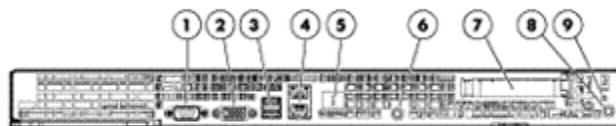
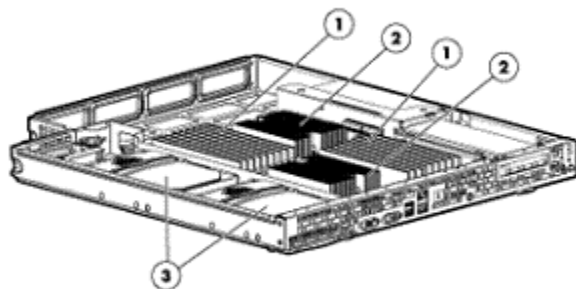


### Overview



#### 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:

- Supports up to two Intel® Quad-Core 5500 sequence processors
- Quad-Core Intel® Xeon® processors 5500 sequence with 4MB or 8 MB Level 3 cache (depends on model)
- Intel® 5520 Chipset

#### ● Memory:

- Up to 144GB, using PC3-8500R DDR3 Registered (RDIMM) memory, operating at 800MHz when fully populated at 3 DIMMs per Channel in 18 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) hard drives using a quick release drive carrier
- Internal storage capacity of up to 2.0TB (2 x 1TB 3.5" SATA)

#### ● Network Controller:

- HP NC362i Integrated Dual Port Gigabit Server Adapter

#### ● Storage Controllers:

- 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:

- Up to two available PCI Express 2.0 slots:

### Overview

- Standard Slot 1: low-profile x16 PCI-Express 2.0
- Optional Slot 2: low-profile internal only x4 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
  - 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)
- **Operating Systems and Virtualization Software Support for ProLiant Servers:**
  - Supports Windows, RHEL, SLES, Solaris, VMware, and Citrix Essentials for XenServer
- **USB Ports:**
  - 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:**
  - 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 SL160z Server - 1U server tray
- **Deployment/Serviceability:**
  - 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
  - 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:**
  - 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.

### Overview

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.

---

#### 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

---

### Standard Features

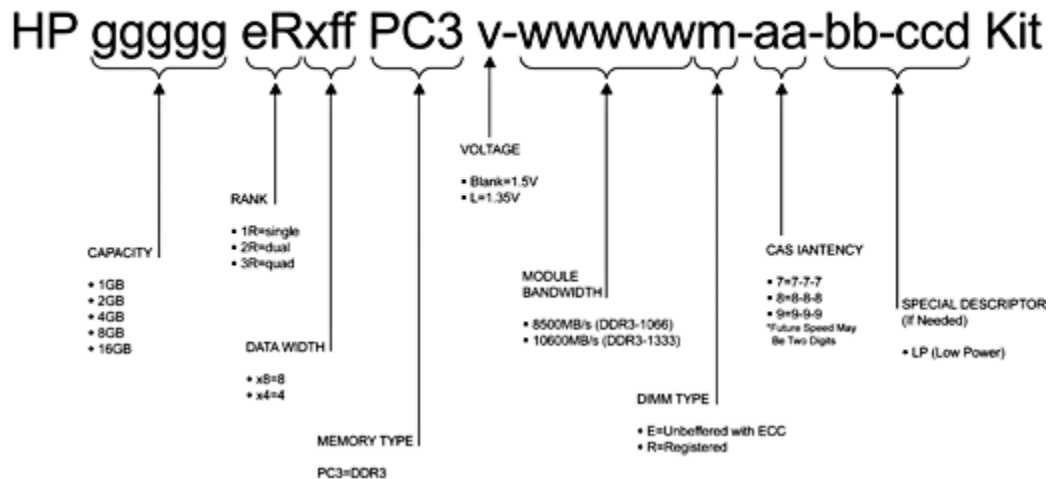
#### Memory

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
Maximum (UDIMM) (per server tray)	24 GB (12 x 2 GB) 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).

#### DDR3 memory options part number decoder



**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.

### Standard Features

<b>Storage</b>	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	
<hr/>			
<b>Maximum Internal Storage</b>	Non-Hot Plug SATA	2.0TB	2 x 1TB
	<hr/>		
<b>Interfaces</b>	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)	
		<b>NOTE:</b> In order to connect a USB device internally, the internal USB Cable G6 Kit must be used (536769-B21)	
		<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		
<hr/>			
<b>Graphics</b>	32MB shared supporting 1600x1200x16M resolution		
<hr/>			
<b>Form Factor</b>	HP ProLiant z6000 G6 Chassis - 2U Chassis		
	<b>NOTE:</b> Can support two SL160z server trays in the 2U chassis.		
	HP ProLiant SL160z G6 Server - 1U server tray		
<hr/>			

### Standard Features

**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
- 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](http://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

### Standard Features

<b>Industry Standard Compliance</b>	ACPI V2.0 Compliant
	PCI 2.2 Compliant
	PXE Support
	WOL Support
	Microsoft® Logo certifications
	IPMI 2.0
	DCMI 1.0
	SMASH CLP compliant

---

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

---

<b>Security - Trusted Platform Module</b>	<p>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.</p>
---	---

**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.

---

<b>Server Power Cords</b>	<p>One 6' Highline (IEC-IEC) power cord ships standard</p> <p><b>NOTE:</b> 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.</p>
---------------------------	---

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>.

---

<b>UPS and PDU Power Cord Matrix</b>	<p>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: <a href="http://www.hp.com/products/powercords">www.hp.com/products/powercords</a>.</p>
--------------------------------------	--



### Standard Features

#### 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 select the correct power supply to meet your configuration, please use the HP Power Advisor at: [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). 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](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

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 Essebentials 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>.

### Standard Features

#### 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 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](http://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
  - 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

For additional information, please visit: [www.racksolutions.com](http://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 MSxxxx, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches.

For more information on Factory Express services for your specific server model please contact your sales representative or go to: <http://www.hp.com/go/factory-express>.

#### HP 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>

### 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/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 configurations 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>

---

<b>HPC Interconnects</b>	<b>InfiniBand</b>	PCI-Express Generation 2 adapters
	<b>Gigabit Ethernet</b>	Use embedded ports
	<b>10-Gigabit Ethernet</b>	PCI-Express Generation 2

### 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>Chassis</b>	HP ProLiant z6000 G6 Chassis <b>NOTE:</b> ships with 2U chassis and 3 fans.	538080-B21
<b>Server Node</b>	HP ProLiant SL160z G6 Server <b>NOTE:</b> ships with two SL160z trays, each with 1 system board	570145-B21
<b>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.	570226-B21
	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.	570227-B21
<b>Power Supply</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 Power Supply Kit	503296-B21
	HP 750W CS HE Power Supply Kit	512327-B21
	HP 1200W CS HE Power Supply Kit	500172-B21

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

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

### Configuration Information - Factory Integrated Models

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

**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](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)

### Configuration Information - Factory Integrated Models

#### 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.

### 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.

<b>HP ProLiant SL160z G6</b>	HP Dedicated MGT Port Kit	516006-B21
<b>Unique Options</b>	HP I/O Riser x16 SL160/170 G6 KIT	574806-B21
	HP Internal USB Cable G6 Kit	536769-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.	

### 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
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
--	------------

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

**NOTE:** Turbo indicates the maximum potential frequency increment when using Intel® Turbo Boost Technology, with 4, 3, 2, and 1 cores active.

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

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



### Core Options

#### 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](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)

#### 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 gigabytes (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](http://www.hp.com/go/ProLiantNICs).

#### Riser Cage Options

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

### Core Options

#### 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

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](http://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](http://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](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](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

<b>Rail Options</b>	<p>HP ProLiant z6000 G6 2U rail kit <span style="float: right;">570226-B21</span>  <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>  <b>NOTE:</b> 10U rail kit used for HP racks ONLY - allows addition of five z6000 chassis at a time.</p> <p>HP Procurve 6600 rail kit <span style="float: right;">538062-B21</span>  <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>  <b>NOTE:</b> This rail kit is used to mount the CISCO 4948 switch recessed with the z6000 chassis.</p>
---------------------	---

---

<b>Security</b>	<p>HP Trusted Platform Module Option Kit <span style="float: right;">488069-B21</span></p>
-----------------	--

---

<b>HPC Specific Options</b>	<p>HP IB 4X DDR Conn-X PCI-e G2 Dual Port HCA <span style="float: right;">483514-B21</span></p> <p>HP IB 4X DDR PCI-e DUAL PORT HCA <span style="float: right;">448397-B21</span></p> <p><b>NOTE:</b> For HPC interconnect adapters please see the HPC Interconnect section of this QuickSpecs.</p>
-----------------------------	---

---

### 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
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.

---

### Additional Options

<b>HP Rack 10000 G2 Series</b> (Carbon/Graphite Metallic)	10642 G2 (42U) Rack Cabinet 1200mm Deep - Shock Pallet	AF034A
	10642 G2 (42U) Rack Cabinet 1200mm Deep - Pallet	AF038A
	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](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>.

<b>HP KVM Switch Options</b>	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>.

<b>HP Serial Console Server Options</b>	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>.

### Additional Options

<b>Service and Support Offerings</b>	HP 1y 4h 13x5 SL6000 HW Support	UR258E
(HP Care Pack Services)	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
	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](http://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)			
	Dual Rank (2R)			Quad Rank (4R)		Single Rank (1R)		Dual Rank (2R)	
DIMM Rank ->									
DIMM Capacity ->	2GB	4GB	8GB	2GB	4GB	1GB	2GB	1GB	2GB
DIMM Native Speed (MHz) ->	1333	1333	1066	*	1066	1333	*	*	1333
<b>SLOTS THAT CAN BE POPULATED</b>									
18 slot servers	18	18	18	*	12	12	*	*	12
<b>MAXIMUM MEMORY CAPACITY (GB)</b>									
18 slot servers	36	72	144	*	48	12	*	*	24
<b>POPULATED DIMM SPEED (MHz)</b>									
1 DIMM Per Channel	1333	1333	1066	*	1066	1333	*	*	1333
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



### Memory

- 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	

##### 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	
	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



### Memory

	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
	5	E; 8GB DIMM	5	E; empty	
	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	
	9	C; 8GB DIMM	9	C; 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	

### Memory

#### 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	

#### 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

### Memory

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

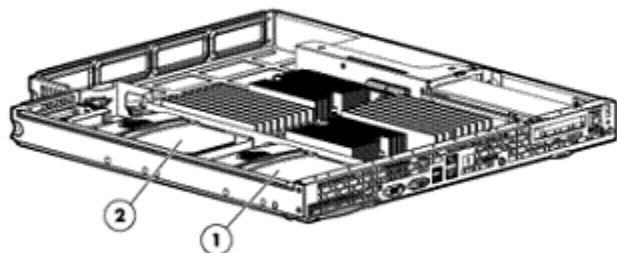
**NOTE:** All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: [www.hp.com/go/ddr3memory-configurator](http://www.hp.com/go/ddr3memory-configurator).

**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)

### 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 <b>NOTE:</b> Transfer rate: 3 Gb/s SATA

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

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

### Power Specifications

<b>HP 460W Power Supply 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>208</b>	<b>200</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 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>208</b>	<b>200</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>208</b>	<b>200</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 44.80 x 71.37 cm) (with bezel)	
	<b>Weight</b> (approximate)	Maximum 53.7 lb (24.35 kg) (all hard drives, power supplies, and processors installed)
	<b>Input Requirements</b> (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
	<b>BTU Rating</b>	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)
	<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 500 Watts (at 100 VAC), 500 Watts (at 200 VAC)
		Maximum Peak Power 500Watts (at 100 VAC), 500 Watts (at 200 VAC) (See Power Specifications Tables)
	<b>System Inlet Temperature</b>	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).
	<b>Relative Humidity</b> (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).
	<b>Altitude</b>	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).
	<b>Acoustic Noise</b>	Listed are the declared A-Weighted sound power levels (LWAd) and

### Technical Specifications

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

<i>L<sub>WAd</sub></i>	6.86
<i>L<sub>pAm</sub></i>	52.36dBA

#### Operating

<i>L<sub>WAd</sub></i>	6.89
<i>L<sub>pAm</sub></i>	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 Network Interface Port Gigabit Server Adapter

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

<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

**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.



### *Technical Specifications*

© Copyright 2009 Hewlett-Packard Development Company, L.P.

The information contained herein is subject to change without notice.

Microsoft and Windows NT are US registered trademarks of Microsoft Corporation. Intel, the Intel logo, Xeon and Xeon Inside are trademarks of Intel Corporation in the U.S. and other countries.

The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

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

## Free Manuals Download Website

<http://myh66.com>

<http://usermanuals.us>

<http://www.somanuals.com>

<http://www.4manuals.cc>

<http://www.manual-lib.com>

<http://www.404manual.com>

<http://www.luxmanual.com>

<http://aubethermostatmanual.com>

Golf course search by state

<http://golfingnear.com>

Email search by domain

<http://emailbydomain.com>

Auto manuals search

<http://auto.somanuals.com>

TV manuals search

<http://tv.somanuals.com>