

Overview

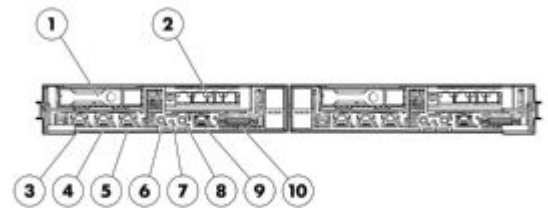
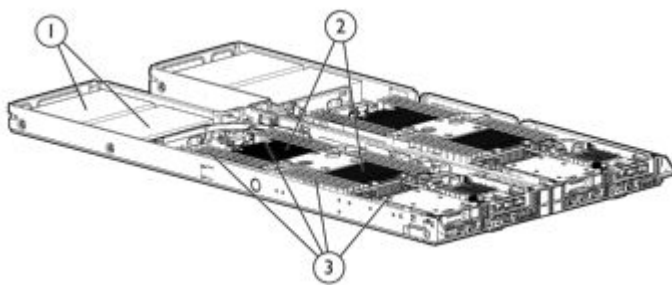
The all new HP ProLiant SL230s Gen8 Server with HP ProActive Insight architecture delivers even greater levels of configurability for high performance and scale-out deployments, to help lower total cost of ownership.

Up to eight ProLiant SL230s Gen8 nodes, in a 4U modular form factor, fit into the HP s6500 scalable system sharing power, cooling and systems management capabilities to achieve lower operational expense.

The ProLiant SL230s Gen8 server includes the exclusive HP SmartMemory and delivers a 25 percent increase in memory bandwidth to improve performance for certain applications.

Delivering on the promise of server lifecycle automation, the ProLiant SL230s features the exclusive HP Active Health System and provides continuous, proactive, monitoring for over 1600 system parameters with zero impact to application performance.

NOTE: The 1U Open View image below shows two SL230s side by side to denote the left and right trays. Each unit is a 1U, half-width form factor.



1U Open View:

1. Four (4) SFF 2.5" HDD's or four (4) SSD's or two (2) LFF 3.5" HDD's or four (4) non-hot plug hard drives using a Quick Release drive carrier
2. Support for two Intel® Xeon® E5-2600 processors
3. Sixteen (16) DDR3 DIMM slots

1U Front View:

1. PCIe Expansion Slot or Hot Plug HDD option for one (1) SFF 2.5" hard drive
2. FlexibleLOM or Hot Plug HDD option for one (1) SFF 2.5" hard drive
3. Dedicated iLO4 Management Port
4. (1) 1GBE Ports
5. (1) 1GBE Ports
6. Power Button
7. Health LED
8. UID LED
9. Serial Port
10. SUV (Serial/USB/Video)

- Updated information pertaining to availability of various options

Standard Features

NOTE: For the Standard Features shipped in the Factory Integrated Models, please see the "Configuration Information - Factory Integrated Models" section.

Processor

One of the following depending on Model

E5-2600 v2 series Processors

Entry Processors

NOTE: All support up to 1333MHz DDR3 memory speeds.

Intel® Xeon® E5-2609 v2 (2.5GHz/4-core/10MB/6.4GT-s QPI/80W)

Base Processors

NOTE: All support up to 1600MHz DDR3 memory speeds.

Intel® Xeon® E5-2630 v2 (2.6GHz/6-core/15MB/7.2GT-s QPI/80W, DDR3-1600, HT, Turbo2-3/3/3/3/4/5)

Intel® Xeon® E5-2650L v2 (1.7GHz/10-core/25MB/8.0GT-s QPI/70W, DDR3-1600, HT, Turbo2-2/2/2/2/2/2/2/2/3/4)

Performance Processors

NOTE: For 130W CPU support and configuration, please contact your HP account team.

NOTE: For 115W CPU support, customers must use the HP 1500W Common Slot Platinum Plus Hot Plug Power Supply Kit (684532-B21).

NOTE: All support up to 1866MHz DDR3 memory speeds.

Intel® Xeon® E5-2695 v2 (2.4GHz/12-core/30MB/8.0GT-s QPI/115W, DDR3-1866, HT, Turbo2-4/4/4/4/4/4/4/4/5/6/7/8)

Intel® Xeon® E5-2680 v2 (2.8GHz/10-core/25MB/8.0GT-s QPI/115W, DDR3-1866, HT, Turbo2-3/3/3/3/3/4/5/6/7/8)

Intel® Xeon® E5-2670 v2 (2.5GHz/10-core/25MB/8.0GT-s QPI/115W, DDR3-1866, HT, Turbo2-4/4/4/4/4/4/4/5/6/7/8)

Intel® Xeon® E5-2660 v2 (2.2GHz/10-core/25MB/8.0GT-s QPI/95W, DDR3-1866, HT, Turbo2-4/4/4/4/4/4/4/5/6/7/8)

Intel® Xeon® E5-2650 v2 (2.6GHz/8-core/20MB/8.0GT-s QPI/95W, DDR3-1866, HT, Turbo2-4/4/4/4/5/6/7/8)

E5-2600 series Processors

Entry Processors

NOTE: All support up to 1066MHz memory speeds.

Intel® Xeon® E5-2609 (2.4GHz/4-core/10MB/6.4GT-s QPI/80W)

Intel® Xeon® E5-2603 (1.8GHz/4-core/10MB/6.4GT-s QPI/80W)

Base Processors

NOTE: All support up to 1333MHz DDR3 memory speeds.

Intel® Xeon® E5-2640 (2.5GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2-3/3/4/4/5/5)

Intel® Xeon® E5-2630 (2.3GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2-3/3/4/4/5/5)

Intel® Xeon® E5-2620 (2.0GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2-3/3/4/4/5/5)

Intel® Xeon® E5-2630L (2.0GHz/6-core/15MB/8.0GT-s QPI/60W, DDR3-1333, HT, Turbo2-3/3/4/4/5/5)

Performance Processors

NOTE: For 130W CPU support and configuration, please contact your HP account team.

NOTE: For 115W CPU support, customers must use the HP 1500W Common Slot Platinum Plus Hot Plug Power Supply Kit (684532-B21).

NOTE: All support up to 1600MHz DDR3 memory speeds.

Standard Features

Intel® Xeon® E5-2670 (2.6GHz/8-core/20MB/8.0GT-s QPI/115W, DDR3-1600, HT, Turbo2-4/4/5/5/6/6/7/7)

Intel® Xeon® E5-2665 (2.4GHz/8-core/20MB/8.0GT-s QPI/115W, DDR3-1600, HT, Turbo2-4/4/5/5/6/6/7/7)

Intel® Xeon® E5-2660 (2.2GHz/8-core/20MB/8.0GT-s QPI/95W, DDR3-1600, HT, Turbo2-5/5/6/6/7/7/8/8)

Intel® Xeon® E5-2650 (2.0GHz/8-core/20MB/8.0GT-s QPI/95W, DDR3-1600, HT, Turbo2-4/4/5/5/5/7/8/8)

Intel® Xeon® E5-2650L (1.8GHz/8-core/20MB/8.0GT-s QPI/70W, DDR3-1600, HT, Turbo2-2/2/3/3/4/4/5/5)

Intel® Xeon® E5-2637 (3.0GHz/2-core/5MB/8.0GT-s QPI/80W, DDR3-1600, HT, Turbo2- 5/5)

NOTE: HT indicates that the processor model supports Intel® Hyper-Threading Technology.

NOTE: Turbo indicates the maximum potential frequency increment when using Intel® Turbo Boost Technology, with 8, 7, 6, 5, 4, 3, 2 or 1 core(s) active.

NOTE: DDR3 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.

NOTE: Up to 2 processors supported. Mixing different processor models is not supported.

NOTE: For the Intel® C600 Chipset E5-2600 Series, the letter preceding the model number indicates the Product Line (E3, E5, E7); 2600x, 2 = number of CPUs in a Node, 6 is socket/segment designation, 00 = Processor SKU, and x = L for low power SKUs.

Cache Memory

One of the following depending on Model

30MB (1x30MB) Level 3

NOTE: For Twelve-core processors.

25MB (1x25MB) Level 3

NOTE: For Ten-core processors.

20MB (1x20MB) Level 3

NOTE: For Eight-core processors.

15MB (1x15MB) Level 3

NOTE: For Six-core processors.

10MB (1x10MB) Level 3

NOTE: For Quad-core processors.

5MB (1x5MB) Level 3

NOTE: For Dual-core processors.

Chipset

Intel® E5-2600 Processor Family

Intel® E5-2600v2 Processor Family

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

<http://www.intel.com/products/server/chipsets/>. Intel® E5-2600v2 Processor Family

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

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

Upgradeability

Upgradeable to two processors

On System

HP iLO (Firmware: HP iLO 4)

Management Processor

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

Memory Protection

Advanced ECC (multi-bit error protection)

Standard Features

Memory	Type	HP SmartMemory DDR3 Registered (RDIMM), Unbuffered (UDIMM)
	DIMM Slots Available	16 DIMM Slots available
	Maximum (RDIMM) (per server tray)	256GB (16 x16GB) Registered memory configurations
	Maximum (UDIMM) (per server tray)	128GB (16 x 8GB) Unbuffered memory configurations
	Maximum (LRDIMM) (per server tray)	512GB (16 x 32GB) Load Reduced DIMM memory configurations

NOTE: HP memory from previous generation servers are not qualified or warranted with this HP ProLiant Server. HP SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen8. For additional information, please see the HP SmartMemory QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html

NOTE: RDIMM and UDIMMs are all distinct memory technologies and cannot be mixed within a server. The majority of ProLiant Gen8 servers support RDIMM, UDIMM.

NOTE: HP certified SmartMemory must be used to guarantee full 1600MHz speeds.

NOTE: Depending on the memory configuration and processor model, the memory speed may run at 1866MHz, 1600MHz, 1333MHz, or 1066MHz. Please see the Online Memory Configuration Tool at: www.hp.com/go/ddr3memory-configurator.

NOTE: Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: www.hp.com/go/proliant-energy-efficient.

Network Controller	HP Ethernet 1Gb 2-port 361i Adapter
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Expansion Slots	Expansion Slot #	Technology	Bus Width*	Connector Width	Form Factor	Notes
	1	PCIe 3.0	x16	x16	Low profile slot	

*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 HP's RBSU (ROM based setup utility) user guide: www.hp.com/support/rbsu.

Standard Features

Storage Controller HP H220i Host Bus Adapter (B320i Dynamic Smart Array with FW update)

Internal Storage Devices

Diskette Drives	Via USB through the SUV port, external support only
Optical Drives	Via USB through the SUV port, external support only
Hard Drives	None ship standard

Maximum Internal Storage

1U Half Width tray

Hot Plug SAS SFF	2.4 TB	2 x 1.2TB
Hot Plug SATA SFF	2.0TB	2 x 1TB
Hot Plug SAS SSD SFF	1.6TB	2 x 800GB
Hot Plug SATA SSD SFF	1.6TB	2 x 800GB
Quick Release SAS SFF	4.8TB	4 x 1.2TB
Quick Release SAS LFF	8.0TB	2 x 4TB
Quick Release SATA SFF	4.0TB	4 x 1TB
Quick Release SATA LFF	8.0TB	2 x 4TB
Quick Release SATA SSD SFF	1.6TB	2 x 800GB

Interfaces

Network RJ-45	Two 1GbE NIC ports
FlexibleLOM	ProLiant Gen8 servers offer a new networking technology - Flexible Network Technology. The SL230 Gen8 server offers the customer the choice of 1Gigabit, 10Gigabit or InfiniBand FlexibleLOM solutions depending on workload. For further details on the choices, see FlexibleLOM in the Networking Section of this document. NOTE: The FlexibleLOM slot is a PCIe 3.0 x 16 slot which ships blank, one can install a Hot Plug HDD kit or one of the many networking FlexibleLOM options.
KVM	Serial USB Video Port (SUV)
Micro SD	1 (internal)
USB Ports	1 (internal)
HP iLO Remote Management Network Port	1 GB Dedicated
Health LED	1 front
Power	1 front
UID	1 front

Industry Standard Compliance

- ACPI 2.0b Compliant
- PCIe 3.0 Compliant
- WOL Support
- Microsoft® Logo certifications
- PXE Support
- USB 1.1 and 2.0 Compliant
- SMBIOS 2.6.1

Standard Features

Server Power Cords

One 6' Highline (IEC-IEC) power cord ships standard

NOTE: HP ProLiant SL servers are primarily connected to PDU's in data center racks so they ship standard with only a PDU power cord (416151-B21). If a user wishes to power a ProLiant SL server using a 110V receptacle (NEMA-15), the NEMA power cord must be ordered separately.

NOTE: If customers require a local power cord, they can check the power cord matrix for the appropriate cord. Please see the following power cord matrix:

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

Power Specifications

To review typical system power ratings use the HP Power Advisor which is available via the online tool located at URL: www.hp.com/go/proliant-energy-efficient or www.hp.com/go/hppoweradvisor.

NOTE: Power Specification and Technical Content for supported power supplies can be found at: http://h18000.www1.hp.com/products/quickspecs/14209_div/14209_div.html

Common Slot Power Supplies

NOTE: Mixing of power supplies in the same server is not supported. All power supplies inside a server must be exactly the same model. Mixing Gold, Platinum, and Platinum Plus certified power supplies is not supported.

HP's Common Slot (CS) power supplies allow for commonality of power supplies across a wide range of ProLiant and Integrity servers, as well as HP Storage solutions, and are designed to provide the highest power supply efficiency without degrading system performance. HP CS power supplies are tested by the Electric Power Research Institute (EPRI) and certified through the ECOS 80 Plus power supply program. HP CS power supply options provide efficiency ratings of up to 94% (80 Plus Platinum) and are available in two power output options - 750W, and 1200W - allowing the user to "right-size" a power supply for their specific server configuration. All HP Common Slot power sources are UL, CE Mark Compliant, hot-plug and support redundant configurations. 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: www.hp.com/go/hppoweradvisor.

NOTE: Mixing of power supplies in the same server is not supported. All power supplies must be of the same output and efficiency rating. If non-matched power supplies are inserted you will get errors and operation will fail.

HP CS Platinum power supplies are required when enabling HP's Intelligent Power Discovery (IPD) solution. IPD is the first technology to create an automated, energy-aware network between IT systems and facilities. This allows your company to reclaim millions of dollars in wasted power capacity and downtime costs across data centers. For more information on HP's IPD solution, go to www.hp.com/go/ipd.

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 www.80Plus.org. Redundant Power: Optional redundant power supplies can be purchased through power supply option kits (see Power Supplies for part numbers).

NOTE: Power Specification and Technical Content for supported power supplies can be found at: http://h18000.www1.hp.com/products/quickspecs/14209_div/14209_div.html

Standard Features

System Fans

HP s6500 Redundant Fan Kit

NOTE: This kit includes only 1 fan, but the chassis requires 8 fans

NOTE: This selection must be ordered in quantities of 8 (PN 617856-B21)

HP s6500 Non-Redundant Fan Kit

NOTE: This kit includes only 1 fan, but the chassis requires 8 fans

NOTE: This selection must be ordered in quantities of 8 (PN 617858-B21)

NOTE: all 8 fan bays must be populated with either redundant or non-redundant fans

NOTE: mixing and matching of fans is not allowed

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: Only 64-bit versions of these operating systems are supported.

NOTE: For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server including how to purchase from HP, please visit our OS Support Site at: <http://www.hp.com/go/ossupport> and our driver download page: <http://www.hp.com/support/SL230sGen8>.

Graphics

Integrated Matrox G200 video standard

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

HP iLO 4 On System Management Memory

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

Form Factor

Fully configured SL230 is 1U, half-width

Fully configured SL6500 chassis is 4U, full-width

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 Active Health System:** Always on, continuous monitoring for increased stability and shorter downtimes; 100% configuration history; Health and service alerts and easy export and upload to Service and Support.
- **HP Intelligent Provisioning:** Lets customers provision and configure a single server without any separate media. No more

Standard Features

SmartStart CDs or Smart Update Firmware DVD are needed.

- To start Intelligent Provisioning:
 - Press the F10 key during the ProLiant Gen8 server boot process (also known as power on self test or POST).
 - Please go to the Intelligent Provisioning website at www.hp.com/go/intelligentprovisioning for additional information and to view usage videos.
 - Use the Service Pack for ProLiant (SPP) at www.hp.com/go/spp to get firmware and software updates.
- **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: 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 Software 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.

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 www.hp.com/go/spp/download. More information can be found: <http://www.hp.com/go/SmartUpdate>, www.hp.com/go/spp and

Standard Features

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

Security

Power-on password
Keyboard password
QuickLock, Network Server Mode
Serial interface control
Administrator's password
iLO 4 (Integrated Lights-Out 4) has 12 customizable user accounts and SSL encryption
iLO 4 can be disabled via a Global Setting
iLO Advanced supports directory services integration

Warranty

This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners. Hardware diagnostic support and repair is available for one year 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.

NOTE: Server Warranty includes 1 year Parts, 1 year Labor, 1-year on-site support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have 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 software

HP Insight Control

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. For more information, see <http://www.hp.com/go/insightcontrol>.

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>.

HP iLO Advanced

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>.

HP iLO Scale-Out

The HP iLO Scale-Out license ideal for web/hosting/cloud service providers and High Performance Computing environments. This license is a specific subset of iLO Advanced functionality, provides fast remote access through Text Console via SSH, lower operational cost with Dynamic power capping, and faster time to resolution through Email-based Alerting and proactive notifications. With this newly designed HP iLO Scale-Out license HPC customers now have a server management package solely design and priced for their massive data environments. HP iLO Scale-Out is available on all HP ProLiant Gen8 SL and BL and DL 160 servers. For more information, see: <http://www.hp.com/go/iLO/scale-out>.

HP Matrix Operating Environment

The HP Matrix Operating Environment (Matrix OE) for ProLiant and Integrity servers is an integrated command center that helps you instantly adjust to dynamic business demands. This advanced infrastructure management software lets you reduce the cost of common data center tasks by up to 40 percent while keeping pace with your changing business.

The HP Matrix OE includes the automated provisioning, optimization, and recovery management capabilities for HP CloudSystem Matrix, the ideal platform for private cloud and Infrastructure as a Service (IaaS).

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

Optional Features

High Performance Clusters	HP Cluster Platforms	HP Cluster Platforms are specifically engineered, factory-integrated large-scale ProLiant clusters optimized for High Performance Computing, with a choice of servers, networks and software. Operating system options include specially priced offerings for Red Hat Enterprise Linux and SUSE Linux Enterprise Server, as well as Microsoft Windows HPC Server. A Cluster Platform Configurator simplifies ordering. http://www.hp.com/go/clusters
	HP HPC Interconnects	High Performance Computing (HPC) interconnect technologies are available for this server as part of the HP Cluster Platform portfolio. These high-speed InfiniBand and Gigabit interconnects are fully supported by HP when integrated within an HP cluster. Flexible, validated solutions can be defined with the help of configuration tools. http://www.hp.com/techservers/clusters/ucp/index.html
	HP Insight Cluster Management Utility	HP Insight Cluster Management Utility (CMU) is an HP-licensed and HP-supported suite of tools that are used for lifecycle management of hyperscale clusters of Linux ProLiant systems. CMU includes software for the centralized provisioning, management and monitoring of nodes. CMU makes the administration of clusters user friendly, efficient, and effective. http://www.hp.com/go/cmu

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 anytime. 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 MSxxxx, 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>.

HP Simple Configurator 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 **THE SL230s tray is a part of the HP ProLiant s6500 Chassis. Support for these tray need to be purchased at a chassis level. Please refer to HP ProLiant s6500 Chassis quick spec documentation for details.**

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.

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: www.hp.com/go/proactiveinsightexperience

Warranty / Service Coverage For ProLiant servers and storage systems, the services cover HP-branded hardware options qualified for the server, purchased at the same time or afterward, internal to the enclosure, as well as external monitors up to 22" and tower UPS products; these items will be covered at the same service level and for the same coverage period as the server unless the maximum supported lifetime and/or the maximum usage limitation has been exceeded. Coverage of the UPS battery is not included; standard warranty terms and conditions apply.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by HP due to malfunction. It does not apply to any exchange of Disk or SSD/Flash Drives that have not failed. SSD/Flash Drives that are specified by HP as consumable parts and/or that have exceeded maximum supported lifetime and/or the maximum usage limit as set forth in the manufacturer's operating manual or the technical data sheet are not eligible for the defective media retention service feature option.

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>

Configuration Information - Factory Integrated Models

NOTE: This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for information on configurable product offerings and requirements.

NOTE: Configure-to-order (CTO) servers must start with a CTO Chassis.

NOTE: FIO indicates that this option is only available as a factory installable option.

NOTE: If you already have an s6500 chassis skip to Step 1A.

NOTE: s6500 Chassis cannot have a mix of SL270s with SL250s and/or SL230s due to different Carbondale (CD) FW versions. You will be unable to order such a configuration. SL250s and SL230s can be intermixed in an s6500 chassis because they possess the same Carbondale (CD) FW versions, but one that differs from SL270s. This rule does not apply to any combination of servers with Ivy Bridge processors, the Carbondale version in those processors is the same.

Step 1: Base Configuration (choose one from each list unless otherwise noted)

HP Chassis	HP ProLiant s6500 without Fans 4U Configure-to-order Chassis	614167-B21
	NOTE: You must choose Power Supplies and fans as the chassis does not include them.	
	NOTE: If you already have an s6500 chassis you can buy server trays below.	

Step 2: Select Nodes

NOTE: Mixing and matching of half width trays is supported in the s6500 chassis.

NOTE: If you do not fill up chassis with servers, the HP node blank Kit (688928-B21 for left and 688930-B21 for right) needs to be ordered for each half width 1U space unpopulated.

HP Server Nodes	HP ProLiant SL230s Gen8 1U Left Half Width Tray Configure-to-order Server	650047-B21
	HP ProLiant SL230s Gen8 1U Right Half Width Tray Configure-to-order Server	650048-B21

Step 3: Choose Required Node Options (only one of the following from each list unless otherwise noted)

HP Processors	NOTE: If 2 processors are desired, select one xxxxx-L21 and one xxxxxx-B21.	
	E5-2600v2 Series Processors	
	Entry Processors	
	NOTE: All support up to 1333MHz memory speeds.	
	HP SL2x0s Gen8 Intel® Xeon® E5-2609v2 (2.5GHz/4-core/10MB/80W) FIO Processor Kit	725942-L21
	Base Processors	
	NOTE: All support up to 1600MHz DDR3 memory speeds.	
	HP SL2x0s Gen8 Intel® Xeon® E5-2630v2 (2.6GHz/6-core/15MB/80W) FIO Processor Kit	725941-L21
	HP SL2x0s Gen8 Intel® Xeon® E5-2650Lv2 (1.7GHz/10-core/25MB/70W) FIO Processor Kit	725943-L21
	Performance Processors	
	NOTE: For 130W CPU support and configuration, please contact your HP account team.	
	NOTE: For 115W CPU support, customers must use the HP 1500W Common Slot Platinum Plus Hot Plug Power Supply Kit (684532-B21).	
	NOTE: All support up to 1866MHz DDR3 memory speeds.	
	HP SL2x0s Gen8 Intel® Xeon® E5-2695v2 (2.4GHz/12-core/30MB/115W) FIO Processor Kit	725944-L21
	HP SL2x0s Gen8 Intel® Xeon® E5-2680v2 (2.8GHz/10-core/25MB/115W) FIO Processor Kit	725937-L21
	HP SL2x0s Gen8 Intel® Xeon® E5-2670v2 (2.5GHz/10-core/25MB/115W) FIO Processor Kit	725938-L21

Configuration Information - Factory Integrated Models

HP SL2x0s Gen8 Intel® Xeon® E5-2660v2 (2.2GHz/10-core/25MB/95W) FIO Processor Kit	725939-L21
HP SL2x0s Gen8 Intel® Xeon® E5-2650v2 (2.6GHz/8-core/20MB/95W) FIO Processor Kit	725940-L21

E5-2600 Series Processors

Entry Processors

NOTE: All support up to 1066MHz memory speeds.

HP SL230s Gen8 Intel® Xeon® E5-2609 (2.4GHz/4-core/10MB/80W) FIO Processor Kit	654422-L21
HP SL230s Gen8 Intel® Xeon® E5-2603 (1.8GHz/4-core/10MB/80W) FIO Processor Kit	654424-L21

Base Processors

NOTE: All support up to 1333MHz DDR3 memory speeds.

HP SL230s Gen8 Intel® Xeon® E5-2640 (2.5GHz/6-core/15MB/95W) FIO Processor Kit	654416-L21
HP SL230s Gen8 Intel® Xeon® E5-2630 (2.3GHz/6-core/15MB/95W) FIO Processor Kit	654418-L21
HP SL230s Gen8 Intel® Xeon® E5-2620 (2.0GHz/6-core/15MB/95W) FIO Processor Kit	654420-L21
HP SL230s Gen8 Intel® Xeon® E5-2630L (2.0GHz/6-core/15MB/60W) FIO Processor Kit	654434-L21

Performance Processors

NOTE: For 130W CPU support and configuration, please contact your HP account team.

NOTE: For 115W CPU support, customers must use the HP 1500W Common Slot Platinum Plus Hot Plug Power Supply Kit (684532-B21).

HP SL230s Gen8 Intel® Xeon® E5-2670 (2.6GHz/8-core/20MB/115W) FIO Processor Kit	654408-L21
HP SL230s Gen8 Intel® Xeon® E5-2665 (2.4GHz/8-core/20MB/115W) FIO Processor Kit	654410-L21
HP SL230s Gen8 Intel® Xeon® E5-2660 (2.2GHz/8-core/20MB/95W) FIO Processor Kit	654412-L21
HP SL230s Gen8 Intel® Xeon® E5-2650 (2.0GHz/8-core/20MB/95W) FIO Processor Kit	654414-L21
HP SL230s Gen8 Intel® Xeon® E5-2650L (1.8GHz/8-core/20MB/70W) FIO Processor Kit	654432-L21
HP SL230s Gen8 Intel® Xeon® E5-2637 (3.0GHz/2-core/5MB/80W) FIO Processor Kit	654430-L21

HP Memory

NOTE: HP memory from previous generation servers are not qualified or warranted with this HP ProLiant Server. HP SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen8. For additional information, please see the HP SmartMemory QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html

NOTE: LRDIMM, RDIMM, and UDIMMs are all distinct memory technologies and cannot be mixed within a server. The majority of ProLiant Gen8 servers support LRDIMM, RDIMM and UDIMMs.

Registered DIMMs (RDIMMs)

NOTE: The following memory is supported by the E5-2600 v2 series Processors.

Configuration Information - Factory Integrated Models

HP 4GB (1x4GB) Single Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	713981-B21
HP 4GB (1x4GB) Single Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	708637-B21
HP 8GB (1x8GB) Dual Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	713983-B21
HP 8GB (1x8GB) Single Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	731765-B21
HP 8GB (1x8GB) Dual Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	708639-B21
HP 8GB (1x8GB) Single Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	731761-B21
HP 16GB (1x16GB) Dual Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	713985-B21
HP 16GB (1x16GB) Dual Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	708641-B21

Registered DIMMs (RDIMMs)

NOTE: The following memory is supported by the E5-2600 series Processors.

HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647893-B21
HP 4GB (1x4GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647895-B21
HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647897-B21
HP 8GB (1x8GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647899-B21
HP 8GB (1x8GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	690802-B21
HP 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647901-B21
HP 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	672631-B21

Unbuffered with ECC DIMMs (UDIMMs)

NOTE: The following memory is supported by the E5-2600 v2 series Processors.

HP 2GB (1x2GB) Single Rank x8 PC3L-12800E (DDR3-1600) Unbuffered CAS-11 Low Voltage Memory Kit	713975-B21
HP 2GB (1x2GB) Single Rank x8 PC3-14900E (DDR3-1866) Unbuffered CAS-13 Memory Kit	708631-B21
HP 4GB (1x4GB) Dual Rank x8 PC3L-12800E (DDR3-1600) Unbuffered CAS-11 Low Voltage Memory Kit	713977-B21
HP 4GB (1x4GB) Dual Rank x8 PC3-14900E (DDR3-1866) Unbuffered CAS-13 Memory Kit	708633-B21
HP 8GB (1x8GB) Dual Rank x8 PC3L-12800E (DDR3-1600) Unbuffered CAS-11 Low Voltage Memory Kit	713979-B21
HP 8GB (1x8GB) Dual Rank x8 PC3-14900E (DDR3-1866) Unbuffered CAS-13 Memory Kit	708635-B21

Unbuffered with ECC DIMMs (UDIMMs)

NOTE: The following memory is supported by the E5-2600 series Processors.

HP 2GB (1x2GB) Single Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669320-B21
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Configuration Information - Factory Integrated Models

HP 2GB (1x2GB) Single Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647905-B21
HP 4GB (1x4GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669322-B21
HP 4GB (1x4GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647907-B21
HP 8GB (1x8GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669324-B21
HP 8GB (1x8GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647909-B21

Load Reduced DIMMs (LRDIMMs)

HP 32GB (1x32GB) Quad Rank x4 PC3-14900L (DDR3-1866) Load Reduced CAS-13 Memory Kit	708643-B21
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NOTE: This memory is supported by the E5-2600 v2 series Processors.

HP 32GB (1x32GB) Quad Rank x4 PC3L-10600L (DDR3-1333) Load Reduced CAS-9 Low Voltage Memory Kit	647903-B21
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NOTE: This memory is only supported by the E5-2600 series Processors.

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: www.hp.com/go/ddr3memory-configurator.

NOTE: Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: www.hp.com/go/proliant-energy-efficient

NOTE: PC3L is a low voltage memory.

Step 4: Choose Additional Factory Integratable Options

HP Networking	Gigabit Ethernet Adapters	
	HP Ethernet 1Gb 4-port 366FLR FIO Adapter	684217-B21
	FlexibleLOM Adapters	
	HP FlexFabric 10Gb 2-port 526FLR-SFP+ FIO Adapter	684219-B21
	HP FlexFabric 10Gb 2-port 533FLR-T FIO Adapter	700760-B21
	HP FlexFabric 10Gb 2-port 534FLR-SFP+ FIO Adapter	700752-B21
	HP Ethernet 10Gb 2-port 560FLR-SFP+ FIO Adapter	684218-B21
	HP Ethernet 10Gb 2-port 561FLR-T FIO Adapter	700700-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs	
HP Insight Software	HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO License	C6N36A
	HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle FIO Electronic License	C6N36ABE
	NOTE: The Electronic software license is available in EMEA only	

Step 5: Choose Other Server Options for Factory Integration

NOTE: For additional options, please refer to the "Core Options" and "Additional Options" sections below.

Core 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 Unique Options	HP 2x Large Form Factor Smart Array Enablement Kit	670277-B21
	HP SL230s 4X SFF Smart Array Enablement Kit	670279-B21
	HP SL230 2X Small Form Factor (SFF) Hot Plug Hard Drive Cage Kit	655618-B21
	HP SL230 Large Form Factor (LFF) Quick Release Hard Drive Cage Kit	655624-B21
	HP SL230 Small Form Factor (SFF) Quick Release Hard Drive Cage Kit	655615-B21
	HP SL230 Single Small Form Factor (SFF) Hot Plug Hard Drive Cage Kit	698835-B21

HP Processors

NOTE: If 2 processors are desired, select one xxxxxx-B21 and one xxxxxx-L21

E5-2600v2 Series Processors

Entry Processors

NOTE: All support up to 1333MHz memory speeds.

HP SL2x0s Gen8 Intel® Xeon® E5-2609v2 (2.5GHz/4-core/10MB/80W) Processor Kit	725942-B21
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Base Processors

NOTE: All support up to 1600MHz DDR3 memory speeds.

HP SL2x0s Gen8 Intel® Xeon® E5-2630v2 (2.6GHz/6-core/15MB/80W) Processor Kit	725941-B21
HP SL2x0s Gen8 Intel® Xeon® E5-2650Lv2 (1.7GHz/10-core/25MB/70W) Processor Kit	725943-B21

Performance Processors

NOTE: For 130W CPU support and configuration, please contact your HP account team.

NOTE: For 115W CPU support, customers must use the HP 1500W Common Slot Platinum Plus Hot Plug Power Supply Kit (684532-B21).

NOTE: All support up to 1866MHz DDR3 memory speeds.

HP SL2x0s Gen8 Intel® Xeon® E5-2695v2 (2.4GHz/12-core/30MB/115W) Processor Kit	725944-B21
HP SL2x0s Gen8 Intel® Xeon® E5-2680v2 (2.8GHz/10-core/25MB/115W) Processor Kit	725937-B21
HP SL2x0s Gen8 Intel® Xeon® E5-2670v2 (2.5GHz/10-core/25MB/115W) Processor Kit	725938-B21
HP SL2x0s Gen8 Intel® Xeon® E5-2660v2 (2.2GHz/10-core/25MB/95W) Processor Kit	725939-B21
HP SL2x0s Gen8 Intel® Xeon® E5-2650v2 (2.6GHz/8-core/20MB/95W) Processor Kit	725940-B21

E5-2600 Series Processors

Entry Processors

NOTE: All support up to 1066MHz memory speeds.

HP SL230s Gen8 Intel® Xeon® E5-2609 (2.4GHz/4-core/10MB/80W) Processor Kit	654422-B21
HP SL230s Gen8 Intel® Xeon® E5-2603 (1.8GHz/4-core/10MB/80W) Processor Kit	654424-B21

Base Processors

NOTE: All support up to 1333MHz DDR3 memory speeds.

Core Options

HP SL230s Gen8 Intel® Xeon® E5-2640 (2.5GHz/6-core/15MB/95W) Processor Kit	654416-B21
HP SL230s Gen8 Intel® Xeon® E5-2630 (2.3GHz/6-core/15MB/95W) Processor Kit	654418-B21
HP SL230s Gen8 Intel® Xeon® E5-2620 (2.0GHz/6-core/15MB/95W) Processor Kit	654420-B21
HP SL230s Gen8 Intel® Xeon® E5-2630L (2.0GHz/6-core/15MB/60W) Processor Kit	654434-B21

Performance Processors

NOTE: For 130W CPU support and configuration, please contact your HP account team.

NOTE: For 115W CPU support, customers must use the HP 1500W Common Slot Platinum Plus Hot Plug Power Supply Kit (684532-B21).

HP SL230s Gen8 Intel® Xeon® E5-2670 (2.6GHz/8-core/20MB/115W) Processor Kit	654408-B21
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NOTE: Processor supports up to 1600MHz memory speeds.

HP SL230s Gen8 Intel® Xeon® E5-2665 (2.4GHz/8-core/20MB/115W) Processor Kit	654410-B21
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NOTE: Processor supports up to 1600MHz memory speeds.

HP SL230s Gen8 Intel® Xeon® E5-2660 (2.2GHz/8-core/20MB/95W) Processor Kit	654412-B21
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NOTE: Processor supports up to 1600MHz memory speeds.

HP SL230s Gen8 Intel® Xeon® E5-2650 (2.0GHz/8-core/20MB/95W) Processor Kit	654414-B21
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NOTE: Processor supports up to 1600MHz memory speeds.

HP SL230s Gen8 Intel® Xeon® E5-2650L (1.8GHz/8-core/20MB/70W) Processor Kit	654432-B21
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NOTE: Processor supports up to 1600MHz memory speeds.

HP SL230s Gen8 Intel® Xeon® E5-2637 (3.0GHz/2-core/5MB/80W) Processor Kit	654430-B21
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NOTE: Processor supports up to 1600MHz DDR3 memory speeds.

HP Memory

NOTE: HP memory from previous generation servers are not qualified or warranted with this HP ProLiant Server. HP SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen8. For additional information, please see the HP SmartMemory QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html

NOTE: LRDIMM, RDIMM, and UDIMMs are all distinct memory technologies and cannot be mixed within a server. The majority of ProLiant Gen8 servers support LRDIMM, RDIMM and UDIMMs.

Registered DIMMs (RDIMMs)

NOTE: The following memory is supported by the E5-2600 v2 series Processors.

HP 4GB (1x4GB) Single Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	713981-B21
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HP 4GB (1x4GB) Single Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	708637-B21
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HP 8GB (1x8GB) Dual Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	713983-B21
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HP 8GB (1x8GB) Single Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	731765-B21
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HP 8GB (1x8GB) Dual Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	708639-B21
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Core Options

HP 8GB (1x8GB) Single Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	731761-B21
HP 16GB (1x16GB) Dual Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	713985-B21
HP 16GB (1x16GB) Dual Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	708641-B21

Registered DIMMs (RDIMMs)

NOTE: The following memory is supported by the E5-2600 series Processors.

HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647893-B21
HP 4GB (1x4GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647895-B21
HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647897-B21
HP 8GB (1x8GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647899-B21
HP 8GB (1x8GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	690802-B21
HP 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647901-B21
HP 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	672631-B21

Unbuffered with ECC DIMMs (UDIMMs)

NOTE: The following memory is supported by the E5-2600 v2 series Processors.

HP 2GB (1x2GB) Single Rank x8 PC3L-12800E (DDR3-1600) Unbuffered CAS-11 Low Voltage Memory Kit	713975-B21
HP 2GB (1x2GB) Single Rank x8 PC3-14900E (DDR3-1866) Unbuffered CAS-13 Memory Kit	708631-B21
HP 4GB (1x4GB) Dual Rank x8 PC3L-12800E (DDR3-1600) Unbuffered CAS-11 Low Voltage Memory Kit	713977-B21
HP 4GB (1x4GB) Dual Rank x8 PC3-14900E (DDR3-1866) Unbuffered CAS-13 Memory Kit	708633-B21
HP 8GB (1x8GB) Dual Rank x8 PC3L-12800E (DDR3-1600) Unbuffered CAS-11 Low Voltage Memory Kit	713979-B21
HP 8GB (1x8GB) Dual Rank x8 PC3-14900E (DDR3-1866) Unbuffered CAS-13 Memory Kit	708635-B21

Unbuffered with ECC DIMMs (UDIMMs)

NOTE: The following memory is supported by the E5-2600 series Processors.

HP 2GB (1x2GB) Single Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669320-B21
HP 2GB (1x2GB) Single Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647905-B21
HP 4GB (1x4GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669322-B21
HP 4GB (1x4GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647907-B21
HP 8GB (1x8GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669324-B21
HP 8GB (1x8GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647909-B21

Core Options

Load Reduced DIMMs (LRDIMMs)

HP 32GB (1x32GB) Quad Rank x4 PC3-14900L (DDR3-1866) Load Reduced CAS-13 Memory Kit 708643-B21

NOTE: This memory is supported by the E5-2600 v2 series Processors.

HP 32GB (1x32GB) Quad Rank x4 PC3L-10600L (DDR3-1333) Load Reduced CAS-9 Low Voltage Memory Kit 647903-B21

NOTE: This memory is only supported by the E5-2600 series Processors.

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: www.hp.com/go/ddr3memory-configurator.

NOTE: Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: www.hp.com/go/proliant-energy-efficient.

NOTE: PC3L is a low voltage memory.

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.

NOTE: The non-hot plug hard drives use a quick release carrier.

NOTE: The hard drive options are not required when configuring a Drive-less Model.

SAS Hot Plug with SmartDrive SFF (2.5-inch) Enterprise Drives

NOTE: Selection of SAS hard drives along with embedded controller (B320i) as primary controller requires the selection of SAS license Key (For CTO orders Customers MUST select 0D1 sku= p/n BC393A (HP SAS Nm 1-Srv Lic for B320i)

HP 1.2TB 6G SAS 10K rpm SFF (2.5-inch) SC Dual Port Enterprise 3yr Warranty Hard Drive 718162-B21

HP 900GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive 652589-B21

HP 600GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive 652583-B21

HP 450GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive 652572-B21

HP 300GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive 652611-B21

HP 300GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive 652564-B21

HP 146GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive 652605-B21

SAS Hot Plug SmartDrive SFF (2.5-inch) Midline Drives

NOTE: Selection of SAS hard drives along with embedded controller (B320i) as primary controller requires the selection of SAS license Key (For CTO orders Customers MUST select 0D1 sku= p/n BC393A (HP SAS Nm 1-Srv Lic for B320i)

HP 1TB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive 652749-B21

HP 500GB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive 652745-B21

SAS Quick Release SFF (2.5-inch) Enterprise (ENT) Drives

NOTE: Selection of SAS hard drives along with embedded controller (B320i) as primary controller requires the selection of SAS license Key (For CTO orders Customers MUST select 0D1 sku= p/n BC393A (HP SAS Nm 1-Srv Lic for B320i)

Core Options

HP 1.2TB 6G SAS 10K rpm SFF (2.5-inch) Quick Release Dual Port ENT 3yr Warranty Hard Drive 718164-B21

HP 300GB 6G SAS 10K rpm SFF (2.5-inch) Quick-release Dual Port Enterprise 3yr Warranty Hard Drive 574879-B21

SAS Quick Release LFF (3.5-inch) Enterprise (ENT) Drives

NOTE: Selection of SAS hard drives along with embedded controller (B320i) as primary controller requires the selection of SAS license Key (For CTO orders Customers MUST select 0D1 sku= p/n BC393A (HP SAS Nm 1-Srv Lic for B320i)

HP 600GB 6G SAS 15K rpm LFF (3.5-inch) Quick-release Dual Port Enterprise 3yr Warranty Hard Drive 574758-B21

SAS Quick Release LFF (3.5-inch) Midline (MDL) Drives

NOTE: Selection of SAS hard drives along with embedded controller (B320i) as primary controller requires the selection of SAS license Key (For CTO orders Customers MUST select 0D1 sku= p/n BC393A (HP SAS Nm 1-Srv Lic for B320i)

HP 4TB 6G SAS 7.2k rpm LFF (3.5-inch) Quick-release Midline 1yr Warranty Hard Drive 697956-B21

HP 2TB 6G SAS 7.2K rpm LFF (3.5-inch) Quick-release Dual Port Midline 1yr Warranty Hard Drive 574761-B21

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

http://h18000.www1.hp.com/products/quickspecs/12244_div/12244_div.html (Worldwide)

6G SATA Hot Plug with SmartDrive SFF (2.5-inch) Midline (MDL) Drives

HP 1TB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive 655710-B21

HP 500GB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive 655708-B21

6G SATA Quick Release SFF (2.5-inch) Midline (MDL) Drives

HP 1TB 6G SATA 7.2K rpm SFF (2.5-inch) Quick Release Midline 1yr Warranty Hard Drive 632080-B21

HP 500GB 6G SATA 7.2K rpm SFF (2.5-inch) Quick Release Midline 1yr Warranty Hard Drive 632078-B21

6G SATA Quick Release LFF (3.5-inch) Midline (MDL) Drives

HP 4TB 6G SATA 7.2k rpm LFF (3.5-inch) Quick-release Midline 1yr Warranty Hard Drive 697954-B21

HP 3TB 6G SATA 7.2K rpm LFF (3.5-inch) Quick Release Midline 1yr Warranty Hard Drive 647274-B21

HP 1TB 6G SATA 7.2K rpm LFF (3.5-inch) Quick Release Midline 1yr Warranty Hard Drive 672621-B21

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

http://h18000.www1.hp.com/products/quickspecs/13021_div/13021_div.html (Worldwide)

6G SATA Value Endurance Hot Plug SFF (2.5-inch) Enterprise Boot Solid State Drives

HP 120GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Boot 3yr Wty Solid State Drive 717965-B21

Core Options

HP 80GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Boot 3yr Wty Solid State Drive 734360-B21

6G SATA Value Endurance Hot Plug SFF (2.5-inch) Enterprise Value Solid State Drives

HP 600GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive 739898-B21

HP 300GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive 739888-B21

HP 240GB 6G SATA Value Endurance SFF 2.5in SC Enterprise Value Solid State Drive 717969-B21

HP 480GB 6G SATA Value Endurance SFF 2.5in SC Enterprise Value Solid State Drive 717971-B21

HP 800GB 6G SATA Value Endurance SFF 2.5in SC Enterprise Value Solid State Drive 717973-B21

6G SATA ME Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives

HP 800GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive 691868-B21

HP 400GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive 691866-B21

HP 200GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive 691864-B21

HP 100GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive 691862-B21

6G SATA Value Endurance Quick Release SFF (2.5-inch) Enterprise Boot Solid State Drives

HP 120GB 6G SATA Value Endurance SFF 2.5-in Quick-release Enterprise Boot 3yr Wty Solid State Drive 718174-B21

HP 80GB 6G SATA Value Endurance SFF 2.5-in Quick-release Enterprise Boot 3yr Wty Solid State Drive 734364-B21

6G SATA Value Endurance SFF (2.5-inch) SC EV Solid State Drives

HP 800GB 6G SATA VE 2.5in SC EV SSD 717973-B21

HP 480GB 6G SATA VE 2.5in SC EV SSD 717971-B21

HP 240GB 6G SATA VE 2.5in SC EV SSD 717969-B21

6G SATA Value Endurance Quick Release SFF (2.5-inch) Enterprise Value Solid State Drives

HP 800GB 6G SATA Value Endurance SFF 2.5-in Quick-release Enterprise Value 3y Wty Solid State Drive 718192-B21

HP 600GB 6G SATA Value Endurance SFF 2.5-in Quick-release Enterprise Value 3yr Wty Solid State Drive 739902-B21

HP 480GB 6G SATA Value Endurance SFF 2.5-in Quick-release Enterprise Value 3yr Wty Solid State Drive 718186-B21

HP 300GB 6G SATA Value Endurance SFF 2.5-in Quick-release Enterprise Value 3yr Wty Solid State Drive 739892-B21

HP 240GB 6G SATA Value Endurance SFF 2.5-in Quick-release Enterprise Value 3yr Wty Solid State Drive 718180-B21

Core Options

6G SATA ME Quick Release SFF (2.5-inch) Enterprise Mainstream Solid State Drives

HP 800GB 6G SATA Mainstream Endurance SFF 2.5-in QR Enterprise Mainstream 3yr Wty Solid State Drive	730057-B21
HP 400GB 6G SATA Mainstream Endurance SFF 2.5-in QR Enterprise Mainstream 3yr Wty Solid State Drive	730055-B21
HP 200GB 6G SATA Mainstream Endurance SFF 2.5-in QR Enterprise Mainstream 3yr Wty Solid State Drive	730053-B21
HP 100GB 6G SATA Mainstream Endurance SFF 2.5-in QR Enterprise Mainstream 3yr Wty Solid State Drive	730051-B21

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

http://h18000.www1.hp.com/products/quickspecs/14038_div/14038_div.html
(Worldwide)

12G SAS Value Endurance Solid State Drives

HP 800GB 12G SAS Value Endurance 2.5in SC Enterprise Value Solid State Drive	762261-B21
HP 1.6TB 12G SAS Value Endurance 2.5in SC Enterprise Value Solid State Drive	762263-B21
HP 800GB 12G SAS Value Endurance 2.5in SC Enterprise Value Solid State Drive	762270-B21
HP 1.6TB 12G SAS Value Endurance 2.5in SC Enterprise Value Solid State Drive	762272-B21

12G SASSFF ME (2.5-inch) EM SC SSD

HP 800GB 12G SAS ME 2.5in SC EM SSD	741146-B21
HP 400GB 12G SAS ME 2.5in SC EM SSD	741142-B21
HP 200GB 12G SAS ME 2.5in EM SC SSD	741138-B21

12G SASSFF HE (2.5-inch) EP SC SSD

HP 800GB 12G SAS HE 2.5in EP SC SSD	741159-B21
HP 400GB 12G SAS HE 2.5in EP SC SSD	741155-B21
HP 200GB 12G SAS HE 2.5in EP SC SSD	741151-B21

Drive Cage Kits

HP SL230 2X Small Form Factor (SFF) Hot Plug Hard Drive Cage Kit	655618-B21
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NOTE: The Front Hot Plug cage kit, enables two hot plug drives to be implemented in the front bezel. Drives can be implemented individually in order to support a FlexibleLOM or riser card option in the opposite slot.

HP SL230 Large Form Factor (LFF) Quick Release Hard Drive Cage Kit	655624-B21
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NOTE: The LFF kit enables two (2) 3.5" QR drives.

HP SL230 Small Form Factor (SFF) Quick Release Hard Drive Cage Kit	655615-B21
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NOTE: The SFF kit enables up to four (4) 2.5" QR drives.

HP SL230 Single Small Form Factor (SFF) Hot Plug Hard Drive Cage Kit	698835-B21
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Core Options

HP Networking

Gigabit Ethernet Adapters

HP NC112T PCI Express Gigabit Server Adapter	503746-B21
HP NC365T 4-port Ethernet Server Adapter	593722-B21
HP Ethernet 1Gb 4-port 331T Adapter	647594-B21
HP Ethernet 1Gb 2-port 361T Adapter	652497-B21
HP Ethernet 1Gb 2-port 332T Adapter	615732-B21

10 Gigabit Ethernet adapters

NOTE: The SL230s Gen8 supports only the low-profile version of the 10GbE Ethernet Adapters.

NOTE: Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately.

HP NC523SFP 10Gb 2-port Server Adapter	593717-B21
HP NC552SFP 10Gb 2-port Ethernet Server Adapter	614203-B21
HP Ethernet 10Gb 2-port 530SFP Adapter	652503-B21
HP Ethernet 10Gb 2-port 530T Adapter	656596-B21
HP Ethernet 10Gb 2-port 560SFP+ Adapter	665249-B21
HP Ethernet 10Gb 2-port 561T Adapter	716591-B21

FlexibleLOM Adapters

HP Ethernet 1Gb 4-port 331FLR Adapter	629135-B21
HP Ethernet 1Gb 4-port 366FLR Adapter	665240-B21
HP FlexFabric 10Gb 2-port 526FLR-SFP+ Adapter	629138-B21
HP Ethernet 10Gb 2-port 530FLR-SFP+ Adapter	647581-B21
HP FlexFabric 10Gb 2-port 533FLR-T Adapter	700759-B21
HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter	700751-B21
HP FlexFabric 10Gb 2-port 554FLR-SFP+ Adapter	629142-B21
HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter	665243-B21
HP Ethernet 10Gb 2-port 561FLR-T Adapter	700699-B21

NOTE: Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs

HP InfiniBand

QLogic InfiniBand 4X QDR PCI-E G2 Dual Port HCA	583211-B21
HP Infiniband FDR/Ethernet 10Gb/40Gb 2-port 544FLR-QSFP Adapter	649282-B21
NOTE: Dual port ConnectX-3 FDR/QDR IB or 40/10GbE. No IB Enablement Kit required.	
HP Infiniband QDR/Ethernet 10Gb 2-port 544FLR-QSFP Adapter	649283-B21
NOTE: Dual port ConnectX-3 QDR IB or 10GbE. No IB Enablement Kit required.	
HP Infiniband FDR/Ethernet 10Gb/40Gb 2-port 544QSFP Adapter	649281-B21
NOTE: Dual port ConnectX-3 FDR/QDR IB or 40/10GbE. No IB Enablement Kit required.	
NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/13078_div/13078_div.html	

HP I/O Expansion Options

HP SL230s x8 Central Processing Unit v2 PCI-E Riser Kit	737686-B21
NOTE: Can only be used with E5-2600v2 processors	

Additional Options

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

NOTE: The Electronic software license is available in EMEA only

HP Insight Control Server Provisioning Media Kit BD883A

HP Insight Management Media Kit C6N31A

HP Insight Control Server Deployment including 1yr 24x7 Support Electronic License T9082AAE

HP Insight Control Server Deployment including 1yr 24x7 Support Single Server License 452151-B21

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_div/12631_div.html

Integrated Lights-Out (iLO)

HP iLO Scale Out

HP Integrated Lights-Out Scale-Out including 3yr 24x7 Tech Support and Updates Flex Qty E-LTU BD776AAE

HP Integrated Lights-Out Scale-Out 3yr 24x7 Tech Support and Updates Flex Quantity License BD776A

HP Integrated Lights-Out Scale-Out including 3yr 24x7 Tech Support and Updates Tracking License BD777A

HP Integrated Lights-Out Scale-Out including 1yr 24x7 Tech Support and Updates Flex Qty E-LTU BD778AAE

HP Integrated Lights-Out Scale-Out 1yr 24x7 Tech Support and Updates Flex Quantity License BD778A

HP Integrated Lights-Out Scale-Out including 1yr 24x7 Tech Support and Updates Tracking License BD779A

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

NOTE: The Electronic software license is available in EMEA only

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

NOTE: The Electronic software license is available in EMEA only

NOTE: Licenses ship without media. The Media Kit for Insight Control for Linux can be ordered separately, or can be downloaded at: <http://www.hp.com/go/ic-linux> (click on Download button).

NOTE: Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single set of activation keys.

NOTE: For additional license options please see the QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/13019_div/13019_div.html

HP Integrated Lights-Out (iLO) Advanced for ProLiant

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

Additional Options

HP iLO Advanced 1 Server License with 3yr 24x7 Tech Support and Updates BD505A
NOTE: For additional license options please see the QuickSpecs at:
http://h18004.www1.hp.com/products/quickspecs/14276_div/14276_div.html
NOTE: For more information, visit: <http://www.hp.com/go/ilo>

High Performance Clusters

HP Cluster Management Utility

HP Insight Cluster Management Utility 1yr 24x7 Flexible License QL803B
 HP Insight Cluster Management Utility 3yr 24x7 Flexible License BD476A
NOTE: These part numbers can be used to purchase one certificate for multiple licenses and support with a single activation key. Each license is for one node (server). Customer will receive a printed end user license agreement and license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online in order to obtain a license key. Customer also will receive a support agreement.

HP Insight Cluster Management Utility Media BD477A
NOTE: For additional license kits please see the QuickSpecs at
http://h18004.www1.hp.com/products/quickspecs/12612_div/12612_div.html

Cloudera Licensing

Cloudera Licenses Available for SL230 Server

Cloudera Ent Basic Ed 1yr 24x7 Phys Lic G7M27A
 Cloudera Ent Basic Ed 1yr 24x7 E-LTU G7M27AAE
 Cloudera Ent Basic Ed 1yr 8x5 Phys Lic G7M28A
 Cloudera Ent Basic Ed 1yr 8x5 E-LTU G7M28AAE
 Cloudera EDH Ed 1yr 24x7 Phys Lic G7M29A
 Cloudera EDH Ed 1yr 24x7 E-LTU G7M29AAE
 Cloudera EDH Ed 1yr 8x5 Phys Lic G7M30A
 Cloudera EDH Ed 1yr 8x5 E-LTU G7M30AAE
 Cloudera EDH Ed 1yr 24x7 Premium E-LTU G7M31AAE

HP I/O Accelerator Options

Second Generation Accelerators

HP 365GB Multi Level Cell G2 PCIe ioDrive2 for ProLiant Servers 673642-B21
 HP 785GB Multi Level Cell G2 PCIe ioDrive2 for ProLiant Servers 673644-B21
 HP 1205GB Multi Level Cell G2 PCIe ioDrive2 for ProLiant Servers 673646-B21
NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13587_div/13587_div.html
 (Worldwide)

HP PCIe Workload Accelerator Options

Mainstream Endurance (ME) PCIe Workload Accelerators

HP 1.4TB HH/HL Mainstream Endurance (ME) PCIe Workload Accelerator 729307-B21
 HP 700GB HH/HL Mainstream Endurance (ME) PCIe Workload Accelerator 729305-B21

High Endurance (HE) PCIe Workload Accelerators

HP 700GB HH/HL High Endurance (HE) PCIe Workload Accelerator 708090-B21
 HP 350GB HH/HL High Endurance (HE) PCIe Workload Accelerator 708088-B21

Value Endurance (VE) PCIe Workload Accelerators

Value Endurance (VE) PCIe Workload Accelerators 763834-B21
 HP 1.6TB VE PCIe Workload Accelerator 763836-B21
 HP 3.2TB VE PCIe Workload Accelerator 763838-B21
 HP 6.4TB VE PCIe Workload Accelerator 763840-B21



Additional Options

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

http://h18000.www1.hp.com/products/quickspecs/14528_div/14528_div.html
(Worldwide)

HP Storage Controllers SAS Controllers

Smart Array P222 Controller

HP Smart Array P222/512 FBWC 6Gb 1-port Int/1-port Ext SAS Controller

631667-B21

NOTE: This part can be partnered with E5-2600 or E5-2600v2 processors.

Smart Array P420 Controller

HP Smart Array P420/1GB FBWC 6Gb 2-ports Int SAS Controller

631670-B21

NOTE: This part can only be partnered with Intel E5-2600 processors (v1)

Smart Array P421 Controller

HP Smart Array P421/1GB FBWC 6Gb 2-ports Ext SAS Controller

631673-B21

HP Smart Array P421/2GB FBWC 6Gb 2-ports Ext SAS Controller

631674-B21

Optional Upgrades

HP 512MB B-series Dynamic Smart Array Flash Backed Write Cache with 24 inch Cable

676473-B21

HP 2x Large Form Factor Smart Array Enablement Kit

670277-B21

HP SL230s 4X SFF Smart Array Enablement Kit

670279-B21

HP 12in Super Capacity Option for Smart Array

668943-B21

HP SAS License Key No Media 1 Single Server License for B320i

BC393A

HP SmartCache No Media 24x7 Technical Support 1 Svr License

D7S26A

HP SmartCache No Media 24x7 Technical Support Flexible License

D7S27A

HP SmartCache No Media 24x7 Technical Support Electronic License

D7S27AAE

NOTE: Due to cabling requirements, the HP 12in Super Cap is a required option to implement a HP Smart Array Controller with Flash.

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

http://h18000.www1.hp.com/products/quickspecs/14227_div/14227_div.html
(Smart Array P222 Controller)

http://h18000.www1.hp.com/products/quickspecs/14229_div/14229_div.html
(Smart Array P421 Controller)

http://h18000.www1.hp.com/products/quickspecs/13200_div/13200_div.html
(Smart Array Advanced Pack)

http://h18000.www1.hp.com/products/quickspecs/14532_div/14532_div.html
(SmartCache)

Host Bus Adapter

HP H222 Host Bus Adapter

650926-B21

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

http://h18004.www1.hp.com/products/quickspecs/14337_div/14337_div.html
(HBA 222)

Additional Options

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>

HP StoreEver LTO-6 Ultrium 6250 Tape Drive in 1U Rack-mount Kit C0L99A
 HP StoreEver 1/8 G2 LTO-6 Ultrium 6250 FC Tape Autoloader C0H19A

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_div/14604_div.html
 (Worldwide)

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:

http://h18000.www1.hp.com/products/quickspecs/13404_div/13404_div.html
 (Worldwide)

HP Storage Options

Storage Fibre Channel HBA

NOTE: For the complete listing of Fibre Channel Host Bus Adapters for Windows 2000, Windows Server 2003 and Linux, please see:

<http://h18006.www1.hp.com/storage/saninfrastructure/hba.html>

Emulex Fibre Channel HBAs

HP StoreFabric SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter C8R38A

HP StoreFabric SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter C8R39A

NOTE: The Emulex Fibre Channel HBAs are low profile PCIe Gen3.0 x8 form factor.

HP Uninterruptible Power Systems

HP Rack-mountable UPS

HP R1500 G3 Uninterruptible Power Supply (UPS)

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

HP R1.5kVA G3 1U JP/TW Uninterruptible Power System AF470A

HP R1.5kVA G3 1U INTL Uninterruptible Power System AF471A

NOTE: Please see the QuickSpecs for additional information:

http://h18000.www1.hp.com/products/quickspecs/14059_div/14059_div.html
 (Worldwide)

HP R/T3000 G2 Uninterruptible Power System (UPS)

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

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

HP R/T3000 G2 2U Detachable Cord High Voltage INTL Uninterruptible Power System AF468A

NOTE: Please see the QuickSpecs for additional information:

http://h18000.www1.hp.com/products/quickspecs/14058_div/14058_div.html
 (Worldwide)

R5000 Uninterruptible Power System (UPS)

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

Additional Options

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
 HP R7KVA 4U IEC-32A High Voltage INTL Uninterruptible Power System AF463A

NOTE: Please see the QuickSpecs for additional information:
http://h18000.www1.hp.com/products/quickspecs/14110_div/14110_div.html
 (Worldwide)

NOTE: For additional information on HP Uninterruptible Power Systems please go to: www.hp.com/servers/rackups.

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 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: www.hp.com/products/powercords.

HP Basic Power Distribution Units (bPDU)

HP Basic Power Distribution Unit: 1U/0U 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 7.3kVA 230 Volt IEC309 32A Input (20xC13) INTL Basic PDU H5M68A
 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 7.3kVA 230 Volt IEC309 32A Input (24xC13/6xC19) INTL Basic PDU H5M70A
 HP 8.3kVA 208 Volt CS8265C Input (30xC13/6xC19) NA/JP Basic PDU H5M60A
 HP 11kVA 230 Volt IEC309 63A Input (30xC13/6xC19) INTL Basic PDU H5M71A
 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 11kVA 400 Volt IEC309 16A 3-Phase Input (30xC13/6xC19) INTL Basic PDU H5M72A

HP Basic Power Distribution Unit: Full Height Version

HP 11kVA 400 Volt IEC309 16A 3-Phase Input (36xC13/6xC19) INTL Basic PDU H5M73A
 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

Additional Options

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_div/14557_div.html
 (Worldwide)

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

HP Remote Monitoring 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 Remote Monitored Power Distribution Unit: Mid Height Version

HP 4.9kVA 208 Volt L6-30 Input (20xC13/4xC19) NA/JP Monitored PDU D9N47A
 HP 7.3kVA 230 Volt IEC309 32A Input (20xC13/4xC19) INTL Monitored PDU D9N48A
 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 11kVA 400 Volt IEC309 16A 3-Phase Input (18xC13/3xC19) INTL Monitored PDU D9N55A

HP Remote Monitored Power Distribution Unit: Full Height Version

HP 8.3kVA 208 Volt CS8265C Input (30xC13/3xC19) NA Monitored PDU D9N49A
 HP 7.3kVA 230 Volt IEC309 32A Input (32xC13/4xC19) INTL Monitored PDU D9N50A
 HP 11kVA 400 Volt IEC309 16A 3-Phase Input (30xC13/3xC19) INTL Monitored PDU D9N57A
 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 22kVA 400 Volt IEC309 32A 3-Phase Input (12xC13/12xC19) INTL Monitored PDU D9N60A
 HP 22kVA 400 Volt IEC309 32A 3-Phase Input (30xC13/3xC19) INTL Monitored PDU D9N56A
 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

Additional Options

HP Environmental Sensor for Remote Monitored PDUs

HP Environmental Sensor for Remote Monitored PDUs

E2D53A

NOTE: Please see the QuickSpecs for additional information:

http://h18000.www1.hp.com/products/quickspecs/14669_div/14669_div.html
(Worldwide)

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 24A 415V Three Phase L22-30 NA Core Intelligent Power Distribution Unit

AF902A

HP 7.3kVA 32A Single Phase INTL Core Intelligent Modular Power Distribution Unit

AF525A

HP 11kVA 16A Three Phase INTL Core Intelligent Modular Power Distribution Unit

AF526A

HP 22kVA 32A Three Phase INTL Core Intelligent Modular Power Distribution Unit

AF527A

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

HP 22kVA 32A 400V Three Phase 12 Outlet Core INTL Intelligent Power Distribution Unit

AF538A

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

HP 7.3kVA 32A Single Phase INTL Intelligent Modular Power Distribution Kit

AF534A

iPDU Extension Bars

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_div/13650_div.html
(Worldwide)

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

www.hp.com/go/rackandpower.

Additional Options

HP Rack Series

HP Intelligent Series Rack

HP 636 1200mm Pallet Intelligent Series Rack	BW899A
HP 636 1200mm Shock Intelligent Series Rack	BW900A
HP 642 1200mm Pallet Intelligent Series Rack	BW907A
HP 642 1200mm Shock Intelligent Series Rack	BW908A
HP 647 1200mm Pallet Intelligent Series Rack	BW913A
HP 647 1200mm Shock Intelligent Series Rack	BW914A

NOTE: Please see the QuickSpecs for Technical Specifications such as height, width, depth, weight, and color:

http://h18000.www1.hp.com/products/quickspecs/14223_div/14223_div.html
(Worldwide)

NOTE: For additional information regarding Rack Cabinets, please see the following URL: <http://www.hp.com/go/rackandpower>.

HP Rack Options

HP TFT7600 G2 KVM Console and Monitor (TFT7600 G2)

HP TFT7600 G2 KVM Console Rackmount Keyboard US Monitor	AZ870A
HP TFT7600 G2 KVM Console Rackmount Keyboard UK Monitor	AZ871A
HP TFT7600 G2 KVM Console Rackmount Keyboard DE Monitor	AZ872A
HP TFT7600 G2 KVM Console Rackmount Keyboard FR Monitor	AZ873A
HP TFT7600 G2 KVM Console Rackmount Keyboard IT Monitor	AZ874A
HP TFT7600 G2 KVM Console Rackmount Keyboard ES Monitor	AZ875A
HP TFT7600 G2 KVM Console Rackmount Keyboard DK Monitor	AZ876A
HP TFT7600 G2 KVM Console Rackmount Keyboard NO Monitor	AZ877A
HP TFT7600 G2 KVM Console Rackmount Keyboard SE/FI Monitor	AZ878A
HP TFT7600 G2 KVM Console Rackmount Keyboard CH Monitor	AZ879A
HP TFT7600 G2 KVM Console Rackmount Keyboard PT Monitor	AZ880A
HP TFT7600 G2 KVM Console Rackmount Keyboard BE Monitor	AZ881A
HP TFT7600 G2 KVM Console Rackmount Keyboard JP Monitor	AZ882A
HP TFT7600 G2 KVM Console Rackmount Keyboard RU Monitor	AZ883A
HP TFT7600 G2 KVM Console Rackmount Keyboard Intl Monitor	AZ884A
HP TFT7600 G2 KVM Console Rackmount Keyboard US TAA Monitor	AZ885A

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

http://h18000.www1.hp.com/products/quickspecs/13731_div/13731_div.html
(Worldwide)

HP USB BFR with PVC Free US Keyboard/Mouse Kit	631341-B21
HP USB BFR with PVC Free UK Keyboard/Mouse Kit	631344-B21
HP USB BFR with PVC Free FR Keyboard/Mouse Kit	631346-B21
HP USB BFR with PVC Free ES Keyboard/Mouse Kit	631348-B21
HP USB BFR with PVC Free DE Keyboard/Mouse Kit	631358-B21
HP USB BFR with PVC Free JP Keyboard/Mouse Kit	631360-B21
HP USB BFR with PVC Free IT Keyboard/Mouse Kit	631362-B21
HP USB BFR with PVC Free CN Keyboard/Mouse Kit	631364-B21
HP USB BFR with PVC Free AE Keyboard/Mouse Kit	638212-B21
HP USB BFR with PVC Free RU Keyboard/Mouse Kit	638214-B21
HP USB BFR with PVC Free IN Keyboard/Mouse Kit	672097-D63
HP USB BFR with PVC Free AP-Intl Keyboard/Mouse Kit	672097-373
HP USB BFR with PVC Free Intl Keyboard/Mouse Kit	672097-B33
HP USB BFR with PVC Free PT Keyboard/Mouse Kit	672097-133

Additional Options

HP USB BFR with PVC Free TR Keyboard/Mouse Kit	672097-143
HP USB BFR with PVC Free CZ Keyboard/Mouse Kit	672097-223
HP USB BFR with PVC Free FI Keyboard/Mouse Kit	672097-353
HP USB BFR with PVC Free SE Keyboard/Mouse Kit	672097-103
HP USB BFR with PVC Free CH Keyboard/Mouse Kit	672097-113
HP USB BFR with PVC Free KR Keyboard/Mouse Kit	672097-KD3

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

http://h18000.www1.hp.com/products/quickspecs/13972_div/13972_div.html
(Worldwide)

HP Server Console Switches

HP Server Console 0x2x8 Port Analog Switch	AF616A
HP Server Console 0x2x16 Port Analog Switch	AF617A
HP TAA 0x2x16xKVM Server Console G2 Switch	AF626A

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

http://h18000.www1.hp.com/products/quickspecs/11834_div/11834_div.html
(Worldwide)

HP Server Console Switch G2 with Virtual Media & CAC

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 CAT5 1-pack USB Interface Adapter	336047-B21

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

http://h18000.www1.hp.com/products/quickspecs/13475_div/13475_div.html
(Worldwide)

HP IP Console Switch G2 with Virtual Media & CAC

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

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

http://h18000.www1.hp.com/products/quickspecs/13474_div/13474_div.html
(Worldwide)

Additional Options

HP USB and SD Options

HP Flash Media Kits for USB Drives

HP 2GB USB Flash Media Drive Key Kit 608447-B21

NOTE: HP qualified blank USB key for use with HP ProLiant servers that support the VMware virtualization environment and other HP value-add software. HP recommends this industry standard USB flash device for use with VMware ESXi. USB device must be installed in the internal slot of the ProLiant server for use with VMware ESXi. Refer to HP VMware Getting Started Guide for installation instructions.

HP 8GB USB Enterprise Mainstream Flash Media Drive Key Kit 737953-B21

HP Enterprise Mainstream Flash Media Kits for Memory Cards

HP 8GB microSD Enterprise Mainstream Flash Media Kit 726116-B21

HP 32GB microSD Enterprise Mainstream Flash Media Kit 700139-B21

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

http://h18000.www1.hp.com/products/quickspecs/13971_div/13971_div.html

Other USB and SD Options

HP 36pin Serial/USB/VGA Dongle Cord Kit 676277-B21

HP Care Pack Services

HP 3 year 24x7 24 hour Call to Repair ProLiant s6500 Hardware Support UR425E

HP 3 year 24x7 24 hour Call to Repair with Defective Media Retention ProLiant s6500 Hardware Support UR426E

HP 3 year 4 hour 13x5 ProLiant s6500 Hardware Support UR400E

HP 3 year 4 hour 13x5 with Defective Media Retention ProLiant s6500 Hardware Support UR401E

HP 3 year 4 hour 24x7 ProLiant s6500 Hardware Support UR402E

HP 3 year 4 hour 24x7 with Defective Media Retention ProLiant s6500 Hardware Support UR403E

HP 3 year 6 hour 24x7 Call to Repair ProLiant s6500 Hardware Support UR404E

HP 3 year 6 hour 24x7 Call to Repair with Defective Media Retention s6500 Hardware Support UR405E

HP 3 year Next business day ProLiant s6500 Hardware Support UR398E

HP 3 year Next business day with Defective Media Retention ProLiant s6500 Hardware Support UR399E

HP 3 year 4 hour 24x7 ProLiant s6500 Collaborative Support U1M52E

HP 3 year 4 hour 24x7 ProLiant s6500 Proactive Care Service U3C72E

HP 3 year Next business day ProLiant s6500 Collaborative Support U1M46E

HP 3 year Next business day ProLiant s6500 Proactive Care Service U3C66E

HP 4 year 24x7 24 hour Call to Repair ProLiant s6500 Hardware Support UR427E

HP 4 year 24x7 24 hour Call to Repair with Defective Media Retention ProLiant s6500 Hardware Support UR428E

HP 4 year 4 hour 13x5 ProLiant s6500 Hardware Support UR408E

HP 4 year 4 hour 13x5 with Defective Media Retention ProLiant s6500 Hardware Support UR409E

HP 4 year 4hour 24x7 ProLiant s6500 Hardware Support UR410E

HP 4 year 4 hour 24x7 with Defective Media Retention ProLiant s6500 Hardware Support UR411E

HP 4 year 6 hour 24x7 Call to Repair ProLiant s6500 Hardware Support UR412E

HP 4 year 6 hour Call to Repair 24x7 with Defective Media Retention ProLiant s6500 Hardware Support UR413E

Additional Options

HP 4 year Next business day ProLiant s6500 Hardware Support	UR406E
HP 4 year Next business day with Defective Media Retention ProLiant s6500 Hardware Support	UR407E
HP 5 year 24x7 24 hour Call to Repair ProLiant s6500 Hardware Support	UR429E
HP 5 year 24x7 24 hour Call to Repair with Defective Media Retention ProLiant s6500 Hardware Support	UR430E
HP 5 year 4 hour 13x5 ProLiant s6500 Hardware Support	UR416E
HP 5 year 4 hour 13x5 with Defective Media Retention ProLiant s6500 Hardware Support	UR417E
HP 5 year 4 hour 24x7 ProLiant s6500 Hardware Support	UR418E
HP 5 year 4 hour 24x7 with Defective Media Retention ProLiant s6500 Hardware Support	UR419E
HP 5 year 6 hour 24x7 Call to Repair ProLiant s6500 Hardware Support	UR420E
HP 5 year 6 hour 24x7 Call to Repair with Defective Media Retention s6500 Hardware Support	UR421E
HP 5 year Next business day ProLiant s6500 Hardware Support	UR414E
HP 5 year Next business day with Defective Media Retention ProLiant s6500 Hardware Support	UR415E

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

Memory

HP ProLiant SL230s Gen8 Server

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

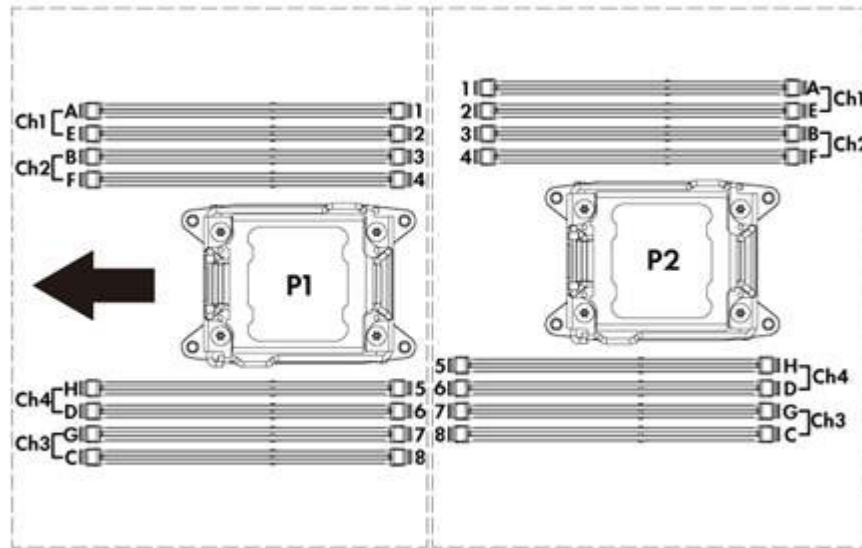
NOTE: Chart does not represent all possible memory configurations.

DDR3 memory population guidelines

For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator

Each Intel® Xeon® E5-2600 family processor socket contains four memory channels that support two DIMMs each for a total of eight (8) DIMM per installed processor or a grand total of sixteen (16) DIMMs for the server. Up to 16GB capacity DIMMs are supported for 512GB of memory (16 DIMM slots x 32GB per DIMM).

NOTE: 512GB refers to Load Reduced DIMM (LRDIMM). The max for registered DIMM memory is 256GB.



Memory Population Rules and Guidelines:

- White DIMM slots denote the first slot of a channel. For 1 DPC (DIMM per channel) populate white slots only.
- Install DIMMs only if the corresponding processor is installed.
- If only one processor is installed in a two processor system, only half of the DIMM slots are available.
- To maximize performance, it is recommended to balance the total memory capacity between all installed processors and to load the channels similarly whenever possible.
- Populate DIMMs from heaviest load (quad-rank) to lightest load (single-rank) within a channel
- Heaviest load (DIMM with most ranks) within a channel goes furthest from the processor
- RDIMMs operating at either 1.35V or 1.5V may be mixed in any order, but the system will power them at the higher voltage.
- Do not mix RDIMMs, LRDIMMs, and UDIMMs
- The Intel Xeon E5-2620 processor does not support DIMMs at 1.35V. Using the HP RBSU, 1.35V DIMMs can be changed to operate at 1.5V.
- The Intel Xeon E5-2620 processor does not support DIMMs at 1.35V. Using the HP RBSU, 1.35V DIMMs can be changed to operate at 1.5V.
- DIMMs of different speeds may be mixed in any order; the server will select a common optimal speed.
- The maximum memory speed is a function of the memory type, memory configuration, and processor model.
- The maximum memory capacity is a function of the memory type and number of installed processors.
- HP memory from previous generation servers is not qualified on the SL230s Gen8 Server. Certain HP SmartMemory features such as memory authentication and enhanced performance may not be supported.
- To realize the performance memory capabilities listed in this document, HP SmartMemory is required. For additional information, please see the HP SmartMemory QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html.
- For memory population rules and additional memory guidelines, please see the SL230 Gen8 user guide at <http://www.hp.com/support>.

Memory

DIMM slot/capacity/populated speed table																	
DIMM Type	Registered DIMMS (RDIMMs)																Load Reduce (LRDIMMs)
DIMM Rank	Single Rank (1R)							Dual Rank (2R)							Quad Rank (4R)		
DIMM Capacity	4GB	4GB	4GB	4GB	8GB	8GB	8GB	8GB	8GB	8GB	8GB	16GB	16GB	16GB	16GB	32GB	32GB
DIMM Native Speed (MHz)	1600	1333	1600	1866	1600	1600	1866	1333	1600	1600	1866	1333	1600	1600	1866	1333	1866
Voltage	Std	LV	LV	Std	Std	LV	Std	LV	Std	LV	Std	LV	Std	LV	Std	LV	Std
SLOTS THAT CAN BE POPULATED																	
16 slot servers	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
MAXIMUM CAPACITY (GB)*																	
Capacity	64	64	64	64	128	128	128	128	128	128	256	128	256	256	256	512	512
POPULATED DIMM SPEED (MHz)																	
1 DIMM Per Channel	1600	1333	1600	1866	1600	1600	1866	1333	1600	1600	1866	1333	1600	1600	1866	1333***	1866
2 DIMM PEr Channel	1600	1333	1600	1866	1600	1600	1866	1333	1600	1600	1866	1333	1600	1600	1866	1333***	1866

* Maximum capacity will vary based on individual server platform qualification schedule
 *** LRDIMM enables 3 DIMMs per channel. HP SmartMemory will support up to 3DPC@DDR3-1066 at 1.35V. Third party memory may only support 3DPC @DDR3-1066 at 1.5V.

DIMM slot/capacity/populated speed table													
DIMM Type	Unbuffered with ECC DIMMs (UDIMMs)												
DIMM Rank	Single Rank (1R)						Dual Rank (2R)						
DIMM Capacity	2GB	2GB	2GB	2GB	4GB	4GB	8GB	8GB	4GB	4GB	8GB	8GB	
DIMM Native Speed (MHz)	1333	1600	1600	1866	1333	1600	1333	1600	1600	1866	1600	1866	
Voltage	LV	Std	LV	Std	LV	Std	LV	Std	LV	Std	LV	Std	
SLOTS THAT CAN BE POPULATED													
16 slot servers	16	16	16	16	16	16	16	16	16	16	16	16	
MAXIMUM CAPACITY (GB)*													
Capacity	32	32	32	32	64	64	128	128	64	64	128	128	
POPULATED DIMM SPEED (MHz)													

Memory

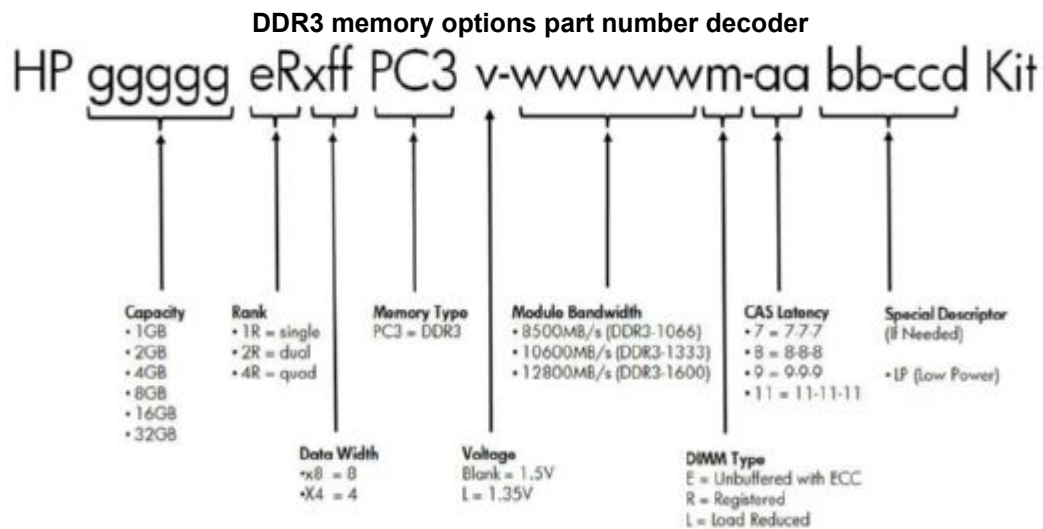
1 DIMM Per Channel	1333	1600	1600	1866	1333	1600	1333	1600	1600	1866	1600	1866
2 DIMM PER Channel	1333**	1600	1600	1866	1333**	1600	1333**	1600	1600	1866	1600	1866

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

** For HP SmartMemory, UDIMM is supported at 2DPC@DDR3-1333. Third party memory may only support up to 2DPC@DDR3-1066.

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

- 2GB = 2048MB
- 4GB = 4096MB
- 8GB = 8192MB
- 16GB = 16384MB



Following are memory options available from HP:

HP Memory

NOTE: HP memory from previous generation servers are not qualified or warranted with this HP ProLiant Server. HP SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen8. For additional information, please see the HP SmartMemory QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html

NOTE: LRDIMM, RDIMM, and UDIMMs are all distinct memory technologies and cannot be mixed within a server. The majority of ProLiant Gen8 servers support LRDIMM, RDIMM and UDIMMs.

Registered DIMMs (RDIMMs)

NOTE: The following memory is supported by the E5-2600 v2 series Processors.

HP 4GB (1x4GB) Single Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	713981-B21
HP 4GB (1x4GB) Single Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	708637-B21
HP 8GB (1x8GB) Dual Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	713983-B21
HP 8GB (1x8GB) Single Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	731765-B21
HP 8GB (1x8GB) Dual Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	708639-B21

Memory

HP 8GB (1x8GB) Single Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	731761-B21
HP 16GB (1x16GB) Dual Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	713985-B21
HP 16GB (1x16GB) Dual Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	708641-B21

Registered DIMMs (RDIMMs)

NOTE: The following memory is supported by the E5-2600 series Processors.

HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647893-B21
HP 4GB (1x4GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647895-B21
HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647897-B21
HP 8GB (1x8GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647899-B21
HP 8GB (1x8GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	690802-B21
HP 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647901-B21
HP 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	672631-B21

Unbuffered with ECC DIMMs (UDIMMs)

NOTE: The following memory is supported by the E5-2600 v2 series Processors.

HP 2GB (1x2GB) Single Rank x8 PC3L-12800E (DDR3-1600) Unbuffered CAS-11 Low Voltage Memory Kit	713975-B21
HP 2GB (1x2GB) Single Rank x8 PC3-14900E (DDR3-1866) Unbuffered CAS-13 Memory Kit	708631-B21
HP 4GB (1x4GB) Dual Rank x8 PC3L-12800E (DDR3-1600) Unbuffered CAS-11 Low Voltage Memory Kit	713977-B21
HP 4GB (1x4GB) Dual Rank x8 PC3-14900E (DDR3-1866) Unbuffered CAS-13 Memory Kit	708633-B21
HP 8GB (1x8GB) Dual Rank x8 PC3L-12800E (DDR3-1600) Unbuffered CAS-11 Low Voltage Memory Kit	713979-B21
HP 8GB (1x8GB) Dual Rank x8 PC3-14900E (DDR3-1866) Unbuffered CAS-13 Memory Kit	708635-B21

Unbuffered with ECC DIMMs (UDIMMs)

NOTE: The following memory is supported by the E5-2600 series Processors.

HP 2GB (1x2GB) Single Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669320-B21
HP 2GB (1x2GB) Single Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647905-B21
HP 4GB (1x4GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669322-B21
HP 4GB (1x4GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647907-B21
HP 8GB (1x8GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669324-B21
HP 8GB (1x8GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647909-B21

Load Reduced DIMMs (LRDIMMs)

Memory

HP 32GB (1x32GB) Quad Rank x4 PC3-14900L (DDR3-1866) Load Reduced CAS-13 Memory Kit 708643-B21

NOTE: This memory is supported by the E5-2600 v2 series Processors.

HP 32GB (1x32GB) Quad Rank x4 PC3L-10600L (DDR3-1333) Load Reduced CAS-9 Low Voltage Memory Kit 647903-B21

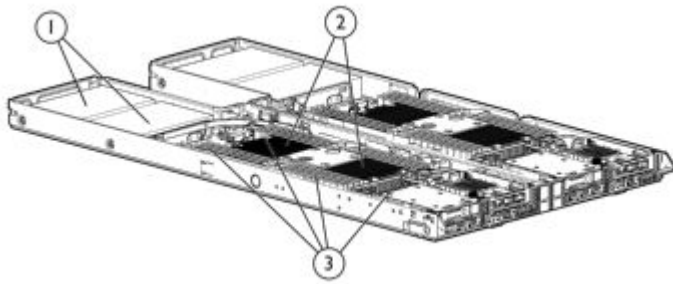
NOTE: This memory is only supported by the E5-2600 series Processors.

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: www.hp.com/go/ddr3memory-configurator.

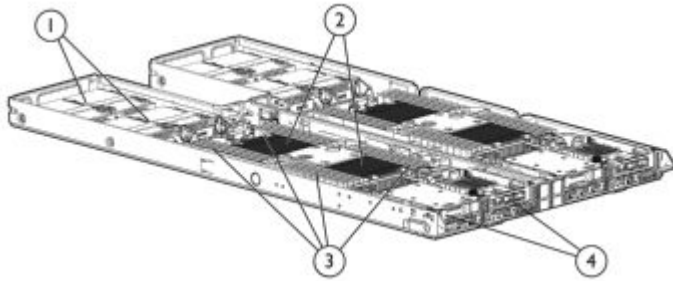
NOTE: Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: www.hp.com/go/proliant-energy-efficient.

NOTE: PC3L is a low voltage memory.

Storage



1-3 Up to four 2.5" hard drives or two 3.5" hard drives can be implemented in this area



1-4 Up to two 2.5" hot-plug drives can be configured in this area.

Note: Hot-Plug drives option via the hot-plug hard drive kit (PN 655618-B21). Drives load into the front bezel via the two PCIe slots.

Technical Specifications

System Unit	Chassis Dimensions (H x W x D) Add fan extension kit (with bezel)	6.96in x 17.638in x 35.236in (17.68 x 44.8 x 89.55cm)	
	Weight (approximate)	Maximum (all hard drives, power supplies, and processors installed)	220lb (99.8kg)
	Input Requirements (per power supply)	Rated Line Voltage	90 to 140 VAC 180 to 264 VAC
		Rated Input Current	7.31A at 115VAC 3.6A at 230VAC
		Rated Input Frequency	47 to 63 Hz
		Rated Input Power	855W (at 100 VAC), 840.72W (at 200 VAC)
	Power Specifications	To review typical system power ratings use the HP Power Advisor which is available via the online tool located at URL: www.hp.com/go/proliant-energy-efficient	
	Power Supply Output (per power supply)	Rated Steady-State Power	653.10W (at 100 VAC), 653.08W (at 200 VAC)
	System Inlet Temperature	Operating	50° to 95° F (10° to 35° C) at sea level with an altitude derating of 1.8°F per every 1000 ft (1.0°C per every 304.8 m) above sea level to a maximum of 10,000 ft (3048 m), no direct sustained sunlight. Maximum rate of change is 18°F/hr (10°C/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 86°F (30°C).
		Non-operating	-22° to 140° F (-30° to 60° C) Maximum rate of change is 36°F/hr (20°C/hr).
	Relative Humidity (non-condensing)	Operating	10% to 90% relative humidity (Rh), 82.4°F (28°C) maximum wet bulb temperature, non-condensing.
		Non-operating	5% to 95% relative humidity (Rh), 101.7°F (38.7°C) maximum wet bulb temperature, non-condensing.
	Altitude	Operating	10,000 ft (3048 m). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 1500 ft/min (457 m/min).
		Non-operating	30,000 ft (9144 m). Maximum allowable altitude change rate is 1500 ft/min (457 m/min).
	Acoustic Noise	Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).	
		Idle	
		LWAd	6.4
	LpAm	45dBA	
	Operating		

Technical Specifications

Emissions Classification (EMC)	LWAd	6.7
	LpAm	51dBA
	FCC Rating	Class A
	Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1

NOTE: Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.

HP Ethernet 1Gb 2-port 361i Adapter	Network Interface Compatibility	10Base-T/100Base-TX/1000Base-TX		
		IEEE 802.3 10Base-T		
		IEEE 802.3ab 1000Base-T		
		IEEE 802.3u 100Base-TX		
		IEEE 1588, IEEE 802.1AS		
		IEEE 802.3az - Energy Efficient Ethernet (EEE)		
	Data Transfer Method	PCI Express v 2.1, 5.0 GT/s and 2.5 GT/s bus speeds and supports for x1, x2, x4 links widths (Lanes)		
	Controller	I350 Powerville		
	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 and Full-Duplex)		1000Mb/s per port, 2000 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 UTP; up to 328 ft (100 m)		

HP H220i Host Bus Adapter	Disk Drive and Enclosure Interface - Transfer rate	6Gb/s SAS (Serial Attached SCSI) 6Gb/s SATA (Serial ATA)	
	SAS Connectors	2 internal 4X connectors	
	Server Interface	x8 PCIe 3.0 provides 8GB/s maximum bandwidth	
	SAS Speed	6Gb/s SAS links provide 4.8GB/s maximum bandwidth	
	Cache Memory	None	
	Physical Drives Supported	Up to 8 physical drives	
	Hot Plug Support	Yes	
	RAID Support	None	

Technical Specifications

Environment-friendly Products and Approach

End-of-life Management and Recycling

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.

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.

Summary of Changes

Date	Version History	Action	Description of Change:
01-Nov-2014	From Version 29 to 30	Changed	Updated Service and Support

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