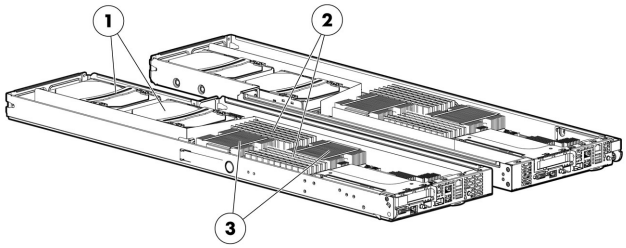
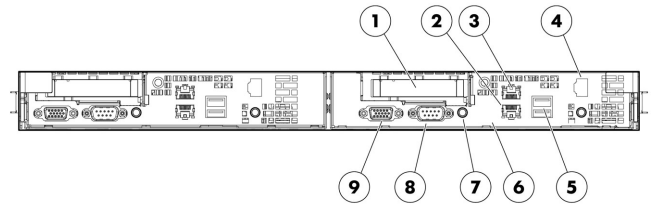
Overview

The HP ProLiant SL170s G6 Server is part of a new family, HP ProLiant SL6500, of HP server solutions optimized for scale-out customers to greatly reduce costs, maximize power efficiency, by sharing power supplies and fans, and maintain total flexibility.

Eight independent HP ProLiant SL170s G6 Servers go into the 4U HP ProLiant s6500 Chassis. The server supports up to two Intel® Xeon® processors with 16 DDR3 DIMM sockets, 2 LFF, 4 SFF or 4 SSD hard drives and support for a low profile x16 PCI-e Gen 2





Open View:

1. Two 3.5" or Four 2.5" non-hot plug hard drives using a quick release drive carrier
2. 16 DDR3 DIMM slots
3. Up to two Intel® 5600 sequence processors

Front View:

1. Optional low profile x16 PCI-e Gen 2
2. (1) 1Gbit NIC port 1
3. (1) 1Gbit NIC port 2
4. Optional Dedicated Management port
5. (2) USB Ports
6. Power Button
7. UID
8. Serial Port
9. Video Port

What's New

- Support for new HP Hard Drives

Standard Features

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

Processor
One of the following depending on Model

Six-Core Processor

Intel® Xeon® Processor X5690 (3.46 GHz,12MB L3 Cache, 130 Watts, DDR3-1333, HT Turbo 2/2/2/2/3/3)
Intel® Xeon® Processor X5675 (3.06 GHz,12MB L3 Cache, 95 Watts, DDR3-1333, HT Turbo 2/2/2/2/3/3)
Intel® Xeon® Processor X5670 (2.93 GHz,12MB L3 Cache, 95 Watts, DDR3-1333, HT Turbo 2/2/2/2/3/3)
Intel® Xeon® Processor X5660 (2.80 GHz, 12MB L3 Cache, 95 Watts, DDR3-1333, HT Turbo 2/2/2/2/3/3)
Intel® Xeon® Processor X5650 (2.66 GHz, 12MB L3 Cache, 95 Watts, DDR3-1333, HT Turbo 2/2/2/2/3/3)
Intel® Xeon® Processor E5649 (2.53 GHz,12MB L3 Cache, 80 Watts, DDR3-1333, HT Turbo 1/1/1/1/2/2)
Intel® Xeon® Processor E5645 (2.40 GHz,12MB L3 Cache, 80 Watts, DDR3-1333, HT Turbo 1/1/1/1/2/2)
Intel® Xeon® Processor L5640 (2.26 GHz, 12MB L3 Cache, 60 Watts, DDR3-1333, HT Turbo 2/2/3/3/4/4)

Quad-Core Processors

Intel® Xeon® Processor X5687 (3.60 GHz,12MB L3 Cache, 130 Watts, DDR3-1333, HT Turbo 2/2/3/3)
Intel® Xeon® Processor X5672 (3.20 GHz,12MB L3 Cache, 95 Watts, DDR3-1333, HT Turbo 2/2/3/3)
Intel® Xeon® Processor X5667 (3.06 GHz, 12MB L3 Cache, 95 Watts, DDR3-1333, HT Turbo 2/2/3/3)
Intel® Xeon® Processor E5640 (2.66 GHz, 12MB L3 Cache, 80 Watts, DDR3-1066, HT Turbo 1/1/2/2)
Intel® Xeon® Processor E5630 (2.53 GHz, 12MB L3 Cache, 80 Watts, DDR3-1066, HT Turbo 1/1/2/2)
Intel® Xeon® Processor E5620 (2.40 GHz, 12MB L3 Cache, 80 Watts, DDR3-1066, HT Turbo 1/1/2/2)
Intel® Xeon® Processor E5606 (2.13 GHz, 8MB L3 Cache, 80 Watts, DDR3-1066)
Intel® Xeon® Processor E5506 (2.13 GHz, 4MB L3 Cache, 80 Watts, DDR3-800)
Intel® Xeon® Processor L5630 (2.13 GHz, 12MB L3 Cache, 40 Watts, DDR3-1066, HT Turbo 1/1/2/2)
Intel® Xeon® Processor E5603 (1.6 GHz, 4MB L3 Cache, 80 Watts, DDR3-1066)

Dual Core Processors

Intel® Xeon® Processor E5503 (2.00GHz, 4MB L3 Cache, 80 Watts, DDR3-800)

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 4, 3, 2, and 1 cores 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: For the Intel 5500 Series, the letter preceding the model number indicates the performance/wattage of the processor. "X" denotes High Performance/Wattage; "E" denotes Enterprise Performance/Wattage (Mainstream), and "L" denotes Lower Wattage.
NOTE: Up to 2 processors supported. Mixing different processor models is not supported.

Cache Memory
One of the following depending on Model

12MB (1 x 12MB) Level 3 cache
NOTE: All 5600 sequence processor models.

4MB (1 x 4MB) Level 3 cache
NOTE: For processors E5506/E5606 and E5503/E5603.

Standard Features

Chipset

Intel® 5520 Chipset

NOTE: For more information regarding Intel chipsets, please see the following URL: http://www.intel.com/products/server/chipsets/

Upgradeability

Upgradeable to two processors

Memory Protection

Advanced ECC (multi-bit error protection)

Lock-step mode

Memory

Type	DDR3 Registered (RDIMM) or Unbuffered (UDIMM)
Standard (per server tray)	6GB (3 x 2 GB) UDIMMs
Maximum (RDIMM) (per server tray)	256GB (16 x 16GB) for Registered Memory configurations
Maximum (UDIMM) (per server tray)	48GB (12 x 4GB) for Unbuffered Memory configurations

NOTE: Depending on the memory configuration and processor model, the memory speed may run at 1333MHz, 1066MHz, or 800MHz. Please see the Online Memory Configuration Tool at: www.hp.com/go/ddr3memory-configurator.

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

Network Controller

HP NC362i Integrated Dual Port Gigabit Server Adapter

Expansion Slots

Expansion Slots #	Technology	Bus Width**	Connector Width	Form Factor	Notes
1	PCI-Express 2.0	x16	x16	Low Profile	3.3 volts

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

Storage Controller

HP Embedded Smart Array B110i SATA RAID Controller (RAID 0, 1, 10) per server node

NOTE: To enable RAID on Embedded SATA, use the HP Smart Array B110i SATA Raid controller, To enable use of the B110i, enter the ROM based setup utility(RBSU). The option for enabling RAID can be found in the advanced section of the RBSU. For additional details www.hp.com/go/SATARAID

NOTE: Transfer rate: 3.0 Gb/s SATA.

NOTE: A HP Smart Array controller is required for SAS Hard Drives

NOTE: An external diskette drive, USB floppy drive key or virtual FDD using LO100 Advanced Pack is needed to install storage controller drivers during a Windows operating system installation from a CD.

Standard Features

Internal Storage Devices	Diskette Drives	Via USB only
	Optical Drives	DVD / CD drives via USB only
	Hard Drives	None ship standard
		Up to 2 Non-hot plug SATA or SAS 3.5" drives
		Up to 4 Non-hot plug SATA, SAS, or SSD 2.5" drives (requires SFF drive cage)

Maximum Internal Storage	Non-Hot Plug SATA 3.5"	6.0TB	2 x 3TB
	Non-Hot Plug SAS 3.5"	4.0TB	2 x 2TB
	Non-Hot Plug SATA 2.5"	4.0TB	4 x 1TB
	Non-Hot Plug SAS 2.5"	1.2TB	4 x 300GB
	Non-Hot Plug SSD 2.5"	1.6TB	4 x 400GB

Interfaces	Parallel	None
	Network RJ-45	2 10/100/1000 NIC ports (1 NIC shared for the HP ProLiant Lights Out 100i Remote Management)
	Serial	1
	Graphics	1
	USB	3 (two front, one internal)
	Management	1 Optional Dedicated LO100i Management Port
	Health LED	1 front
	Power	1 front
	UID	1 front

Industry Standard Compliance

ACPI V2.0 Compliant
PCI 2.2 Compliant
PXE Support
WOL Support
Microsoft® Logo certifications
IPMI 2.0
DCMI 1.0
SMASH CLP compliant

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 (227099-001) must be ordered separately.

NOTE: If customers require a 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.

Standard Features

UPS and PDU Power Cord Matrix	Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: www.hp.com/products/powercords.
HP Common Slot Power Supplies	HP has a new design for ProLiant power supplies. The new Common Slot (CS) Power Supply provides the customer with commonality in power supplies across multiple platforms to save on the cost of spares and allows HP to offer multiple power solutions to fit the customers' needs. Many HP ProLiant Servers come with or are compatible with high-efficiency HP CS Power Supplies. These power supplies are designed for high-efficiency power without degrading performance of the ProLiant server. HP CS Power Supplies options for this server have efficiency ratings up to 94%. There are six power options available, depending on the configuration of your server. To make sure you select the correct power supply to meet your configuration, we suggest that you use the HP Power Advisor to decide the "Right-Size" for your configuration. All HP Common Slot power sources are UL, CE Mark Compliant, Hot Plug and Redundant (redundancy dependent on node configurations). It is highly recommended that you use the HP Power Calculator in defining the "Right-Size" power supply for your needs. The HP ProLiant CS Power supplies meet multiple Energy Efficiency Initiatives including: • Climate Savers Computing Initiative (CSCI) Silver, Gold, and Platinum power efficiency ratings • ECOS Consulting/80PLUS Silver, Gold, and Platinum power efficiency ratings Optional power supplies can be purchased through power supply option kits (see Power Supply Options for part numbers).
System Fans	Non redundant model - 8 fans required Redundant model - redundant fan kit required **NOTE:** all 8 fan bays must be populated with either redundant or non-redundant fans **NOTE:** mixing and matching of fans is not allowed
Operating Systems and Virtualization Software Support for ProLiant Servers	Microsoft Windows Server Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) VMware ESX **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: www.hp.com/support/SL170sG6
Graphics	32MB shared supporting 1600x1200x16M resolution

Standard Features

Form Factor	HP ProLiant s6500 Chassis - 4U HP ProLiant SL170s G6 1U half width server tray

Embedded Manageability	**HP ProLiant LO100**	HP ProLiant Onboard Administrator Powered by Lights-Out 100 is standard with this server and has LO100i Advanced Licenses for Virtual KVM and Virtual Media available as options. Standard Features: ● Embedded IPMI standard reporting ● System event log access ● Remote Serial console (serial redirection) ● Browser, Telnet access ● SMASH-CLP compliant ● IPMI 2.0 compliant ● DCMI 1.0 compliant ● Secure Socket Layer Encryption ● Secure Shell Encryption Licensed Features ● Virtual media (Floppy, CD, USB 2.0) with Advanced License ● Virtual KVM with Advanced License

Security	Power-on password Setup password Diskette boot control Secure Sockets Layer (SSL) Secure Shell (SSH)

Warranty	This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners. Hardware diagnostic support and repair is available for one year from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HP Care Pack services or customized service agreements. Hard drives have either a one year or three year warranty. **NOTE:** Server Warranty includes 1 year Parts, 1 year Labor, 1-year on-site support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have HP replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at: http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html.

Optional Features

HP Insight management software	**HP Insight Control for Linux**	HP Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, remote control, and optimize your IT infrastructure through a single, simple management console. For more information, see http://www.hp.com/go/insightcontrol. HP Insight Control includes one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, see: http://www.hp.com/services/insight.
	HP Insight Rapid Deployment software	HP Insight Rapid Deployment software (RDP) extends HP Systems Insight Manager with a complete deployment solution for HP ProLiant servers. RDP provides a central location (running on a Windows CMS) to configure server hardware, deploy Windows, Linux and VMware ESX operating environments and install HP ProLiant Support Pack drivers using images and scripted profiles. For more information, visit: http://www.hp.com/go/rdp.
Core Infrastructure Management	**HP Systems Insight Manager**	HP Systems Insight Manager (HP SIM) provides a unified, secure and extensible standards-based environment to centrally manage servers, storage and other infrastructure devices, (both HP and non-HP) across multiple operating system platforms. For additional information, please see: http://www.hp.com/go/insight.
	Subscriber's Choice	Subscriber's Choice Driver and Support Alerts/Notifications is a web-based email subscription service that provides software and driver change notifications for ProLiant products. Sign up at: http://www.hp.com/go/subscriberschoice and customize your profile to receive various new alerts as they become available, on a weekly or monthly basis.
	ROMPaq, software and latest drivers	The latest software, drivers, and firmware fully optimized and tested for your ProLiant server and options; downloaded from Software and Drivers download pages website at: http://www.hp.com/go/support and from www.hp.com/servers/easysetup. Contains the following: • HP Insight Management Agents for Systems Insight Manager (SIM) Integration • HP Systems Management Homepage • Array Configuration Utility (ACU) • Array Diagnostics Utility (ADU) • HP Insight Diagnostics

Optional Features

High Performance Clusters	**HP Cluster Platforms**	HP Cluster Platforms are specifically engineered, factory-integrated large-scale ProLiant clusters optimized for High Performance Computing, with a choice of servers, networks and software. Operating system options include specially priced offerings for Red Hat Enterprise Linux and SUSE Linux Enterprise Server, as well as Microsoft Windows HPC Server. A Cluster Platform Configurator simplifies ordering. http://www.hp.com/go/clusters
	HP HPC Interconnects	High Performance Computing (HPC) interconnect technologies are available for this server as part of the HP Cluster Platform portfolio. These high-speed InfiniBand and Gigabit interconnects are fully supported by HP when integrated within an HP cluster. Flexible, validated solutions can be defined with the help of configuration tools. http://www.hp.com/techservers/clusters/ucp/index.html
	HP Cluster Management Utility	HP Cluster Management Utility (CMU) is an HP-licensed and HP-supported suite of tools that are used to manage large-scale Linux ProLiant systems. CMU includes software for the centralized provisioning, management and monitoring of nodes. CMU makes the administration of clusters user friendly, efficient, and effective. http://www.hp.com/go/cmu
	HP HPC Linux Value Pack	HP HPC Linux Value Pack (Value Pack) is an HP-licensed and HP-supported specially priced software bundle for the development and deployment of applications on HPC Cluster Platforms. Value Pack includes the Platform HPC Enterprise Edition suite of tools including the LSF workload scheduler, the HP-MPI parallelization library. Also included are the HP Unified Parallel C compiler and the HP Shmem library, as well as the execution environments for the libraries and compiler. HP HPC Linux Value Pack

Factory Express Portfolio for Servers and Storage	HP Factory Express offers configuration, customization, integration and deployment services for HP servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed. Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the MSAxxxx, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches. For more information on Factory Express services for your specific server model please contact your sales representative or go to: http://www.hp.com/go/factory-express.

HP Simple Configurator	SCE is a guided self service tool to help sales and non technical people provide customers with initial configurations in 3 to 5 minutes. You may then send the configuration on for configuration help, or use in your existing ordering processes. If you require "custom" rack configuration or configuration for products not available in SCE, please contact HP's Customer Business Center or an Authorized Partner for assistance. http://www.hp.com/products/configurator

Service and Support

Service and Support

HP Technology Services for Industry Standard Servers and BladeSystem
Capitalizing on HP ProLiant server and HP BladeSystem capabilities requires a service partner who understands your increasingly complex business technology environment. That's why it makes sense to team up with the people who know HP infrastructure hardware and software best - the experienced professionals at HP Services.

What HP ProLiant and BladeSystem Services can do for you
HP ProLiant and BladeSystem Services can help you design, deploy, test, integrate, support, and manage IT and infrastructure solutions. This way, HP proposes services solutions that include more than just uplift of base warranty. You can get the support you need by choosing from one of a number of service packaged solutions we have designed to address wider set of customer support needs:.

HP Technology Services meets business challenges with services offered in three packages - **Optimized Care Package, Standard Care Package, and Basic Care Package** - available for each product group. Such packaged solutions enable customers to optimize technology operations, minimize risk and drive better business outcomes with easy-to-buy, easy-to-use scalable support packages for servers, storage, networking and software.

Optimized Care

Optimized Care Package: Supports maintaining servers at optimum performance availability

HP ProLiant Server Hardware Installation
Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner
http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN

HP Installation and Startup for Insight Control Software
Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-9972ENW.pdf

3-Year HP Critical Advantage
Provides end-to-end infrastructure support solution for business critical applications running on virtualized/x86 infrastructures, enabling the customers to cost effectively build, operate, and continuously improve their IT environment
http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=4AA3-1772ENW

Additional Services: Data Center Transformation Service

Service and Support

Standard Care

Standard Care Package: Package that maintains high level of server availability

HP ProLiant Server Hardware Installation
Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner
http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN

HP Installation and Startup for Insight Control Software
Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-9972ENW.pdf

3-Year HP 6 hour Hardware Support Onsite Call-to-Repair Service
Provides an IT manager with a team of support specialists who will quickly begin troubleshooting the system to help return the hardware to operating condition within 6 hours of the initial service request to the HP Global Solution Center
http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EN.pdf

3-Year , HP 24x7 Software Support for Insight Control
Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers
http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6645EEE.pdf

Additional Services: Software OS (Microsoft, Linux (SUSE/Red Hat) & VMware Installation & Start Up and Software Support); Microsoft or Linux or VMware education courses; +60 Proactive Select Credits

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Basic Care

Basic Care Package: delivers minimum recommended support service level

HP ProLiant Server Hardware Installation
Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner
http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN

HP Installation and Startup for Insight Control Software
Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-9972ENW.pdf

3-Year HP 24x7 4 hour Response, Hardware Support Onsite Service
Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-9972ENW.pdf

3-Year , HP 24x7 Software Support for Insight Control
Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers
http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6645EEE.pdf

Additional Services: Software OS (Microsoft, Linux (SUSE/Red Hat) & VMware Installation & Start Up and Software Support); +30 Proactive Select Credits, Factory Express

Service and Support

Insight Remote Support	The packages include HP Insight Remote Support that uses proven technology to deliver secure, reliable 24x7 remote monitoring, diagnoses, and problem resolution. It is available at no additional cost to all warranty, HP Care Pack Service, and service agreement customers.
For more information	To learn more on HP ProLiant servers and HP BladeSystem servers, please contact your HP sales representative or HP Authorized Channel Partner. Or visit: http://www.hp.com/services/proliant

Pre-configured Models

NOTE: For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.
NOTE: Pre-configured models ship with the configurations below. Options can be selected from the Core or Additional options section of this QuickSpecs.
NOTE: HP does not allow factory integration of options into pre-configured models. Any additional options purchased will be shipped separately.
NOTE: If you desire a custom configuration please see "Configuration Information - Factory Integrated Models" section of this QuickSpecs.
NOTE: Server SKUs below are the server tray ONLY, a chassis is needed to run servers.
NOTE: Mixing and matching of half width trays is supported - See s6500 Tray mixing support plan.

Performance Models

HP ProLiant SL170s G6 1U Left Half Width Tray X5670 2P 24GB-R B110i Perf Server 624773-B21	**Processor(s)**	(2) Intel® Xeon® Processor X5670 (2.93 GHz,12MB L3 Cache, 95 Watts, DDR3-1333, HT Turbo 2/2/2/2/3/3)
	Cache Memory	12MB (1 x 12MB) Level 3 cache
	Memory	24 GB (6 x 4 GB) PC3-10600R (DDR3-1333) Registered DIMM **NOTE:** Total of 16 DIMM slots.
HP ProLiant SL170s G6 1U Right Half Width Tray X5670 2P 24GB-R B110i Perf Server 624772-B21	**Network Controller**	HP NC362i Integrated Dual Port Gigabit Server Adapter
	Storage Controller	HP Embedded Smart Array B110i SATA RAID Controller (RAID 0, 1, 10)
	Hard Drive	None ship standard
	Internal Storage	2 LFF or 4 SFF Hard drives
	Power Supply	Chassis sold separately
	Fans	Chassis sold separately
	Form Factor	1U Half Width server tray
	Warranty	Server Warranty includes 1 year Parts, 1 year Labor, 1-year on-site support with next business day response.

Base Models

HP ProLiant SL170s G6 1U Left Half Width Tray E5649 1P 12GB-R B110i Base Server 638886-B21	**Processor(s)**	(1) Intel® Xeon® Processor E5649 (2.53 GHz, 12MB L3 Cache, 80 Watts, DDR3-1066, HT Turbo 1/1/1/1/2/2)
	Cache Memory	12MB (1 x 12MB) Level 3 cache
	Memory	12 GB (3 x 4 GB) PC3-10600R (DDR3-1333) Registered DIMM **NOTE:** Total of 16 DIMM slots.
HP ProLiant SL170s G6 1U Right Half Width Tray E5649 1P 12GB-R B110i Base Server 638885-B21	**Network Controller**	HP NC362i Integrated Dual Port Gigabit Server Adapter
	Storage Controller	HP Embedded Smart Array B110i SATA RAID Controller (RAID 0, 1, 10)
	Hard Drive	None ship standard
	Internal Storage	2 LFF or 4 SFF Hard drives
	Power Supply	Chassis sold separately
	Fans	Chassis sold separately
	Form Factor	1U Half Width server tray
	Warranty	Server Warranty includes 1 year Parts, 1 year Labor, 1-year on-site support with next business day response.

Entry Models

HP ProLiant SL170s G6 1U Left Half Width Tray E5620 1P 6GB-R B110i Entry Server 622531-B21	**Processor(s)**	(1) Intel® Xeon® Processor E5620 (2.40 GHz, 12MB L3 Cache, 80 Watts, DDR3-1066, HT Turbo 1/1/2/2)
	Cache Memory	12MB (1 x 12MB) Level 3 cache
	Memory	6 GB (3 x 2 GB) PC3-10600R (DDR3-1333) Registered DIMM **NOTE:** Total of 16 DIMM slots.
HP ProLiant SL170s G6 1U Right Half Width Tray E5620 1P 6GB-R B110i Server 624783-B21	**Network Controller**	HP NC362i Integrated Dual Port Gigabit Server Adapter
	Storage Controller	HP Embedded Smart Array B110i SATA RAID Controller (RAID 0, 1, 10)
	Hard Drive	None ship standard
	Internal Storage	2 LFF or 4 SFF Hard drives
	Power Supply	Chassis sold separately
	Fans	Chassis sold separately
	Form Factor	1U Half Width server tray
	Warranty	Server Warranty includes 1 year Parts, 1 year Labor, 1-year on-site support with next business day response.

S6500 tray mixing support plan

NOTE: s6500 is a 4U chassis and has a left and a right side.
NOTE: The picture below show how each half of the chassis can be configured.
NOTE: This shows mixing and matching of half width trays.
NOTE: 2U half width tray is NOT supported in middle 2 bays.

1U 1/2Width
1U 1/2Width
1U 1/2W
1U 1/2W

2U 1/2W
2U 1/2W

1U 1/2 W
1U 1/2 W
2U 1/2W

2U 1/2 W
1U 1/2 W
1U 1/2 W

NOTE: This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for information on configurable product offerings and requirements.
NOTE: Configure-to-order (CTO) servers must start with a CTO Chassis.
NOTE: FIO indicates that this option is only available as a factory installable option.
NOTE: If you already have an s6500 chassis skip to Step 1A.

Step 1: 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 HPs6500 node blank Kit 622372-B21 needs to be ordered for each unpopulated half width 1U space.

HP Server Nodes	HP ProLiant SL170s G6 1U Right Tray Node Server	622224-B21
	HP ProLiant SL170s G6 1U Left Tray Node Server	622226-B21

Step 2: 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.

Six-Core Processors	
HP SL170s G6 Intel® Xeon® X5690 (3.46GHz/6-core/12MB/130W) FIO Processor Kit	638859-L21
HP SL170s G6 Intel® Xeon® X5675 (3.06GHz/6-core/12MB/95W) FIO Processor Kit	638863-L21
HP SL170s G6 Intel® Xeon® X5660 (2.80GHz/6-core/12MB/95W) FIO Processor Kit	631465-L21
HP SL170s G6 Intel® Xeon® X5650 (2.66GHz/6-core/12MB/95W) FIO Processor Kit	631468-L21
HP SL170s G6 Intel® Xeon® E5649 (2.53GHz/6-core/12MB/80W) FIO Processor Kit	638876-L21
HP SL170s G6 Intel® Xeon® E5645 (2.40GHz/6-core/12MB/80W) FIO Processor Kit	638878-L21
HP SL170s G6 Intel® Xeon® L5640 (2.26GHz/6-core/12MB/60W) FIO Processor Kit	631487-L21
Quad-Core Processors	
HP SL170s G6 Intel® Xeon® X5687 (3.60GHz/4-core/12MB/130W) FIO Processor Kit	638861-L21
HP SL170s G6 Intel® Xeon® X5672 (3.20GHz/4-core/12MB/95W) FIO Processor Kit	638874-L21
HP SL170s G6 Intel® Xeon® E5620 (2.40GHz/4-core/12MB/80W) FIO Processor Kit	631477-L21
HP SL170s G6 Intel® Xeon® E5606 (2.13GHz/4-core/8MB/80W) FIO Processor Kit	638882-L21
HP SL170s G6 Intel® Xeon® E5603 (1.60GHz/4-core/4MB/80W) FIO Processor Kit	638884-L21
HP SL170s G6 Intel® Xeon® L5630 (2.13GHz/4-core/12MB/40W) FIO Processor Kit	631489-L21
HP SL170s G6 Intel® Xeon® E5607 (2.26GHz/4-core/8MB/80W) FIO Processor Kit	638880-L21

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 4, 3, 2, and 1 cores 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: For the Intel 5500 Series, the letter preceding the model number indicates the performance/wattage of the processor. "X" denotes High Performance/Wattage; "E" denotes Enterprise Performance/Wattage (Mainstream); and "L" denotes Lower Wattage.

HP Memory	**Registered DIMMs (RDIMMs)**	
	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500656-B21
	HP 4GB (1x4GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500658-B21
	HP 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593339-B21
	HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit **NOTE:** Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors.	604504-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500662-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit **NOTE:** Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors.	604506-B21
	HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	500666-B21
	HP 16GB (1x16GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 LP Memory Kit	627812-B21
	Unbuffered with ECC DIMMs (UDIMMs) **NOTE:** Maximum 12 DIMMs supported per node.	
	HP 1GB (1x1GB) Single Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500668-B21
	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500670-B21
	HP 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500672-B21
	HP 4GB (1x4GB) Dual Rank x8 PC3L-10600 (DDR3-1333) Unbuffered CAS-9 Low Power Memory Kit	619488-B21
	NOTE: For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator. **NOTE:** There is a maximum support limitation of 8 ranks per memory channel (maximum of 2 quad rank DIMMs per channel) **NOTE:** PC3L is a low voltage memory. **NOTE:** Memory Min and Max depends on number of processors and type of memory: 1. Processor -> R-Dimm: Min 1 // Max 6 U-Dimm: Min 1 // Max 12 2. Processors -> R-Dimm: Min 2 // Max 6 U-Dimm: Min 2 // Max 12	

Step 3: Choose Additional Factory Integratable Options (only one from each category below)

HP Storage Controllers	HP Smart Array P212/256 BBWC 1-ports Int/1-ports Ext PCIe x8 FIO SAS Controller **NOTE:** HP P212 SAS 4HDD Cable Kit is required when adding SAS hard drives using the P212 controller (574001-B21) **NOTE:** HP z6000 BBWC HDWR KIT is required when adding BBWC (582653-B21)	491191-B21
	HP Smart Array P410/ZM 2-ports Int PCIe x8 FIO SAS Controller **NOTE:** HP P410 SAS 4HDD Cable Kit is required when adding SAS hard drives using the P410 controller (583997-B21)	462860-B21
	HP Smart Array P410/256 BBWC 2-ports Int PCIe x8 FIO SAS Controller **NOTE:** HP P410 SAS 4HDD Cable Kit is required when adding SAS hard drives using the P410 controller (583997-B21) **NOTE:** HP z6000 BBWC HDWR KIT is required when adding BBWC (582653-B21)	491195-B21
	HP Smart Array P411/256 BBWC 2-ports Ext PCIe x8 FIO SAS Controller **NOTE:** HP z6000 BBWC HDWR KIT is required when adding BBWC (582653-B21)	491193-B21

Step 4: 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 SL170s Small Form Factor (SFF) Enablement Kit **NOTE:** Includes SFF drive cage and cable for up to 2 SFF drives.	622274-B21
	HP SL160/170 G6 x16 Input/Output Riser Kit	574806-B21
HP Processor	**Six-Core Processors**	
	HP SL170s G6 Intel® Xeon® X5690 (3.46GHz/6-core/12MB/130W) Processor Kit	638859-B21
	HP SL170s G6 Intel® Xeon® X5675 (3.06GHz/6-core/12MB/95W) Processor Kit	638863-B21
	HP SL170s G6 Intel® Xeon® X5660 (2.80GHz/6-core/12MB/95W) Processor Kit	631465-B21
	HP SL170s G6 Intel® Xeon® X5650 (2.66GHz/6-core/12MB/95W) Processor Kit	631468-B21
	HP SL170s G6 Intel® Xeon® E5649 (2.53GHz/6-core/12MB/80W) Processor Kit	638876-B21
	HP SL170s G6 Intel® Xeon® E5645 (2.40GHz/6-core/12MB/80W) Processor Kit	638878-B21
	HP SL170s G6 Intel® Xeon® L5640 (2.26GHz/6-core/12MB/60W) Processor Kit	631487-B21
	HP SL170s G6 Intel® Xeon® X5687 (3.60GHz/4-core/12MB/130W) Processor Kit	638861-B21
	Quad-Core Processors	
	HP SL170s G6 Intel® Xeon® E5607 (2.26GHz/4-core/8MB/80W) Processor Kit	638880-B21
	HP SL170s G6 Intel® Xeon® E5620 (2.40GHz/4-core/12MB/80W) Processor Kit	631477-B21
	HP SL170s G6 Intel® Xeon® E5606 (2.13GHz/4-core/8MB/80W) Processor Kit	638882-B21
	HP SL170s G6 Intel® Xeon® E5603 (1.60GHz/4-core/4MB/80W) Processor Kit	638884-B21
	HP SL170s G6 Intel® Xeon® L5630 (2.13GHz/4-core/12MB/40W) Processor Kit	631489-B21
	HP SL170s G6 Intel® Xeon® X5672 (3.20GHz/4-core/12MB/95W) Processor Kit	638874-B21
	Dual-Core Processors	
	HP SL170z G6 Intel® Xeon® E5507 (2.26GHz/4-core/4MB/80W) Processor Kit	624887-B21
	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 4, 3, 2, and 1 cores 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:** For the Intel 5500 Series, the letter preceding the model number indicates the performance/wattage of the processor. "X" denotes High Performance/Wattage; "E" denotes Enterprise Performance/Wattage (Mainstream); and "L" denotes Lower Wattage.	

Core Options

HP Memory	**Registered DIMMs (RDIMMs)**	
	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500656-B21
	HP 4GB (1x4GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500658-B21
	HP 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593339-B21
	HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit **NOTE:** Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors.	604504-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500662-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit **NOTE:** Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors.	604506-B21
	HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	500666-B21
	HP 16GB (1x16GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 LP Memory Kit	627812-B21
	Unbuffered with ECC DIMMs (UDIMMs) **NOTE:** Maximum 12 DIMMs supported per node.	
	HP 1GB (1x1GB) Single Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500668-B21
	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500670-B21
	HP 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500672-B21
	HP 4GB (1x4GB) Dual Rank x8 PC3L-10600 (DDR3-1333) Unbuffered CAS-9 Low Power Memory Kit	619488-B21
	NOTE: All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator. **NOTE:** Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: www.hp.com/go/proliant-energy-efficient. **NOTE:** There is a maximum support limitation of 8 ranks per memory channel (maximum of 2 quad rank DIMMs per channel). **NOTE:** PC3L is a low voltage memory.	

Core Options

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: SATA hard drives have a 1-year warranty.
NOTE: Hard drives have either a one year or three year warranty.
NOTE: The hard drives use a quick release carrier.
NOTE: One SL170s SFF Enablement Kit (622274-B21) (is required when installing 2 SFF drives in the LFF space
NOTE: When adding SAS one of the following cable kits needs to be ordered depending on which SAS controller installing - HP P212 SAS 4HDD Cable Kit 574001-B21 or HP P410 SAS 4HDD Cable Kit 583997-B21.

SAS Quick Release SFF (2.5-inch) Enterprise (ENT) Drives	
HP 300GB 6G SAS 10K rpm SFF (2.5-inch) Quick-release Dual Port Enterprise 3yr Warranty Hard Drive	574879-B21
SAS Quick Release LFF (3.5-inch) Enterprise (ENT) Drives	
HP 600GB 6G SAS 15K rpm LFF (3.5-inch) Quick-release Dual Port Enterprise 3yr Warranty Hard Drive	574758-B21
HP 300GB 6G SAS 15K rpm LFF (3.5-inch) Quick-release Dual Port Enterprise 3yr Warranty Hard Drive	585980-B21
SAS Quick Release LFF (3.5-inch) Midline (MDL) Drives	
HP 2TB 6G SAS 7.2K rpm LFF (3.5-inch) Quick-release Dual Port Midline 1yr Warranty Hard Drive	574761-B21
SATA Quick Release SFF (2.5-inch) Midline (MDL) Drives	
HP 500GB 3G SATA 7.2K rpm SFF (2.5-inch) Quick-release Midline 1yr Warranty Hard Drive	574953-B21
SATA Quick Release LFF (3.5-inch) Midline (MDL) Drives	
HP 3TB 3G SATA 7.2K rpm LFF (3.5-inch) Quick Release Midline 1yr Warranty Hard Drive	642098-B21
HP 2TB 3G SATA 7.2K rpm LFF (3.5-inch) Quick-release Midline 1yr Warranty Hard Drive	574755-B21
HP 1TB 3G SATA 7.2K rpm LFF (3.5-inch) Quick-release Midline 1yr Warranty Hard Drive	574025-B21
HP 500GB 3G SATA 7.2K rpm LFF (3.5-inch) Quick-release Midline 1yr Warranty Hard Drive	574023-B21
3G SATA MLC Quick Release SFF (2.5-inch) Enterprise Mainstream Solid State Drives	
HP 400GB 3G SATA MLC SFF (2.5-inch) Quick-release Enterprise Mainstream 3yr Wty Solid State Drive	636625-B21
HP 200GB 3G SATA MLC SFF (2.5-inch) Quick-release Enterprise Mainstream 3yr Wty Solid State Drive	636623-B21
HP 100GB 3G SATA MLC SFF (2.5-inch) Quick-release Enterprise Mainstream 3yr Wty Solid State Drive	636621-B21

Core Options

HP Networking	**Gigabit Ethernet Adapters**	
	HP NC112T PCI Express Gigabit Server Adapter	503746-B21
	HP NC360T PCI-E Dual Port Gigabit Server Adapter	412648-B21
	HP NC364T PCI-E Quad Port Gigabit Server Adapter	435508-B21
	HP NC365T 4-port Ethernet Server Adapter	593722-B21
	HP NC373F PCI-E Multifunction 1000SX Gigabit Svr Adapter	394793-B21
	HP NC373T PCI-E Multifunction Gigabit Server Adapter	394791-B21
	HP NC375T PCI Express Quad Port Gigabit Server Adapter	538696-B21
	HP NC382T PCI Express Dual Port Multifunction Gigabit Server Adapter	458492-B21
	10 Gigabit Ethernet Adapters **NOTE:** A minimum of two Gigabytes (2 GB) of server memory is required per each adapter. **NOTE:** Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately	
	HP NC522SFP Dual Port 10GbE Gigabit Server Adapter	468332-B21
	HP NC550SFP Dual Port 10GbE Server Adapter	581201-B21
	HP NC552SFP 10Gb 2-port Ethernet Server Adapter	614203-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs.	
	HP 10 GbE PCI-e G2 Dual Port Network Interface Card	516937-B21
HP InfiniBand	HP InfiniBand 4X QDR ConnectX-2 PCIe G2 Dual Port HCA	592520-B21
	QLogic InfiniBand 4X QDR PCI-E G2 Dual Port HCA	583211-B21
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/13078_na/13078_na.html	
HP I/O Expansion Options	HP SL160/170 G6 x16 Input/Output Riser Kit	574806-B21

Additional Options

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

HP Management Network	HP Multinode Dedicated Management Port Option Kit	601818-B21

HP Insight Software	**HP Integrated Lights-Out (iLO) Advanced**	
	HP iLO Advanced including 1yr 24x7 Technical Support and Updates Electronic License	TA850AAE
	HP iLO Advanced Electronic License with 3yr 24x7 Tech Support and Updates	BD506AAE
	HP iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License	512485-B21
	HP iLO Advanced 1 Server License with 3yr 24x7 Tech Support and Updates	BD505A
	HP iLO Advanced Flexible Qty License with 3yr 24x7 Tech Support and Updates	BD506A
	HP iLO Advanced Tracking License with 3yr 24x7 Tech Support and Updates	BD507A
	NOTE: This license allows 1 server to be deployed and managed via HP iLO Advanced. Customer will receive a printed license entitlement certificate via physical shipment. 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 Service. **NOTE:** For additional license kits, including electronic delivery options, please see the iLO QuickSpecs at: http://h18004.www1.hp.com/products/quickspecs/14276_na/14276_na.html	
	HP Insight Control Server Deployment	
	HP Insight Control Server Deployment including 1yr 24x7 Support Electronic License	T9082AAE
	HP Insight Control Server Deployment including 1yr 24x7 Support Single Server License	452151-B21
	NOTE: Insight Software DVD media without licenses. Contains HP Systems Insight Manager, HP Insight Control, HP Insight Dynamics, HP Insight Control for Microsoft System Center, and Virtual Connect Enterprise Manager software. Uses an integrated installer to perform quick and accurate software installation and updates. **NOTE:** Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key. **NOTE:** Customer will receive a printed license entitlement certificate via physical shipment. 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 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 Insight Control QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12631_na/12631_na.html	

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_na/12612_na.html	
	HP HPC Linux Value Pack	
	HP High Performance Computing Linux Value Pack 1 Processor Flexible License for ProLiant Servers **NOTE:** This part number can be used to purchase one certificate for multiple licenses with a single activation key. Each license is for one socket (a.k.a. processor). 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.	TC293B
	HP High Performance Computing Linux Value Pack Media Kit for ProLiant Servers **NOTE:** This part number can be used to purchase media including software and documentation, which will be delivered to the customer. **NOTE:** For additional license kits please see the QuickSpecs at: http://h18004.www1.hp.com/products/quickspecs/13485_na/13485_na.html	TC294A
HP Storage Options	**Storage Fibre Channel HBA**	
	NOTE: For the complete listing of Fibre Channel Host Bus Adapters for Windows 2000, Windows Server 2003 and Linux, please see: http://h18006.www1.hp.com/storage/saninfrastructure/hba.html	
	Converged Network Adapter	
	HP CN1000E Dual Port Converged Network Adapter	AW520B
HP Storage Controllers	**SAS Controllers**	
	Smart Array P212 Controller **NOTE:** HP P212 SAS 4HDD Cable Kit is required when adding SAS hard drives using the P212 controller (574001-B21)	
	HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller	462828-B21
	HP Smart Array P212/256 1-ports Int/1-ports Ext PCIe x8 SAS Controller	462834-B21
	Smart Array P410 Controller **NOTE:** HP P410 SAS 4HDD Cable Kit is required when adding SAS hard drives using the P410 controller (583997-B21)	
	HP Smart Array P410/256 2-ports Int PCIe x8 SAS Controller	462862-B21
	HP Smart Array P410/512 BBWC 2-ports Int PCIe x8 SAS Controller	462864-B21
	HP Smart Array P410/512 FBWC 2-ports Int PCIe x8 SAS Controller	578230-B21
	HP Smart Array P410/1G FBWC 2-ports Int PCIe x8 SAS Controller	572532-B21
	Smart Array P411 Controller	
	HP Smart Array P411/256 2-ports Ext PCIe x8 SAS Controller	462830-B21
	HP Smart Array P411/512 BBWC 2-ports Ext PCIe x8 SAS Controller	462832-B21
	HP Smart Array P411/512 FBWC 2-ports Ext PCIe x8 SAS Controller	578229-B21

Additional Options

HP Smart Array P411/1G FBWC 2-ports Ext PCIe x8 SAS Controller	572531-B21
Optional Upgrades **NOTE:** HP z6000 BBWC HDWR KIT is required when adding BBWC (582653-B21)	
HP 256MB P-series Cache Upgrade **NOTE:** Supported on HP Smart Array P212 Controller only.	462968-B21
HP 512MB P-Series Battery Backed Write Cache Upgrade **NOTE:** Supported on HP Smart Array P410 Controller and HP Smart Array P411 Controller only.	462967-B21
HP 650 mAh P-Series Battery **NOTE:** To enable BBWC on the 256MB cache. **NOTE:** Supported on HP Smart Array P212 Controller.	462969-B21
HP 2x170 P212 SAS 2 Hard Drive Power Cable Kit	589234-B21
HP 1GB Flash Backed Cache	534562-B21
HP Smart Array Advanced Pack including 1yr 24x7 Technical Support and Updates Single Server License **NOTE:** This part number can be used to purchase a single license or to order multiple licenses with a single activation key. Customers will receive a license entitlement certificate via e-mail. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Include one year of 24x7 HP Software Technical Support Services.	516471-B21
HP Smart Array Hot Plug Advance Pack for B110i w/1y 24x7 Supp Physical 1 Svr LTU	TC421A
NOTE: Please see the following QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13203_na/13203_na.html (Smart Array P212 Controller) http://h18000.www1.hp.com/products/quickspecs/13201_na/13201_na.html (Smart Array P410 Controller) http://h18000.www1.hp.com/products/quickspecs/13202_na/13202_na.html (Smart Array P411 Controller) http://h18000.www1.hp.com/products/quickspecs/13495_na/13495_na.html (Smart Array Hot Plug Advance Pack for B110i)	
SCSI HBA	
HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter **NOTE:** Recommended HBA for SCSI tape drive connect.	412911-B21
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12566_na/12566_na.html (SCSI HBA)	

Additional Options

HP Tape Backup	**NOTE:** For the complete range of tape drives, autoloaders, libraries and media see: http://www.hp.com/go/tape. For hardware and software compatibility of HP tape backup products see: http://www.hp.com/storage/SPOCK.	
	HP StoreEver LTO-6 Ultrium 6250 Tape Drive in 1U Rack-mount Kit	C0L99A
	HP StoreEver LTO-6 Ultrium 6650 Internal Tape Drive	EH963A
	HP StoreEver LTO-6 Ultrium 6650 External Tape Drive	EH964A
	HP StoreEver LTO-6 Ultrium 6250 Internal Tape Drive	EH969A
	HP StoreEver LTO-6 Ultrium 6250 External Tape Drive	EH970A
HP Storage Options	**Storage Fibre Channel HBA**	
	NOTE: The following is a list of all Fibre Channel Host Bus Adapters for Windows and Linux. For detailed compatibility information please see: http://h18006.www1.hp.com/storage/saninfrastructure/hba.html	
	Brocade Fibre Channel HBAs	
	HP 81B 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AP769B
	HP 82B 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AP770B
	HP 41B 4Gb 1-port PCIe Fibre Channel Host Bus Adapter	AP767B
	HP 42B 4Gb 2-port PCIe Fibre Channel Host Bus Adapter	AP768B
	Emulex Fibre Channel HBAs	
	HP 81E 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AJ762A
	HP 82E 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AJ763A
	HP FC2142SR 4Gb 1-port PCIe Fibre Channel Host Bus Adapter	A8002A
	HP FC2242SR 4Gb 2-port PCIe Fibre Channel Host Bus Adapter	A8003A
	QLogic Fibre Channel HBAs	
	HP 81Q 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AK344A
	HP 82Q 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AJ764A
	HP FC1142SR 4Gb 1-port PCIe Fibre Channel Host Bus Adapter	AE311A
	HP FC1242SR 4Gb 2-port PCIe Fibre Channel Host Bus Adapter	AE312A

Additional Options

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
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14059_na/14059_na.html	
	HP R/T3000 G2 Uninterruptible Power System (UPS)	
	HP R/T3000 G2 2U L530 Low Voltage NA/JP Uninterruptible Power System	AF466A
	HP R/T3000 G2 2U L620 High Voltage NA/JP Uninterruptible Power System	AF467A
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14058_na/14058_na.html	
	R5000 Uninterruptible Power System (UPS)	
	HP R5KVA 3U 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_na/14109_na.html	
	R7000 Uninterruptible Power System (UPS)	
	HP R7KVA 4U 50A High Voltage NA/JP Uninterruptible Power System	AF462A
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14110_na/14110_na.html	
	NOTE: For additional information on HP Uninterruptible Power Systems please go to: www.hp.com/servers/rackups.	
	NOTE: For additional information on sizing your server, please reference: http://www.upssizer.com.	
	NOTE: Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: www.hp.com/products/powercords.	
HP Power Distribution Units	**HP Monitored Power Distribution Unit: Full Rack Version**	
	HP 8.6kVA 24A Single Input Three Phase NA/JP Monitored Power Distribution Unit	AF504A
	HP 8.3kVA 40A Single Input Single Phase NA/JP Monitored Power Distribution Unit	AF506A
	HP Monitored Power Distribution Unit: Half Rack Version	
	HP 4.9kVA 24A Single Input Single Phase NA/JP Monitored Power Distribution Unit	AF914A
	NOTE: Please see the following QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/12118_na/12118_na.html	
	Modular Power Distribution Units 1U/0U (Up to 32 outlets)	
	NOTE: 1U/0U mounting brackets shipped with the unit (optimized for 10000 and 9000 series racks).	
	HP 2.8kVA 24A Low Voltage NA/JP Modular Power Distribution Unit	252663-D71
	HP 4.9kVA 24A High Voltage NA/JP Modular Power Distribution Unit	252663-D72
	NOTE: Please see the following QuickSpecs for additional options including shorter jumper cables and country specific power cords: http://h18000.www1.hp.com/products/quickspecs/11041_na/11041_na.html	
	NOTE: For additional information on HP Power Distribution Units including accessories	

please go to: www.hp.com/go/pdu.
NOTE: Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: www.hp.com/products/powercords.

HP Intelligent Power Distribution Units (iPDU)	**iPDU Core Units**	
	HP 4.9kVA 24A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF520A
	HP 8.6kVA 24A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF522A
	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_na/13650_na.html	
HP Rack Options	**HP TFT7600 G2 KVM Console Rackmount Keyboard Monitor**	
	HP TFT7600 G2 KVM Console Rackmount Keyboard US Monitor	AZ870A
	HP TFT7600 G2 KVM Console Rackmount Keyboard US TAA Monitor	AZ885A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13731_na/13731_na.html	
	HP USB BFR with PVC Free US Keyboard/Mouse Kit	631341-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13972_na/13972_na.html	
	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_na/11834_na.html	
	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_na/13475_na.html	
	HP IP Console Switch G2 with Virtual Media & CAC	
	HP 1x4 USB/PS2 KVM Console Switch	AF611A

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_na/13474_na.html	
HP USB and SD Options	HP USB 2-Button Optical Scroll Mouse	DC172B
	HP Standard USB Keyboard US	DT528A#ABA
HP Care Pack Services	HP 3 year Next business day ProLiant s6500 Hardware Support	UR398E
	HP 3 year Next business day with Defective Media Retention ProLiant s6500 Hardware Support	UR399E
	HP 3 year 4 hour 13x5 ProLiant s6500 Hardware Support	UR400E
	HP 3 year 4 hour 13x5 with Defective Media Retention ProLiant s6500 Hardware Support	UR401E
	HP 3 year 4 hour 24x7 ProLiant s6500 Hardware Support	UR402E
	HP 3 year 4 hour 24x7 with Defective Media Retention ProLiant s6500 Hardware Support	UR403E
	HP 3 year 6 hour 24x7 Call to Repair ProLiant s6500 Hardware Support	UR404E
	HP 3 year 6 hour 24x7 Call to Repair with Defective Media Retention s6500 Hardware Support	UR405E
	HP 3 year 4 hour 24x7 ProLiant s6500 Collaborative Support	U1M52E
	HP 3 year 4 hour 24x7 ProLiant s6500 Proactive Care Service	U3C72E
	HP 3 year Next business day ProLiant s6500 Collaborative Support	U1M46E
	HP 3 year Next business day ProLiant s6500 Proactive Care Service	U3C66E
	HP 4 year Next business day ProLiant s6500 Hardware Support	UR406E
	HP 4 year Next business day with Defective Media Retention ProLiant s6500 Hardware Support	UR407E
	HP 4 year 4 hour 13x5 ProLiant s6500 Hardware Support	UR408E
	HP 4 year 4 hour 13x5 with Defective Media Retention ProLiant s6500 Hardware Support	UR409E
	HP 4 year 4hour 24x7 ProLiant s6500 Hardware Support	UR410E
	HP 4 year 4 hour 24x7 with Defective Media Retention ProLiant s6500 Hardware Support	UR411E
	HP 4 year 6 hour 24x7 Call to Repair ProLiant s6500 Hardware Support	UR412E
	HP 4 year 6 hour Call to Repair 24x7 with Defective Media Retention ProLiant s6500 Hardware Support	UR413E
	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
	HP 5 year 4 hour 13x5 ProLiant s6500 Hardware Support	UR416E

Additional Options

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 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 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 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

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

Memory

HP ProLiant SL170s Generation 6 (G6)

NOTE: Memory configurations listed do not apply to "Factory Integrated Models".
NOTE: Chart does not represent all possible memory configurations.

DDR3 memory population guidelines

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

Some DIMM installation guidelines are summarized below:

- For servers with sixteen (16) memory slots
- There are three (3) channels per processor; six (6) channels per server
- There are two (3) DIMM slots for two memory channels and one (2) DIMM slots for one memory channel; sixteen (16) total slots
- Memory channels 1 and 2 consists of the six (6) DIMMs that are furthest from the processor
- Memory channel 3 consists of the two (2) DIMMs that are closest to the processor
- DIMM slots that are white should be populated first
- Do not mix Unbuffered memory (UDIMMs) with Registered memory (RDIMMs)
- Do not install DIMMs if the corresponding processor is not installed
- If only one processor is installed in a 2CPU system, only half of the DIMM slots are available
- To maximize performance, balance the total memory capacity between all installed processors
- It is not required, but it is recommended to load the channels similarly if possible
- You can only have up to eight (8) ranks installed per channel
- You can only install two quad-rank DIMMs per channel
- You can only install two UDIMMs per channel; if available, the third slot in the channel must remain empty
- 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 chipset
- For memory mirroring mode, channel 3 must be unpopulated. Channels 1 and 2 are populated identically
- For lock-step mode, channel 3 must be unpopulated. DIMMs in channels 1 and 2 will be installed in pairs. The paired slots will be 1,4; 2,5; 3;6 on a 3DPC system or 1,4; 2,5; on a 2DPC system
- If mixing DIMM voltage is a requirement, please note that the DIMMs will run at 1.5V since all 1.35V are capable of supporting 1.5V operations

Memory

DIMM slot/capacity/populated speed table											
DIMM Type	Registered DIMMS (RDIMMs)								Unbuffered with ECC DIMMs (UDIMMs)		
DIMM Rank	Single Rank (1R)	Dual Rank (2R)					Quad Rank (4R)		Single Rank (1R)	Dual Rank (2R)	
DIMM Capacity	4GB	2GB	4GB	8GB	8GB	16GB	4GB	16GB	1GB	2GB	4GB
DIMM Native Speed (MHz)	1333	1333	1333	1066	1333	1333	1066	1066	1333	1333	1333
	SLOTS THAT CAN BE POPULATED										
16 slot servers	16	16	16	16	16	16	12	12	12	12	12
	MAXIMUM CAPACITY (GB)										
	64	32	64	128	128	256	48	192	12	24	48
	POPULATED DIMM SPEED (MHz)										
1 DIMM Per Channel	1333	1333	1333	1066	1333	1333	1066	1066	1333	1333	1333
2 DIMM Per Channel	1333*	1333*	1333*	1066	1333*	1066/ 1333**	800	800	1333	1333	1333*
3 DIMM Per Channel	800	800	800	800	800	800***	n/a	n/a	n/a	n/a	n/a
*Supported at 1333 via setting in ROM based setup utility (RBSU) ** 2DPC: LV runs at 1066, Std voltage runs at 1333 *** 3DPC: LV/Std voltage runs at 800											

NOTES:

- PC3-10600 DIMMs have a maximum speed of 1333MHz. PC3-8500 DIMMs have a maximum speed of 1066MHz
- Mixing DIMM speeds is allowed, but the system processor speed rules always override the DIMM capabilities
- If you do mix DIMM speeds, the memory bus will default to the minimum clock rate of all DIMMs in the system - even if the slower DIMM is on the other processor
- If you install 1x 1066MHz DIMM in channel 1 and 1x 1333MHz DIMM in channel 2, the maximum speed will be 1066MHz If you install 1x 1066MHz DIMM in channel 1 and 5x 1333MHz DIMMs with 1 DIMM Per Channel (DPC) in each of the other channels, the maximum speed will be 1066MHz
- If you install 3DPC in one channel (if applicable) and 1DPC in all other channels, you run at 800MHz
- Maximum memory speed will also depend on the processor installed
  References to the above MHz speeds are for the various speeds of DDR3 DIMMs; 1333 refers to DDR3-1333, etc.

DIMM slot and configuration diagrams
Basic memory slot & population diagram

- Population order; start with "A" first, "B" second, "C" third, etc.

Memory

16 DIMM SLOTS (8 per CPU node)					
	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	A	1	A	Chnl 1
	2	D	2	D	
	3	G	3	G	
Chnl 2	4	B	4	B	Chnl 2
	5	E	5	E	
	6	H	6	H	
Chnl 3	7	C	7	C	Chnl 3
	8	F	8	F	

Standard memory configuration (1 CPU model)

- 6GB, consisting of three (3) 2GB dual-rank PC3-10600E UDIMMs

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	A; 2GB DIMM	1	A; empty	Chnl 1
	2	D; empty	2	D; empty	
	3	G; empty	3	G; empty	
Chnl 2	4	B; 2GB DIMM	4	B; empty	Chnl 2
	5	E; empty	5	E; empty	
	6	H; empty	6	H; empty	
Chnl 3	7	C; 2GB DIMM	7	C; empty	Chnl 3
	8	F; empty	8	F; empty	

Standard memory plus optional memory (1 CPU model)

- 12GB, consisting of three (3) 2GB UDIMMs plus three (3) 2GB UDIMMs
  - 6x 2GB dual-rank PC3-10600E UDIMMs

Memory

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	A; 2GB DIMM	1	A; empty	Chnl 1
	2	D; 2GB DIMM	2	D; empty	
	3	G; empty	3	G; empty	
Chnl 2	4	B; 2GB DIMM	4	B; empty	Chnl 2
	5	E; 2GB DIMM	5	E; empty	
	6	H; empty	6	H; empty	
Chnl 3	7	C; 2GB DIMM	7	C; empty	Chnl 3
	8	F; 2GB DIMM	8	F; empty	

Standard memory replaced with optional memory (1 CPU model)
RDIMM maximum configuration

- 96GB, consisting of eight (6) 16GB dual-rank PC3-8500 RDIMMs

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	A; 16GB DIMM	1	A; empty	Chnl 1
	2	D; 16GB DIMM	2	D; empty	
	3	G; empty	3	G; empty	
Chnl 2	4	B; 16GB DIMM	4	B; empty	Chnl 2
	5	E; 16GB DIMM	5	E; empty	
	6	H; empty	6	H; empty	
Chnl 3	7	C; 16GB DIMM	7	C; empty	Chnl 3
	8	F; 16GB DIMM	8	F; empty	

Standard memory replaced with optional memory (2 CPU model)
RDIMM maximum configuration

- 256GB, consisting of sixteen (16) 16GB PC3-8500 RDIMMs

Memory

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	A; 16GB DIMM	1	A; 16GB DIMM	Chnl 1
	2	D; 16GB DIMM	2	D; 16GB DIMM	
	3	G; 16GB DIMM	3	G; 16GB DIMM	
Chnl 2	4	B; 16GB DIMM	4	B; 16GB DIMM	Chnl 2
	5	E; 16GB DIMM	5	E; 16GB DIMM	
	6	H; 16GB DIMM	6	H; 16GB DIMM	
Chnl 3	7	C; 16GB DIMM	7	C; 16GB DIMM	Chnl 3
	8	F; 16GB DIMM	8	F; 16GB DIMM	

UDIMM maximum configuration

- 48GB, consisting of twelve (12) 4GB dual-rank PC3-10600 UDIMMs

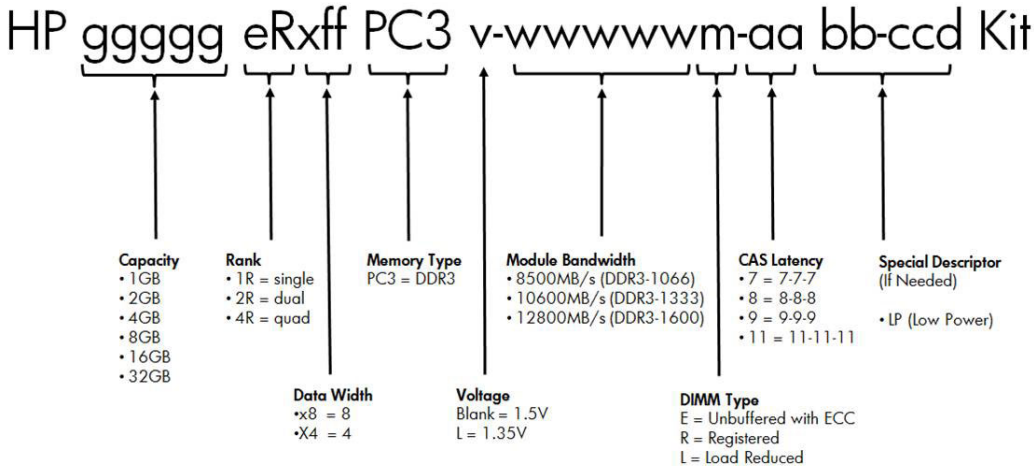
	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	A; 4GB DIMM	1	A; 4GB DIMM	Chnl 1
	2	D; 4GB DIMM	2	D; 4GB DIMM	
	3	G; empty	3	G; empty	
Chnl 2	4	B; 4GB DIMM	4	B; 4GB DIMM	Chnl 2
	5	E; 4GB DIMM	5	E; 4GB DIMM	
	6	H; empty	6	H; empty	
Chnl 3	7	C; 4GB DIMM	7	C; 4GB DIMM	Chnl 3
	8	F; 4GB DIMM	8	F; 4GB DIMM	

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

- 1GB = 1024MB
- 2GB = 2048MB
- 4GB = 4096MB
- 8GB = 8192MB
- 16GB = 16384MB

DDR3 memory options part number decoder

Memory

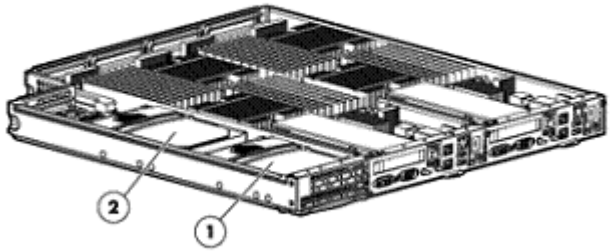


Following are memory options available from HP:

HP Memory	**Registered DIMMs (RDIMMs)**	
	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500656-B21
	HP 4GB (1x4GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500658-B21
	HP 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593339-B21
	HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit **NOTE:** Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors.	604504-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500662-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit **NOTE:** Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors.	604506-B21
	HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	500666-B21
	HP 16GB (1x16GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 LP Memory Kit	627812-B21
	Unbuffered with ECC DIMMs (UDIMMs) **NOTE:** Maximum 12 DIMMs supported per node	
	HP 1GB (1x1GB) Single Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500668-B21
	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500670-B21
	HP 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500672-B21
	HP 4GB (1x4GB) Dual Rank x8 PC3L-10600 (DDR3-1333) Unbuffered CAS-9 Low Power Memory Kit	619488-B21
	NOTE: All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator. **NOTE:** Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: www.hp.com/go/proliant-energy-efficient. **NOTE:** There is a maximum support limitation of 8 ranks per memory channel (maximum of 2 quad	

rank DIMMs per channel).
NOTE: PC3L is a low voltage memory.

1-2 Two 3.5" or Four 2.5" Non-hot plug SATA hard drive bays - Using quick release carrier



Drive Support

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.

SAS Non-Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives - with quick-release (QR) carrier

	Quantity Supported	Position Supported	Controller
600GB 6G SAS 15K 300GB 6G SAS 15K	Up to 2	1-2	HP Embedded SATA RAID Controller **NOTE:** Transfer rate: 3 Gb/s SATA.

SAS Non-Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives - with quick-release (QR) carrier

	Quantity Supported	Position Supported	Controller
300GB 6G SAS 10K	Up to 4	1-4	HP Embedded SATA RAID Controller **NOTE:** Transfer rate: 3 Gb/s SATA.

SAS Non-Hot Plug LFF (3.5-inch) Midline (MDL) Drives - with quick-release (QR) carrier

	Quantity Supported	Position Supported	Controller
2TB 6G SAS 7.2K	Up to 4	1-4	HP Embedded SATA RAID Controller **NOTE:** Transfer rate: 3 Gb/s SATA.

SATA Non-Hot Plug LFF (3.5-inch) Midline (MDL) Drives - with quick-release (QR) carrier

	Quantity Supported	Position Supported	Controller

Storage

3TB 3G SATA 7.2K 2TB 3G SATA 7.2K 1TB 3G SATA 7.2K 500GB 3G SATA 7.2K	Up to 2	1-2	HP Embedded SATA RAID Controller **NOTE:** Transfer rate: 3 Gb/s SATA.

SATA Non-Hot Plug SFF (2.5-inch) Midline (MDL) Drives - with quick-release (QR) carrier

	Quantity Supported	Position Supported	Controller
500GB 3G SATA 7.2K	Up to 4	1-4	HP Embedded SATA RAID Controller **NOTE:** Transfer rate: 3 Gb/s SATA.

Power Specifications

HP 750W Common Slot Gold Hot Plug Power Supply Kit							
Part Number	512327-B21						
Input Voltage Range (V rms)	100 to 240						
Frequency Range (Nominal) (Hz)	50/60						
Nominal Input Voltage (Vrms)	**100**	**120**	**200**	**208**	**220**	**230**	**240**
Maximum Rated Output Wattage Rating	750	750	750	750	750	750	750
Nominal Input Current (A rms)	8.9	7.4	4.3	4.1	3.9	3.7	3.6
Maximum Rated Input Wattage Rating (Watts)	857	847	824	824	820	820	820
Maximum Rated VA (Volt-Amp)	894	884	859	854	854	854	
Efficiency (%)	87.5	88.5	91	91	91.5	91.5	91.5
Power Factor	0.97						
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current (A peak)	30						
Maximum Inrush Current duration (mS)	20						
Maximum British Thermal Unit Rating (BTU-Hr)	2925	2892	2812	2812	2797	2797	2797

HP 750W Common Slot Platinum Hot Plug Power Supply Kit							
Part Number	593831-B21						
Input Voltage Range (V rms)	100 to 240						
Frequency Range (Nominal) (Hz)	50/60						
Nominal Input Voltage (Vrms)	**100**	**120**	**200**	**208**	**220**	**230**	**240**
Maximum Rated Output Wattage Rating	750	750	750	750	750	750	750
Nominal Input Current (A rms)	8.6	7.1	4.2	4.0	3.8	3.6	3.4
Maximum Rated Input Wattage Rating (Watts)	841	828	809	808	807	806	805
Maximum Rated VA (Volt-Amp)	863	850	830	829	828	827	826
Efficiency (%)	89.2	90.6	92.7	92.8	93	93.1	93.2
Power Factor	0.985						
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current (A peak)	30						
Maximum Inrush Current duration (mS)	20						
Maximum British Thermal Unit Rating (BTU-Hr)	2868	2825	2761	2757	2753	2749	2747

Power Specifications

HP 1200W Common Slot Silver Hot Plug Power Supply Kit							
Part Number	500172-B21						
Input Voltage Range (V rms)	100 to 240						
Frequency Range (Nominal) (Hz)	50/60						
Nominal Input Voltage (Vrms)	**100**	**120**	**200**	**208**	**220**	**230**	**240**
Maximum Rated Output Wattage Rating	800	900	1200	1200	1200	1200	1200
Nominal Input Current (A rms)	9.7	9.0	7.0	6.8	6.4	6.1	5.9
Maximum Rated Input Wattage Rating (Watts)	930	1034	1348	1348	1348	1348	1348
Maximum Rated VA (Volt-Amp)	970	1079	1406	1406	1406	1406	1406
Efficiency (%)	86	87	89	89	89	89	89
Power Factor	0.97						
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current (A peak)	30						
Maximum Inrush Current duration (mS)	20						
Maximum British Thermal Unit Rating (BTU-Hr)	3174	3530	4600	4600	4600	4600	4600

HP 1200W Common Slot Platinum Hot Plug Power Supply Kit							
Part Number	578322-B21						
Input Voltage Range (V rms)	100 to 240						
Frequency Range (Nominal) (Hz)	50/60						
Nominal Input Voltage (Vrms)	**100**	**120**	**200**	**208**	**220**	**230**	**240**
Maximum Rated Output Wattage Rating	800	900	1200	1200	1200	1200	1200
Nominal Input Current (A rms)	9.3	8.6	6.7	6.5	6.1	5.8	5.6
Maximum Rated Input Wattage Rating (Watts)	889	989	1290	1290	1290	1290	1290
Maximum Rated VA (Volt-Amp)	927	1031	1345	1345	1345	1345	1345
Efficiency (%)	90	91	93	93	93	93	93
Power Factor	0.97						
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current (A peak)	30						
Maximum Inrush Current duration (mS)	10						
Maximum British Thermal Unit Rating (BTU-Hr)	3033	3375	4403	4403	4403	4403	4403

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

Technical Specifications

System Unit	**Dimensions** (H x W x D) (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 Specifications	To review typical system power ratings use the HP Power Advisor which is available via the online tool located at URL: www.hp.com/go/proliant-energy-efficient	
	Power Supply Output (per power supply)	Rated Steady-State Power	653.10W (at 100 VAC), 653.08W (at 200 VAC)
	System Inlet Temperature	Operating	50° to 95° F (10° to 35° C) at sea level with an altitude derating of 1.8°F per every 1000 ft (1.0°C per every 305 m) above sea level to a maximum of 10,000 ft (3050 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 (3050 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	
		L_{WAd}	6.4
		L_{pAm}	45dBA
		Operating	
		L_{WAd}	6.7
		L_{pAm}	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.	

Embedded NC362i PCIe Gigabit Server Adapter	**Network Interface**	Integrated 10/100/1000BASE-T Transceiver Combines a triple-speed IEEE 802.3TM - Compliant Media Access Controller (MAC) with a triple-speed Ethernet transceiver.	
	Data Transfer Method	Compliant to x4 PCIe Specification	
	Controller	Intel® 82576	
	Network Transfer Rate	10Base-T (Half-Duplex)	10 Mb/s
		10Base-T (Full-Duplex)	20 Mb/s
		100Base-TX (Half-Duplex)	100 Mb/s
		100Base-TX (Full-Duplex)	200 Mb/s
		1000Base-TX (Half and Full-Duplex)	2000Mb/s
	Connector	RJ-45 connector	
	Cable Support	Performs all the physical layer functions for 10BASE-T, 100BASE-T, and 1000BASE-T Ethemet on standard Category 5 UTP	

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.

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