Overview

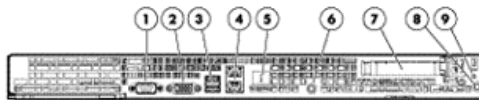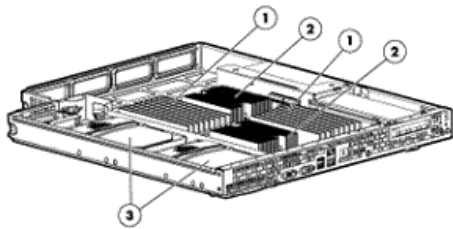## HP ProLiant SL160z Generation 6 (G6)

Open View:
1. 18 DDRs DIMM slots
2. Up to two Intel® Quad-Core 5500 sequence processors
3. Two 3.5" non-hot plug hard drives using a quick release drive carrier

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

At A Glance

The HP ProLiant SL160z G6 server 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, by sharing power supplies and fans, and maintain total flexibility.

Two independent HP ProLiant SL160z G6 Servers go into the 2U HP ProLiant z6000 G6 Chassis. The HP ProLiant SL160z G6 Server is a two socket Intel server with 18 DDR3 DIMM sockets and support for a low profile x16 PCI-e Gen 2 and an internal x4 PCI-e Gen 2 slot.

The HP ProLiant SL160z G6 is optimized for applications needing large amounts of memory and I/O expansion.

- **Processors**:
  o Supports up to two Intel® Quad-Core 5500 sequence processors
  o Quad-Core Intel® Xeon® processors 5500 sequence with 4MB or 8 MB Level 3 cache (depends on model)
  o Intel® 5520 Chipset
- **Memory**:
  o Up to 144GB, using PC3-8500R DDR3 Registered (RDIMM) memory, operating at 800MHz when fully populated at 3 DIMMs per Channel in 18 slots.
  o 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**:
  o Support for up to two 3.5" non-hot plug Serial ATA (SATA) hard drives using a quick release drive carrier
  o Internal storage capacity of up to 2.0TB (2 x 1TB 3.5" SATA)

Overview

- **Network Controller**:
    - o HP NC362i Integrated Dual Port Gigabit Server Adapter
- **Storage Controllers**:
    - o Non-Hot Plug SATA Models: HP Embedded SATA RAID Controller (RAID 0, 1, 10)
        NOTE: Transfer rate: up to 3 Gb/s SATA
- **Expansion Slots**:
    - o Up to two available PCI Express 2.0 slots:
        - Standard Slot 1: low-profile x16 PCI-Express 2.0
        - Optional Slot 2: low-profile internal only x4 PCI-Express 2.0
- **Management**:
    - o HP ProLiant Onboard Administrator Powered by Lights-Out 100 with optional LO100i Advanced Licenses for Virtual KVM and Virtual Media
    - o 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
    - o HP Insight Diagnostics
    - o Smart Components - a self-executable software consisting of driver and firmware
    - o 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
    - o SmartStart Scripting Toolkit - an automated scalable deployment utility
    - o 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).
    - o Array Configuration Utility (ACU)
    - o Array Diagnostics Utility (ADU)
- **Operating Systems and Virtualization Software Support for ProLiant Servers**:
    - o Supports Windows, RHEL, SLES, Solaris, VMware, and Citrix Essentials for XenServer
- **USB Ports**:
    - o Three USB ports (two front, one internal)
        NOTE: In order to utilize the internal USB port the USB cable (P/N: 536769-B21) must be connected to the internal USB header.
- **Optical Drive**:
    - o External support only
- **Power Supply**:
    - o 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**:
    - o HP ProLiant z6000 G6 Chassis - 2U
    - o HP ProLiant SL160z Server - 1U server tray
- **Deployment/Serviceability**:
    - o HP ProLiant SL160z 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 SL160z G6 servers
        - 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 SL160z servers

Overview

- o Customer Self Repair (CSR): HP products are designed with many CSR parts to minimize repair time and allow for greater flexibility in performing defective parts replacement
- **Warranty**:
  - o 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. SATA hard drives have a one year warranty. SAS Midline drives have a one-year warranty. SAS Enterprise drives have a three-year warranty.

    NOTE: Server Warranty includes 1 year Parts, 1 year labor, and 1 year on-site service. 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	**Quad-Core Processors** Intel® Xeon® Processor X5570 (2.93 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 E5504 (2.00 GHz, 4MB L3 Cache, 80W, DDR3-800) 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 E5502 (1.86 GHz, 4MB L3 Cache, 80W, DDR3-800) **NOTE:** Available through Configure To Order only. See Factory Integration Models section for more details. **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.

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Upgradeability	Upgradeable to two processors

Chipset	Intel® 5520 Chipset

Cache Memory	8 MB (1 x 8MB) Level 3 cache **NOTE:** All processor models except for those identified below. 4 MB (1 x 4MB) Level 3 cache **NOTE:** For processors L5506, E5504, E5502.

Memory Protection	Advanced memory protection

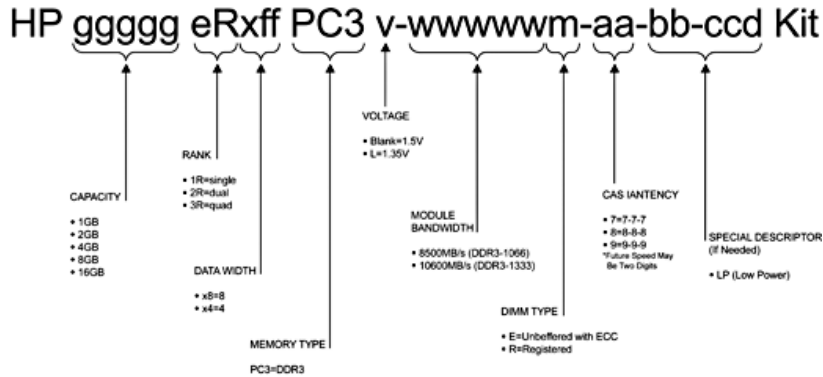|		
Memory	Type	DDR3 Registered (RDIMM) or Unbuffered (UDIMM)
	Standard (per server tray)	6 GB (3 x 2 GB) UDIMMs
	Maximum (RDIMM) (per server tray)	144 GB (18 x 8 GB) for Registered Memory configurations

Standard Features

Maximum (UDIMM) (per   24 GB (12 x 2 GB) for Unbuffered Memory configurations
server tray)

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.

DDR3 memory options part number decoder

HP ggggg eRxff PC3 v-wwwwwm-aa-bb-ccd Kit

CAPACITY
• 1GB
• 2GB
• 4GB
• 8GB
• 16GB

RANK
• 1R=single
• 2R=dual
• 3R=quad

DATA WIDTH
• x8=8
• x4=4

MEMORY TYPE
PC3=DDR3

VOLTAGE
• Blank=1.5V
• L=1.35V

MODULE BANDWIDTH
• 8500MB/s (DDR3-1066)
• 10600MB/s (DDR3-1333)

DIMM TYPE
• E=Unbuffered with ECC
• R=Registered

CAS lATENCY
• 7=7-7-7
• 8=8-8-8
• 9=9-9-9
*Future Speed May Be Two Digits

SPECIAL DESCRIPTOR (If Needed)
• LP (Low Power)

Network Controller	HP NC362i Integrated Dual Port Gigabit Server Adapter

Expansion Slots	Slot #	Technology	Bus Width	Connector Width*	Bus Number*	Device No.**	Form Factor	Notes
	1	PCI-Express 2.0	x16	x16	1	0	Low Profile	3.3 volts

NOTE: All slots can accept universal keyed PCI cards.

* Default bus assignment. Inserting cards with PCI bridges may alter the actual bus assignment number.

** Slots are enumerated differently based on OS. MS OS's enumerate from lowest to highest Device ID by bus (starting with the lowest bus).

Storage Controller	Non-Hot Plug SATA Models:	HP Embedded SATA RAID Controller (RAID 0, 1, 10)

NOTE: Transfer rate: 3.0 Gb/s SATA
NOTE: A HP Smart Array Controller is required for SAS HDD
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.

QuickSpecs

Standard Features

Storage	Optical Drives	DVD-ROM / DVD RW drives via USB only
	Diskette Drives	Via USB only
	Drive Bays	None ship standard
		Up to 2 Non-hot plug SATA 3.5" drives

Maximum Internal Storage	Non-Hot Plug SATA	2.0TB	2 x 1TB

Interfaces	Parallel	None
	Network RJ-45	2 10/100/1000 NIC ports (plus 1 optional dedicated port for the HP ProLiant Lights Out 100i Remote Management)
	Serial	1
	Pointing Device (Mouse)	0 (via USB only)
	Graphics	1
	Keyboard	0 (via USB only)
	USB	3 (two front, one internal)
		NOTE: In order to connect a USB device internally, the internal USB Cable G6 Kit must be used (536769-B21)
		NOTE: Please see the following URL for additional information regarding USB support: http://h18004.www1.hp.com/products/servers/platforms/usb-support.html.
	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
	NOTE: Can support two SL160z server trays in the 2U chassis.
	HP ProLiant SL160z G6 Server - 1U server tray

Embedded Systems Management	**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.
		Features:
		• Embedded IPMI reporting • System event log access • Remote Serial console (serial redirection) • Browser, Telnet access • SMASH-CLP compliant

Standard Features

- IPMI 2.0 compliant
- DCMI 1.0 compliant
- Secure Socket Layer Encryption
- Secure Shell Encryption
- Virtual media (Floppy, CD, USB 2.0) with Advanced Licenses
- Virtual KVM with Advanced License

Server Management Stand Alone Software Products	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 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.
	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.
Core Infrastructure Management	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.
Easy Set-up CD and ISO Image Web downloads	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

Industry Standard Compliance	ACPI V2.0 Compliant
	PCI 2.2 Compliant
	PXE Support
	WOL Support
	Microsoft® Logo certifications

Standard Features

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
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.

NOTE: For more information about TPM, including a white paper, go to:
http://www.hp.com/go/TPM
NOTE: ProLiant OS pre-installed units will come with the partition required for TPM deployment.
NOTE: The TPM key is unique to every TPM deployed server and must be retained. Misplacing or losing the key could result in data loss.

Server Power Cords
One 6' Highline (IEC-IEC) power cord ships standard
NOTE: HP ProLiant DL servers no longer ship standard with NEMA power cords (163719-002) that allow connection to 110V US wall outlets in a home or office. ProLiant DL servers are primarily connected to PDU's in data center racks so they now ship standard with only a PDU power cord (416151-B21). If a user wishes to power a ProLiant DL server using a 110V receptacle (NEMA-15), the NEMA power cord (227099-001) must be ordered separately.

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.

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. The new HP Common Slot power supplies are designed for the highest power efficiency without degrading performance of the ProLiant server. Power Supplies 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

Standard Features

select the correct power supply to meet your configuration, please use the HP Power Advisor at: www.hp.com/go/proliant-energy-efficient or www.hp.com/go/hppoweradvisor. All HP Common Slot power sources are UL, CE Mark Compliant, Hot Plug and Redundant.

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:

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

3 system fans ship standard in z6000 chassis

Operating Systems and Virtualization Software Support for ProLiant Servers

Microsoft Windows Server
Microsoft Windows Server Hyper-V
Red Hat Enterprise Linux (RHEL)
SUSE Linux Enterprise Server (SLES)
VMWare
Citrix Essebtials 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/SL160G6.

Rack Airflow Requirements

Rack 10000 series Cabinets
The increasing power of new high-performance processor technology requires increased cooling efficiency for rack-mounted servers. The 10000 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

Standard Features

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/SL160.

Rack Support

HP ProLiant SL160z G6 models have two different rail kits to choose from:

- 10U bulk rail kit - Used to fit in HP 10000 series racks
    o One 10U bulk rail kit will hold up to five z6000 chassis, thus ten SL160z G6 servers
- 2U rail kit - Used to fit in 3rd party racks or to sell one z6000 chassis at a time
    o One 2U rail kit will hold one z6000 chassis, thus two SL160z servers

For additional information, please visit: www.racksolutions.com.

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

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.

Standard Features

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/go/proliant/carepack

HPC Interconnects

NOTE: High Performance Computing (HPC) interconnect technologies are available for the SL160z G6 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, Gigabit Ethernet or Myrinet Interconnects:
http://www.hp.com/techservers/clusters/ucp/index.html

HPC Interconnects	InfiniBand	PCI-Express Generation 2 adapters
	Gigabit Ethernet	Use embedded ports
	10-Gigabit Ethernet	PCI-Express Generation 2

QuickSpecs

HP ProLiant SL160z Generation 6 (G6)

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 (you must choose the chassis and the tray)

Models	Chassis	
	HP ProLiant z6000 G6 Chassis	538080-B21
	Factory Integrated Model ships with:	
	2U chassis and 3 fans	
	Rails and power supplies are required options below	
	Server Tray	
	HP ProLiant SL160z G6 Server	570145-B21
	Factory Integrated Model ships with:	
	Two SL160z trays, each with 1 system board	
	Proccesors, memory and hard drives are required options below	

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

Processors	Quad-Core Processors	
	Intel® Xeon® Processor X5570 (2.93 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3), FIO	539214-L21
	NOTE: If 2 processors are desired, select one 539214-L21 and one 539214-B21.	
	Intel® Xeon® Processor X5550 (2.66 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3), FIO	570804-L21
	NOTE: If 2 processors are desired, select one 570804-L21 and one 570804-B21.	
	Intel® Xeon® Processor E5540 (2.53 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2), FIO	539212-L21
	NOTE: If 2 processors are desired, select one 539212-L21 and one 539212-B21.	
	Intel® Xeon® Processor E5520 (2.26 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2), FIO	539200-L21
	NOTE: If 2 processors are desired, select one 539200-L21 and one 539200-B21.	
	Intel® Xeon® Processor E5504 (2.00 GHz, 4MB L3 Cache, 80W, DDR3-800), FIO	539198-L21
	NOTE: If 2 processors are desired, select one 539198-L21 and one 539198-B21.	
	Intel® Xeon® Processor L5520 (2.26 GHz, 8MB L3 Cache, 60W, DDR3-1066, HT, Turbo 1/1/2/2), FIO	539202-L21

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Configuration Information - Factory Integrated Models

NOTE: If 2 processors are desired, select one 539202-L21 and one 539202-B21.	
Intel® Xeon® Processor L5506 (2.13 GHz, 4MB L3 Cache, 60W, DDR3-800), FIO	571696-L21
NOTE: If 2 processors are desired, select one 571696-L21 and one 571696-B21.	

Dual-Core Processors

Intel® Xeon® Processor E5502 (1.86 GHz, 4MB L3 Cache, 80W, DDR3-800), FIO	571694-L21
NOTE: If 2 processors are desired, select one 571694-L21 and one 571694-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.

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

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)

Riser Cards	Low Profile Riser Options		
	HP PCI-E x4 Riser SL160z G6 Kit	571408-B21	**Formatted:** Italian (Italy)
	HP I/O Riser x16 SL160/170 G6 KIT	574806-B21	**Formatted:** Italian (Italy)

Configuration Information - Factory Integrated Models

Rail Options	HP ProLiant z6000 G6 2U rail kit	570226-B21
	NOTE: 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	570227-B21
	NOTE: 10U rail kit used for HP racks ONLY - allows addition of five z6000 chassis at a time.	

Hard Drive	**NOTE:** Transfer rates of drives are dependent on the maximum transfer rate supported by the Controller. Refer to the Controller technical specifications for details.	
	NOTE: The hard drives use a quick release carrier.	
	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 500GB 3G SATA 7.2K 3.5in QR MDL HDD	574023-B21
	HP 1TB 3G SATA 7.2K 3.5in QR MDL HDD	574025-B21
	NOTE: SATA hard drives have a 1-year warranty.	

Power Supply	**NOTE:** Refer to HP Power Advisor when selecting a power supply for your configuration, www.hp.co/go/hppoweradvisor. 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: "www.hp.com/go/proliant-energy-efficient" or www.hp.com/go/hppoweradvisor	
	HP 460W CS HE Power Supply Kit	503296-B21
	HP 750W CS HE Power Supply Kit	512327-B21
	HP 1200W CS HE Power Supply Kit	500172-B21

Step 3: 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 factory integrated. Please contact your local sales representative for additional information.

HP ProLiant SL160z G6 Unique Options		
HP Dedicated MGT Port Kit	516006-B21	
HP I/O Riser x16 SL160/170 G6 KIT	574806-B21	**Formatted:** Italian (Italy)
HP Internal USB Cable G6 Kit	536769-B21	
HP ProLiant z6000 Tray blank kit	574551-B21	
NOTE: This is needed to help with cooling if a tray is removed from the z6000.		
HP ProLiant z6000 Cable Management Kit	575156-B21	
NOTE: This is needed when using Fiber cables.		

Processor		
Quad-Core Processors		
Intel® Xeon® Processor X5570 (2.93 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3)	539214-B21	
Intel® Xeon® Processor X5550 (2.66 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3)	570804-B21	
Intel® Xeon® Processor E5540 (2.53 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)	539212-B21	
Intel® Xeon® Processor E5520 (2.26 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)	539200-B21	
Intel® Xeon® Processor E5504 (2.00 GHz, 4MB L3 Cache, 80W, DDR3-800)	539198-B21	**Formatted:** Italian (Italy)
Intel® Xeon® Processor L5520 (2.26 GHz, 8MB L3 Cache, 60W, DDR3-1066, HT, Turbo 1/1/2/2)	539202-B21	
Intel® Xeon® Processor L5506 (2.13 GHz, 4MB L3 Cache, 60W, DDR3-800)	571696-B21	
Dual-Core Processors		
Intel® Xeon® Processor E5502 (1.86 GHz, 4MB L3 Cache, 80W, DDR3-800)	571694-B21	**Formatted:** Italian (Italy)

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.

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 8GB 2Rx4 PC3-10600R-9 Kit	500662-B21	
HP 8GB 2Rx4 PC3-8500R-7 Kit	516423-B21	
Unbuffered with ECC DIMMs (UDIMMs)		
NOTE: Maximum 12 DIMMs supported per node.		

Core Options

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

Hard Drives

NOTE: Transfer rates of drives are dependent on the maximum transfer rate supported by the HBA or Controller. Refer to the HBA or Controller technical specifications for details.
NOTE: The hard drives use a quick release carrier.

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 500GB 3G SATA 7.2K 3.5in QR MDL HDD	574023-B21
HP 1TB 3G SATA 7.2K 3.5in QR MDL HDD	574025-B21

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

Communications

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 NC382T PCI Express Dual Port Multifunction Gigabit Server Adapter	458492-B21
HP NC522SFP Dual Port 10GbE Server Adapter	468332-B21

NOTE: A minimum of two gigabtyes (2GB) of server memory is required for each NC522SFP 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.

Riser Cage Options

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

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Redundant Options

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 Power Supply Kit	503296-B21
HP 750W CS HE Power Supply Kit	512327-B21

Core Options

HP 1200W CS HE Power Supply Kit   500172-B21

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

Additional Options

Remote Management	HP LO100i Advanced Pack, No Media 1-Server License including 1 year of 24x7 Technical Support and Updates	530521-B21
	NOTE: For additional information, please see the Lights-Out 100i QuickSpecs at: www.hp.com/go/lo100.	

HP Insight Control Environment Suite (ICE)	**NOTE:** Electronic licensing options are available for Insight Control suites software products. Please see the appropriate Insight Control QuickSpecs for additional information. www.hp.com/go/ice	
	HP Insight Control Environment for Linux	
	HP Insight Control Environment for Linux, Media pack (DVD) - No licenses included	464422-B22
	NOTE: This optional Media pack DVD contains the ISO image for HP Insight Control Environment for Linux, HP System Insight Manager, HP Insight Power Manager, HP Virtual Machine Management Pack, and an integrated installer. Servers must be acquired separately.	
	NOTE: This Media pack is optional because the latest ISO image and latest updates may be downloaded at no cost from: http://www.hp.com/go/ice-linux (click on Download button).	
	HP Insight Control Environment for Linux, No Media, 1-Server license, including one year of 24x7 Technical Support and Updates	464423-B22
	NOTE: This part number can be used to purchase one (1) license with a single activation key. 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 and Update Service.	
	NOTE: One certificate is shipped for each license.	
	NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/13019_div/13019_div.html	

Server Management Stand Alone Software Products	**NOTE:** Electronic licensing options are available for Insight Control suites and select Insight Software products. Please see the appropriate Insight Control and Insight Software QuickSpecs for additional information.	
	Deploy	
	HP Insight Rapid Deployment software	
	HP Insight Rapid Deployment software single license including 1 yr 24x7 Technical Support and Updates	452151-B21
	NOTE: This license allows 1 server to be deployed and managed via RDP. 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 and Update Service.	
	NOTE: For additional License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11053_div/11053_div.html	
	NOTE: Flexible and volume quantity license kits are available for Insight Software products. Refer to: http://www.hp.com/servers/proliantessentials or the various Insight Software product QuickSpecs for more information.	

Additional Options

Rail Options	HP ProLiant z6000 G6 2U rail kit	570226-B21	
	NOTE: 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	570227-B21	
	NOTE: 10U rail kit used for HP racks ONLY - allows addition of five z6000 chassis at a time.		
	HP Procurve 6600 rail kit	538062-B21	
	NOTE: This rail kit is used to mount the Procurve 6600 switch recessed with the z6000 chassis.		
	Voltaire 4036 rail kit	538064-B21	
	NOTE: This rail kit is used to mount the Voltaire 4036 switch recessed with the z6000 chassis.		
	CISCO 4948 rail kit	574549-B21	
	NOTE: This rail kit is used to mount the CISCO 4948 switch recessed with the z6000 chassis.		
Security	HP Trusted Platform Module Option Kit	488069-B21	
HPC Specific Options	HP IB 4X DDR Conn-X PCI-e G2 Dual Port HCA	483514-B21	
	HP IB 4X DDR PCI-e DUAL PORT HCA	448397-B21	
	NOTE: For HPC interconnect adapters please see the HPC Interconnect section of this QuickSpecs.		
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		
	HP StorageWorks FC2142SR 4Gb PCI-e HBA	A8002A	
	HP StorageWorks FC2242SR Dual Channel 4Gb PCI-e HBA	A8003A	
	HP StorageWorks FC1142SR 4Gb PCI-e HBA	AE311A	
	HP StorageWorks FC1242SR Dual Channel 4Gb PCI-e HBA	AE312A	
	HP StorageWorks 81E 8Gb PCI-e FC HBA	AJ762A	Formatted: Italian (Italy)
	HP StorageWorks 82E 8Gb Dual-port PCI-e FC HBA	AJ763A	
	HP StorageWorks 81Q 8Gb PCI-e FC HBA	AK344A	
	HP StorageWorks 82Q 8Gb Dual Port PCI-e FC HBA	AJ764A	
	StorageWorks SCSI HBA		
	HP U320e SCSI Host Bus Adapter	AH627A	
	NOTE: Recommended HBA for MSL SCSI Tape Library connect.		
HP Rack 10000 G2 Series	10642 G2 (42U) Rack Cabinet 1200mm Deep - Shock Pallet	AF034A	
	10642 G2 (42U) Rack Cabinet 1200mm Deep - Pallet	AF038A	

Additional Options

(Carbon/Graphite Metallic)	10647 G2 (47U) Rack Cabinet 1200mm Deep - Shock Pallet	AF044A
	10647 G2 (47U) Rack Cabinet 1200mm Deep - Pallet	AF045A

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

NOTE: Please see the Rack 10000 G2 QuickSpecs for Technical Specifications such as height, width, depth, weight, and color: 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 KVM Switch Options	2x1x16 IP Console Switch with Virtual Media	AF601A
	4x1x16 IP Console Switch with Virtual Media	AF602A
	2x16 Server Console Switch with Virtual Media	AF600A
	Server Console Switch (KVM), 0 x 2 x 8 port	AF616A
	Server Console Switch (KVM), 0 x 2 x 16 port	AF617A
	HP 1x4 Console Switch (ALL)	AF611A
	USB Server Console Cable, 6 ft, 2 pack	AF613A

NOTE: required for supporting USB peripherals.

NOTE: Cat5e cables are required to connect Interface Adapters to Console Switches. Cat5e cables can be found at the following URL: http://www.hp.com/go/kvm.

HP Serial Console Server Options	HP 16 Port Serial Console Server (worldwide)	AF101A
	HP 48 Port Serial Console Server (worldwide)	AF102A
	Serial Adapter, RJ45-D89 DCE Female, 1-pack	AF103A
	Serial Adapter, RJ45-D89 DCE Female, 8-pack	AF110A

NOTE: For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: http://www.hp.com/go/kvm.

Service and Support Offerings (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

Additional Options

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
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
HP LO100i Advanced Pack 3 year 24x7 Software Support	UM748E

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

Memory

HP ProLiant SL160z G6 (all models)
NOTE: Memory configurations listed do not apply to "Factory Integrated Models".
NOTE: Charts do 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 eighteen (18) memory slots:
    - There are three (3) channels per processor; six (6) channels per server
    - There are three (3) DIMM slots for each memory channel; eighteen (18) total slots
    - Memory channel 1 consists of the three (3) DIMMs that are closest to the processor
    - Memory channel 3 consists of the three (3) DIMMs that are furthest from 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
- No mixing DIMM voltage; all DIMMs must be the same voltage

DIMM Type ->	Registered DIMMs (RDIMMs)					Unbuffered with ECC DIMMs (UDIMMs)			
DIMM Rank ->	Dual Rank (2R)			Quad Rank (4R)		Single Rank (1R)		Dual Rank (2R)	
DIMM Capacity ->	2GB	4GB	8GB	2GB	4GB	1GB	2GB	1GB	2GB
DIMM Native Speed (MHz) ->	1333	1333	1066	*	1066	1333	*	*	1333
SLOTS THAT CAN BE POPULATED									
18 slot servers	18	18	18	*	12	12	*	*	12
MAXIMUM MEMORY CAPACITY (GB)									
18 slot servers	36	72	144	*	48	12	*	*	24
POPULATED DIMM SPEED (MHz)									
1 DIMM Per Channel	1333	1333	1066	*	1066	1333	*	*	1333

Memory

2 DIMM Per Channel	1066	1066	1066	*	800	1066	*	*	1066
3 DIMM Per Channel	800	800	800	*	*	*	*	*	*
* - not supported by HP at this time.									

NOTES:

- 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, you still run at 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, you run at 1066MHz
- If you install 3DPC in one channel (if applicable) and 1DPC in all other channels, you run at 800MHz
- 95 Watt CPU's are required for 1333MHz DIMM speeds. All other CPU's are capable of up to 1066MHz
- 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.

18 DIMM SLOTS (9 per CPU node)					
	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G	1	G	Chnl 1
	2	D	2	D	
	3	A	3	A	
Chnl 2	4	H	4	H	Chnl 2
	5	E	5	E	
	6	B	6	B	
Chnl 3	7	I	7	I	Chnl 3
	8	F	8	F	
	9	C	9	C	

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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	G; empty	1	G; empty	Chnl 1
	2	D; empty	2	D; empty	

Memory

		3	A; 2GB DIMM	3	A; empty	
Chnl 2		4	H; empty	4	H; empty	Chnl 2
		5	E; empty	5	E; empty	
		6	B; 2GB DIMM	6	B; empty	
Chnl 3		7	I; empty	7	I; empty	Chnl 3
		8	F; empty	8	F; empty	
		9	C; 2GB DIMM	9	C; empty	

Standard memory plus optional memory (1 CPU model)

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

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G; empty	1	G; empty	Chnl 1
	2	D; 2GB DIMM	2	D; empty	
	3	A; 2GB DIMM	3	A; empty	
Chnl 2	4	H; empty	4	H; empty	Chnl 2
	5	E; 2GB DIMM	5	E; empty	
	6	B; 2GB DIMM	6	B; empty	
Chnl 3	7	I; empty	7	I; empty	Chnl 3
	8	F; 2GB DIMM	8	F; empty	
	9	C; 2GB DIMM	9	C; empty	

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

- 72GB, consisting of nine (9) 8GB dual-rank PC3-8500 RDIMMs

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G; 8GB DIMM	1	G; empty	Chnl 1
	2	D; 8GB DIMM	2	D; empty	
	3	A; 8GB DIMM	3	A; empty	
Chnl 2	4	H; 8GB DIMM	4	H; empty	Chnl 2

Memory

		6	B; 8GB DIMM	6	B; empty	
Chnl 3		7	I; 8GB DIMM	7	I; empty	Chnl 3
		8	F; 8GB DIMM	8	F; empty	

UDIMM maximum configuration (1 CPU model)

- 12GB, consisting of six (6) 2GB dual-rank PC3-10600 UDIMMs

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G; empty	1	G; empty	Chnl 1
	2	D; 2GB DIMM	2	D; empty	
	3	A; 2GB DIMM	3	A; empty	
Chnl 2	4	H; empty	4	H; empty	Chnl 2
	5	E; 2GB DIMM	5	E; empty	
	6	B; 2GB DIMM	6	B; empty	
Chnl 3	7	I; empty	7	I; empty	Chnl 3
	8	F; 2GB DIMM	8	F; empty	
	9	C; 2GB DIMM	9	C; empty	

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

- 144GB, consisting of eighteen (18) 8GB PC3-8500 RDIMMs

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G; 8GB DIMM	1	G; 8GB DIMM	Chnl 1
	2	D; 8GB DIMM	2	D; 8GB DIMM	
	3	A; 8GB DIMM	3	A; 8GB DIMM	
Chnl 2	4	H; 8GB DIMM	4	H; 8GB DIMM	Chnl 2
	5	E; 8GB DIMM	5	E; 8GB DIMM	
	6	B; 8GB DIMM	6	B; 8GB DIMM	
Chnl 3	7	I; 8GB DIMM	7	I; 8GB DIMM	Chnl 3
	8	F; 8GB DIMM	8	F; 8GB DIMM	
	9	C; 8GB DIMM	9	C; 8GB DIMM	

Memory

UDIMM maximum configuration (2 CPU model)

- " 24GB, consisting of twelve (12) 2GB dual-rank PC3-10600 UDIMMs

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G; empty	1	G; empty	Chnl 1
	2	D; 2GB DIMM	2	D; 2GB DIMM	
	3	A; 2GB DIMM	3	A; 2GB DIMM	
Chnl 2	4	H; empty	4	H; empty	Chnl 2
	5	E; 2GB DIMM	5	E; 2GB DIMM	
	6	B; 2GB DIMM	6	B; 2GB DIMM	
Chnl 3	7	I; empty	7	I; empty	Chnl 3
	8	F; 2GB DIMM	8	F; 2GB DIMM	
	9	C; 2GB DIMM	9	C; 2GB DIMM	

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

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

Following are memory options available from 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 8GB 2Rx4 PC3-10600R-9 Kit	500662-B21
	HP 8GB 2Rx4 PC3-8500R-7 Kit	516423-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

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.
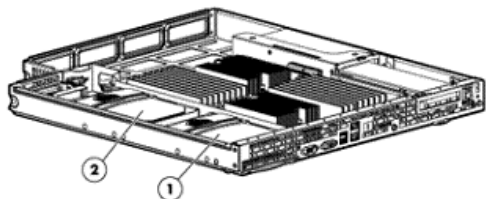
Memory

NOTE: There is a maximum support limitation of 8 ranks per memory channel
(maximum of 2 quad rank DIMMs per channel)

Storage

1-2 Non-hot plug SATA hard drive bays - Using quick release carrier

Drive Support

Hard Drives

NOTE: Transfer rates of drives are dependent on the maximum transfer rate supported by the HBA or Controller. Refer to the HBA or Controller technical specifications for details.

SATA Entry (ETY) Drives - with quick release carrier

	Quantity Supported	Position Supported	Controller
160GB 3G SATA 7.2K	Up to 2	1-2	HP Embedded SATA RAID Controller **NOTE:** Transfer rate: 3 Gb/s SATA

SATA Midline (MDL) Drives - with quick release carrier

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

QuickSpecs

HP ProLiant SL160z Generation 6 (G6)

Power Specifications

HP 460W Power Supply Part Number - AC 460W PSU	503296-B21						
Input Voltage Range (Vrms)	100 to 240						
Frequency Range (Nominal) (Hz)	50/60						
Nominal Input Voltage (Vrms)	100	120	208	200	220	230	240
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

HP 750W Power Supply Part Number - AC 750W PSU	512327-B21						
Input Voltage Range (Vrms)	100 to 240						
Frequency Range (Nominal) (Hz)	50/60						
Nominal Input Voltage (Vrms)	100	120	208	200	220	230	240
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

HP 1200W Power Supply Part Number - AC	500172-B21
Operational Input Voltage Range	100 to 240

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Power Specifications

(Vrms)							
Frequency Range (Nominal) (Hz)	50/60						
Nominal Input Voltage (Vrms)	100	120	208	200	220	230	240
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 or www.hp.com/go/hppoweradvisor

Technical Specifications

System Unit	Dimensions (H x W x D) (with bezel)		3.46 x 17.64 x 28.1 in (8.79 x 44.80 x 71.37 cm)
	Weight (approximate)	Maximum (all hard drives, power supplies, and processors installed)	53.7 lb (24.35 kg)
	Input Requirements (per power supply)	Rated Line Voltage	90 to 132 VAC 180 to 264 VAC
		Rated Input Current	5. 8 Amps (at 100 VAC) to 2.9 Amps (at 200 VAC)
		Rated Input Frequency	47 to 63 Hz
	BTU Rating	Rated Input Power	570W (at 100 VAC) 565W (at 200 VAC)
		Maximum	-500W 1940 BTU / hr (at 100 VAC), 1920 BTU/hr (at 200 VAC) 460W - 1773 BTU / hr (at 120 VAC), 1715 (at 240 VAC) 750W - 2892 BTU / hr (at 120 VAC), 2797 (at 240 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	500 Watts (at 100 VAC), 500 Watts (at 200 VAC)
		Maximum Peak Power (See Power Specifications Tables)	500Watts (at 100 VAC), 500 Watts (at 200 VAC)
	System Inlet Temperature	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).
		Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
	Relative Humidity (non-condensing)	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
		Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
	Altitude	Operating	3050 m (10,000 ft). This value may be limited

		by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Acoustic Noise	Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).

Idle

L_{WAd}	6.86
L_{pAm}	52.36dBA

Operating

L_{WAd}	6.89
L_{pAm}	52.60dBA

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.

NC362i Integrated Dual Port 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 x1 PCIe Specification	
	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 Ethernet on standard Category 5 UTP	

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.