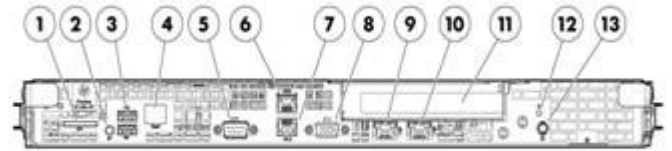
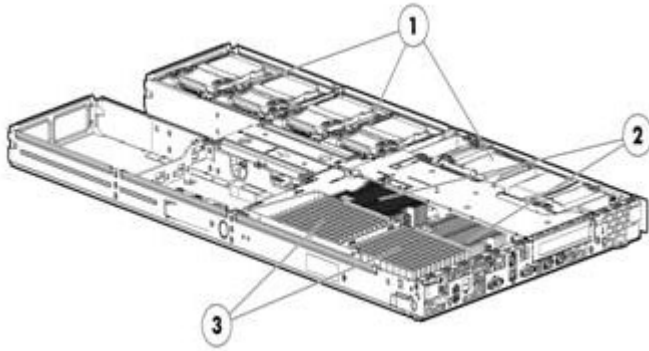


Overview

Introducing the HP ProLiant SL165s G7, part of the new SL6500 Scalable Series providing individual node serviceability and optional, hot-plug redundant fans. The SL165s G7 is available with the latest high performance AMD Opteron Eight and Twelve Core processors, 24 DDR3 memory DIMMs, 2 PCIe Gen2 slots, four NIC ports and an Easy Setup CD.



Inside View:

1. Six 3.5" or eight 2.5" non-hot plug hard drives using a quick release drive carrier
2. Up to Two AMD Opteron™ Processor 6100 series
3. 24 DDR3 DIMM slots

Front View:

1. Optional SD Slot
2. UID LED/SW
3. (2) USB Ports
4. Optional Dedicated Management port
5. Serial Port
6. 1Gbit NIC
7. 1Gbit NIC
8. Video Port
9. 1Gbit NIC
10. 1Gbit NIC
11. Optional low profile x16 PCI-e Gen 2
12. Health LED
13. Power Button

What's New

- Support for new HP Hard Drives

Standard Features

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

Processor

One of the following depending on Model

Twelve-Core Processors

AMD Opteron™ 6176 (2.3GHz/12-core/12MB/80W) Processor

AMD Opteron™ 6172 (2.1GHz/12-core/12MB/80W) Processor

AMD Opteron™ 6166HE (1.8GHz/12-core/12MB/65W) Processor

Eight-Core Processors

AMD Opteron™ 6140 (2.6GHz/8-core/12MB/80W) Processor

AMD Opteron™ 6136 (2.4GHz/8-core/12MB/80W) Processor

AMD Opteron™ 6128 (2.0GHz/8-core/12MB/80W) Processor

AMD Opteron™ 6132HE (2.2GHz/8-core/12MB/65W) Processor

NOTE: Supports up to two AMD Opteron™ 6000 series Eight-Core and Twelve-Core processors.

NOTE: Supports DirectConnect Architecture and Power Now.

NOTE: Processor wattage references reflect Average CPU Power (ACP). For more information on ACP visit: <http://www.amd.com/powernow>.

| | |
|--------------|-------------------------------|
| Cache Memory | 12MB (1 x 12MB) Level 3 Cache |
|--------------|-------------------------------|

| | |
|---------|---------------------------|
| Chipset | AMD Chipset SR5670/SP5100 |
|---------|---------------------------|

| | |
|----------------|-------------------------------|
| Upgradeability | Upgradeable to two processors |
|----------------|-------------------------------|

| | |
|-------------------|--------------|
| Memory Protection | Advanced ECC |
|-------------------|--------------|

| | | | |
|---|-----------------|---|--|
| Memory One of the following depending on Model | Type | DDR3 Registered (RDIMM) or Unbuffered (UDIMM) | |
| | Maximum (RDIMM) | 256GB | Using 8 x 16GB PC3-8500 and 16 x 8GB PC3-10600 DDR3 Registered (RDIMM) memory, operating at 800MHz when populated at 3 DIMMs per Channel in 24 slots |
| | Maximum (UDIMM) | 64GB | (16 x 4GB) using PC3-10600E DDR3 Unbuffered (UDIMM) memory, operating at 1066MHz when populated at 2 DIMMs per Channel in 16 slots |

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: <http://www.hp.com/go/proliant-energy-efficient>



Standard Features

Network Controller Two HP NC362i Integrated Dual Port Gigabit Server Adapter

Expansion Slots

NOTE: Optional - PCI-Express assembly includes: Slot 1: Low-profile PCI-Express Gen2 x16 and Slot 2: low-profile PCI-Express Gen2 x4 (x8 connector) (internal only).

| Expansion Slot # | Technology | Bus Width** | Connector Width | Bus Number* | Form Factor | Notes |
|------------------|-----------------|-------------|-----------------|-------------|----------------------------|-------|
| 1 | PCI-Express 2.0 | x16 | x16 | 5 | Low Profile | |
| 2 | PCI-Express 2.0 | x4 | x8 | 2 | Low Profile, Internal Only | |

* 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

HP Embedded B110i SATA RAID Controller (RAID 0, 1, 10)

NOTE: Transfer rate: up to 3 Gb/s SATA

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

NOTE: A diskette drive or virtual FDD using LO100i Advanced Pack is needed to install storage controller drivers during a Windows operating system installation from a CD.

| | | |
|----------------|-----------------|--|
| Storage | Diskette Drives | Via USB only |
| | Optical Drives | Via USB only NOTE: External support only. |
| | Hard Drives | None ship standard |
| | Drive Bays | Up to six 3.5" non-hot plug Serial ATA (SATA) hard drives using a quick release drive carrier Up to eight 2.5" non-hot plug Serial ATA (SATA) or Solid State Drive (SSD) hard drives using a quick release drive carrier and the SFF drive cage |

| | | | |
|---------------------------------|------------------------|--------|-----------|
| Maximum Internal Storage | Non-Hot Plug SATA 3.5" | 12.0TB | 6 x 2TB |
| | Non-Hot Plug SAS 3.5" | 12.0TB | 6 x 2TB |
| | Non-Hot Plug SATA 2.5" | 4.0TB | 8 x 500GB |
| | Non-Hot Plug SAS 2.5" | 2.4TB | 8 x 300GB |
| | Non-Hot Plug SSD 2.5" | 3.2TB | 8 x 400GB |



Standard Features

| | | |
|------------|--------------------------|--|
| Interfaces | Serial | 1 |
| | Parallel | None |
| | Network RJ-45 (Ethernet) | Two HP NC362i Integrated Dual Port Gigabit Server Adapters (4 ports) |
| | Video | 1 |
| | USB | 3 (two front, one internal) |
| | Management | 1 Optional Dedicated LO100i Management Port |
| | Health LED | 1 front |
| | Power | 1 front |
| | UID | 1 front |

| | |
|------------------------------|---|
| Industry Standard Compliance | ACPI V2.0 Compliant |
| | PCI 2.2 Compliant |
| | PXE Support |
| | WOL Support |
| | Microsoft® Logo certifications |
| | IPMI 2.0, SMASH CLP, DCMI 1.0 compliant |

Server Power Cords One 6' Highline (IEC-IEC) power cord ships standard
NOTE: HP ProLiant SL servers are primarily connected to PDU's in data center racks so they ship standard with only a PDU power cord (416151-B21).

NOTE: If customers require a power cord, they can check the power cord matrix for the appropriate cord. Please see the following power cord matrix: <http://www.hp.com/go/powercordmatrix>.

Common Slot Power Supplies

HP has a new design for ProLiant power supplies. The new Common Slot (CS) Power Supply provides the customer with commonality in power supplies across multiple platforms to save on the cost of spares and allows HP to offer multiple power solutions to fit the customers' needs. Many HP ProLiant Servers come with or are compatible with high-efficiency HP CS Power Supplies. These power supplies are designed for high-efficiency power without degrading performance of the ProLiant server. HP CS Power Supplies options for this server have efficiency ratings up to 94%. There are several power options available, depending on the configuration of your server. To make sure you select the correct power supply to meet your configuration, we suggest that you use the HP Power Advisor to decide the "Right-Size" for your configuration. All HP Common Slot power sources are UL, CE Mark Compliant, Hot Plug and Redundant (redundancy dependent on node configurations).

It is highly recommended that you use the HP Power Calculator in defining the "Right-Size" power supply for your needs.

The HP ProLiant CS Power supplies meet multiple Energy Efficiency Initiatives including:

- Climate Savers Computing Initiative (CSCI) Silver, Gold, and Platinum power efficiency ratings
- ECOS Consulting/80PLUS Silver, Gold, and Platinum power efficiency ratings

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



Standard Features

System Fans Non redundant model - 8 fans required
Redundant model - redundant fan kit required
NOTE: all 8 fan bays must be populated with either redundant or non-redundant fans
NOTE: mixing and matching of fans is not allowed

Required Cabling For required cabling information, refer to the HP Web site at: www.hp.com/servers/sl165s

Operating Systems and Virtualization Software Support for ProLiant Servers [Microsoft Windows Server](#)
[Red Hat Enterprise Linux \(RHEL\)](#)
[SUSE Linux Enterprise Server \(SLES\)](#)
[Oracle Solaris](#)
[VMware](#)
[Citrix Essentials for XenServer \(Retail\)](#)
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>

Graphics 32MB shared supporting 1600x1200x16M resolution

Form Factor HP ProLiant s6500 Chassis - 4U
HP ProLiant SL165s G6 1U full width server tray

Embedded Manageability **HP LO100 Advanced** HP ProLiant Onboard Administrator Powered by Lights-Out 100 is standard with this server and has LO100i Advanced Licenses for Virtual KVM and Virtual Media available as options.

Standard Features:

- Embedded IPMI standard reporting
- System event log access
- Remote Serial console (serial redirection)
- Browser, Telnet access
- SMASH-CLP compliant
- IPMI 2.0 compliant
- DCMI 1.0 compliant
- Secure Socket Layer Encryption
- Secure Shell Encryption

Licensed Features:

- Virtual media (Floppy, CD, USB 2.0) with Advanced License
 - Virtual KVM with Advanced License
-



Standard Features

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

Warranty

This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners. Hardware diagnostic support and repair is available for one year from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HP Care Pack services or customized service agreements. Hard drives have either a one year or three year warranty.

NOTE: Server Warranty includes 1 year Parts, 1 year labor, and 1 year on-site service. APJ 3/3/3.

Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have HP replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at:

<http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>.



Optional Features

HP Insight Control management software

HP Insight Control for Linux

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

HP Insight Control for Linux serves environments requiring a Linux-based management console. See www.hp.com/go/ic-linux.

HP Insight Control for Linux includes one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, please visit: <http://www.hp.com/services/insight>

HP Insight Control server deployment

HP Insight Control server deployment is an optional deployment solution for HP ProLiant and Integrity servers hosted on a Windows CMS. It automates the process of deploying and provisioning server software, enabling companies to quickly and easily adapt to changing business demands. Insight Control server deployment includes software optimizations for HP servers, including the HP scripting toolkits, configuration jobs for leading industry-standard operating systems, sample unattended files, and HP server support packs that include software drivers, management agents, and important documentation. Deploying servers can be accomplished either through imaging or through scripting.

Insight Control server deployment is hosted on a Windows server and is intended for heterogeneous environments deploying Windows, Linux, VMware ESX and Microsoft Hyper-V systems.

Insight Control server deployment includes one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, please visit: <http://www.hp.com/services/insight>



Optional Features

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

Factory Express Portfolio for Servers and Storage

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

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



Service and Support

NOTE: HP Care Pack services are offered at enclosure level only.

Service and Support

HP Technology Services for Industry Standard Servers and BladeSystem

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

What HP ProLiant and BladeSystem Services can do for you

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

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

Optimized Care

Optimized Care Package: Supports maintaining servers at optimum performance availability

HP ProLiant Server Hardware Installation

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

HP Installation and Startup for Insight Control Software

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

3-Year HP Critical Advantage

Provides end-to-end infrastructure support solution for business critical applications running on virtualized/x86 infrastructures, enabling the customers to cost effectively build, operate, and continuously improve their IT environment

<http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=4AA3-1772ENW>

Additional Services: Data Center Transformation Service



Service and Support

Standard Care

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

HP ProLiant Server Hardware Installation

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

HP Installation and Startup for Insight Control Software

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

3-Year HP 6 hour Hardware Support Onsite Call-to-Repair Service

Provides an IT manager with a team of support specialists who will quickly begin troubleshooting the system to help return the hardware to operating condition within 6 hours of the initial service request to the HP Global Solution Center
<http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6636ENN>

3-Year , HP 24x7 Software Support for Insight Control

Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers
<http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6645EEE.pdf>

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

Basic Care

Basic Care Package: delivers minimum recommended support service level

HP ProLiant Server Hardware Installation

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

HP Installation and Startup for Insight Control Software

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

3-Year HP 24x7 4 hour Response, Hardware Support Onsite Service

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

3-Year , HP 24x7 Software Support for Insight Control

Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers
<http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6645EEE.pdf>

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



Service and Support

Insight Remote Support The packages include HP Insight Remote Support that uses proven technology to deliver secure, reliable 24x7 remote monitoring, diagnoses, and problem resolution. It is available at no additional cost to all warranty, HP Care Pack Service, and service agreement customers.

For more information To learn more on HP ProLiant servers and HP BladeSystem servers, please contact your HP sales representative or HP Authorized Channel Partner. Or visit: <http://www.hp.com/services/proliant>

Customer Technical Training In today's cost-conscious business environment, IT professionals, developers, consultants and users face an interesting challenge: how to keep up with the latest technologies and expand important skills while delivering profitable results on current projects. To help address this challenge, HP offers innovative training solutions that help keep you up-to-date on virtualization, server, storage, Insight Control, Citrix, Microsoft® and open source/Linux-related topics-while spending less time away from business-critical activities.

HP Services Awards HP Technology Services continues to be recognized for service and support excellence by customers, partners, industry organizations and publications around the world. Recent honors and award reflect our services team's dedications, technical expertise, professionalism and uncompromising commitment to customer satisfaction.

Additional Services Information To learn more on HP ProLiant servers, HP BladeSystem servers and HP storage products, please contact your HP sales representative or HP Authorized Channel Partner. Or visit: www.hp.com/services/proliant or www.hp.com/services/ bladesystem or <http://www.hp.com/hps/storage>



Pre-configured Models

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

NOTE: Pre-configured models ship with the configurations below. Options can be selected from the Core or Additional options section of this QuickSpecs.

NOTE: HP does not allow factory integration of options into pre-configured models. Any additional options purchased will be shipped separately.

NOTE: If you desire a custom configuration please see "Configuration Information - Factory Integrated Models" section of this QuickSpecs.

NOTE: Server SKUs below are the server tray ONLY, a chassis is needed to run servers.

NOTE: Mixing and matching of half width trays is supported - See s6500 Tray mixing support plan.

Performance Models

| | | |
|--|--------------------|--|
| HP ProLiant SL165s G7 1U Full Width Tray 6176 2P 32GB Server 626715-B21 | Processor(s) | (2) AMD Opteron™ 6176 (2.3GHz/12-core/12MB/80W) Processors |
| | Cache Memory | 12MB (1 x 12MB) Level 3 cache |
| | Memory | 32 GB (8 x 4 GB) PC3-10600R (DDR3-1333) Registered DIMM NOTE: Total of 24 DIMM slots. |
| | Network Controller | (2) HP NC362i Integrated Dual Port Gigabit Server Adapter |
| | Storage Controller | HP Embedded Smart Array B110i SATA RAID Controller (RAID 0, 1, 10) |
| | Hard Drive | None ship standard |
| | Internal Storage | 6 LFF or 8 SFF Hard drives |
| | Power Supply | Chassis sold separately |
| | Fans | Chassis sold separately |
| | Form Factor | 1U Full Width server tray |
| | Warranty | Server Warranty includes 1 year Parts, 1 year Labor, 1-year on-site support with next business day response. (APJ 3/3/3) |

Base Models

| | | |
|--|--------------------|--|
| HP ProLiant SL165s G7 1U Full Width Tray 6136 1P 16GB Server 626714-B21 | Processor(s) | (1) AMD Opteron™ 6136 (2.4GHz/8-core/12MB/80W) Processor |
| | Cache Memory | 12MB (1 x 12MB) Level 3 cache |
| | Memory | 16 GB (4 x 4 GB) PC3-10600R (DDR3-1333) Registered DIMM NOTE: Total of 24 DIMM slots. |
| | Network Controller | (2) HP NC362i Integrated Dual Port Gigabit Server Adapter |
| | Storage Controller | HP Embedded Smart Array B110i SATA RAID Controller (RAID 0, 1, 10) |
| | Hard Drive | None ship standard |
| | Internal Storage | 6 LFF or 8 SFF Hard drives |
| | Power Supply | Chassis sold separately |
| | Fans | Chassis sold separately |
| | Form Factor | 1U Full Width server tray |
| | Warranty | Server Warranty includes 1 year Parts, 1 year Labor, 1-year on-site support with next business day response. (APJ 3/3/3) |



Pre-configured Models

Entry Models

| | | |
|---|---------------------------|--|
| HP ProLiant SL165s G7 1U Full Width Tray 6128 1P 8GB Server 626713-B21 | Processor(s) | (1) AMD Opteron™ 6128 (2.0GHz/8-core/12MB/80W) Processor |
| | Cache Memory | 12MB (1 x 12MB) Level 3 cache |
| | Memory | 8 GB (4 x 2 GB) PC3-10600R (DDR3-1333) Registered DIMM NOTE: Total of 24 DIMM slots. |
| | Network Controller | (2) HP NC362i Integrated Dual Port Gigabit Server Adapter |
| | Storage Controller | HP Embedded Smart Array B110i SATA RAID Controller (RAID 0, 1, 10) |
| | Hard Drive | None ship standard |
| | Internal Storage | 6 LFF or 8 SFF Hard drives |
| | Power Supply | Chassis sold separately |
| | Fans | Chassis sold separately |
| | Form Factor | 1U Full Width server tray |
| | Warranty | Server Warranty includes 1 year Parts, 1 year Labor, 1-year on-site support with next business day response. (APJ 3/3/3) |

S6500 tray mixing support plan

NOTE: s6500 is a 4U chassis.

NOTE: No mixing of half-width and full-width trays.

NOTE: Intel and AMD trays can be mixed in the same chassis.



Configuration Information - Factory Integrated Models

NOTE: This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for information on configurable product offerings and requirements.

NOTE: Configure-to-order (CTO) servers must start with a CTO Chassis.

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

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

| | | |
|-------------------|---|--|
| HP Chassis | <p>NOTE: If you already have an s6500 chassis skip to Step 1A below.</p> <p>HP ProLiant s6500 w/o Fans 4U Configure-to-order Chassis 614167-B21</p> <p>NOTE: You must choose Power Supplies and fans as the chassis does not include them.</p> | |
| HP Chassis Fans | <p>HP s6500 Redundant Fan Kit 617856-B21</p> <p>NOTE: This kit includes only 1 fan</p> <p>NOTE: This selection must be ordered in quantities of 8.</p> <p>HP s6500 Non Redundant Fan Kit 617858-B21</p> <p>NOTE: This kit includes only 1 fan</p> <p>NOTE: This selection must be ordered in quantities of 8.</p> | |
| HP Rail Kits | <p>HP s6500 4U 3rd Party Rail Kit 601946-B21</p> <p>HP s6500 4U Rail Kit 599109-B21</p> | |
| HP Power Supplies | <p>NOTE: 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/hppoweradvisor</p> <p>HP 750W Common Slot Platinum Hot Plug Power Supply Kit 593831-B21</p> <p>HP 750W Common Slot Gold Hot Plug Power Supply Kit 512327-B21</p> <p>HP 1200W Common Slot Silver Hot Plug Power Supply Kit 500172-B21</p> <p>HP 1200W Common Slot Platinum Hot Plug Power Supply Kit 578322-B21</p> <p>NOTE: Option Kits contain optional power supply, an IEC power cable and PDU IEC cables.</p> | |

Step 1A: Select Nodes

| | | |
|-----------------|--|------------|
| HP Server Nodes | HP ProLiant SL165s G7 Tray Node Server | 626699-B21 |
|-----------------|--|------------|

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

| | | |
|---------------|--|--|
| HP Processors | <p>Twelve-Core Processors</p> <p>NOTE: If 2 processors are desired, select one xxxxx-L21 and one xxxxx-B21.</p> <p>HP SL165s G7 AMD Opteron™ 6176 (2.3GHz/12-core/12MB/115W) FIO Processor Kit 635811-L21</p> <p>HP SL165s G7 AMD Opteron™ 6172 (2.1GHz/12-core/12MB/115W) FIO Processor Kit 642189-L21</p> <p>HP SL165s G7 AMD Opteron™ 6166HE (1.8GHz/12-core/12MB/85W) FIO Processor Kit 635809-L21</p> <p>Eight-Core Processors</p> | |
|---------------|--|--|



Configuration Information - Factory Integrated Models

| | |
|--|------------|
| HP SL165s G7 AMD Opteron™ 6140 (2.6GHz/8-core/12MB/115W) FIO Processor Kit | 635810-L21 |
| HP SL165s G7 AMD Opteron™ 6136 (2.4GHz/8-core/12MB/115W) FIO Processor Kit | 642190-L21 |
| HP SL165s G7 AMD Opteron™ 6128 (2.0GHz/8-core/12MB/115W) FIO Processor Kit | 642191-L21 |

HP Memory

Registered DIMMs (RDIMMs)

| | |
|--|------------|
| HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit | 593907-B21 |
| HP 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit | 593911-B21 |
| HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit | 604500-B21 |
| HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit | 604502-B21 |
| HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit | 593913-B21 |
| HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit | 593915-B21 |

Unbuffered with ECC DIMMs (UDIMMs)

| | |
|---|------------|
| HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit | 593921-B21 |
| HP 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit | 593923-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: <http://www.hp.com/go/proliant-energy-efficient>

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

NOTE: PC3L is a low voltage memory.



Configuration Information - Factory Integrated Models

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

| | | |
|------------------------|--|------------|
| HP Storage Controllers | HP Smart Array P212/256 BBWC 1-ports Int/1-ports Ext PCIe x8 FIO SAS Controller NOTE: HP PCIe x16 SL160sG6/165sG7 Riser Kit is required when using the P212 controller. The P212 is always configured in the external PCIe x16 slot. | 491191-B21 |
| | HP Smart Array P410/ZM 2-ports Int PCIe x8 FIO SAS Controller NOTE: HP PCIe x4 SL160sG6/165sG7 Riser Kit is required when using the P410 controller. The P410 is always configured in the internal PCIe x4 slot. | 462860-B21 |
| | HP Smart Array P410/256 BBWC 2-ports Int PCIe x8 FIO SAS Controller NOTE: HP PCIe x4 SL160sG6/165sG7 Riser Kit is required when using the P410 controller. The P410 is always configured in the internal PCIe x4 slot. | 491195-B21 |
| | HP Smart Array P411/256 BBWC 2-ports Ext PCIe x8 FIO SAS Controller NOTE: HP PCIe x16 SL160sG6/165sG7 Riser Kit is required when using the P411 controller. The P411 is always configured in the external PCIe x16 slot. | 491193-B21 |

Step 4: Choose Additional Options for Factory Integration

NOTE: For additional options, please refer to the "Core Options" and "Additional Options" section below.



Core Options

NOTE: Some options may not be available for factory integration. Please contact an HP sales representative for additional information.

| | | |
|--------------------------|--|------------|
| HP Unique Options | HP Dedicated Management Port Kit | 516006-B21 |
| | HP Input/Output x16 SL165s G7/SL160s G6 Riser Kit | 632893-B21 |
| | NOTE: This kit is required for any option going in the external PCI slot. | |
| | HP SL160s G6/SL165s G7 X4 PCI-E Riser Kit | 636237-B21 |
| | NOTE: This kit is required for any option going in the internal PCI slot. | |
| | HP DL165 G7 Secure Card Reader Module Option Kit | 592710-B21 |
| | HP Internal USB Cable G6 Kit | 536769-B21 |
| | HP SL160s G6/SL165s G7 Small Form Factor 2 Drive Cage Kit | 635914-B21 |
| | NOTE: This kit is required for each of the first 4 SFF (2.5") hard drives or SSDs. For SFF drives numbered 5 - 8, it is not required. | |
| | HP s6500 Full Tray Node Blank Kit | 627051-B21 |
| | NOTE: Node blank is needed when removing full width tray for service. | |
| | NOTE: Node blank is needed when not completely filling s6500 chassis. | |
| | NOTE: 1 node blank kit is needed for every 1U full width space left in chassis. | |
| | HP s6500 Redundant Fan Kit | 617856-B21 |
| | NOTE: It is required that the entire chassis be filled with fans - Part number only contains 1 fan, 8 must be purchased. | |
| | HP s6500 Non Redundant Fan Kit | 617858-B21 |
| | NOTE: It is required that the entire chassis be filled with fans - Part number only contains 1 fan, 8 must be purchased. | |
| | HP s6500 Chassis Handles Kit | 608477-B21 |
| | HP s6500 4U 3rd Party Rail Kit | 601946-B21 |
| | HP s6500 4U Rail Kit | 599109-B21 |

HP Processor

Twelve-Core Processors

| | |
|--|------------|
| HP SL165s G7 AMD Opteron™ 6176 (2.3GHz/12-core/12MB/115W) Processor Kit | 635811-B21 |
| HP SL165s G7 AMD Opteron™ 6172 (2.1GHz/12-core/12MB/115W) Processor Kit | 642189-B21 |
| HP SL165s G7 AMD Opteron™ 6166HE (1.8GHz/12-core/12MB/85W) Processor Kit | 635809-B21 |

Eight-Core Processors

| | |
|---|------------|
| HP SL165s G7 AMD Opteron™ 6140 (2.6GHz/8-core/12MB/115W) Processor Kit | 635810-B21 |
| HP SL165s G7 AMD Opteron™ 6136 (2.4GHz/8-core/12MB/115W) Processor Kit | 642190-B21 |
| HP SL165s G7 AMD Opteron™ 6128 (2.0GHz/8-core/12MB/115W) Processor Kit | 642191-B21 |
| HP SL165s G7 AMD Opteron™ 6132HE (2.2GHz/8-core/12MB/85W) Processor Kit | 635808-B21 |



Core Options

| | |
|------------------|--|
| HP Memory | <p>Registered DIMMs (RDIMMs)</p> <p>HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit 593907-B21</p> <p>HP 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit 593911-B21</p> <p>HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit 604500-B21</p> <p>HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit 604502-B21</p> <p>HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit 593913-B21</p> <p>HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit 593915-B21</p> <p>Unbuffered with ECC DIMMs (UDIMMs)</p> <p>HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit 593921-B21</p> <p>HP 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit 593923-B21</p> <p>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.</p> <p>NOTE: Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: http://www.hp.com/go/proliant-energy-efficient</p> <p>NOTE: There is a maximum support limitation of 8 ranks per memory channel (maximum of 2 quad rank DIMMs per channel)</p> <p>NOTE: PC3L is a low voltage memory.</p> |
|------------------|--|

HP Hard Drives

NOTE: The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

NOTE: Hard drives have either a one year or three year warranty.

NOTE: The hard drives use a quick release carrier.

NOTE: SAS and SATA HDDs cannot be mixed in the same platform. SAS and SSD can be mixed and SATA and SSD can be mixed.

NOTE: The HP 2 Drive SFF Cage SL160sG6/165sG7 Kit (635914-B21) is required for each of the first 4 SFF (2.5") hard drives or SSDs. For SFF drives numbered 5 - 8, it is not required.

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

HP 600GB 6G SAS 15K rpm LFF (3.5-inch) Quick-release Dual Port Enterprise 3yr Warranty Hard Drive 574758-B21

HP 300GB 6G SAS 15K rpm LFF (3.5-inch) Quick-release Dual Port Enterprise 3yr Warranty Hard Drive 585980-B21

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



Core Options

| | |
|--|------------|
| HP 300GB 6G SAS 10K rpm SFF (2.5-inch) Quick-release Dual Port Enterprise 3yr Warranty Hard Drive | 574879-B21 |
| SAS Non-Hot Plug LFF (3.5-inch) Midline (MDL) Drives - with quick-release (QR) carrier | |
| HP 2TB 6G SAS 7.2K rpm LFF (3.5-inch) Quick-release Dual Port Midline 1yr Warranty Hard Drive | 574761-B21 |
| SATA Non-Hot Plug LFF (3.5-inch) Entry (ETY) Drives - with quick-release (QR) carrier | |
| HP 160GB 3G SATA 7.2K rpm LFF (3.5-inch) Quick-release Entry 1yr Warranty Hard Drive | 574021-B21 |
| SATA Non-Hot Plug LFF (3.5-inch) Midline (MDL) Drives - with quick-release (QR) carrier | |
| HP 2TB 3G SATA 7.2K rpm LFF (3.5-inch) Quick-release Midline 1yr Warranty Hard Drive | 574755-B21 |
| HP 1TB 3G SATA 7.2K rpm LFF (3.5-inch) Quick-release Midline 1yr Warranty Hard Drive | 574025-B21 |
| HP 500GB 3G SATA 7.2K rpm LFF (3.5-inch) Quick-release Midline 1yr Warranty Hard Drive | 574023-B21 |
| SATA Non-Hot Plug SFF (2.5-inch) Midline (MDL) Drives - with quick-release (QR) carrier | |
| HP 500GB 3G SATA 7.2K rpm SFF (2.5-inch) Quick-release Midline 1yr Warranty Hard Drive | 574953-B21 |
| SATA Non-Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives - with quick-release (QR) carrier | |
| HP 400GB 3G SATA MLC SFF (2.5-inch) Quick-release Enterprise Mainstream 3yr Wty Solid State Drive | 636625-B21 |
| HP 200GB 3G SATA MLC SFF (2.5-inch) Quick-release Enterprise Mainstream 3yr Wty Solid State Drive | 636623-B21 |
| HP 100GB 3G SATA MLC SFF (2.5-inch) Quick-release Enterprise Mainstream 3yr Wty Solid State Drive | 636621-B21 |



Core Options

| | | |
|--|--|------------|
| HP Networking | Gigabit Ethernet Adapters | |
| | HP NC112T PCI Express Gigabit Server Adapter | 503746-B21 |
| | HP NC360T PCI-E Dual Port Gigabit Server Adapter | 412648-B21 |
| | HP NC365T 4-port Ethernet Server Adapter | 593722-B21 |
| | HP NC373F PCI-E Multifunction 1000SX Gigabit Svr Adapter | 394793-B21 |
| | HP NC373T PCI-E Multifunction Gigabit Server Adapter | 394791-B21 |
| | HP NC375T PCI Express Quad Port Gigabit Server Adapter | 538696-B21 |
| | HP NC382T PCI Express Dual Port Multifunction Gigabit Server Adapter | 458492-B21 |
| | 10 Gigabit Ethernet Adapters | |
| | NOTE: A minimum of two Gigabytes (2 GB) of server memory is required per each NC522SFP adapter. | |
| | NOTE: Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately. | |
| | HP NC522SFP Dual Port 10GbE Gigabit Server Adapter | 468332-B21 |
| | HP NC523SFP 10Gb 2-port Server Adapter | 593717-B21 |
| | HP NC550SFP Dual Port 10GbE Server Adapter | 581201-B21 |
| HP NC552SFP 10Gb 2-port Ethernet Server Adapter | 614203-B21 | |
| NOTE: Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs | | |
| HP 10 GbE PCI-e G2 Dual Port Network Interface Card | 516937-B21 | |
| <hr/> | | |
| HP InfiniBand | HP InfiniBand 4X QDR ConnectX-2 PCIe G2 Dual Port HCA | 592520-B21 |
| | HP InfiniBand 4X DDR ConnectX-2 PCIe G2 Dual Port HCA | 592521-B21 |
| | QLogic InfiniBand 4X QDR PCI-E G2 Dual Port HCA | 583211-B21 |
| | NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/13078_na/13078_na.html | |
| <hr/> | | |
| HP I/O Expansion Options | HP Input/Output x16 SL165s G7/SL160s G6 Riser Kit | 632893-B21 |
| | NOTE: This kit is required for any option going in the external PCI slot. | |
| | HP SL160s G6/SL165s G7 X4 PCI-E Riser Kit | 636237-B21 |
| | NOTE: This kit is required for any option going in the internal PCI slot. | |
| <hr/> | | |
| HP Power Supplies | NOTE: 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/hppoweradvisor | |
| | HP 750W Common Slot Platinum Hot Plug Power Supply Kit | 593831-B21 |
| | HP 750W Common Slot Gold Hot Plug Power Supply Kit | 512327-B21 |
| | HP 1200W Common Slot Silver Hot Plug Power Supply Kit | 500172-B21 |
| | HP 1200W Common Slot Platinum Hot Plug Power Supply Kit | 578322-B21 |



Additional Options

| | | |
|---|---|------------|
| High Performance Clusters | HP Cluster Management Utility | |
| | HP Cluster Management Utility Media | 433257-B21 |
| | NOTE: Order a minimum of one license per cluster to purchase media including software and documentation, which will be delivered to the customer, and also licenses CMU management. No license key is delivered or required. | |
| | NOTE: For additional license kits please see the QuickSpecs at: http://h18004.www1.hp.com/products/quickspecs/12612_na/12612_na.html | |
| HP HPC Linux Value Pack | HP HPC Linux Value Pack | |
| | HP High Performance Computing Linux Value Pack 1 Processor Flexible License | TC293A |
| | NOTE: This part number can be used to purchase one certificate for multiple licenses with a single activation key. Each license is for one socket (a.k.a. processor). Customer will receive a printed end user license agreement and license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online in order to obtain a license key. | |
| | HP High Performance Computing Linux Value Pack Media Kit | TC294A |
| NOTE: This part number can be used to purchase media including software and documentation, which will be delivered to the customer. | | |
| NOTE: For additional license kits please see the QuickSpecs at: http://h18004.www1.hp.com/products/quickspecs/13485_na/13485_na.html | | |
| HP Drive Cage Options | HP SL160s G6/SL165s G7 Small Form Factor 2 Drive Cage Kit | 635914-B21 |
| | NOTE: The HP 2 Drive SFF Cage SL160sG6/165sG7 Kit is required for each of the first 4 SFF (2.5") hard drives or SSDs. For SFF drives numbered 5 - 8, it is not required. | |
| HP Security | HP Trusted Platform Module Option | 488069-B21 |
| | NOTE: The TPM (Trusted Platform Module) is a microcontroller chip that can securely store artifacts used to authenticate the server platform. These artifacts can include passwords, certificates and encryption keys. Windows® BitLocker™ Drive Encryption (BitLocker) is a data protection feature available in Windows Server® 2008. BitLocker leverages the enhanced security capabilities of a Trusted Platform Module (TPM) version 1.2. The TPM works with BitLocker to help protect user data and to ensure that a server running Windows Server 2008 has not been tampered with while the system was offline. For more information about TPM, including a white paper, go to: www.hp.com/go/TPM . | |
| | 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. | |
| HP Storage Controllers | SAS Controllers | |
| | Smart Array P212 Controller | |
| | NOTE: HP PCIe x16 SL160sG6/165sG7 Riser Kit (632893-B21) is required when using the P212 controller. The P212 is always configured in the external PCIe x16 slot. | |
| | HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller | 462828-B21 |



Additional Options

HP Smart Array P212/256 1-ports Int/1-ports Ext PCIe x8 SAS Controller 462834-B21

Smart Array P410 Controller

NOTE: HP PCIe x4 SL160sG6/165sG7 Riser Kit (636237-B21) is required when using the P410 controller. The P410 is always configured in the internal PCIe x4 slot.

HP Smart Array P410/256 2-ports Int PCIe x8 SAS Controller 462862-B21

HP Smart Array P410/512 BBWC 2-ports Int PCIe x8 SAS Controller 462864-B21

HP Smart Array P410/512 FBWC 2-ports Int PCIe x8 SAS Controller 578230-B21

HP Smart Array P410/1G FBWC 2-ports Int PCIe x8 SAS Controller 572532-B21

Smart Array P411 Controller

NOTE: HP PCIe x16 SL160sG6/165sG7 Riser Kit (632893-B21) is required when using the P411 controller. The P411 is always configured in the external PCIe x16 slot.

HP Smart Array P411/256 2-ports Ext PCIe x8 SAS Controller 462830-B21

HP Smart Array P411/512 BBWC 2-ports Ext PCIe x8 SAS Controller 462832-B21

HP Smart Array P411/512 FBWC 2-ports Ext PCIe x8 SAS Controller 578229-B21

HP Smart Array P411/1G FBWC 2-ports Ext PCIe x8 SAS Controller 572531-B21

Optional Upgrades

HP 256MB P-series Cache Upgrade 462968-B21

NOTE: Supported on HP Smart Array P212 Controller only.

HP 512MB P-Series Battery Backed Write Cache Upgrade 462967-B21

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

HP 650 mAh P-Series Battery 462969-B21

NOTE: To enable BBWC on the 256MB cache.

NOTE: Supported on HP Smart Array P212 Controller, HP Smart Array P410 Controller, and HP Smart Array P411 Controller only.

HP 512MB Flash Backed Write Cache 534916-B21

HP 1GB Flash Backed Cache 534562-B21

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

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

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

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

SCSI HBA

HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter 412911-B21

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

http://h18000.www1.hp.com/products/quickspecs/12566_div/12566_div.html
(SC11Xe Host Bus Adapter)



Additional Options

| | | |
|----------------|---|--------|
| HP Power Cords | HP 1.83m 10A C13 Power Cord | AF556A |
| | HP 2m 10A C13-C14 Redundant Jumper Cord | AF573A |

HP Storage Options

Fibre Channel HBA

NOTE: For the complete listing of Fibre Channel Host Bus Adapters for Windows 2000, Windows Server 2003 and Linux, please see:

<http://h18006.www1.hp.com/storage/saninfrastructure/hba.html>

Brocade Fibre Channel HBAs

| | |
|--|--------|
| HP 81B PCIe 8Gb Fibre Channel Single Port Host Bus Adapter | AP769A |
| HP 82B PCIe 8Gb Fibre Channel Dual Port Host Bus Adapter | AP770A |
| HP 41B PCIe 4Gb Fibre Channel Single Port Host Bus Adapter | AP767A |
| HP 42B PCIe 4Gb Fibre Channel Dual Port Host Bus Adapter | AP768A |

Emulex Fibre Channel HBAs

| | |
|---|--------|
| HP 81E 8Gb Single Port PCI-e Fibre Channel Host Bus Adapter | AJ762A |
| HP 82E 8Gb Dual Port PCI-e Fibre Channel Host Bus Adapter | AJ763A |
| HP FC2142SR 4Gb PCIe Host Bus Adapter | A8002A |
| HP FC2242SR 4Gb PCIe DC Host Bus Adapter | A8003A |

QLogic Fibre Channel HBAs

| | |
|---|--------|
| HP 81Q PCI-e Fibre Channel Host Bus Adapter | AK344A |
| HP 82Q 8Gb Dual Port PCI-e Fibre Channel Host Bus Adapter | AJ764A |
| HP FC1142SR 4Gb PCIe Host Bus Adapter | AE311A |
| HP FC1242SR 4Gb PCIe DC Host Bus Adapter | AE312A |

SCSI HBA

| | |
|--|--------|
| HP U320e SCSI Dual Channel Host Bus Adapter | AH627A |
| NOTE: Recommended HBA for MSL SCSI Tape Library connect. Converged Network Adapter | |
| HP CN1100E Dual Port Converged Network Adapter | BK835A |

HP Disk Storage Systems

Disk Enclosures

| | |
|-------------------------|--------|
| HP D2600 Disk Enclosure | AJ940A |
| HP D2700 Disk Enclosure | AJ941A |

NOTE: Please see the QuickSpecs for additional options and configuration information at:

http://h18000.www1.hp.com/products/quickspecs/13404_na/13404_na.html



Additional Options

HP SL Advanced Power Manager

NOTE: The SL Advanced Power Manager is an optional rack level solution for the HP ProLiant SL6000 which enables server-level DC (or hardware) power on and off and server-level monitoring. In addition, the SL APM will automatically discover SL hardware components which are connected into the SL APM solution.

NOTE: The SL APM does not replace rack PDUs, but is designed to enable the utilization of basic, low cost, rack PDUs while providing the functionality of 'switched' PDUs which provide hardware power on/off of individual servers by turning off the AC power to the power supplies of a given server. Because the SL servers share power supplies to optimize power efficiency, using 'switched' PDUs to turn off the power supplies in the chassis will result in the loss of all servers in that chassis. The SL APM solves this by allowing server-level hardware power on/off of the DC power to the individual server motherboards.

HP SL Advanced Power Manager Kit

538084-B21

HP SL Advanced Power Manager Distribution Module Kit

539264-B21

NOTE: Connects up to 10 chassis.

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

HP Rack Series

HP Rack 10000 G2 Series (Carbon/Graphite Metallic)

HP 10642 G2 Pallet Universal Rack

AF001A

HP 10642 G2 Shock Universal Rack

AF002A

HP 10642 G2 1200mm deep Shock Rack

AF092A

HP 10647 G2 1200mm deep Shock Rack

AF094A

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

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

http://h18000.www1.hp.com/products/quickspecs/12402_na/12402_na.html

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

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

CAUTION: If a third-party rack is used, observe the following additional requirements to ensure adequate airflow and to prevent damage to the equipment: Front and rear doors: If your 42U server rack includes closing front and rear doors, you must allow 830 square inches (5,350 sq cm) 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 2.75 inches (7 cm).

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.



Additional Options

NOTE: Quick deploy rail system provides tool-free support for racks with square or round mounting holes (including Compaq/HP 7000, 9000, 10000 G2 and HP series), with an adjustment range of 24" - 36". The ambidextrous cable management arm can be mounted on either the left or right side for improved cable management.

| | | |
|-----------------------|--------------------------------------|------------|
| HP USB and SD Options | HP USB 2-Button Optical Scroll Mouse | DC172B |
| | HP USB 04 Standard Keyboard | DT528A#ABA |



Memory

HP ProLiant SL165s G7 (all models)

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

NOTE: Chart does not represent all possible memory configurations.

DDR3 memory population guidelines

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

www.hp.com/go/ddr3memory-configurator

Some DIMM installation guidelines are summarized below:

- For servers with twenty-four (24) memory slots:
 - There are four (4) channels per processor; eight (8) channels per server
 - There are three (3) DIMM slots for each memory channel; twenty-four (24) total slots
 - Memory channel 1 consists of the three (3) DIMMs that are furthest from the processor
 - Memory channel 4 consists of the three (3) DIMMs that are closest to the processor
- 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
- 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
- References to the above MHz speeds are for the various speeds of DDR3 DIMMs; 1333 refers to DDR3-1333, etc
- You can only install one quad-rank DIMMs per channel and it must be in the center socket
- You can only install two UDIMMs per channel; if available, the second (or middle) 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



Memory

| DIMM Type -> | Registered DIMMS (RDIMMs) | | | | Unbuffered with ECC DIMMs (UDIMMs) | |
|---|---------------------------|----------------|-------------|----------------|------------------------------------|------|
| DIMM Rank -> | Single Rank | Dual Rank (2R) | | Quad Rank (4R) | Dual Rank (2R) | |
| DIMM Capacity -> | 4GB | 2GB | 8GB | 16GB | 2GB | 4GB |
| DIMM Native Speed (MHz) -> | 1333 | 1333 | 1333 | 1066 | 1333 | 1333 |
| Voltage | LV/Std | Std | LV/Std | Std | Std | Std |
| SLOTS THAT CAN BE POPULATED | | | | | | |
| 24 slot servers | 24 | 24 | 24 | 8 | 16 | 16 |
| MAXIMUM CAPACITY (GB) | | | | | | |
| 24 slot servers | 96 | 48 | 192 | 256* | 32 | 64 |
| POPULATED DIMM SPEED (MHz) | | | | | | |
| 1 DIMM Per Channel | 1066/1333** | 1333 | 1066/1333** | 1066 | 1333 | 1333 |
| 2 DIMM Per Channel | 1066/1333** | 1333 | 1066/1333** | n/a | 1333 | 1333 |
| 3 DIMM Per Channel | 1066/1333** | 1066 | 1066 | n/a | n/a | n/a |
| * This capacity is achieved by loading 1 16GB in center socket and remaining sockets with 8GB DIMMs | | | | | | |
| ** LV runs at 1066/Std voltage runs at 1333 | | | | | | |

DIMM slot and configuration diagrams

Basic memory slot & population diagram

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

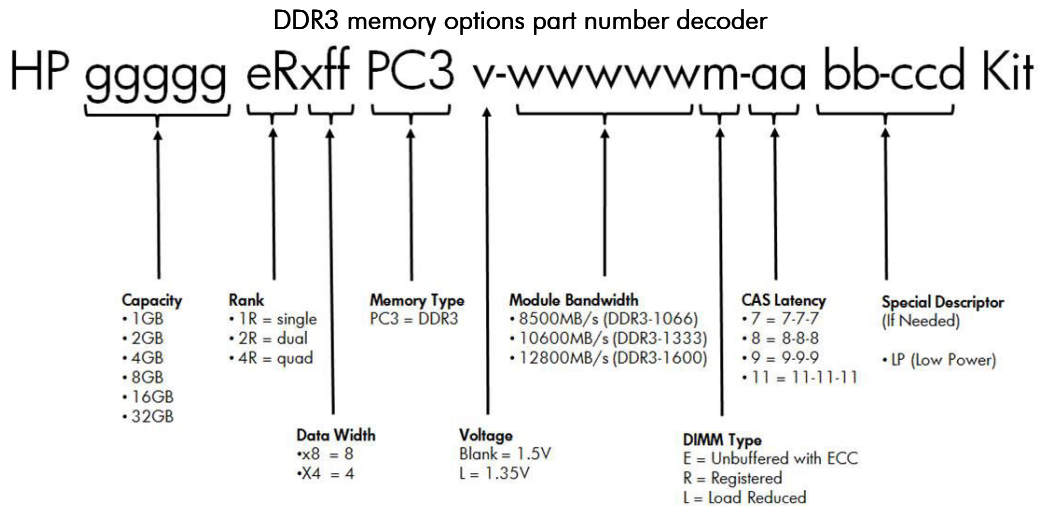
| 24 DIMM SLOTS (12 per CPU node) | | | | | |
|---------------------------------|--------|------------------|--------|------------------|--------|
| | CPU1 | | CPU2 | | |
| | slot # | population order | slot # | population order | |
| Chnl 1 | 1 | A | 1 | A | Chnl 1 |
| | 2 | I | 2 | I | |
| | 3 | E | 3 | E | |
| Chnl 2 | 4 | C | 4 | C | Chnl 2 |
| | 5 | K | 5 | K | |
| | 6 | G | 6 | G | |
| Chnl 3 | 7 | B | 7 | B | Chnl 3 |
| | 8 | J | 8 | J | |
| | 9 | F | 9 | F | |
| Chnl 4 | 10 | D | 10 | D | Chnl 4 |
| | 11 | L | 11 | L | |
| | 12 | H | 12 | H | |



Memory

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

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



Following are memory options available from HP:

HP Memory

Registered DIMMs (RDIMMs)

| | |
|--|------------|
| HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit | 593907-B21 |
| HP 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit | 593911-B21 |
| HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit | 604500-B21 |
| HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit | 604502-B21 |
| HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit | 593913-B21 |
| HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit | 593915-B21 |

Unbuffered with ECC DIMMs (UDIMMs)

| | |
|---|------------|
| HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit | 593921-B21 |
| HP 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit | 593923-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: <http://www.hp.com/go/proliant-energy-efficient>.



Memory

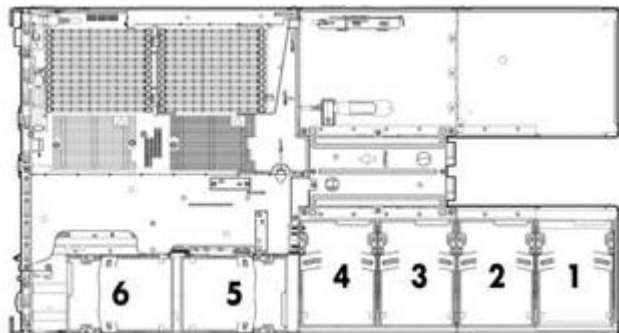
efficient

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

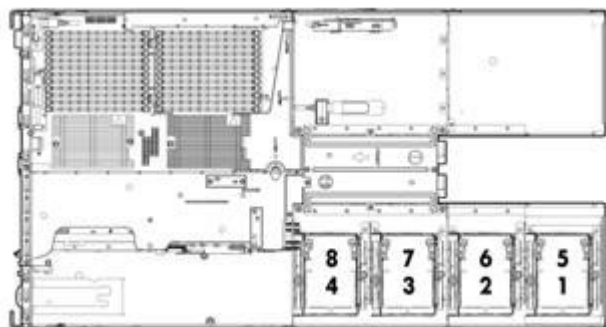
NOTE: PC3L is a low voltage memory.



Storage



1-6 Non-hot plug LFF SATA hard drive bays - Using quick release carrier (LFF SAS supports 1-4 only)



1-8 Non-hot plug SFF SAS, SATA or SSD hard drive bays - Using quick release carrier

Drive Support

Hard Drives

NOTE: The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

NOTE: Hard drives have either a one year or three year warranty.

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

| | Quantity Supported | Position Supported | Controller |
|------------------|--------------------|--------------------|--|
| 600GB 6G SAS 10K | Up to 6 | 1-6 | HP Smart Array P212/Zero Memory Controller |
| 300GB 6G SAS 10K | | | HP Smart Array P212/256 MB Controller |
| | | | HP Smart Array P410/256MB Controller |
| | | | HP Smart Array P410/512MB with BBWC |

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

| | Quantity Supported | Position Supported | Controller |
|------------------|--------------------|--------------------|--|
| 300GB 6G SAS 10K | Up to 8 | 1-8 | HP Smart Array P212/Zero Memory Controller |
| | | | HP Smart Array P212/256 MB Controller |
| | | | HP Smart Array P410/256MB Controller |
| | | | HP Smart Array P410/512MB with BBWC |

Storage

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

| | Quantity Supported | Position Supported | Controller |
|--------------------|--------------------|--------------------|--|
| 2TB 6G SAS 7.2K DP | Up to 6 | 1-6 | HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P410/256MB Controller HP Smart Array P410/512MB with BBWC |

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

| | Quantity Supported | Position Supported | Controller |
|--------------------|--------------------|--------------------|-----------------------------|
| 160GB 3G SATA 7.2K | Up to 6 | 1-6 | HP Embedded SATA Controller |

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

| | Quantity Supported | Position Supported | Controller |
|--|--------------------|--------------------|-----------------------------|
| 2TB 3G SATA 7.2K 1TB 3G SATA 7.2K 500GB 3G SATA 7.2K | Up to 6 | 1-6 | HP Embedded SATA Controller |

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

| | Quantity Supported | Position Supported | Controller |
|--------------------|--------------------------|--------------------|---|
| 500GB 3G SATA 7.2K | Up to 6 with embedded | 1-6 | HP Embedded SATA Controller |
| | Up to 8 with Smart Array | 1-8 | HP Smart Array P410/256MB Controller HP Smart Array P410/512MB with BBWC |

External Storage

| | Quantity Supported | Position Supported | Controller |
|----------------------|--------------------|--------------------|---|
| D2600 Disk Enclosure | Up to 4 Up to 8 | External | HP Smart Array P212/ 256 MB Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/1G FBWC Controller |
| D2700 Disk Enclosure | Up to 2 Up to 4 | External | HP Smart Array P212/ 256 MB Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/1G FBWC Controller |



Power Specifications

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

| HP 750W Common Slot Gold Hot Plug Power Supply Kit | | | | | | | |
|--|------------|------|------|------|------|------|------|
| Part Number | 512327-B21 | | | | | | |
| Input Voltage Range (Vrms) | 100 to 240 | | | | | | |
| Frequency Range (Nominal) (Hz) | 50/60 | | | | | | |
| Nominal Input Voltage (Vrms) | 100 | 120 | 200 | 208 | 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 |



Power Specifications

| HP 1200W Common Slot Platinum Hot Plug Power Supply Kit | | | | | | | |
|---|------------|------|------|------|------|------|------|
| Part Number | 578322-B21 | | | | | | |
| Input Voltage Range (V rms) | 100 to 240 | | | | | | |
| Frequency Range (Nominal) (Hz) | 50/60 | | | | | | |
| Nominal Input Voltage (Vrms) | 100 | 120 | 200 | 208 | 220 | 230 | 240 |
| Maximum Rated Output Wattage Rating | 800 | 900 | 1200 | 1200 | 1200 | 1200 | 1200 |
| Nominal Input Current (A rms) | 9.3 | 8.6 | 6.7 | 6.5 | 6.1 | 5.8 | 5.6 |
| Maximum Rated Input Wattage Rating (Watts) | 889 | 989 | 1290 | 1290 | 1290 | 1290 | 1290 |
| Maximum Rated VA (Volt-Amp) | 927 | 1031 | 1345 | 1345 | 1345 | 1345 | 1345 |
| Efficiency (%) | 90 | 91 | 93 | 93 | 93 | 93 | 93 |
| Power Factor | 0.97 | | | | | | |
| Leakage Current (mA) | 0.42 | 0.50 | 0.83 | 0.87 | 0.92 | 0.96 | 1.00 |
| Maximum Inrush Current (A peak) | 30 | | | | | | |
| Maximum Inrush Current duration (mS) | 20 | | | | | | |
| Maximum British Thermal Unit Rating (BTU-Hr) | 3033 | 3375 | 4403 | 4403 | 4403 | 4403 | 4403 |

| HP 1200W Common Slot Silver Hot Plug Power Supply Kit | | | | | | | |
|---|------------|------|------|------|------|------|------|
| Part Number | 500172-B21 | | | | | | |
| Operational Input Voltage Range (Vrms) | 100 to 240 | | | | | | |
| Frequency Range (Nominal) (Hz) | 50/60 | | | | | | |
| Nominal Input Voltage (Vrms) | 100 | 120 | 200 | 208 | 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) | 6.96 x 17.638 x 35.236in (17.68 x 44.8 x 89.55cm) | | |
| | Weight (approximate) | Maximum | 220lb (99.8kg) | |
| | Input Requirements (per power supply) | Rated Line Voltage | 90 to 140 VAC 180 to 264 VAC | |
| | | Rated Input Current | 7.31A at 115VAC 3.6A at 230VAC | |
| | | Rated Input Frequency | 47 to 63 Hz | |
| | | Rated Input Power | 855W (at 100 VAC), 840.72W (at 200 VAC) | |
| | BTU Rating | Maximum | 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 Power Advisor which is available via the online tool located at URL: www.hp.com/go/hppoweradvisor | | |
| | | <ul style="list-style-type: none"> - Click on the system of interest. Example: SL165s G7 - Follow the instructions of the next screens. | | |
| | System Inlet Temperature | Operating | 50° to 95° F (10° to 35° C) at sea level with an altitude derating of 1.8°F per every 1000 ft (1.0°C per every 305 m) above sea level to a maximum of 10,000 ft (3050 m), no direct sustained sunlight. Maximum rate of change is 18°F/hr (10°C/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 86°F (30°C). | |
| Non-operating | | -22° to 140° F (-30° to 60° C) Maximum rate of change is 36°F/hr (20°C/hr). | | |
| Relative Humidity (non-condensing) | Operating | 10% to 90% relative humidity (Rh), 82.4°F (28°C) maximum wet bulb temperature, non-condensing. | | |
| | Non-operating | 5% to 95% relative humidity (Rh), 101.7°F (38.7°C) maximum wet bulb temperature, non-condensing. | | |
| Altitude | Operating | 10,000 ft (3050 m). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 1500 ft/min (457 m/min). | | |
| | Non-operating | 30,000 ft (9144 m). Maximum allowable altitude change rate is 1500 ft/min (457 m/min). | | |



Technical Specifications

| | | |
|--------------------------------|--|---|
| 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 | |
| | <i>LWAd</i> | 6.4 |
| | <i>LpAm</i> | 45 dBA |
| | Operating | |
| | <i>LWAd</i> | 6.7 |
| | <i>LpAm</i> | 51 dBA |
| Emissions Classification (EMC) | FCC Rating | Class A |
| | Normative Standards | CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1 |

NOTE: Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.

| | | |
|--|--|------------------------------|
| HP Embedded B110i SATA RAID Controller (RAID 0, 1, 10) | Drives Supported | Up to 4 SATA devices |
| | Channels | (4) 1.5Gb SATA |
| | Storage Capacity | 4.0TB internal storage |
| | Data Transfer Method | 32-bit/33-MHz PCI bus-master |
| | Maximum SATA Channel Transfer Rate | 1.5Gb/s per channel |
| | Maximum Transfer Rate per PCI Bus (peak) | 266 MB/s per channel |
| | Protocols | SATA PIO Mode [0-4] |
| | Cable | SATA |
| | Internal ATA Connectors | Four SATA connectors |



Technical Specifications

| | | |
|--|------------------------------|--|
| Two 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 |
| | Controller | Intel® 82576 |
| | Network Transfer Rate | 10Base-T (Half-Duplex) 10Base-T (Full-Duplex) 100Base-TX (Half-Duplex) 100Base-TX (Full-Duplex) 1000Base-TX (Half and Full-Duplex) |
| | 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.

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

