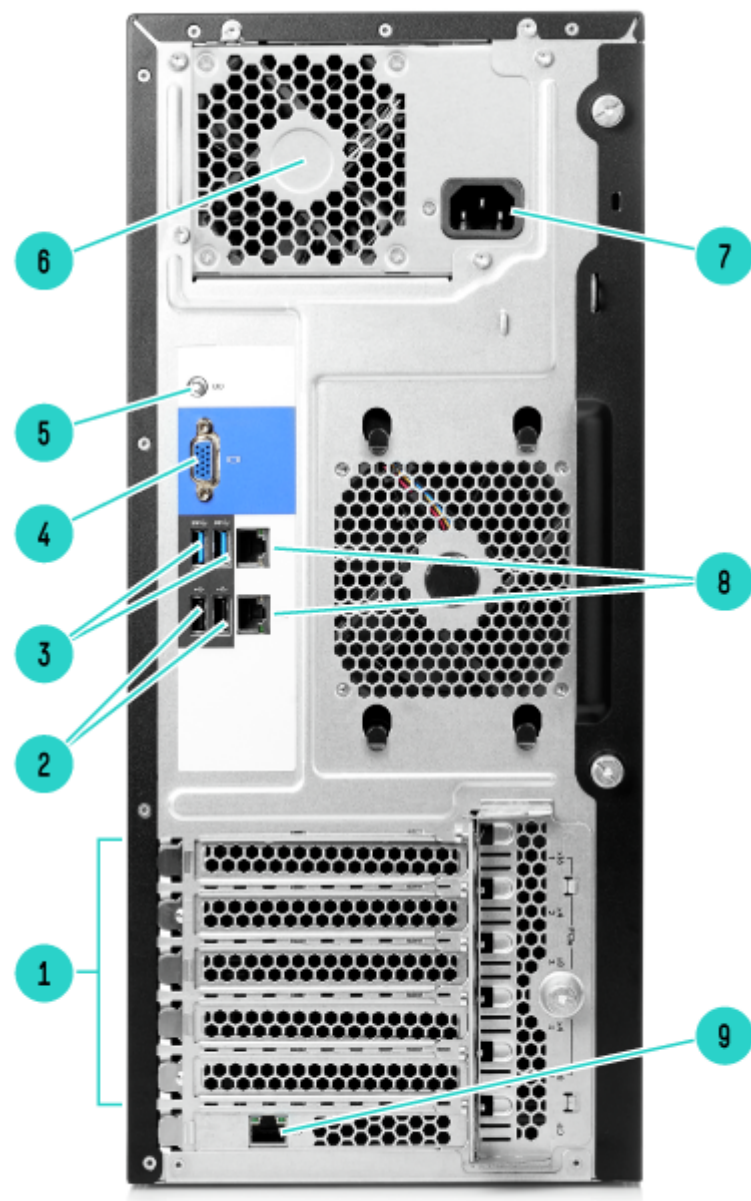
Overview

Rear View

1 PCIe3 Slots (Slots 1-5)
3 USB 3.0 (2) connectors
5 UID button/LED
7 Power supply power connection
9 HPE ML Gen9 dedicated iLO port kit
   (optional)

2 USB 2.0 (2) connectors
4 Video connector
6 Power supply bay
8 Network RJ-45 ports (2)

Overview
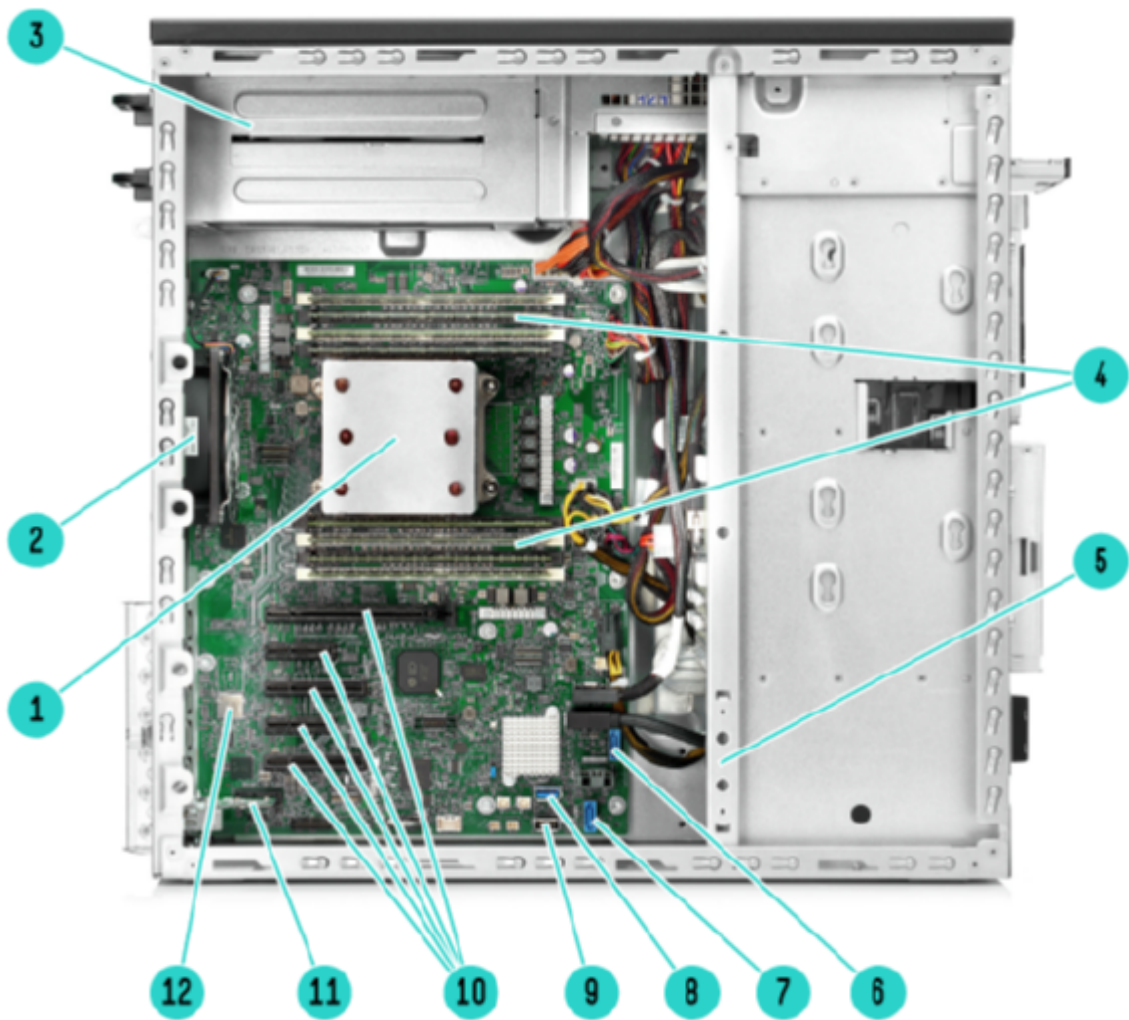
Internal View

1	One (1) processor and heatsink with HPE Smart Socket Guide	2	System Fan (92x32mm default), upgrade system fan(92x38mm) is required for 140W E5-1600v3 Processor and SAS SSD
3	Power Supply backplane cage		
5	PCIe fan (option required to support PCIe expansion cards)	4	Eight (8) DDR4 DIMM slots
7	SATA connector 1	6	Front USB 3.0 connector
9	Internal USB 2.0 connector	8	Internal USB 3.0 connector
11	Dedicated iLO module slot (optional)	10	Five (5) PCIe3 expansion slots
		12	MicroSD slot

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

	Model	CPU frequency	Cores	L3 Cache	Power	QPI	DDR4 Hz
Processor One of the following depending on model	E5-2660v3	2.6GHz	10	25MB	105W	9.6GT/s	2133
	E5-2640v3	2.6GHz	8	20MB	90W	8.0GT/s	1866
	E5-2630Lv3	1.8GHz	8	20MB	55W	8.0GT/s	1866
	E5-2623v3	3.0GHz	4	10MB	105W	8.0GT/s	1866
	E5-2620v3	2.4GHz	6	15MB	85W	8.0GT/s	1866
	E5-2609v3	1.9GHz	6	15MB	85W	6.4GT/s	1600
	E5-2603v3	1.6GHz	6	15MB	85W	6.4GT/s	1600
	E5-1650v3	3.5GHz	6	15MB	140W	0.0GT/s	2133
	E5-1603v3	2.8GHz	4	10MB	140W	0.0GT/s	1866
	E5-1620v3	3.5GHz	4	10MB	140W	0.0GT/s	2133
	E5-2660v4	2.0GHz	14	35MB	105W	9.6GT/s	2400
	E5-2640v4	2.4GHz	10	25MB	90W	8.0GT/s	2133
	E5-2630Lv4	1.8GHz	10	25MB	55W	8.0GT/s	2133
	E5-2623v4	2.6GHz	4	10MB	85W	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
	E5-1680v4	3.4GHz	8	20MB	140W	9.6GT/s	2400
	E5-1660v4	3.2GHz	8	20MB	140W	9.6GT/s	2400
	E5-1620v4	3.5GHz	4	10MB	140W	0.0GT/s	2400

NOTE: Up to 1 processor supported. Mixing different processor models is not supported.

Cache Memory One of the following depending on model	10MB (1 x 10MB) Level 3 cache NOTE: For Four-core processors. 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 Ten-core processors. 35MB (1 x 35MB) Level 3 cache NOTE: For Fourteen-core processors.
Chipset	Intel® C610 Series Chipset Intel® E5-2600v4 Processor Family Intel® E5-2600v3 Processor Family Intel® E5-1600v3 Processor Family NOTE: This is a 140W processor which need to be ordered with the ML110 Gen9 System fan upgrade kit - 789654-B21. NOTE: For more information regarding Intel® chipsets, please see the following URL: http://www.intel.com/products/server/chipsets/

Standard Features

On System Management Chipset	HPE iLO (Firmware HPE iLO4 2.0 or later) 2GB NAND NOTE: Read and learn more in the HPE iLO QuickSpecs.

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

DIMM Slots Available   8   (8 DIMM slots per processor, 4 channels per processor, 2 DIMMs per channel)

Maximum Capacity (LRDIMM)   128GB   (8 x 16GB LRDIMM @2133MHz)

Maximum Capacity (RDIMM)   256GB   (8 x 32GB RDIMM @2133MHz)

NOTE: This server does not support mixing LRDIMMs and 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 5717C0 Dual-port 1Gb

Expansion Slots

Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
5	PCIe 3.0	x8	x8		Full-height, half-length slot	For processor 1
4	PCIe 3.0	x4	x4		Full-height, half-length slot	For processor 1
3	PCIe 3.0	x8	x8		Full-height, half-length slot	For processor 1
2	PCIe 3.0	x4	x4		Full-height, half-length slot	For processor 1
1	PCIe 3.0	x16	x16		Full-height, ¾ length (up to 9.5") Slot	For processor 1

NOTE: Bus number - Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number.
NOTE: Five total expansion PCIe 3.0 slots. One PCIe 3.0 x16 (x16 speed); Two PCIe 3.0 x 8 (x8 speed); Two PCIe 3.0 x 4 (x4 speed).

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

QuickSpecs

Standard Features

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.	

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 BTO models.
	Hard Drives	None ship standard
	Hard Drive Bays	Up to 4 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 3 blanks and 8SFF includes 7 blanks. Additional hard drive blanks can be ordered using either P/N 666986-B21 for the HPE LFF HDD Blank Kit or P/N 666987-B21 for the HPE SFF HDD Blank Kit. These part numbers for single HDD blanks below are also provided should you require replacement HDD blanks for your server.
		NOTE: NHPE SATA is limited to B140i controller.
		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: H240 8LFF/8SFF require 2 cable kit P/N: 784606-B21.
		NOTE: P84016SFF require 2 cable kit P/N: 784608-B21.

Maximum Internal Storage One of the following depending on model		CAPACITY	CONFIGURATION
	Hot Plug LFF SAS	64TB	8x8TB
	Hot Plug LFF SATA	64TB	8x8TB
	Hot Plug SFF SAS	32TB	16x2TB
	Hot Plug SFF SATA	32TB	16x2TB
	Non Hot Plug LFF SATA	16TB	4x4TB
	Hot Plug LFF SATA SSD	15.36TB	8x1.92TB
	Hot Plug SFF SAS SSD	6.4TB	16x400GB
	Hot Plug SFF SATA SSD	30.72TB	16x1.92TB

Standard Features

Power Supply One of the following depending on model	HPE 350W ATX-Gen9 Power Supply FIO Kit HPE 550W ATX-Gen9 Power Supply Kit HPE 750W CS Gold Ht Plg Pwr Supply Kit NOTE: The first 750W CS Gold Ht Plg Pwr Supply Kit requires the RPS Enablement Kit. NOTE: The RPS Enablement kit will support two power supplies. HPE Entry-Level Power Supplies provide lower-cost options for customers trying to balance their need for enterprise class efficiency and reliability while maintaining lowest possible hardware costs. All Entry-Level power supply options have been designed specifically for HPE ProLiant Gen9 Essential Series servers. The HPE 550W FIO Power Supply is the standard, non-redundant AC power supply option for most HPE ProLiant Gen9 Essential servers. It features Silver-level (89%) certified power efficiency with a set of features optimized for the Gen9 Essential-series rack and tower servers. 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 <u>ProLiant Power Cables</u> web page. To review the power requirements for your selected system, please use the HPE Power Advisor Tool located at <u>http://www.hp.com/go/hppoweradvisor</u>. Power specifications and technical content for all HPE Server power supplies can be found at <u>http://www.hp.com/go/proliant/powersupply</u>.		

		Non-redundant	Redundant
System Fans One of the following depending on model	1P model	2 fans	NA
	NOTE: One (1) Non-hot plug, non-redundant fan ships as standard.		

Interfaces	Video	1 (rear)
	Network RJ-45 (Ethernet)	2
	HPE iLO Remote Management Network Port	1GbE Optional Port
	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)

Standard Features

Operating Systems and Virtualization Software Support for ProLiant Servers	<u>Microsoft Windows Server</u> <u>Red Hat Enterprise Linux (RHEL)</u> <u>SUSE Linux Enterprise Server (SLES)</u> <u>VMware</u> 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.hp.com/go/ossupport and our driver download page http://h20566.www2.hpe.com/hpsc/swd/public/readIndex?sp4ts.oid=7796456.
Upgradeability	Up to 16 SFF Hard Drive Bays; Or 8 LFF Hard Drive Bays Up to 8 DIMM slots Redundant Power Supply Optional optical drive (up to 1)
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	16 bit color: maximum resolution of 1920 x 1200 Integrated Matrox G200 video standard 32 bit color: maximum resolution of 1280 x 1024 16 MB Flash 128 MB DDR3
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

Standard Features

Form Factor	Tower (4.5U) NOTE: Sliding Shelf - 234672-B21 is optional to support rack form factor.	
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.
	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.

Standard Features

	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, Care Pack 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: The Service Pack for ProLiant (which includes HPE SUM) can be downloaded from http://www.hp.com/go/spp/download. More information can be found: http://www.hp.com/go/SmartUpdate, http://www.hp.com/go/spp and http://www.hp.com/go/hpsum.

Security	Power-on password Setup password Serial interface control Power switch security Administrator's password TPM 1.2 TPM 2.0 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 Care Pack 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 HPE replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at: http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html.

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.hp.com/go/iLO/essentials.
	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.hp.com/go/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. http://www.hp.com/go/cmu. 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. http://www.hp.com/go/clusters.
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.

Optional Features

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

Storage software that gets the job done:

- Data Protection and Recovery Software
  Whether you're a large enterprise or a smaller business, Hewlett Packard Enterprise data protection and recovery software will cost-effectively protect you against disaster and ensure business continuity.
- Data Archive and Migration Software
  Hewlett Packard Enterprise storage software enables you to comply with data retention and retrieval requirements, improve application performance, and reduce costs by efficiently migrating infrequently accessed or less valuable data to lower cost storage.
- Storage Resource Management Software (SRM)
  Hewlett Packard Enterprise storage resource management software reduces operational costs and provides the command and control foundation you need to efficiently manage and visualize your physical and virtual environments.
- Data Replication Software
  Hewlett Packard Enterprise offers array-based and host-based replication software for use in disaster recovery, testing, application development and reporting.
- Storage Device Management Software
  Maximize your investment in Hewlett Packard Enterprise storage and networking with software that enables hardware-specific configuration, performance tuning and connectivity management.
- HPE StoreVirtual VSA
  With HPE StoreVirtual VSA you can use the power of virtualization to create a virtual array within your host server. Manage it as a single pool of shared storage capacity, and scale it to match your evolving needs. HPE ProLiant Gen9 servers include a 3-year limited license for HPE StoreVirtual VSA software with 1TB of capacity at no extra cost. Simply select to install HPE StoreVirtual VSA software during server setup within Intelligent Provisioning. More information, instructional videos, and free console management software are available at http://www.hp.com/go/vsa1TB.

NOTE: For more information about Storage Software including QuickSpecs, please see: http://www.hp.com/go/storage/software.

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. https://h22174.www2.hp.com/SimplifiedConfig/Index.

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. http://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. http://h20195.www2.hp.com/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

Service and Support

servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner.
http://h20195.www2.hp.com/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
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

	Entry Models		Base Models	
[SKU Number]	777160-xx1	838502-xx1	777161-xx1	838503-xx1
Model Name	HP ProLiant ML110 Gen9 E5-2603v3 4GB-R B140i 4LFF NHP 350W PS Entry Server	HPE ProLiant ML110 Gen9 E5-2603v4 8GB-R B140i 4LFF NHP 350W PS Entry Server	HP ProLiant ML110 Gen9 E5-2620v3 8GB-R B140i 4LFF 350W PS Base Server	HPE ProLiant ML110 Gen9 E5-2620v4 8GB-R B140i 4LFF 350W PS Base Server
Processor	Intel® Xeon® E5-2603v3	Intel® Xeon® E5-2603v4	Intel® Xeon® E5-2620v3	Intel® Xeon® E5-2620v4
Number of Processors	One			
Memory	4GB (1x4GB Registered DIMMs, 2133 MHz)	8GB (1x8GB Registered DIMMs, 2400 MHz)	8GB (1x8GB Registered DIMMs, 2133 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 (Hot Plug)	
Optical Drive Bay	1; (Optional: DVD-ROM, DVD-RW)			
Optical Drive	Optional Slim Optical Bay (SATA DVD-RW/ROM Optical Drive)			
PCI-Express Slots	5 PCIe 3.0 slots (without risers)			
Power Supply	(1) 350W ATX Power Supply		(1) HPE 350W ATX Power Supply	
Fans	1 non hot plug, non-redundant			
Management	iLO Management (standard), Intelligent Provisioning (standard), iLO Essentials (optional), iLO Scale-out (optional only for DL), iLO Advanced (optional)			
Form Factor	Tower (4.5U)			
Warranty	Server Warranty includes 3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response.			

Country Code Key	xx1 = B21	Worldwide
	xx1 = 001	US
	xx1 = 031	UK
	xx1 = 291	Japan
	xx1 = 371	AP
	xx1 = 421	EU
	xx1 = AA1	PRC

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

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)

[Chassis]	HP ProLiant ML110 Gen9 Non-hot Plug 4LFF Configure-to-order Server	HP ProLiant ML110 Gen9 Hot Plug 4LFF Configure-to-order Server	HP ProLiant ML110 Gen9 Hot Plug 8SFF Configure-to-order Server
SKU Number	776933-B21	776934-B21	776935-B21
Processor	1	1	1
DIMM Slots	8 DIMM slots for RDIMM, LRDIMM DDR4 Memory		
Storage Controller	HPE Dynamic Smart Array B140i		
PCIe	5 PCIe 3.0 Slots		
Drive Cage	4LFF Non Hot Plug	4LFF Hot Plug	8SFF Hot Plug
Network Controller	Broadcom 5717 Dual-port 1GbE		
Fans	1 non hot plug, non-redundant		
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   Select one or two processors from Core options-Processor section below,

- If one processor is desired, select one xxxxxx-L21
- If two processors are desired, select one xxxxxx-L21 and one xxxxxx-B21.
- Up to 2 processors supported. Mixing different processor models is not supported.
- DDR4 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.

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   Select one or more memory from Core options-Memory section below,

- LRDIMM, RDIMM are all distinct memory technologies and cannot be mixed within a server. The majority of ProLiant Gen9 servers support LRDIMM and RDIMM.
- 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.
- If only one processor is installed, only half of the total DIMM slots are available.
-

Configuration Information - Factory Integrated Models

When populating with two processors all DIMM slots are available.
- 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.
- Depending on the memory configuration and processor model, the memory speed may run at 2133MHz, 1866MHz, 1600MHz or 1333MHz. Please see Memory Population Table or the Online Memory Configuration Tool at: http://www.hp.com/go/ddr4config.

Power Supplies - 100 series servers

Select one or more power supplies from Core Options-Power Supplies section below:

- Prior to selecting a power supply option, it is highly recommended that you review your server configuration in the HPE Power Advisor tool to determine the right size power supply for your server configuration. The HPE Power Advisor is located at: http://www.hp.com/go/hppoweradvisor.
- By RPS Enablement Kit power options, mixing of power supplies in the same RPS enablement kit 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.

Step 3: Choose Additional Factory Integratable Options

HPE Networking

Select a standup NIC adapter from Core options-Networking section below,

- Please see the QuickSpecs for Technical Specifications and additional information: http://www.hp.com/go/ProLiantNICs.
- These options are upgradeable and can be changed from the original configuration after the server is shipped.
- For 10Gb adapters, a minimum of two Gigabytes (2 GB) of server memory is required per each adapter.

HPE Drives

Select one or more drives from Core options-HPE Drives section below:

- 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.
- Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.
- The HPE ProLiant Gen9 Smart Storage solutions are equipped with re-designed Small Form Factor (SFF 2.5 in) and Large Form Factor (LFF 3.5 in) hot plug carriers for HPE Qualified Hard Drives and Solid State Drives. These new carriers provide status and activity indicators as well as caution indicators for "Do Not Remove".

HPE Graphics Options

Select one or more graphics adapter from Additional options section below.

- 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.hp.com/go/hppoweradvisor.
- This section may contain FIO options, please see HPE Computation & Graphics Accelerators section below.

Configuration Information - Factory Integrated Models

HPE Unique Options

Select one or more Unique options from Core options section below.

- This section may contain FIO options, please see the Unique options section below.
- FIO indicates that this option is only available as a factory installable option.

HPE Cooling Options

Select one or more Fan Kits from Core options section below.

- This section may contain FIO options, please see HPE Cooling Options section below.
- FIO indicates that this option is only available as a factory installable option.

HPE Storage Controllers

Select one or more Storage options from Additional options section below.

- The embedded B140i controller will operate in UEFI only mode. For legacy support an additional controller will be needed, and for CTO orders please also select the Legacy mode settings part, 758959-B22
- This section may contain FIO options, please see HPE Storage Controllers section below.
- FIO indicates that this option is only available as a factory installable option.

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 ML110 Gen9 Mini SAS H240 Cable Kit	789648-B21
	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) - 8SFF	
	HP ML110 Gen9 Mini SAS P440/P840 Cable Kit	789651-B21
	NOTE: Must be selected for P440/P840 controller. 1 cable kit is required for P440x1 2 cable kits are required for P840x1	
	HP ML110 Gen9 System Fan Upgrade Kit	789654-B21
	NOTE: When any E5-1600 processor kit or SAS SSD is selected, then this option kit must be ordered.	
	HP ML110 Gen9 PCI Fan and Baffle Kit	784580-B21
	NOTE: If any PCIe card is selected, then this option kit must be selected. This option kit cannot be selected if no PCIe card is ordered.	
	HP ML110 Gen9 Redundant Power Supply Enablement Kit	784582-B21
	NOTE: If this kit must be selected when 750W CS Gold Ht Plg Pwr Supply Kit is ordered.	
	HP AHCI-Enable FIO Setting	801845-B21
	NOTE: This needs to be selected when Advanced Host Controller Interface mode is required on B140i controller.	
	HP ML150 Gen9 Dedicated iLO Management Port Kit	780310-B21

HPE Processors	Entry Processors - E5-2600v4 series Processors	
	HPE ML110 Gen9 Intel® Xeon® E5-2620v4 (2.1GHz/8-core/20MB/85W) FIO Processor Kit	826101-L21
	HPE ML110 Gen9 Intel® Xeon® E5-2609v4 (1.7GHz/8-core/20MB/85W) FIO Processor Kit	826102-L21
	HPE ML110 Gen9 Intel® Xeon® E5-2603v4 (1.7GHz/6-core/15MB/85W) FIO Processor Kit	826103-L21
	HPE ML110 Gen9 Intel® Xeon® E5-2630Lv4 (1.8GHz/10-core/25MB/55W) FIO Processor Kit	826104-L21
	HPE ML110 Gen9 Intel® Xeon® E5-2623v4 (2.6GHz/4-core/10MB/85W) FIO Processor Kit	826105-L21
	Entry Processors - E5-2600v3 series Processors	
	HP ML110 Gen9 Intel® Xeon® E5-2603v3 (1.6GHz/6-core/15MB/85W) FIO Processor Kit	773169-L21
	HP ML110 Gen9 Intel® Xeon® E5-2609v3 (1.9GHz/6-core/15MB/85W) FIO Processor Kit	773167-L21
	Entry Processors - E5-1600v3 series Processors	
	HP ML110 Gen9 Intel® Xeon® E5-1603v3 (2.8GHz/4-core/10MB/140W) FIO Processor Kit	783017-L21
	HP ML110 Gen9 Intel® Xeon® E5-1620v3 (3.5GHz/4-core/10MB/140W) FIO Processor Kit	783021-L21
	HP ML110 Gen9 Intel® Xeon® E5-1650v3 (3.5GHz/6-core/15MB/140W) FIO Processor Kit	783023-L21
	Entry Processors - E5-1600v4 series Processors	

Core Options

HPE ML110 Gen9 Intel® Xeon® E5-1620v4 (3.5GHz/4-core/10MB/140W) FIO Processor Kit	826107-L21
HPE ML110 Gen9 Intel® Xeon® E5-1660v4 (3.2GHz/8-core/20MB/140W) FIO Processor Kit	826110-L21
HPE ML110 Gen9 Intel® Xeon® E5-1680v4 (3.4GHz/8-core/20MB/140W) FIO Processor Kit	826111-L21
Base Processors - E5-2600v3 series Processors	
HP ML110 Gen9 Intel® Xeon® E5-2640v3 (2.6GHz/8-core/20MB/90W) FIO Processor Kit	773158-L21
HP ML110 Gen9 Intel® Xeon® E5-2620v3 (2.4GHz/6-core/15MB/85W) FIO Processor Kit	773162-L21
HP ML110 Gen9 Intel® Xeon® E5-2630Lv3 (1.8GHz/8-core/20MB/55W) FIO Processor Kit	773173-L21
HP ML110 Gen9 Intel® Xeon® E5-2623v3 (3GHz/4-core/10MB/105W) FIO Processor Kit	780075-L21
Performance Processors - E5-2600v4 series Processors	
HPE ML110 Gen9 Intel® Xeon® E5-2640v4 (2.4GHz/10-core/25MB/90W) FIO Processor Kit	826100-L21
HPE ML110 Gen9 Intel® Xeon® E5-2660v4 (2.0GHz/14-core/35MB/105W) FIO Processor Kit	826099-L21
Performance Processors - E5-2600v3 series Processors	
HP ML110 Gen9 Intel® Xeon® E5-2660v3 (2.6GHz/10-core/25MB/105W) FIO Processor Kit	773156-L21

HPE Memory		
	Registered DIMMs (RDIMMs) for E5-2600v3 Series	
	HP 4GB (1x4GB) Single Rank x8 DDR4-2133 CAS-15-15-15 Registered Memory Kit	726717-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 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 4GB (1x4GB) Single Rank x8 DDR4-2133 CAS-15-15-15 Registered Standard Memory Kit	803026-B21
	HP 8GB (1x8GB) Single Rank x4 DDR4-2133 CAS-15-15-15 Registered Standard Memory Kit	803028-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
	Registered DIMMs (RDIMMs) for E5-2600v4 Series	
	HP 8GB (1x8GB) Single Rank x8 DDR4-2400 CAS-17-17-17 Registered Memory Kit	805347-B21
	HPE 8GB (1x8GB) Single Rank x8 DDR4-2400 CAS-17-17-17 Registered Standard Memory Kit	851353-B21
	HP 16GB (1x16GB) Single Rank x4 DDR4-2400 CAS-17-17-17 Registered Memory Kit	805349-B21
	HPE 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

Core Options

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 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	
	HP 1.2TB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	781518-B21
	HP 1.2TB 6G SAS 10K rpm SFF (2.5-inch) SC Dual Port Enterprise 3yr Warranty Hard Drive	718162-B21
	HP 900GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	785069-B21
	HP 900GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652589-B21
	HP 600GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	759212-B21
	HP 600GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	781516-B21
	HP 600GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652583-B21
	HP 450GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	759210-B21
	HP 450GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652572-B21
	HP 300GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	759208-B21
	HP 300GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	785067-B21
	HP 300GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652564-B21
	HP 146GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652605-B21
	SAS Hot Plug SFF (2.5-inch) Midline (MDL) Drives	
	HP 1TB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	652749-B21
	HPE 1TB 12G SAS 7.2K rpm SFF (2.5in) SC Midline 1yr Warranty Hard Drive	832514-B21
	HP 500GB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	652745-B21
	SAS Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives	
	HP 600GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive	765424-B21
	HP 450GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive	737394-B21
	HP 300GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive	737261-B21
	SAS Hot Plug LFF (3.5-inch) Midline (MDL) Drives	

Core Options

HP 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	765259-B21
HP 6TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	761477-B21
HP 4TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	765257-B21
HPE 4TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	818367-B21
HPE 2TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	818365-B21
HP 4TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	695510-B21
HP 3TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652766-B21
HP 2TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652757-B21
HP 1TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652753-B21
HPE 8TB 12G SAS 7.2K rpm LFF (3.5in) 512e SC Midline 1yr Warranty Hard Drive	819201-B21
HPE 8TB 6G SATA 7.2K rpm LFF (3.5in) 512e SC Midline 1yr Warranty Hard Drive	819203-B21
12G SAS Write Intensive Hot Plug SFF (2.5-inch) Solid State Drives	
HPE 1.6TB 12G SAS Write Intensive-1 SFF (2.5in) SC 3yr Wty Solid State Drive	846432-B21
HPE 800GB 12G SAS Write Intensive-1 SFF (2.5in) SC 3yr Wty Solid State Drive	846430-B21
12G SAS Mixed Use Hot Plug SFF (2.5-inch) Solid State Drives	
HPE 1.6TB 12G SAS Mixed Use-1 SFF (2.5in) SC 3yr Wty Solid State Drive	846436-B21
HPE 800GB 12G SAS Mixed Use-1 SFF (2.5in) SC 3yr Wty Solid State Drive	846434-B21
SATA Hot Plug SFF (2.5-inch) Midline (MDL) Drives	
HP 1TB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	655710-B21
HP 500GB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	655708-B21
HP 2TB 6G SATA 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	765455-B21
HP 1TB 6G SATA 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	765453-B21
SATA Hot Plug LFF (3.5-inch) Midline (MDL) Drives	

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HP 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	765255-B21
HP 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	753874-B21
HP 4TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	765253-B21
HP 4TB 6G SATA 7.2k rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	693687-B21
HPE 4TB 6G SATA 7.2K rpm LFF (3.5in) SC Midline 1yr Warranty Hard Drive	861678-B21
HP 3TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	628061-B21
HP 2TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	658079-B21
HPE 2TB 6G SATA 7.2K rpm LFF (3.5in) SC Standard 1yr Warranty Hard Drive	858596-B21
HPE 2TB 6G SATA 7.2K rpm LFF (3.5in) SC Midline 1yr Warranty Hard Drive	861676-B21
HPE 1TB 6G SATA 7.2K rpm LFF (3.5in) SC Standard 1yr Warranty Hard Drive	858594-B21
HP 1TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	657750-B21
HP 500GB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	658071-B21
SATA Non-Hot Plug LFF (3.5-inch) Midline (MDL) Drives	
HP 4TB 6G SATA 7.2K rpm LFF (3.5in) Non-hot Plug Standard 1yr Warranty Hard Drive	801888-B21
HP 3TB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive	628065-B21
HP 3TB 6G SATA 7.2K rpm LFF (3.5in) Non-hot Plug Standard 1yr Warranty Hard Drive	801886-B21
HP 2TB 6G SATA 7.2K rpm LFF (3.5in) Non-hot Plug Standard 1yr Warranty Hard Drive	801884-B21
HP 1TB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive	659337-B21
HP 2TB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive	659339-B21
HP 1TB 6G SATA 7.2K rpm LFF (3.5in) Non-hot Plug Standard 1yr Warranty Hard Drive	801882-B21
HP 500GB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive	659341-B21
12G SAS Hot Plug SFF (2.5-inch) SC 512e Drives	
HP 2TB 12G SAS 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	765466-B21
HP 1.8TB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 512e 3yr Warranty Hard Drive	791034-B21
HP 1TB 12G SAS 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	765464-B21
HP 600GB 12G SAS 15K rpm SFF (2.5-inch) SC 512e Enterprise 3yr Warranty Hard Drive	748387-B21
6G SATA Hot Plug SFF (2.5-inch) SC Read Intensive Solid State Drives	

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Core Options

HP 1.6TB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804605-B21
HP 800GB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804599-B21
HP 480GB 6G SATA Read Intensive SFF 2.5-in SC 3yr Wty Solid State Drive	789145-B21
HP 480GB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804593-B21
HP 240GB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804587-B21
HP 120GB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804581-B21
HP 80GB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804575-B21
6G SATA Hot Plug RI-3 SFF (2.5-inch) SC Solid State Drives	
HP 3.84TB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816929-B21
HP 1.92TB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816919-B21
HP 960GB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816909-B21
HP 480GB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816899-B21
HP 240GB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816889-B21
HP 120GB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816879-B21
6G SATA Hot Plug SFF (2.5-inch) SC Write Intensive Solid State Drives	
HP 1.2TB 6G SATA Write Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804677-B21
HP 800GB 6G SATA Write Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804671-B21
HP 800GB 6G SATA Mixed Use-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804625-B21
HP 400GB 6G SATA Write Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804665-B21
HP 200GB 6G SATA Write Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804639-B21
6G SATA Hot Plug SFF (2.5-inch) SC Mixed Use Solid State Drives	
HP 1.6TB 6G SATA Mixed Use-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804631-B21
HP 480GB 6G SATA Mixed Use-2 SFF 2.5-in SC 3yr Wty Solid State Drive	832414-B21
HP 200GB 6G SATA Mixed Use-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804613-B21
6G SATA Hot Plug MU-3 SFF (2.5-inch) SC Solid State Drives	

Core Options

HP 1.92TB 6G SATA Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive	817011-B21
HP 960GB 6G SATA Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816995-B21
HP 480GB 6G SATA Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816985-B21
HP 240GB 6G SATA Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816975-B21
HP 120GB 6G SATA Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816965-B21
6G SATA Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives	
HP 800GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691868-B21
HP 400GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691866-B21
HP 100GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691862-B21
6G SATA Hot Plug SFF (2.5-inch) Enterprise Value Solid State Drives	
HP 600GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	739898-B21
6G SATA Hot Plug SFF Value Endurance (2.5-inch) Enterprise Value M1 Solid State Drives	
HP 800GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty M1 Solid State Drive	764929-B21
HP 480GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty M1 Solid State Drive	764927-B21
HP 240GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty M1 Solid State Drive	764925-B21
HP 120GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty M1 Solid State Drive	764923-B21
6G SATA Hot Plug LFF (3.5-inch) Enterprise Mainstream Solid State Drives	
HP 800GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691860-B21
HP 400GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691856-B21
6G SATA Hot Plug LFF (3.5-inch) SC Read Intensive Solid State Drives	
HP 1.6TB 6G SATA Read Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804608-B21
HP 800GB 6G SATA Read Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804602-B21
HP 480GB 6G SATA Read Intensive LFF 3.5-in SC Converter 3yr Wty Solid State Drive	789147-B21
HP 480GB 6G SATA Read Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804596-B21
HP 240GB 6G SATA Read Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804590-B21
HP 120GB 6G SATA Read Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804584-B21
HP 80GB 6G SATA Read Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804578-B21
6G SATA Hot Plug LFF (3.5-inch) RI-3 SCC SSD	

Core Options

HP 3.84TB 6G SATA Read Intensive-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive	816933-B21
HP 1.92TB 6G SATA Read Intensive-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive	816923-B21
HP 960GB 6G SATA Read Intensive-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive	816913-B21
HP 480GB 6G SATA Read Intensive-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive	816903-B21
HP 240GB 6G SATA Read Intensive-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive	816893-B21
HP 120GB 6G SATA Read Intensive-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive	816883-B21
6G SATA Hot Plug LFF (3.5-inch) SC Write Intensive Solid State Drives	
HP 1.2TB 6G SATA Write Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804680-B21
HP 800GB 6G SATA Write Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804674-B21
HP 400GB 6G SATA Write Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804668-B21
HP 200GB 6G SATA Write Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804642-B21
6G SATA Hot Plug LFF (3.5-inch) SC Mixed Use Solid State Drives	
HP 1.6TB 6G SATA Mixed Use-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804634-B21
HP 800GB 6G SATA Mixed Use-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804628-B21
HP 480GB 6G SATA Mixed Use-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	832417-B21
HP 200GB 6G SATA Mixed Use-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804616-B21
6G SATA Hot Plug LFF (3.5-inch) MU-3 SCC SSD	
HP 1.92TB 6G SATA Mixed Use-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive	817015-B21
HP 960GB 6G SATA Mixed Use-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive	816999-B21
HP 480GB 6G SATA Mixed Use-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive	816989-B21
HP 240GB 6G SATA Mixed Use-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive	816979-B21
HP 120GB 6G SATA Mixed Use-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive	816969-B21
6G SATA Hot Plug LFF Value Endurance (3.5-inch) Converter Enterprise Value M1 Solid State Drives	
HP 480GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty M1 Solid State Drive	764943-B21
HP 240GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty M1 Solid State Drive	764941-B21
HP 120GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty M1 Solid State Drive	764939-B21
Hard Drive Blank Kits	
HP Large Form Factor Hard Drive Blank Kit	666986-B21
HP Small Form Factor Hard Drive Blank Kit	666987-B21

Core Options

	Hard Drive Kits	
	HP ML110 Gen9 4LFF Hot Plug Drive Cage Kit	784584-B21
	HP ML110 Gen9 8SFF Hot Plug Drive Cage Kit	784586-B21
	M.2 SSD	
	HP Dual 120GB Value Endurance Solid State M.2 Enablement Kit for ProLiant ML/DL Servers	777894-B21

NOTE: M.2 SSD ML-DL Enablmt Kit can be built RAID 0, 1 by using B140i controller.
- When HPE 120GB M.2 SSD ML-DL Dual Enablmt Kit is ordered, then it can support RAID 0, 1.

	HP 120GB Value Endurance Solid State M.2 Enablement Kit for ProLiant ML/DL Servers	788028-B21

HPE Networking	1 Gigabit Ethernet adapters	
	HP Ethernet 1Gb 4-port 331T Adapter	647594-B21
	HP Ethernet 1Gb 2-port 332T Adapter	615732-B21
	HP Ethernet 1Gb 2-port 361T Adapter	652497-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
	HP Ethernet 10Gb 2-port 546SFP+ Adapter	779793-B21
	HPE Ethernet 10Gb 2-port 562SFP+ Adapter	727055-B21

HPE Power Supplies	HPE Entry-Level Power Supplies	
	HP 750W Common Slot Gold Hot Plug Power Supply Kit	512327-B21
	HP ML110 Gen9 350W ATX Gen9 Power Supply FIO Kit	776442-B21
	HP 550W ATX Gen9 Power Supply Kit	776444-B21
	HP ML110 Gen9 Redundant Power Supply Enablement Kit	784582-B21

NOTE: If this kit must be selected when 750W CS Gold Ht Plg Pwr Supply Kit is ordered.
NOTE: 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 http://www.hp.com/go/proliant/powersupply.

HPE Computation and Graphics Accelerators	HP NVIDIA Quadro K2200 Graphics Accelerator	J0G89A
	HP NVIDIA Quadro K4200 Graphics Accelerator	J0G90A

NOTE: If this SKU is selected, then customer must select HPE 750W CS Gold Ht Plg Pwr Supply Kit OR HPE 550W ATX-GEN9 Pwr Supply Kit in order.
NOTE: This option kit cannot be selected with 350W power supplies due to power consumption.
NOTE: HPE ML110 Gen9 GPU Supporting Holder Kit must be selected.

	HP ML110 Gen9 GPU Supporting Holder Kit	787006-B21
	HPE NVIDIA Quadro M2000 Graphics Accelerator	P8Y48A

NOTE: Only the above listed Graphics cards are HPE standard supported options in this server.
NOTE: The NVIDIA Quadro modules 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.

Core Options

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.hp.com/go/hppoweradvisor.

HPE Cooling Options	HP ML110 Gen9 PCI Fan and Baffle Kit	784580-B21
	NOTE: If any PCIe card is selected, then this option kit must be selected. This option kit cannot be selected if no PCIe card is ordered.	
	HP ML110 Gen9 System Fan Upgrade Kit	789654-B21
	NOTE: When any 140W processor kit or SAS SSD is selected, then this option kit must be ordered.	

Additional Options

HPE Insight Software	HPE Insight Control	
	HPE Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO LTU	C6N36A
	HPE Insight Control including 1yr 24x7 TSU E-LTU	C6N28ABE

NOTE: Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key.
NOTE: Customer will receive a license entitlement certificate. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24x7 HPE Software Technical Support and Update Service.
NOTE: Licenses ship without media. The HPE Insight Control Media Kit can be ordered separately, or can be downloaded at: http://www.hp.com/go/insightupdates.
NOTE: For additional license options please see the QuickSpecs at: http://www.hpe.com/h20195/v2/gethtml.aspx?docname=c04123391.

Embedded Management	HPE iLO Advanced	
	HPE iLO Advanced including 3yr 24x7 Technical Support and Updates E-LTU	E6U64ABE
	HPE iLO Advanced including 3yr 24x7 Tech Support and Updates 1-server LTU	BD505A
	HPE iLO Advanced including 1yr 24x7 Technical Support and Updates 1-server LTU	512485-B21
	HPE iLO Advanced including 1yr 24x7 Technical Support and Updates Flexible Quantity LTU	512486-B21
	HPE iLO Advanced including 1yr 24x7 Technical Support and Updates Tracking LTU	512487-B21
	HPE iLO Advanced including 1yr 24x7 Technical Support and Updates E-LTU	E6U59ABE
	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
	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

Additional Options

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.

	HP Trusted Platform Module Option	488069-B21

NOTE: The HPE Trusted Platform Module Option (488069-B21) is the TPM 1.2 version. Compatible server platforms include Gen8 and Gen9 servers
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 Controller	
	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: When additional 8SFF Drive cage is ordered and also P840 is selected, then must select one separate HPE ML110 Gen9 Mini SAS P440/P840 Cbl Kit.

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

NOTE: Smart Storage Battery included.
NOTE: Must select battery holder P/N: 786710-B21 when purchase P440.
NOTE: B140i can't mix with any standup internal controller.

	HP Smart Array P840/4GB FBWC 12Gb 2-ports Int FIO SAS Controller	761874-B21

NOTE: Smart Storage Battery included.
NOTE: B140i can't mix with any standup internal controller.
NOTE: Must select P840/4G Controller when apply 16SFF.
NOTE: Must select P440/P840 Cable kit, 1 cable kit per controller.
NOTE: Must select P840/4G FIO Controller when additional drive cage is selected.

	HP Smart Array P841/4GB FBWC 12Gb 4-ports Ext SAS Controller	726903-B21
	HP ML110 Gen9 Mini SAS H240 Cable Kit	789648-B21

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)
- 8SFF

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

NOTE: Must be selected for P440/P840 controller.
1 cable kit is required for P440x1
2 cable kits are required for P840x1
NOTE: Must select battery holder kit when P series FIO controller is selected.

Additional Options

	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
	HP H241 12Gb 2-ports Ext Smart Host Bus Adapter	726911-B21
	HP H240 12Gb 2-ports Int FIO Smart Host Bus Adapter	761873-B21

NOTE: Must select 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)

- 8SFF

	Battery Holder	
	HP ML150 Gen9 Smart Storage Battery Holder Kit	786710-B21

NOTE: Only support P series controllers.

	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.

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, P441, P841 when select External Tape Drive.

	Tape Drives	
	HPE StoreEver LTO-7 Ultrium 15000 External Tape Drive	BB874A
	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 Disk Backup	HPE RDX Removable Disk Backup System	
	HP D3700 Enclosure	QW967A
	HP D3600 Enclosure	QW968A
	HPE RDX+ 3TB USB 3.0 External Disk Backup System	P9L72A
	HP RDX+ 500GB External Backup System	B7B66B
	HP RDX+ 1TB External Backup System	B7B69B
	HP RDX 2TB USB3.0 External Disk Backup System	E7X53B
	HP RDX+ External Docking System	C8S07B

Additional Options

HPE Disk Storage Systems	**Disk Enclosures**	
	HP D6000 w/35 4TB 6G SAS 7.2K LFF Dual Port MDL HDD 140TB Bundle	E7W30A
	HP D6000 w/70 4TB 6G SAS 7.2K LFF Dual Port MDL HDD 280TB Bundle	E7W31A
	HP D6000 Dual I/O Module Disk Enclosure	QQ695A
	HP D6000 w/35 2TB 6G SAS 7.2K LFF Dual port MDL HDD 70TB Bundle	QQ697A
	HP D6000 w/70 2TB 6G SAS 7.2K LFF Dual port MDL HDD 140TB Bundle	QQ698A
	HP D6000 w/35 3TB 6G SAS 7.2K LFF Dual port MDL HDD 105TB Bundle	QQ699A
	HP D6000 w/70 3TB 6G SAS 7.2K LFF Dual port MDL HDD 210TB Bundle	QQ700A
	HP D6000 w/70 8TB 12G SAS 7.2K LFF (3.5in) Dual Port MDL HDD 560TB Bundle	M0T59A
	HP D6000 w/70 6TB 12G SAS 7.2K LFF (3.5in) Dual Port MDL HDD 420TB Bundle	M0T57A
	HP D6000 w/35 8TB 12G SAS 7.2K LFF (3.5in) Dual Port MDL HDD 280TB Bundle	M0T58A
HPE Rack Mount Consoles, KVM Switches, and Keyboards	**HPE Location Discovery Services**	
	HP Location Discovery Services LCD8500 Kit	TL052A
	NOTE: Please see the <u>HPE Location Discovery Services QuickSpecs</u> for information on additional options and product specifications.	
	HPE Rack Mount Consoles	
	HP LCD8500 1U US Rackmount Console Kit	AF630A
	HP LCD8500 1U UK Rackmount Console Kit	AF631A
	HP LCD8500 1U DE Rackmount Console Kit	AF632A
	HP LCD8500 1U FR Rackmount Console Kit	AF633A
	HP LCD8500 1U JP Rackmount Console Kit	AF642A
	HP LCD8500 1U RU Rackmount Console Kit	AF643A
	HP LCD8500 1U INTL Rackmount Console Kit	AF644A
	HP LCD8500 1U US TAA Rackmount Console Kit	AF645A
	HPE KVM Switches	

Additional Options

HP USB Remote Access Key for G3 KVM Console Switches	AF650A
HP 0x1x8 G3 KVM Console Switch	AF651A
HP 0x2x16 G3 KVM Console Switch	AF652A
HP TAA 0x2x16 G3 KVM Console Switch	AF653A
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
HP 4x1Ex32 KVM IP Console Switch G2 with Virtual Media CAC Software	AF622A
HPE USB Keyboard and Mouse	
HP USB BFR with PVC Free US Keyboard/Mouse Kit	631341-B21
HP USB BFR with PVC Free Intl Keyboard/Mouse Kit	672097-B33
HP USB BFR with PVC Free UK Keyboard/Mouse Kit	631344-B21
HP USB BFR with PVC Free FR Keyboard/Mouse Kit	631346-B21
HP USB BFR with PVC Free ES Keyboard/Mouse Kit	631348-B21
HP USB BFR with PVC Free DE Keyboard/Mouse Kit	631358-B21
HP USB BFR with PVC Free JP Keyboard/Mouse Kit	631360-B21
HP USB BFR with PVC Free IT Keyboard/Mouse Kit	631362-B21
HP USB BFR with PVC Free CN Keyboard/Mouse Kit	631364-B21
HP USB BFR with PVC Free AE Keyboard/Mouse Kit	638212-B21
HP USB BFR with PVC Free RU Keyboard/Mouse Kit	638214-B21
HP USB BFR with PVC Free SE Keyboard/Mouse Kit	672097-103
HP USB BFR with PVC Free CH Keyboard/Mouse Kit	672097-113
HP USB BFR with PVC Free PT Keyboard/Mouse Kit	672097-133
HP USB BFR with PVC Free TR Keyboard/Mouse Kit	672097-143
HP USB BFR with PVC Free CZ Keyboard/Mouse Kit	672097-223
HP USB BFR with PVC Free FI Keyboard/Mouse Kit	672097-353
HP USB BFR with PVC Free AP-Intl Keyboard/Mouse Kit	672097-373
HP USB BFR with PVC Free IN Keyboard/Mouse Kit	672097-D63
HP USB BFR with PVC Free KR Keyboard/Mouse Kit	672097-KD3
HPE Other Options	
HP Rack LED Light Kit	BW939A
HP Kit LCD 1.83m Latch Display Port Cable	G7T29A
HP Advanced Power Manager Kit	741192-B21

HPE Uninterruptible HPE DirectFlow Three Phase UPS

Additional Options

Power Systems (UPS)	**Power Unit (1U UPS)**	
	HP R12000 DirectFlow - 1U Rackmount Uninterruptible Power System	G9Y75A
	HP R12000 DirectFlow - POD 1U Rackmount Uninterruptible Power System	AF478A
	Input/Output Module Options for 1U UPS	
	HP 32A 400-415 Volt Three Phase INTL R12000 DirectFlow UPS IEC309 Input/Output Module	AF488A
	HP 30A 400-415 Volt Three Phase NA R10000 DirectFlow UPS IEC309 Input/Output Module	AF489A
	HP 32A 380 Volt Three Phase China R12000 DirectFlow UPS Unterminated Input/Output Module	AF490A
	HP 30A 480 Volt Three Phase NA R12000 DirectFlow UPS L22-30 Input/Output Module	AF491A
	HP 30A 480 Volt Three Phase NA R12000 DirectFlow UPS IEC309 Input/Output Module	AF492A
	HP 30A 400-415 Volt Three Phase NA R12000 DirectFlow UPS IEC309 Input/Output Module	G9Y76A
	Power Unit (2U UPS)	
	HP R18000 DirectFlow - 2U Rackmount Uninterruptible Power System	AF479A
	Input/Output Module Options for 2U UPS	
	HP 32A 400-415 Volt Three Phase INTL R18000 DirectFlow UPS IEC309 Input/Output Module	AF483A
	HP 30A 380 Volt Three Phase China R18000 DirectFlow UPS Unterminated Input/Output Module	AF485A
	HP 30A 480 Volt Three Phase NA R18000 DirectFlow UPS IEC309 Input/Output Module	AF486A
	HP 30A 480 Volt Three Phase NA R18000 DirectFlow UPS IEC309 Input/Output Module	AF487A
	HP 30A 400 Volt Three Phase NA R18000 DirectFlow UPS IEC309 Input/Output Module	D9Q02A
	HP 30A 400-415V Three Phase NA R18000 DirectFlow UPS 1:1 IEC309 Input/Output Module	AF484A
	NOTE: All Input/Output Modules support dual output outlets except the AF484A.	
	Battery Pack Options	
	HP DirectFlow UPS - 1U Rackmount Lithium-ion Battery Pack	AF480A
	HP DirectFlow UPS - 3U Rackmount VRLA Battery Pack	AF482A
	HP WW DirectFlow Secondary Battery Cable	AF497A
	NOTE: Please see the <u>HPE DirectFlow Three Phase Uninterruptible Power System QuickSpecs</u> for information on additional options and product specifications.	
	HPE Tower UPS	
	HPE T750 G4 UPS Models	
	HP T750 G4 NA/JP Uninterruptible Power System	J2P85A
	HP T750 G4 INTL Uninterruptible Power System	J2P88A
	HPE T1000 G4 UPS Models	
	HP T1000 G4 NA/JP Uninterruptible Power System	J2P86A
	HP T1000 G4 INTL Uninterruptible Power System	J2P89A
	HPE T1500 G4 UPS Models	
	HP T1500 G4 NA/JP Uninterruptible Power System	J2P87A
	HP T1500 G4 INTL Uninterruptible Power System	J2P90A

Additional Options

HPE Rack/Tower UPS	
HPE R/T2200 G4 UPS Models	
HP R/T2200 G4 NA/JP Uninterruptible Power System	J2R00A
HPE R/T3000 G4 UPS Models	
HP R/T3000 G4 Low Voltage NA/JP Uninterruptible Power System	J2R01A
HP R/T3000 G4 High Voltage NA/JP Uninterruptible Power System	J2R02A
HP R/T3000 G4 High Voltage INTL Uninterruptible Power System	J2R04A
R1500 G4 Models	
HP R1500 G4 NA Uninterruptible Power System	J2Q99A
HP R1500 G4 JP/TWN Uninterruptible Power System	J2R05A
HP R1500 G4 INTL Uninterruptible Power System	J2R03A
R7000 Uninterruptible Power System (UPS)	
HP R7000 4U 50A High Voltage NA/JP Uninterruptible Power System	AF462A
HP R7000 4U IEC-32A High Voltage INTL Uninterruptible Power System	AF463A
R5000 Uninterruptible Power System (UPS)	
HP R5000 3U L630 High Voltage NA/JP Uninterruptible Power System	AF460A
HP R5000 3U IEC309-32A High Voltage INTL Uninterruptible Power System	AF461A
HPE UPS Options	
HP R/T2200 G4 Extended Runtime Module	J2R09A
HP R/T3000 G4 Extended Runtime Module	J2R10A
HP 2U Rack/Tower UPS Shipping Kit	L4Q11A
HP DirectFlow UPS Management Card	AF493A

NOTE: To learn more, please visit the <u>HPE Uninterruptible Power Systems (UPS) web page</u>.

HPE USB and SD Options		
	HPE Enterprise Mainstream Flash Media Kits for Memory Cards	
	HP 32GB microSD Enterprise Mainstream Flash Media Kit	700139-B21
	HP 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		
	Foundation Care	
	HPE 3 year Foundation Care 24x7 ML110 Gen9 Service	U8JB1E
	HPE 3 year Foundation Care 24x7 wDMR ML110 Gen9 Service	U8JB2E
	HPE 3 year Foundation Care 24x7 wCDMR ML110 Gen9 Service	U8JG2E
	Proactive Care	
	HPE 3 year Proactive Care 24x7 ML110 Gen9 Service	U8JB3E
	HPE 3 year Proactive Care 24x7 with DMR ML110 Gen9 Service	U8JB4E
	HPE 3 year Proactive Care 24x7 with CDMR ML110 Gen9 Service	U8JG3E
	Installation Services	
	HPE Installation ML310e/ML110 Service	U6G21E

NOTE: For a full list of available support services, please visit https://ssc.hpe.com/portal/site/ssc/

Memory

Memory
Population
guidelines
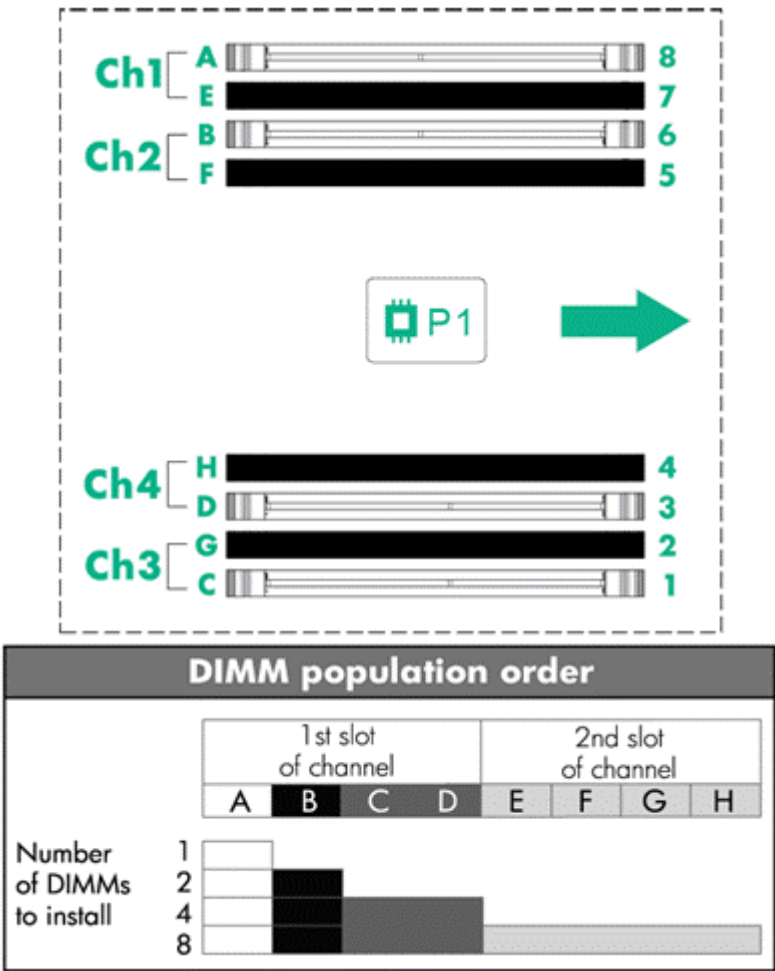
General Memory Population Rules and Guidelines:
- . Install DIMMs only if the corresponding processor is installed.
- . To maximize performance, it is recommended to balance the total memory capacity between all installed processors and load the channels similarly whenever possible.
- . White DIMM slots 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 ML110 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.

Memory

. There are four (4) channels per processor There are two (2) DIMM slots for each memory channel; eight (8) 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.

Intel Gen9 Supported Memory Bandwidth for HPE ProLiant Gen9 Intel® Xeon® E5-2600v3 Series Processor Family

Memory Bandwidth and Capacity				
[DIMM Type]			Registered DIMMs (RDIMMs)	
HPE SKU P/N	726717-B21	726718-B21	759934-B21	
DIMM Rank	Single Rank	Single Rank	Dual Rank	
DIMM Capacity	4GB	8GB	8GB	
Voltage	Std Voltage 1.2V	Std Voltage 1.2V	Std Voltage 1.2V	
DIMM Native Speed (MT/s)	2133	2133	2133	
SLOTS THAT CAN BE POPULATED				
8 slot servers	8	8	8	
MAXIMUM CAPACITY (GB)				
	32	64	64	
POPULATED DIMM SPEED (MT/s)				
1 DIMM Per Channel	2133	2133	2133	
2 DIMM Per Channel	2133	2133	2133	

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

Memory Bandwidth and Capacity		
[DIMM Type]		Registere
HPE SKU P/N	805347-B21	805349-B21
DIMM Rank	Single Rank	Single Rank
DIMM Capacity	8GB	16GB
Voltage	Std Voltage 1.2V	Std Voltage 1.2V
DRAM Depth [bit]	1G	1G
DRAM Width [bit]	x8	x4
DRAM Density	8Gb	8Gb
CAS Latency	17-17-17	17-17-17
DIMM Native Speed (MT/s)	2400	2400
SLOTS THAT CAN BE POPULATED		
8 slot servers	8	8
MAXIMUM CAPACITY (GB)		

Memory

	64	128
POPULATED DIMM SPEED (MT/s)		
1 DIMM Per Channel	2400	2400
2 DIMM Per Channel	2133	2133

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	C		Chnl 1
	2	G	2	G		

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

		CPU 1		CPU 2		
	Slot #	population order	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

Memory Speed by Processor Model	Processor Models	Supported Memory Speeds
	E5-2603v3, E5-2609v3	1600MHz
	E5-1603v3, E5-2640v3, E5-2620v3, E5-2630Lv3, E5-2623v3	1866MHz
	E5-1620v3, E5-1650v3, E5-2660v3	2133MHz
	E5-2609v4, E5-2603v4	1866MHz
	E5-2620v4, E5-2630Lv4, E5-2623v4, E5-2640v4	2133MHz
	E5-1620v4, E5-1660v4, E5-1680v4, E5-2660v4	2400MHz

Standard and Maximum Memory Capacity (Pre-configured Models)	Pre Configured Models	Standard Memory	Maximum Memory Plus Optional Memory	Standard Memory Replaced with Optional Memory
	E5-2603v3	4GB (1x4GB)	228GB (7x32GB, 1x4GB)	128GB (8x16GB)
	E5-2603v4, E5-2620v3, E5-2620v4	8GB (1x8GB)	232GB (7x32GB, 1x8GB)	128GB (8x16GB)

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
- 32GB = 32,768MB
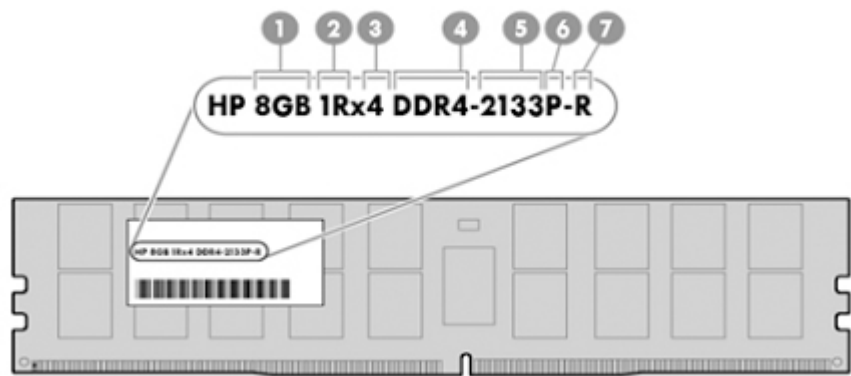
1. Capacity: 4GB/8GB/16GB/32GB
2. Rank: 1R = Single-rank; 2R = Dual-rank; 4R = Quad-rank
3. Data width: x4 = 4-bit; x8 = 8-bit
4. Memory generation: DDR4
5. Maximum memory speed: 2133 MT/s
6. CAS latency: P = 15
7. DIMM type: R = RDIMM (registered); L = LRDIMM (load reduced)

Storage

4-bay LFF non-hot-plug drive model   1-4   4 x LFF SATA/SSD Non-hot-plug Hard
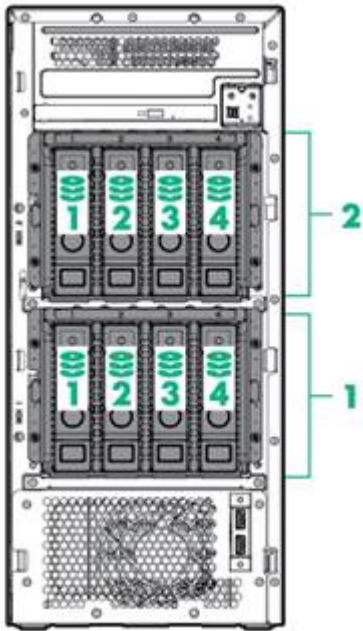Drive Bays
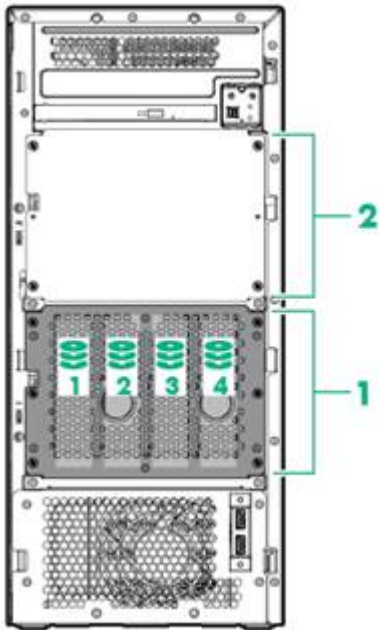
4-bay LFF hot-plug drive model   1 x 1-4   4 x LFF SAS/SSD Hot Pluggable Hard
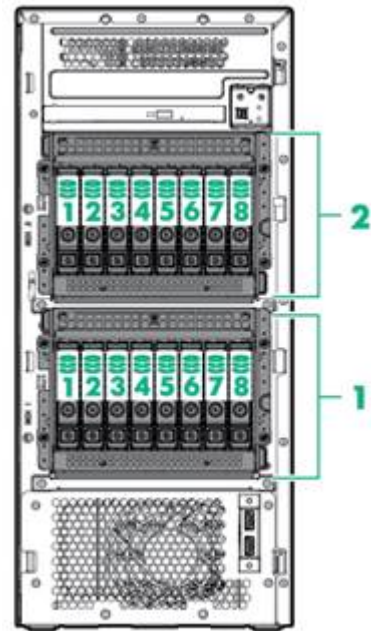Drive Bays

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

Storage

8-bay SFF hot-plug drive model

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

Maximum Storage Capacity -
Total (8 LFF Drive) 64 TB
Total (16 SFF   32 TB
Drive)

Technical Specifications

System Unit	Tower Dimensions	17.32(H) x 7.68(W) x 18.92(D) in (44 x 19.5 x 48.05 cm)	
	Tower Weight	Minimum:	27.56lb (12.5kg)
		Maximum:	55lb (24.9g)
	Input Requirements	Range Line Voltage	100 to 240 VAC
		Rated Input Current	For 350W & 550W Power Supply:8A (at 100~240 VAC)
		Rated Input Frequency	50 to 60 Hz
		Rated Input Power	For 550 W Power Supply:< 639 W (at 100 VAC),< 605 W (at 200 VAC)
			For 350 W Power Supply:< 427 W (at 100 VAC),< 427 W (at 200 VAC)
	BTU Rating	Maximum	For 550 W Power Supply:2204 BTU/hr (at 100 VAC),2113 BTU/hr (at 200 VAC)
			For 350 W Power Supply:1452 BTU/hr (at 100 VAC),1544 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 URL: http://www.hp.com/go/proliant-energy-efficient or http://www.hp.com/go/hppoweradvisor - Click on the system of interest.	
	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 350 W Power Supply:350 W (at 100 VAC),350 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 175 m (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.hp.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

Technical Specifications

configurations for this system are listed at the URL:
http://www.hp.com/servers/ashrae.

System performance may be reduced if operating in
the extended ambient operating range or with a fan
fault.
NOTE: Supports A3 extended ambient.

	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	3.6 Bels (LFF Non Hot-Plug Base)
	3.6 Bels (LFF Hot-plug Base)
	4.1 Bels (LFF Hot-plug Performance)
L pAm	21 dBA (LFF Non Hot-Plug Base)
	21 dBA (LFF Hot-plug Base)
	27 dBA (LFF Hot-plug Performance)

Operating

L WAd	3.6 Bels (LFF Non Hot-Plug Base)
	3.7 Bels (LFF Hot-plug Base)
	4.2 Bels (LFF Hot-plug Performance)
L pAm	21 dBA (LFF Non Hot-Plug Base)
	21 dBA (LFF Hot-plug Base)
	25 dBA (LFF Hot-plug Performance)

NOTE: Configurations tested for LFF non hot-plug based models
included one (1) 1TB LFF SATA Midline HDD and Windows 2012
Enterprise 64-bit.
NOTE: Configurations tested for LFF hot-plug base models included
one (1) 1TB LFF SATA Midline HDD and Windows 2012 Enterprise
64-bit.
NOTE: Configurations tested for LFF hot-plug performance models
included four (4) 2TB LFF SATA Midline HDD and Windows 2012
Enterprise 64-bit.
NOTE: The Listed sound levels apply to standard shipping
configurations. Additional options may result in increased sound
levels.

Technical Specifications

Emissions Classification	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.

HPE Dynamic Smart Array B140i Controller	Number of PCI links	Four
	PCI link rate	4 Gb/s
	Storage protocol support	SATA
	SAS/SATA peak data transfer rate	6 Gb/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 2-port 330i	Network Interface	10Base-T/100Base-TX/1000Base-TX

Technical Specifications

Adapter	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
		1000Base-TX (Half-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	
	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 offers end-of-life Hewlett Packard Enterprise product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: http://www.hp.com/go/green. To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest Hewlett Packard Enterprise sales office. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner.

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 at: http://www.hp.com/go/green. 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. |

Summary of Changes

Date	Version History	Action	Description of Change
7-Jun-2016	From Version 9 to 10	Added	Added new HPE Memory, new HPE Drives offering, new HPE NVIDIA Quadro M2000 Graphics Accelerator, and new HPE Disk Backup options.
		Changed	HPE Processors, Upgradeability, and HPE Memory sections were revised.
8-Apr-2016	From Version 8 to 9	Changed	HPE Processors section was revised.
31-Mar-2016	From Version 7 to 8	Added	Added Intel® E5-2600v4 processor support. New hard drives offering added to the HPE Drives section.
		Changed	Maximum Internal Storage, Embedded Management, Service and Support, Pre-configured Models, HPE Security, and Memory sections were revised.
		Removed	Obsolete SKUs were removed from the QuickSpecs.
17-Dec-2015	From Version 6 to 7	Added	Smart Buy models were added to the NA version.
1-Dec-2015	From Version 5 to 6	Changed	On System Management Chipset, Embedded Management, Server utilities, and HPE Unique Options were revised. Product images were updated.
		Removed	Obsolete SKUs were removed from the QuickSpecs.
28-Sep-2015	From Version 4 to 5	Added	Added new 6Gb SATA Solid State Drives.
		Removed	Obsolete SKUs were removed from the QuickSpecs.
17-Aug-2015	From Version 3 to 4	Changed	Rear view image was replaced. Additional Options was revised.
		Removed	Obsolete SKUs were removed from the QuickSpecs.
1-Jun-2015	From Version 2 to 3	Added	New Hard Drives were added to Core Options. HPE Insight Software section was added to Additional Options. Optional Software was added to HPE Storage Controllers.
		Changed	Standard Features was revised. HPE Storage Controllers and HPE Disk Backup were revised.
		Removed	Obsolete SKUs were removed from the QuickSpecs.
24-Apr-2015	From Version 1 to 2	Added	Smart Buy models added to the NA version only.

Summary of Changes