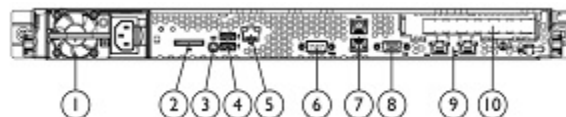
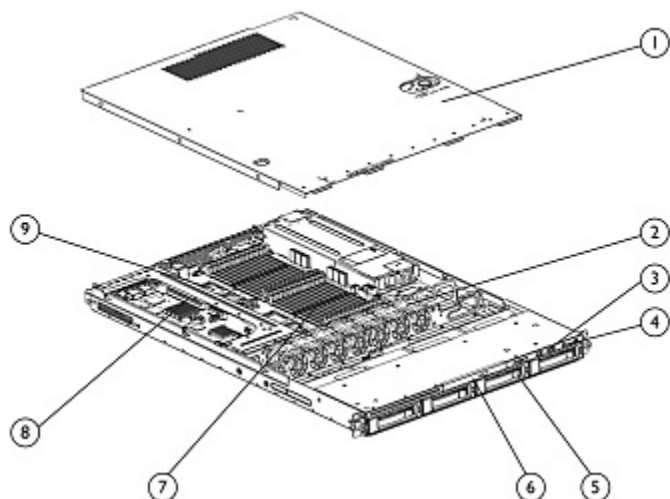


### Overview

#### Hot Plug SAS/SATA or Non-Hot Plug SATA Models



#### Front View:

1. Access panel
2. System fans
3. Front-panel USB 2.0 ports
4. Power switch/system status LEDs
5. Standard 1st , 2nd , 3rd and 4th 3.5" hot-plug SAS/SATA or non-hot plug SATA hard drive bays
6. Optical drive bay
7. Twenty Four DIMM Slots
8. Slot 1: Full-length/Full height x16 PCI-Express Gen2 slot, or Slot 1: Half-length/Full height x16 PCI-Express Gen2 slot and Slot 2: Low Profile x4 PCI-Express Gen2 slot (accepts x8 cards, internal only)
9. Two (2) AMD Opteron 6100 series processors

#### Rear View:

1. Power supply
2. Optional SD Card Reader
3. Unit Identification LED (UID)
4. Two USB ports
5. Optional Lights-Out 100 10/100Mbps port
6. Serial port
7. (2) RJ45 GbE LAN ports (3rd & 4th port)
8. VGA port
9. (2) RJ45 GbE LAN ports (1st & 2nd port)
10. Slot 1: Full-length/Full height x16 PCI-Express Gen2 slot, or Slot 1: Half-length/Full height x16 PCI-Express Gen2 slot and Slot 2: Low Profile x4 PCI-Express Gen2 slot (accepts x8 cards, internal only)

### At A Glance

Introducing the HP ProLiant DL165G7, now available with the latest high performance Opteron Eight and Twelve Core processors, 24 DDR3 memory DIMMs, 2 PCIe Gen2 slots, four NIC ports and an Easy Setup CD.

#### Processors:

- Supports up to two AMD Opteron™ 6000 series Eight and Twelve Core processors
- Supports DirectConnect Architecture
- Supports Power Now

#### Memory:

- Up to 256GB, using 2x8GB Dual-Rank and 1x16GB Quad-Rank PC3-8500R-7 DDR3 Registered (RDIMM) memory per memory channel, operating at 800MHz in 24 slots. (See memory section for population rules)
- Up to 192GB, using 8GB PC3-10600R or PC3-8500R DDR3 Registered (RDIMM) memory, operating at 800MHz when populated at 3 DIMMs per Channel in 24 slots.
- Up to 64GB, using PC3-10600E DDR3 Unbuffered (UDIMM) memory, operating at 1066MHz when populated at 2 DIMMs per Channel in 16 slots.

#### Internal Drive Support:

### Overview

- Internal storage capacity:
  - SATA Capacity: Support for up to 8.0TB (4 x 2TB) with Hot Plug Model. 8.0TB (4 x 2TB) with Non Hot Plug Model
  - SAS Capacity: Support for up to 8.0 TB (4 x 2TB) with Hot Plug Model
- **Network Controller:**
  - (2) HP NC362i Integrated Dual Port Gigabit Server Adapter (4 ports total)
- **Storage Controllers:**
  - Non-Hot Plug SATA Models: HP Embedded B110i SATA Smart Array RAID Controller
  - Cold Plug SATA Models: HP Embedded B110i SATA Smart Array RAID Controller
  - Hot Plug SATA/SAS Models: HP P410 Smart Array Controller or HP Smart Array Hot Plug Advance Pack for B110i SATA RAID license key upgrade.
- **Expansion Slots:**
  - Standard - PCI-Express assembly includes:
    - Slot 1: Either full-length/full height PCI-Express Gen2 x16 or half-length/full height when internal slot is installed
    - Slot 2: half-length/low-profile PCI-Express Gen2 x4 (x8 connector) (Internal ONLY)
- **Infrastructure Management:**
  - HP Lights-Out 100 with optional LO100 Advanced Licenses for Virtual KVM and Virtual Media.
  - HP Insight Control for Linux, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, control and optimize your IT infrastructure through a single, simple management console. Insight Control for Linux supports Linux-based central management servers.
- **USB Ports:**
  - Up to Six USB ports (two front & two rear standard, 2 internal option)
- **Optical Drive:**
  - Support for one (optional): Slim 9.5 mm DVD-ROM or DVD/CD RW
- **Power Supply:**
  - 500W Power Supply [Non-Hot Plug, PFC (Autoswitching)]
  - Optional FIO high-efficiency pluggable power supplies: 750W Power Supply
- **Form Factor:**
  - Rack (1U)
  - Fixed mounting rails included with all models
- **Deployment/Serviceability:**
  - HP ProLiant DL165 G7 models have tool-less fixed rails which provide support for racks with round mounting holes and tool-free support for racks with square mounting holes (including Compaq/HP 7000, 9000, 10000 and HP series), with an adjustment range of 26" - 36
  - Tool-less access to all system components for easy serviceability
  - 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. Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.  
**NOTE:** Server Warranty includes 3 year Next Day Parts replacement, 0-Years Labor, 0-Years Onsite support. Warranty terms may vary by region. 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** AMD Opteron™ Processor Model 6128 (2.0 GHz, 12MB Level 3 Cache, 80W)  
 One of the following depending on Model  
 AMD Opteron™ Processor Model 6128HE (2.0 GHz, 12MB Level 3 Cache, 65W)  
 AMD Opteron™ Processor Model 6134 (2.3 GHz, 12MB Level 3 Cache, 80W)  
**NOTE:** Available through Configure To Order only. See Factory Integration Models section for more details.  
 AMD Opteron™ Processor Model 6136 (2.4 GHz, 12MB Level 3 Cache, 80W)  
 AMD Opteron™ Processor Model 6164HE (1.7 GHz, 12MB Level 3 Cache, 65W)  
**NOTE:** Available through Configure To Order only. See Factory Integration Models section for more details.  
 AMD Opteron™ Processor Model 6172 (2.1 GHz, 12MB Level 3 Cache, 80W)  
 AMD Opteron™ Processor Model 6174 (2.2 GHz, 12MB Level 3 Cache, 80W)  
**NOTE:** Available through Configure To Order only. See Factory Integration Models section for more details.

**Upgradeability** Upgradeable to two processors

**Chipset** AMD Chipset SR5670/SP5100

**Cache Memory** Model Series 6000  
 12MB shared L3

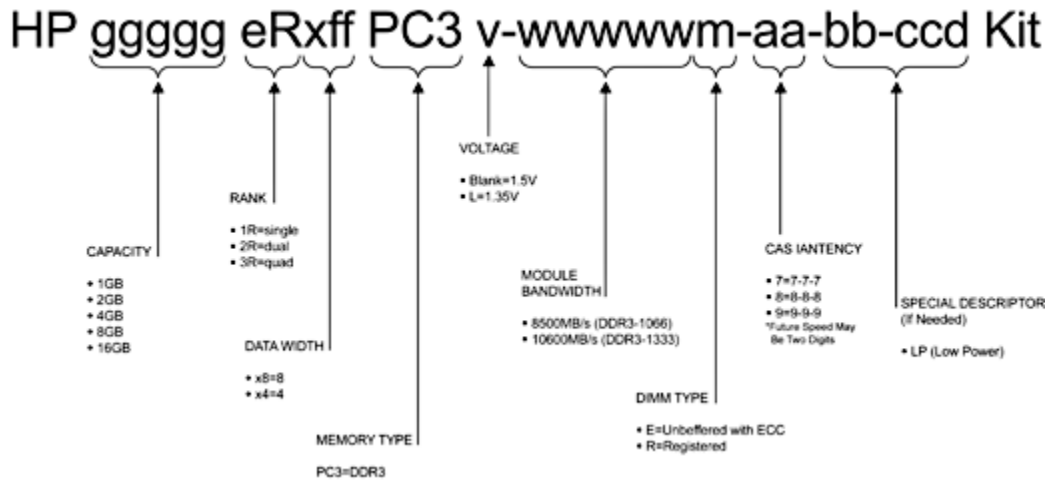
**Memory Protection** Advanced ECC

**Memory** Type DDR3 Registered (RDIMM) or Unbuffered (UDIMM)  
 One of the following depending on Model  
 Standard  
 Entry Model 4 GB (2 x 2 GB) RDIMMs  
 Base Model 8 GB (4 x 2 GB) RDIMMs  
 Performance Model 16 GB (8 x 2 GB) RDIMMs  
 Efficiency Model 4 GB (2 x 2 GB) RDIMMs  
 Maximum (RDIMM) 256 GB (8 x 16 GB + 16 x 8 GB)  
 Maximum (UDIMM) 64 GB (16 x 4 GB)

**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).

**DDR3 memory options part number decoder**

### Standard Features



**Network Controller** (2) HP NC362i Integrated Dual Port Gigabit Server Adapter

| Expansion Slots # | Technology      | Bus Width** | Connector Width | Bus Number* | Device No.** | Form Factor                | Notes     |
|-------------------|-----------------|-------------|-----------------|-------------|--------------|----------------------------|-----------|
| 1                 | PCI-Express 2.0 | x16         | x16             | 5           | 0            | Full Height/Full Length    | 3.3 volts |
| 2***              | PCI-Express 2.0 | x4          | x8              | 2           | 0            | Low Profile, Internal Only | 3.3 volts |

\* 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).

\*\*\*In order to access expansion slot #2, the low profile internal only slot, expansion slot #1 may only be populated with a half length, full height form factor card.

|                           |                       |  |
|---------------------------|-----------------------|--|
| <b>Storage Controller</b> | Non-Hot Plug SATA     | HP Smart Array B110i SATA RAID Controller<br><b>NOTE:</b> To enable RAID for embedded SATA controller, use EZ set-up CD to download driver, hpahcizr.sys, is part of the 8.20 PSP, Smart Start, EZSetup CD. For more information on Smart Array B110i, go to: <a href="http://www.hp.com/go/sataraid">www.hp.com/go/sataraid</a>   |
|                           | Cold Plug SATA Models | HP Smart Array B110i SATA RAID Controller<br><b>NOTE:</b> Supported on LFF models only.  |
|                           | Hot Plug SATA/SAS     | HP Smart Array P410 Controller (RAID 0/1/1+0)<br>HP Smart Array P410 Controller 256 BBWC (RAID/0/1/1+0/5/5+0)<br><b>NOTE:</b> Transfer rate: up to 3 Gb/s SATA, up to 6 Gb/s SAS.<br>HP Smart Array B110i SATA RAID Controller<br><b>NOTE:</b> Hot plug functionality requires the addition of a Smart Array Advanced Pack License Key upgrade (P/N TC421A)<br><b>NOTE:</b> To enable RAID for embedded SATA controller, use EZ set-up CD to download driver, hpahcizr.sys, is part of the 8.20 PSP, Smart Start, EZSetup CD. For more information on Smart Array, go to: <a href="http://www.hp.com/go/sataraid">www.hp.com/go/sataraid</a> |

**NOTE:** A diskette drive or virtual FDD using LO100 Advanced Pack is needed to install storage controller drivers during a Windows operating system installation from a CD.

**NOTE:** Addition of the battery backed cache upgrade enables BBWC, RAID 5, 5+0, array expansion, logical drive extension, RAID migration, and stripe size migration.

**NOTE:** RAID 6 functionality requires the addition of Smart Array Advanced Pack (P/N: 516471-B21).

### Standard Features

|                |                 |   |
|----------------|-----------------|---|
| <b>Storage</b> | Diskette Drives | Via USB only  |
|                | Optical Drives  | Optional SATA 9.5mm DVD-ROM Optical Drive<br>Optional SATA 9.5mm DVD RW Optical Drive |
|                | Hard Drives     | Up to 4 Non-hot plug SATA 3.5" drives   |
|                |                 | Up to 4 Hot plug SAS/SATA 3.5" drives<br>Up to 8 Hot plug SAS/SATA 2.5" drives        |

|                                 |                       |       |           |
|---------------------------------|-----------------------|-------|-----------|
| <b>Maximum Internal Storage</b> | Non-Hot Plug LFF SATA | 8.0TB | 4 x 2TB   |
|                                 | Hot Plug LFF SATA     | 8.0TB | 4 x 2TB   |
|                                 | Hot Plug LFF SAS      | 8.0TB | 4 x 2TB   |
|                                 | Hot Plug SFF SAS      | 4.0TB | 8 x 500GB |

|                   |                         |   |
|-------------------|-------------------------|---|
| <b>Interfaces</b> | Parallel                | None  |
|                   | Network RJ-45(Ethernet) | 4 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                     | 6 (two front, two internal, two rear)<br><b>NOTE:</b> One optional internal USB connector is reserved for connection to the rear SD Card Reader (592710-B21)<br><b>NOTE:</b> In order to connect a USB device internally, the internal USB Cable G6 Kit must be used (536769-B21)<br><b>NOTE:</b> Please see the following URL for additional information regarding USB support:<br><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> . |

|                 |   |
|-----------------|---|
| <b>Graphics</b> | 32MB shared supporting all display resolutions up to 1600x1200 16bpp@75Hz<br><b>NOTE:</b> 8MB is dedicated to video memory. |
|-----------------|---|

|                    |                              |
|--------------------|------------------------------|
| <b>Form Factor</b> | Rack (1U), (1.75 in/4.45 cm) |
|--------------------|------------------------------|

### Standard Features

#### Embedded Manageability

#### HP LO100 Advanced

HP Lights-Out 100 with Optional LO100 Advanced Licenses for Virtual KVM and Virtual Media.

#### 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
- Secure Socket Layer (SSL) Encryption
- Secure Shell (SSH) Encryption

#### Licensed Features:

- Virtual media (Floppy, CD, USB 2.0)
- Virtual KVM

**NOTE:** Flexible and volume quantity (AKA) license kits are available for the Lights-Out 100 Advanced Pack licenses as well as Electronic License To Use (E-LTU). AKA Tracking licenses require a 100 unit minimum forecast at initial contract signing. For these additional part numbers, please refer to each software products. QuickSpecs at this link for more information: [www.hp.com/go/lo100](http://www.hp.com/go/lo100)

#### HP Insight Control management software

#### HP Insight Control for Linux

HP Insight Control for Linux, as a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, monitor, remote control, and optimize your IT infrastructure through a single, simple management console. The Insight Control for Linux installs and license software modules that are integrated into HP System Insight Manager.

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

HP Insight Control include 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>.

#### Insight Control server deployment

HP Insight Control server deployment is a 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

### Standard Features

information about this service, please visit:

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

---

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

---

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

---

|                     |   |
|---------------------|---|
| <b>Power Supply</b> | <p>500 Watts, auto-switching, high efficiency, PFC (Power Factor Correcting).</p> <p><b>NOTE:</b> Factory upgradeable to high-efficiency 750W pluggable power supply.</p> |
|---------------------|---|

---

### Standard Features

**System Fans** 4 non-hot plug system fans ship standard with 1P models, optional upgrade to N+1 redundant.  
7 non-hot plug system fans ship standard with 2P models, N+1 Redundant Standard

---

**Operating Systems and Virtualization Software Support for ProLiant Servers** [Microsoft Windows Server](#)  
[Microsoft Windows Server 2008 Hyper V](#)  
[Red Hat Enterprise Linux \(RHEL\)](#)  
[SUSE Linux Enterprise Server \(SLES\)](#)  
[Solaris 10 for x86/x64 based Systems](#)  
[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/supportos> and our driver download page <http://www.hp.com/support/DL165G7>.

---

### Rack Airflow Requirements

#### Rack 10000 G2 series Cabinets

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

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

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

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

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

**NOTE:** For additional information, refer to the Setup and Installation Guide or the Documentation CD provided with the server, or to the server documentation located in the Support section at the following URL: [www.hp.com/servers/dl165](http://www.hp.com/servers/dl165).

---

### Rack Support

The DL Fixed Rail System supports installation in racks with square or round mounting holes (including Compaq/HP 7000, 9000, 10000 and HP series), with an adjustment range of 24" - 36".

---

### Telco Rack Support

Installation into Telco 2 post, and 4 post, or threaded holes racks requires a 3rd party option kit. For additional information, please visit: [www.hp.com/go/rackandpower](http://www.hp.com/go/rackandpower)

**NOTE:** The 4 post Telco racks also supported.

---



### Standard Features

#### Factory Express Portfolio for Servers and Storage

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

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the MSAxxxx, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches.

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

#### HP Enterprise Configurator

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

#### Service and Support

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

HP Care Pack services 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 24x7 4 hr Response service support coverage
- **Deployment Service** - Hardware Installation

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

- **Support Service** - 3Year 24x7 24 hr Call to repair service support coverage
- **Support Service** - 3-Year 24x7 6 hr Call to repair service support coverage
- **Support Plus** - 24x7 24 hr Call to repair service support including OS coverage Operating

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://h20219.www2.hp.com/services/us/en/warranty/carepack-servers-proliant.html>

### *HPC Interconnects*

**NOTE:** High Performance Computing (HPC) interconnect technologies are available for the DL165 G7 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 or optional 10GbE NICs |
|                          | <b>10-Gigabit Ethernet</b> | PCI-Express Generation 2                  |

### Models

#### Cold Plug/Hot Plug Serial ATA (SATA)/Serial Attached SCSI (SAS) Models

|  |                           |   |
|--|---------------------------|---|
| <b>HP DL165G7 6172 Hot Plug SAS/SATA</b><br>590261-xx1 | <b>Processor(s)</b>       | AMD Opteron™ Processor Model 6172 (2.1 GHz, 12MB Level 3 Cache, 80W)                                  |
|  | <b>Cache Memory</b>       | 12 MB shared L3 cache   |
|  | <b>Memory</b>             | 16GB (8 x 2GB) PC3-10600R (RDIMM)   |
|  | <b>Network Controller</b> | 2x HP NC362i Integrated Dual Port Gigabit Server Adapter  |
|  | <b>Storage Controller</b> | HP Smart Array P410/ 256MB BBWC   |
|  | <b>Hard Drive</b>         | None ship standard  |
|  | <b>Internal Storage</b>   | Up to 8 Small form factor Hot Plug drives<br>4.0TB (8 x 500GB Hot Plug 2.5" SAS Hard Drives), Maximum |
|  | <b>Optical Drive</b>      | None ship standard  |
|  | <b>Form Factor</b>        | 1U  |

|  |                           |   |
|--|---------------------------|---|
| <b>HP DL165G7 6136 Hot Plug SAS/SATA</b><br>590260-xx1 | <b>Processor(s)</b>       | AMD Opteron™ Processor Model 6136 (2.4 GHz, 12MB Level 3 Cache, 80W)  |
|  | <b>Cache Memory</b>       | 12 MB shared L3 cache   |
|  | <b>Memory</b>             | 8GB (4 x 2GB) PC3-10600R (RDIMM)  |
|  | <b>Network Controller</b> | 2x HP NC362i Integrated Dual Port Gigabit Server Adapter  |
|  | <b>Storage Controller</b> | HP Smart Array P410   |
|  | <b>Hard Drive</b>         | None ship standard  |
|  | <b>Internal Storage</b>   | 8.0TB (4 x 2TB Hot Plug 3.5" SATA Hard Drives), Maximum<br>8.0TB (4 x 2TB Hot Plug 3.5" SAS Hard Drives), Maximum |
|  | <b>Optical Drive</b>      | None ship standard  |
|  | <b>Form Factor</b>        | 1U  |

|  |                           |   |
|--|---------------------------|---|
| <b>HP DL165G7 6128 Hot Plug SAS/SATA</b><br>590259-xx1 | <b>Processor(s)</b>       | AMD Opteron™ Processor Model 6128 (2.0 GHz, 12MB Level 3 Cache, 80W)  |
|  | <b>Cache Memory</b>       | 12 MB shared L3 cache   |
|  | <b>Memory</b>             | 4GB (2 x 2GB) PC3-10600R (RDIMM)  |
|  | <b>Network Controller</b> | 2x HP NC362i Integrated Dual Port Gigabit Server Adapter  |
|  | <b>Storage Controller</b> | HP Smart Array B110i  |
|  | <b>Hard Drive</b>         | None ship standard  |
|  | <b>Internal Storage</b>   | 8.0TB (4 x 2TB Hot Plug 3.5" SATA Hard Drives), Maximum<br>8.0TB (4 x 2TB Hot Plug 3.5" SAS Hard Drives), Maximum |
|  | <b>Optical Drive</b>      | None ship standard  |
|  | <b>Form Factor</b>        | 1U  |

|   |                           |   |
|---|---------------------------|---|
| <b>HP DL165G7 6128HE Pluggable SATA</b><br>590258-xx1 | <b>Processor(s)</b>       | AMD Opteron™ Processor Model 6128HE (2.0 GHz, 12MB Level 3 Cache, 65W)  |
|   | <b>Cache Memory</b>       | 12 MB shared L3 cache   |
|   | <b>Memory</b>             | 4GB (2 x 2GB) PC3-10600R (RDIMM)  |
|   | <b>Network Controller</b> | 2x HP NC362i Integrated Dual Port Gigabit Server Adapter  |
|   | <b>Storage Controller</b> | HP Smart Array B110i  |
|   | <b>Hard Drive</b>         | None ship standard  |
|   | <b>Internal Storage</b>   | 8.0TB (4 x 2TB Hot Plug 3.5" SATA Hard Drives), Maximum<br>8.0TB (4 x 2TB Hot Plug 3.5" SAS Hard Drives), Maximum |
|   | <b>Optical Drive</b>      | None ship standard  |
|   | <b>Form Factor</b>        | 1U  |

## Models

---

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

### Configuration Information - Factory Integrated Models

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

**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 only available as a Factory Installable Option.

#### Step 1: Base Configuration

##### **Non-Hot Plug SATA Model (choose one of the following configurable models)**

HP DL165G7 NHP CTO Chassis

591660-B21

##### **Factory Integrated Model ships with:**

Two HP NC362i Integrated Dual Port Gigabit Server Adapters

Slot 1: FL /FH PCI-Express x16 Gen 2 slot or

Slot 1 : HL/FH x16 PCI-Express Gen2 slot and

Slot 2 : HL/LP x8 PCI-Express Gen2 slot (internal only)

HP Smart Array B110i SATA RAID Controller

One Highline IEC Power Cord

4 Fixed, Non-Redundant Fans (standard); 6 Fixed, N+1 Redundant Fans (standard with addition of second processor)

Rack (1U), (1.75 in / 4.45 cm)

Tool-less Fixed Rails

##### **Hot Plug/Cold Plug Models**

HP DL165G7 LFF CTO Chassis

592226-B21

HP DL165G7 SFF CTO Chassis

592227-B21

##### **Factory Integrated Model ships with:**

Two HP NC362i Integrated Dual Port Gigabit Server Adapters

Slot 1: FL /FH PCI-Express x16 Gen 2 slot or

Slot 1 : HL/FH x16 PCI-Express Gen2 slot and

Slot 2 : HL/LP x8 PCI-Express Gen2 slot (internal only)

One Highline IEC Power Cord

4 Fixed, Non-Redundant Fans (standard); 6 Fixed, N+1 Redundant Fans (standard with addition of second processor)

Rack (1U), (1.75 in / 4.45 cm)

Tool-less Fixed Rails

### Configuration Information - Factory Integrated Models

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

##### HP Processors

**NOTE:** If 2 processors are desired, select one xxxxxx-L21 and one xxxxxx-B21.

|  |            |
|--|------------|
| AMD Opteron™ Processor Model 6128 (2.0 GHz, 12MB Level 3 Cache, 80W) FIO Kit   | 601111-L21 |
| AMD Opteron™ Processor Model 6128HE (2.0 GHz, 12MB Level 3 Cache, 65W) FIO Kit | 601110-L21 |
| AMD Opteron™ Processor Model 6134 (2.3 GHz, 12MB Level 3 Cache, 80W) FIO Kit   | 601115-L21 |
| AMD Opteron™ Processor Model 6136 (2.4 GHz, 12MB Level 3 Cache, 80W) FIO Kit   | 601112-L21 |
| AMD Opteron™ Processor Model 6164HE (1.7 GHz, 12MB Level 3 Cache, 65W) FIO Kit | 601116-L21 |
| AMD Opteron™ Processor Model 6172 (2.1 GHz, 12MB Level 3 Cache, 80W) FIO Kit   | 601113-L21 |
| AMD Opteron™ Processor Model 6174 (2.2 GHz, 12MB Level 3 Cache, 80W) FIO Kit   | 601118-L21 |

##### HP Memory

###### Registered DIMMs (RDIMMs)

|                               |            |
|-------------------------------|------------|
| HP 2GB 2Rx4 PC3-10600R-9 Kit  | 593907-B21 |
| HP 4GB 1Rx4 PC3-10600R-9 Kit  | 593911-B21 |
| HP 4GB 1Rx4 PC3L-10600R-9 Kit | 604500-B21 |
| HP 8GB 2Rx8 PC3-10600R-9 Kit  | 593913-B21 |
| HP 8GB 2Rx4 PC3L-10600R-9 Kit | 604502-B21 |
| HP 16GB 4Rx4 PC3-8500R-7 Kit  | 593915-B21 |

###### Unbuffered with ECC DIMMs (UDIMMs)

|                              |            |
|------------------------------|------------|
| HP 2GB 2Rx8 PC3-10600E-9 Kit | 593921-B21 |
| HP 4GB 2Rx8 PC3-10600E-9 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](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: <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

#### HP Hard Drives

**NOTE:** The components of a storage subsystem (e.g. the drive, the HBA/controller, 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; refer to the specific hard drive QuickSpecs for details.

**NOTE:** A minimum of one SATA Non-Hot Plug hard drive is required ONLY when purchasing Non-Hot Plug CTO Chassis Model (P/N 591660-B21) in Step 1.

#### Serial-ATA (SATA) Non-Hot Plug Hard Drives (Non-Hot Plug Models Only)

##### SATA Non-Hot Plug LFF (3.5-inch) Entry (ETY) Drives

HP 250GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Entry 1y Wty Hard Drive 571232-B21

HP 160GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Entry 1y Wty Hard Drive 458947-B21

##### SATA Non-Hot Plug LFF (3.5-inch) Midline (MDL) Drives

HP 2TB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1y Wty Hard Drive 507774-B21

HP 1TB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1y Wty Hard Drive 507772-B21

HP 750GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1y Wty Hard Drive 462595-B21

HP 500GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1y Wty Hard Drive 458941-B21

HP 250GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1y Wty Hard Drive 458939-B21

#### HP Storage Controllers

**NOTE:** With the HP Smart Array P410 Controller, the addition of the battery backed cache upgrade enables BBWC, RAID 5, 5+0, array expansion, logical drive extension, RAID migration, and stripe size migration. In order to upgrade to RAID 6, at least 256MB Cache and a Battery is required in addition to the Smart Array Advanced Pack license (P/N 516471-B21).

**NOTE:** To use the internal only PCI-e slot when purchasing the Hot Plug CTO Chassis, a HP Smart Array P410 controller must be selected. When selecting the HP Smart Array P212 Controller (P/N 491191-B21), the controller will be installed in the x16 slot since it has both an internal and external port. This prevents the use of the internal slot and no PCI-E slots will be available.

**NOTE:** A minimum of one primary HP Storage Controller is required ONLY when purchasing SFF CTO Chassis Model (P/N 592227-B21) in Step 1.

HP Smart Array P812/1G Flash Backed Cache Controller 487204-B21

HP P410 w/1G Flash Backed Cache Controller 572532-B21

HP P410 w/512MB Flash Backed Cache Controller 578230-B21

HP P410/Zero Memory FIO Smart Array Controller 462860-B21

HP P410/256MB Smart Array Controller 462862-B21

HP Smart Array P410/256MB w/ Battery FIO 491195-B21

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

### Configuration Information - Factory Integrated Models

|                          |   |            |
|--------------------------|---|------------|
| <b>HP Power Supplies</b> | <p><b>CAUTION:</b> 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/hppoweradvisor">www.hp.com/go/hppoweradvisor</a>. 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.</p> |            |
|                          | HP High Efficiency 500W Non hot plug FIO Power Supply Kit   | 593915-B21 |
|                          | HP High Efficiency 750W 92%Power Supply Kit   | 535683-B21 |

### Step 3: Choose Additional Factory Integratable Options

|                               |  |            |
|-------------------------------|--|------------|
| <b>HP Storage Controllers</b> | <p><b>NOTE:</b> With the HP Smart Array P410 Controller, the addition of the battery backed cache upgrade enables BBWC, RAID 5, 5+0, array expansion, logical drive extension, RAID migration, and stripe size migration. In order to upgrade to RAID 6, at least 256MB Cache and a Battery is required in addition to the Smart Array Advanced Pack license (P/N 516471-B21).</p> <p><b>NOTE:</b> To use the internal only PCI-e slot when purchasing the Hot Plug CTO Chassis, a HP Smart Array P410 controller must be selected. When selecting the HP Smart Array P212 Controller (P/N 491191-B21), the controller will be installed in the x16 slot since it has both an internal and external port. This prevents the use of the internal slot and no PCI-E slots will be available.</p> |            |
|                               | HP P212/256MB FIO Smart Array BBWC   | 491191-B21 |
|                               | <b>NOTE:</b> P212 may be used as external controller only in SFF models.   |            |
|                               | HP P410/Zero Memory FIO Smart Array Controller   | 462860-B21 |
|                               | HP Smart Array P410/256MB w/ Battery FIO   | 491195-B21 |

### Step 4: Choose Additional Options for Factory Integration

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



### Core Options

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

|                      |  |            |
|----------------------|--|------------|
| <b>HP Processors</b> | AMD Opteron™ Processor Model 6128 (2.0 GHz, 12MB Level 3 Cache, 80W) Kit   | 601111-B21 |
|                      | AMD Opteron™ Processor Model 6128HE (2.0 GHz, 12MB Level 3 Cache, 65W) Kit | 601110-B21 |
|                      | AMD Opteron™ Processor Model 6134 (2.3 GHz, 12MB Level 3 Cache, 80W) Kit   | 601115-B21 |
|                      | AMD Opteron™ Processor Model 6136 (2.4 GHz, 12MB Level 3 Cache, 80W) Kit   | 601112-B21 |
|                      | AMD Opteron™ Processor Model 6164HE (1.7 GHz, 12MB Level 3 Cache, 65W) Kit | 601116-B21 |
|                      | AMD Opteron™ Processor Model 6172 (2.1 GHz, 12MB Level 3 Cache, 80W) Kit   | 601113-B21 |
|                      | AMD Opteron™ Processor Model 6174 (2.2 GHz, 12MB Level 3 Cache, 80W) Kit   | 601118-B21 |

|  |   |            |
|--|---|------------|
| <b>HP Memory</b>                           | <b>Registered DIMMs (RDIMMs)</b>          |            |
|  | HP 2GB 2Rx4 PC3-10600R-9 Kit              | 593907-B21 |
|  | HP 4GB 1Rx4 PC3-10600R-9 Kit              | 593911-B21 |
|  | HP 4GB 1Rx4 PC3L-10600R-9 Kit             | 604500-B21 |
|  | HP 8GB 2Rx8 PC3-10600R-9 Kit              | 593913-B21 |
|  | HP 8GB 2Rx4 PC3L-10600R-9 Kit             | 604502-B21 |
|  | HP 16GB 4Rx4 PC3-8500R-7 Kit              | 593915-B21 |
|  | <b>Unbuffered with ECC DIMMs (UDIMMs)</b> |            |
|  | HP 2GB 2Rx8 PC3-10600E-9 Kit              | 593921-B21 |
|  | HP 4GB 2Rx8 PC3-10600E-9 Kit              | 593923-B21 |
| <b>NOTE:</b> PC3L is a low voltage memory. |   |            |

|                          |                             |            |
|--------------------------|-----------------------------|------------|
| <b>HP Optical Drives</b> | DVD-ROM Drive Optical Drive | 481045-B21 |
|                          | DVD RW Drive Optical Drive  | 481047-B21 |

|                       |  |            |
|-----------------------|--|------------|
| <b>HP Hard Drives</b> | <b>NOTE:</b> The components of a storage subsystem (e.g. the drive, the HBA/controller, 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. |            |
|                       | <b>NOTE:</b> Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.   |            |
|                       | <b>SATA Hot Plug LFF (3.5-inch) Midline (MDL) Drives</b>   |            |
|                       | HP 2TB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive   | 507632-B21 |
|                       | HP 1TB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive   | 454146-B21 |
|                       | HP 750GB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive   | 458930-B21 |
|                       | HP 500GB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive   | 458928-B21 |
|                       | <b>SATA Non-Hot Plug LFF (3.5-inch) Midline (MDL) Drives</b>   |            |
|                       | HP 2TB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1y Wty Hard Drive  | 507774-B21 |
|                       | HP 1TB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1y Wty Hard Drive  | 507772-B21 |

### Core Options

HP 750GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1y Wty Hard Drive 462595-B21

HP 500GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1y Wty Hard Drive 458941-B21

HP 250GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1y Wty Hard Drive 458939-B21

#### **SATA Hot Plug LFF (3.5-inch) Entry (ETY) Drives**

HP 250GB 3G SATA 7.2K rpm LFF (3.5-inch) Entry 1yr Warranty Hard Drive 571230-B21

HP 160GB 3G SATA 7.2K rpm LFF (3.5-inch) Entry 1yr Warranty Hard Drive 458945-B21

#### **SATA Non-Hot Plug LFF (3.5-inch) Entry (ETY) Drives**

HP 250GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Entry 1y Wty Hard Drive 571232-B21

HP 160GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Entry 1y Wty Hard Drive 458947-B21

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

[http://h18000.www1.hp.com/products/quickspecs/13021\\_div/13021\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13021_div/13021_div.html)  
(Worldwide)

#### **SATA Hot Plug 3.5" Midline (MDL) Solid State Drives**

HP 120GB 3G SATA 3.5in MDL 1y Wty SSD 570763-B21

HP 60GB 3G SATA 3.5in MDL 1y Wty SSD 570761-B21

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

[http://h18000.www1.hp.com/products/quickspecs/13415\\_div/13415\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13415_div/13415_div.html)  
(Worldwide)

#### **SAS Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives**

HP 600GB 6G SAS 15K LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive 516828-B21

HP 450GB 6G SAS 15K LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive 516816-B21

HP 450GB 3G SAS 15K LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive 454232-B21

HP 300GB 6G SAS 15K LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive 516814-B21

HP 300GB 3G SAS 15K LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive 416127-B21

HP 146GB 3G SAS 15K LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive 384854-B21

#### **SAS Hot Plug LFF (3.5-inch) Midline (MDL) Drives**

HP 2TB 6G SAS 7.2K rpm LFF (3.5-inch) Dual Port Midline 1yr Wty Hard Drive 507616-B21

HP 1TB 6G SAS 7.2K rpm LFF (3.5-inch) Dual Port Midline 1yr Wty Hard Drive 507614-B21

HP 1TB 3G SAS 7.2K rpm LFF (3.5-inch) Dual Port Midline 1yr Wty Hard Drive 461137-B21

HP 750GB 3G SAS 7.2K rpm LFF (3.5-inch) Dual Port Midline 1yr Wty Hard Drive 461135-B21

**NOTE:** The purchase of SAS HBA or array controller is required.

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

[http://h18000.www1.hp.com/products/quickspecs/12244\\_div/12244\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12244_div/12244_div.html)  
(Worldwide)

### Core Options

#### HP Networking

##### Gigabit Ethernet Adapters

|  |            |
|--|------------|
| HP NC112T PCIe Gigabit Server Adapter                                | 503746-B21 |
| HP NC360T PCI Express Dual Port Gigabit Server Adapter               | 412648-B21 |
| HP NC375T PCI Express Quad Port Gigabit Server Adapter               | 538696-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 |

##### 10 Gigabit Ethernet Adapters

|  |            |
|--|------------|
| HP NC522SFP Dual Port 10GbE Server Adapter | 468332-B21 |
|--|------------|

**NOTE:** A minimum of two Gigabytes (2 GB) of server memory is required per each NC522SFP adapter.

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

|  |            |
|--|------------|
| HP NC550SFP Dual Port 10GbE Server Adapter | 581201-B21 |
|--|------------|

**NOTE:** A minimum of two Gigabytes (2 GB) of server memory is required per each NC550SFP adapter.

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

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

#### HP Cooling Options

|                                  |            |
|----------------------------------|------------|
| HP DL165G7 Redundant Fan OPT KIT | 593114-B21 |
|----------------------------------|------------|

**NOTE:** Redundant Fan Option Kit ONLY required for fan redundancy in single processor configurations. Two processor configurations offer N+1 fan redundancy as standard.

### Additional Options

|   |  |            |
|---|--|------------|
| <b>HP Entry-Level Server Management</b> | <p>HP LO100i Advanced Pack, No Media 1-Server License including 1 year of 24x7 Technical Support and Updates</p> <p><b>NOTE:</b> For additional License Kits please see the Lights-Out 100i QuickSpecs at: <a href="http://www.hp.com/go/lo100">www.hp.com/go/lo100</a>.</p> | 530521-B21 |
|---|--|------------|

|                            |  |            |
|----------------------------|--|------------|
| <b>HP Insight Software</b> | <b>HP Insight Control for Linux</b>  |            |
|                            | <p>HP Insight Control for Linux, 1-server license, including one year of 24x7 Technical Support and Updates, Electronic</p>  | TC213AAE   |
|                            | <p>HP Insight Control for Linux, No Media, 1-Server license, including one year of 24x7 Technical Support and Updates</p>  | TC209A     |
|                            | <p>HP Insight Control for Linux, Media pack (DVD) - No licenses included</p>   | TC208A     |
|                            | <p><b>NOTE:</b> Licenses ship without media. The Media Kit for Insight Control for Linux can be ordered separately, or can be downloaded at: <a href="http://www.hp.com/go/ic-linux">http://www.hp.com/go/ic-linux</a> (click on Download button).</p> <p><b>NOTE:</b> Electronic licenses can be used to purchase multiple licenses with a single activation key, and are available in all countries except China and Japan. Customers in China and Japan should order the physical equivalent.</p> <p><b>NOTE:</b> Customer will receive a license entitlement certificate, which must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support Service.</p> <p><b>NOTE:</b> For additional License Kits, including electronic licensing options, please see the QuickSpecs at: <a href="http://h18000.www1.hp.com/products/quickspecs/13019_div/13019_div.html">http://h18000.www1.hp.com/products/quickspecs/13019_div/13019_div.html</a></p> |            |
|                            | <b>HP Insight Control server deployment</b>  |            |
|                            | <p>HP Insight Control server deployment Electronic License including 1 year 24x7 Technical Support and Updates</p>   | T9082AAE   |
|                            | <p>HP Insight Control server deployment 1-Server License including 1 year 24x7 Technical Support and Updates</p>   | 452151-B21 |
|                            | <p><b>NOTE:</b> Licenses ship without media. The Insight Control Media Kit can be ordered separately, or can be downloaded at: <a href="http://www.hp.com/go/insightupdates">http://www.hp.com/go/insightupdates</a>.</p> <p><b>NOTE:</b> Electronic licenses can be used to purchase multiple licenses with a single activation key, and is available in all countries except China and Japan. Customers in China and Japan should order the physical equivalent.</p> <p><b>NOTE:</b> Customer will receive a license entitlement certificate, which must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support Service.</p> <p><b>NOTE:</b> For additional license kits please see the Insight Control QuickSpecs at: <a href="http://h18004.www1.hp.com/products/quickspecs/12631_div/12631_div.html">http://h18004.www1.hp.com/products/quickspecs/12631_div/12631_div.html</a></p>  |            |

|                           |                                   |            |
|---------------------------|-----------------------------------|------------|
| <b>HP Graphic Options</b> | HP Graphic Card Power Adapter Kit | 533955-B21 |
|---------------------------|-----------------------------------|------------|

|                          |                                       |            |
|--------------------------|---------------------------------------|------------|
| <b>HP Security - TPM</b> | HP Trusted Platform Module Option Kit | 488069-B21 |
|--------------------------|---------------------------------------|------------|

### HP Storage Controllers SAS Controllers

**NOTE:** To utilize the internal only slot, the HP Smart Array P410 Controller must be selected. The selection of the HP Smart Array P212 Controller for internal and external connectivity, will require the use of the Full Length Full Height PCI-E x16 slot.

**NOTE:** With the HP Smart Array P410 Controller, the addition of the battery backed cache upgrade enables BBWC, RAID 5, 5+0, array expansion, logical drive extension, RAID migration, and stripe size migration. In order to upgrade to RAID 6, at least 256MB Cache and a Battery is required in addition to the HP

### Additional Options

Smart Array Advanced Pack license (P/N 516471-B21).

#### Smart Array P212 Controller

HP Smart Array P212/Zero Memory Controller 462828-B21

HP Smart Array P212/256MB Controller 462834-B21

#### Smart Array P410 Controller

HP Smart Array P410/256MB Controller 462862-B21

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

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

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

#### Smart Array P411 Controller

**NOTE:** Controllers for use with external storage only.

HP Smart Array P411/256MB Controller 462830-B21

HP Smart Array P411/512MB BBWC 462832-B21

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

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

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

[http://h18000.www1.hp.com/products/quickspecs/12616\\_div/12616\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12616_div/12616_div.html)  
(Smart Array P800 Controller)

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

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

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

#### Optional upgrades

1G Flash Backed Write Cache 534562-B21

512MB Flash Backed Write Cache 534916-B21

HP Smart Array Advanced Pack No Media 1-Server license including 1yr 24x7 Technical Support 516471-B21

**NOTE:** This part number can be used to purchase a single license or to order multiple licenses with a single activation key. Customers will receive a license entitlement certificate via e-mail. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Include one year of 24x7 HP Software Technical Support Services.

HP Smart Array Hot Plug Advanced Pack for B110i No Media 1-Server license including 1yr 24x7 Technical Support TC421A

#### SAS HBA

HP SC08Ge Host Bus Adapter 488765-B21

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

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

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

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

[http://h18000.www1.hp.com/products/quickspecs/13558\\_div/13558\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13558_div/13558_div.html)  
(Smart Array P812 Controller)

[http://h18000.www1.hp.com/products/quickspecs/13495\\_div/13495\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13495_div/13495_div.html)  
(Smart Array Advanced Pack)

[http://h18004.www1.hp.com/products/quickspecs/13082\\_div/13082\\_div.html](http://h18004.www1.hp.com/products/quickspecs/13082_div/13082_div.html)  
(SC08Ge HBA)

### Additional Options

|                              |  |            |
|------------------------------|--|------------|
| <b>HP InfiniBand Options</b> | HP IB 4X DDR PCI-e DUAL PORT HCA           | 448397-B21 |
|                              | HP IB 4X QDR Conn-X PCI-e G2 Dual Port HCA | 516937-B21 |

**NOTE:** Please see the QuickSpecs for additional information:  
[http://h18000.www1.hp.com/products/quickspecs/13078\\_div/13078\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13078_div/13078_div.html)

### HP Backup & Recovery Data Protector Express Software

|   |         |
|---|---------|
| HP Data Protector Express 4.0 SP1 Backup Server   | BB117BA |
| HP Data Protector Express 4.0 SP1 for Microsoft Small Business Server                                     | BB118BA |
| HP Data Protector Express Backup Server 4.0 SP1 Upgrade from Data Protector Express Single Server Edition | BB117BT |

**NOTE:** Only one of these Data Protector Express base products is required. To see available options: <http://www.hp.com/go/dataprotectorexpress>

### HP Tape Backup

**NOTE:** For the complete range of StorageWorks tape drives, autoloaders, libraries and media see: <http://www.hp.com/go/tape>. For hardware and software compatibility of HP StorageWorks tape backup products see: <http://www.hp.com/go/connect>.

|   |        |
|---|--------|
| HP StorageWorks DAT 160 SAS Internal Tape Drive | Q1587A |
|---|--------|

**NOTE:** For installation into 1U SAS Rack-Mount Kit (AE459B) or 3U SAS Rack-Mount Kit (AG576B). No peripheral bay available for installation into the server. Connection using the HP SC44Ge SAS Host Bus Adapter (416096-B21) recommended.

|   |        |
|---|--------|
| HP StorageWorks 1U USB Rack-Mount Kit with one DAT 320 USB Tape Drive | AP835A |
|---|--------|

|   |        |
|---|--------|
| HP StorageWorks DAT 320 SAS Internal Tape Drive | AJ830A |
|---|--------|

**NOTE:** For installation into 1U SAS Rack-Mount Kit (AE459B) or 3U SAS Rack-Mount Kit (AG576B). No peripheral bay available for installation into the server. Connection using the HP SC44Ge SAS Host Bus Adapter (416096-B21) recommended.

|   |        |
|---|--------|
| HP StorageWorks LTO-2 Ultrium 448 SAS Internal Tape Drive | DW085A |
|---|--------|

**NOTE:** For installation into 1U SAS Rack-Mount Kit (AE459B) or 3U SAS Rack-Mount Kit (AG576B). No peripheral bay available for installation into the server. Connection using the HP SC44Ge SAS Host Bus Adapter (416096-B21) recommended.

|   |        |
|---|--------|
| HP StorageWorks LTO-3 Ultrium 920 SAS Internal Tape Drive | EH847A |
|---|--------|

**NOTE:** For installation into 1U SAS Rack-Mount Kit (AE459B) or 3U SAS Rack-Mount Kit (AG576B). No peripheral bay available for installation into the server. Connection using the HP SC44Ge SAS Host Bus Adapter (416096-B21) recommended.

|  |        |
|--|--------|
| HP StorageWorks 1/8 G2 LTO-3 Ultrium 920 SAS Tape Autoloader | AH558A |
|--|--------|

**NOTE:** Requires HP 1U Tape Autoloader Rack-Mount Kit (AH166A) for rack installation. Connection using the HP SC44Ge SAS Host Bus Adapter (416096-B21) recommended.

|   |        |
|---|--------|
| HP StorageWorks MSL2024 Tape Library with one LTO-3 Ultrium 920 SAS Drive | AH559A |
|---|--------|

**NOTE:** Connection using the HP SC44Ge SAS Host Bus Adapter (416096-B21) recommended.

### Additional Options

#### HP Disk Backup

**NOTE:** For the complete range of StorageWorks D2D Backup Systems see: <http://www.hp.com/go/d2d>. For the complete range of StorageWorks RDX drives and media see: <http://www.hp.com/go/rdx>. For hardware and software compatibility of HP StorageWorks disk backup products see: <http://www.hp.com/go/connect>.

#### HP StorageWorks D2D Backup Systems with Backup Data Deduplication

HP StorageWorks D2D2502i Backup System EJ001A

**NOTE:** 1.5TB of usable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.

HP StorageWorks D2D2504i Backup System EJ002A

**NOTE:** 3.0TB of usable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.

#### USB Removable Media RDX Disk Backup Systems

HP StorageWorks RDX320 Internal Removable Disk Backup System AJ767A

**NOTE:** For installation into 1U USB Rack-Mount Kit (A8007A). No peripheral bay available for drive installation into the server. 320GB of disk capacity per data cartridge.

HP StorageWorks RDX500 Internal Removable Disk Backup System AJ934A

**NOTE:** For installation into 1U USB Rack-Mount Kit (A8007A). No peripheral bay available for drive installation into the server. 500GB of disk capacity per data cartridge.

HP StorageWorks RDX750 Internal Removable Disk Backup System AW577A

**NOTE:** For installation into 1U USB Rack-Mount Kit (A8007A). No peripheral bay available for drive installation into the server. 750GB of disk capacity per data cartridge.

#### HP StorageWorks Options

#### StorageWorks Fibre Channel HBA

**NOTE:** The following is a list of all Fibre Channel Host Bus Adapters for Windows and Linux. For detailed compatibility information please see: <http://h18006.www1.hp.com/storage/saninfrastructure/hba.html>

#### Brocade Fibre Channel HBAs

HP 81B PCIe 8Gb FC Single Port HBA AP769A

HP 82B PCIe 8Gb FC Dual Port HBA AP770A

HP 41B PCIe 4Gb FC Single Port HBA AP767A

HP 42B PCIe 4Gb FC Dual Port HBA AP768A

#### Emulex Fibre Channel HBAs

HP StorageWorks 81E 8Gb SP PCI-e FC HBA AJ762A

HP StorageWorks 82E 8Gb Dual-port PCI-e FC HBA AJ763A

HP StorageWorks FC2142SR 4Gb PCI-e HBA A8002A

HP StorageWorks FC2242SR Dual Channel 4Gb PCI-e HBA A8003A

#### QLogic Fibre Channel HBAs

HP StorageWorks 81Q 8Gb PCI-e FC HBA AK344A

HP StorageWorks 82Q 8Gb Dual Port PCI-e FC HBA AJ764A

HP StorageWorks FC1142SR 4Gb PCI-e HBA AE311A

HP StorageWorks FC1242SR Dual Channel 4Gb PCI-e HBA AE312A

#### StorageWorks SCSI HBA

HP U320e SCSI Host Bus Adapter AH627A

**NOTE:** Recommended for MSL SCSI Tape Library connect.

### Additional Options

**NOTE:** Recommended Dual Channel Ultra320 SCSI Controller for connecting multi-drive MSL tape libraries to ProLiant servers.

**StorageWorks Converged Network Adapter**

HP CN1000E 2P Converged Network Adapter AW520A

**HP Uninterruptible Power Systems**

**HP Rack-mountable UPS**

**HP R1500 G2 UPS**

HP, R1.5kVA UPS, 1U, NA AF419A

HP, R1.5kVA UPS, 1U, INTL AF418A

HP, R1.5kVA UPS, 1U, JPN/TW AF421A

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

[http://h18000.www1.hp.com/products/quickspecs/12507\\_div/12507\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12507_div/12507_div.html) (Worldwide)

**HP T1000 G3 UPS**

HP T1000 G3 UPS, NA/JPN AF448A

HP T1000 G3 UPS, INTL AF449A

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

[http://h18000.www1.hp.com/products/quickspecs/13160\\_div/13160\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13160_div/13160_div.html) (Worldwide)

**HP T1500 G3 UPS**

HP T1500 G3 UPS, NA/JPN AF450A

HP T1500 G3 UPS, INTL AF451A

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

[http://h18000.www1.hp.com/products/quickspecs/13160\\_div/13160\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13160_div/13160_div.html) (Worldwide)

**NOTE:** For additional information on all HP Uninterruptible Power Systems and accessories please go to: [www.hp.com/products/ups](http://www.hp.com/products/ups) (Worldwide)

**NOTE:** For additional information on sizing your server, please reference: <http://www.upssizer.com>

**HP Rack Series**

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

HP Universal Rack 10642 G2 Pallet ALL AF001A

HP Universal Rack 10642 G2 Shock ALL AF002A

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

**NOTE:** xxxxxx-B22 (shock pallet) used to ship racks with equipment installed (by custom systems, VARs and Channels).

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

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

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



### Additional Options

#### HP Rack Options

#### Keyboards and Monitors

##### HP KVM Switch Options

Server console switch 0x2x8

AF616A

Server console switch 0x2x16

AF617A

##### HP 1x4 Console Switch

0x2x16 KVM Server Console G2 Switch with Virtual Media and CAC

AF618A

0x2x32 KVM Server Console G2 Switch with Virtual Media and CAC

AF619A

1x1Ex8 KVM IP Console Switch G2 with Virtual Media and CAC

AF620A

2x1Ex16 KVM IP Console Switch G2 with Virtual Media and CAC

AF621A

4x1Ex32 KVM IP Console Switch G2 with Virtual Media and CAC

AF622A

**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>.

#### HP USB and SD Options

HP USB-P/S2 Mouse

DC369A

HP USB 04 Standard Keyboard

DT528A#ABA

HP DL165G7 SD Card Reader Module OPT KIT

592710-B21

### Memory

#### HP ProLiant DL165 G7 (all models)

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

#### Standard Memory

4 GB (2 x 2 GB) PC2-6400 DIMM memory, with Advanced ECC Capabilities memory installed.

#### Maximum Memory

Up to 246GB memory is available with the optional installation of PC2-8500R-7 Registered DIMM memory kits. Memory should be installed in pairs and matched for optimum performance.

#### 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 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
- 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
- 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/Reg                    | Reg            | LV/Reg | Reg            | Reg                                | Reg  |
| <b>SLOTS THAT CAN BE POPULATED</b> |                           |                |        |                |                                    |      |
| 24 slot servers                    | 24                        | 24             | 24     | 8              | 16                                 | 16   |
| <b>MAXIMUM CAPACITY (GB)</b>       |                           |                |        |                |                                    |      |
| 24 slot servers                    | 96                        | 48             | 192    | 256*           | 32                                 | 64   |
| <b>POPULATED DIMM SPEED (MHz)</b>  |                           |                |        |                |                                    |      |
| 1 DIMM Per Channel                 | 1333                      | 1333           | 1333   | 1066           | 1333                               | 1333 |
| 2 DIMM Per Channel                 | 1333                      | 1333           | 1333   | n/a            | 1333                               | 1333 |
| 3 DIMM Per Channel                 | 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.

### 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                |        |

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

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

### Memory

Following are memory options available from HP:

#### HP Memory

#### Registered DIMMs (RDIMMs)

|                               |            |
|-------------------------------|------------|
| HP 2GB 2Rx4 PC3-10600R-9 Kit  | 593907-B21 |
| HP 4GB 1Rx4 PC3-10600R-9 Kit  | 593911-B21 |
| HP 4GB 1Rx4 PC3L-10600R-9 Kit | 604500-B21 |
| HP 8GB 2Rx8 PC3-10600R-9 Kit  | 593913-B21 |
| HP 8GB 2Rx4 PC3L-10600R-9 Kit | 604502-B21 |
| HP 16GB 4Rx4 PC3-8500R-7 Kit  | 593915-B21 |

#### Unbuffered with ECC DIMMs (UDIMMs)

|                              |            |
|------------------------------|------------|
| HP 2GB 2Rx8 PC3-10600E-9 Kit | 593921-B21 |
| HP 4GB 2Rx8 PC3-10600E-9 Kit | 593923-B21 |

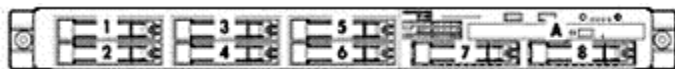
**NOTE:** PC3L is a low voltage memory.

### Storage



1-4 Hot plug 3.5" SATA or Hot-plug SAS/SATA hard drive bays

A Optional DVD-ROM, or DVD/CD RW



1-8 Eight Hot-plug SAS hard drive bays

A Optional DVD-ROM, or DVD RW

## Drive Support

### Removable Media

|         | Quantity Supported | Position Supported | Controller                        |
|---------|--------------------|--------------------|-----------------------------------|
| DVD-ROM | Up to 1            | A                  | Integrated IDE (ATAPI) (optional) |
| DVD RW  | Up to 1            | A                  | Integrated IDE (ATAPI) (optional) |

### Hard Drives

**NOTE:** The components of a storage subsystem (e.g. the drive, the HBA/controller, 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; refer to the specific hard drive QuickSpecs for details.

#### SATA Non-Hot Plug LFF (3.5-inch) Midline (MDL) Drives

|                    | Quantity Supported | Position Supported | Controller                     |
|--------------------|--------------------|--------------------|--------------------------------|
| 2TB 3G SATA 7.2K   | Up to 4            | 1-4                | HP Smart Array P212 Controller |
| 1TB 3G SATA 7.2K   |                    |                    | HP Smart Array P410 Controller |
| 750GB 3G SATA 7.2K |                    |                    | HP Smart Array P812 Controller |
| 500GB 3GSATA 7.2K  |                    |                    |                                |
| 250GB 3G SATA 7.2K |                    |                    |                                |

#### SATA Hot Plug LFF (3.5-inch) Midline (MDL) Drives

|                    | Quantity Supported | Position Supported | Controller                     |
|--------------------|--------------------|--------------------|--------------------------------|
| 2TB 3G SATA 7.2K   | Up to 4            | 1-4                | HP Smart Array P212 Controller |
| 1TB 3G SATA 7.2K   |                    |                    | HP Smart Array P410 Controller |
| 750GB 3G SATA 7.2K |                    |                    | HP Smart Array P812 Controller |
| 500GB 3G SATA 7.2K |                    |                    |                                |
| 250GB 3G SATA 7.2K |                    |                    |                                |
| 160GB 3G SATA 7.2K |                    |                    |                                |

#### SATA Hot Plug LFF (3.5-inch) Entry (ETY) Drives

|                    | Quantity Supported | Position Supported | Controller                     |
|--------------------|--------------------|--------------------|--------------------------------|
| 250GB 3G SATA 7.2K | Up to 4            | 1-4                | HP Smart Array P212 Controller |
| 160GB 3G SATA 7.2K |                    |                    | HP Smart Array P410 Controller |
|                    |                    |                    | HP Smart Array P812 Controller |

#### SATA Hot Plug Midline (MDL) Solid State Drives

|  | Quantity Supported | Position Supported | Controller |
|--|--------------------|--------------------|------------|
|--|--------------------|--------------------|------------|

### Storage

|                     |         |     |                                |
|---------------------|---------|-----|--------------------------------|
| 60GB 3.0G SATA SSD  | Up to 8 | 1-8 | HP Smart Array P212 Controller |
| 120GB 3.0G SATA SSD |         |     | HP Smart Array P410 Controller |
|                     |         |     | HP Smart Array P812 Controller |

#### SATA Hot Plug 3.5" Midline (MDL) Solid State Drives

|                     | Quantity Supported | Position Supported | Controller                     |
|---------------------|--------------------|--------------------|--------------------------------|
| 60GB 3.0G SATA SSD  | Up to 4            | 1-4                | HP Smart Array P212 Controller |
| 120GB 3.0G SATA SSD |                    |                    | HP Smart Array P410 Controller |
|                     |                    |                    | HP Smart Array P812 Controller |

#### SAS Hot Plug SFF (2.5-inch) Midline (MDL) Drives

|                 | Quantity Supported | Position Supported | Controller                     |
|-----------------|--------------------|--------------------|--------------------------------|
| 500 6G SAS 7.2K | Up to 8            | 1-8                | HP Smart Array P212 Controller |
|                 |                    |                    | HP Smart Array P410 Controller |
|                 |                    |                    | HP Smart Array P812 Controller |

#### SAS Hot Plug LFF (3.5-inch) Midline (MDL) Drives

|                 | Quantity Supported | Position Supported | Controller                     |
|-----------------|--------------------|--------------------|--------------------------------|
| 2TB 6G SAS 7.2K | Up to 4            | 1-4                | HP Smart Array P212 Controller |
| 1TB 6G SAS 7.2K |                    |                    | HP Smart Array P410 Controller |
| 1TB 3G SAS 7.2K |                    |                    | HP Smart Array P812 Controller |
| 750 3G SAS 7.2K |                    |                    |                                |

#### SAS Hot Plug SFF(2.5-inch) Enterprise (ENT) Drives

|                  | Quantity Supported | Position Supported | Controller                     |
|------------------|--------------------|--------------------|--------------------------------|
| 300GB 6G SAS 10K | Up to 8            | 1-8                | HP Smart Array P212 Controller |
| 300GB 3G SAS 10K |                    |                    | HP Smart Array P410 Controller |
| 146GB 6G SAS 15K |                    |                    | HP Smart Array P812 Controller |
| 146GB 3G SAS 15K |                    |                    |                                |
| 146GB 6G SAS 10K |                    |                    |                                |
| 146GB 3G SAS 10K |                    |                    |                                |
| 72GB 6G SAS 15K  |                    |                    |                                |
| 72GB 3G SAS 10K  |                    |                    |                                |

#### SAS Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives

|                  | Quantity Supported | Position Supported | Controller                     |
|------------------|--------------------|--------------------|--------------------------------|
| 600GB 6G SAS 15K | Up to 4            | 1-4                | HP Smart Array P212 Controller |
| 450GB 6G SAS 15K |                    |                    | HP Smart Array P410 Controller |
| 450GB 3G SAS 15K |                    |                    | HP Smart Array P812 Controller |
| 300GB 6G SAS 15K |                    |                    |                                |
| 300GB 3G SAS 15K |                    |                    |                                |
| 146GB 3G SAS 15K |                    |                    |                                |

### Storage

#### Tape and Disk Backup

**NOTE:** For the complete range of StorageWorks tape drives, autoloaders, libraries and media, including the internal fitting models, see: <http://www.hp.com/go/tape>. For the complete range of StorageWorks D2D Backup Systems see: <http://www.hp.com/go/d2d>. For the complete range of StorageWorks RDX drives and media see: <http://www.hp.com/go/rdx>. For hardware and software compatibility of HP StorageWorks disk and tape backup products see: <http://www.hp.com/go/connect>.

|   | Position | Recommended Controller  | Part Number |
|---|----------|---|-------------|
| <b>HP StorageWorks SCSI Tape Drives, External</b><br>LTO-1 Ultrium 232<br>LTO-2 Ultrium 448<br>LTO-3 Ultrium 920<br>LTO-3 Ultrium 960<br>LTO4 Ultrium 1760<br>LTO-4 Ultrium 1840<br>DAT 40<br>DAT 72<br>DAT 160<br>1U Rack-Mount Kit<br>3U Rack-Mount Kit | External | HP SC11Xe Host Bus Adapter<br><br>Please check the full compatibility information at:<br><a href="http://www.hp.com/go/connect">http://www.hp.com/go/connect</a>            | 412911-B21  |
| <b>HP StorageWorks USB Tape Drives, External</b><br>DAT 40<br>DAT 72<br>DAT 160<br>DAT 320<br>1U USB Rack-Mount Kit   | External | USB 2.0 Port  | N/A         |
| <b>HP StorageWorks SAS Tape Drives, External</b><br>DAT 160<br>DAT 320<br>LTO-2 Ultrium 448<br>LTO-3 Ultrium 920<br>LTO-4 Ultrium 1760<br>LTO-4 Ultrium 1840<br>LTO-5 Ultrium 3000<br>LTO-5 Ultrium 3280<br>1U Rack-Mount Kit<br>3U Rack-Mount Kit        | External | HP Smart Array P212 SAS controller<br><br>Please check the full compatibility information at:<br><a href="http://www.hp.com/go/connect">http://www.hp.com/go/connect</a>    | 462828-B21  |
| <b>HP StorageWorks SCSI Tape Autoloaders, External</b><br>DAT 72x10 Autoloader<br>1/8 G2 Autoloader   | External | HP SC11Xe Host Bus Adapter<br><br>Please check the full compatibility information at:<br><a href="http://www.hp.com/go/connect">http://www.hp.com/go/connect</a>            | 412911-B21  |
| <b>HP StorageWorks SCSI Tape Libraries, External</b><br>MSL2024<br>MSL4048<br>MSL8096<br>MSL6000  | External | HP U320e SCSI Dual Channel Controller<br><br>Please check the full compatibility information at:<br><a href="http://www.hp.com/go/connect">http://www.hp.com/go/connect</a> | AH627A      |
| <b>HP StorageWorks SAS</b>  | External | HP Smart Array P212 SAS controller  | 462828-B21  |

## Storage

### Tape Autoloaders and Libraries, External

1/8 G2 Autoloader  
MSL2024  
MSL4048  
MSL8096

Please check the full compatibility information at:  
<http://www.hp.com/go/connect>

### HP StorageWorks Fibre Channel Tape Libraries, External

MSL2024  
MSL4048  
MSL8096  
MSL6000

External

Please consult the EBS connectivity matrix at:  
<http://www.hp.com/go/ebs> for connectivity information and the supported Fibre Channel HBAs shown in this QuickSpecs.

### HP StorageWorks USB RDX Removable Disk Backup System, External

RDX160  
RDX320  
RDX500  
RDX750

External

USB 2.0 port

N/A

### HP StorageWorks D2D Backup Systems, iSCSI

D2D2500i  
D2D4000i

Rack Mount

Embedded Network Controller. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.

### HP StorageWorks D2D Backup Systems, Fibre Channel

D2D4000fc

Rack Mount

Direct server attach is not supported, requires connection via SAN fabric. See: <http://www.hp.com/go/connect>



### Power Specifications

|  |                |            |            |            |            |            |
|--|----------------|------------|------------|------------|------------|------------|
| <b>HP 500W Power Supply</b>                  |                |            |            |            |            |            |
| <b>Part Number - AC 500W PSU</b>             | 515915-B21 FIO |            |            |            |            |            |
| <b>Input Voltage Range (Vrms)</b>            | 100 to 240     |            |            |            |            |            |
| <b>Frequency Range (Nominal) (Hz)</b>        | 47/63          |            |            |            |            |            |
| <b>Nominal Input Voltage (Vrms)</b>          | <b>100</b>     | <b>120</b> | <b>200</b> | <b>220</b> | <b>230</b> | <b>240</b> |
| Maximum Rated Output Wattage                 | 500            | 500        | 500        | 500        | 500        | 500        |
| Nominal Input Current (A rms)                | 5.74           | 4.99       | 2.86       | 2.58       | 2.46       | 2.36       |
| Max Rated Input Wattage Rating (Watts)       | 568            | 568        | 562        | 556        | 556        | 556        |
| Max. Rated VA (Volt-Amp)                     | 574            | 574        | 573        | 567        | 567        | 567        |
| Efficiency (%) at Max. Rated Output Wattage  | 88             | 88         | 89         | 90         | 90         | 90         |
| Power Factor                                 | 0.99           | 0.99       | 0.98       | 0.98       | 0.98       | 0.98       |
| Leakage Current (mA)                         | 0.42           | 0.50       | 0.81       | 0.91       | 0.95       | 1.00       |
| Max. Inrush Current (A peak)                 | 30             | 30         | 30         | 30         | 30         | 30         |
| Max. Inrush Current duration (mS)            | 20             | 20         | 20         | 20         | 20         | 20         |
| Maximum British Thermal Unit Rating (BTU-Hr) |                |            |            |            |            |            |

|  |                       |            |            |            |            |            |            |
|--|-----------------------|------------|------------|------------|------------|------------|------------|
| <b>HP 750W Power Supply</b>                  |                       |            |            |            |            |            |            |
| <b>Part Number - AC 750W PSU</b>             | 512327-B21 Option Kit |            |            |            |            |            |            |
| <b>Input Voltage Range (Vrms)</b>            | 100 to 240            |            |            |            |            |            |            |
| <b>Frequency Range (Nominal) (Hz)</b>        | 50/60                 |            |            |            |            |            |            |
| <b>Nominal Input Voltage (Vrms)</b>          | <b>100</b>            | <b>120</b> | <b>200</b> | <b>208</b> | <b>220</b> | <b>230</b> | <b>240</b> |
| Max Rated Output Wattage Rating              | 750                   | 750        | 750        | 750        | 750        | 750        | 750        |
| Nominal Input Current (A rms)                | 8.9                   | 7.4        | 4.3        | 4.1        | 3.9        | 3.7        | 3.6        |
| 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       |

**NOTE:**

To review typical system power ratings use the Active Answers 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)

### System Specifications

#### Power

|  |                          |                          |
|--|--------------------------|--------------------------|
| ProLiant DL165 G7 Fully Configured                       | 115V/60Hz                | 220V/50Hz                |
| Fully Loaded System Input Wattage (W)                    | 568                      | 556                      |
| Fully Loaded System Input Current (A rms)                | 4.99                     | 2.58                     |
| Fully Loaded System Thermal (BTU- Hr)                    | 1939.15                  | 1898.18                  |
| Fully Loaded System VA (Volt-Amp)                        | 574                      | 567                      |
| System Inrush Current with all power supplies loaded (A) | 30                       | 30                       |
| Power cord requirements                                  | Nema 5-15P to IEC320-C13 | IEC320-C13 to IEC320-C14 |

**NOTE:** Power shown is for a fully configured system consisting of (2) CPU, (8) double-sided DIMMs, (2) HDDs, (1) CD-ROM, and (2) PCI cards.

**Power Cord** AF556A

#### Server Power Cords

One 6' Highline (IEC-IEC) power cord ships standard

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

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

### Technical Specifications

|                    |   |  |  |
|--------------------|---|--|--|
| <b>System Unit</b> | <b>Dimensions</b><br>(H x W x D)<br>(with bezel)            | 1.70 x 17.64 x 27.59 in (4.32 x 44.80 x 69.95 cm)  |  |
|                    | <b>Weight</b><br>(approximate)                              | Maximum  | 32.08 lb (14.55 kg)<br>(all hard drives, power supplies, and processors installed) |
|                    |   | Minimum  | 27.4 lb (12.43 kg)<br>(one hard drive, power supply, and processor installed)      |
|                    | <b>Input Requirements</b><br>(per 500W power supply)        | Rated Line Voltage   | 100 to 127 VAC<br>200 to 240 VAC   |
|                    |   | Rated Input Current  | 4.99A (at 115 VAC), 2.46A (at 230 VAC)   |
|                    |   | Rated Input Frequency  | 47 to 63 Hz  |
|                    |   | Rated Input Power  | 574W (at 100 VAC)<br>573W (at 200 VAC)   |
|                    | <b>BTU Rating</b>   | Maximum  | 500W<br>1700 BTU / hr (at 100 VAC)<br>1700 BTU/hr (at 200 VAC)                     |
|                    | <b>Power Specifications</b>                                 | To review typical system power ratings use the Power Advisor which is available via the online tool located at URL:<br><a href="http://www.hp.com/go/hppoweradvisor">www.hp.com/go/hppoweradvisor</a>                    |  |
|                    |   | - Click on the system of interest. Example: DL165 G7<br>- Follow the instructions of the next screens.   |  |
|                    | <b>Power Supply Output</b><br>(per power supply)            | Rated Steady-State Power   | 500 Watts (at 100 VAC),<br>500 Watts (at 200 VAC)                                  |
|                    |   | Maximum Peak Power   | 500 Watts (at 100 VAC),<br>500 Watts (at 200 VAC)                                  |
|                    | <b>Optional High Efficiency Power Supply Specifications</b> |  |  |
|                    | <b>Input Requirements</b><br>(per power supply)             | Rated Line Voltage   | 90-110 VAC,<br>108-132 VAC<br>180-264VAC   |
|                    |   | Rated Input Current  | 7.4 A (at 115 VAC),<br>3.6 A (at 230 VAC)  |
|                    |   | Rated Input Frequency  | 47 to 63 Hz  |
|                    |   | Rated Input Power  | 846 W (at 115 VAC),<br>822W (at 230 VAC)   |
|                    | <b>BTU Rating</b>   | Maximum  | 750 W<br>2550 BTU/hr (at 100 VAC),<br>2550 BTU/hr (at 200 VAC)                     |
|                    | <b>Power Specifications</b>                                 | To review typical system power ratings use the 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> |  |
|                    |   | - Click on the system of interest. Example: DL165 G7<br>- Follow the instructions of the next screens.   |  |
|                    | <b>Power Supply Output</b><br>(per power supply)            | Rated Steady-State Power   | 750 W (at 100 VAC),<br>750W (at 200 VAC)   |
|                    |   | Maximum Peak Power   | 750 W (at 100 VAC),<br>750 W (at 200 VAC)  |

### Technical Specifications

|   |  |   |
|---|--|---|
| <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.<br>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 (non-condensing)</b> | Operating  | 10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.   |
|   | Non-operating  | 5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.   |
| <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 609 m/min (2000 ft/min).   |
|   | Non-operating  | 9144 m (30,000 ft). Maximum allowable altitude change rate is 609 m/min (2000 ft/min).  |
| <b>Acoustic Noise</b>                     | Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109). |   |
|   | <b>Idle</b>  |   |
|   | LWAd   | 6.03 B  |
|   | LpAm   | 46.1 dBA  |
|   | <b>Operating</b>   |   |
|   | LWAd   | 6.08 B  |
|   | LpAm   | 46.4 dBA  |
| <b>Emissions Classification (EMC)</b>     | <b>FCC Rating</b>  | Class A   |
|   | <b>Normative Standards</b>   | CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1   |

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

### Technical Specifications

|   |   |   |  |
|---|---|---|--|
| <b>HP B110i Smart Array Controller</b>  | <b>Drives Supported</b>                         | Up to 4 SATA devices  |  |
|   | <b>Channels</b>                                 | 4 1.5Gb SATA  |  |
|   | <b>Storage Capacity</b>                         | 3.0TB internal storage  |  |
|   | <b>Data Transfer Method</b>                     | 32-bit/33-MHz PCI bus-master  |  |
|   | <b>Maximum SATA Channel Transfer Rate</b>       | 1.5Gb/s per channel   |  |
|   | <b>Maximum Transfer Rate per PCI Bus (peak)</b> | 266 MB/s per channel  |  |
|   | <b>Protocols</b>                                | SATA<br>PIO Mode[0-4]   |  |
|   | <b>Cable</b>                                    | SATA  |  |
|   | <b>Internal ATA Connectors</b>                  | Four SATA connectors<br><b>NOTE:</b> Raid support requires optional slot based raid controller.                           |  |
|   | <hr/>   |   |  |
| <b>Smart Array P410/410i Controller</b> | <b>Disk Drive and Enclosure Interface</b>       | 6Gb/s SAS (Serial Attached SCSI)<br>3Gb/s SATA (Serial ATA)   |  |
|   | <b>SAS Connectors</b>                           | 2 internal (Mini-SAS) x8 wide port connectors   |  |
|   | <b>Cache Memory Speed</b>                       | DDR2-533MHz with 40 or 72-bit wide bus provides up to 4.2 GB/s maximum bandwidth.   |  |
|   | <b>Server Interface</b>                         | x8 2.5G PCIe 2.0 provides 2GB/s maximum bandwidth   |  |
|   | <b>SAS Speed</b>                                | x8 6Gb/s SAS provides 4.8GB/s maximum bandwidth   |  |
|   | <b>Cache Memory</b>                             | 40-bit 256MB ECC protected cache (72-bit 512MB BBWC module upgrades available); transportable with battery-backed upgrade |  |
|   | <b>Logical Drives Supported</b>                 | Up to 64 logical drives   |  |
|   | <b>Host Memory Addressing</b>                   | 64-bit, supporting greater than 4GB server memory space   |  |
|   | <b>RAID Support</b>                             |   | RAID 6, 6+0 (Advanced Data Guarding)<br><b>NOTE:</b> The minimum of 256 MB cache, battery kit, and Smart Array Advanced Pack License Key upgrade is required to enable RAID 6, 6+0 |
|   |   |   | RAID 5, 5+0 (Distributed Data Guarding)<br><b>NOTE:</b> The 256 MB is required to enable RAID 5, 5+0 support of the Smart Array P410i  |
|   |   | RAID 1+0 (Striping & Mirroring)   |  |
|   |   | RAID 0 (Striping)   |  |
| <hr/>                                   |   |   |  |

### Technical Specifications

|  |   |  |
|--|---|--|
| <b>(2x) NC362i Integrated Dual Port Gigabit Server Adapter</b> | <b>Network Interface</b>  | Integrated 10/100/1000BASE-T Transceiver<br>Combines a triple-speed IEEE 802.3TM - Compliant Media Access Controller (MAC) with a triple-speed Ethernet transceiver. |
|  | <b>Data Transfer Method</b>   | Compliant to x1 PCIe Specification   |
|  | <b>Controller</b>   | Intel® 82576   |
|  | <b>Network Transfer Rate</b>  | 10Base-T (Half-Duplex)   |
|  |   | 10Base-T (Full-Duplex)   |
|  |   | 100Base-TX (Half-Duplex)   |
| 100Base-TX (Full-Duplex)                                       |   |  |
| <b>Connector</b>   | 1000Base-TX (Half and Full-Duplex)  |  |
|  | RJ-45 connector   |  |
| <b>Cable Support</b>   | Performs all the physical layer functions for 10BASE-T, 100BASE-T, and 1000BASE-T Ethernet on standard Category 5 UTP |  |

---

|   |   |  |
|---|---|--|
| <b>Environment-friendly Products and Approach</b> | <b>End-of-life Management and Recycling</b> | Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: <a href="http://www.hp.com/go/green">http://www.hp.com/go/green</a> . To recycle your product, please go to: <a href="http://www.hp.com/go/green">http://www.hp.com/go/green</a> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner. |
|---|---|--|

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.

---

© Copyright 2010 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. AMD, Opteron, and Hyper-Transport are trademarks of AMD Corporation in the United States 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>