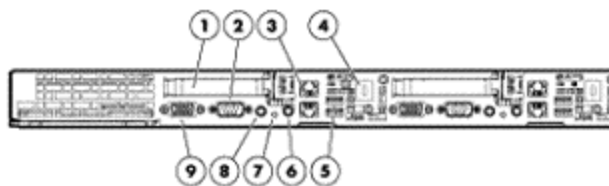
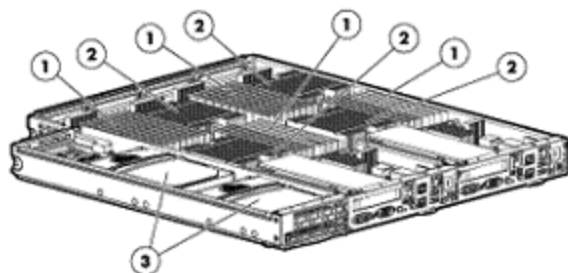


### Overview



#### Open View:

1. 16 DDR3 DIMM slots
2. Up to two Intel® Quad-Core 5500 sequence processors
3. Two 3.5" (1 per server) or four 2.5" (2 per server) non-hot plug hard drives using a quick release drive carrier

#### Front View:

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

### What's New

- Support for up to two Intel® 5600 sequence processors
- Support for Low-voltage memory

### At A Glance

The HP ProLiant SL2x170z is part of a new family, HP ProLiant SL6000, of HP server solutions optimized for scale-out customers to greatly reduce costs, maximize power efficiency, and maintain total flexibility. The HP ProLiant SL2x170z G6 Server is designed for maximum compute density. Each SL2x170z system board is a two socket Intel server with 16 DDR3 DIMM sockets.

**NOTE:** The SL2x170 include two (2) SL170 system boards per tray. The following information is for each system board.

#### ● Processors:

- Supports up to two Intel® 5600 sequence processors
- Six-Core Intel® Xeon® processors 5600 sequence with 12MB Level 3 cache (depends on model)
- Quad-Core Intel® Xeon® processors 5600 sequence with 12MB Level 3 cache (depends on model)
- Supports up to two Intel® 5500 sequence processors
- Intel® 5520 Chipset

#### ● Memory:

- Up to 192GB (16GB kits populating 12 DIMM slots), using PC3-8500R DDR3 Registered (RDIMM) memory, operating at 800MHz when fully populated in 12 slots
- Up to 24GB, using PC3-10600E DDR3 Unbuffered (UDIMM) memory, operating at 1066MHz when fully populated at 2 DIMMs per Channel in 12 slots

#### ● Internal Drive Support:

- Support for up to two 3.5" non-hot plug Serial ATA (SATA) or Serial Attached SCSI (SAS) hard drives using a quick release drive carrier (1 per server)
- Support for up to four 2.5" non-hot plug Serial ATA (SATA), Serial Attached SCSI (SAS), or Solid State Drive (SSD) hard drives using a quick release drive carrier and the SFF drive cage (2 per server)

#### ● Network Controller:

- HP NC362i Integrated Dual Port Gigabit Server Adapter

#### ● Storage Controllers:

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

**NOTE:** Transfer rate: 3.0 Gb/s SATA

#### ● Expansion Slots:

- One available PCI Express Gen 2.0 slots
- Optional Slot 1: Low profile x16 PCI-Express 2.0

#### ● Management:

- HP ProLiant Onboard Administrator Powered by Lights-Out 100 with optional LO100i Advanced Licenses for Virtual KVM and Virtual Media
- The HP ProLiant Easy Set-up CDs and ISO image downloads offer Assisted and Manual single server installation, setup, and deployment capability. Capabilities provided are:
  - AutoRun
  - Assisted Installation Microsoft Windows 2003 Server and Microsoft Windows 2008 Server.
  - OS and SW available for Manual Installation are listed on each servers' QuickSpecs

### Overview

- HP Insight Diagnostics
- Smart Components - a self-executable software consisting of driver and firmware
- HP Smart Update Manager - a single system and multi-server deployment tool for Windows environments that works with Smart Components to provide customers with easy-to-use GUI and Script-based deployment capacity
- SmartStart Scripting Toolkit - an automated scalable deployment utility
- Insight Management Agents for environmental monitoring that is similar to and consistent with that of HP ProLiant 300 series servers and above servers and that allows integration to HP Systems Insight Manager (SIM).
- Array Configuration Utility (ACU)
- Array Diagnostics Utility (ADU)
- HP Insight Control for Linux (IC-Linux), a product option, delivers essential lifecycle management that can help save time and money by integrating discovery, server deployment, firmware updates & provisioning, health & performance management, remote management, and virtualization. This makes it easy to optimize your IT infrastructure through a single, simple management console. The Insight Control for Linux suite supports Linux-based servers and management consoles.
- **Operating Systems and Virtualization Software Support for ProLiant Servers:**
  - Supports Windows, RHEL, SLES, Solaris
- **USB Ports:**
  - Three USB ports / server node (two front, one internal)
- **Optical Drive:**
  - External support only
- **Power Supply:**
  - The 2U chassis supports three power supply options:
    - Common Slot Power Supplies enable power capping and hot-pluggability
      - HP 1200W CS HE Silver Power Supply (Hot Plug, Autoswitching) (optional)
      - HP 750W CS HE Gold Power Supply (Hot Plug, Autoswitching) (optional)
      - HP 460W CS HE Gold Power Supply (Hot Plug, Autoswitching) (optional)
- **Form Factor:**
  - HP ProLiant z6000 G6 Chassis - 2U
  - HP ProLiant SL2x170z Server - 1U Server Tray
- **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>.

### 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 X5680 (3.33 GHz, 12MB L3 Cache, 130W, DDR3-1333, HT, Turbo 1/1/2/2/3/3)

Intel® Xeon® Processor X5670 (2.93 GHz, 12MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3/4/4)

Intel® Xeon® Processor X5660 (2.80 GHz, 12MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3/4/4)

Intel® Xeon® Processor X5650 (2.66 GHz, 12MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3/4/4)

#### Quad-Core Processors

Intel® Xeon® Processor E5640 (2.66 GHz, 12MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)

Intel® Xeon® Processor E5630 (2.53 GHz, 12MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)

Intel® Xeon® Processor E5620 (2.40 GHz, 12MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)

Intel® Xeon® Processor L5640 (2.40 GHz, 12MB L3 Cache, 60W, DDR3-1066, HT, Turbo 2/2/3/3/4/4)

Intel® Xeon® Processor L5630 (2.13 GHz, 12MB L3 Cache, 40W, DDR3-1066, HT, Turbo 1/1/2/2)

Intel® Xeon® Processor X5570 (2.93 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3)

Intel® Xeon® Processor X5560 (2.8 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo, 2/2/3/3)

Intel® Xeon® Processor X5550 (2.66 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo, 2/2/3/3)

Intel® Xeon® Processor E5540 (2.53 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)

Intel® Xeon® Processor E5520 (2.26 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)

Intel® Xeon® Processor E5506 (2.13 GHz, 4MB L3 Cache, 80W, DDR3-800)

Intel® Xeon® Processor E5504 (2.00 GHz, 4MB L3 Cache, 80W, DDR3-800)

Intel® Xeon® Processor L5530 (2.40 GHz, 8MB L3 Cache, 60W, DDR3-1066, HT, Turbo 1/1/2/2)

Intel® Xeon® Processor L5520 (2.26 GHz, 8MB L3 Cache, 60W, DDR3-1066, HT, Turbo 1/1/2/2)

Intel® Xeon® Processor L5506 (2.13 GHz, 4MB L3 Cache, 60W, DDR3-800)

#### Dual Core Processors

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

Intel® Xeon® Processor E5502 (1.86 GHz, 4MB L3 Cache, 80W, 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.

#### Upgradeability

Upgradeable to two processors

#### Chipset

Intel® 5520 Chipset

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

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

#### Cache Memory

One of the following depending on Model

12MB (1 x 12MB) Level 3 cache

**NOTE:** All 5600 sequence processor models.

8MB (1 x 8MB) Level 3 cache

**NOTE:** All processor models except for those identified below.

4MB (1 x 4MB) Level 3 cache

**NOTE:** For processors L5506, E5504, E5506, E5503 and E5502.

#### Memory Protection

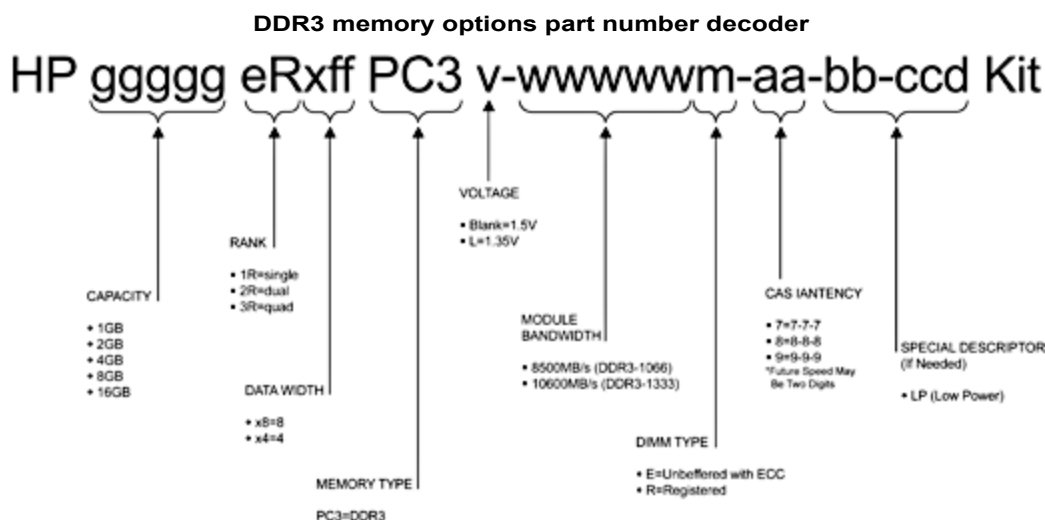
Advanced memory protection

### Standard Features

<b>Memory</b>	Type	DDR3 Registered (RDIMM) or Unbuffered (UDIMM)
	Standard (per server tray)	6GB (3 x 2 GB) UDIMMs
	Maximum (RDIMM) (per server tray)	192GB (12 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](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: [www.hp.com/go/proliant-energy-efficient](http://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](http://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.

<b>Storage</b>	Optical Drives	DVD / CD drives via USB only
	Diskette Drives	Via USB only
	Drive Bays	None ship standard
		Up to 2 Non-hot plug SATA or SAS 3.5" drives (1 drive for each system board)
		Up to 4 Non-hot plug SATA, SAS, or SSD 2.5" drives (requires SFF drive cage) (2 drives for each system board)

<b>Maximum Internal Storage</b>	Non-Hot Plug SATA 3.5" 4.0TB	2 x 4TB (1 drive for each system board)
	Non-Hot Plug SAS 3.5" 600GB	2 x 300GB (1 drive for each system board)
	Non-Hot Plug SATA 2.5" 2TB	4 x 500GB (2 drives for each system board)
	Non-Hot Plug SAS 2.5" 1.2TB	4 x 300GB (2 drives for each system board)
	Non-Hot Plug SSD 2.5" 480GB	4 x 120GB (2 drives for each system board)

### Standard Features

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) <b>NOTE:</b> Please see the following URL for additional information regarding USB support: <a href="http://h18004.www1.hp.com/products/servers/platforms/usb-support.html">http://h18004.www1.hp.com/products/servers/platforms/usb-support.html</a> .
Management		1 Optional Dedicated LO100i Management Port
Health LED		1 front per server node
Power		1 front per server node
UID		1 front per server node

**Graphics** 32MB shared supporting 1600x1200x16M resolution

**Form Factor** HP ProLiant z6000 G6 Chassis - 2U Chassis can support up to two SL2x170z server trays in the 2U chassis. This equals a total of four (4) SL170 system boards  
HP ProLiant SL2x170z G6 Server - 1U server tray with two (2) SL170 system boards

**Embedded Manageability** **HP ProLiant Onboard Administrator Powered by LO100 with LO100i Advanced Licenses** 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

**HP Insight Control management software** **HP Insight Control for Linux** HP Insight Control for Linux (IC-Linux), as a product option, delivers essential lifecycle management that can help save time and money by integrating discovery, server deployment, firmware updates & provisioning, health & performance management, remote management, and virtualization. This makes it easy to optimize your IT infrastructure through a single, simple management console. The IC-Linux suite installs and licenses software modules that are integrated into HP System Insight Manager (HP SIM).

HP Insight Control for Linux serves environments requiring Linux-based management consoles. See [www.hp.com/go/ic-linux](http://www.hp.com/go/ic-linux).

HP Insight Control for Linux 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, please visit: <http://www.hp.com/services/insight>

### Standard Features

#### Core Infrastructure Management

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: <a href="http://www.hp.com/go/rdp">http://www.hp.com/go/rdp</a> .
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: <a href="http://www.hp.com/go/insight">http://www.hp.com/go/insight</a> .
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: <a href="http://www.hp.com/go/subscriberschoice">http://www.hp.com/go/subscriberschoice</a> and customize your profile to receive various new alerts as they become available, on a weekly or monthly basis.
ROMPaaS, 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: <a href="http://www.hp.com/go/support">http://www.hp.com/go/support</a> and from <a href="http://www.hp.com/servers/easysetup">www.hp.com/servers/easysetup</a> . Contains the following: <ul style="list-style-type: none"> <li>● HP Insight Management Agents for Systems Insight Manager (SIM) Integration</li> <li>● HP Systems Management Homepage</li> <li>● Array Configuration Utility (ACU)</li> <li>● Array Diagnostics Utility (ADU)</li> <li>● HP Insight Diagnostics</li> </ul>

#### 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

#### Security

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

#### Security - Trusted Platform Module

Trusted Platform Module option kit

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

**NOTE:** ProLiant OS pre-installed units will come with the partition required for TPM deployment.  
**NOTE:** The TPM key is unique to every TPM deployed server and must be retained. Misplacing or losing the key could result in data loss.



### 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 (227099-001) 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>.

**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](http://www.hp.com/products/powercords).

**Power Supply** HP has a new design for ProLiant power. The new Common Slot Power Supply bay. This design 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 Common Slot, High Efficiency and Right-Size Power Supplies. Common Slot (CS) designates commonality of the power supply across multiple ProLiant servers. HP's new Common Slot power supplies are designed for highest efficiency to provide power efficiency without degrading performance of the ProLiant. Power Supplies will have efficiency ratings up to 92%. There are three Right Size 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 Calculator 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).

**Common Slot ProLiant** It is highly recommended that you use the HP Power Calculator in defining the "Right-Size" power supply for your needs. HP offers three Power Supply Options:

- HP 460Watts, Common Slot, 92% Efficiency
- HP 750Watts, Common Slot, 92% Efficiency
- HP 1200Watts, Common Slot, 90% Efficiency
- HP 1200Watts, Common Slot, 94% Efficiency

The HP ProLiant Common Slot Power supplies meet multiple Energy Efficiency Initiatives: Climate Savers Computing Initiative GOLD and ECOS Consulting 80PLUS GOLD for the 460w and 750w Power Supplies and Climate Savers Computing Initiative Silver, ECOS Consulting 80PLUS Silver for 1200w Power Supply. HP has also been working with the EPA on developing an ENERGY STAR? Computer Server specification and plans on offering models that meet the requirements when they are published. Please visit the ENERGY STAR website at: [www.energystar.gov](http://www.energystar.gov) for updates on the specification development process and approved platforms.

Optional power supplies can be purchased through power supply option kits (see Power Supply Options for part numbers).

**System Fans** 4 system fans ship standard in z6000 chassis - N+1 redundant

**Operating Systems and Virtualization Software Support for ProLiant Servers** [Microsoft Windows Server](#)  
[Microsoft Windows Server Hyper-V](#)  
[Microsoft HPC Server 2008](#)  
[Red Hat Enterprise Linux \(RHEL\)](#)  
[SUSE Linux Enterprise Server \(SLES\)](#)  
[Solaris](#)  
[VMware ESX](#)  
[Citrix Essentials for 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, please visit our Support Matrix at: <http://www.hp.com/go/ossupport> and our driver download page <http://www.hp.com/support/SL2x170zG6>.

### Standard Features

#### Rack Airflow Requirements

##### Rack 10000 G2 series Cabinets

The increasing power of new high-performance processor technology requires increased cooling efficiency for rack-mounted servers. The 10000 G2 Series Racks provide enhanced airflow for maximum cooling, allowing these racks to be fully loaded with servers using the latest processors.

**CAUTION:** If a third-party rack is used, observe the following additional requirements to ensure adequate airflow and to prevent damage to the equipment:

Front and rear doors: If your 42U server rack includes closing front and rear doors, you must allow 5,350 sq cm (830 square inches) of hole evenly distributed from top to bottom to permit adequate airflow (equivalent to the required 64 percent open area for ventilation).

Side: The clearance between the installed rack component and the side panels of the rack must be a minimum of 7 cm (2.75 inches)

**CAUTION:** Always use blanking panels to fill all remaining empty front panel U-spaces in the rack. This arrangement ensures proper airflow. Using a rack without blanking panels results in improper cooling that can lead to thermal damage.

**NOTE:** For additional information, refer to the Setup and Installation Guide or the Documentation CD provided with the server, or to the server documentation located in the Support section at the following URL: [www.hp.com/servers/SL2x170z](http://www.hp.com/servers/SL2x170z).

#### Rack Support

HP ProLiant SL2x170z G6 models have two different rail kits to choose from:

- 10U bulk rail kit - Used to fit in HP 10000 series racks
  - One 10U bulk rail kit will hold up to five z6000 chassis, thus ten SL2x170z G6 server trays for a total of twenty system boards
- 2U rail kit - Used to fit in 3rd party racks or to sell one z6000 chassis at a time
  - One 2U rail kit will hold one z6000 chassis, thus two SL2x170z servers for a total of four system boards

For additional information, please visit: [www.hp.com/go/rackandpower](http://www.hp.com/go/rackandpower).

#### 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 Enterprise Configurator

The HP eConfigure Enterprise Configurator now provides factory default racking for our HP hardware portfolio. This approach is aligned with our strategic direction to meet the needs and expectations of our valued customers. If you require "custom" rack configuration, please contact HP's Customer Business Center or an Authorized Partner for assistance.  
<http://www.hp.com/products/configurator>

#### HPC Interconnects

**NOTE:** High Performance Computing (HPC) interconnect technologies are available for this server under the Cluster Platform product portfolio. These high-speed interconnects are fully supported by HP when they are part of these configure to order clusters. Solutions can be defined with a lot of flexibility with the help of configuration tools. Please visit the following URL to configure HPC Clusters with InfiniBand or Gigabit Ethernet Interconnects:  
<http://www.hp.com/techservers/clusters/ucp/index.html>

<b>InfiniBand</b>	PCI-Express adapters
<b>Gigabit Ethernet</b>	Use embedded ports



### Standard Features

**Service and Support** HP Care Pack Services provide total care and support expertise with committed response designed to meet your IT and business needs.

HP Care Pack Services provide total care and support expertise with committed response designed to meet your IT and business needs.

HP Care Pack services include coverage for the HP branded hardware options qualified for the server that are purchased at the same time or afterward and internal to the enclosure. It also includes the 22" and smaller external monitors and tower UPS options up to 3kVA. These items will be covered at the same service level and for the same coverage period as the server. Coverage of UPS Battery is not included and standard warranty terms & conditions apply. For servers or storage systems installed within a rack, service also covers all HP qualified rack options installed within the same rack.

To fully capitalize on your HP ProLiant servers' capabilities requires a service partner who thoroughly understands your server technology and systems environment. HP Services, an industry leader in provision of multi vender support solutions provides a range of support services designed to meet the varying needs of business. Whether an SMB or large global corporation HP has a ProLiant server support offer to help you speedily deploy and maximize system uptime.

**Recommended Service** - Simplify ProLiant solution implementation, maintenance and management.

- **Support Service** - 3 Year, 9x5 Next Business Day coverage, excluding HP holidays only
- **Deployment Service** - Hardware Installation only

**Enhanced Service** - Optimize service level to increase IT performance and availability

- **Support Service** - 3 Year 13x5 Same Business Day, 4-Hour response coverage
- **Deployment Service** - Installation and Start-up only

Installation & Start-Up of a ProLiant server and Microsoft or Linux O/S per the Customer Description and/or Data Sheet. To be delivered on a scheduled basis 8am-5pm, M-F, excl. HP holidays.

For a complete listing of service offerings and information visit:

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

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

### Models

#### Non-Hot Plug Serial ATA (SATA) Model

**NOTE:** Non-Hot Plug models are not upgradeable to Hot Plug.

**NOTE:** A rail kit is not included in model - this allows for the purchase of the right size rail kit.

**NOTE:** This Model includes two HP ProLiant SL2x170z Server trays. Each server tray includes two SL170 system boards.

Specs below represent configuration of each system board.

<b>HP ProLiant SL2x170z G6, 2 trays, L5520, 6GB</b> 539610-xx1	<b>Processor(s)</b>	(1) Intel® Xeon® Processor L5520 (2.26 GHz, 8MB L3 Cache, 60W, DDR3-1066, HT, Turbo 1/1/2/2)
	<b>Cache Memory</b>	8MB shared L3 cache
	<b>Memory</b>	6GB (3 x 2GB) PC3-10600E (UDIMM)/Server tray
	<b>Network Controller</b>	HP NC362i Integrated Dual Port Gigabit Server Adapter
	<b>Storage Controller</b>	Embedded Smart Array B110i SATA RAID 0, 1, 10
	<b>Hard Drive</b>	Optional SATA
	<b>Internal Storage</b>	Up to 1 large form factor Non-Hot Plug drives using quick release carrier
	<b>Power Supply</b>	750W
	<b>Fans</b>	4 system fans ship standard in z6000 chassis - N+1 redundant
	<b>Form Factor</b>	One HP ProLiant z6000 G6 Chassis Two HP ProLiant SL2x170z G6 Server

<b>Country Code Key</b>	xx=00	U.S.
	xx=29	Japan
	xx=37	AP
	xx=42	Euro
	xx=AA	PRC

### 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 additional information.

**NOTE:** HP does not allow factory integration of options into standard models listed above. Configure-to-order servers must start with a CTO Chassis.

**NOTE:** FIO indicates that this option is a Factory Installable Option.

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

<b>HP Chassis</b>	HP ProLiant z6000 G6 Chassis <b>NOTE:</b> Ships with 2U chassis and 4 fans.	538080-B21
<b>HP Server Nodes</b>	HP ProLiant SL2x170z G6 Server board 1 HP ProLiant SL2x170z G6 Server board 2 <b>NOTE:</b> It is required that 2 server trays are purchased - The purchase of board 1 and 2 equals one server tray. <b>NOTE:</b> Must select quantity 2 of both Server Node part numbers.	570149-B21 570150-B21
<b>HP Rail Kits</b>	HP ProLiant z6000 G6 2U rail kit <b>NOTE:</b> 2U rail kit used for HP or 3rd part racks - allows addition of one z6000 chassis at a time. HP ProLiant z6000 G6 10U Bulk rail kit <b>NOTE:</b> 10U rail kit used for HP racks ONLY - allows addition of five z6000 chassis at a time.	570226-B21 570227-B21
<b>HP Power Supplies</b>	<b>NOTE:</b> Refer to HP Power Advisor when selecting a power supply for your configuration, <a href="http://www.hp.com/go/hppoweradvisor">www.hp.com/go/hppoweradvisor</a> . Many HP ProLiant Servers now offer new power options, including Common Slot Power Supplies. These power supplies come in multiple power ratings and higher efficiency levels to offer the Right Size solution to fit your configuration. This provides improved power delivery and the advantage of reclaiming lost power. Prior to making a power supply selection it is "highly recommended" that the "HP Power Advisor" is run to determine the right size power supply for your server configuration. The HP Power Advisor is located at " <a href="http://www.hp.com/go/proliant-energy-efficient">www.hp.com/go/proliant-energy-efficient</a> " or <a href="http://www.hp.com/go/hppoweradvisor">www.hp.com/go/hppoweradvisor</a> HP 460W CS HE Gold Power Supply HP 750W CS HE Gold Power Supply HP 1200W CS HE Silver Power Supply	503296-B21 512327-B21 500172-B21

#### Step 2: Choose Required Node Options (only one of the following from each list unless otherwise noted)

<b>HP Processors</b>	<b>Six-Core Processors</b>	
	Intel® Xeon® Processor X5680 (3.33 GHz, 12MB L3 Cache, 130W, DDR3-1333, HT, Turbo 1/1/2/2/3/3), FIO <b>NOTE:</b> If 2 processors are desired, select one 592168-L21 and one 592168-B21.	592168-L21
	Intel® Xeon® Processor X5670 (2.93 GHz, 12MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3/4/4), FIO <b>NOTE:</b> If 2 processors are desired, select one 592172-L21 and one 592172-B21.	592172-L21
	Intel® Xeon® Processor X5660 (2.80 GHz, 12MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3/4/4), FIO <b>NOTE:</b> If 2 processors are desired, select one 592174-L21 and one 592174-B21.	592174-L21
	Intel® Xeon® Processor X5650 (2.66 GHz, 12MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3/4/4), FIO <b>NOTE:</b> If 2 processors are desired, select one 592176-L21 and one 592176-B21.	592176-L21
	<b>Quad-Core Processors</b>	
	Intel® Xeon® Processor E5640 (2.66 GHz, 12MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2), FIO <b>NOTE:</b> If 2 processors are desired, select one 592308-L21 and one 592308-B21.	592308-L21
	Intel® Xeon® Processor E5630 (2.53 GHz, 12MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2), FIO <b>NOTE:</b> If 2 processors are desired, select one 592304-L21 and one 592304-B21.	592304-L21
	Intel® Xeon® Processor E5620 (2.40 GHz, 12MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2), FIO <b>NOTE:</b> If 2 processors are desired, select one 592306-L21 and one 592306-B21.	592306-L21
	Intel® Xeon® Processor L5640 (2.26 GHz, 12MB L3 Cache, 60W, DDR3-1333, HT, Turbo 2/2/3/3/4/4), FIO <b>NOTE:</b> If 2 processors are desired, select one 592325-L21 and one 592325-B21.	592325-L21
	Intel® Xeon® Processor L5630 (2.13 GHz, 12MB L3 Cache, 40W, DDR3-1066, HT, Turbo 1/1/2/2), FIO <b>NOTE:</b> If 2 processors are desired, select one 592327-L21 and one 592327-B21.	592327-L21

### Configuration Information - Factory Integrated Models

Intel® Xeon® processor X5570 (2.93 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3), FIO Base	570454-L21
<b>NOTE:</b> If 2 processors are desired, select one 570454-L21 and one 570454-B21.	
Intel® Xeon® processor X5560 (2.8 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3), FIO Base	588193-L21
<b>NOTE:</b> If 2 processors are desired, select one 588193-L21 and one 588193-B21.	
Intel® Xeon® processor X5550 (2.66 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3), FIO Base	570456-L21
<b>NOTE:</b> If 2 processors are desired, select one 570456-L21 and one 570456-B21.	
Intel® Xeon® processor E5540 (2.53 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2), FIO Base	570458-L21
<b>NOTE:</b> If 2 processors are desired, select one 570458-L21 and one 570458-B21.	
Intel® Xeon® processor E5520 (2.26 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2), FIO Base	570481-L21
<b>NOTE:</b> If 2 processors are desired, select one 570481-L21 and one 570481-B21.	
Intel® Xeon® Processor E5506 (2.13 GHz, 4MB L3 Cache, 80W, DDR3-800)	592321-L21
<b>NOTE:</b> If 2 processors are desired, select one 592321-L21 and one 592321-B21.	
Intel® Xeon® processor E5504 (2.00 GHz, 4MB L3 Cache, 80W, DDR3-800), FIO Base	570450-L21
<b>NOTE:</b> If 2 processors are desired, select one 570480-L21 and one 570450-B21.	
Intel® Xeon® processor L5530 (2.4 GHz, 8MB L3 Cache, 60W, DDR3-1066, HT, Turbo 1/1/2/2), FIO Base	586603-L21
<b>NOTE:</b> If 2 processors are desired, select one 586603-L21 and one 586603-B21.	
Intel® Xeon® processor L5520 (2.26 GHz, 8MB L3 Cache, 60W, DDR3-1066, HT, Turbo 1/1/2/2), FIO Base	570485-L21
<b>NOTE:</b> If 2 processors are desired, select one 570485-L21 and one 570485-B21.	
Intel® Xeon® processor L5506 (2.13 GHz, 4MB L3 Cache, 60W, DDR3-800), FIO Base	570483-L21
<b>NOTE:</b> If 2 processors are desired, select one 570483-L21 and one 570483-B21.	
<b>Dual-Core Processors</b>	
Intel® Xeon® Processor E5503 (2.00 GHz, 4MB L3 Cache, 80W, DDR3-800)	592323-L21
<b>NOTE:</b> If 2 processors are desired, select one 592323-L21 and one 592323-B21.	
Intel® Xeon® Processor E5502 (1.86 GHz, 4MB L3 Cache, 80W, DDR3-800), FIO	571707-L21
<b>NOTE:</b> If 2 processors are desired, select one 571707-L21 and one 571707-B21.	
<b>NOTE:</b> HT indicates that the processor model supports Intel® Hyper-Threading Technology.	
<b>NOTE:</b> Turbo indicates the maximum potential frequency increment when using Intel® Turbo Boost Technology, with 4, 3, 2, and 1 cores active.	
<b>NOTE:</b> DDR3 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.	
<b>NOTE:</b> 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.	
<b>NOTE:</b> Existing SL products cannot be upgraded with 130watt processors, new purchase only.	

### Configuration Information - Factory Integrated Models

#### HP Memory

##### Registered DIMMs (RDIMMs)

HP 2GB 2Rx8 PC3-10600R-9 Kit	500656-B21
HP 4GB 2Rx4 PC3-10600R-9 Kit	500658-B21
HP 4GB 4Rx8 PC3-8500R-7 LP Kit	500660-B21
HP 4GB 1Rx4 PC3-10600R-9 Kit	593339-B21
HP 4GB 1Rx4 PC3L-10600R-9 Kit	604504-B21

**NOTE:** Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors.

HP 8GB 2Rx4 PC3-8500R-7 Kit	516423-B21
HP 8GB 2Rx4 PC3-10600R-9 Kit	500662-B21
HP 8GB 2Rx4 PC3L-10600R-9 Kit	604506-B21

**NOTE:** Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors.

HP 16GB 4Rx4 PC3-8500R-7 Kit	500666-B21
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##### Unbuffered with ECC DIMMs (UDIMMs)

**NOTE:** Maximum 12 DIMMs supported per node.

HP 1GB 1Rx8 PC3-10600E-9 Kit	500668-B21
HP 2GB 2Rx8 PC3-10600E-9 Kit	500670-B21
HP 4GB 2Rx8 PC3-10600E-9 Kit	500672-B21

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

#### HP Hard Drive

**NOTE:** The hard drives use a quick release carrier.

**NOTE:** One 2 Drive SFF Drive Cage (582657-B21) is required when installing 2 SFFF drives

**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 Enterprise (ENT) Drives - with quick-release (QR) carrier

HP 600GB 6G SAS 15K 3.5in QR DP ENTHDD	574758-B21
HP 300GB 6G SAS 15K 3.5in QR DP ENT HDD	585980-B21
HP 300GB 6G SAS 10K 2.5in QR DP ENT HDD	574879-B21

##### SATA Entry (ETY) Drives - with quick-release (QR) carrier

HP 160GB 3G SATA 7.2K 3.5in QR ETY HDD	574021-B21
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##### SATA Midline (MDL) Drives - with quick-release (QR) carrier

HP 2TB 3G SATA 7.2K 3.5in QR MDL HDD	574755-B21
HP 1TB 3G SATA 7.2K 3.5in QR MDL HDD	574025-B21
HP 500GB 3G SATA 7.2K 3.5in QR MDL HDD	574023-B21
HP 500GB 3G SATA 7.2K 2.5in QR MDL HDD	574953-B21
HP 160GB 3G SATA 7.2K 2.5in QR MDL HDD	574893-B21

**NOTE:** SATA hard drives have a 1-year warranty.

**NOTE:** The HP SATA / PW CBL SL160/170 G6 KIT (574005-B21) is needed when adding more than two 2.5" hard drives.

##### SATA Midline (MDL) Solid State Drives - with quick-release (QR) carrier

HP 120GB 3G SATA 2.5in QR MDL SSD	586587-B21
HP 60GB 3G SATA 2.5in QR MDL SSD	586585-B21

### Configuration Information - Factory Integrated Models

<b>HP Storage Controllers</b>	HP P212/256 FIO SA Cntrlr w/Battery	491191-B21
	<b>NOTE:</b> HP P212 SAS 4HDD Cable Kit is required when adding SAS hard drives using the P212 controller (574001-B21)	
	<b>NOTE:</b> HP z6000 BBWC HDWR KIT is required when adding BBWC (582653-B21)	
	HP Smart Array P410/ZM FIO Controller	462860-B21
	<b>NOTE:</b> HP P410 SAS 4HDD Cable Kit is required when adding SAS hard drives using the P410 controller (583997-B21)	
	HP Smart Array P410/256 MB w/ Battery FIO	491195-B21
	<b>NOTE:</b> HP P410 SAS 4HDD Cable Kit is required when adding SAS hard drives using the P410 controller (583997-B21)	
	<b>NOTE:</b> HP z6000 BBWC HDWR KIT is required when adding BBWC (582653-B21)	
	HP Smart Array P411/256 MB w/ Battery FIO	491193-B21
	<b>NOTE:</b> HP z6000 BBWC HDWR KIT is required when adding BBWC (582653-B21)	

### Step 3: Choose Additional Options for Factory Integration

<b>HP Insight Software</b>	HP Insight Control for Linux, No Media 1-Server License Factory-Integratable Option (FIO) including 1 year of 24x7 Technical Support and Updates	TC203A
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**NOTE:** For additional options, please refer to the "Core Options" and "Additional Options" section below.



### Core Options

**NOTE:** Some options may not be factory integrated. Please contact your local sales representative for additional information.

<b>HP Unique Options</b>	HP Dedicated MGT Port Kit	517405-B21
	HP I/O Riser x16 SL160/170 G6 KIT	574806-B21
	HP ProLiant z6000 Tray blank kit	574551-B21
	<b>NOTE:</b> This is needed to help with cooling if a tray is removed from the z6000.	
	HP ProLiant z6000 Cable Management Kit	575156-B21
	<b>NOTE:</b> this is needed when using Fiber cables.	
	1U Filler Panel Blank Mounting Bracket	579069-B21
	<b>NOTE:</b> This is needed to mount the 1U blanking panel back with server when the server is recessed mounted.	
	HP P212 SAS 4HDD Cable Kit	574001-B21
	<b>NOTE:</b> This is required when adding SAS hard drives using the P212 controller.	
	HP P410 SAS 4HDD Cable Kit	583997-B21
	<b>NOTE:</b> This is required when adding SAS hard drives using the P410 controller.	
	HP SATA / PW CBL SL160/170 G6 KIT	574005-B21
	<b>NOTE:</b> This is needed when adding more than two 2.5" hard drives.	
	HP z6000 BBWC HDWR KIT	582653-B21
	<b>NOTE:</b> This is required when adding BBWC.	
	2 Drive SFF Drive Cage	582657-B21
	<b>NOTE:</b> This is required when adding SFF (2.5") SSD or hard drives.	
	HP z6000 Processor / Memory Blank Kit	579255-B21
	<b>NOTE:</b> This is optional to give the best cooling efficiency when server trays are not configured exactly the same in the z6000 chassis.	

### HP Processor

#### Six-Core Processors

Intel® Xeon® Processor X5680 (3.33 GHz, 12MB L3 Cache, 130W, DDR3-1333, HT, Turbo 1/1/2/2/3/3)	592168-B21
Intel® Xeon® Processor X5670 (2.93 GHz, 12MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3/4/4)	592172-B21
Intel® Xeon® Processor X5660 (2.80 GHz, 12MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3/4/4)	592174-B21
Intel® Xeon® Processor X5650 (2.66 GHz, 12MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3/4/4)	592176BL21

#### Quad-Core Processors

Intel® Xeon® Processor E5640 (2.66 GHz, 12MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)	592308-B21
Intel® Xeon® Processor E5630 (2.53 GHz, 12MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)	592304-B21
Intel® Xeon® Processor E5620 (2.40 GHz, 12MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)	592306-B21
Intel® Xeon® Processor L5640 (2.26 GHz, 12MB L3 Cache, 60W, DDR3-1333, HT, Turbo 2/2/3/3/4/4)	592325-B21
Intel® Xeon® Processor L5630 (2.13 GHz, 12MB L3 Cache, 40W, DDR3-1066, HT, Turbo 1/1/2/2)	592327-B21
Intel® Xeon® Processor X5570 (2.93 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3)	570454-B21
Intel® Xeon® Processor X5560 (2.8 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3)	588193-B21
Intel® Xeon® Processor X5550 (2.66 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3)	570456-B21
Intel® Xeon® Processor E5540 (2.53 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)	570458-B21
Intel® Xeon® Processor E5520 (2.26 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)	570481-B21
Intel® Xeon® Processor E5506 (2.13 GHz, 4MB L3 Cache, 80W, DDR3-800)	592321-B21
Intel® Xeon® Processor E5504 (2.00 GHz, 4MB L3 Cache, 80W, DDR3-800)	570450-B21
Intel® Xeon® Processor L5520 (2.26 GHz, 8MB L3 Cache, 60W, DDR3-1066, HT, Turbo 1/1/2/2)	586603-B21
Intel® Xeon® Processor L5520 (2.26 GHz, 8MB L3 Cache, 60W, DDR3-1066, HT, Turbo 1/1/2/2)	570485-B21
Intel® Xeon® Processor L5506 (2.13 GHz, 4MB L3 Cache, 60W, DDR3-800)	570483-B21

#### Dual-Core Processors

Intel® Xeon® Processor E5503 (2.00 GHz, 4MB L3 Cache, 80W, DDR3-800)	592323-B21
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### Core Options

Intel® Xeon® Processor E5502 (1.86 GHz, 4MB L3 Cache, 80W, DDR3-800) 571707-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.

### HP Memory

#### Registered DIMMs (RDIMMs)

HP 2GB 2Rx8 PC3-10600R-9 Kit 500656-B21

HP 4GB 2Rx4 PC3-10600R-9 Kit 500658-B21

HP 4GB 4Rx8 PC3-8500R-7 LP Kit 500660-B21

HP 4GB 1Rx4 PC3-10600R-9 Kit 593339-B21

HP 4GB 1Rx4 PC3L-10600R-9 Kit 604504-B21

**NOTE:** Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors.

HP 8GB 2Rx4 PC3-8500R-7 Kit 516423-B21

HP 8GB 2Rx4 PC3-10600R-9 Kit 500662-B21

HP 8GB 2Rx4 PC3L-10600R-9 Kit 604506-B21

**NOTE:** Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors.

HP 16GB 4Rx4 PC3-8500R-7 Kit 500666-B21

#### Unbuffered with ECC DIMMs (UDIMMs)

**NOTE:** Maximum 12 DIMMs supported per node.

HP 1GB 1Rx8 PC3-10600E-9 Kit 500668-B21

HP 2GB 2Rx8 PC3-10600E-9 Kit 500670-B21

HP 4GB 2Rx8 PC3-10600E-9 Kit 500672-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](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: [www.hp.com/go/proliant-energy-efficient](http://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.

### 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 hard drives use a quick release carrier.

**NOTE:** One 2 Drive SFF Drive Cage (582657-B21) is required when installing 2 SFF drives

**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.

#### SSAS Enterprise (ENT) Drives - with quick-release (QR) carrier

HP 600GB 6G SAS 15K 3.5in QR DP ENT HDD 574758-B21

HP 300GB 6G SAS 15K 3.5in QR DP ENT HDD 585980-B21

HP 300GB 6G SAS 10K 2.5in QR DP ENT HDD 574879-B21

#### SATA Entry (ETY) Drives - with quick-release (QR) carrier

HP 160GB 3G SATA 7.2K 3.5in QR ETY HDD 574021-B21

#### SATA Midline (MDL) Drives - with quick-release (QR) carrier

HP 2TB 3G SATA 7.2K 3.5in QR MDL HDD 574755-B21

HP 1TB 3G SATA 7.2K 3.5in QR MDL HDD 574025-B21

HP 500GB 3G SATA 7.2K 3.5in QR MDL HDD 574023-B21

HP 500GB 3G SATA 7.2K 2.5in QR MDL HDD 574953-B21

HP 160GB 3G SATA 7.2K 2.5in QR MDL HDD 574893-B21

### Core Options

**NOTE:** SATA hard drives have a 1-year warranty.

**NOTE:** The HP SATA / PW CBL SL160/170 G6 KIT (574005-B21) is needed when adding more than two 2.5" hard drives.

#### SATA Midline (MDL) Solid State Drives - with quick-release (QR) carrier

HP 120GB 3G SATA 2.5in QR MDL SSD	586587-B21
HP 60GB 3G SATA 2.5in QR MDL SSD	586585-B21

### HP Networking

#### Gigabit Ethernet Adapters

HP NC112T PCIe Gigabit Server Adapter	503746-B21
HP NC360T PCI Express Dual Port Gigabit Server Adapter	412648-B21
HP NC364T PCI Express Quad Port Gigabit Server Adapter	435508-B21
HP NC373F PCI Express Multifunction Gigabit Server Adapter	394793-B21
HP NC373T PCI Express 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

HP NC522SFP Dual Port 10GbE Server Adapter	468332-B21
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**NOTE:** A minimum of two Gigabytes (2 GB) of server memory is required per each NC522SFP adapter.

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

HP NC550SFP Dual Port 10GbE Server Adapter	581201-B21
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**NOTE:** A minimum of two Gigabytes (2 GB) of server memory is required per each NC550SFP adapter.

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

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information: [www.hp.com/go/ProLiantNICs](http://www.hp.com/go/ProLiantNICs).

### HP Infiniband

HP IB 4X DDR PCI-e Dual Port 0 Memory HCA	483513-B21
HP IB 4X DDR Conn-X PCI-e G2 Dual Port HCA	483514-B21
HP IB 4X DDR PCI-e Dual Port HCA	409376-B21
HP IB 4X DDR PCI-e DUAL PORT HCA	448397-B21
HP IB 4X QDR CX-2 PCI-e G2 Dual Port HCA	592520-B21
HP IB 4X DDR CX-2 PCI-e G2 Dual Port HCA	592521-B21

**NOTE:** Please see the QuickSpecs for additional information:

[http://h18000.www1.hp.com/products/quickspecs/13078\\_div/13078\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13078_div/13078_div.html)

### HP I/O Expansion Options

HP I/O Riser x16 SL160/170 G6 KIT	574806-B21
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### HP Power Supplies

**CAUTION:** In ProLiant Servers that have more than one power slot (bay), only same size power supplies are recommended. If non-matched power supplies are inserted you will get errors and operation will fail.

HP 460W CS HE Gold Power Supply	503296-B21
HP 750W CS HE Gold Power Supply	512327-B21
HP 1200W CS HE Silver Power Supply	500172-B21

**NOTE:** Option Kits contain optional power supply, an IEC power cable and PDU IEC cables.

### Additional Options

<b>HP Entry-Level Server Management</b>	<p>HP LO100i Advanced Pack, No Media 1-Server License including 1 year of 24x7 Technical Support and Updates</p> <p><b>NOTE:</b> For additional information, please see the Lights-Out 100i QuickSpecs at: <a href="http://www.hp.com/go/lo100">www.hp.com/go/lo100</a>.</p>	530521-B21
<b>HP Insight Software</b>	<p><b>HP Insight Control for Linux</b></p> <p>HP Insight Control for Linux, 1-server license, including one year of 24x7 Technical Support and Updates, Electronic <span style="float: right;">TC213AAE</span></p> <p>HP Insight Control for Linux, No Media, 1-Server license, including one year of 24x7 Technical Support and Updates <span style="float: right;">TC209A</span></p> <p>HP Insight Control for Linux, Media pack (DVD) - No licenses included <span style="float: right;">TC208A</span></p> <p><b>NOTE:</b> Media pack DVD contains the ISO image for HP Insight Control for Linux, HP Systems Insight Manager, HP Insight Control power management, HP Insight Control virtual machine management, and an integrated installer. Servers must be acquired separately.</p> <p><b>NOTE:</b> Licenses ship without media. The Media Kit for Insight Control for Linux can be ordered separately, or can be downloaded at: <a href="http://www.hp.com/go/ic-linux">http://www.hp.com/go/ic-linux</a> (click on Download button).</p> <p><b>NOTE:</b> Electronic software is available in all countries except China and Japan. Customers in China and Japan should order the physical equivalent.</p> <p><b>NOTE:</b> Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single set of activation keys.</p> <p><b>NOTE:</b> For additional License Kits, including electronic licensing options, please see the QuickSpecs at: <a href="http://h18000.www1.hp.com/products/quickspecs/13019_div/13019_div.html">http://h18000.www1.hp.com/products/quickspecs/13019_div/13019_div.html</a></p>	
<b>HP Rail Options</b>	<p>HP ProLiant z6000 G6 2U rail kit <span style="float: right;">570226-B21</span></p> <p><b>NOTE:</b> 2U rail kit used for HP or 3rd part racks - allows addition of one z6000 chassis at a time.</p> <p>HP ProLiant z6000 G6 10U Bulk rail kit <span style="float: right;">570227-B21</span></p> <p><b>NOTE:</b> 10U rail kit used for HP racks ONLY - allows addition of five z6000 chassis at a time.</p> <p>HP SL Universal Switch Rail Kit <span style="float: right;">592774-B21</span></p> <p><b>NOTE:</b> This kit allows you to install HP or 3rd party switch in the same rack as SL6000.</p> <p>HP ProCurve 6600 rail kit <span style="float: right;">538062-B21</span></p> <p><b>NOTE:</b> This rail kit is used to mount the ProCurve 6600 switch recessed with the z6000 chassis.</p> <p>CISCO 4948 rail kit <span style="float: right;">574549-B21</span></p> <p><b>NOTE:</b> This rail kit is used to mount the CISCO 4948 switch recessed with the z6000 chassis.</p>	
<b>HP Security - TPM</b>	HP Trusted Platform Module Option Kit	488069-B21

Additional Options

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/Zero Memory Controller 462828-B21

HP Smart Array P212/256 MB 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 P410/256MB Controller 462862-B21

HP Smart Array P410/512MB with BBWC 462864-B21

HP Smart Array P410/512MB with FBWC 578230-B21

HP Smart Array P410/1G with FBWC 572532-B21

**Smart Array P411 Controller**

HP Smart Array P411/256MB Controller 462830-B21

HP Smart Array P411/512MB Battery Backed Write Cache 462832-B21

HP Smart Array P411/512MB Flash Backed Write Cache 578229-B21

HP Smart Array P411/1G Flash Backed Write Cache 572531-B21

**Optional Upgrades**

**NOTE:** HP z6000 BBWC HDWR KIT is required when adding BBWC (582653-B21)

256 MB Cache Module 462968-B21

**NOTE:** Supported on HP Smart Array P212 Controller only.

512MB BBWC 462967-B21

**NOTE:** Supported on HP Smart Array P410 Controller and HP Smart Array P411 Controller only.

Battery Kit upgrade 462969-B21

**NOTE:** To enable BBWC on the 256MB cache.

**NOTE:** Supported on HP Smart Array P212 Controller.

512MB Flash Backed Write Cache 534916-B21

1G Flash Backed Write Cache 534562-B21

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

[http://h18000.www1.hp.com/products/quickspecs/13203\\_div/13203\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13203_div/13203_div.html)  
(Smart Array P212 Controller)

[http://h18000.www1.hp.com/products/quickspecs/13201\\_div/13201\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13201_div/13201_div.html)  
(Smart Array P410 Controller)

[http://h18000.www1.hp.com/products/quickspecs/13202\\_div/13202\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13202_div/13202_div.html)  
(Smart Array P411 Controller)

**SCSI HBA**

HP SC11Xe Host Bus Adapter 412911-B21

**NOTE:** Recommended HBA for SCSI tape drive connect.

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

[http://h18000.www1.hp.com/products/quickspecs/12566\\_div/12566\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12566_div/12566_div.html)  
(SCSI HBA)

### Additional Options

#### HP StorageWorks Options

#### StorageWorks 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>

#### Emulex Fibre Channel HBAs

HP StorageWorks 81E PCI-e FC HBA Single Port	AJ762A
HP StorageWorks 82E PCI-e FC HBA Dual Port	AJ763A
HP StorageWorks FC2142 4Gb PCI-e HBA	A8002A
HP StorageWorks FC2242 Dual Channel 4Gb PCI-e HBA	A8003A

#### QLogic Fibre Channel HBAs

HP StorageWorks 81Q PCI-e FC HBA Single Port	AK344A
HP StorageWorks 82Q PCI-e FC HBA Dual Port	AJ764A
HP StorageWorks FC1142 4Gb PCI-e HBA	AE311A
HP StorageWorks FC1242 Dual Channel 4Gb PCI-e HBA	AE312A

#### StorageWorks SCSI HBA

HP U320e SCSI Host Bus Adapter	AH627A
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**NOTE:** Recommended HBA for MSL SCSI Tape Library connect.

#### HP Disk Storage Systems

#### Disk Enclosures

HP StorageWorks D2600 Disk Enclosure	AJ940A
HP StorageWorks D2700 Disk Enclosure	AJ941A

**NOTE:** Please see the QuickSpecs for additional options and configuration information at: [http://h18000.www1.hp.com/products/quickspecs/13404\\_div/13404\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13404_div/13404_div.html) (Worldwide)

#### HP Rack Series

#### HP Rack 10000 G2 Series (Carbon/Graphite Metallic)

10642 G2 (42U) Rack Cabinet - Pallet	AF001A
10642 G2 (42U) Rack Cabinet - Shock Pallet	AF002A

**NOTE:** It is mandatory to use a shock pallet when shipping racks with equipment installed.

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

[http://h18000.www1.hp.com/products/quickspecs/12402\\_div/12402\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12402_div/12402_div.html) (Worldwide)

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

#### HP Care Pack Services

HP 1y 4h 13x5 SL6000 HW Support	UR258E
HP 1y 4h 24x7 SL6000 HW Support	UR259E
HP 1y 6h 24x7 CTR SL6000 HW Supp	UR260E
HP 3y Nbd SL6000 HW Support	UR261E
HP 3y Nbd w/DMR SL6000 HW Supp	UR262E
HP 3y 4h 13x5 SL6000 HW Support	UR263E
HP 3y 4h13x5 w/DMR SL6000 HW Supp	UR264E
HP 3y 4h 24x7 SL6000 HW Support	UR265E
HP 3y 4h24x7 w/DMR SL6000 HW Supp	UR266E
HP 3y 6h 24x7 CTR SL6000 HW Supp	UR267E
HP3y 6h24x7 CTRw/DMR SL6000 HW Supp	UR268E
HP 4y Nbd SL6000 HW Support	UR269E
HP 4y Nbd w/DMR SL6000 HW Supp	UR270E
HP 4y 4h 13x5 SL6000 HW Support	UR271E
HP 4y 4h13x5 w/DMR SL6000 HW Supp	UR272E
HP 4y 4h 24x7 SL6000 HW Support	UR273E
HP 4y 4h24x7 w/DMR SL6000 HW Supp	UR274E
HP 4y 6h 24x7 CTR SL6000 HW Supp	UR275E
HP4y 6h24x7 CTRw/DMR SL6000 HW Supp	UR276E
HP 5y Nbd SL6000 HW Support	UR277E
HP 5y Nbd w/DMR SL6000 HW Supp	UR278E
HP 5y 4h 13x5 SL6000 HW Support	UR279E



### Additional Options

HP 5y 4h13x5 w/DMR SL6000 HW Supp	UR280E
HP 5y 4h 24x7 SL6000 HW Support	UR281E
HP 5y 4h24x7 w/DMR SL6000 HW Supp	UR282E
HP 5y 6h 24x7 CTR SL6000 HW Supp	UR283E
HP5y 6h24x7 CTRw/DMR SL6000 HW Supp	UR284E
HP 3y 24x7 24h CTR SL6000 HW Supp	UR288E
HP 3y24x7 24hCTRwDMR SL6000 HW Supp	UR289E
HP 4y 24x7 24h CTR SL6000 HW Supp	UR290E
HP 4y24x7 24hCTRwDMR SL6000 HW Supp	UR291E
HP 5y 24x7 24h CTR SL6000 HW Supp	UR292E
HP 5y24x7 24hCTRwDMR SL6000 HW Supp	UR293E
HP Install SL6000 Service	UR285E
HP Startup SL6000 Service	UR286E
HP Install nonStdHrs SL6000 SVC	UR287E
Hardware Installation, Electronic	U9520E
HP 3y 4h 24x7 ProLiant DL14x/16x HW Supp	U9510E
HP 3y Nbd ProLiant DL14x/16x HW Supp	U9508E

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

### Memory

#### HP ProLiant SL2x170z G6 Server

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

**NOTE:** Each server tray includes two SL170 system boards. Specs below represent configuration of each system board.

**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](http://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

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	4GB	16GB	1GB	2GB	4GB
DIMM Native Speed (MHz)	1333	1333	1333	1066	1333	1066	1066	1333	1333	1333
<b>SLOTS THAT CAN BE POPULATED</b>										
18 slot servers	16	16	16	16	16	12	12	12	12	12
<b>MAXIMUM CAPACITY (GB)</b>										
	64	32	64	128	128	48	192	12	24	48
<b>POPULATED DIMM SPEED (MHz)</b>										
1 DIMM Per Channel	1333	1333	1333	1066	1333	1066	1066	1333	1333	1333
2 DIMM Per Channel	1333*	1333*	1333*	1066	1333*	800	800	1333	1333	1333*
3 DIMM Per Channel	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)

#### 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



### Memory

- 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.

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

	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

### Memory

	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

- 192GB, consisting of twelve (12) 16GB PC3-8500 RDIMMs

	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; empty	3	G; empty	
Chnl 2	4	B; 16GB DIMM	4	B; 16GB DIMM	Chnl 2
	5	E; 16GB DIMM	5	E; 16GB DIMM	
	6	H; empty	6	H; empty	
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

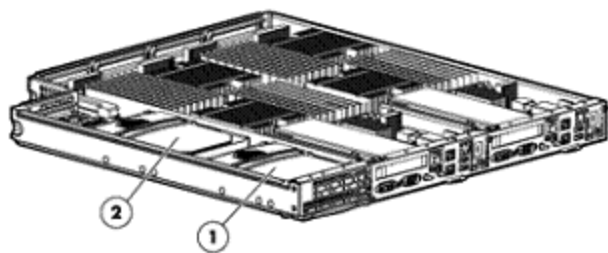
### Memory

Following are memory options available from HP:

<b>HP Memory</b>	<p><b>Registered DIMMs (RDIMMs)</b></p> <p>HP 2GB 2Rx8 PC3-10600R-9 Kit 500656-B21</p> <p>HP 4GB 2Rx4 PC3-10600R-9 Kit 500658-B21</p> <p>HP 4GB 4Rx8 PC3-8500R-7 LP Kit 500660-B21</p> <p>HP 4GB 1Rx4 PC3-10600R-9 Kit 593339-B21</p> <p>HP 4GB 1Rx4 PC3L-10600R-9 Kit 604504-B21</p> <p><b>NOTE:</b> Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors.</p> <p>HP 8GB 2Rx4 PC3-8500R-7 Kit 516423-B21</p> <p>HP 8GB 2Rx4 PC3-10600R-9 Kit 500662-B21</p> <p>HP 8GB 2Rx4 PC3L-10600R-9 Kit 604506-B21</p> <p><b>NOTE:</b> Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors.</p> <p>HP 16GB 4Rx4 PC3-8500R-7 Kit 500666-B21</p> <p><b>Unbuffered with ECC DIMMs (UDIMMs)</b></p> <p><b>NOTE:</b> Maximum 12 DIMMs supported per node</p> <p>HP 1GB 1Rx8 PC3-10600E-9 Kit 500668-B21</p> <p>HP 2GB 2Rx8 PC3-10600E-9 Kit 500670-B21</p> <p>HP 4GB 2Rx8 PC3-10600E-9 Kit 500672-B21</p> <p><b>NOTE:</b> 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: <a href="http://www.hp.com/go/ddr3memory-configurator">www.hp.com/go/ddr3memory-configurator</a>.</p> <p><b>NOTE:</b> Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: <a href="http://www.hp.com/go/proliant-energy-efficient">www.hp.com/go/proliant-energy-efficient</a>.</p> <p><b>NOTE:</b> There is a maximum support limitation of 8 ranks per memory channel (maximum of 2 quad rank DIMMs per channel)</p> <p><b>NOTE:</b> PC3L is a low voltage memory.</p>
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### Storage

- 1-2 One 3.5" Non-hot plug hard drive bays - Using quick release carrier for each system board for a total of 2 drives



## 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.

#### SATA Entry (ETY) Drives - with Quick Release carrier

	Quantity Supported	Position Supported	Controller
160GB 3G SATA 7.2K 3.5in	Up to 2	1-2	HP Embedded SATA RAID Controller <b>NOTE:</b> Transfer rate: 3 Gb/s SATA.

#### SATA Midline (MDL) Drives with Quick Release carrier

	Quantity Supported	Position Supported	Controller
2TB 3G SATA 7.2K 3.5in	Up to 2	1-2	HP Embedded SATA RAID Controller <b>NOTE:</b> Transfer rate: 3 Gb/s SATA.
1TB 3G SATA 7.2K 3.5in			
500GB 3G SATA 7.2K 3.5in			
500GB 3G SATA 7.2K 2.5in			
160GB 3G SATA 7.2K 2.5in			

#### SAS Enterprise (ENT) Drives - with quick-release carrier

	Quantity Supported	Position Supported	Controller
600GB 6G SAS 15K 3.5in	Up to 2	1-2	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller <b>NOTE:</b> HP P212 SAS 4HDD Cable Kit is required when adding SAS hard drives using the P212 controller.
300GB 6G SAS 15K 3.5in			HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller <b>NOTE:</b> HP P410 SAS 4HDD Cable Kit is required when adding SAS hard drives using the P410 controller.
300GB 6G SAS 10K 2.5in	Up to 4	1-4	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller <b>NOTE:</b> HP P212 SAS 4HDD Cable Kit is required when adding SAS hard drives using the P212 controller.
			HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller <b>NOTE:</b> HP P410 SAS 4HDD Cable Kit is required when adding SAS hard drives using the P410 controller.

#### SATA Midline (MDL) Solid State Drives - with quick-release carrier

	Quantity Supported	Position Supported	Controller
120GB 3G SATA 2.5in	Up to 4	1-4	HP Embedded SATA RAID Controller for up to 6 <b>NOTE:</b> Transfer rate: 3 Gb/s SATA.
60GB 3G SATA 2.5in			



### Storage

#### External Storage

	<b>Quantity Supported</b>	<b>Position Supported</b>	<b>Controller</b>
D2700 Disk Enclosure	Up to 2	External	HP Smart Array P212/256 MB Controller
	Up to 4	External	HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB Controller

### Power Specifications

<b>HP 460W Power Supply</b>							
<b>Part Number - AC 460W PSU</b>	503296-B21						
<b>Input Voltage Range (Vrms)</b>	100 to 240						
<b>Frequency Range (Nominal) (Hz)</b>	50/60						
<b>Nominal Input Voltage (Vrms)</b>	<b>100</b>	<b>120</b>	<b>200</b>	<b>208</b>	<b>220</b>	<b>230</b>	<b>240</b>
Maximum Rated Output Wattage	460	460	460	460	460	460	460
Nominal Input Current (A rms)	5.5	4.5	2.6	2.5	2.4	2.3	2.2
Max Rated Input Wattage Rating (Watts)	526	520	505	505	503	503	503
Max. Rated VA (Volt-Amp)	548	542	527	527	524	524	524
Efficiency (%) at Max. Rated Output Wattage	87.5	88.5	91	91	91.5	91.5	91.5
Power Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Max. Inrush Current (A peak)	30	30	30	30	30	30	30
Max. Inrush Current duration (mS)	20	20	20	20	20	20	20
Maximum British Thermal Unit Rating (BTU-Hr)	1794	1773	1725	1725	1715	1715	1715

<b>HP 750W Power Supply</b>							
<b>Part Number - AC 750W PSU</b>	512327-B21						
<b>Input Voltage Range (Vrms)</b>	100 to 240						
<b>Frequency Range (Nominal) (Hz)</b>	50/60						
<b>Nominal Input Voltage (Vrms)</b>	<b>100</b>	<b>120</b>	<b>200</b>	<b>208</b>	<b>220</b>	<b>230</b>	<b>240</b>
Maximum Rated Output Wattage	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
Max Rated Input Wattage Rating (Watts)	857	847	824	825	820	820	820
Max. Rated VA (Volt-Amp)	894	884	859	859	854	854	854
Efficiency (%) at Max. Rated Output Wattage	87.5	88.5	91	91	91.5	91.5	91.5
Power Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Max. Inrush Current (A peak)	30	30	30	30	30	30	30
Max. Inrush Current duration (mS)	20	20	20	20	20	20	20
Maximum British Thermal Unit Rating (BTU-Hr)	2925	2892	2812	2812	2797	2797	2797

### Power Specifications

<b>HP 1200W Power Supply Part Number - AC</b>	500172-B21						
<b>Operational Input Voltage Range (Vrms)</b>	100 to 240						
<b>Frequency Range (Nominal) (Hz)</b>	50/60						
<b>Nominal Input Voltage (Vrms)</b>	<b>100</b>	<b>120</b>	<b>200</b>	<b>208</b>	<b>220</b>	<b>230</b>	<b>240</b>
Maximum Rated Output Wattage	800	900	1200	1200	1200	1200	1200
Nominal Input Current (A rms)	9.7	9.0	7.0	6.8	6.4	9.1	5.9
Max Rated Input Wattage Rating (Watts)	930	1034	1348	1348	1348	1348	1348
Max. Rated VA (Volt-Amp)	970	1079	1406	1406	1406	1406	1406
Efficiency (%) at Max. Rated Output Wattage	86	87	89	89	89	89	89
Power Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Max. Inrush Current (A peak)	30	30	30	30	30	30	30
Max. Inrush Current duration (mS)	20	20	20	20	20	20	20
Maximum British Thermal Unit Rating (BTU-Hr)	3174	3530	4600	4600	4600	4600	4600

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](http://www.hp.com/go/proliant-energy-efficient) or [www.hp.com/go/hppoweradvisor](http://www.hp.com/go/hppoweradvisor)

### Technical Specifications

<b>System Unit</b>	<b>Dimensions</b> (H x W x D)	3.46 x 17.64 x 28.1 in (8.79 x 44.81 x 731.37 cm) (with bezel)
	<b>Weight</b> (approximate)	Maximum 65.7 lb (29.8 kg) (all hard drives, power supplies, and processors installed)
	<b>Input Requirements</b> (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)
	<b>Power Specifications</b>	To review typical system power ratings use the HP Power Advisor which is available via the online tool located at URL: <a href="http://www.hp.com/go/proliant-energy-efficient">www.hp.com/go/proliant-energy-efficient</a>
	<b>Power Supply Output</b> (per power supply)	Rated Steady-State Power 653.10W (at 100 VAC), 653.08W (at 200 VAC)
	<b>System Inlet Temperature</b>	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 40° to 140° F (-40° to 60° C) Maximum rate of change is 36°F/hr (20°C/hr).
	<b>Relative Humidity</b> (non-condensing)	Operating 10% to 85% relative humidity (Rh), 82.4°F (28°C) maximum wet bulb temperature, non-condensing. Non-operating 10% to 95% relative humidity (Rh), 101.7°F (38.7°C) maximum wet bulb temperature, non-condensing.
	<b>Altitude</b>	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).
	<b>Acoustic Noise</b>	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).
	<b>Idle</b>	<i>L<sub>WAd</sub></i> 6.86 <i>L<sub>pAm</sub></i> 52.36dBA
	<b>Operating</b>	<i>L<sub>WAd</sub></i> 6.89 <i>L<sub>pAm</sub></i> 52.60dBA
	<b>Emissions Classification (EMC)</b>	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.

### Technical Specifications

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

<b>Environment-friendly Products and Approach</b>	<b>End-of-life Management and Recycling</b>	<p>Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: <a href="http://www.hp.com/go/green">http://www.hp.com/go/green</a>. To recycle your product, please go to: <a href="http://www.hp.com/go/green">http://www.hp.com/go/green</a> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.</p> <p>The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: <a href="http://www.hp.com/go/green">http://www.hp.com/go/green</a>. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.</p>
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For hard drives, 1GB = 1 billion bytes. Actual formatted capacity is less.