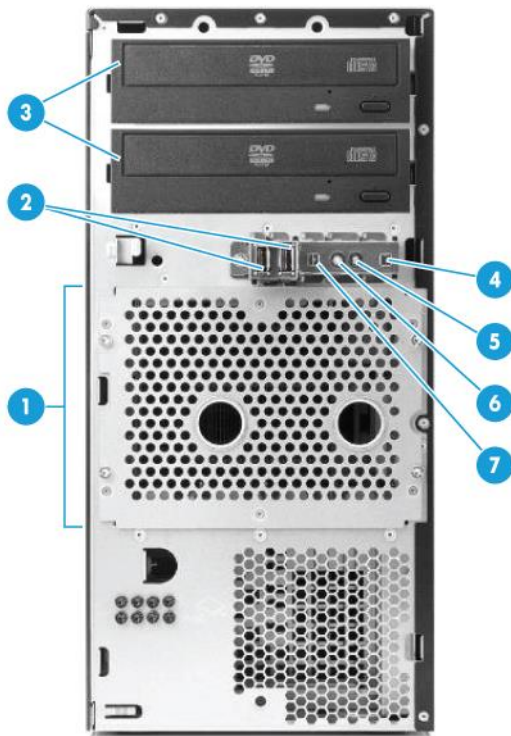


Overview

HP ProLiant ML10 v2 Server

HP 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:

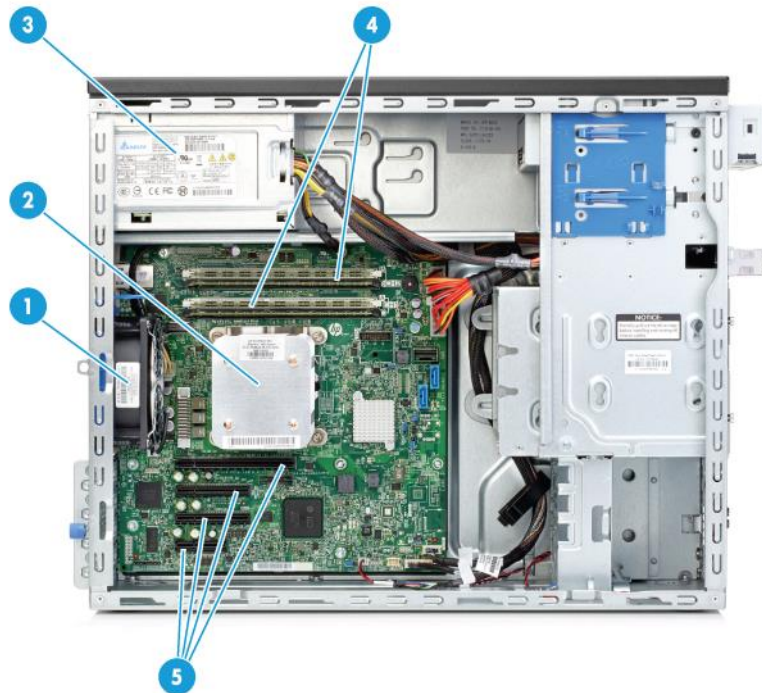
1. HDD cage – NHP 4LFF
2. Two (2) USB connectors
3. Half Height SATA DVD-ROM or DVD RW Optical Drive
4. Power Button
5. System Health
6. NIC Activity LED
7. UID LED Button



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

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)

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 4 LFF Hard Drive Bays

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)

On System Management Processor

HP iLO (Firmware: HP iLO4)

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

Memory Protection

ECC

Memory

One of the following depending on model

Type

HP SmartMemory

DDR3 Unbuffered (UDIMM)

DIMM Slots Available

4

Maximum Capacity (UDIMM)

32GB (4 x 8GB UDIMM)

NOTE: HP memory from previous generation servers are not fully compatible with the HP 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>.

Network Controller

HP Ethernet 1Gb 2-port 332i Adapter

Expansion Slots

Expansion Slot #	Technology	Bus Width*	Connector Width	Form Factor	Notes
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Standard Features

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.

HP Server ROM

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

HP 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.

HP 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.

HP's 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 HP ROM-Based Setup Utility (RBSU)).

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

Storage Controller

HP 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 HP ProLiant ML10 v2 series server user guide.

NOTE: For general information about HP 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

One of the following depending on model

HP Half-Height SATA DVD-ROM Optical Drive

HP 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: HP LFF Gen8 Hard Drive Blank

Standard Features

Kit.

Maximum Internal Storage One of the following depending on model	Non Hot Plug LFF SATA	16TB	4 x 4TB
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Interfaces	Video	1 (rear)
	Network RJ-45 (Ethernet)	2 (1 shared for HP 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
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Server Power Cords	The ProLiant ML10v2 server is a tower server that ships standard with a 6' NEMA power cord that allows connection to wall outlets in a home or office. If customers require additional power cords, they can check the power cord matrix for the appropriate sku. Please see the following power cord matrix: http://www.hp.com/go/powercordmatrix .
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Power Specifications	To review typical system power requirements, use the HP Power Advisor which is available via download at URL: http://www.hp.com/go/proliant-energy-efficient or http://www.hp.com/go/hppoweradvisor .
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NOTE: Power Specification and Technical Content for supported power supplies can be found at: http://h18000.www1.hp.com/products/quickspecs/14209_na/14209_na.html

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%.
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It is highly recommended that you use the HP Power Advisor in defining the "Right-Size" power supply for your needs. HP 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 at: http://h18000.www1.hp.com/products/quickspecs/14209_na/14209_na.html

System Fans	One (1) Non-redundant system fan ships standard
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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 HP's Certified and Supported ProLiant Servers for OS and Virtualization

Standard Features

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)

HP iLO 4 On System Management Memory

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

Form Factor

One of the following depending on model

Micro ATX Tower (4U) chassis with feet/bezel:

14.5" (36.82cm) Height x 6.89" (17.5cm) Width x 18.71" (47.52cm) Length

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

HP iLO Management Engine

HP 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. HP iLO Management Engine comes standard on all HP ProLiant Gen8 servers. The HP iLO Management Engine portfolio includes:

- **HP iLO:** The HP iLO (Integrated Lights-Out) management processor is the core foundation for the HP iLO Management Engine
- **HP 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.
- **HP 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 HP iLO Management Engine technologies whitepaper.

HP Insight Management

HP Service Pack for ProLiant (SPP)

HP Service Pack for ProLiant (SPP) and HP Smart Update Manager (HP 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 HP server hardware launches. By enabling firmware to be updated online and integrating firmware and system software updates in one operation, HP 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 HP provides 12 months of support for each Service Pack for ProLiant release.

Standard Features

The user experience around HP 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 HP 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 HP 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, HP SUM provides the tools to optimize stability and consistency throughout the company. While HP SUM and the SPP recommend the combinations of firmware and system software that HP 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 HP 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 HP 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 HP Services and a worldwide network of HP 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 HP 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 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 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 HP 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

HP Insight Management	HP Insight Control	<p>HP 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. HP 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.</p> <p>HP Insight Control includes one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, see: http://www.hp.com/services/insight.</p>
	HP iLO Advanced	<p>HP 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 HP 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</p>
	HP iLO Essentials	<p>HP iLO Essentials license ideal for small and medium business customers. The specially created HP 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 HP iLO Essentials license SMB customers now have the option of a server management package solely design and priced just right for their IT environments. HP iLO Essentials is available on all HP ProLiant Gen8 e-series making this an ideal solution for small business owners. For more information, see: http://www.hp.com/go/iLO/essentials</p>

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 HP 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, HP data protection and recovery software will cost-effectively protect you against disaster and ensure business continuity.
- **Data Archive and Migration Software**
HP's 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)**
HP's 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**
HP offers array-based and host-based replication software for use in disaster recovery,

Optional Features

- testing, application development and reporting.
- **Storage Device Management Software**
Maximize your investment in HP storage and networking with software that enables hardware-specific configuration, performance tuning and connectivity management.
- **HP StoreVirtual VSA**
With HP 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>.

HP Insight Online

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

Factory Express Portfolio for Servers and Storage

HP Factory Express offers configuration, customization, integration and deployment services for HP 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. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 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 HP's Customer Business Center or an Authorized Partner for assistance. <http://www.hp.com/products/configurator>.

Service and Support

Service and Support

HP Technology Services for Industry Standard Servers

HP Technology Services delivers confidence, reduces risk and helps customers realize agility and stability. Connect to HP 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 HP Care Pack Services

HP Care Pack 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

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

HP Proactive Care helps prevent problems and stabilize IT by utilizing secure, real-time, predictive analytics and proactive consultations when your products are connected to HP. 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 HP ProLiant server.

<http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-8855ENW.pdf>

Standard Care

Supports maintaining high level of server availability

Foundation Care 24x7, three-year Care Pack Service

HP Foundation Care 24x7 connects you to HP 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 HP server. Simplify your support experience and make HP your first call for hardware or software questions.

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

HP Foundation Care Next Business Day connects you to HP 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 HP your first call for hardware or software questions.

<http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=4AA4-8876ENW&cc=us&lc=en>

Get connected to HP 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

HP ProLiant Server Hardware Installation

Provides for the basic hardware installation of HP branded 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>

Factory Express for Servers and storage

Service and Support

HP Factory Express offers configuration, customization, integration and deployment services for HP 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. HP 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 HP Care Pack services can be found at: <http://www.hp.com/go/cpc>

HP Support Center

Personalized online support portal with access to information, tools and experts to support HP business products. Submit support cases online, chat with HP experts, access support resources or collaborate with peers. Learn more

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

HP'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.

HP Insight Remote Support and HP Support Center are available at no additional cost with a HP warranty, HP Care Pack or HP contractual support agreement.

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

Parts and Materials

HP will provide HP-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 HP due to malfunction.

For more information

To learn more on HP ProLiant servers and HP BladeSystem servers, please contact your HP sales representative or HP 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: HP 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: HP LFF Gen8 Hard Drive Blank Kit.

Entry Models

HP ProLiant ML10 v2 G32401P 4GB-U NHP 4 LFF 350W PS Entry Svr 814483-001	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 HP Ethernet 1Gb 2-port 332i Adapter HP Dynamic Smart Array B120i Controller None 4 LFF SAS/SATA HDD cage; includes 4 LFF hard drive blanks None HP 350W Multi-Output Power Supply One (1) Non-redundant system fan ships standard HP iLO Management Engine (standard on system NIC) Optional: HP iLO Essentials or HP Insight Control Micro ATX Tower (4U) Server Warranty includes 1-Year Parts.
HP ProLiant ML10 v2 G32401P 4GB-U B120i NHP 4LFF 1x1TB 350W PS Entry Server 814484-001	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 2GB) PC3-12800E DDR3 UDIMM HP Ethernet 1Gb 2-port 332i Adapter HP Dynamic Smart Array B120i Controller None 4 LFF SAS/SATA HDD cage; includes 1x1TB SATA drive and 3 LFF hard drive blanks None HP 350W Multi-Output Power Supply One (1) Non-redundant system fan ships standard HP iLO Management Engine (standard on system NIC) Optional: HP iLO Essentials or HP Insight Control Micro ATX Tower (4U) Server Warranty includes 1-Year Parts

Base Models

HP ProLiant ML10 v2 i3 4150 1P 4GB-U B120i 350W PS Svr	Processor(s) Cache Memory Memory	(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
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Pre-configured Models

814485-001	Network Controller	HP Ethernet 1Gb 2-port 332i Adapter
	Storage Controller	HP Dynamic Smart Array B120i Controller
	Hard Drive	None
	Internal Storage	4 LFF SAS/SATA HDD cage; includes 1x1TB SATA drive and 3 LFF hard drive blanks
	Optical Drive	None
	Power Supply	HP 350W Multi-Output Power Supply
	Fans	One (1) Non-redundant system fan ships standard
	Management	HP iLO Management Engine (standard on system NIC) Optional: HP iLO Essentials or HP Insight Control
	Form Factor	Micro ATX Tower (4U)
	Warranty	Server Warranty includes 1-Year Parts.

Core Options

NOTE: Options may not be integrated at the factory. Contact your local sales representative for additional information.

HP Unique Options	HP Tower/Rack Conversion Tray Universal Kit	417705-B21
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HP Memory

Unbuffered with ECC DIMMs (UDIMMs)

NOTE: The following memory is supported by the E3-1200 series Processors

HP 4GB (1x4GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669322-B21
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HP 8GB (1x8GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669324-B21
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HP 8GB (1x8GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	815371-B21
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HP Optical Drives

HP Half-Height SATA DVD ROM JackBlack Optical Drive	624189-B21
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HP Half-Height SATA DVD RW JackBlack Optical Drive	624192-B21
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HP 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

HP 3TB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive	628065-B21
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HP 2TB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive	659339-B21
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HP 1TB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive	659337-B21
---	------------

HP 500GB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive	659341-B21
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6G SATA Non-hot Plug LFF (3.5-inch) Entry (ETY) Drives

HP 500GB 6G SATA 7.2K rpm LFF (3.5in) Non-hot Plug Entry 512e 1yr Warranty Hard Drive	815612-B21
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HP 1TB 6G SATA 7.2K rpm LFF (3.5in) Non-hot Plug Entry 512e 1yr Warranty Hard Drive	815614-B21
---	------------

HP 2TB 6G SATA 7.2K rpm LFF (3.5in) Non-hot Plug Entry 512e 1yr Warranty Hard Drive	815631-B21
---	------------

HP 3TB 6G SATA 7.2K rpm LFF (3.5in) Non-hot Plug Entry 512e 1yr Warranty Hard Drive	815633-B21
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HP 4TB 6G SATA 5.9K rpm LFF (3.5in) Non-hot Plug Entry 512e 1yr Warranty Hard Drive	815635-B21
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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 HP 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

Core Options

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:

http://h18000.www1.hp.com/products/quickspecs/13021_na/13021_na.html

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

HP Large Form Factor Hard Drive Blank Kit 666986-B21

HP Networking

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

Switches

HP PS110 Wireless 802.11n VPN AM Router JL065A

HP PS110 Wireless 802.11n VPN WW Router JL066A

NOTE: HP 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:

<http://www8.hp.com/h20195/v2/Gethtml.aspx?docname=c04519011>

HP PS1810-8G Switch J9833A

HP PS1810-24G Switch J9834A

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

http://h18004.www1.hp.com/products/quickspecs/14586_na/14586_na.html

HP 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, HP recommends the use of an HP approved configurator. Contact your local sales representative for additional information.

HP Insight Software

HP Insight Control

HP Insight Control including 1yr 24x7 Technical Support and Updates Single Server License C6N27A

HP Insight Control including 1yr 24x7 Technical Support and Updates Electronic License C6N28ABE

HP Insight Control Server Provisioning Media Kit BD883A

HP 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 HP Software Technical Support and Update Service.

NOTE: Licenses ship without media. The HP 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://h18000.www1.hp.com/products/quickspecs/12631_na/12631_na.html

HP Integrated Lights-Out (iLO)

HP iLO Essentials

HP Integrated Lights-Out Essentials including 3yr 24x7 Technical Support and Updates E-LTU E6U61ABE

HP Integrated Lights-Out Essentials including 1yr 24x7 Technical Support and Updates E-LTU E6U62ABE

HP Integrated Lights-Out Essentials including 3yr 24x7 Tech Support and Updates Single Svr License BD774A

HP Integrated Lights-Out Essentials including 1yr 24x7 Tech Support and Updates Single Svr License BD775A

HP Integrated Lights-Out (iLO) Advanced for ProLiant

HP iLO Advanced including 1yr 24x7 Technical Support and Updates E-LTU E6U59ABE

HP iLO Advanced including 3yr 24x7 Technical Support and Updates E-LTU E6U64ABE

HP iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License 512485-B21

HP iLO Advanced 1 Server License with 3yr 24x7 Tech Support and Updates BD505A

HP iLO Advanced Flexible Qty License with 3yr 24x7 Tech Support and Updates BD506A

HP iLO Advanced Tracking License with 3yr 24x7 Tech Support and Updates BD507A

HP iLO Advanced including 1yr 24x7 Technical Support and Updates Flexible Quantity License 512486-B21

HP iLO Advanced including 1yr 24x7 Technical Support and Updates Tracking License 512487-B21

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

http://h18004.www1.hp.com/products/quickspecs/14276_na/14276_na.html

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

HP Security

HP 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

Additional Options

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.

HP Storage Controllers

HP Host Bus Adapters

HP H220 Host Bus Adapter

650933-B21

HP H221 PCIe 3.0 SAS Host Bus Adapter

729552-B21

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

http://h18004.www1.hp.com/products/quickspecs/14336_na/14336_na.html (HBA H220)

http://h18004.www1.hp.com/products/quickspecs/14222_na/14222_na.html (HBA H221)

HP 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 HP tape backup products see: <http://www.hp.com/storage/SPOCK> and <http://www.hp.com/go/ebs>.

HP StoreEver LTO-6 Ultrium 6250 Internal Tape Drive

EH969A

HP StoreEver LTO-6 Ultrium 6250 External Tape Drive

EH970A

HP Tape Storage Systems

HP StoreEver MSL6480

HP StoreEver MSL6480 Scalable Base Module

QU625A

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

http://h18000.www1.hp.com/products/quickspecs/14604_na/14604_na.html

HP 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 HP disk backup products see: <http://www.hp.com/storage/SPOCK>.

HP RDX Removable Disk Backup System

HP RDX320 USB3.0 External Disk Backup System

B7B63A

HP RDX500 USB3.0 Internal Disk Backup System

B7B64A

HP RDX500 USB3.0 External Disk Backup System

B7B66A

HP RDX1000 USB3.0 Internal Disk Backup System

B7B67A

HP RDX1000 USB3.0 External Disk Backup System

B7B69A

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

http://h18000.www1.hp.com/products/quickspecs/13036_na/13036_na.html

HP Disk Storage Systems Disk Enclosures

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:

Additional Options

information:

http://h18000.www1.hp.com/products/quickspecs/13404_na/13404_na.html

HP Uninterruptible Power Systems

HP DirectFlow Three Phase 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

NOTE: Choose one I/O Module per UPS.

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

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

HP Tower UPS

HP T750 G4 UPS Models

HP T750 G4 NA/JP Uninterruptible Power System J2P85A

HP T1000 G4 UPS Models

HP T1000 G4 NA/JP Uninterruptible Power System J2P86A

HP T1500 G4 UPS Models

HP T1500 G4 NA/JP Uninterruptible Power System J2P87A

HP Rack/Tower UPS

HP R/T2200 G4 UPS Models

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

HP 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 Tower UPS

HP T1000 G3 UPS Models

HP T1000 G3 1000VA NA Tower Uninterruptible Power System AF448A

HP T1500 G3 UPS Models

HP T1500 G3 1400VA NA Tower Uninterruptible Power System AF450A

NOTE: Please see the QuickSpecs for additional information:

http://h18000.www1.hp.com/products/quickspecs/13160_na/13160_na.html

HP Rack-mountable UPS

HP R1500 G3 Uninterruptible Power Supply (UPS)

HP R1.5kVA G3 1U NA Uninterruptible Power System AF469A

NOTE: Please see the QuickSpecs for additional information:

http://h18000.www1.hp.com/products/quickspecs/14059_na/14059_na.html

HP R1500 G4 Uninterruptible Power Supply (UPS)

HP R1500 G4 NA Uninterruptible Power System J2Q99A

HP R/T3000 G2 Uninterruptible Power System (UPS)

HP R/T3000 G2 2U L530 Low Voltage NA/JP Uninterruptible Power System AF466A

Additional Options

HP R/T3000 G2 2U L620 High Voltage NA/JP Uninterruptible Power System AF467A

NOTE: Please see the QuickSpecs for additional information:

http://h18000.www1.hp.com/products/quickspecs/14058_na/14058_na.html

R5000 Uninterruptible Power System (UPS)

HP R5KVA 3U IEC309-32A High Voltage INTL Uninterruptible Power System AF461A

HP R5KVA 3U L630 High Voltage NA/JP Uninterruptible Power System AF460A

NOTE: Please see the QuickSpecs for additional information:

http://h18000.www1.hp.com/products/quickspecs/14109_div/14109_div.html
(Worldwide)

R7000 Uninterruptible Power System (UPS)

HP R7KVA 4U 50A High Voltage NA/JP Uninterruptible Power System AF462A

NOTE: Please see the QuickSpecs for additional information:

http://h18000.www1.hp.com/products/quickspecs/14110_na/14110_na.html

NOTE: For additional information on sizing your server, please reference:

<http://www.upsizer.com>.

NOTE: Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP 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 HP Uninterruptible Power Systems please go to: <http://www.hp.com/servers/rackups>.

HP Basic Power

Distribution Units (bPDU)

HP Basic Power Distribution Unit: 1U/OU Version

HP 1.9kVA 120 Volt L5-20 Input (12xNEMA 5-20R) NA/JP Basic PDU H5M54A

HP 3.6kVA 200-240 Volt Detachable C20 Input (12xC13) WW Basic PDU H5M56A

HP Basic Power Distribution Unit: Half Height Version

HP 2.8kVA 120 Volt L5-30 Input (18xNEMA 5-20R) NA/JP Basic PDU H5M55A

HP 3.6kVA 200-240 Volt Detachable C20 Input (18xC13) WW Basic PDU H5M57A

HP 4.9kVA 208 Volt L6-30 Input (20xC13) NA/JP Basic PDU H5M58A

HP 8.6kVA 208 Volt L15-30 3-Phase Input (18xC13) NA/JP Basic PDU H5M61A

HP Basic Power Distribution Unit: Mid Height Version

HP 4.9kVA 208 Volt L6-30 Input (24xC13/6xC19) NA/JP Basic PDU H5M59A

HP 8.3kVA 208 Volt CS8265C Input (30xC13/6xC19) NA/JP Basic PDU H5M60A

HP Hardwired 200-240 Volt Input (30xC13/6xC19) WW Basic PDU H5M75A

HP 5.7kVA 208 Volt L21-20 3-Phase Input (24xC13/3xNEMA 5-20R) NA/JP Basic PDU H5M63A

HP 8.6kVA 208 Volt L21-30 3-Phase Input (24xC13/3xC19/3xNEMA 5-20R) NA/JP Basic PDU H5M64A

HP 8.6kVA 208 Volt L15-30 3-Phase Input (24xC13/6xC19) NA/JP Basic PDU H5M62A

HP Basic Power Distribution Unit: Full Height Version

HP 11kVA 400 Volt IEC309 30A 3-Phase Input (36xC13/6xC19) NA Basic PDU H5M67A

HP Basic Power Distribution Unit: 480/277 Volt Version

HP 13.2kVA 480 Volt IEC309 30A 3-Phase Input (15 Outlet) NA Basic PDU H3X07A

HP 19.9kVA 480 Volt IEC309 30A 3-Phase Input (30 Outlet) NA Basic PDU H3X08A

HP 800VA - 277V Input / 230V Output NA Rack Mount Transformer H3X09A

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

http://h18000.www1.hp.com/products/quickspecs/14557_na/14557_na.html

Additional Options

NOTE: Additional HP Power Distribution Units are available. For a complete list of all HP PDUs and additional information please visit <http://www.hp.com/go/rackandpower>.

HP Remote Monitored Power Distribution Units (mPDU)	HP Remote Monitored Power Distribution Unit: 1U Version	
	HP 2.8kVA 120 Volt L5-30 Input (12xNEMA 5-20R)NA/JP Monitored PDU	D9N43A
	HP 3.6kVA 200-240 Volt Detachable C20 Input (12xC13) WW Monitored PDU	D9N46A
	HP 4.9kVA 208 Volt L6-30 Input (12xC13) NA/JP Monitored PDU	D9N44A
	HP Remote Monitored Power Distribution Unit: Half Height Version	
	HP 3.6kVA 200-240 Volt Detachable C20 Input (16xC13) WW Monitored PDU	D9N45A
	HP 4.9kVA 208 Volt L6-30 Input (12xC13) NA/JP Monitored PDU	G9Z05A
	HP Remote Monitored Power Distribution Unit: Mid Height Version	
	HP 4.9kVA 208 Volt L6-30 Input (20xC13/4xC19) NA/JP Monitored PDU	D9N47A
	HP 8.6kVA 208 Volt L15-30 3-Phase Input (18xC13/3xC19) NA/JP Monitored PDU	D9N51A
	HP 5.7kVA 208 Volt L21-20 3-Phase Input (18xC13/3xNEMA 5-20R) NA/JP Monitored PDU	D9N52A
	HP 8.6kVA 208 Volt L21-30 3-Phase Input (20xC13/3xC19/3xNEMA 5-20R) NA/JP Monitored PDU	D9N53A
	HP Remote Monitored Power Distribution Unit: Full Height Version	
	HP 8.3kVA 208 Volt CS8265C Input (30xC13/3xC19) NA Monitored PDU	D9N49A
	HP 14.4kVA 208 Volt CS8365C 3-Phase Input (12xC13/12xC19)NA Monitored PDU	D9N58A
	HP 16.6kVA 400 Volt IEC309 30A 3-Phase Input (30xC13/3xC19) NA Monitored PDU	D9N61A
	HP 17.3kVA 208 Volt IEC309 60A 3-Phase Input (24xC13/3xC19) NA/JP Monitored PDU	D9N54A
	HP 17.3kVA 208 Volt IEC309 60A 3-Phase Input (12xC13/12xC19) NA/JP Monitored PDU	D9N59A
	HP 16.6kVA 400 Volt IEC309 30A 3-Phase Input (12xC13/12xC19) NA Monitored PDU	D9N62A
	HP 19.9kVA 480 Volt 3-Phase (30 Outlet) NA Monitored PDU	D9N63A
	HP Environmental Sensor for Remote Monitored PDUs	
HP Environmental Sensor for Remote Monitored and Managed PDUs	E2D53A	
NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14669_na/14669_na.html		

HP Intelligent Power Distribution Units (iPDU)	iPDU Core Units	
	HP 4.9kVA 24A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF520A
	HP 8.3kVA 40A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF521A
	HP 8.6kVA 24A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF522A
	HP 14.4kVA 40A Three Phase NA/JP Intelligent Modular Power Distribution Unit	AF533A
	HP 17.3kVA 48A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF523A
	HP 17.3kVA 48A 208V Three Phase 12 Outlet Core NA/JP Intelligent Power Distribution Unit	AF535A
	HP 17.3kVA 24A 415V Three Phase 12 Outlet Core NA/JP Intelligent Power Distribution Unit	AF537A
	iPDU Kits with Standard Extension Bars	
	HP 4.9kVA 24A Single Phase NA/JP Intelligent Modular Power Distribution Kit	AF531A
	HP 8.6kVA 24A Three Phase NA/JP Intelligent Modular Power Distribution Kit	AF532A
	iPDU Extension Bars	

Additional Options

HP 5xC13 Intelligent PDU Extension Bar G2 Kit	AF547A
HP 5xC13 Outlets Power and UID LEDs Pair Standard Extension Bar	AF528A
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13650_na/13650_na.html	

HP Managed Power Distribution Units (maPDU)

Half Height Models

HP 3.6kVA 200–240 Volt Detachable C20 Input (7xC13/1xC19) WW Managed PDU	H8B49A
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Full Height Models

HP 2.8kVA 120 Volt L5–30 Input (24x NEMA 5–20) NA/JP Managed PDU	H8B48A
HP 4.9kVA 208 Volt L6–30 Input (20xC13/4xC19) NA/JP Managed PDU	H8B50A
HP 8.6kVA 208 Volt L15–30 3 Phase Input (18xC13/6xC19) NA/JP Managed PDU	H8B52A
HP 8.6kVA 208 Volt L21–30 3 Phase Input (20xC13/3xC19/1x NEMA 5–20) NA/JP Managed PDU	H8B53A
HP 14.4kVA 208V CS8365C 3 Phase Input (12xC13/12xC19) NA/JP Managed PDU	H8B55A
HP 17.3kVA 208V IEC309 60A 3 Phase Input (12xC13/12xC19) NA/JP Managed PDU	H8B56A

NOTE: Please see the [QuickSpecs for Technical Specifications and additional information:](#) <http://www8.hp.com/h20195/v2/GetHtml.aspx?docname=c04376687>

HP Rack Options

HP Location Discovery Services

HP Location Discovery Services LCD8500 Kit	TL052A
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NOTE: Please see the [HP Location Discovery Services QuickSpecs](#) for information on additional options and product specifications.

HP LCD8500 1U Rackmount Console Kit Models

HP LCD8500 1U US Rackmount Console Kit	AF630A
HP LCD8500 1U US TAA Rackmount Console Kit	AF645A

HP LCD8500 1U Rackmount Console Kit Options

HP Kit LCD 1.83m Latch Display Port Cable	G7T29A
HP Rack LED Light Kit	BW939A

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

HP 1U Rackmount Keyboard with USB

HP 1U US Rackmount Keyboard with USB	AG072A
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NOTE: Please see the [HP 1U Rackmount Keyboard with USB QuickSpecs](#) for information on additional options and product specifications.

HP USB Keyboard and Mouse

HP USB BFR with PVC Free US Keyboard/Mouse Kit	631341-B21
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NOTE: Please see the [HP USB Keyboard and Mouse QuickSpecs](#) for information on additional options and product specifications.

HP USB and SD Options

HP Flash Media Kits for USB Drives

HP 8GB USB Enterprise Mainstream Flash Media Drive Key Kit	737953-B21
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HP Enterprise Mainstream Flash Media Kits for Memory Cards

HP 8GB microSD Enterprise Mainstream Flash Media Kit	726116-B21
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NOTE: Please see the [HP Flash Media Kits QuickSpecs](#) for information on additional options and product specifications.

Additional Options

HP Care Pack Services

Proactive Care

HP 3y 4h 24x7 ML10 v2 ProCare SVC U0SC5E

HP 3y 4h 24x7 w/DMR ML10 v2 ProCare SVC U0SC6E

HP 3y 4h 24x7 w/CDMR ML10 v2 ProCare SVC U0SC7E

Foundation Care

HP 3y Nbd ML10 v2 FC SVC U2GU0E

HP 3y Nbd w/DMR ML10 v2 FC SVC U2GU1E

HP 3y Nbd w/CDMR ML10 v2 FC SVC U2GU2E

HP 3y 24x7 ML10 v2 FC SVC U2GU3E

HP 3y 24x7 w/DMR ML10 v2 FC SVC U2GU4E

HP 3y 24x7 w/CDMR ML10 v2 FC SVC U2GU5E

Installation Services

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

HP 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".

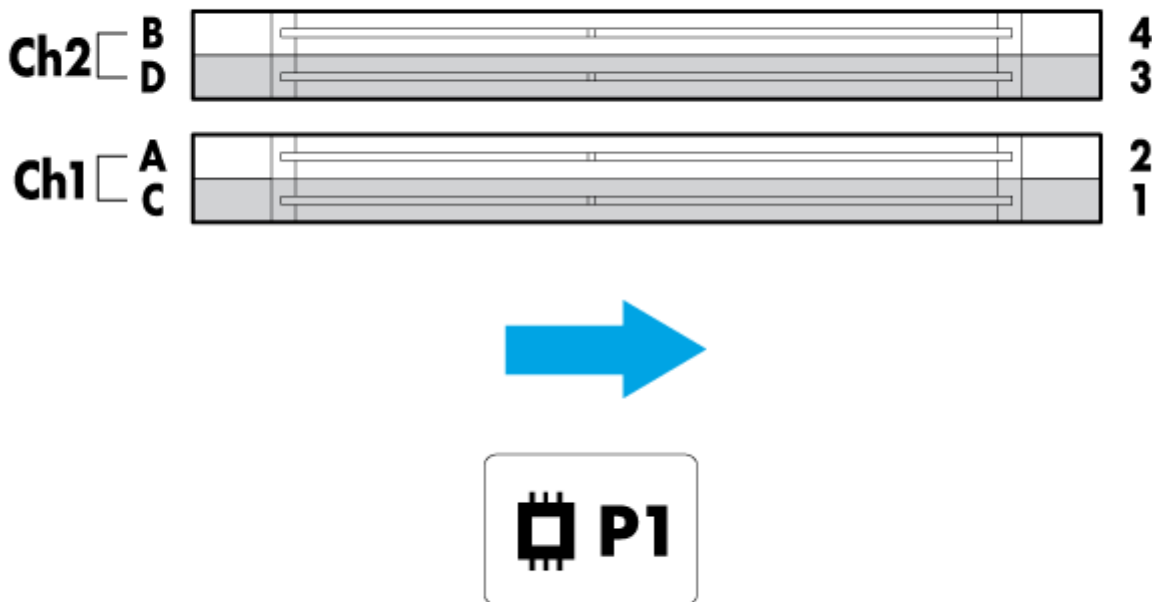
HP SmartMemory

New HP SmartMemory now provides additional protection for your servers. With HP Authentication it can verify that you have true HP Qualified Memory in your HP 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 HP 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 HP qualified DIMMs

ML10 v2 Supported Memory Bandwidth and Capacity

DIMM Type	Unbuffered with ECC DIMMs (UDIMMs)								
					Dual Rank (2R)				
DIMM Rank									
DIMM Capacity				4GB	4GB	4GB	8GB	8GB	8GB
DIMM Native				1333	1600	1600	1333	1600	1600

Memory

Speed (MT/s)									
Voltage			LV	Std	LV	LV	Std	LV	
SLOTS THAT CAN BE POPULATED									
4 slot servers			4	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 HP SmartMemory is required.

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

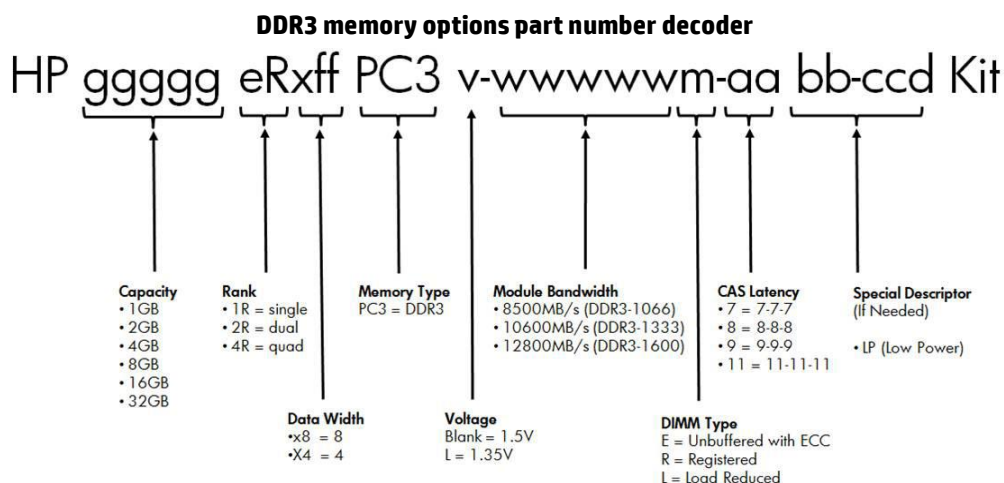
** For HP SmartMemory, UDIMM is supported at 2DPC@1333 at 1.35V. Third party memory may only support up to 2DPC@1066 at 1.5V.

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



Memory

Following are memory options available from HP:

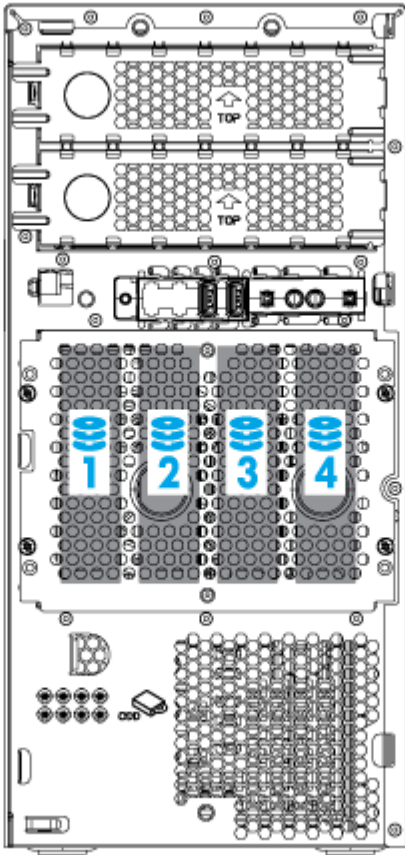
HP Memory

Unbuffered with ECC DIMMs (UDIMMs)

HP 4GB (1x4GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669322-B21
HP 8GB (1x8GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669324-B21
HP 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)	14.5 x 6.89 x 18.71 in (36.82 x 17.5 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)	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.	

Technical Specifications

Noise emissions were measured in accordance with ISO 7779 (ECMA 74) 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.

HP 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)

HP 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
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

Technical Specifications

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

Environment-friendly Products and Approach	End-of-life Management and Recycling	<p>Hewlett-Packard offers end-of-life HP 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 HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.</p> <p>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 web site at: http://www.hp.com/go/green. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.</p>
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For hard drives, 1GB = 1 billion bytes. Actual formatted capacity is less.