

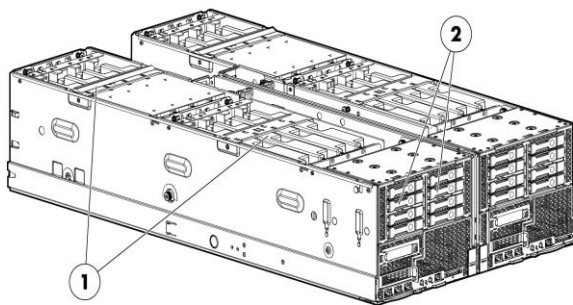
Overview

HP ProLiant SL270s Generation 8 (Gen8)

The HP ProLiant SL270s Gen8 Server is part of the HP ProLiant SL6500 Scalable System of server solutions designed for the Hyperscale and High Performance Computing (HPC) market segments. It reduces solution costs, maximizes power efficiency, and eases customer serviceability.

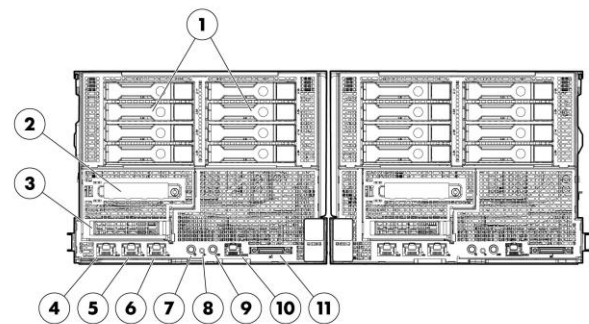
The HP ProLiant s6500 Chassis can accommodate two 2U, half-width SL270s Gen8 Servers, each individually serviceable. The SL270s Gen8 is designed for extreme rack level graphics processing unit (GPU) density, with up to 16 accelerators capable of being implemented in one chassis, reducing the complexity of required adapters and cabling.

The chassis features front cabling and common slot power supplies and fans for ease of service. The HP ProLiant SL270s Server is ideal for HPC applications in Oil & Gas, Life Sciences, Manufacturing, Research, and Finance.



4U Open View:

1. Eight accelerator location
2. Eight front SFF Hot Plug drives



4U Front View:

1. Eight front SFF Hot Plug drives
2. FlexibleLOM Slot
3. PCIe Expansion Slot
4. Dedicated iLO4 Management Port
5. (1) 1GbE Ports
6. (1) 1GbE Ports
7. Power Button
8. Health LED
9. UID LED
10. Serial Port
11. SUV (Serial/USB/Video)

What's New

- Updated information pertaining to availability of various options

Standard Features

NOTE: The SL270 Gen8 (Node SKU's 654947-B21, 654948-B21) accommodates E5-2600 processors. Any time an SL270 Gen8 SE server (Node SKU's 739055-B21, 739056-B21) is mentioned, this document is referring to the version of that server that accommodates E5-2600v2 processors.

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

NOTE: The HP ProLiant SL270s Gen8 Server can accommodate E5-2600 series processors, while the HP ProLiant SL270s Gen8 SE Server can accommodate E5-2600v2 series processors.

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, Turbo2-4/4/4/4/4/4/4/5/6/7/8)

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, Turbo2-4/4/4/4/4/4/5/6/7/8)

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

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-

Standard Features

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.

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/>.

Upgradeability

Upgradeable to two processors

On System Management Chipset

HP iLO (Firmware: HP iLO 4)

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

Standard Features

Memory Protection Advanced ECC (multi-bit error protection)

Memory	Type	HP SmartMemory DDR3 Registered (RDIMM) or Unbuffered (UDIMM)
	DIMM Slots Available	16 total DIMM Slots available
	Standard (Base Models)	8GB (2x 4G) Registered DIMMs (1333MHz)
	Maximum (RDIMM) (per server tray)	256GB (16 x 16GB) Registered memory configurations
	Maximum (UDIMM) (per server tray)	128GB (16 x 8GB)
	Maximum (LRDIMM) (per server tray)	512GB (16 x 32GB) LRDIMM memory configurations

NOTE: HP memory from previous generation servers are not qualified or warranted with this HP ProLiant Server. 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

NOTE: RDIMM and UDIMMs are all distinct memory technologies and cannot be mixed within a server.

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

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

Network Controller HP Ethernet 1Gb 2-port 361i Adapter

Expansion Slots	Expansion Slots	Technology	Bus Width*	Connector Width	Form Factor	Notes
	Low Profile	PCIe 3.0	x8	x8	Half-length, half-height	Front Panel Access
	FlexibleLOM	PCIe 3.0	x8	x8	FlexibleLOM	Front Panel Access
	All 8 GPU Slots	PCIe 3.0	x16	x16	Full-length, full height	GPU only

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

NOTE: NVIDIA Tesla K2 runs at PCIe Gen3.0. All other accelerators run at Gen2.0.

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

Standard Features

(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: <http://www.hp.com/support/rbsu>.

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

4U Half Width tray		
Hot Plug SATA SFF 2.5"	8.0 TB	8 x 1TB
Hot Plug SAS SFF 2.5"	9.6TB	8 x 1.2TB
Hot Plug SATA SSD 2.5"	6.4TB	8 x 800GB
Hot Plug SAS SSD 2.5"	6.4TB	8 x 800GB

Interfaces

Network RJ-45	Two 1GbE NIC ports
FlexibleLOM	ProLiant Gen8 servers offer a new networking technology - Flexible Network Technology. The SL270s 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 for further details.
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 download at URL: <http://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% and are available in three power output options - 750W, 1200W and 1500W - allowing the customer 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.

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.

It is highly recommended that you use the HP Power Advisor in defining the "Right-Size" power supply for your needs. HP Power Advisor can be accessed at: <http://www.hp.com/go/hppoweradvisor>.

NOTE: The 80 PLUS program is a unique forum that unites electric utilities, the computer industry, and consumers in an effort to bring energy efficient technology solutions to the marketplace. 80 Plus independently tests power supply efficiency and publicly posts the results on 80Plus.org. Redundant Power: Optional (1+ 1 or n+n 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

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

Standard Features

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
 Citrix XenServer

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/SL270sGen8>

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 SL270 is 4U, half-width
 Fully configured s6500 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 iLO Mobile App:** Enables the ability to access, deploy, and manage your server anytime from anywhere from select smartphones and mobile devices. For additional information please visit: <http://www.hp.com/go/ilo/mobileapp>

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

HP Insight Management

HP Service Pack for ProLiant (SPP)

HP Service Pack for ProLiant (SPP) and HP Smart Update Manager (HP SUM) provide a comprehensive approach to firmware and system software maintenance. Together they provide better operating stability and ensure maximum uptime. The SPP will be updated at a predictable cadence,

Standard Features

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

Security

- Power-on password
- 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)

Standard Features

parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have HP replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at: <http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>.

Optional Features

HP Insight Management	HP Insight Control	<p>HP Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, remote control, and optimize your IT infrastructure through a single, simple management console. For more information, see http://www.hp.com/go/insightcontrol.</p> <p>HP Insight Control includes one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, see: http://www.hp.com/services/insight.</p>
	HP iLO Advanced	<p>HP Integrated Lights-Out Advanced License a product option, providing smart remote server management without compromise. iLO Advanced unlocks the full set of remote administration functionality for all HP ProLiant servers by activating the full Virtual Keyboard Video and Mouse remote console, multi-user collaboration, console record and replay, GUI-based and scripted virtual media and virtual folders, and enhanced security and power management functionality. For more information, see: http://www.hp.com/go/ioloadvance</p>
	HP iLO Scale-Out	<p>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</p>
	HP Matrix Operating Environment	<p>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.</p> <p>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).</p> <p>NOTE: For more information, visit: http://www.hp.com/go/matrixoe</p>
High Performance Clusters	HP Cluster Platforms	<p>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</p>
	HP HPC Interconnects	<p>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</p>
	HP Insight Cluster	<p>HP Insight Cluster Management Utility (CMU) is an HP-licensed and HP-</p>

Optional Features

Management Utility

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>

Storage Software

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

- **Data Protection and Recovery Software**
Whether you're a large enterprise or a smaller business, HP data protection and recovery software will cost-effectively protect you against disaster and ensure business continuity.
- **Data Archive and Migration Software**
HP's storage software enables you to comply with data retention and retrieval requirements, improve application performance, and reduce costs by efficiently migrating infrequently accessed or less valuable data to lower cost storage.
- **Storage Resource Management Software (SRM)**
HP's storage resource management software reduces operational costs and provides the command and control foundation you need to efficiently manage and visualize your physical and virtual environments.
- **Data Replication Software**
HP offers array-based and host-based replication software for use in disaster recovery, testing, application development and reporting.
- **Storage Device Management Software**
Maximize your investment in HP storage and networking with software that enables hardware-specific configuration, performance tuning and connectivity management.
- **HP StoreVirtual VSA**
With HP StoreVirtual VSA you can use the power of virtualization to turn a set of heterogeneous and disconnected physical disk drives in your servers and storage devices into a single pool of logical storage capacity.

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

HP Insight Online

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

Factory Express Portfolio for Servers and Storage

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

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

Optional Features

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>

Computational and Graphics Accelerators

Each SL270s tray will accommodate up to eight computational or graphics accelerators, with options including NVIDIA Tesla K20, K20x, K40 and K80 GPUs, NVIDIA GRID K2 GPUs, Intel® Xeon Phi™ 5110p and AMD S9150 Firepro Coprocessors.

NOTE: The maximum number of NVIDIA Tesla K20, K20x and K40 GPUs and Intel® Xeon Phi™ 5110p coprocessors supported is 8. The maximum number of NVIDIA GRID K2 and K80 GPUs is 4. The maximum number of HP AMD FirePro S9150 Accelerators is 6.

NOTE: The NVIDIA GRID K2 and K80 operate at PCIe Gen 3. All other accelerators operate at PCIe Gen 2.

NOTE: When adding accelerators to the SL270s servers, one must utilize the HP 1200W CS Platinum Power Supply Kit, 578322-B21, or the HP1500W CS Platinum Power Supply Kit, 684532-B21, for all four power supply slots.

NOTE: When adding Nvidia Tesla K2, K20, K20X or K40 accelerators to the SL270s servers, one must utilize the HP SL270 NVIDIA GPU Enablement Kit. When adding Intel Xeon Phi 5110p Coprocessors, one must utilize the HP SL270 Coprocessor Enablement Kit.

NOTE: When adding Nvidia Tesla K80 accelerator to the SL270s servers, one must utilize the HP SL270 K80 GPU Enablement Kit.

NOTE: When adding AMD S9150 Firepro accelerator to the SL270s servers, one must utilize the HP SL270 AMD GPU Enablement Kit.

NOTE: When implementing 7 or 8 accelerators, one must utilize the HP 1500W CS Platinum Power Supply Kit, 684532-B21.

NOTE: One must configure a minimum of 4GB of memory per processor when accelerators are installed.

NOTE: Mixing of accelerators or coprocessors within the same server is not allowed.

NOTE: At this time, the NVIDIA Tesla K40 is operated at PCIe Gen3.0.

NOTE: The NVIDIA Tesla K40 and K80 and AMD S9150 Firepro are only supported on E5-2600v2 processors.

Service and Support

Service and Support

The SL270s 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:

<http://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: Factory Integrated Models must start with a CTO Server.

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

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

NOTE: 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 a 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 622372-B21 needs to be ordered for each half width 1U space unpopulated.

HP Server Nodes	HP ProLiant SL270s Gen8 1U Left Half Width Tray Configure-to-order Server	654947-B21
	NOTE: Server node is only available for E5-2600 processors.	
	HP ProLiant SL270s Gen8 SE 4U Left Tray Configure-to-order Server	739055-B21
	NOTE: Server node is only available for E5-2600v2 processors.	
	HP ProLiant SL270s Gen8 1U Right Half Width Tray Configure-to-order Server	654948-B21
	NOTE: Server node is only available for E5-2600 processors.	
	HP ProLiant SL270s Gen8 SE 4U Right Tray Configure-to-order Server	739056-B21
	NOTE: Server node is only available for E5-2600v2 processors.	

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.	
	NOTE: All E5-2600v2 processors must be paired with 739055-B21 or 739056-B21	
	Tray Node Servers	
	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	

Configuration Information - Factory Integrated Models

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
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.

NOTE: All E5-2600 processors must be paired with 654947-B21 or 654948-B21 Tray Node Servers

HP SL270s Gen8 Intel® Xeon® E5-2609 (2.4GHz/4-core/10MB/80W) FIO Processor Kit	662341-L21
HP SL270s Gen8 Intel® Xeon® E5-2603 (1.8GHz/4-core/10MB/80W) FIO Processor Kit	662342-L21

Base Processors

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

HP SL270s Gen8 Intel® Xeon® E5-2640 (2.5GHz/6-core/15MB/95W) FIO Processor Kit	662338-L21
HP SL270s Gen8 Intel® Xeon® E5-2630 (2.3GHz/6-core/15MB/95W) FIO Processor Kit	662339-L21
HP SL270s Gen8 Intel® Xeon® E5-2620 (2.0GHz/6-core/15MB/95W) FIO Processor Kit	662340-L21
HP SL270s Gen8 Intel® Xeon® E5-2630L (2.0GHz/6-core/15MB/60W) FIO Processor Kit	662347-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 SL270s Gen8 Intel® Xeon® E5-2670 (2.6GHz/8-core/20MB/115W) FIO Processor Kit	662334-L21
HP SL270s Gen8 Intel® Xeon® E5-2665 (2.4GHz/8-core/20MB/115W) FIO Processor Kit	662335-L21
HP SL270s Gen8 Intel® Xeon® E5-2660 (2.2GHz/8-core/20MB/95W) FIO Processor Kit	662336-L21
HP SL270s Gen8 Intel® Xeon® E5-2650 (2.0GHz/8-core/20MB/95W) FIO Processor Kit	662337-L21
HP SL270s Gen8 Intel® Xeon® E5-2650L (1.8GHz/8-core/20MB/70W) FIO Processor Kit	662346-L21
HP SL270s Gen8 Intel® Xeon® E5-2637 (3.0GHz/2-core/5MB/80W) FIO Processor Kit	662345-L21

Configuration Information - Factory Integrated Models

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
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

Configuration Information - Factory Integrated Models

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)	
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 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: http://www.hp.com/go/ddr3memory-configurator .	
NOTE: Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: http://www.hp.com/go/proliant-energy-efficient	
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 Ethernet 10Gb 2-port 560FLR-SFP+ FIO Adapter 684218-B21

HP Ethernet 10Gb 2-port 561FLR-T FIO Adapter 700700-B21

NOTE: Can only be paired with M2070 and M2090 GPU Kits

HP FlexFabric 10Gb 2-port 534FLR-SFP+ FIO Adapter 700752-B21

HP FlexFabric 10Gb 2-port 533FLR-T FIO Adapter 700760-B21

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

Configuration Information - Factory Integrated Models

HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle FIO
Electronic License

C6N36ABE

Step 5: Choose Additional Options for Factory Integration

NOTE: For additional options, please refer to the "Core Options" and "Additional Options" section 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 SL270 NVIDIA GPU Enablement Kit NOTE: Required when ordering NVidia Tesla K2, K20, or K20x Modules.	711951-B21
	HP SL270 Coprocessor Enablement Kit NOTE: Required when ordering Intel Xeon Phi 5110p Coprocessor.	711970-B21
	HP SL270 K80 GPU Enablement Kit NOTE: Required when ordering NVidia Tesla K80 Modules.	814622-B21
	HP SL270 AMD GPU Enablement Kit NOTE: Required when ordering AMD S9150 Firepro Accelerator.	813861-B21

HP Processors

E5-2600 v2 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

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 SL270s Gen8 Intel® Xeon® E5-2609 (2.4GHz/4-core/10MB/80W) Processor Kit 662341-B21

HP SL270s Gen8 Intel® Xeon® E5-2603 (1.8GHz/4-core/10MB/80W) Processor Kit 662342-B21

Base Processors

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

HP SL270s Gen8 Intel® Xeon® E5-2640 (2.5GHz/6-core/15MB/95W) Processor Kit 662338-B21

HP SL270s Gen8 Intel® Xeon® E5-2630 (2.3GHz/6-core/15MB/95W) Processor Kit 662339-B21

HP SL270s Gen8 Intel® Xeon® E5-2620 (2.0GHz/6-core/15MB/95W) Processor Kit 662340-B21

HP SL270s Gen8 Intel® Xeon® E5-2630L (2.0GHz/6-core/15MB/60W) Processor Kit 662347-B21

Performance Processors

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

Core Options

team.

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

HP SL270s Gen8 Intel® Xeon® E5-2670 (2.6GHz/8-core/20MB/115W) Processor Kit	662334-B21
HP SL270s Gen8 Intel® Xeon® E5-2665 (2.4GHz/8-core/20MB/115W) Processor Kit	662335-B21
HP SL270s Gen8 Intel® Xeon® E5-2660 (2.2GHz/8-core/20MB/95W) Processor Kit	662336-B21
HP SL270s Gen8 Intel® Xeon® E5-2650 (2.0GHz/8-core/20MB/95W) Processor Kit	662337-B21
HP SL270s Gen8 Intel® Xeon® E5-2650L (1.8GHz/8-core/20MB/70W) Processor Kit	662346-B21
HP SL270s Gen8 Intel® Xeon® E5-2637 (3.0GHz/2-core/5MB/80W) Processor Kit	662345-B21

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
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

Core Options

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)

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

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

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.

Core Options

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 OD1 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 OD1 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

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

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
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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 80GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Boot 3yr Wty Solid State Drive	734360-B21
HP 240GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	717969-B21
HP 480GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	717971-B21
HP 800GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	717973-B21

6G SATA RI-2 SFF SC SSD

Core Options

HP 1.6TB 6G SATA RI-2 SFF SC SSD	804605-B21
HP 800GB 6G SATA RI-2 SFF SC SSD	804599-B21
HP 480GB 6G SATA RI-2 SFF SC SSD	804593-B21
HP 240GB 6G SATA RI-2 SFF SC SSD	804587-B21
HP 120GB 6G SATA RI-2 SFF SC SSD	804581-B21
HP 80GB 6G SATA RI-2 SFF SC SSD	804575-B21

6G SATA MU-2 SFF SC SSD

HP 1.6TB 6G SATA MU-2 SFF SC SSD	804631-B21
HP 800GB 6G SATA MU-2 SFF SC SSD	804625-B21
HP 480GB 6G SATA MU-2 SFF SC SSD	832414-B21
HP 200GB 6G SATA MU-2 SFF SC SSD	804613-B21

6G SATA WI-2 SFF SC SSD

HP 1.2TB 6G SATA WI-2 SFF SC SSD	804677-B21
HP 800GB 6G SATA WI-2 SFF SC SSD	804671-B21
HP 400GB 6G SATA WI-2 SFF SC SSD	804665-B21
HP 200GB 6G SATA WI-2 SFF SC SSD	804639-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 SAS ME Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State 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 OD1 sku= p/n BC393A (HP SAS Nm 1-Srv Lic for B320i)

6G SAS SLC Hot Plug SFF (2.5-inch) Enterprise Performance Solid State Drives

NOTE: The mixing of standard SAS drives with SAS SSD drives is supported within the server, but limits the RAID configuration to two separate RAID 0 volumes. Mixing of other drives types is not supported.

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 VE Hot Plug SFF (2.5-inch) Value Endurance Solid State 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 OD1 sku= p/n BC393A (HP SAS Nm 1-Srv Lic for B320i)

HP 800GB 12G SAS Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	762261-B21
HP 1.6TB 12G SAS Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	762263-B21
HP 800GB 12G SAS Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid	762270-B21

Core Options

State Drive
 HP 1.6TB 12G SAS Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive 762272-B21

12G SAS ME Hot Plug SFF (2.5-inch) Mainstream Endurance Solid State 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 OD1 sku= p/n BC393A (HP SAS Nm 1-Srv Lic for B320i)

12G SAS HE Hot Plug SFF (2.5-inch) High Endurance Solid State 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 OD1 sku= p/n BC393A (HP SAS Nm 1-Srv Lic for B320i)

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 332T Adapter 615732-B21
 HP Ethernet 1Gb 2-port 361T Adapter 652497-B21

10 Gigabit 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 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

NOTE: Can only be paired with M2070 and M2090 GPU Kits

HP NC552SFP 10Gb 2-port Ethernet Server Adapter 614203-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: Can only be paired with M2070 and M2090 GPU Kits

NOTE: Please see the QuickSpecs for Technical Specifications and additional information: <http://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 544QSFP Adapter 649281-B21

NOTE: Dual port ConnectX-3 FDR/QDR IB or 40/10GbE. No IB Enablement Kit required

FlexibleLOM Adapters

Core Options

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.

NOTE: Please see the QuickSpecs for additional information:

http://h18000.www1.hp.com/products/quickspecs/13078_div/13078_div.html

Additional Options

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

HP Insight Software

HP Insight Control

HP Insight Control including 1yr 24x7 Technical Support and Updates Single Server License	C6N27A
HP Insight Control including 1yr 24x7 Technical Support and Updates Electronic License	C6N28ABE
HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle FIO Electronic License	C6N36ABE
HP Insight Control Server Provisioning Media Kit	BD883A
HP Insight Management Media Kit	C6N31A

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

NOTE: Customer will receive a license entitlement certificate. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.

NOTE: Licenses ship without media. The HP Insight Control Media Kit can be ordered separately, or can be downloaded at: <http://www.hp.com/go/insightupdates>.

NOTE: For additional license options please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html

HP 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

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
HP iLO Advanced 1 Server License with 3yr 24x7 Tech Support and Updates	BD505A
HP iLO Advanced including 1yr 24x7 Technical Support and Updates E-LTU	E6U59ABE
HP iLO Advanced including 3yr 24x7 Technical Support and Updates E-LTU	E6U64ABE

Additional Options

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 SL270 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 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

HP 1.3TB HH/HL Value Endurance (VE) PCIe Workload Accelerator 763834-B21

HP 1.6TB HH/HL Value Endurance (VE) PCIe Workload Accelerator 763836-B21

HP 3.2TB HH/HL Value Endurance (VE) PCIe Workload Accelerator 763838-B21

HP 6.4TB FH/HL Value Endurance (VE) PCIe Workload Accelerator 763840-B21

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

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

Computational and Graphics Accelerators

NOTE: Each SL270s tray will accommodate up to eight accelerators. Max number of accelerators is 8 unless explicitly stated.

NOTE: When adding accelerators to the SL270s server, one must utilize the HP 1200W CS Platinum Power Supply Kit, 578322-B21, or HP 1500W CS Platinum Power Supply Kit, 684532-B21 for all four power supply slots.

Additional Options

NOTE: When implementing 7 or 8 accelerators, one must utilize the HP 1500W CS Platinum Power Supply Kit, 684532-B21.

NOTE: One must configure a minimum of 4GB of memory per processor when accelerators are installed

NOTE: Mixing of accelerators or coprocessors within the same server is not allowed.

NVIDIA Accelerators for HP ProLiant Servers

NVIDIA GRID K2 Dual GPU PCIe Graphics Accelerator 729851-B21

NOTE: Only supported with E5-2600v2 Processor Kits

NOTE: Maximum number of Grid K2 GPU Kits in an SL270 is four (4)

NOTE: 8GB Host System Memory required per Virtual Machine (VM)

NVIDIA Tesla K10 Rev B Dual GPU PCIe Computational Accelerator E5V47A

NOTE: Only supported with E5-2600v2 Processor Kits

NVIDIA Tesla K20 5 GB Computational Accelerator C7S14A

NVIDIA Tesla K40 12 GB Computational Accelerator F1R08A

NVIDIA Tesla K80 Computational Accelerator J0G95A

AMD S9150 Firepro Computational Accelerator J0H11A

NOTE: This module, on the SL270s, is supported as a PCIe Gen 2 device

NOTE: Only supported with E5-2600v2 Processor Kits

NVIDIA Tesla K20X 6 GB Computational Accelerator C7S15A

NOTE: For additional information on NVidia accelerators, please see the QuickSpecs at: http://h18004.www1.hp.com/products/quickspecs/14576_div/14576_div.html

Intel Xeon Phi Coprocessor Modules for HP ProLiant Servers

Intel® Xeon® Phi 5110P (8GB/225W) Coprocessor Kit C1P87A

NOTE: For additional information on Intel Xeon Phi coprocessors, please see the QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/14441_div/14441_div.html

Enablement Kits

HP SL270 NVIDIA GPU Enablement Kit 711951-B21

NOTE: Required when ordering NVidia Tesla K2, K20, or K20x Modules.

HP SL270 Coprocessor Enablement Kit 711970-B21

NOTE: Required when ordering Intel Xeon Phi 5110p Coprocessor.

HP SL270 K80 GPU Enablement Kit 814622-B21

NOTE: Required when ordering NVidia Tesla K80 Modules.

HP SL270 AMD GPU Enablement Kit 813861-B21

NOTE: Required when ordering AMD S9150 Firepro Accelerator.

HP Storage Controllers

SAS Controllers

NOTE: The following SAS Controllers require a 2P configuration.

Smart Array P222 Controller

HP Smart Array P222/512 FBWC 6Gb 1-port Int/1-port Ext SAS Controller 631667-B21

Smart Array P420 Controller

HP Smart Array P420/1GB FBWC 6Gb 2-ports Int SAS Controller 631670-B21

HP Smart Array P420/2GB FBWC 6Gb 2-ports Int SAS Controller 631671-B21

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

Smart Array P430 Controller

HP Smart Array P430/2GB FBWC 12Gb 1-port Int SAS Controller 698529-B21

Additional Options

Optional Upgrades

HP 512MB B-series Dynamic Smart Array Flash Backed Write Cache with 24 inch Cable	676473-B21
HP 24in Super Capacity Option for Smart Array	668944-B21
HP SL250s 4X SFF Smart Array Enablement Kit	670564-B21
NOTE: This SKU must be paired with the HP Smart Array P222/512MB FBWC Controller.	
HP SL270s 8X Small Form Factor (SFF) Enablement Kit	670566-B21
HP P430 Enablement Cable Kit	740024-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: 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/14624_div/14624_div.html
(Smart Array P430 Controller)

http://h18000.www1.hp.com/products/quickspecs/14625_div/14625_div.html
(Smart Array P431 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 H220 Host Bus Adapter	650933-B21
HP H221 PCIe 3.0 SAS Host Bus Adapter	729552-B21
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/14336_div/14336_div.html
(HBA 220)

http://h18004.www1.hp.com/products/quickspecs/14222_div/14222_div.html
(HBA 221)

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

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
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Additional Options

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

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	COL99A
HP StoreEver 1/8 G2 LTO-6 Ultrium 6250 FC Tape Autoloader	COH19A

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 D3600 Enclosure	QW968A
NOTE: See the D3000 Disk Enclosure QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at: http://h18000.www1.hp.com/products/quickspecs/14866_div/14866_div.html (Worldwide)	
HP D3700 Enclosure	QW967A
NOTE: See the D3000 Disk Enclosure QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at: http://h18000.www1.hp.com/products/quickspecs/14866_div/14866_div.html (Worldwide)	
HP D2600 Disk Enclosure	AJ940A

Additional Options

NOTE: See the D2000 Disk Enclosure QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at: http://h18000.www1.hp.com/products/quickspecs/13404_div/13404_div.html (Worldwide)

HP D2700 Disk Enclosure AJ941A

NOTE: See the D2000 Disk Enclosure QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at: http://h18000.www1.hp.com/products/quickspecs/13404_div/13404_div.html (Worldwide)

HP D6000 Dual I/O Module Disk Enclosure QQ695A

NOTE: See the D6000 Disk Enclosure QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at: http://h18000.www1.hp.com/products/quickspecs/14419_div/14419_div.html (Worldwide)

HP Basic Power Distribution Units

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

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 (12xC13) WW Basic PDU H5M56A

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

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

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

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

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

HP 7.3kVA 230 Volt IEC309 32A Input (20xC13) INTL Basic PDU H5M68A

HP 7.3kVA 230 Volt IEC309 32A Input (24xC13/6xC19) INTL Basic PDU H5M70A

HP 11kVA 230 Volt IEC309 63A Input (30xC13/6xC19) INTL Basic PDU H5M71A

HP 11kVA 400 Volt IEC309 16A 3-Phase Input (30xC13/6xC19) INTL Basic PDU H5M72A

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

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

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

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

HP 277 Volt options for H3X07A and 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: <http://www.hp.com/go/rackandpower>.

HP Remote Monitoring Power Distribution Units

HP 2.8kVA 120 Volt L5-30 Input (12xNEMA 5-20R)NA/JP Monitored PDU D9N43A

Additional Options

HP 4.9kVA 208 Volt L6-30 Input (12xC13) NA/JP Monitored PDU	D9N44A
HP 3.6kVA 200-240 Volt Detachable C20 Input (16xC13) WW Monitored PDU	D9N45A
HP 3.6kVA 200-240 Volt Detachable C20 Input (12xC13) WW Monitored PDU	D9N46A
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 8.3kVA 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 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 17.3kVA 208 Volt IEC309 60A 3-Phase Input (24xC13/3xC19) NA/JP Monitored PDU	D9N54A
HP 11kVA 400 Volt IEC309 16A 3-Phase Input (18xC13/3xC19) INTL Monitored PDU	D9N55A
HP 22kVA 400 Volt IEC309 32A 3-Phase Input (30xC13/3xC19) INTL Monitored PDU	D9N56A
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 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 16.6kVA 400 Volt IEC309 30A 3-Phase Input (30xC13/3xC19) NA Monitored PDU	D9N61A
HP 16.6kVA 400 Volt IEC309 30A 3-Phase Input (12xC13/12xC19) NA Monitored PDU	D9N62A
HP 19.9kVA 480 Volt 3-Phase (30 Outlet) NA Monitored PDU	D9N63A
HP Environmental Sensor for Remote Monitored PDUs	
HP Environmental Sensor for Remote Monitored 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

Additional Options

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:

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

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:

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:

Additional Options

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

HP USB Keyboard and Mouse

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
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
HP USB BFR with PVC Free IN Keyboard/Mouse Kit	672097-D63

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
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Additional Options

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)

HP USB and SD Options

HP Flash Media Kits for USB Drives

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

HP 8GB microSD Enterprise Mainstream Flash Media Kit	726116-B21
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
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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 Collaborative Support	U1M52E
HP 3 year 4 hour 24x7 ProLiant s6500 Hardware Support	UR402E
HP 3 year 4 hour 24x7 ProLiant s6500 Proactive Care Service	U3C72E
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 Collaborative Support	U1M46E
HP 3 year Next business day ProLiant s6500 Hardware Support	UR398E
HP 3 year Next business day ProLiant s6500 Proactive Care Service	U3C66E
HP 3 year Next business day with Defective Media Retention ProLiant s6500 Hardware Support	UR399E
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

Additional Options

HP 4 year 6 hour Call to Repair 24x7 with Defective Media Retention ProLiant s6500 Hardware Support	UR413E
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 SL270s Gen8 Server

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

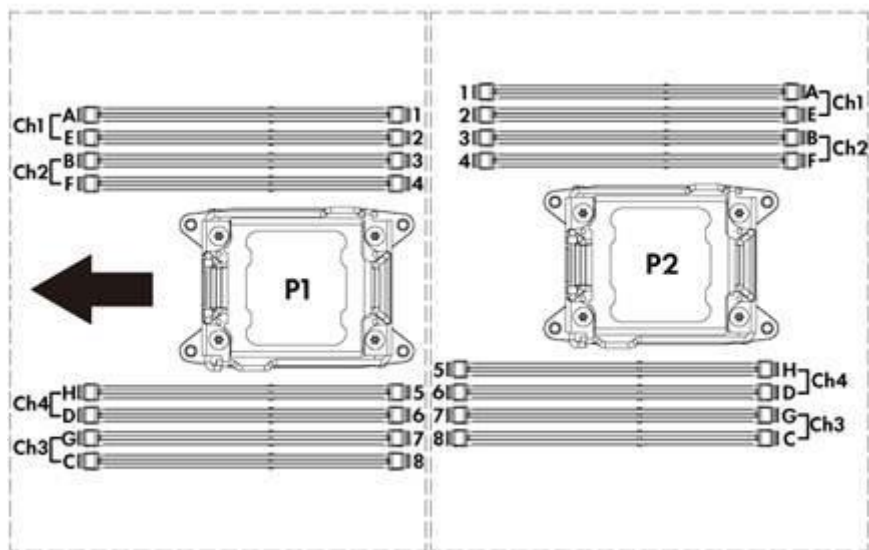
NOTE: Chart does not represent all possible memory configurations.

DDR3 memory population guidelines

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

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

Each Intel® Xeon® E5-2600 family processor socket contains two memory channels that support four 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 256GB of memory (16 DIMM slots x 16GB per DIMM).



Memory Population Rules and Guidelines:

- 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 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.
- 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 SL270s 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:

Memory

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

- For memory population rules and additional memory guidelines, please see the SL270 Gen8 user guide at <http://www.hp.com/support>.

DIMM slot/capacity/populated speed table																
DIMM Type	Registered DIMMS (RDIMMs)															Load Reduced (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
DIMM Native Speed (MHz)	1600	1333	1600	1866	1600	1600	1866	1333	1600	1600	1866	1333	1600	1600	1866	1866
Voltage	Std	LV	LV	Std	Std	LV	Std	LV	Std	LV	Std	LV	Std	LV	Std	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
MAXIMUM CAPACITY (GB)*																
Capacity	64	64	64	64	128	128	128	128	128	128	128	128	256	256	256	256
POPULATED DIMM SPEED (MHz)																
1 DIMM Per Channel	1600	1333	1600	1866	1600	1600	1866	1333	1600	1600	1866	1333	1600	1600	1866	1866
2 DIMM PEr Channel	1600	1333	1600	1866	1600	1600	1866	1333	1600	1600	1866	1333	1600	1600	1866	1866
* Maximum capacity will vary based on individual server platform qualification schedule																

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	16

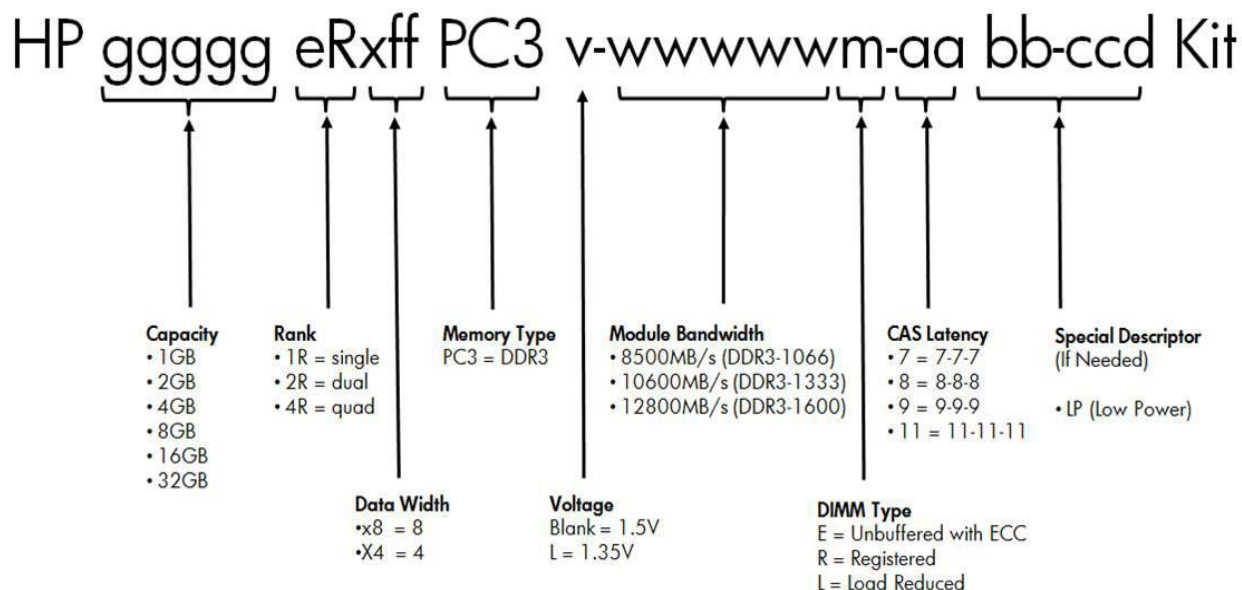
Memory

MAXIMUM CAPACITY (GB)*												
Capacity	32	32	32	32	64	64	128	128	64	64	128	128
POPULATED DIMM SPEED (MHz)												
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.

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

DDR3 memory options part number decoder



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

713981-B21

Memory

Voltage Memory Kit	
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
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

Memory

Kit

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

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

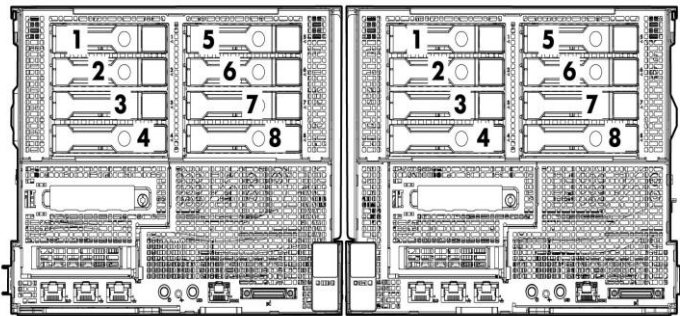
NOTE: Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: <http://www.hp.com/go/proliant-energy-efficient>

NOTE: PC3L is a low voltage memory.

Storage

4U Tray

1-8 Up to eight 2.5" hot plug hard drive bays



Technical Specifications

System Unit	Chassis Dimensions (H x W x D) Add fan extension kit (with bezel)	6.96 x 17.638 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 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

Technical Specifications

Operating

LWAd 6.7

LpAm 51dBA

Emissions Classification (EMC)

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 Dynamic Smart Array B320i Controller

Dimensions

Embedded

Disk Drive Interface - Transfer rate

Up to 6Gb/s SAS (Serial Attached SCSI)

Up to 6Gb/s SATA (Serial ATA)

Connectors

2 internal 4X connectors

Server Interface

x4 PCIe 2.0 provides 4GB/s maximum bandwidth

Speed

8 x 6Gb/s SAS links provide 4.8GB/s maximum bandwidth

Cache Memory

Zero Memory RAID has no cache memory

optional 40-bit 512MB ECC protected Flash Backed Write Cache (FBWC)

Logical Drives Supported

Zero Memory, Up to 2 logical volumes (8 physical drives)

Up to 64 logical drives with cache

Host Memory Addressing

64-bit, supporting greater than 4GB server memory space

Hot Plug Support

Yes

RAID Support

RAID 0 (Striping), RAID 1 (Mirroring)

RAID 1+0 (Striping & Mirroring)

RAID 5 with optional 512MB FBWC

NOTE: 512 MB cache is required to enable RAID 5 support

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:
21-Aug-2015	From version 25 to 26	Changed	Changes made throughout the QuickSpecs
10-Jul-2015	From version 24 to 25	Changed	Update in the nodes number
30-Mar-2015	From Version 23 to 24	Changed	Updates in the Computational and Graphics Accelerators section
1-Nov-2014	From version 22 to 23	Changed	Service and Support updated
18-Aug-2014	From Version 20 to 21	Changed	Expansion Slots, Unique Options, and Computational and Graphics Accelerators were revised.
20-Jun-2014	From Version 19 to 20	Added	Note was added throughout Hard Drives.
10-Jun-2014	From Version 18 to 19	Changed	Service and Support, Hard Drives, Insight Software, Cloudera Licensing, Storage Controllers, and USB and SD Options were revised.
31-Mar-2014	From Version 17 to 18	Changed	Changes made throughout the QuickSpecs
18-Feb-2014	From Version 16 to 17	Changed	Changes made throughout the QuickSpecs
16-Dec-2013	From Version 15 to 16	Changed	Changes made to the North America and Canada versions only.
11-Oct-2013	From Version 14 to 15	Added	<p>6G SATA Value Endurance Hot Plug SFF Enterprise Value Solid State Drives were added to Hard Drives</p> <p>Mainstream Endurance (ME) PCIe Workload Accelerators were added to HP PCIe Workload Accelerator Options</p> <p>NVIDIA Tesla K10 rev B Dual GPU PCIe Computational Accelerator was added to GPU Computing Modules</p> <p>HP Remote Monitoring Power Distribution Units was added to Additional Options</p> <p>HP 8GB SD Enterprise Mainstream Flash Media Kit was added to HP USB and SD Options</p>
10-Sep-2013	From Version 13 to 14	Added	<p>E5-2600 v2 series Processors, Memory, Controllers, and NICs were added</p> <p>Canonical Ubuntu was added to Operating Systems and Virtualization Software Support for ProLiant Servers</p> <p>Smart Array P430 and P431 Controllers were added to Storage Controllers</p>
23-Jul-2013	From Version 12 to 13	Changed	Step 1 notes section was revised in Configuration Information - Factory Integrated Models.
10-Jun-2013	From Version 11 to 12	Changed	<p>Overview: Removed What's New</p> <p>Configuration Information: Step 3</p> <p>Optional Features: Updated GPU Computing Modules section.</p> <p>Core Options: HP Networking</p> <p>Additional Options: Updated HP Insight Software, GPU Computing Modules and HP USB and SD Options sections.</p>
13-May-2013	From Version 10 to 11	Added	Core Options: Added Step 4 to section.

Summary of Changes

			Additional Options: Added HP PCIe Workload Accelerator Options, HP Tape Backup and HP Basic Power Distribution Units sections.
		Changed	<p>Overview: Updated What's New with:</p> <p>Added support for new NVidia Kepler GPGPUs:</p> <p>NVIDIA Tesla K10 PCIe Module</p> <p>NVIDIA Tesla K20 5 GB Module</p> <p>NVIDIA Tesla K20X 6 GB Module</p> <p>Standard Features: Updated Common Slot Power Supplies and On System Management sections.</p> <p>Optional Features: Updated GPU Computing Modules section.</p> <p>Configuration Information: Updated Step 3.</p> <p>Additional Options: Updated HP Insight Software, GPU Computing Modules and HP Rack Options sections.</p>
09-Apr-2013	From Version 9 to 10	Added	Added Step 1A to the Configuration Information section.
25-Mar-2013	From Version 8 to 9	Removed	Additional Options: Removed A0C39A from GPU Computing Modules section.
01-Mar-2013	From Version 7 to 8	Added	Core Options: Added 665240-B21 and 665243-B21 to the HP Networking section.
22-Feb-2013	From Version 6 to 7	Removed	Removed the two notes in the Interfaces section of Standard Features.
19-Feb-2013	From Version 5 to 6	Changed	<p>Changes made to the following sections:</p> <p>Standard Features: Expansion slots, Graphics, HP Insight Management, Added Storage Software</p> <p>Configuration Information: Step 3</p> <p>Core Options: HP Hard Drives, HP Networking</p> <p>Additional Options: (changes made throughout the entire section)</p>
04-Jan-2013	From Version 4 to 5	Removed	Removed 6G SAS MLC Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives
11-Dec-2012	From Version 3 to 4	Changed	Changes made to the following sections:

Summary of Changes

			<p>Overview</p> <p>Optional Features: GPU Computing Modules</p> <p>Additional Features: GPU Computing Modules and HP Storage Controllers</p>
05-Dec-2012	From Version 2 to 3	Changed	Changes made to the Standard Features only.
04-Dec-2012	From Version 1 to 2	Changed	<p>Changes made to the following sections:</p> <p>Overview</p> <p>Standard Features: On System Management</p> <p>Configuration Information: Step 1, Step 2, Step 3</p> <p>Core Options: Hard Drives</p> <p>Additional Options: Added HP Care Pack Services</p> <p>Storage</p>

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