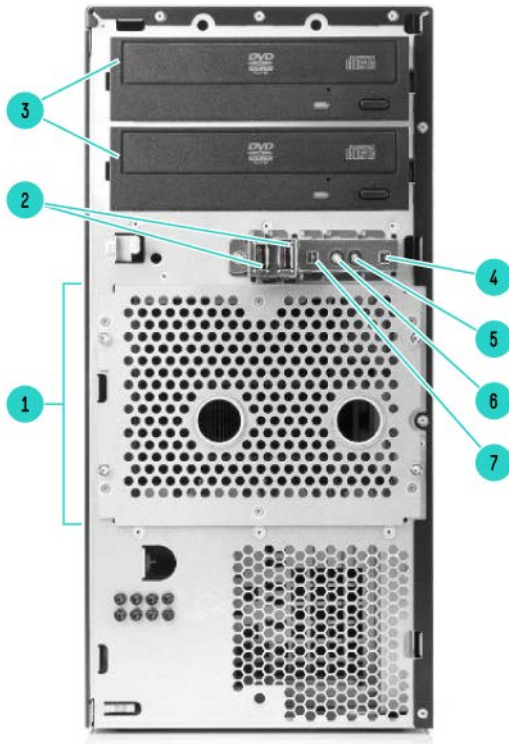


Overview

HPE ProLiant ML10 v2 Server

HPE ProLiant ML10 v2, a single-socket 4U tower server, delivers essential availability and expansion needed to accommodate changing business needs. It is ideal for remote sites and corporate branch offices running file/print, web messaging, and small vertical applications or databases.



Front View:

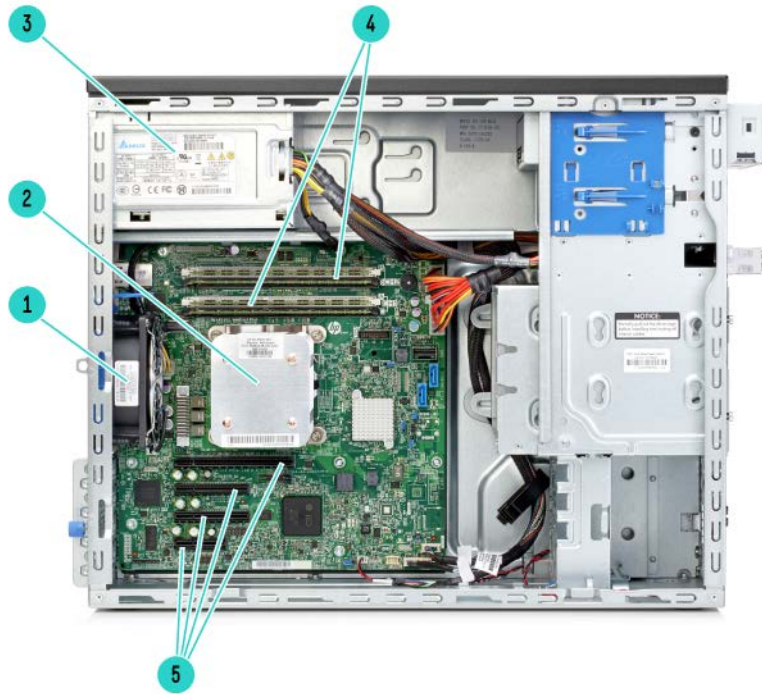
1. HDD cage – NHP 4LFF
2. Two (2) USB connectors
3. Half Height SATA DVD-ROM or DVD RW Optical Drive
4. Power Button
5. System Health
6. NIC Activity LED
7. UID LED Button



Rear View:

1. Four (4) PCIe expansion slots
2. VGA connector
3. Two (2) USB 3.0 Connectors
4. NIC Connectors
5. Power Supply
6. Power Supply power connector

Overview



Internal View:

1. System Fans: One NHP fan
2. One (1) processors and Heat sink
3. Power Supply
4. Four (4) DDR3 DIMM slots, shown fully populated in 4 slots
5. Four (4) PCIe expansion slots

What's New

- New HDD offering.

Standard Features

Processor

One of the following depending on model

Entry Processors

NOTE: All support up to 1333MT/s DDR3 memory speeds.

Intel® Pentium® G3240 (3.1GHz/2-core/3MB/54W)

Base Processors

NOTE: All support up to 1600MT/s DDR3 memory speeds.

Intel® Core™ i3-4150 (3.5GHz/2-core/3MB/54W, HT)

Performance Processors

NOTE: All support up to 1600MT/s DDR3 memory speeds.

Intel® Xeon® E3-1220v3 (3.1GHz/4-core/8MB/80W)

Intel® Xeon® E3-1241v3 (3.5GHz/4-core/8MB/80W, HT)

Cache Memory

One of the following depending on model

8MB (1 x 8MB) L3 Cache

NOTE: For Quad-core Xeon processors.

3MB (1 x 3MB) L3 Cache

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

Chipset

Intel® C222 Chipset

NOTE: For more information regarding Intel® chipsets, please see the following URL:

<http://www.intel.com/products/server/chipsets/>.

Upgradeability

Upgradeable to 4 cores

NOTE: Total 2 or 4 cores

Up to 4 DIMM slots available for higher memory capacity

Up to 6 LFF Hard Drive Bays

NOTE: Requires purchase of HPE ML10 v2 Drive Enablement Kit (#812248-B21)

1 x8 and 1 x16 PCIe 3.0 and 1 x8 and 1x4 PCIe 2.0 I/O slots for additional communications and storage expansion

Optical Drive Bay (up to 2)

NOTE: No Optical drive with 6 LFF drive support

On System Management

HPE iLO (Firmware: HPE iLO4)

Processor

NOTE: For more information, visit: <http://www.hp.com/go/ilo>

Memory Protection

ECC

Memory

One of the following depending on model

Type

HPE SmartMemory

DDR3 Unbuffered (UDIMM)

DIMM Slots Available

4

Maximum Capacity (UDIMM)

32GB (4 x 8GB UDIMM)

NOTE: HPE memory from previous generation servers are not fully compatible with the HPE ProLiant ML10 v2 Server.

NOTE: Depending on the memory configuration and processor model, the memory speed may run at 1600MT/s or 1333MT/s. Please see Memory Population Table or the Online Memory Configuration Tool at: <http://www.hp.com/go/ddr3memory-configurator>.

Standard Features

Network Controller HPE Ethernet 1Gb 2-port 332i Adapter

Expansion Slots

Expansion Slot #	Technology	Bus Width*	Connector Width	Form Factor	Notes
4	PCIe 3.0	X8	X16	Full Length/Full Height	
3	PCIe 3.0	X8	X8	Full Length/Full Height	
2	PCIe 2.0	X1	x8	Full Length/Full Height	
1	PCIe 2.0	X1	X4	Half Length/Full Height	

*Indicates the number of physical electrical lanes running to the connector.

HPE Server ROM

HPE ROM (Read Only Memory) is now digitally signed using the HPE Corporate Signing Service. This signature is verified before the flash process starts, reducing accidental programming and preventing malicious efforts to corrupt system ROM.

HPE ROM provides for essential initialization and validation of hardware components before control is passed to the customer-installed operating system. The ROM also provides the capability of booting from various fixed media (HDD, CD-ROM) and removable media (USB), to continue operation to the operating system.

HPE ROM performs very early configuration of the video controller, to allow monitoring of initialization progress via an attached monitor. If configuration or hardware errors are discovered during this early phase of hardware initialization, suitable messages are now displayed on the connected monitor. Additionally, these configuration or hardware errors are logged to the Integrated Management Log (IML) to assist in diagnosis.

The HPE ProLiant ROM is used to configure the following:

- Processor and chipset status registers
- System memory, memory map, and memory initialization
- System hardware configuration (Integrated PCI devices and optional PCIe cards).
- Customer-specific BIOS configuration (using the HPE ROM-Based Setup Utility (RBSU)).

NOTE: For further information, please refer to the HPE ROM-Based Setup Utility User Guide: <http://www.hp.com/support/rbsu>.

Storage Controller HPE Dynamic Smart Array B120i Controller

NOTE: Supports up to 6.0Gb/s SATA. (SATA port 0/1 support 6Gb/s and SATA port 2/3 support 3Gb/s)

NOTE: Supports RAID 0/1/10 only. No FBWC support. For FBWC, a standup Smart Array Controller card must be configured.

NOTE: For set up instructions, please refer to the HPE ProLiant ML10 v2 series server user guide.

NOTE: For general information about HPE Smart Array B120i SATA RAID Controller, please go to: <http://h18013.www1.hp.com/products/servers/proliantstorage/arraycontrollers/dynamicsmartarray/index.html>

Internal Storage Devices Optical Drives

HPE Half-Height SATA DVD-ROM Optical Drive

Standard Features

One of the following depending on model HPE Half-Height SATA DVD-RW Optical Drive

Hard Drives

Hard Drive Bays

One of the following depending on model

4 LFF drive bays (non-hot-plug)

NOTE: All Pre-configured Models come populated with some hard drive blanks installed. Should the customer need additional hard drive blanks, they can order more using P/N 666986-B21: HPE LFF Gen8 Hard Drive Blank Kit.

Maximum Internal Storage

One of the following depending on model

Non Hot Plug LFF SATA 24TB

6 x 4TB

Interfaces

Video

1 (rear)

Network RJ-45 (Ethernet)

2 (1 shared for HPE Integrated Lights-Out)

USB

4 2 front, 2 rear(USB3.0)

Industry Standard Compliance

ACPI 2.0b Compliant

PCIe 3.0 Compliant

PXE Support

WOL Support

Microsoft® Logo certifications

USB 2.0 /3.0 Support

Server Power Cords

The ProLiant ML10v2 server is a tower server that ships standard with a 6' country specific NEMA power cord that allows connection to wall outlets in a home or office. If customers require additional local power cords, they can check the power cord matrix for the appropriate country specific SKU. Please see the following power cord matrix: <http://www.hp.com/go/powercordmatrix>.

Power Specifications

To review typical system power requirements, use the HPE Power Advisor which is available via download at URL: <http://www.hp.com/go/proliant-energy-efficient> or <http://www.hp.com/go/hppoweradvisor>.

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

Power Supplies

The ML10 v2 supports one power supply, a 350W Multi-Output Power Supply, the 350W Multi-Output Power Supply is a non-redundant power supply with an efficiency rating of 85%.

It is highly recommended that you use the HPE Power Advisor in defining the "Right-Size" power supply for your needs. HPE Power Advisor can be accessed at:

<http://www.hp.com/go/hppoweradvisor>.

NOTE: The 80 PLUS program is a unique forum that unites electric utilities, the computer industry, and consumers in an effort to bring energy efficient technology solutions to the marketplace. 80 Plus independently tests power supply efficiency and publicly posts the results on <http://www.80plus.org/>.

NOTE: Power Specification and Technical Content for supported power supplies can be found

Standard Features

at: <https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111541>

System Fans One (1) Non-redundant system fan ships standard

Operating Systems and Virtualization Software Support for ProLiant Servers [Microsoft Windows Server](#)
[Canonical Ubuntu](#)
[Red Hat Enterprise Linux \(RHEL\)](#)
[SUSE Linux Enterprise Server \(SLES\)](#)
[VMware](#)

NOTE: For more information on the HPE 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://www.hp.com/support/ML10v2>.

Graphics Integrated Matrox G200 video standard

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

HPE iLO 4 On System Management Memory

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

Form Factor Micro ATX Tower (4U) chassis with feet/bezel:
 One of the following depending on model
 14.5" (36.82cm) Height x 6.89" (17.5cm) Width x 18.71" (47.52cm) Length
 8 SFF Drive Bay Cage:
 4.6" (11.72cm) Height x 5.74" (14.57cm) Width x 4.79" (12.16cm) Length
 4 LFF Drive Bay Cage:
 4.6" (11.72cm) Height x 5.74" (14.57cm) Width x 6.90" (17.54cm) Length

On System Management HPE iLO Management Engine

HPE iLO Management Engine is a comprehensive set of embedded management features supporting the complete lifecycle of the server, from initial deployment, through ongoing management, to service alerting and remote support. HPE iLO Management Engine comes standard on all HPE ProLiant Gen8 servers. The HPE iLO Management Engine portfolio includes:

- **HPE iLO:** The HPE iLO (Integrated Lights-Out) management processor is the core foundation for the HPE iLO Management Engine
- **HPE Agentless Management:** Provides built in server health monitoring and alerting capability without OS agents, that starts working the moment a power cord and an Ethernet cable are connected.
- **HPE iLO Mobile App:** 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.hp.com/go/ilo/mobileapp>

NOTE: For more information, visit: <http://www.hp.com/go/ilo> or HPE iLO Management Engine technologies whitepaper.

Standard Features

HPE Insight Management

HPE Service Pack for ProLiant (SPP)

HPE Service Pack for ProLiant (SPP) and HPE Smart Update Manager (HPE SUM) provide a comprehensive approach to firmware and system software maintenance. Together they provide better operating stability and ensure maximum uptime. The SPP will be updated at a predictable cadence, typically coinciding with new Hewlett Packard Enterprise server hardware launches. By enabling firmware to be updated online and integrating firmware and system software updates in one operation, HPE SUM and the SPP offer faster updates of individual servers and dramatically faster updates of entire BladeSystem enclosures. Further improving system uptime and stability is the fact that Hewlett Packard Enterprise provides 12 months of support for each Service Pack for ProLiant release.

The user experience around HPE SUM and the SPP has been improved in several ways, starting with the web download. A single web page provides access to a single download containing both the latest version of HPE SUM and the latest SPP. Optional smaller subsets with only specific types of servers or specific operating systems are offered to save on download time. The HPE SUM application provides a straightforward, intuitive user interface that guides the user through the steps of discovery, analyses and update, providing comprehensive information on available updates, criticality and interdependencies. This information is also available in reports. By providing the option of multiple local or shared repositories which can be easily updated from hp.com, HPE SUM provides the tools to optimize stability and consistency throughout the company. While HPE SUM and the SPP recommend the combinations of firmware and system software that Hewlett Packard Enterprise has found to be the best practice, the application gives customers the flexibility to set their own specific baseline.

The Service Pack for ProLiant has been rigorously tested with specific attention for interaction between firmware, drivers and agents both within the server as well as in interaction with the BladeSystem enclosure components (Onboard Administrator and Virtual Connect). This testing ensures the highest quality as well as providing the input for HPE SUM to deploy updates taking into account all interdependencies, when determining the correct updates and order of update deployment.

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
Administrator's password

Warranty

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

NOTE: Server Warranty includes 1-Year Parts. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR

Standard Features

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://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>

Optional Features

HPE Insight Management

HPE Insight Control	HPE Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, remote control, and optimize your IT infrastructure through a single, simple management console. HPE Insight Control also supports Location and Power Discovery Services to automate many configuration, asset tracking, and power management tasks to speed implementation and prevent downtime. For more information, see http://www.hp.com/go/insightcontrol .
	HPE Insight Control includes one year of 24 x 7 HPE Software Technical Support and Update Service ensuring rapid access to Hewlett Packard Enterprise support staff and proactive delivery of software updates. For more information about this service, see: http://www.hp.com/services/insight .
HPE iLO Advanced	HPE Integrated Lights-Out Advanced License a product option, providing smart remote server management without compromise. iLO Advanced unlocks the full set of remote administration functionality for all HPE ProLiant servers by activating the full Virtual Keyboard Video and Mouse remote console, multi-user collaboration, console record and replay, GUI-based and scripted virtual media and virtual folders, and enhanced security and power management functionality. For more information, see: http://www.hp.com/go/iloadvance
HPE iLO Essentials	HPE iLO Essentials license ideal for small and medium business customers. The specially created HPE iLO Essentials (a subset of iLO Advanced functionality) saves SMB customers time and money, by ease of remote server set up through the interactive virtual media, lowering operational costs with remote access via the Integrated Remote Console, and faster time to resolution with email-based proactive notifications. With this newly designed HPE iLO Essentials license SMB customers now have the option of a server management package solely design and priced just right for their IT environments. HPE iLO Essentials is available on all HPE ProLiant Gen8 e-series making this an ideal solution for small business owners. For more information, see: http://www.hp.com/go/iLO/essentials

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 HPE 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, HPE data protection and recovery software will cost-effectively protect you against disaster and ensure business continuity.
- **Data Archive and Migration Software**
The HPE 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)**
The HPE 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.

Optional Features

- **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 HPE 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 turn a set of heterogeneous and disconnected physical disk drives in your servers and storage devices into a single pool of logical storage capacity.

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

HPE Insight Online

HPE Insight Online is a new addition to the HPE Support Center for one stop, secure access to product and HPE support information personalized to your IT environment. Insight Online can automatically display devices remotely monitored by HPE Insight Remote Support. With Insight Online's easy navigation you can efficiently track your IT support contracts and device status from anywhere and at anytime. <http://www.hp.com/go/insightonline>

Factory Express Portfolio for Servers and Storage

HPE Factory Express offers configuration, customization, integration and deployment services for Hewlett Packard Enterprise servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed.

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. Hewlett Packard Enterprise products supported through Factory Express include a wide array of servers and storage: HPE Integrity, HPE ProLiant, HPE ProLiant Server Blades, HPE BladeSystem, HPE 9000 servers as well as the MSAxxxx, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches.

For more information on Factory Express services for your specific server model please contact your sales representative or go to: <http://www.hp.com/go/factory-express>

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 the HPE Customer Business Center or an Authorized Partner for assistance. <http://www.hp.com/products/configurator>

Service and Support

Service and Support

HPE Technology Services for Industry Standard Servers

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. Our support technology lets you to tap into the knowledge of millions of devices and thousands of experts to stay informed and in control, anywhere, any time.

Protect your business beyond warranty with HPE Pointnext operational services

HPE Pointnext operational services enable you to order the right service level, length of coverage and response time as you purchase your new server, giving you full entitlement for the term you select.

Optimized Care

Supports maintaining servers at optimum performance availability

HPE Proactive Care with 24x7 coverage, three year Care Pack Service

HPE Proactive Care helps prevent problems and stabilize IT by utilizing secure, real-time, predictive analytics and proactive consultations when your products are connected to Hewlett Packard Enterprise. This Care Pack Service combines three years' proactive reporting and advice with our 24x7 coverage and enhanced escalation management, four hour hardware response time and two hour call back for software questions on leading industry standard software running on your HPE ProLiant server. <https://www.hpe.com/h20195/v2/getpdf.aspx/4aa3-8855enw.pdf>

Standard Care

Supports maintaining high level of server availability

Foundation Care 24x7, three-year Care Pack Service

HPE Foundation Care 24x7 connects you to Hewlett Packard Enterprise 24 hours a day, seven days a week for assistance on resolving issues. Hardware onsite response within four hours if needed; collaborative software included in this Care Pack service provides troubleshooting assistance on industry leading software running on your Hewlett Packard Enterprise server. Simplify your support experience and make Hewlett Packard Enterprise your first call for hardware or software questions. <https://www.hpe.com/h20195/V2/GetDocument.aspx?docname=4AA4-8876ENW&cc=us&lc=en>

Basic Care

Delivers minimum recommended support service level

Foundation Care NBD, three-year Care Pack Service

HPE Foundation Care Next Business Day connects you to Hewlett Packard Enterprise during business hours for assistance on resolving issues – features next business day hardware onsite response if needed and software call back within two hours. 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 for hardware or software questions. <https://www.hpe.com/h20195/V2/GetDocument.aspx?docname=4AA4-8876ENW&cc=us&lc=en>

Get connected to Hewlett Packard Enterprise to improve your support experience

Prevent problems with innovative, automated monitoring tools and proactive services. Combining Proactive Care Services with our remote support technology such as Insight Online provides you with expert advice and personalized, cloud-based automated IT support, helping to prevent unplanned down time and solve problems quickly. For more information, visit: <http://www.hp.com/go/proactiveinsightexperience>

Related Services

HPE ProLiant 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.

Service and Support

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN.pdf>

Factory Express for Servers and storage

HPE Factory Express offers configuration, customization, integration and deployment services for Hewlett Packard Enterprise servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed. For more information on Factory Express services for your specific server model please contact your sales representative or go to:

<http://www.hp.com/go/factory-express>.

Data Privacy Services

Protect your data through better media management. HPE Data privacy services help manage and protect sensitive data to reduce the risk of unauthorized access to private information and help meet compliance requirements. Our retention services allow you to keep drives and other devices upon failure, our removal services provide convenient data sanitization and our recovery services allow you to safely retire IT assets and capture any remaining value from the hardware.

<http://www.hp.com/services/dataprivacy>

Additional HPE Pointnext operational services can be found at: <http://www.hp.com/go/cpc>

HPE Support Center

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.hp.com/go/hpsc>

Hewlett Packard Enterprise's 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 HPE warranty, HPE Care Pack or HPE contractual support agreement.

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

Parts and Materials

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

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

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

For more information

To learn more on HPE ProLiant servers and HPE BladeSystem servers, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner. Or visit: <http://www.hp.com/services/proliant>

Pre-configured Models

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

NOTE: Hewlett Packard Enterprise does not allow factory integration of options into pre-configured models. Any additional options purchased will be shipped separately.

NOTE: Maximum speed supported depends on the CPU installed.

Please see Memory Population Table or the Online Memory Configuration Tool at: <http://www.hp.com/go/ddr3memory-configurator>.

NOTE: All Pre-configured Models come populated with some hard drive blanks installed. Should the customer need additional hard drive blanks, they can order more using P/N 666986-B21: HPE LFF Gen8 Hard Drive Blank Kit.

Entry Models

HPE ProLiant ML10 v2 G32401P 4GB-U NHP 4 LFF 350W PS Entry Svr 814483-001	Processor(s)	(1) Intel® PentiumG3240 (3.1GHz/2-core/3MB/54W, HT) Processor
	Cache Memory	3MB (1 x 3MB) L3 cache
	Memory	4GB (1 x 4GB) PC3-12800E DDR3 UDIMM
	Network Controller	HPE Ethernet 1Gb 2-port 332i Adapter
	Storage Controller	HPE Dynamic Smart Array B120i Controller
	Hard Drive	None
	Internal Storage	4 LFF SATA HDD cage; includes 4 LFF hard drive blanks
	Optical Drive	None
	Power Supply	HPE 350W Multi-Output Power Supply
	Fans	One (1) Non-redundant system fan ships standard
	Management	HPE iLO Management Engine (standard on system NIC) Optional: HPE iLO Essentials or HPE Insight Control
	Form Factor	Micro ATX Tower (4U)
Warranty	Server Warranty includes 1-Year Parts.	
HPE ProLiant ML10 v2 G32401P 4GB-U B120i NHP 4LFF 1x1TB 350W PS Entry Server 814484-001	Processor(s)	(1) Intel® PentiumG3240 (3.1GHz/2-core/3MB/54W, HT)Processor
	Cache Memory	3MB (1 x 3MB) L3 cache
	Memory	4GB (1 x 4GB) PC3-12800E DDR3 UDIMM
	Network Controller	HPE Ethernet 1Gb 2-port 332i Adapter
	Storage Controller	HPE Dynamic Smart Array B120i Controller
	Hard Drive	1x1TB SATA drive and 3 LFF hard drive blanks
	Internal Storage	4 LFF SATA HDD cage
	Optical Drive	None
	Power Supply	HPE 350W Multi-Output Power Supply
	Fans	One (1) Non-redundant system fan ships standard
	Management	HPE iLO Management Engine (standard on system NIC) Optional: HPE iLO Essentials or HPE Insight Control
	Form Factor	Micro ATX Tower (4U)
Warranty	Server Warranty includes 1-Year Parts	

Pre-configured Models

Base Models

HPE ProLiant ML10 v2 i3 4150 1P 4GB-U B120i 350W PS Svr 814485-001	Processor(s)	(1) Intel® Core™ i3-4150 (3.5GHz/2-core/3MB/54W, HT)Processor
	Cache Memory	3MB (1 x 3MB) L3 cache
	Memory	4GB (1 x 4GB) PC3-12800E DDR3 UDIMM
	Network Controller	HPE Ethernet 1Gb 2-port 332i Adapter
	Storage Controller	HPE Dynamic Smart Array B120i Controller
	Hard Drive	1x1TB SATA drive and 3 LFF hard drive blanks
	Internal Storage	4 LFF SATA HDD cage
	Optical Drive	None
	Power Supply	HPE 350W Multi-Output Power Supply
	Fans	One (1) Non-redundant system fan ships standard
	Management	HPE iLO Management Engine (standard on system NIC) Optional: HPE iLO Essentials or HPE Insight Control
	Form Factor	Micro ATX Tower (4U)
	Warranty	Server Warranty includes 1-Year Parts.

Smart Buy Models

HPE ProLiant ML10 v2 G3240 NHP US Svr/S-B 812126-S01	Processor(s) Cache Memory Memory Network Controller Storage Controller Hard Drive Internal Storage Optical Drive Power Supply Fans Management Form Factor Warranty	(1) Intel® PentiumG3240 (3.1GHz/2-core/3MB/54W, HT) Processor 3MB (1 x 3MB) L3 cache 4GB (1 x 4GB) PC3-12800E DDR3 UDIMM HPE Ethernet 1Gb 2-port 332i Adapter HPE Dynamic Smart Array B120i Controller None 4 LFF SAS/SATA HDD cage; includes 4 LFF hard drive blanks None HPE 350W Multi-Output Power Supply One (1) Non-redundant system fan ships standard HPE iLO Management Engine (standard on system NIC) Optional: HPE iLO Essentials or HPE Insight Control Micro ATX Tower (4U) Server Warranty includes 1-Year Parts.
HPE ProLiant ML10 v2 i3-4150 NHP US Svr/S-B 812128-S01	Processor(s) Cache Memory Memory Network Controller Storage Controller Hard Drive Internal Storage Optical Drive Power Supply Fans Management Form Factor Warranty	(1) Intel® Core™ i3-4150 (3.5GHz/2-core/3MB/54W, HT)Processor 3MB (1 x 3MB) L3 cache 4GB (1 x 4GB) PC3-12800E DDR3 UDIMM HPE Ethernet 1Gb 2-port 332i Adapter HPE Dynamic Smart Array B120i Controller None 4 LFF SAS/SATA HDD cage; includes 4 LFF hard drive blanks None HPE 350W Multi-Output Power Supply One (1) Non-redundant system fan ships standard HPE iLO Management Engine (standard on system NIC) Optional: HPE iLO Essentials or HPE Insight Control Micro ATX Tower (4U) Server Warranty includes 1-Year Parts.
HPE ProLiant ML10 v2 E3-1220v3 NHP US Svr/S-B 812129-S01	Processor(s) Cache Memory Memory Network Controller Storage Controller Hard Drive Internal Storage Optical Drive Power Supply	(1) Intel® Xeon® E3-1220v3 (3.1GHz/4-core/8MB/80W)Processor 8MB (1 x 8MB) L3 cache 4GB (1 x 4GB) PC3-12800E DDR3 UDIMM HPE Ethernet 1Gb 2-port 332i Adapter HPE Dynamic Smart Array B120i Controller None 4 LFF SAS/SATA HDD cage; includes 4 LFF hard drive blanks None HPE 350W Multi-Output Power Supply

Smart Buy Models

Fans	One (1) Non-redundant system fan ships standard
Management	HPE iLO Management Engine (standard on system NIC) Optional: HPE iLO Essentials or HPE Insight Control
Form Factor	Micro ATX Tower (4U)
Warranty	Server Warranty includes 1-Year Parts.

**HPE ProLiant ML10 v2
E3-1220v3 NHP US
Svr/S-B
812130-S01**

Processor(s)	(1) Intel® Xeon® E3-1220v3 (3.1GHz/4-core/8MB/80W)Processor
Cache Memory	8MB (1 x 8MB) L3 cache
Memory	8GB (1 x 8GB) Dual Rank PC3-12800E DDR3 UDIMM
Network Controller	HPE Ethernet 1Gb 2-port 332i Adapter
Storage Controller	HPE Dynamic Smart Array B120i Controller
Hard Drive	1TB 6G SATA 7.2k 3.5in NHP
Internal Storage	4 LFF SAS/SATA HDD cage; includes 3 LFF hard drive blanks
Optical Drive	None
Power Supply	HPE 350W Multi-Output Power Supply
Fans	One (1) Non-redundant system fan ships standard
Management	HPE iLO Management Engine (standard on system NIC) Optional: HPE iLO Essentials or HPE Insight Control
Form Factor	Micro ATX Tower (4U)
Warranty	Server Warranty includes 1-Year Parts.

Core Options

HPE Unique Options	HP ML10v2 Drive Enablement Kit	812248-B21
HPE Memory	Unbuffered with ECC DIMMs (UDIMMs)	
	NOTE: The following memory is supported by the E3-1200 series Processors	
	HPE 4GB (1x4GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669322-B21
	HPE 4GB (1x4GB) Single Rank x4 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	820077-B21
	HPE 8GB (1x8GB) Dual Rank x8 PC3- 12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669324-B21
	HPE 8GB (1x8GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	815371-B21
HPE Optical Drives	HPE Half-Height SATA DVD ROM JackBlack Optical Drive	624189-B21
	HPE Half-Height SATA DVD RW JackBlack Optical Drive	624192-B21
HPE Hard 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.	
	6G SATA Non-hot Plug LFF (3.5-inch) Midline (MDL) Drives	
	HPE 3TB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive	628065-B21
	HPE 2TB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive	659339-B21
	HPE 1TB SATA 6G Midline 7.2K LFF (3.5in) RW 1yr Wty HDD	659337-B21
	HPE 500GB SATA 6G Midline 7.2K LFF (3.5in) RW 1yr Wty HDD	659341-B21
	6G SATA Non-hot Plug LFF (3.5-inch) Entry (ETY) Drives	
	HPE 4TB SATA 6G Entry 5.9K LFF (3.5in) RW 1yr Wty HDD	815635-B21
	6G SATA Non-hot Plug LFF (3.5-inch) STY Hard Drives	
	HPE 3TB SATA 6G Midline 7.2K LFF (3.5in) RW 1yr Wty HDD	843270-B21
	HPE 2TB SATA 6G Midline 7.2K LFF (3.5in) RW 1yr Wty HDD	843268-B21
	HPE 1TB SATA 6G Entry 7.2K LFF (3.5in) RW 1yr Wty HDD	843266-B21

Core Options

HPE 500GB SATA 6G Midline 7.2K LFF (3.5in) RW 1yr Wty HDD

843264-B21

NOTE: Maximum supported lifetime/maximum usage:

Parts and components that have exceeded 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 this service.

NOTE: Data Retentive components that are specified by HPE as consumable parts and/or that have exceeded the maximum supported lifetime and/or the maximum usage limit as set forth in the manufacturer's operating manual, the product QuickSpecs, or the technical data sheet are not eligible for the defective media retention or the comprehensive defective material retention service feature option.

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:

<https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111725>

Hard Drive Kits

NOTE: All Factory Integrated Models will be populated with sufficient hard drive blanks based on the number of initial hard drives ordered with the server.

NOTE: The part numbers for single HDD blanks below are provided should the customer require replacement HDD blanks for their server

HPE Large Form Factor Hard Drive Blank Kit

666986-B21

HPE Networking

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

Switches

HPE PS110 Wireless 802.11n VPN AM Router

JL065A

HPE PS110 Wireless 802.11n VPN WW Router

JL066A

NOTE: HPE PS110 Wireless VPN Router Series deliver high-performance internet access and wired/wireless connectivity for offices and remote/mobile employees.

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:

<https://www.hpe.com/h20195/v2/Gethtml.aspx?docname=c04519011>

HPE PS1810-8G Switch

J9833A

HPE PS1810-24G Switch

J9834A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:

Core Options

<https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111385>

HPE Computation and Graphics Accelerators

NVIDIA Quadro K2000 PCIe Graphics Adapter

753959-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 a Hewlett Packard Enterprise approved configurator. Contact your local sales representative for additional information.

HPE Insight Software	HPE Insight Control	
	HPE Insight Control including 1yr 24x7 Technical Support and Updates 1-server LTU	C6N27A
	HPE Insight Control including 1yr 24x7 TSU E-LTU	C6N28ABE
	HP Insight Control Server Provisioning Media Kit	BD883A
	HPE Insight Management Media Kit	C6N31A

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 24 x 7 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:

<https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04123391>

HPE Integrated Lights-Out (iLO)

HPE iLO Essentials

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

HPE Integrated Lights-Out (iLO) Advanced for ProLiant

HPE iLO Advanced including 1yr 24x7 Technical Support and Updates E-LTU	E6U59ABE
HPE iLO Advanced including 3yr 24x7 Technical Support and Updates E-LTU	E6U64ABE
HPE iLO Advanced including 1yr 24x7 Technical Support and Updates 1-server LTU	512485-B21
HPE iLO Advanced including 3yr 24x7 Tech Support and Updates 1-server LTU	BD505A
HPE iLO Advanced including 3yr 24x7 Tech Support and Updates Flexible Quantity LTU	BD506A
HPE iLO Advanced including 3yr 24x7 Tech Support and Updates Tracking LTU	BD507A

Additional Options

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

NOTE: For additional license kits, including electronic delivery options, please see the QuickSpecs at:

<https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04154343>

NOTE: For more information, visit: <http://www.hp.com/go/ilo>.

HPE Security

HPE Trusted Platform Module Option 488069-B21

NOTE: The TPM (Trusted Platform Module) is a microcontroller chip that can securely store artifacts used to authenticate the server platform. These artifacts can include passwords, certificates and encryption keys. Windows® BitLocker™ Drive Encryption (BitLocker) is a data protection feature available in Windows Server® 2008. BitLocker leverages the enhanced security capabilities of a Trusted Platform Module (TPM) version 1.2. The TPM works with BitLocker to help protect user data and to ensure that a server running Windows Server 2008 has not been tampered with while the system was offline. For more information about TPM, including a white paper, go to:

<http://www.hp.com/go/TPM>.

NOTE: ProLiant OS pre-installed units will come with the partition required for TPM deployment.

NOTE: The TPM key is unique to every TPM deployed server and must be retained. Misplacing or losing the key could result in data loss.

HPE Storage Controllers HPE Host Bus Adapters

HP H220 Host Bus Adapter 650933-B21

HPE H221 PCIe 3.0 SAS Host Bus Adapter 729552-B21

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:

<https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111197>(HBA H220)

<https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111475>(HBA H221)

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>.

SAS Rack-Mount Tape Solutions

HPE StoreEver LTO-6 Ultrium 6650 SAS External Tape Drive EH964A

HPE StoreEver LTO-6 Ultrium 6250 Tape Drive in a 1U Rack Mount Kit COL99A

HPE StoreEver LTO-6 Ultrium 6250 Internal Tape Drive EH969A

Additional Options

HPE StoreEver LTO-6 Ultrium 6250 External Tape Drive	EH970A
HPE StoreEver LTO-5 Ultrium 3000 SAS Tape Drive in a 1U Rack Mount Kit	EJ014B
HPE StoreEver LTO-5 Ultrium 3000 SAS External Tape Drive	EH958B
HPE StoreEver LTO-5 Ultrium 3280 SAS External Tape Drive	EH900B
HPE StoreEver LTO-4 Ultrium 1760 SAS (1) in a 1U Rack Mount Kit	EH946C
HPE StoreEver LTO-4 Ultrium 1760 SAS External Tape Drive	EH920B
HPE StoreEver LTO-3 Ultrium 920 SAS External Tape Drive	EH848B
HPE StoreEver 1U SAS Rack Mount Kit	AE459B

HPE DAT Autoloader

HPE StoreEver 1/8 G2 LTO-6 Ultrium 6250 Fibre Channel Tape Autoloader	COH19A
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HPE MSL2024 Tape Library

HPE StoreEver MSL2024 0-drive Tape Library	AK379A
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HPE MSL4048 Tape Library

HPE StoreEver MSL4048 0-drive Tape Library	AK381A
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HPE StoreEver MSL6480

HPE StoreEver MSL6480 Scaleable Expansion Module	QU626A
HPE StoreEver MSL6480 Scalable Base Module	QU625A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:

<https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111416>

HPE Disk Backup

NOTE: For the complete range of RDX drives and media see: <http://www.hp.com/go/rdx>. For hardware and software compatibility of HPE disk backup products see: <http://www.hp.com/storage/SPOCK>.

HPE RDX Removable Disk Backup System

HPE RDX500 USB3.0 Internal Disk Backup System	B7B64A
HP RDX+ 500GB External Backup System	B7B66B
HPE RDX1000 USB3.0 Internal Disk Backup System	B7B67A
HPE RDX 2TB USB3.0 External Disk Backup System	E7X53B
HP RDX+ 1TB External Backup System	B7B69B
HPE RDX+ External Docking System	C8S07B

Additional Options

HPE D3700 Enclosure QW967A

HPE D3600 Enclosure QW968A

NOTE: Please see the QuickSpecs for additional part numbers, Technical Specifications, and additional information:
<https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111633>

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

HPE D6000 Dual I/O Module Disk Enclosure QQ695A

HPE D6000 w/35 2TB 6G SAS 7.2K LFF Dual port MDL HDD 70TB Bundle QQ697A

HPE D6000 w/70 2TB 6G SAS 7.2K LFF Dual port MDL HDD 140TB Bundle QQ698A

HPE D6000 w/35 3TB 6G SAS 7.2K LFF Dual port MDL HDD 105TB Bundle QQ699A

HPE D6000 w/70 3TB 6G SAS 7.2K LFF Dual port MDL HDD 210TB Bundle QQ700A

HP D2600 w/12 4TB 6G SAS 7.2K LFF Dual Port MDL HDD 48TB Bundle E7W32A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
<https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111697>

HPE KVM Switches

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 Other Options

HP Advanced Power Manager Kit 741192-B21

HP ConvergedSystem Door Branding Kit TK815A

HP ConvergedSystem Rack Light Kit TK816A

HP ConvergedSystem Rack Side Panel 1075mm Kit TK817A

HPE Uninterruptible Power Systems (UPS)

HPE DirectFlow Three Phase UPS Power Unit (1U UPS)

HPE R12000 DirectFlow - 1U Rackmount Uninterruptible Power System G9Y75A

Additional Options

HPE R12000 DirectFlow - POD 1U Rackmount Uninterruptible Power System AF478A

Input/Output Module Options for 1U UPS

NOTE: Choose one I/O Module per UPS.

HPE 30A 400-415 Volt Three Phase NA R10000 DirectFlow UPS IEC309 Input/Output Module AF489A

HPE 30A 480 Volt Three Phase NA R12000 DirectFlow UPS L22-30 Input/Output Module AF491A

HPE 30A 480 Volt Three Phase NA R12000 DirectFlow UPS IEC309 Input/Output Module AF492A

HPE 30A 400-415 Volt Three Phase NA R12000 DirectFlow UPS IEC309 Input/Output Module G9Y76A

HPE DirectFlow UPS Management Card AF493A

Power Unit (2U UPS)

HPE R18000 DirectFlow - 2U Rackmount Uninterruptible Power System AF479A

Input/Output Module Options for 2U UPS

HPE 30A 480 Volt Three Phase NA R18000 DirectFlow UPS IEC309 Input/Output Module AF486A

HPE 30A 480 Volt Three Phase NA R18000 DirectFlow UPS IEC309 Input/Output Module AF487A

HPE 30A 400 Volt Three Phase NA R18000 DirectFlow UPS IEC309 Input/Output Module D9Q02A

HPE 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

HPE DirectFlow UPS - 1U Rackmount Lithium-ion Battery Pack AF480A

HPE DirectFlow UPS - 3U Rackmount VRLA Battery Pack AF482A

HPE WW DirectFlow Secondary Battery Cable AF497A

NOTE: Please see the [HPE DirectFlow Three Phase Uninterruptible Power System QuickSpecs](#) for information on additional options and product specifications.

HPE Tower UPS

Additional Options

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

HPE Rack/Tower UPS

HPE R/T2200 G4 UPS Models

HPE R/T2200 G4 NA/JP Uninterruptible Power System J2R00A

HPE R/T3000 G4 UPS Models

HPE R/T3000 G4 Low Voltage NA/JP Uninterruptible Power System J2R01A

HPE R/T3000 G4 High Voltage NA/JP Uninterruptible Power System J2R02A

HPE Tower UPS

HPE T1000 G3 UPS Models

HP T1000 G3 1000VA NA Tower Uninterruptible Power System AF448A

HPE Rack-mountable UPS

HPE R1500 G4 Uninterruptible Power Supply (UPS)

HPE R1500 G4 NA Uninterruptible Power System J2Q99A

R5000 Uninterruptible Power System (UPS)

HPE R5000 3U L630 High Voltage NA/JP Uninterruptible Power System AF460A

R7000 Uninterruptible Power System (UPS)

HPE R7000 4U 50A High Voltage NA/JP Uninterruptible Power System AF462A

HPE UPS Options

HPE R/T2200 G4 Extended Runtime Module J2R09A

HPE R/T3000 G4 Extended Runtime Module J2R10A

HPE 2U Rack/Tower UPS Shipping Kit L4Q11A

NOTE: Please see the [HPE Line Interactive Single Phase UPS QuickSpecs](#) for information on additional options and product specifications.

NOTE: To learn more, please visit the [HPE Uninterruptible Power Systems \(UPS\) web page](#).

NOTE: For additional information on sizing your server, please reference: <http://www.upssizer.com>.

NOTE: Please see the UPS and PDU cable matrix's on the HPE Power Protection

Additional Options

and Management page. Under Power Cords, click on the "HPE Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link:

<http://www.hp.com/products/powercords>.

NOTE: For additional information on HPE Uninterruptible Power Systems please go to: <http://www.hp.com/servers/rackups>.

HPE Basic Power Distribution Units (bPDU)	HPE 1.9kVA 120 Volt L5-20 Input (12xNEMA 5-20R) NA/JP Basic PDU	H5M54A
	HPE Basic 3.6kVA/60320 C20 Detachable 16A/230V Outlets (12) C13/Horizontal WW PDU	H5M56A
	HPE Basic 2.8kVA/L5-30P 24A/120V Outlets (18) 5-20R/Vertical NA/JP PDU	H5M55A
	HPE Basic 4.9kVA/60320 C20 Detachable 16A/230V Outlets (20) C13/Vertical WW PDU	H5M57A
	HPE Basic 4.9kVA/L6-30P 24A/208V Outlets (20) C13/Vertical NA/JP PDU	H5M58A
	HPE Basic 3Ph 8.6kVA/L15-30P 24A/208V Outlets (18) C13/Vertical NA/JP PDU	H5M61A
	HPE Basic 4.9kVA/L6-30P 24A/208V Outlets (24) C13 (6) C19/Vertical NA/JP PDU	H5M59A
	HPE Basic 8.3kVA/CS8265C 40A/208V Outlets (30) C13 (6) C19/Vertical NA PDU	H5M60A
	HPE Basic 9.2kVA/50A Terminal Block 40A/230V Outlets (30) C13 (6) C19/Vertical WW PDU	H5M75A
	HPE Basic 3Ph 5.7kVA/ L21-20P 16A/120-208V Outlets (24) C13 (3) 5-20R/Vertical NA/JP PDU	H5M63A
	HPE Basic 3Ph 8.6kVA/L21-30P 24A/120-208V Outlets (24) C13 (3) C19 (3) 5-20R/Vertical NA/JP PDU	H5M64A
	HPE Basic 3Ph 8.6kVA/L15-30P 24A/208V Outlets (24) C13 (6) C19/Vertical NA/JP PDU	H5M62A
	HPE Basic 3Ph 11kVA/60309 16A/240V Outlets (36) C13 (6) C19/Vertical NA PDU	H5M67A
	HPE 800VA - 277V Input / 230V Output NA Rack Mount Transformer	H3X09A
	HPE Basic Modular 2.8kVA/L5-30P 24A/120V Outlets (4) C19/Horizontal NA/JP PDU	252663-D71
HPE Basic Modular 4.9kVA/L6-30P 24A/208V Outlets (4) C19/Horizontal NA/JP Core Only PDU	252663-D74	
HPE Basic Modular 8.3kVA/CS8265C 40A/208V Outlets (4) C19/Horizontal NA/JP PDU	252663-D75	
HPE Basic Modular 3Ph 8.6kVA/L15-30P 24A/208V Outlets (6) C19/Horizontal NA/JP PDU	AF512A	

Additional Options

HPE Basic Modular 3Ph 14.4kVA/CS8365C 40A/208V Outlets (6) C19/Horizontal NA/JP PDU AF519A

HPE Basic Modular 3Ph 17.3kVA/60309 60A 4-wire 48A/208V Outlets (6) C19/Horizontal NA/JP PDU AF511A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:

<https://www.hp.com/h20195/v2/GetHTML.aspx?docname=c04111250>

NOTE: Additional HPE Power Distribution Units are available. For a complete list of all HPE PDUs and additional information please visit

<http://www.hp.com/go/rackandpower>.

HPE Remote Monitored Power Distribution Units (mPDU)

HPE Remote Monitored Power Distribution Unit: 1U Version

HPE Metered 2.8kVA/L5-30P 24A/120V Outlets (12) 5-20R/Horizontal NA/JP PDU D9N43A

HPE Metered 3.6kVA/60320 C20 Detachable 16A/230V Outlets (12) C13/Horizontal WW PDU D9N46A

HPE Metered 4.9kVA/L6-30P 24A/208V Outlets (12) C13/Horizontal NA/JP PDU D9N44A

HPE Remote Monitored Power Distribution Unit: Half Height Version

HPE Metered 3.6kVA/60320 C20 Detachable 16A/230V Outlets (16) C13/Vertical WW PDU D9N45A

HPE Metered 4.9kVA/L6-30P 24A/208V Outlets (12) C13/Vertical NA/JP PDU G9Z05A

HPE Remote Monitored Power Distribution Unit: Mid Height Version

HPE Metered 4.9kVA/L6-30P 24A/208V Outlets (20) C13 (4) C19/Vertical NA/JP PDU D9N47A

HPE Metered 3Ph 8.6kVA/L15-30P 24A/208V Outlets (18) C13 (3) C19/Vertical NA/JP PDU D9N51A

HPE Metered 3Ph 5.7kVA/L21-20P 16A/120-208V Outlets (13) C13 (3) 5-20R/Vertical NA/JP PDU D9N52A

HPE Metered 3Ph 8.6kVA/L21-30P 24A/120-208V Outlets (18) C13 (3) C19 (3) 5-20R/Vertical NA/JP PDU D9N53A

HPE Remote Monitored Power Distribution Unit: Full Height Version

HPE Metered 8.3kVA/CS8265C 40A/208V Outlets (30) C13 (3) C19/Vertical NA PDU D9N49A

HPE Metered 3Ph 14.4kVA/CS8365C 40A/208V Outlets (12) C13 (12) C19/Vertical NA/JP PDU D9N58A

HPE Metered 3Ph 16.6kVA/60309 32A-30A 5-wire 24A/230V Outlets (30) C13 (3) C19/Vertical NA/JP PDU D9N61A

HPE Metered 3Ph 17.3kVA/60309 60A 4-wire 48A/208V Outlets (24) C13 (3) D9N54A

Additional Options

C19/Vertical NA/JP PDU

HPE Metered 3Ph 17.3kVA/60309 60A 4-wire 48A/208V Outlets (12) C13 (12)
C19/Vertical NA/JP PDU D9N59A

HPE Metered 3Ph 16.6kVA/60309 32A-30A 5-wire 24A/230V Outlets (12) C13 (12)
C19/Vertical NA/JP PDU D9N62A

HPE Metered 3Ph 19.9kVA/L22-30P 24A/277V Outlets (30) RF-203P-HP/Vertical NA
PDU D9N63A

HPE Metered 3Ph 17.3kVA/60309 60A 4-wire 48A/208V Outlets (12) C13 (12)
C19/Vertical NA/JP PDU G9Z07A

HPE Environmental Sensor for Remote Monitored PDUs

HP Environmental Sensor for Remote Monitored and Managed PDUs E2D53A

NOTE: Please see the QuickSpecs for additional information:

<https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04229513>

HPE Intelligent Power Distribution Units (iPDU)

iPDU Core Units

HPE Intelligent Modular 4.9kVA/L6-30P 24A/208V Outlets (6) C19/Horizontal NA/JP
PDU AF520A

HPE Intelligent Modular 8.3kVA/CS8265C 40A/208V Outlets (6) C19/Horizontal
NA/JP PDU AF521A

HPE Intelligent Modular 3Ph 8.6kVA/L15-30P 24A/208V Outlets (6) C19/Horizontal
NA/JP PDU AF522A

HPE Intelligent Modular 3Ph 14.4kVA/CS8365C 40A/208V Outlets (6) C19/Horizontal
NA/JP PDU AF533A

HPE Intelligent Modular 3Ph 17.3kVA/60309 60A 4-wire 48A/208V (6)
C19/Horizontal NA/JP PDU AF523A

HPE Intelligent Modular 3Ph 11kVA/L22-20P 16A/240V Outlets (6) C19/Horizontal
NA/JP PDU AF900A

HPE Intelligent Modular 3Ph 17.3kVA/60309 30A 5-wire 24A/240V (6)
C19/Horizontal NA/JP PDU AF901A

HPE Intelligent Modular 3Ph 17.3kVA/IEC 60309 60A 4-wire 48A/208V (12)
C19/Horizontal NA/JP PDU AF535A

HPE Intelligent Modular 3Ph 17.3kVA/IEC 60309 30A 5-wire 24A/240V (12)
C19/Horizontal NA/JP PDU AF537A

iPDU Kits with Standard Extension Bars

HPE Intelligent Modular 4.9kVA/L6-30P 24A/208V Outlets (20) C13 (6)
C19/Horizontal NA/JP PDU AF531A

Additional Options

HPE Intelligent Modular 3Ph 8.6kVA/L15-30P 24A/208V Outlets (20) C13 (6) C19/Horizontal NA/JP PDU AF532A

iPDU Extension Bars

HPE 5xC13 Intelligent PDU Extension Bar G2 Kit AF547A

HPE 5xC13 Outlets Power and UID LEDs Pair Standard Extension Bar AF528A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:

<https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04128194>

HPE Managed Power Distribution Units (maPDU)

Half Height Models

HPE Metered Switched 3.6kVA/60320 C20 Detachable 16A/230V Outlets (7) C13 (1) C19/Vertical WW PDU H8B49A

Full Height Models

HPE Metered Switched 2.8kVA/L5-30P 24A/120V Outlets (24) 5-20R /Vertical NA/JP PDU H8B48A

HPE Metered Switched 4.9kVA/L6-30P 24A/208V Outlets (20) C13 (4) C19/Vertical NA/JP PDU H8B50A

HPE Metered Switched 3Ph 8.6kVA/L15-30P 24A/208V Outlets (18) C13 (6) C19/Vertical NA/JP PDU H8B52A

HPE Metered Switched 3Ph 8.6kVA/L21-30P 24A/208V Outlets (20)C13 (3)C19 (1)5-20R/Vertical NA/JP PDU H8B53A

HPE Metered Switched 3Ph 14.4kVA/CS8365C 40A/208V Outlets (12) C13 (12) C19/Vertical NA/JP PDU H8B55A

HPE Metered Switched 3Ph 17.3kVA/60309 4-wire 48A/208V Outlets (12) C13 (12) C19/Vertical NA/JP PDU H8B56A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:

[HPE Managed Power Distribution Units QuickSpecs](#)

HPE Rack Options

HPE Location Discovery Services

HPE Location Discovery Services LCD8500 Kit TL052A

NOTE: Please see the [HPE Location Discovery Services QuickSpecs](#) for information on additional options and product specifications.

HPE LCD8500 1U Rackmount Console Kit Models

HP LCD8500 1U US Rackmount Console Kit AF630A

HP LCD8500 1U US TAA Rackmount Console Kit AF645A

HPE LCD8500 1U Rackmount Console Kit Options

HP Kit LCD 1.83m Latch Display Port Cable G7T29A

Additional Options

HPE Rack LED Light Kit

BW939A

NOTE: Please see the [HPE Rack Console QuickSpecs](#) for information on additional options and product specifications.

HPE USB Keyboard and Mouse

HPE USB US Keyboard/Mouse Kit

631341-B21

NOTE: Please see the [HPE USB Keyboard and Mouse QuickSpecs](#) for information on additional options and product specifications.

HPE USB and SD Options

HPE Flash Media Kits for USB Drives

HPE 8GB USB Enterprise Mainstream Flash Media Drive Key Kit

737953-B21

HPE Enterprise Mainstream Flash Media Kits for Memory Cards

HPE 8GB microSD Enterprise Mainstream Flash Media Kit

726116-B21

NOTE: Please see the [HPE Flash Media Kits QuickSpecs](#) for information on additional options and product specifications.

HPE Pointnext operational services

Proactive Care

HPE 3 year Proactive Care 24x7 ML10v2 Service

U0SC5E

HPE 3 year Proactive Care 24x7 with DMR ML10v2 Service

U0SC6E

HPE 3 year Proactive Care 24x7 with CDMR ML10v2 Service

U0SC7E

Foundation Care

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

Installation Services

NOTE: Reduce the time required to get your system up and running and help minimize disruptions to your business.

HPE Install ProLiant ML110 Service

U4444E

NOTE: For more information, customer/resellers can contact: <http://www.hp.com/services/carepack>

Memory

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

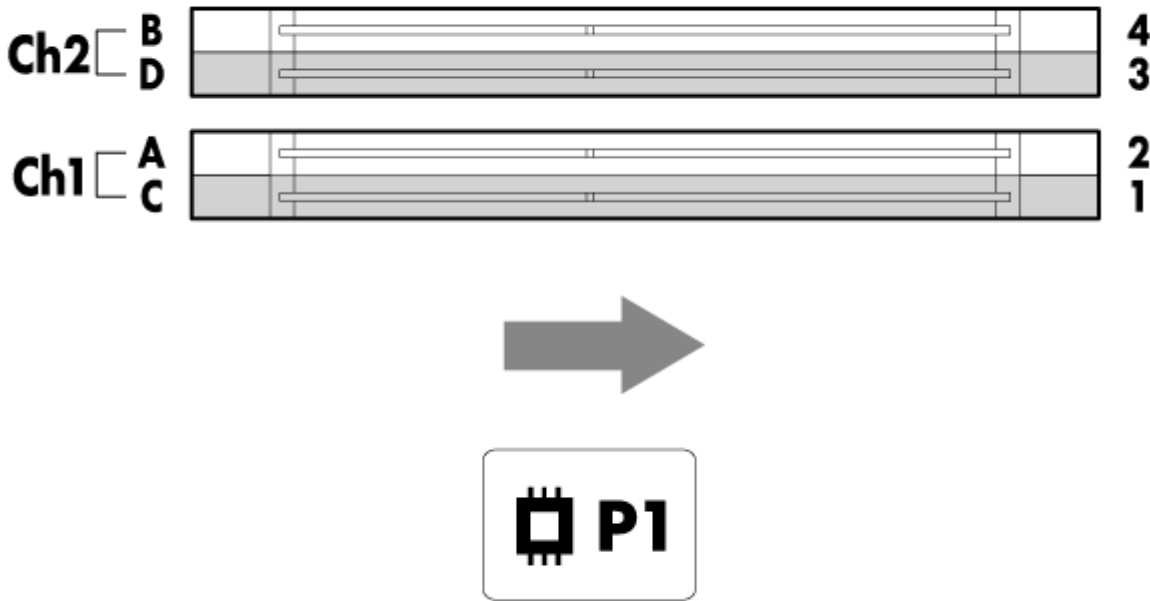
HPE SmartMemory

New HPE SmartMemory now provides additional protection for your servers. With HPE Authentication it can verify that you have true HPE Qualified Memory in your HPE ProLiant Gen8 server.

DDR3 memory population guidelines

For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool:

<http://www.hp.com/go/ddr3memory-configurator>



General Guidelines:

- The HPE ProLiant ML10 v2 Server has four memory slots
- There are two channels per server with two DIMM slots per channel
- Memory channel 1 consists of the two (2) DIMMs that are closest to the processor
- Memory channel 2 consists of the two (2) DIMMs that are furthest from the processor
- Different types of processors have different types of memory support.
- Support for single/dual-rank 1333/1600 MT/s ECC UDIMM (unbuffered DIMMS)
- The server supports up to 32GB (4 x 8-GB) for Unbuffered DIMMs
- No support for LRDIMMs; RDIMMs; Non-ECC UDIMMs
- Do not install DIMMs if the processor is not installed
- Populate DIMMs from heaviest load (double-rank) to lightest load (single-rank)
- Non-ECC DIMMs are not supported
- Always use HPE qualified DIMMs

ML10 v2 Supported Memory Bandwidth and Capacity

DIMM Type	Unbuffered with ECC DIMMs (UDIMMs)	
	Single Rank (1R)	Dual Rank (2R)
DIMM Rank		

Memory

DIMM Capacity				4GB	4GB	4GB	8GB	8GB	8GB
DIMM Native Speed (MT/s)				1333	1600	1600	1333	1600	1600
Voltage				LV	Std	LV	LV	Std	LV
SLOTS THAT CAN BE POPULATED									
4 slot servers				4	4	4	4	4	4
MAXIMUM CAPACITY (GB)*									
				16	16	16	32	32	32
POPULATED DIMM SPEED (MT/s)									
1 DIMM Per Channel				1333	1600	1600	1333	1600	1600
2 DIMM Per Channel				1333**	1600	1600	1333**	1600	1600

NOTE: Memory speed is a function of the processor QPI bus speed. To realize the performance memory capabilities listed above HPE SmartMemory is required.

* Maximum capacity will vary based on individual server platform qualification schedule.

** For HPE SmartMemory, UDIMM is supported at 2DPC@1333 at 1.35V. Third party memory may only support up to 2DPC@1066 at 1.5V.

Memory		Slot			
		DIMM1C	DIMM2A	DIMM3D	DIMM4B
Standard (Performance Model)	8GB	Empty	8GB	Empty	Empty
Maximum	32GB	8GB	8GB	8GB	8GB

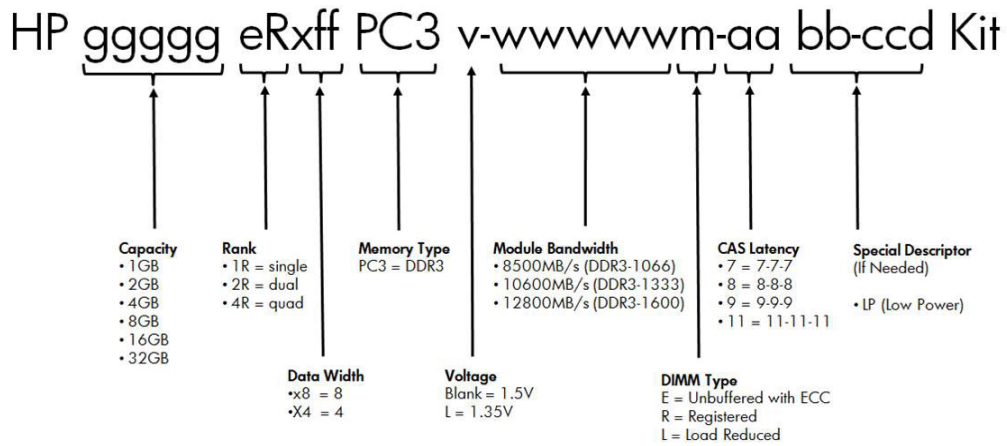
Memory Speed by Processor Model	
Processor Models	Supported Memory Speeds
E3-1220v3, E3-1230v3, E3-1240v4, E3-1270v3	1600/1333

NOTE: Capacity references are rounded to the common Gigabyte values.

- 2GB = 2048MB
- 4GB = 4096MB
- 8GB = 8192MB

DDR3 memory options part number decoder

Memory



Following are memory options available from Hewlett Packard Enterprise:

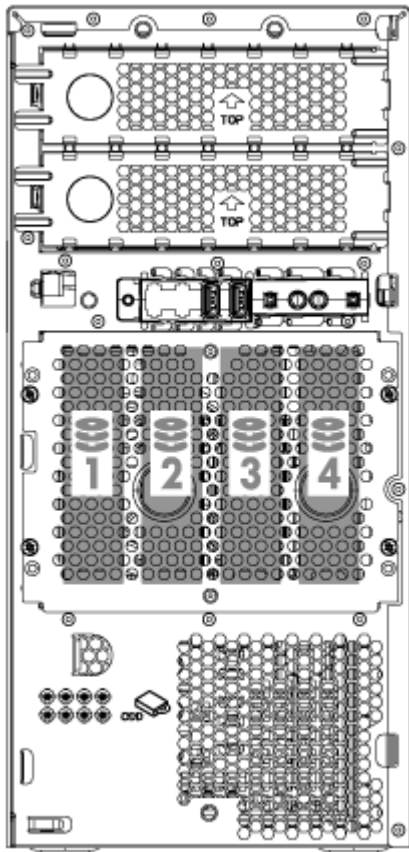
HPE Memory

Unbuffered with ECC DIMMs (UDIMMs)

HPE 4GB (1x4GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669322-B21
HPE 4GB (1x4GB) Single Rank x4 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	820077-B21
HPE 8GB (1x8GB) Dual Rank x8 PC3- 12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669324-B21
HPE 8GB (1x8GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	815371-B21

NOTE: All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: <http://www.hp.com/go/ddr3memory-configurator>.

Storage



1 - 4 Four-bay LFF drive model

Technical Specifications

System Unit	Tower Dimensions (H x W x D) (with feet/bezel)	14.5x 6.89 x 18.71 in (36.82 x17.5 x 47.52 cm)	
	Tower Weight (approximate)	Maximum (All hard drives, power supplies, and processors installed)	33.51 lb (15.20 kg)
		Minimum (One hard drive, power supply, and processor installed)	23.81 lb (10.80 kg)
Input Requirements (per power supply)	Input Requirements (per power supply)	Rated Line Voltage	100 to 240 VAC
		Rated Input Current	6 Amps
		Rated Input Frequency	47 to 63 Hz
		Rated Input Power	440W at 100 V AC input 440W at 200V AC input
BTU Rating	Maximum	460W - 1773 BTU / hr (at 120 VAC), 1715 (at 240 VAC)	
Power Supply Output (per power supply)	Rated Steady-State Power	350 W (at 100 VAC), 350 W (at 200 VAC)	
	Maximum Peak Power	350 W (at 100 VAC), 350 W (at 200 VAC)	
System Inlet Temperature	Operating	0° to 40°C (32° to 104°F) at sea level with an altitude derating of 1.0°C per every 304.8 m (1.8°F per every 1000 ft) above sea level to a maximum of 3048 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).	
	Non-operating	-30° to 65°C (-22° to 149°F). Maximum rate of change is 20°C/hr (36°F/hr).	
Relative Humidity (non-condensing)	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.	
	Non-operating	0 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 457 m/min (1500 ft/min).	
	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).	
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)		

Technical Specifications

and declared in accordance with ISO 9296 (ECMA 109).

Idle

L WAd	4.2 B
L pAm	27dB-A

Operating

L WAd	4.2 B
L pAm	27dB-A

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.

HPE Dynamic Smart Array B120i Controller	Dimensions	Embedded	
	Disk Drive and Enclosure Interface - Transfer rate	Up to 6Gb/s SATA (Serial ATA)	
	Connectors	6 internal SATA connectors	
	Server Interface	x4 PCIe 2.0	
	SATA Speed	6Gb/s SATA links	
	Cache Memory	Zero Memory RAID has no cache memory	
	Logical Drives Supported	Up to 8 logical volumes (6 physical drives)	
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space	
	Hot Plug Support	Yes	
	RAID Support	RAID 0 (Striping), RAID 1 (Mirroring) RAID 1+0 (Striping & Mirroring)	
HPE Ethernet 1Gb 2-port 332i Adapter	Network Interface	10Base-T/100Base-TX/1000Base-TX	
	Compatibility	IEEE 802.3 10Base-T	
		IEEE 802.3ab 1000Base-T	
		IEEE 802.3u 100Base-TX	
		Energy Efficient Ethernet (EEE) compliant with IEEE Std 802.3az (default is disabled)	
	Data Transfer Method	PCI-e, two lanes (x2)	
Controller	BCM5720		
Network Transfer Rate	10Base-T (Half-Duplex)	10 Mb/s per port, 20 Mb/s Combined	
	10Base-T (Full-Duplex)	20 Mb/s per port, 40 Mb/s Combined	

Technical Specifications

	100Base-TX (Half-Duplex)	100 Mb/s per port, 200 Mb/s Combined
	100Base-TX (Full-Duplex)	200 Mb/s per port, 400 Mb/s Combined
	1000Base-TX (Half-Duplex)	1000Mb/s per port, 2000 Mb/s Combined
	1000 Base-TX (Full-Duplex)	2000Mb/s per port, 4000 Mb/s Combined
Connector	RJ-45	
Cable Support	10Base-T	Categories 3, 4 or 5 UTP; up to 328 ft (100 m)
	10/100/1000Base-TX	Category 5 or better; up to 328 ft (100 m)

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

Hewlett Packard Enterprise offers end-of-life HPE 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
23-Oct-2017	From Version 7 to 8	Changed	Care Pack naming and Service and Support- Parts and Materials updated.
17-Dec-2015	From Version 6 to 7	Added	Smart Buy models were added to the NA version.
01-Dec-2015	From Version 5 to 6	Added	New Hard Drives offering was added to HPE Hard Drives section.
		Changed	Product images were updated.
		Removed	Obsolete SKUs were removed from the QuickSpecs.
28-Sep-2015	From Version 4 to 5	Changed	Pre-Configured Models section was revised.
10-Jun-2015	From Version 3 to 4	Added	New options added to HPE Rack Options (Worldwide version only).
		Changed	Pre-Configured Models section was revised (Worldwide version only).
01-Jun-2015	From Version 2 to 3	Added	Added HPE Unique Options section. HPE 4GB (1x4GB) Single Rank x4 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit was added to HPE Memory. HPE KVM Switches section was added to QuickSpecs.
		Changed	Upgradeability, Maximum Internal Storage, HPE Tape Backup, HPE Disk Backup, HPE Disk Storage Systems, HPE Uninterruptible Power Systems (UPS), HPE Basic Power Distribution Units (bPDU), HPE Remote Monitored Power Distribution Units (mPDU), HPE Intelligent Power Distribution Units (iPDU), HPE Pointnext operational services, and HPE Memory sections were revised.
06-Apr-2015	From Version 1 to 2	Added	New models added to Pre-configured Models in the WW version only.
		Changed	Pre-configured Models and HPE Disk Backup were revised.
		Removed	HPE Unique Options was removed from the QuickSpecs.



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

c04567802 - 15220 - North America - V8 - 23-October-2017

