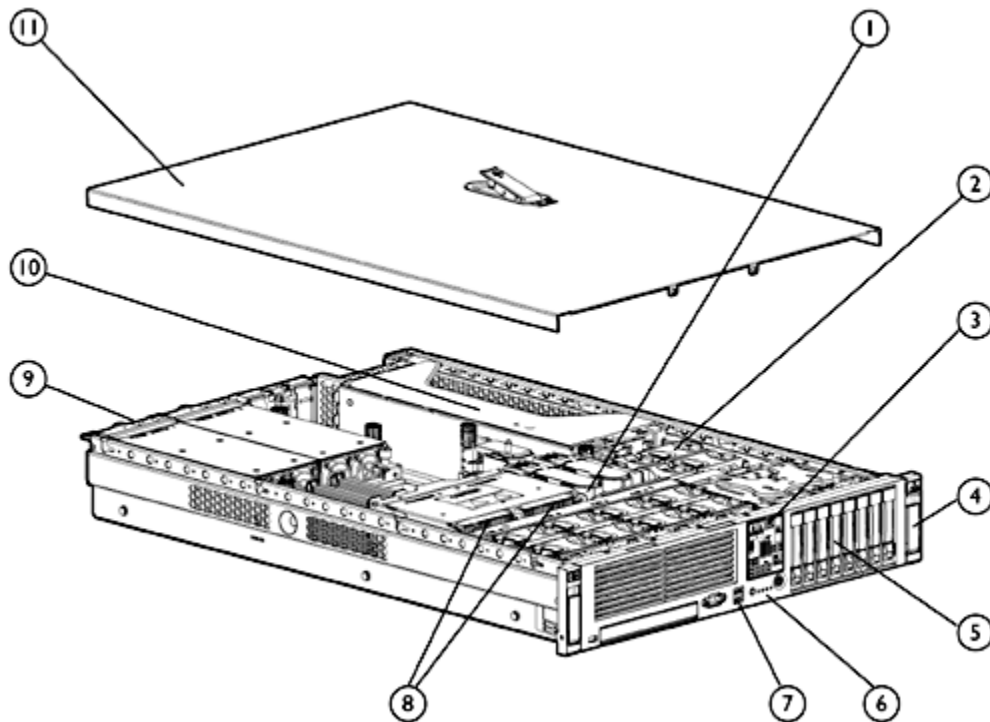


### Overview



1. Eight sockets for PC2-5300 Fully Buffered DIMMs (DDR2-667)
2. Hot-plug fans, full redundancy
3. Systems Insight Display
4. Quick release lever for rapid server access
5. Support for eight Small Form Factor hot plug hard drives bays
6. Front LEDs (show server status) and Unit Identification button/LED (for easy in rack server identification)

7. Two front USB ports (2 rear USB ports, 1 internal USB port)
8. Intel Xeon Processor (Performance models include two processors)
9. Hot plug power supply, redundancy option (High performance models include redundant power supply)
10. Three PCI-E non-hot plug expansion slots (or optional mixed PCI-X/E expansion cage). Two additional PCI-E slots embedded on the system board. Four slots available for use; one consumed by Smart Array controller.
11. Quick removal access panel

### Overview

### What's New

- Intel Xeon Quad-core processors with 1066MHz front-side bus.

### At A Glance

The HP ProLiant DL380, the world's largest selling server, delivers on its history of design excellence with enterprise-class uptime and manageability, proven 2-way Intel Xeon performance, and 2U density for a variety of rack deployments and applications.

- **Processors:**
  - Dual-Core and Quad-Core Intel® Xeon™ processors for blazing performance; systems support up to 2 processors (2 processors standard on all Performance models)
  - Preconfigured Performance models save valuable deployment time at a discounted bundle price
  - Intel 5000P chipset
- **Memory:**
  - Up to 32 GB PC2-5300 Fully Buffered DIMMs (DDR2-667) with 4:1 and 2:1 interleaving available, online spare and mirrored memory capabilities
  - NOTE: Memory DIMMs in systems with the Front Side Bus (FSB) running at 1333 MHz will run at 667 MHz and in systems with a FSB running at 1066 MHz or 667 MHz the memory DIMMs will run at 533 MHz.
- **Storage Controller:**
  - Performance Models: HP Smart Array P400/512MB BBWC Controller (RAID 0/1/1+0/5/6)
  - Base Models: HP Smart Array P400/256MB Controller (RAID 0/1/1+0/5)
  - Entry Models: HP Smart Array E200/64MB Controller (RAID 0/1/1+0)
- **Internal Drive Support:**
  - (8) small form factor (SFF) hot-plug drive bays to support Serial-attached SCSI (SAS) and Serial ATA (SATA) drives
  - Slimline media bay supporting DVD, CD or Floppy drive
- **Network Controller:**
  - Embedded NC373i Multifunction Gigabit Server Adapters with TCP/IP Offload Engine, including support for Accelerated iSCSI and RDMA through optional ProLiant Essentials Licensing Kits
- **Expansion Slots:**
  - Four available PCI-Express slots, optional mixed PCI-X / PCI-Express configurations available
- **USB Ports:**
  - USB 2.0 support
  - 5 total ports: (2) ports up front; (2) ports in back; (1) port internal
- **Redundancy:**
  - Fully redundant hot plug fans
  - Hot plug power supply with optional redundancy (Included in Performance models)
- **Management:**
  - New Integrated Lights-Out 2 featuring Integrated Remote Console with KVM over IP performance over shared network access
  - HP Power Meter and Power Regulator for ProLiant, delivering integrated power monitoring and server level, policy based power management with industry leading energy efficiency and savings on system power and cooling costs.
  - Automatic Server Recovery (ASR), ROM Based Setup Utility (RBSU), HP System Insight Manager, Status LEDs including system health and UID and SmartStart
  - System Insight Display on the front bezel for quick and easy server diagnostics
- **Form Factor:**
  - Rack (2U), (3.5-inch); Depth 26 inches (66 cm)
- **Deployment/Serviceability:**
  - Quick Deploy Rail System includes sliding universal rails, an ambidextrous cable management arm and quick release levers for fast and easy serviceability
  - Tool-less access to all system components for easy in rack serviceability
- **Warranty:**
  - Protected by HP Services and a worldwide network of resellers and service providers. Three-year Next Business Day, on-site limited global warranty. Certain restrictions and exclusions apply. Pre-Failure Notification on processors, memory, and SAS hard drives. SATA hard drives have a one-year warranty.

Standard Features

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

|                                                             |                                                                                                                                                   |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Processor</b><br>One of the following depending on Model | Quad-Core Intel Xeon Processor E5320 (1.86 GHz, 80 Watts, 1066 Front Side Bus (FSB))                                                              |
|                                                             | Quad-Core Intel Xeon Processor E5310 (1.60 GHz, 80 Watts, 1066 FSB)                                                                               |
|                                                             | Dual-Core Intel Xeon Processor 5160 (3.0 GHz, 80 Watts, 1333 FSB)                                                                                 |
|                                                             | Dual-Core Intel Xeon Processor 5150 (2.67 GHz, 65 Watts, 1333 FSB)                                                                                |
|                                                             | Dual-Core Intel Xeon Processor 5148 (2.33 GHz, 40 Watts, 1333 FSB, Low Voltage)                                                                   |
|                                                             | Dual-Core Intel Xeon Processor 5140 (2.33 GHz, 65 Watts, 1333 FSB)                                                                                |
|                                                             | Dual-Core Intel Xeon Processor 5130 (2.0 GHz, 65 Watts, 1333 FSB)                                                                                 |
|                                                             | Dual-Core Intel Xeon Processor 5120 (1.86 GHz, 65 Watts, 1066 FSB)                                                                                |
|                                                             | Dual-Core Intel Xeon Processor 5110 (1.6 GHz, 65 Watts, 1066 FSB)                                                                                 |
|                                                             | Dual-Core Intel Xeon Processor 5080 (3.73GHz, 130 Watts, 1066 FSB)                                                                                |
|                                                             | Dual-Core Intel Xeon Processor 5060 (3.2GHz, 130 Watts, 1066 FSB)                                                                                 |
|                                                             | Dual-Core Intel Xeon Processor 5050 (3.0 GHz, 95 Watts, 667 FSB)                                                                                  |
|                                                             | <b>NOTE:</b> Up to 2 processors supported. Performance configurations include two processors. Mixing different processor models is not supported. |

|                                                                |                                             |
|----------------------------------------------------------------|---------------------------------------------|
| <b>Cache Memory</b><br>One of the following depending on Model | 8MB (2 x 4MB) Level 2 cache (5300 sequence) |
|                                                                | 4MB (1 x 4MB) Level 2 cache (5100 sequence) |
|                                                                | 4MB (2 x 2MB) Level 2 cache (5000 sequence) |

|                |                                                                                                                                                                                                            |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Chipset</b> | Intel 5000P Chipset                                                                                                                                                                                        |
|                | <b>NOTE:</b> For more information regarding Intel chipsets, please see the following URL:<br><a href="http://www.intel.com/products/server/chipsets/">http://www.intel.com/products/server/chipsets/</a> . |

|                       |                             |
|-----------------------|-----------------------------|
| <b>Upgradeability</b> | Upgradeable to 2 processors |
|-----------------------|-----------------------------|

|                          |                                                                                          |
|--------------------------|------------------------------------------------------------------------------------------|
| <b>Memory Protection</b> | Advanced ECC (multi-bit error protection), Online Spare, Mirroring<br>4-way Interleaving |
|--------------------------|------------------------------------------------------------------------------------------|

|                                                                                                                                                                                                           |                               |                                                                                                                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| <b>Memory</b>                                                                                                                                                                                             | Type                          | PC2-5300 Fully Buffered DIMMs (DDR2-667) with 4:1 and 2:1 interleaving available (interleaving requires identical DIMMs) |
|                                                                                                                                                                                                           | Standard (Entry Models)       | 1 GB (2 x 512 MB)                                                                                                        |
|                                                                                                                                                                                                           | Standard (Base Models)        | 2 GB (2 x 1 GB)                                                                                                          |
|                                                                                                                                                                                                           | Standard (Performance Models) | 4 GB (4 x 1 GB)                                                                                                          |
|                                                                                                                                                                                                           | Maximum                       | 32 GB (8 x 4 GB)                                                                                                         |
| <b>NOTE:</b> Memory DIMMs in systems with the Front Side Bus (FSB) running at 1333 MHz will run at 667 MHz and in systems with a FSB running at 1066 MHz or 667 MHz the memory DIMMs will run at 533 MHz. |                               |                                                                                                                          |

Standard Features

**Network Controller** Embedded NC373i Multifunction Gigabit Server Adapters with TCP/IP Offload Engine, including support for Accelerated iSCSI and RDMA through optional ProLiant Essentials Licensing Kits

Expansion Slots

| Embedded Slots | Slot Number | Bus Speed* | Bus Number** | Device Number*** | Hot Plug | PCI Voltage |
|----------------|-------------|------------|--------------|------------------|----------|-------------|
|                | 1           | x4 PCIe    | 6            | 0                | no       | N/A         |
|                | 2           | x4 PCIe    | 11           | 0                | no       | N/A         |

**NOTE:** Embedded slots support half-height low profile cards. For Base and Performance models, the integrated Smart Array P400 (SAS Controller) is installed in Slot 1.

| PCIe Riser (Standard) | Slot Number | Bus Speed* | Bus Number** | Device Number*** | Hot Plug | PCI Voltage |
|-----------------------|-------------|------------|--------------|------------------|----------|-------------|
|                       | 3           | x4 PCIe    | 14           | 0                | no       | N/A         |
|                       | 4           | x8 PCIe    | 23           | 0                | no       | N/A         |
|                       | 5           | x8 PCIe    | 19           | 0                | no       | N/A         |

**NOTE:** Riser slots support full-size PCIe/PCI-X cards. For Entry model, the standard Smart Array E200 Controller with 64MB Cache (SAS Controller) is installed in Slot 3.

| PCIe/PCI-X Riser (Optional) | Slot Number | Bus Speed*             | Bus Number** | Device Number*** | Hot Plug | PCI Voltage |
|-----------------------------|-------------|------------------------|--------------|------------------|----------|-------------|
|                             | 3           | x8 PCIe                | 23           | 0                | no       | N/A         |
|                             | 4           | 64-bit/133MHz<br>PCI-X | 18           | 1                | no       | 3.3 Volt    |
|                             | 5           | 64-bit/133MHz<br>PCI-X | 18           | 2                | no       | 3.3 Volt    |

**NOTE:** Server has 5 total slots with 4 slots are available for use; one slot populated by the internal storage controller.

**\*NOTE:** x4 slots support x8 cards, but will run at x4 speeds. x8 slots supports x16 cards, but will run at x8 speeds.

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

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

|                                                                      |                     |                                                                                                                                                                        |
|----------------------------------------------------------------------|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Storage Controller</b><br>One of the following depending on Model | Performance Models: | HP Smart Array P400/512MB BBWC Controller (RAID 0/1/1+0/5/6)                                                                                                           |
|                                                                      | Base Models:        | HP Smart Array P400/256MB Controller (RAID 0/1/1+0/5)<br><b>Available upgrades:</b> 512MB battery-backed write cache (BBWC) or standalone battery for RAID 0/1/1+0/5/6 |
|                                                                      | Entry Models:       | HP Smart Array E200/64MB Controller (RAID 0/1/1+0)<br><b>Available upgrades:</b> 128MB battery-backed write cache (BBWC) for RAID 0/1/1+0/5                            |

|                |                                         |                                                       |
|----------------|-----------------------------------------|-------------------------------------------------------|
| <b>Storage</b> | Diskette Drive                          | None Standard                                         |
|                | Optical Drive                           | None Standard                                         |
|                | One of the following depending on Model | IDE DVD-ROM/CDRW Combo included on Performance models |
|                | Hard Drives                             | None Standard                                         |



Standard Features

|                          |              |         |                                                              |
|--------------------------|--------------|---------|--------------------------------------------------------------|
| Maximum Internal Storage | Hot Plug SAS | 1.168TB | 8 x 146GB with standard internal hot plug SFF SAS drive cage |
|--------------------------|--------------|---------|--------------------------------------------------------------|

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Remote Management | Integrated Lights Out 2 (iLO 2) Standard Management: <ul style="list-style-type: none"><li>• Virtual Text Remote Console</li><li>• Virtual Power Button Control</li><li>• Integrated Remote Console</li><li>• Dedicated &amp; full function shared network connectivity</li><li>• Embedded system health</li><li>• Browser, command line and scripted access</li><li>• Automatic IP Configuration via DHCP/DNS/WINS</li><li>• Industry Standard 128-bit Secure Sockets Layer (SSL) and Secure Shell security (SSH)</li><li>• OS independent hardware health status</li><li>• IML and iLO Event Logging</li><li>• Support for 12 user accounts with customizable access privilege</li></ul> |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Intelligent Manageability | HP Systems Insight Manager<br>SmartStart<br>Management Agent<br>Redundant ROM<br>Remote Flash ROM<br>ROM-Based Setup Utility (RBSU)<br>Integrated Management Log<br>Automatic Server Recovery (ASR)<br>Dynamic Sector Repairing (with Smart Array controller)<br>Drive Parameter Tracking (with Smart Array controller)<br>Hot Spare Boot<br><b>NOTE:</b> Upon the event of a failed processor in a multi-processing environment, the system will automatically reboot and attempt to use the remaining good processor.<br>Pre-Failure Warranty (covers processors, SAS hard drives and memory) |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|            |                              |                                                                                                                                                                                                                                                                                                    |
|------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Interfaces | Serial                       | 1                                                                                                                                                                                                                                                                                                  |
|            | Pointing Device (Mouse)      | 1                                                                                                                                                                                                                                                                                                  |
|            | Graphics                     | 1                                                                                                                                                                                                                                                                                                  |
|            | Keyboard                     | 1                                                                                                                                                                                                                                                                                                  |
|            | VGA                          | 2 (1 front, 1 back)                                                                                                                                                                                                                                                                                |
|            | Network RJ-45                | 2                                                                                                                                                                                                                                                                                                  |
|            | iLO 2 remote management port | 1                                                                                                                                                                                                                                                                                                  |
|            | USB 2.0 Ports                | 5 total: 2 front, 2 back, 1 internal<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> . |

|          |                                                                     |
|----------|---------------------------------------------------------------------|
| Graphics | Integrated ATI ES1000 1280 x 1024 x 16M color (32MB video standard) |
|----------|---------------------------------------------------------------------|

Standard Features

|                                              |                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------------|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Form Factor                                  | Rack (2U); Height 3.38-inch (8.59 cm); Depth: 26 inches (66 cm) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| ProLiant Essentials Foundation Pack Software | HP Systems Insight Manager                                      | <p>HP Systems Insight Manager (HP SIM) provides a unified, secure and extensible environment to centrally manage servers, storage and other infrastructure devices across multiple operating system platforms.</p> <p>Through a single management view, HP SIM provides core management services that include device discovery and identification, event views, health monitoring, inventory data collection, software version control and reporting. HP SIM is built on industry standards and is extensible with value-added ProLiant Essentials, Integrity Essentials and Storage Essentials software to meet individual management needs. For more details on HP SIM visit <a href="http://www.hp.com/go/hpsim">http://www.hp.com/go/hpsim</a>.</p> <p>HP SIM provides organizations with the following benefits:</p> <ul style="list-style-type: none"><li>• Simplifies and consolidates infrastructure lifecycle management using task and query based functionality</li><li>• Provides the foundation for infrastructure automation and virtualization</li><li>• Enables IT management based on business processes not hardware platforms</li><li>• Lowers infrastructure maintenance cost and frees resources for innovation</li><li>• Maximizes resource utilization with virtualization technologies</li><li>• Provides a central point of integration between infrastructure and Enterprise management tools such as HP OpenView</li></ul> |
|                                              | SmartStart                                                      | <p>SmartStart simplifies server setup by providing a quick, easy way to deploy reliable and consistent server configurations. For more information, please visit the SmartStart Web site at <a href="http://www.hp.com/servers/manage">http://www.hp.com/servers/manage</a>.</p> <p>SmartStart version supported (minimum): SmartStart 7.51</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                              | Insight Management Agents                                       | <p>Insight Management Agents should be installed on all HP servers to present system instrumentation, health and configuration information into HP Systems Insight Manager and the HP System Management Homepage. The HP System Management Homepage aggregates systems data from Insight Management Agents and other HP management tools, providing a consolidated browser-based interface for managing individual servers,</p> <p>Insight Management Agents and The HP System Management Homepage are included on ProLiant Support Packs, and can also be installed using the server profiles provided with the ProLiant Essentials Rapid Deployment Pack. For additional information about the Management Agents and the HP System Management Homepage please visit the management Web site at <a href="http://www.hp.com/servers/manage">http://www.hp.com/servers/manage</a>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                              | Subscriber's Choice                                             | <p>Subscriber's Choice Driver and Support Alerts/Notifications is a web-based email subscription service that provides automatic delivery of software and driver change notifications for ProLiant products. Sign up at <a href="http://www.hp.com/go/subscriberschoice">http://www.hp.com/go/subscriberschoice</a> and customize your profile to receive alerts on updates as they become available.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |



### Standard Features

|                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ROMPaq, support software, and configuration utilities | The latest software, drivers, and firmware fully optimized and tested for your ProLiant server and options<br>Available in SmartStart or downloadable from the Software and Drivers download pages at <a href="http://www.hp.com/go/support">http://www.hp.com/go/support</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Insight Diagnostics                                   | The most advanced configuration analysis, reporting and troubleshooting utilities used by HP and at your fingertips, available in SmartStart.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Optional ProLiant Essentials Value Packs              | Optional software offerings that extend the functionality of an Adaptive Infrastructure to address specific business problems and needs: <ul style="list-style-type: none"> <li>• Rapid Deployment Pack (RDP) is an automated deployment and provisioning solution for all ProLiant servers. RDP includes the ProLiant Integration Module featuring ProLiant server pre-configured events for OS installation, and optimized software drivers, firmware and management agents. Every RDP disc includes 7-day, 10-node trial licenses for evaluation purposes. RDP requires a license for each server deployed and is available for purchase with HP servers. For more information, visit: <a href="http://www.hp.com/servers/rdp">http://www.hp.com/servers/rdp</a>.</li> <li>• Workload Management Pack – provides easier management of complex environments, improving overall server utilization and enabling Windows 2000 customers for the first time to confidently deploy multiple applications on a single multiprocessor ProLiant Server.</li> <li>• Performance Management Pack – a performance management solution that identifies and explains hardware performance bottlenecks on ProLiant servers and attached options enabling users to better utilize their valuable resources.</li> <li>• Intelligent Networking Pack – detects and analyzes network bottlenecks or broken network linkages and steers traffic to the optimum route based on network conditions, plus it provides an extra layer of protection. The virus throttle feature of the solution slows the propagation of fast spreading virus.</li> <li>• Vulnerability and Patch Management Pack – identifies and remediates software security vulnerabilities due to missing patches as well operating system configurations that can be exploited by viruses, worms, and other blended threats.</li> <li>• Virtual Machine Management Pack – provides central management and control of virtual machines from Microsoft and VMware. Integrated approach provides the ability to manage both physical and virtual resources from a single management console.</li> <li>• Server Migration Pack - The Server Migration Pack automates the manual processes required for migrating servers between physical or virtual platforms (P2V, V2P, and V2V).</li> <li>• Server Migration Pack – P2P Edition: Upgrading or replacing your existing server? Effortlessly transition to new servers with automated, accurate and affordable migration of OS, application and data.</li> <li>• Accelerated iSCSI Pack – enables the embedded Multifunction network controller to serve as both a NIC and an iSCSI HBA providing access to SAN storage over the same connection used for networking. Processing of the protocol stack is offloaded to the NIC reducing CPU utilization and greatly improving the speed with which the requests are processed and sent to the network.</li> <li>• Remote Directory Memory Access (RDMA) Pack for Embedded Multifunction Gigabit Server Adapters – provides direct and faster</li> </ul> |

Standard Features

|                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                  | communication between application buffers in separate servers for tasks that involves moving large amounts of data, such as network backups, database read/write, and high performance computing.                                                                                                                                                                                                                               |
| Optional Remote Management Packs | <ul style="list-style-type: none"><li>• Integrated Lights-Out Advanced Pack - upgrades the iLO 2 processor with comprehensive remote control including Virtual KVM graphical console, virtual media, power management and enterprise security.</li><li>• Integrated Lights-Out Select Pack - upgrades the iLO 2 processor with virtual media, power management and enterprise security for text console environments.</li></ul> |

**NOTE:** Flexible and volume quantity license kits are available for ProLiant Essentials Value Packs. Refer to <http://www.hp.com/servers/proliantessentials> or the various ProLiant Essentials Value Pack product QuickSpecs for more information.

**NOTE:** For more information regarding ProLiant Essentials Software, please see the following URL: <http://www.hp.com/servers/proliantessentials>.

|                               |                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Industry Standard Compliance  | ACPI 2.0 Compliant<br>PCI 2.2 Compliant<br>WOL Support<br>Microsoft® Logo certifications<br>USB 2.0 Support                                                                                                                                                                                                                                     |
| Security                      | Power-on password<br>Keyboard password<br>Diskette drive control<br>Diskette boot control<br>QuickLock, Network Server Mode<br>Parallel and serial interface control<br>Administrator's password<br>Disk configuration lock                                                                                                                     |
| Server Power Cords            | High voltage power cord ships standard with all part numbers.                                                                                                                                                                                                                                                                                   |
| UPS and PDU Power Cord Matrix | Please see the UPS and PDU cable matrix that lists cable descriptions, requirements, and specifications for UPS and PDU units:<br><a href="ftp://ftp.compaq.com/pub/products/servers/ProLiantstorage/power-protection/powercordmatrix.pdf">ftp://ftp.compaq.com/pub/products/servers/ProLiantstorage/power-protection/powercordmatrix.pdf</a> . |
| Power Supply                  | 800Watt, CE Mark Compliant<br>Optional Hot Plug AC Redundant Power Supply                                                                                                                                                                                                                                                                       |
| System Fans                   | Fully redundant hot plug fans ship standard                                                                                                                                                                                                                                                                                                     |
| Required Cabling              | For required cabling information, refer to the Web site at:<br><a href="http://h18000.www1.hp.com/products/servers/proliantDL380/">http://h18000.www1.hp.com/products/servers/proliantDL380/</a> .                                                                                                                                              |



### Standard Features

#### OS Support

Microsoft Windows Server 2000  
Microsoft Windows Server 2003  
Novell NetWare  
LINUX (Red Hat, SuSE)  
SCO UnixWare, OpenServer  
VMware Virtualization Software  
Solaris 10 32/64-bit

**NOTE:** For more complete and up-to-date information on how to buy server operating systems from HP please visit the OS product site at:

<http://h18004.www1.hp.com/products/servers/software/OEM.html>.

**NOTE:** For a more complete and up-to-date listing of supported OSs and versions, please visit our OS Support Matrix at: <http://www.hp.com/go/supportos>.

**NOTE:** For an up-to-date listing of the latest drivers available for the HP ProLiant DL380 G5, please see: <http://h18023.www1.hp.com/support/files/server/us/index.html>.

**NOTE:** For a more complete and up-to-date information on Linux support, please visit HP Linux Web site at: <http://h18000.www1.hp.com/products/servers/linux/hpLinuxcert.html>.

**NOTE:** For more information on HP's Certified and Supported ProLiant Servers, please visit the VMware Server Support Matrix at:

<http://h18004.www1.hp.com/products/servers/software/vmware/hpvmwarecert.html>.

#### Rack Airflow Requirements

##### Rack 10000 series Cabinets

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

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

- Front and rear doors: If your 42U server rack includes closing front and rear doors, you must allow 830 square inches (5,350 sq cm) of hole evenly distributed from top to bottom to permit adequate airflow (equivalent to the required 64 percent open area for ventilation).
- Side: The clearance between the installed rack component and the side panels of the rack must be a minimum of 2.75 inches (7 cm).

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

**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: <http://h18000.www1.hp.com/products/servers/proliantdl380/index.html>.

#### Rack Kit

The HP ProLiant DL380 quick deploy rail system provides tool-free support for racks with square or round mounting holes (including Compaq/HP 7000\*, 9000, 10000 and HP series), with an adjustment range of 24" - 36". The ambidextrous cable management arm can be mounted on either the left or right side for improved cable management.

**NOTE:** Cable management arm must be removed to access hot-plug power supplies when the cable management arm is mounted on the right.

**\*NOTE:** High Airflow Inserts (High Air Flow Rack Door Insert for the 7142 Rack (single) - PN: 327281-B21; or High Air Flow Rack Door Insert for the 7142 Rack (6-pack) - PN: 327281-B22) are required to support the HP ProLiant DL380 G5 in 7000 series racks. The DL380 G5 Cable Management Arm is not supported on 7000 series racks.

### Standard Features

#### Telco Rack Support

DL380 G5 Telco Rack Kit:

Support for all 2-post Telco racks requires the use of the standard rack kit and an additional option kit from Rack Solutions (<http://www.racksolutions.com/hp/>)

#### 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 MSA1000, 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 eCo-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

This product is covered by a global limited warranty and supported by HP Services and a worldwide network of resellers and service providers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Additional support may be covered under the warranty or available for an additional fee. Enhancements to warranty services are available through HP Care Pack services or customized service agreements.

**NOTE:** Server Warranty includes 3 year Parts, 3 year Labor, 3-year on-site support. Additional information regarding worldwide limited warranty and technical support is available at: <http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>

HP Care Pack services include coverage for the HP branded hardware options qualified for the server, purchased at the same time or afterward, internal to the enclosure, as well as 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, 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.

HP services provide continuous care and support expertise with committed response designed to meet your IT and business needs.

To fully capitalizing 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.

Enhanced Care – Minimum recommended service support offer designed to ensure customers have access to expert assistance, whenever they need it.

- 4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years

### Standard Features

Continuous Care – Recommended service delivering cost-effective support options designed to extend HP Services committed response and guaranteed fix times, designed to speed problem identification and resolution.

- *6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years*

Total Care – Highest HP Support service level recommend to help increase IT performance and availability with comprehensive, integrated hardware and software services

- *Support Plus 24 – Onsite HW support 24x7, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays*

Deployment Services – HP Installation and Start Up services designed to take time, risk, and worry out of the deployment of ProLiant servers – and free customers IT support staff to focus on what they do best, their business.

- *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*

**NOTE:** For a complete listing of service offerings and information visit:

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

<http://www.hp.com/go/proliant/carepack>

*HPC Interconnects*

**NOTE:** High Performance Computing (HPC) interconnect technologies are available for the DL380 under the Cluster Platform product portfolio. These high-speed interconnects are fully supported by HP when they are part of these configure to order clusters. Solutions can be defined with a lot of flexibility with the help of configuration tools. Please visit the following URL to configure HPC Clusters with InfiniBand, Gigabit Ethernet or Myrinet Interconnects:  
<http://www.hp.com/techservers/clusters/ucp/index.html>

|                  |                  |                                |
|------------------|------------------|--------------------------------|
| HPC Interconnect | InfiniBand       | PCI-X and PCI-Express adapters |
|                  | Gigabit Ethernet | Use embedded ports             |
|                  | Myrinet XP       | PCI-X Rev D and Rev E adapters |

Models

|                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>HP DL380 G5 Performance Models</b><br><br><b>Dual-Core Models</b><br><b>HP DL380G5 5160 4G HPM</b><br>418315-001<br><b>HP DL380G5 5150 4G HPM</b><br>418314-001                                                                                                                                                                                              | <b>Processor(s)</b><br><a href="#">Two of the following depending on Model</a><br><br><b>Cache Memory</b><br><b>Memory</b><br><br><b>Network Controller</b><br><b>Storage Controller</b><br><b>Hard Drive</b><br><b>Internal Storage</b><br><b>Optical Drive</b><br><b>Form Factor</b><br><b>Availability</b>                                                            | (2) Dual-Core Intel Xeon 5160 Processors (3.00 GHz, 80 Watt, 1333 FSB)<br>(2) Dual-Core Intel Xeon 5150 Processors (2.67 GHz, 65 Watt, 1333 FSB)<br>4MB (1 x 4MB) Level 2 cache - Intel Xeon processor 5100 sequence<br>4 GB (4 x 1 GB of 4:1 interleaved PC2-5300 Fully Buffered DIMMs (DDR2-667) with Advanced ECC, mirrored and online spare memory capabilities<br>Embedded NC373i Multifunction Gigabit Server Adapters<br>HP Smart Array P400/512MB BBWC Controller (RAID 0/1/1+0/5/6)<br>None ship standard<br>1.168TB (with optional hard drives)<br>IDE DVD-ROM/CDRW combo<br>Rack (2U), Height 3.38-inch/8.59 cm; Depth: 26 inches (66 cm)<br>Hot Plug Fully Redundant Fans and Power Supplies                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>HP DL380 G5 Base Models</b><br><br><b>Quad-Core Models</b><br><b>HP DL380G5 E5320 2G</b><br>433526-001<br><br><b>Dual-Core Models</b><br><b>HP DL380G5 5160 2G</b><br>417458-001<br><b>HP DL380G5 5150 2G</b><br>417457-001<br><b>HP DL380G5 5140 2G</b><br>417456-001<br><b>HP DL380G5 5130 2G</b><br>417455-001<br><b>HP DL380G5 5060 2G</b><br>397307-001 | <b>Processor(s)</b><br><a href="#">One of the following depending on Model</a><br><br><b>Cache Memory</b><br><a href="#">One of the following depending on Model</a><br><b>Memory</b><br><br><b>Network Controller</b><br><b>Storage Controller</b><br><b>Hard Drive</b><br><b>Internal Storage</b><br><b>Optical Drive</b><br><b>Form Factor</b><br><b>Availability</b> | (1) Quad-Core Intel Xeon E5320 Processors (1.86 GHz, 80 Watt, 1066 FSB)<br>(1) Dual-Core Intel Xeon 5160 Processors (3.00 GHz, 80 Watt, 1333 FSB)<br>(1) Dual-Core Intel Xeon 5150 Processors (2.67 GHz, 65 Watt, 1333 FSB)<br>(1) Dual-Core Intel Xeon 5140 Processor (2.33 GHz, 65 Watt, 1333 FSB)<br>(1) Dual-Core Intel Xeon 5130 Processor (2.0 GHz, 65 Watt, 1333 FSB)<br>(1) Dual-Core Intel Xeon 5060 Processor (3.2 GHz, 130 Watt, 1066 FSB)<br>8MB (2 x 4MB) Level 2 cache – Intel Xeon processor 5300 sequence<br>4MB (1 x 4MB) Level 2 cache – Intel Xeon processor 5100 sequence<br>4MB (2 x 2MB) Level 2 cache – Intel Xeon processor 5000 sequence<br>2 GB (2 x 1 GB) PC2-5300 Fully Buffered DIMMs (DDR2-667) with Advanced ECC, mirrored and online spare memory capabilities<br>Embedded NC373i Multifunction Gigabit Server Adapters<br>HP Smart Array P400/256MB Controller (RAID 0/1/1+0/5)<br>None ship standard<br>1.168TB (with optional hard drives)<br>Optional DVD, DVD/CD-RW combo, DVD+R/RW or floppy drive<br>Rack (2U), Height 3.38-inch/8.59cm; Depth: 26 inches (66 cm)<br>Hot Plug Fully Redundant Fans Standard |

Models

|                                                                     |                                                                                |                                                                                                                                                                                                                          |
|---------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>HP DL380 G5 Entry Models</b>                                     | <b>Processor(s)</b><br><a href="#">One of the following depending on Model</a> | (1) Quad-Core Intel Xeon E5310 Processor (1.60 GHz, 80 Watt, 1066 FSB)<br>(1) Dual-Core Intel Xeon 5120 Processor (1.87 GHz, 65 Watt, 1066 FSB)<br>(1) Dual-Core Intel Xeon 5110 Processor (1.60 GHz, 65 Watt, 1066 FSB) |
| <b>Quad-Core Models</b><br><b>HP DL380G5 E5310 1G</b><br>433527-001 | <b>Cache Memory</b>                                                            | 8MB (2 x 4MB) Level 2 cache - Intel Xeon processor 5300 sequence<br>4MB (1 x 4MB) Level 2 cache - Intel Xeon processor 5100 sequence                                                                                     |
| <b>Dual-Core Models</b><br><b>HP DL380G5 5120 1G</b><br>417454-001  | <b>Memory</b>                                                                  | 1 GB (2 x 512 MB) PC2-5300 Fully Buffered DIMMs (DDR2-667) with Advanced ECC, mirrored and online spare memory capabilities                                                                                              |
| <b>HP DL380G5 5110 1G</b><br>417453-001                             | <b>Network Controller</b>                                                      | Embedded NC373i Multifunction Gigabit Server Adapters                                                                                                                                                                    |
|                                                                     | <b>Storage Controller</b>                                                      | HP Smart Array E200/64MB Controller (RAID 0/1/1+0)                                                                                                                                                                       |
|                                                                     | <b>Hard Drive</b>                                                              | None ship standard                                                                                                                                                                                                       |
|                                                                     | <b>Internal Storage</b>                                                        | 1.168TB (with optional hard drives)                                                                                                                                                                                      |
|                                                                     | <b>Optical Drive</b>                                                           | Optional DVD, DVD/CD-RW combo, DVD+R/RW or floppy drive                                                                                                                                                                  |
|                                                                     | <b>Form Factor</b>                                                             | Rack (2U), Height 3.38-inch/8.59cm; Depth: 26 inches (66 cm)                                                                                                                                                             |
|                                                                     | <b>Availability</b>                                                            | Hot Plug Fully Redundant Fans Standard                                                                                                                                                                                   |



Configuration Information - Factory Integrated Models

**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:** This product offering does not support HP Factory Express Server Configuration Level 1.

**NOTE:** FIO indicates that this option only available as a Factory Installable Option.

Step 1: Base Configuration (choose one of the following configurable models)

|        |                                                       |            |
|--------|-------------------------------------------------------|------------|
| Models | HP ProLiant DL380G5 Rack Chassis                      | 391835-B21 |
|        | <b>Factory Integrated Model ships with:</b>           |            |
|        | (8) SFF Serial Attached SCSI (SAS) Drive Bays         |            |
|        | Embedded NC373i Multifunction Gigabit Server Adapters |            |
|        | PCI-Express Riser Cage                                |            |
|        | 800Watt hot plug power supply, CE Mark Compliant      |            |
|        | One IEC Power cord                                    |            |
|        | 12 hot plug fans (fully redundant)                    |            |
|        | Rack (2U), (3.5-inch)                                 |            |

Step 1A: Choose SAS Controller (must choose only one of the following)

|                 |                                                                                    |            |
|-----------------|------------------------------------------------------------------------------------|------------|
| SAS Controllers | P400/256 for DL380 G5/ DL385 G2 FIO                                                | 405160-B21 |
|                 | <b>NOTE:</b> PCI Express                                                           |            |
|                 | P400/512 BBWC for DL380 G5/ DL385 G2 FIO                                           | 405162-B21 |
|                 | <b>NOTE:</b> PCI Express                                                           |            |
|                 | HP Smart Array E200/64MB Controller                                                | 409180-B21 |
|                 | <b>NOTE:</b> PCI Express                                                           |            |
|                 | HP Smart Array E200/128 BBWC Controller                                            | 411508-B21 |
|                 | <b>NOTE:</b> PCI Express                                                           |            |
|                 | HP Smart Array P600/256 BBWC Controller                                            | 337972-B21 |
|                 | <b>NOTE:</b> PCI-X. SA-P600 Controller supports both internal and external drives. |            |

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

|             |                                  |            |
|-------------|----------------------------------|------------|
| Processors  | HP E5320 DL380G5 FIO Kit         | 433522-L21 |
|             | HP E5310 DL380G5 FIO Kit         | 437943-L21 |
|             | HP X5160 DL380G5 FIO Kit         | 418324-L21 |
|             | HP X5150 DL380G5 FIO Kit         | 418323-L21 |
|             | HP X5148 DL380G5 FIO Kit         | 432333-L21 |
|             | HP X5140 DL380G5 FIO Kit         | 418322-L21 |
|             | HP X5130 DL380G5 FIO Kit         | 418321-L21 |
|             | HP X5120 DL380G5 FIO Kit         | 418320-L21 |
|             | HP X5110 DL380G5 FIO Kit         | 418319-L21 |
|             | HP X5080 DL380G5 FIO Kit         | 412967-L21 |
|             | HP X5060 DL380G5 FIO Kit         | 397328-L21 |
|             | HP X5050 DL380G5 FIO Kit         | 397326-L21 |
|             |                                  |            |
| Base Memory | 1 GB FBD PC2-5300 2 x 512 MB Kit | 397409-B21 |
|             | 2 GB FBD PC2-5300 2 x 1 GB Kit   | 397411-B21 |
|             | 4 GB FBD PC2-5300 2 x 2 GB Kit   | 397413-B21 |
|             | 8 GB FBD PC2-5300 2 x 4 GB Kit   | 397415-B21 |

Configuration Information - Factory Integrated Models

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

|                   |                                                                                                                                                                                                                                                                                                                                                                     |            |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Optical Drive     | Slimline Ejectable Floppy drive                                                                                                                                                                                                                                                                                                                                     | 390164-B21 |
|                   | HP DVD±R/RW 8X Slim                                                                                                                                                                                                                                                                                                                                                 | 383975-B21 |
|                   | Slimline DVD-ROM Drive (8x/24x) Option Kit                                                                                                                                                                                                                                                                                                                          | 264007-B21 |
|                   | Slimline CD-RW/DVD-ROM Combo Option Kit                                                                                                                                                                                                                                                                                                                             | 331903-B21 |
| Performance Packs | The HP ProLiant DL380 G5 performance packs are necessary to configure a HP ProLiant DL380 G5 Performance Model. HP ProLiant DL380 G5 Performance model includes the latest performance technologies and enterprise class availability features pre-installed for convenience and value. The performance pack includes a 2nd processor and a redundant power supply. |            |
|                   | <b>NOTE:</b> Must also select 331903-B21 to achieve parity to DL380 G5 High Performance Models.                                                                                                                                                                                                                                                                     |            |
|                   | HP DL380G5 X5160 HPM FIO Perf Pack                                                                                                                                                                                                                                                                                                                                  | 419812-B21 |
|                   | HP DL380G5 X5150 HPM FIO Perf Pack                                                                                                                                                                                                                                                                                                                                  | 419811-B21 |

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

**NOTE:** For additional options, please refer to the "Options" section below.

Options

**NOTE:** Some options may not be integrated at the factory. Contact your local sales representative for additional information.

|                                            |                                           |            |
|--------------------------------------------|-------------------------------------------|------------|
| <b>HP ProLiant DL380 G5 Unique Options</b> | Mixed Riser Cage Option Kit (PCI-E/PCI-X) | 410570-B21 |
|--------------------------------------------|-------------------------------------------|------------|

|                          |                                               |            |
|--------------------------|-----------------------------------------------|------------|
| <b>Redundant Options</b> | Redundant Power Supply 350/370/380 G5 Kit     | 399771-B21 |
|                          | Redundant Power Supply 350/370/380 G5 Kit     | 399771-001 |
|                          | Redundant Power Supply 380 G5 Kit - 48Volt DC | 433634-B21 |

|                    |                                                            |            |
|--------------------|------------------------------------------------------------|------------|
| <b>Power Cords</b> | Nema 5-15P to IEC320-C13                                   | AF556A     |
|                    | Power Cord, Euro, 10A 250 V Straight (12 ft/3.7 m)         | 157215-021 |
|                    | Power Cord, UK, 10A 250 V Straight (12 ft/3.7 m)           | 157216-031 |
|                    | Power Cord, Danish, 10A 250 V Straight (12 ft/3.7 m)       | 157218-081 |
|                    | Power Cord, Swiss, 10A 250 V Straight (12 ft/3.7 m)        | 157219-111 |
|                    | Power Cord, Italian, 10A 250 V Straight (12 ft/3.7 m)      | 157217-061 |
|                    | Power Cord, South Africa, 10A 250 V Straight (12 ft/3.7 m) | 157220-AR1 |

|                   |                                                                                 |            |
|-------------------|---------------------------------------------------------------------------------|------------|
| <b>Processors</b> | Quad-Core Intel Xeon Processor E5320 (1.86 GHz, 80 Watts, 1066 FSB)             | 433522-B21 |
|                   | Quad-Core Intel Xeon Processor E5310 (1.60 GHz, 80 Watts, 1066 FSB)             | 437943-B21 |
|                   | Dual-Core Intel Xeon Processor 5160 (3.0 GHz, 80 Watts, 1333 FSB)               | 418324-B21 |
|                   | Dual-Core Intel Xeon Processor 5150 (2.67 GHz, 65 Watts, 1333 FSB)              | 418323-B21 |
|                   | Dual-Core Intel Xeon Processor 5148 (2.33 GHz, 40 Watts, 1333 FSB, Low Voltage) | 432333-B21 |
|                   | Dual-Core Intel Xeon Processor 5140 (2.33 GHz, 65 Watts, 1333 FSB)              | 418322-B21 |
|                   | Dual-Core Intel Xeon Processor 5130 (2.0 GHz, 65 Watts, 1333 FSB)               | 418321-B21 |
|                   | Dual-Core Intel Xeon Processor 5120 (1.86 GHz, 65 Watts, 1066 FSB)              | 418320-B21 |
|                   | Dual-Core Intel Xeon Processor 5110 (1.6 GHz, 65 Watts, 1066 FSB)               | 418319-B21 |
|                   | Dual-Core Intel Xeon Processor 5080 (3.73GHz, 130 Watts, 1066 FSB)              | 412967-B21 |
|                   | Dual-Core Intel Xeon Processor 5060 (3.2GHz, 130 Watts, 1066 FSB)               | 397328-B21 |
|                   | Dual-Core Intel Xeon Processor 5050 (3.0 GHz, 95 Watts, 667 FSB)                | 397326-B21 |
|                   |                                                                                 |            |

|                       |                                  |            |
|-----------------------|----------------------------------|------------|
| <b>Memory (DIMMs)</b> | 1 GB FBD PC2-5300 2 x 512 MB Kit | 397409-B21 |
|                       | 2 GB FBD PC2-5300 2 x 1 GB Kit   | 397411-B21 |
|                       | 4 GB FBD PC2-5300 2 x 2 GB Kit   | 397413-B21 |
|                       | 8 GB FBD PC2-5300 2 x 4 GB Kit   | 397415-B21 |

|                       |                                              |            |
|-----------------------|----------------------------------------------|------------|
| <b>Optical Drives</b> | Slimline CD-RW/DVD-ROM Combo Option Kit      | 331903-B21 |
|                       | <b>NOTE:</b> Included in performance models. |            |
|                       | Slimline DVD-ROM Drive (8x/24x) Option Kit   | 264007-B21 |
|                       | HP DVD±R/RW 8X Slim                          | 383975-B21 |
|                       | Slimline CD-ROM Drive 24X                    | 356963-B21 |

|                       |                                 |            |
|-----------------------|---------------------------------|------------|
| <b>Diskette Drive</b> | Slimline Ejectable Floppy drive | 390164-B21 |
|-----------------------|---------------------------------|------------|



### Options

#### Hard Drives

##### SFF SAS - Hot Plug

HP 146GB 3G SAS 10K SFF SP HDD 431958-B21

HP 72GB 3G SAS 10K SFF SP HDD 375861-B21

HP 36GB 3G SAS 10K SFF SP HDD 375859-B21

**NOTE:** Please see the SAS Hard Drive QuickSpecs for Technical Specifications such as capacity, height, width, interface, transfer rate, seek time, physical configuration, and operating temperature:

[http://h18000.www1.hp.com/products/quickspecs/12244\\_na/12244\\_na.HTML](http://h18000.www1.hp.com/products/quickspecs/12244_na/12244_na.HTML)

##### SFF SATA Hot Plug

HP 60GB 1.5G SATA 5.4K SFF HDD 379306-B21

**NOTE:** SATA drives have a 1 year warranty. Please see the SATA Hard Drive QuickSpecs for Technical Specifications such as capacity, height, width, interface, transfer rate, seek time, physical configuration, and operating temperature:

[http://h18000.www1.hp.com/products/quickspecs/12091\\_na/12091\\_na.HTML](http://h18000.www1.hp.com/products/quickspecs/12091_na/12091_na.HTML)

#### Remote Management

##### Integrated Lights-Out Advanced Pack

ProLiant Essentials Integrated Lights-Out Advanced Pack, 1 server 263825-B21

**Featuring:** Sophisticated virtual administration features for ultimate control of servers in the data centers and remote sites.

**NOTE:** For additional Integrated Light-Out Advanced Pack License Kits please see the QuickSpecs at:

[http://h18000.www1.hp.com/products/quickspecs/11052\\_na/11052\\_na.HTML](http://h18000.www1.hp.com/products/quickspecs/11052_na/11052_na.HTML)

##### Integrated Lights-Out Select Pack

Integrated Lights-Out Select Pack, 1 server License 413119-B21

**Featuring:** sophisticated remote control and security features for HP BladeSystem servers and ProLiant ML/DL servers in text console environments.

**NOTE:** For additional Integrated Light-Out Select Pack License Kits please see the QuickSpecs at:

[http://h18000.www1.hp.com/products/quickspecs/12362\\_na/12362\\_na.HTML](http://h18000.www1.hp.com/products/quickspecs/12362_na/12362_na.HTML)

#### ProLiant Essentials Value Pack Software

##### ProLiant Essentials Accelerated iSCSI Pack

ProLiant Essentials Accelerated iSCSI Pack, Single License 407484-B22

**NOTE:** For additional Accelerated iSCSI Pack License Kits, please see the QuickSpecs at:

[http://h18000.www1.hp.com/products/quickspecs/12466\\_na/12466\\_na.HTML](http://h18000.www1.hp.com/products/quickspecs/12466_na/12466_na.HTML)

##### ProLiant Essentials Intelligent Networking Pack

ProLiant Essentials Intelligent Networking Pack - Windows Edition, Single Server License 436225-B21

**NOTE:** For use with a single server. Contains one license with a unique license activation key and documentation.

**NOTE:** For additional ProLiant Intelligent Networking Pack - Windows License Kits please see the QuickSpecs at:

[http://h18000.www1.hp.com/products/quickspecs/12062\\_na/12062\\_na.HTML](http://h18000.www1.hp.com/products/quickspecs/12062_na/12062_na.HTML)

ProLiant Essentials Intelligent Networking Pack - Linux Edition, Single Server License 436229-B21

**NOTE:** For additional ProLiant Intelligent Networking Pack - Linux License Kits please see the QuickSpecs at:

[http://h18000.www1.hp.com/products/quickspecs/12327\\_na/12327\\_na.HTML](http://h18000.www1.hp.com/products/quickspecs/12327_na/12327_na.HTML)

##### ProLiant Essentials Performance Management Pack

### Options

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| ProLiant Essentials Performance Management Pack, Single-Server License<br><b>NOTE:</b> For use with a single server. Contains one license with a unique license activation key, HP Management CD and documentation.<br><b>NOTE:</b> The most recent version of the software can always be downloaded at <a href="http://www.hp.com/products/pmp">http://www.hp.com/products/pmp</a> .<br><b>NOTE:</b> For additional ProLiant Performance Management Pack License Kits please see the QuickSpecs at: <a href="http://h18000.www1.hp.com/products/quickspecs/11925_na/11925_na.HTML">http://h18000.www1.hp.com/products/quickspecs/11925_na/11925_na.HTML</a>                                         | 306696-B21 |
| <b>HP ProLiant Essentials RDMA Pack</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |
| HP ProLiant Essentials RDMA Pack for Embedded Multifunction Gigabit Server Adapters, 1 License                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 407478-B22 |
| HP ProLiant Essentials RDMA Pack for Standup Multifunction Gigabit Server Adapters, 1 License<br><b>NOTE:</b> For additional ProLiant Essentials RDM Pack License Kits please see the QuickSpecs at: <a href="http://h18000.www1.hp.com/products/quickspecs/12573_na/12573_na.HTML">http://h18000.www1.hp.com/products/quickspecs/12573_na/12573_na.HTML</a>                                                                                                                                                                                                                                                                                                                                         | 407481-B22 |
| <b>ProLiant Essentials Rapid Deployment Pack</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |
| Rapid Deployment Pack, Single-Server License<br><b>NOTE:</b> This license allows 1 server to be deployed and managed via RDP.<br><b>NOTE:</b> For additional ProLiant Essentials Rapid Deployment Pack License Kits please see the QuickSpecs at: <a href="http://h18000.www1.hp.com/products/quickspecs/11053_na/11053_na.HTML">http://h18000.www1.hp.com/products/quickspecs/11053_na/11053_na.HTML</a>                                                                                                                                                                                                                                                                                            | 267196-B21 |
| <b>ProLiant Essentials Workload Management Pack</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |
| ProLiant Essentials Workload Management Pack, Single Server License<br><b>NOTE:</b> For additional ProLiant Workload Management Pack License Kits please see the QuickSpecs at: <a href="http://h18000.www1.hp.com/products/quickspecs/11452_na/11452_na.HTML">http://h18000.www1.hp.com/products/quickspecs/11452_na/11452_na.HTML</a>                                                                                                                                                                                                                                                                                                                                                              | 303284-B21 |
| <b>ProLiant Essentials Virtualization Management Software</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |
| ProLiant Essentials Virtual Machine Management Pack, Single-Server License<br><b>NOTE:</b> For use with a single server. Contains one license with a unique license activation key and documentation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 435661-B21 |
| ProLiant Essentials Server Migration Pack, Single-Migration License<br><b>NOTE:</b> Contains one license, enabling 1 server migration, with a unique license activation key and documentation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 435663-B21 |
| ProLiant Essentials Server Migration Pack - Physical to ProLiant Edition, Single-Migration License<br><b>NOTE:</b> This license allows 1 server to be migrated from a physical server to a virtual machine. Or this license can be used to migrate a virtual machine from one virtualization layer i.e. VMware GSX to a different virtualization layer such as VMware ESX or Microsoft Virtual Server 2005.<br><b>NOTE:</b> For additional ProLiant Essentials Virtualization Management Software License Kits please see the QuickSpecs at: <a href="http://h18000.www1.hp.com/products/quickspecs/12328_na/12328_na.HTML">http://h18000.www1.hp.com/products/quickspecs/12328_na/12328_na.HTML</a> | 412978-B21 |
| <b>ProLiant Essentials Vulnerability and Patch Management Pack</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |
| ProLiant Essentials Vulnerability and Patch Management Pack, Single-Server License<br><b>NOTE:</b> For use with a single server. Contains one license with a unique license activation key and documentation.<br><b>NOTE:</b> For additional ProLiant Vulnerability and Patch Management Pack License Kits, please see the QuickSpecs at: <a href="http://h18000.www1.hp.com/products/quickspecs/12111_na/12111_na.HTML">http://h18000.www1.hp.com/products/quickspecs/12111_na/12111_na.HTML</a>                                                                                                                                                                                                    | 371645-B21 |

Options

**NOTE:** Flexible and volume quantity license kits are available for ProLiant Essentials Value Packs. Refer to <http://www.hp.com/servers/proliantessentials> or the various ProLiant Essentials Value Pack product QuickSpecs for more information.

**NOTE:** For more information regarding ProLiant Essentials Software, please see the following URL: <http://www.hp.com/servers/proliantessentials>.

|                                                                                                                                                                                                                                                                                  |                                              |            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|------------|
| ProLiant Software Maintenance Subscription                                                                                                                                                                                                                                       | ProLiant Software Maintenance Subscription   | 355060-B21 |
|                                                                                                                                                                                                                                                                                  | ProLiant Software Maintenance Single Release | 356573-B21 |
|                                                                                                                                                                                                                                                                                  | ProLiant Foundation Pack Single Release      | 356604-B21 |
| <b>NOTE:</b> Please see the SmartStart QuickSpecs for additional information regarding the subscription purchase:<br><a href="http://h18000.www1.hp.com/products/quickspecs/North_America/11073.html">http://h18000.www1.hp.com/products/quickspecs/North_America/11073.html</a> |                                              |            |

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Storage Controllers | <b>NOTE:</b> Please refer to the HP ProLiant DL380 G5 SCSI Cabling Matrix for information on what's required to cable optional array controllers:<br><a href="ftp://ftp.compaq.com/pub/products/servers/proliantdl380/dl380g4-cabling-matrix.pdf">ftp://ftp.compaq.com/pub/products/servers/proliantdl380/dl380g4-cabling-matrix.pdf</a>                                                                                                                                                    |            |
|                     | <b>SAS Controllers</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |
|                     | <b>Smart Array E200 Controller</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |
|                     | HP Smart Array E200/128 BBWC Controller                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 411508-B21 |
|                     | HP Smart Array E200/64MB Controller                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 409180-B21 |
|                     | 128-MB BBWC (Battery-Backed Write Cache) Enabler                                                                                                                                                                                                                                                                                                                                                                                                                                            | 351580-B21 |
|                     | <b>NOTE:</b> Supports the Smart Array E200 Controller, Smart Array 641 Controller, and Smart Array 642 Controller.                                                                                                                                                                                                                                                                                                                                                                          |            |
|                     | <b>Smart Array P400 Controller</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |
|                     | HP Smart Array P400/256MB Controller                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 405132-B21 |
|                     | HP Smart Array P400/512MB BBWC Controller                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 411064-B21 |
|                     | 512MB Battery-backed cache upgrade                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 405148-B21 |
|                     | <b>NOTE:</b> For Smart Array P400 Controller.                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |
|                     | Battery-backed write cache upgrade                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 383280-B21 |
|                     | <b>NOTE:</b> For Smart Array P400 Controller.                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |
|                     | Smart Array P400 Battery Attach Kit                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 417836-B21 |
|                     | <b>NOTE:</b> This option kit contains a 24" battery cable and adhesive material for installing a battery into the server if a Smart Array P400 is integrated outside of the factory. For all solutions, please refer to the server QuickSpecs and User's Manual for detailed installation instructions.                                                                                                                                                                                     |            |
|                     | <b>Smart Array P600 Controller</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |
|                     | HP Smart Array P600/256 BBWC Controller                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 337972-B21 |
|                     | <b>NOTE:</b> Requires Mixed PCI-E/X riser cage.                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |
|                     | 512 MB Battery-Backed Cache Upgrade                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 372538-B21 |
|                     | <b>NOTE:</b> This 512-MB Battery-Backed Cache Module upgrade kit supports the Smart Array P600 Controller and the Smart Array 6400 series Controller.                                                                                                                                                                                                                                                                                                                                       |            |
|                     | <b>Smart Array P800 Controller</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |
|                     | HP Smart Array P800/512 BBWC Controller                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 381513-B21 |
|                     | <b>NOTE:</b> Please see the following QuickSpecs for Technical Specifications and additional information:<br><a href="http://h18000.www1.hp.com/products/quickspecs/12460_na/12460_na.HTML">http://h18000.www1.hp.com/products/quickspecs/12460_na/12460_na.HTML</a> (Smart Array E200 Controller)<br><a href="http://h18000.www1.hp.com/products/quickspecs/12400_na/12400_na.HTML">http://h18000.www1.hp.com/products/quickspecs/12400_na/12400_na.HTML</a> (Smart Array P400 Controller) |            |



Options

[http://h18000.www1.hp.com/products/quickspecs/12247\\_na/12247\\_na.HTML](http://h18000.www1.hp.com/products/quickspecs/12247_na/12247_na.HTML)  
(Smart Array P600 Controller)  
[http://h18000.www1.hp.com/products/quickspecs/12616\\_na/12616\\_na.HTML](http://h18000.www1.hp.com/products/quickspecs/12616_na/12616_na.HTML)  
(Smart Array P800 Controller)

SAS HBA

HP 8 Internal Port SAS HBA with RAID 347786-B21

**NOTE:** Please see the following QuickSpecs for additional information:  
[http://h18004.www1.hp.com/products/quickspecs/12332\\_na/12332\\_na.html](http://h18004.www1.hp.com/products/quickspecs/12332_na/12332_na.html)  
(8 Internal Port SAS HBA)

SCSI Controllers for External Drive/Storage Support

**NOTE:** All Ultra 320 controllers are PCI-X and require the Mixed Riser Cage Option Kit (PCI-E/PCI-X).

Smart Array 6402/128 Controller 273915-B21

**NOTE:** Ultra320 SCSI.

Smart Array 6404/256 Controller 273914-B21

**NOTE:** Ultra320 SCSI.

Smart Array 642 Controller 291967-B21

**NOTE:** Ultra320 SCSI.

128-MB Battery-Backed Write Cache (BBWC) 351580-B21

**NOTE:** Supports the Smart Array E200 Controller, Smart Array 641 Controller, and Smart Array 642 Controller.

Ultra320 Expansion Module for SA-6402 273911-B21

64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2 374654-B21

SCSI HBA

HP SC11Xe Host Bus Adapter 412911-B21

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

[http://h18000.www1.hp.com/products/quickspecs/11943\\_na/11943\\_na.HTML](http://h18000.www1.hp.com/products/quickspecs/11943_na/11943_na.HTML)  
(Single Channel Ultra320 SCSI HBA)  
[http://h18000.www1.hp.com/products/quickspecs/11587\\_na/11587\\_na.HTML](http://h18000.www1.hp.com/products/quickspecs/11587_na/11587_na.HTML)  
(Smart Array 6400 Series)  
[http://h18000.www1.hp.com/products/quickspecs/12069\\_na/12069\\_na.HTML](http://h18000.www1.hp.com/products/quickspecs/12069_na/12069_na.HTML)  
(Smart Array 642)  
[http://h18000.www1.hp.com/products/quickspecs/12566\\_na/12566\\_na.HTML](http://h18000.www1.hp.com/products/quickspecs/12566_na/12566_na.HTML)  
(SC11XE HBA)



Options

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| Communications                                                                                                                                                                                                                                                                                                            | HP NC150T PCI 4-port Gigabit 1000T Combo Switch Adapter                                           | 367132-B21 |
|                                                                                                                                                                                                                                                                                                                           | HP NC310F PCI-X 1000SX Gigabit Server Adapter                                                     | 368169-B21 |
|                                                                                                                                                                                                                                                                                                                           | HP NC320T PCI Express 1000T Gigabit Server Adapter                                                | 367047-B21 |
|                                                                                                                                                                                                                                                                                                                           | HP NC340T PCI-X 4-port 1000T Gigabit Server Adapter                                               | 391661-B21 |
|                                                                                                                                                                                                                                                                                                                           | HP NC360T PCI Express Dual Port Gigabit Server Adapter                                            | 412648-B21 |
|                                                                                                                                                                                                                                                                                                                           | HP NC373F PCI Express Multifunction Gigabit Server Adapter                                        | 394793-B21 |
|                                                                                                                                                                                                                                                                                                                           | HP NC373T PCI Express Multifunction Gigabit Server Adapter                                        | 394791-B21 |
|                                                                                                                                                                                                                                                                                                                           | HP NC380T PCI Express Dual Port Multifunction Gigabit Server Adapter                              | 394795-B21 |
|                                                                                                                                                                                                                                                                                                                           | HP NC510F PCIe 10 Gigabit Server Adapter                                                          | 414126-B21 |
|                                                                                                                                                                                                                                                                                                                           | <b>NOTE:</b> A minimum of 1 gigabyte (1 GB) of server memory is required per each NC510F adapter. |            |
|                                                                                                                                                                                                                                                                                                                           | HP NC510C PCIe 10 Gigabit Server Adapter                                                          | 414129-B21 |
|                                                                                                                                                                                                                                                                                                                           | <b>NOTE:</b> A minimum of 1 gigabyte (1 GB) of server memory is required per each NC510C adapter. |            |
|                                                                                                                                                                                                                                                                                                                           | HP NC1020 PCI 1000T Gigabit Server Adapter                                                        | 353377-B21 |
| <b>NOTE:</b> Any NIC (except the NC1020) on the option list can be used for redundancy with the embedded Dual NC373i Multifunction Gigabit NICs. When teaming with other NICs or with the embedded NIC, the lack of Jumbo Frames and LSO features on the NC1020 will cause high end NICs to have those features disabled. |                                                                                                   |            |
|                                                                                                                                                                                                                                                                                                                           | HP IB 4X DDR PCI-e single PORT HCA                                                                | 431039-B21 |
|                                                                                                                                                                                                                                                                                                                           | HP IB 4X SDR PCI-e single PORT HCA                                                                | 431038-B21 |

Tape Drives

**NOTE:** For the complete listing of Tape Drive offerings, please see:  
<http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html>

For recommended tape drive offerings for this ProLiant server see the following:

USB Tape Drives

|                                                                      |        |
|----------------------------------------------------------------------|--------|
| HP StorageWorks 1U USB Rack-Mount Kit with one DAT 72 USB Tape Drive | AG594A |
|----------------------------------------------------------------------|--------|

SAS Tape Drives

**NOTE:** Connecting hard drive cage and SAS tape to the same SAS Controller using split cable (supplied with tape drive) deactivates 1 of the hard drive bays. Actual hard drive bay deactivated depends on where split cable plugs into SAS drive connector. Example: 3x SAS cable connector plugged into SAS drive connector (5-8) on the back of the hard drive cage would mean drive bay 8 is deactivated.

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

**NOTE:** HP recommends combining this tape drive with the 1U SAS Rack-Mount kit (AE459A) for a complete rack-mount solution.

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

**NOTE:** HP recommends combining this tape drive with the 1U SAS Rack-Mount kit (AE459A) for a complete rack-mount solution.

**NOTE:** Please refer to the "Tape Drives, Tape Autoloaders & Tape Libraries" table in the Storage section of this document for a list of SAS controllers with tape support.

Ultrium Tape Drives

|                                                             |        |
|-------------------------------------------------------------|--------|
| HP StorageWorks Ultrium 232 Internal Tape Drive (Carbonite) | DW064A |
|-------------------------------------------------------------|--------|

**NOTE:** HP recommends combining this tape drive with the 1U SCSI Rack-Mount kit (A7445B) for a complete rack-mount solution.

|                                                                    |        |
|--------------------------------------------------------------------|--------|
| HP StorageWorks 1U Rack-mount kit with one Ultrium 448 (Carbonite) | DW028B |
|--------------------------------------------------------------------|--------|

|                                                                      |            |
|----------------------------------------------------------------------|------------|
| HP StorageWorks 3U SCSI Rack-mount kit with one Ultrium 460 (Carbon) | 350546-B22 |
|----------------------------------------------------------------------|------------|



Options

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| HP StorageWorks 1U SCSI Rack-mount kit with one Ultrium 920                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | EH903A |
| HP StorageWorks 3U SCSI Rack-mount kit with one Ultrium 960 (Carbonite)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Q1595B |
| <b>NOTE:</b> Please see the HP StorageWorks Ultrium Tape Drive QuickSpecs for additional options such as controllers, media, and other related items:<br><a href="http://h18006.www1.hp.com/products/quickspecs/11739_na/11739_na.html">http://h18006.www1.hp.com/products/quickspecs/11739_na/11739_na.html</a><br>For an up-to-date listing of the latest O/S and software support details for HP Ultrium tape drives, please visit: <a href="http://www.hp.com/go/connect">http://www.hp.com/go/connect</a> .                                                                                                                                                                                                                                                                                                                                   |        |
| <b>External DAT Drives</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |        |
| HP StorageWorks DAT 72 SCSI External Tape Drive (Carbon)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Q1523B |
| <b>NOTE:</b> Please see the DAT Tape Drive QuickSpecs for controllers, media, and other options:<br><a href="http://h18000.www1.hp.com/products/quickspecs/11883_na/11883_na.HTML">http://h18000.www1.hp.com/products/quickspecs/11883_na/11883_na.HTML</a><br><a href="http://h18006.www1.hp.com/products/quickspecs/12128_na/12128_na.html">http://h18006.www1.hp.com/products/quickspecs/12128_na/12128_na.html</a><br>For an up-to-date listing of the latest O/S and software support details for HP Ultrium tape drives, please visit: <a href="http://www.hp.com/go/connect">http://www.hp.com/go/connect</a>                                                                                                                                                                                                                               |        |
| <b>DAT Drives</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |        |
| HP StorageWorks DAT 72 SCSI Internal Tape Drive (Carbon)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Q1523B |
| <b>NOTE:</b> HP recommends combining this tape drive with the 1U SCSI Rack-Mount kit (A7445B) for a complete rack-mount solution.<br><b>NOTE:</b> Please see the DAT Tape Drive QuickSpecs for controllers, media, and other options:<br><a href="http://h18000.www1.hp.com/products/quickspecs/11883_na/11883_na.HTML">http://h18000.www1.hp.com/products/quickspecs/11883_na/11883_na.HTML</a><br>For an up-to-date listing of the latest O/S and software support details for HP DAT drives, please visit: <a href="http://www.hp.com/go/connect">http://www.hp.com/go/connect</a>                                                                                                                                                                                                                                                              |        |
| <b>Rack-Mount Tape Drive Enclosures</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |        |
| HP StorageWorks 1U SCSI Rack-Mount kit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | A7445B |
| <b>NOTE:</b> The 1U Rack-Mount Kit can support up to (2) half-height tape drives and is compatible with multiple Single-Ended and LVD SCSI tape drives including the DAT 24, DAT 40, DAT 72, DLT VS80, DLT VS160, Ultrium 215, Ultrium 232, Ultrium 448 and Ultrium 920 tape drives.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |        |
| HP StorageWorks 1U USB Rack-Mount Kit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | A8007A |
| <b>NOTE:</b> The 1U USB Rack-Mount Kit can support up to (2) half-height tape drives and is compatible with the DAT 24 USB, DAT 40 USB and DAT 72 USB tape drives.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |        |
| HP StorageWorks 1U SAS Rack-Mount Kit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | AE459A |
| <b>NOTE:</b> The 1U SAS Rack-Mount Kit can support up to (2) half-height tape drives and is compatible with the Ultrium 448 SAS tape drive.<br><b>NOTE:</b> Connecting hard drive cage and SAS tape to the same SAS Controller using split cable (supplied with tape drive) deactivates 1 of the hard drive bays. Actual hard drive bay deactivated depends on where split cable plugs into SAS drive connector. Example: 3x SAS cable connector plugged into SAS drive connector (5-8) on the back of the hard drive cage would mean drive bay 8 is deactivated.<br><b>NOTE:</b> Please see the Rack-Mount Tape Drive Kits QuickSpecs for additional information regarding these kits:<br><a href="http://h18000.www1.hp.com/products/quickspecs/10854_na/10854_na.HTML">http://h18000.www1.hp.com/products/quickspecs/10854_na/10854_na.HTML</a> |        |

Options

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|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| Tape Autoloaders | <b>HP StorageWorks DAT Autoloader</b>                                                                                                                                                                                                                                                                                         |        |
|                  | HP StorageWorks DAT 72x10 tape autoloader                                                                                                                                                                                                                                                                                     | AE313A |
|                  | <b>HP StorageWorks 1/8 Tape Autoloader</b>                                                                                                                                                                                                                                                                                    |        |
|                  | HP StorageWorks 1/8 Ultrium 960 Tape Autoloader                                                                                                                                                                                                                                                                               | AF204A |
|                  | HP StorageWorks 1/8 Ultrium 920 G2 Tape Autoloader                                                                                                                                                                                                                                                                            | AH165A |
|                  | HP StorageWorks 1/8 Ultrium 448 G2 Tape Autoloader                                                                                                                                                                                                                                                                            | AH164A |
|                  | HP StorageWorks 1/8 Ultrium 232 G2 Tape Autoloader                                                                                                                                                                                                                                                                            | AH163A |
|                  | HP StorageWorks 1/8 G2 Tape Autoloader Rack Kit                                                                                                                                                                                                                                                                               | AH166A |
|                  | <b>NOTE:</b> Required to install the 1/8 G2 Autoloaders in a standard 19-inch rack; includes rails and rackmount instructions                                                                                                                                                                                                 |        |
|                  | 1/8 Tape Autoloader Rackmount Kit                                                                                                                                                                                                                                                                                             | C9268R |
|                  | <b>NOTE:</b> Required to install the 1/8 tape autoloader in a standard 19-inch rack.                                                                                                                                                                                                                                          |        |
|                  | <b>NOTE:</b> Please reference the Tape Autoloader QuickSpecs at <a href="http://www.hp.com/go/automation">http://www.hp.com/go/automation</a> for additional information needed to create a complete solution; reference current compatibility information at <a href="http://www.hp.com/go/ebs">http://www.hp.com/go/ebs</a> |        |

|                |                                                                                                                                                                                                                                                                                                                                                         |        |
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| Tape Libraries | <b>HP StorageWorks MSL2024 Tape Library</b>                                                                                                                                                                                                                                                                                                             |        |
|                | HP StorageWorks MSL2024 1 Ultrium 960 Drive Library                                                                                                                                                                                                                                                                                                     | AG115A |
|                | HP StorageWorks MSL2024 1 Ultrium 960 4GB FC Library                                                                                                                                                                                                                                                                                                    | AG326B |
|                | HP StorageWorks MSL2024 1 Ultrium 920 Drive Library                                                                                                                                                                                                                                                                                                     | AH169A |
|                | HP StorageWorks MSL2024 2 Ultrium 920 Drive Library                                                                                                                                                                                                                                                                                                     | AH170A |
|                | HP StorageWorks MSL2024 1 Ultrium 448 Drive Library                                                                                                                                                                                                                                                                                                     | AG116A |
|                | HP StorageWorks MSL2024 2 Ultrium 448 Drive Library                                                                                                                                                                                                                                                                                                     | AG117A |
|                | <b>HP StorageWorks MSL4048 Tape Library</b>                                                                                                                                                                                                                                                                                                             |        |
|                | HP StorageWorks MSL4048 1 Ultrium 448 Drive Library                                                                                                                                                                                                                                                                                                     | AG320A |
|                | HP StorageWorks MSL4048 2 Ultrium 448 Drive Library                                                                                                                                                                                                                                                                                                     | AG321A |
|                | HP StorageWorks MSL4048 1 Ultrium 920 Drive Library                                                                                                                                                                                                                                                                                                     | AH171A |
|                | HP StorageWorks MSL4048 2 Ultrium 920 Drive Library                                                                                                                                                                                                                                                                                                     | AH172A |
|                | HP StorageWorks MSL4048 1 Ultrium 960 Drive Library                                                                                                                                                                                                                                                                                                     | AG322A |
|                | HP StorageWorks MSL4048 1 Ultrium 960 4GB FC Library                                                                                                                                                                                                                                                                                                    | AG324B |
|                | HP StorageWorks MSL4048 2 Ultrium 960 Drive Library                                                                                                                                                                                                                                                                                                     | AG323A |
|                | HP StorageWorks MSL4048 2 Ultrium 960 4GB FC Library                                                                                                                                                                                                                                                                                                    | AG325B |
|                | <b>HP StorageWorks MSL6000 Tape Library</b>                                                                                                                                                                                                                                                                                                             |        |
|                | <b>Ultrium 960 technology</b>                                                                                                                                                                                                                                                                                                                           |        |
|                | HP StorageWorks MSL6030 1 Ultrium 960 Dr LVDS Library                                                                                                                                                                                                                                                                                                   | AD606B |
|                | HP StorageWorks MSL6030 1 Ultrium 960 Dr FC Library                                                                                                                                                                                                                                                                                                     | AD608B |
|                | HP StorageWorks MSL6030 2 Ultrium 960 Dr LVDS Library                                                                                                                                                                                                                                                                                                   | AD607B |
|                | HP StorageWorks MSL6030 2 Ultrium 960 Dr FC Library                                                                                                                                                                                                                                                                                                     | AD609B |
|                | <b>Ultrium 460 technology</b>                                                                                                                                                                                                                                                                                                                           |        |
|                | HP StorageWorks MSL6030 1 Ultrium 460 Dr LVDS Library                                                                                                                                                                                                                                                                                                   | AD598B |
|                | HP StorageWorks MSL6030 1 Ultrium 460 Dr FC Library                                                                                                                                                                                                                                                                                                     | AD600B |
|                | HP StorageWorks MSL6030 2 Ultrium 460 Dr LVDS Library                                                                                                                                                                                                                                                                                                   | AD599B |
|                | HP StorageWorks MSL6030 2 Ultrium 460 Dr FC Library                                                                                                                                                                                                                                                                                                     | AD601B |
|                | <b>NOTE:</b> Please reference the MSL2024, MSL4048 and MSL6000 Tape Library QuickSpecs at <a href="http://www.hp.com/go/automation">http://www.hp.com/go/automation</a> for additional information needed to create a complete solution; reference current compatibility information at <a href="http://www.hp.com/go/ebs">http://www.hp.com/go/ebs</a> |        |



### Options

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|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|---------|
| <b>HP Data Protector Express Software</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | HP DP Express Backup Server Upgrade for ProLiant Software | BB117AP |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | HP DP Express Package for Microsoft Small Business Server | BB118AA |
| <p><b>NOTE:</b> To obtain a free licensed copy of HP Data Protector Express for ProLiant edition software, please visit the "Protect Your Data" link accessible from your ProLiant server's System Management Homepage (SMH) software (SmartStart 7.5 or later).</p> <p><b>NOTE:</b> Please see the HP Data Protector Express QuickSpecs for additional information regarding the purchase of HP Data Protector Express software: <a href="http://h18000.www1.hp.com/products/quickspecs/12337_na/12337_na.html">http://h18000.www1.hp.com/products/quickspecs/12337_na/12337_na.html</a></p> |                                                           |         |

|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| <b>Cluster Options</b> | ProLiant Cluster Starter Kit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 364023-B22  |
|                        | <p><b>NOTE:</b> For additional information regarding the ProLiant Cluster Starter Kit please see the following QuickSpecs at: <a href="http://h18000.www1.hp.com/products/quickspecs/11935_na/11935_na.html">http://h18000.www1.hp.com/products/quickspecs/11935_na/11935_na.html</a></p>                                                                                                                                                                                                                                                             |             |
|                        | HP HA/F200 for Entry SAN Cluster                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 364026-B22  |
|                        | <p><b>NOTE:</b> For additional information regarding the ProLiant Cluster for Entry Level SAN please see the following QuickSpecs at: <a href="http://h18000.www1.hp.com/products/quickspecs/11932_na/11932_na.html">http://h18000.www1.hp.com/products/quickspecs/11932_na/11932_na.html</a></p> <p><b>NOTE:</b> For configuration/certification options for the HP Parallel Database Cluster for Oracle RAC please go to: <a href="http://www.hp.com/solutions/highavailability/oracle">http://www.hp.com/solutions/highavailability/oracle</a></p> |             |
|                        | HP Serviceguard for Linux ProLiant Cluster A.11.16 for SUSE SLES 9 & 10 and Red Hat EL 3 & 4 (2 node license cluster kit)                                                                                                                                                                                                                                                                                                                                                                                                                             | 305199-B26  |
|                        | HP Serviceguard for Linux A.11.16 for SUSE SLES 9 & 10 and Red Hat EL 3 & 4 (single license version)                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 307754-B26  |
|                        | HP Serviceguard for Linux and Red Hat Global File System - 1 year subscription                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | T2798AA#001 |
|                        | HP Serviceguard for Linux and Red Hat Global File System - 3 years subscription                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | T2798AA#003 |
|                        | <p><b>NOTE:</b> For additional information regarding HP Serviceguard for Linux, please see the following QuickSpecs at: <a href="http://h18000.www1.hp.com/products/quickspecs/11518_na/11518_na.html">http://h18000.www1.hp.com/products/quickspecs/11518_na/11518_na.html</a></p> <p><b>NOTE:</b> For configuration/certification options for HP Serviceguard for Linux please go to: <a href="http://www.hp.com/info/sglx">http://www.hp.com/info/sglx</a></p>                                                                                     |             |
|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |

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|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| <b>StorageWorks Options</b> | <p><b>NOTE:</b> For the complete listing of Fibre Channel Host Bus Adapters for Windows 2000, Windows Server 2003 and Linux, please see: <a href="http://h18006.www1.hp.com/storage/saninfrastructure/hba.html">http://h18006.www1.hp.com/storage/saninfrastructure/hba.html</a></p> |        |
|                             | HP StorageWorks FC2142SR 4Gb PCI-e HBA                                                                                                                                                                                                                                               | A8002A |
|                             | HP StorageWorks FC2242SR Dual Channel 4 Gb PCI-e HBA                                                                                                                                                                                                                                 | A8003A |
|                             | HP StorageWorks FC1142SR 4Gb PCI-e HBA                                                                                                                                                                                                                                               | AE311A |
|                             | HP StorageWorks FC1242SR Dual Channel 4 Gb PCI-e HBA                                                                                                                                                                                                                                 | AE312A |
|                             | HP StorageWorks FC2143 4Gb PCI-X 2.0 -to-Fibre Channel HBA                                                                                                                                                                                                                           | AD167A |
|                             | HP StorageWorks FC2243 Dual Channel 4Gb PCI-X 2.0 HBA                                                                                                                                                                                                                                | AD168A |
|                             | HP StorageWorks FC1143 4Gb PCI-X 2.0 HBA                                                                                                                                                                                                                                             | AB429A |
|                             | HP StorageWorks FC1243 Dual Channel 4Gb PCI-X 2.0 HBA                                                                                                                                                                                                                                | AE369A |
|                             |                                                                                                                                                                                                                                                                                      |        |

Options

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|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| HP StorageWorks<br>Modular Smart Array<br>20      | HP StorageWorks Modular Smart Array 20                                                                                                                                                                                                                                                                                                                    | 335921-B21 |
|                                                   | <b>NOTE:</b> Rack-mountable 12 (SATA) drive enclosure with U320 Host connectivity, redundant power supplies.                                                                                                                                                                                                                                              |            |
|                                                   | HP StorageWorks Modular Smart Array 20 Starter Kit                                                                                                                                                                                                                                                                                                        | 366172-B21 |
|                                                   | <b>NOTE:</b> Rack-mountable 12 (SATA) drive enclosure with U320 Host connectivity, redundant power supplies. Includes Smart Array 6402/128 Controller.                                                                                                                                                                                                    |            |
|                                                   | <b>NOTE:</b> The Modular Smart Array Enclosure 20 Family supports the SATA 1.5Gb/s 3.5" Hot Plug Hard Drives.                                                                                                                                                                                                                                             |            |
| HP StorageWorks<br>Modular Smart Array<br>30      | HP StorageWorks Modular Smart Array 30 SB                                                                                                                                                                                                                                                                                                                 | 302969-B21 |
|                                                   | <b>NOTE:</b> Rack-mountable 14 drive enclosure with single bus, redundant power supplies                                                                                                                                                                                                                                                                  |            |
|                                                   | HP StorageWorks Modular Smart Array 30 DB                                                                                                                                                                                                                                                                                                                 | 302970-B21 |
|                                                   | <b>NOTE:</b> Rack-mountable 14 drive enclosure with dual bus, redundant power supplies                                                                                                                                                                                                                                                                    |            |
|                                                   | <b>NOTE:</b> The Modular Smart Array Enclosure 30 Family supports the Wide Ultra3, Ultra320 Hot Plug Hard Drives.                                                                                                                                                                                                                                         |            |
| HP StorageWorks<br>Modular Smart Array<br>50      | HP StorageWorks Modular Smart Array 50 Enclosure                                                                                                                                                                                                                                                                                                          | 364430-B21 |
|                                                   | <b>NOTE:</b> Please see the Modular Smart Array 50 QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at:<br><a href="http://h18000.www1.hp.com/products/quickspecs/12245_na/12245_na.HTML">http://h18000.www1.hp.com/products/quickspecs/12245_na/12245_na.HTML</a>               |            |
| HP StorageWorks<br>Modular Smart Array<br>500 G2  | HP StorageWorks Modular Smart Array 500 Generation 2                                                                                                                                                                                                                                                                                                      | 335880-B21 |
|                                                   | <b>NOTE:</b> Please see the Modular Smart Array 500 Generation 2 QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at:<br><a href="http://h18000.www1.hp.com/products/quickspecs/11956_na/11956_na.HTML">http://h18000.www1.hp.com/products/quickspecs/11956_na/11956_na.HTML</a> |            |
| HP StorageWorks<br>Modular Smart Array<br>1000    | HP StorageWorks Modular Smart Array 1000                                                                                                                                                                                                                                                                                                                  | 201723-B22 |
|                                                   | <b>NOTE:</b> Please see the Modular Smart Array 1000 QuickSpecs for additional options and configuration information at:<br><a href="http://h18000.www1.hp.com/products/quickspecs/11033_na/11033_na.HTML">http://h18000.www1.hp.com/products/quickspecs/11033_na/11033_na.HTML</a>                                                                       |            |
| HP StorageWorks<br>Modular Smart Array<br>1500 cs | Modular Smart Array 1500 Controller Shelf                                                                                                                                                                                                                                                                                                                 | AA986A     |
|                                                   | <b>NOTE:</b> Please see the StorageWorks Modular SAN Array 1500 cs QuickSpecs for additional options and configuration information at:<br><a href="http://www.hp.com/go/MSA1500cs">http://www.hp.com/go/MSA1500cs</a>                                                                                                                                     |            |
| Uninterruptible Power<br>Systems - Rack           | HP R1.5 VA 1U UPS                                                                                                                                                                                                                                                                                                                                         | AF419A     |
|                                                   | HP R/T2200 2-U ERM                                                                                                                                                                                                                                                                                                                                        | AF412A     |



Options

|                                            |                                                         |        |
|--------------------------------------------|---------------------------------------------------------|--------|
| HP Monitored Power Distribution Unit (PDU) | HP Monitored Power Distribution Unit: Full Rack Version |        |
|                                            | 17.3 kVA Monitored PDU Model S2324                      | AF503A |
|                                            | 8.6 kVA Monitored PDU Model S1324                       | AF504A |
|                                            | 16.6 kVA Monitored PDU Model S2140                      | AF505A |
|                                            | 8.3 kVA Monitored PDU Model S1140                       | AF506A |
|                                            | 22 kVA Monitored PDU Model S2316                        | AF507A |
|                                            | 11 kVA Monitored PDU Model S1316                        | AF508A |
|                                            | 14.7 kVA Monitored PDU Model S2132                      | AF509A |
|                                            | 7.3 kVA Monitored PDU Model S1132                       | AF510A |
|                                            | 4.9kVA Monitored PDU model S124                         | AF514A |
|                                            | 7.3kVA Monitored PDU model S132                         | AF515A |

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| USB Options | HP USB 2-Button Optical Scroll Mouse (Carbonite/Silver) | DC172B     |
|             | USB 1.44-MB External Diskette Drive (Carbonite)         | DC141B     |
|             | HP USB 04 Standard Keyboard                             | DT528A#ABA |
|             | USB 2.0 4-port HUB                                      | DG954A     |
|             | HP 1GB Drive Key II- USB 2.0 Flash Drive                | AG382AA    |
|             | HP 512MB DriveKey II- USB Flash Drive                   | ED516AA    |

|                                            |                                                                                                                                                                                                                                                  |            |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| HP Rack 5000 Series<br>(Graphite Metallic) | HP 5642 Rack-Unassembled                                                                                                                                                                                                                         | 358254-B21 |
|                                            | <b>NOTE:</b> Please see the <a href="http://h18000.www1.hp.com/products/quickspecs/12074_na/12074_na.HTML">HP Rack 5642 QuickSpecs</a> for additional part numbers and Technical Specifications such as height, width, depth, weight, and color: |            |
|                                            | <a href="http://h18000.www1.hp.com/products/quickspecs/12074_na/12074_na.HTML">http://h18000.www1.hp.com/products/quickspecs/12074_na/12074_na.HTML</a>                                                                                          |            |
|                                            | <b>NOTE:</b> For additional information regarding Rack Cabinets, please see the following URL: <a href="http://www.hp.com/go/rackandpower">http://www.hp.com/go/rackandpower</a> .                                                               |            |

|                                                       |                                                                                                                                                                                                                       |        |
|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| HP Rack 10000 G2 Series<br>(Carbon/Graphite Metallic) | 10642 G2 (42U) Rack Cabinet - Pallet                                                                                                                                                                                  | AF001A |
|                                                       | 10642 G2 (42U) Rack Cabinet - Shock Pallet                                                                                                                                                                            | AF002A |
|                                                       | 10642 G2 (42U) Rack Cabinet - Crated                                                                                                                                                                                  | AF003A |
|                                                       | 10642 G2 (42U) Rack Cabinet, with Extension - Shock Pallet                                                                                                                                                            | AF004A |
|                                                       | 10636 G2 (36U) Rack Cabinet - Pallet                                                                                                                                                                                  | AF011A |
|                                                       | 10636 G2 (36U) Rack Cabinet - Shock Pallet                                                                                                                                                                            | AF012A |
|                                                       | 10636 G2 (36U) Rack Cabinet - Crated                                                                                                                                                                                  | AF013A |
|                                                       | 10636 G2 (36U) Rack Cabinet, with Extension - Shock Pallet                                                                                                                                                            | AF014A |
|                                                       | <b>NOTE:</b> It is mandatory to use a shock pallet when shipping racks with equipment installed.                                                                                                                      |        |
|                                                       | <b>NOTE:</b> Please see the <a href="http://h18000.www1.hp.com/products/quickspecs/12402_na/12402_na.HTML">Rack 10000 G2 QuickSpecs</a> for Technical Specifications such as height, width, depth, weight, and color: |        |
|                                                       | <a href="http://h18000.www1.hp.com/products/quickspecs/12402_na/12402_na.HTML">http://h18000.www1.hp.com/products/quickspecs/12402_na/12402_na.HTML</a>                                                               |        |
|                                                       | <b>NOTE:</b> For additional information regarding Rack Cabinets, please see the following URL: <a href="http://www.hp.com/go/rackandpower">http://www.hp.com/go/rackandpower</a> .                                    |        |

Options

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| HP Rack 10000 Series<br>(Graphite Metallic)                                                                                                                                                                                                                                                | HP S10614 (14U) Rack Cabinet - Shock Pallet | 292302-B22 |
|                                                                                                                                                                                                                                                                                            | HP 10842 (42U) Rack Cabinet - Pallet        | 257415-B21 |
|                                                                                                                                                                                                                                                                                            | HP 10842 (42U) Rack Cabinet - Shock Pallet  | 257415-B22 |
|                                                                                                                                                                                                                                                                                            | HP 10647 (47U) Rack Cabinet - Pallet        | 245160-B21 |
|                                                                                                                                                                                                                                                                                            | HP 10647 (47U) Rack Cabinet - Crated        | 245160-B23 |
|                                                                                                                                                                                                                                                                                            | HP 10622 (22U) Rack Cabinet - Pallet        | 245163-B21 |
|                                                                                                                                                                                                                                                                                            | HP 10622 (22U) Rack Cabinet - Shock Pallet  | 245163-B22 |
|                                                                                                                                                                                                                                                                                            | HP 10622 (22U) Rack Cabinet - Crated        | 245163-B23 |
| <b>NOTE:</b> xxxxxx-B21 (pallet) used to ship empty racks shipped on a truck. -B22 (shock pallet) used to ship racks with equipment installed (by custom systems, VARs and Channels). xxxxxx-B23 (crated) used for air shipments of empty racks.                                           |                                             |            |
| <b>NOTE:</b> It is mandatory to use a shock pallet in order to ship racks with equipment installed. Not all Compaq equipment is qualified to be shipped in the Rack 10000 series.                                                                                                          |                                             |            |
| <b>NOTE:</b> Please see the Rack 10000 QuickSpecs for Technical Specifications such as height, width, depth, weight, and color:<br><a href="http://h18000.www1.hp.com/products/quickspecs/10995_na/10995_na.HTML">http://h18000.www1.hp.com/products/quickspecs/10995_na/10995_na.HTML</a> |                                             |            |
| <b>NOTE:</b> For additional information regarding Rack Cabinets, please see the following URL: <a href="http://www.hp.com/go/rackandpower">http://www.hp.com/go/rackandpower</a>                                                                                                           |                                             |            |

|                                                                                                                                                                                   |                                                                                                                                                |            |
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| Keyboards and<br>Monitors                                                                                                                                                         | TFT7210R Rack Mounted 17" Monitor                                                                                                              | 348373-B21 |
|                                                                                                                                                                                   | <b>NOTE:</b> For a complete list of Monitors please view the following URL:<br><a href="http://www.hp.com/go/kvm">http://www.hp.com/go/kvm</a> |            |
|                                                                                                                                                                                   | TFT7600 Rackmount Keyboard Monitor                                                                                                             | AG052A     |
|                                                                                                                                                                                   | 1U Rackmount Keyboard with USB                                                                                                                 | AG072A     |
| <b>NOTE:</b> For additional information regarding Rack Options, please see the following URL: <a href="http://www.hp.com/go/rackandpower">http://www.hp.com/go/rackandpower</a> . |                                                                                                                                                |            |

|                          |                                                                                                                                                                                                                                                |            |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| HP KVM Switch<br>Options | 2x1x16 IP Console Switch with Virtual Media                                                                                                                                                                                                    | AF601A     |
|                          | 4x1x16 IP Console Switch with Virtual Media                                                                                                                                                                                                    | AF602A     |
|                          | 2x16 Server Console Switch with Virtual Media                                                                                                                                                                                                  | AF600A     |
|                          | PS/2 Virtual Media Interface Adapter, 1 pack                                                                                                                                                                                                   | AF604A     |
|                          | <b>NOTE:</b> Requires PS/2 and one USB port on server.                                                                                                                                                                                         |            |
|                          | Server Console Switch (KVM), 0 x 1 x 8 port                                                                                                                                                                                                    | 336044-B21 |
|                          | Server Console Switch (KVM), 0 x 2 x 16 port                                                                                                                                                                                                   | 336045-B21 |
|                          | PS/2 Interface Adapter, 1 pack                                                                                                                                                                                                                 | 262588-B21 |
|                          | PS/2 Interface Adapter, 8 pack                                                                                                                                                                                                                 | 262587-B21 |
|                          | USB Interface Adapter, 1 pack                                                                                                                                                                                                                  | 336047-B21 |
|                          | Serial Interface adapter - 1 Pack with power supply                                                                                                                                                                                            | 373035-B21 |
|                          | <b>NOTE:</b> Cat5e cables are required to connect Interface Adapters to Console Switches. Cat5e cables can be found at the following URL:<br><a href="http://www.hp.com/go/kvm">http://www.hp.com/go/kvm</a> .                                 |            |
|                          | HP 1x 4 USB/PS2 KVM Switch, RM                                                                                                                                                                                                                 | 371302-B21 |
|                          | <b>NOTE:</b> For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: <a href="http://www.hp.com/go/kvm">http://www.hp.com/go/kvm</a> . |            |





Options

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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|--------|
| HP Serial Console<br>Server Options                                                                                                                                                                                                            | HP 16 Port Serial Console Server            | AF101A |
|                                                                                                                                                                                                                                                | HP 48 Port Serial Console Server            | AF102A |
|                                                                                                                                                                                                                                                | Serial Adapter, RJ45-DB9 DCE Female, 1 Pack | AF103A |
|                                                                                                                                                                                                                                                | Serial Adapter, RJ45-DB9 DCE Female, 8 Pack | AF110A |
| <b>NOTE:</b> Cat5e cables are required to connect Serial Adapters to Serial Console Servers. Additional Serial Adapters and Cat5e cables can be found at the following URL: <a href="http://www.hp.com/go/kvm">http://www.hp.com/go/kvm</a> .  |                                             |        |
| <b>NOTE:</b> For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: <a href="http://www.hp.com/go/kvm">http://www.hp.com/go/kvm</a> . |                                             |        |

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|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| Service and Support<br>Offerings (HP Care<br>Pack Services) | <b>Hardware Services On-site Service</b>                                                                                                                                                                 |        |
|                                                             | 4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic                                                                                                                                    | U4544E |
|                                                             | 4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic                                                                                                                                    | U4545E |
|                                                             | <b>Hardware Services 6-Hour Call to Repair On-site Service</b>                                                                                                                                           |        |
|                                                             | 6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic                                                                                                                    | U4546E |
|                                                             | <b>Installation &amp; Start-up Services</b>                                                                                                                                                              |        |
|                                                             | Hardware Installation, Electronic                                                                                                                                                                        | U4554E |
|                                                             | 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, Electronic | U4555E |
|                                                             | Installation and Startup for Essentials Rapid Deployment Pack, Electronic                                                                                                                                | U5683E |
|                                                             | <b>Support Plus</b>                                                                                                                                                                                      |        |
|                                                             | Onsite HW support, 8am-9pm, M-F, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 8am-9pm, M-F 2hr response time excl. HP holidays, Electronic                         | U4556E |
|                                                             | <b>Support Plus 24</b>                                                                                                                                                                                   |        |
|                                                             | Onsite HW support 24x7, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic                                          | U4557E |
|                                                             | Onsite HW support 24x7, 4hr response and SuSE Linux SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic                                             | U6312E |
|                                                             | Onsite HW support 24x7, 4hr response and Red Hat ES Linux SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic                                       | U8334E |
|                                                             | <b>NOTE:</b> For more information, customer/resellers can contact <a href="http://www.hp.com/services/carepack">http://www.hp.com/services/carepack</a>                                                  |        |

Memory

HP ProLiant DL380 G5 Base Models  
Standard Memory

2 GB PC2-5300 Fully Buffered DIMMs (DDR2-667) (2 x 1 GB)

**Upgrading Memory and Memory Interleaving**

When upgrading memory, DIMMs 1A and 2A must match. DIMMs 3B and 4B, DIMMs 5C and 6C, and DIMMs 7D and 8D must match and must be installed as a pair. When DIMMs 1A and 2A are populated the system is automatically configured for 2:1 interleaving. When all 4 banks are populated the system is automatically configured for 4:1 interleaving. When four, six, or eight DIMMs are populated with identical DIMMs the system is automatically configured for bank interleaving.

**Standard Memory Plus Optional Memory**

Up to 14 GB memory is available with the standard memory of 2 GB and the optional installation PC2-5300 Fully Buffered DIMMs (DDR2-667) memory kits.

**Standard Memory Replaced with Optional Memory**

Up to 32 GB of memory is available with the removal of the standard 1 GB of memory and the optional installation of PC2-5300 Fully Buffered DIMMs (DDR2-667) memory kits.

**NOTE:** Chart does not represent all possible configurations.

| Memory   |       | Slot |      |       |       |       |       |       |       |
|----------|-------|------|------|-------|-------|-------|-------|-------|-------|
|          |       | 1    | 2    | 3     | 4     | 5     | 6     | 7     | 8     |
| Standard | 2 GB  | 1 GB | 1 GB | Empty | Empty | Empty | Empty | Empty | Empty |
| Optional | 14 GB | 1 GB | 1 GB | 2 GB  | 2 GB  | 2 GB  | 2 GB  | 2 GB  | 2 GB  |
| Maximum  | 32 GB | 4 GB | 4 GB | 4 GB  | 4 GB  | 4 GB  | 4 GB  | 4 GB  | 4 GB  |

**NOTE:** In the online spare configuration, the ROM automatically configures the last populated bank as the spare memory. If only banks A and B are populated, bank B is the spare bank. If banks A, B, and C are populated, bank C is the spare bank, Online spare memory is configured through RBSU.

**NOTE:** Mirrored Memory uses mirrored banks to provide a high level of memory redundancy. Customer chooses to implement or not: User selectable via BIOS and default is off.

|                                                 |            |
|-------------------------------------------------|------------|
| Following are memory options available from HP: |            |
| 1 GB FBD PC2-5300 2 x 512 MB Kit                | 397409-B21 |
| 2 GB FBD PC2-5300 2 x 1 GB Kit                  | 397411-B21 |
| 4 GB FBD PC2-5300 2 x 2 GB Kit                  | 397413-B21 |
| 8 GB FBD PC2-5300 2 x 4 GB Kit                  | 397415-B21 |

| In Advanced ECC mode, FBDIMMs must be populated as specified in the following table: |                     |                     |                     |                     |
|--------------------------------------------------------------------------------------|---------------------|---------------------|---------------------|---------------------|
| Configuration                                                                        | Bank A<br>1A and 3A | Bank B<br>5B and 7B | Bank C<br>2C and 4C | Bank D<br>6D and 8D |
| 1                                                                                    | X                   | -                   | -                   | -                   |
| 2                                                                                    | X                   | X                   | -                   | -                   |
| 3                                                                                    | X                   | X                   | X                   | -                   |
| 4                                                                                    | X                   | X                   | X                   | X                   |

Online spare memory configuration

Online spare FBDIMM configuration requirements (in addition to general configuration requirements):

- When only bank A is being used, it must be fully populated with dual-rank FBDIMMs.
- If banks A and C are being used, they must be fully populated.
- If installed, bank A and bank C must contain FBDIMMs with identical part numbers.
- If installed, bank B and bank D must also contain FBDIMMs with identical part numbers.

In online spare mode, FBDIMMs must be populated as specified in the following table:

Memory

| Configuration | Branch 0<br>Bank A<br>1A and 3A | Branch 0<br>Bank C<br>2C and 4C | Branch 1<br>Bank B<br>5B and 7B | Branch 1<br>Bank D<br>6D and 8D |
|---------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| 1*            | X                               | -                               | -                               | -                               |
| 2             | X                               | X                               | -                               | -                               |
| 3             | X                               | X                               | X                               | X                               |

**\*NOTE:** Configuration 1 is only supported if using bank A, populated with dual-rank FBDIMMs. All FBDIMMs 1GB and above are dual-rank.  
After installing FBDIMMs, use RBSU to configure the system for online spare memory support ("Configuring online spare memory" on page 57).

Mirrored memory configuration

Mirrored memory FBDIMM configuration requirements (in addition to general configuration requirements):

- Banks A and B must be fully populated.
- Bank A and bank B must contain FBDIMMs with identical part numbers. If installed, bank C and bank D must also contain FBDIMMs with identical part numbers.

When using mirrored memory mode, FBDIMMs must be populated as specified in the following table:

| Configuration | Bank A<br>1A and 3A | Bank B<br>5B and 7B | Bank C<br>2C and 4C | Bank D<br>6D and 8D |
|---------------|---------------------|---------------------|---------------------|---------------------|
| 1             | X                   | X                   | -                   | -                   |
| 2             | X                   | X                   | X                   | X                   |

**NOTE:** After installing FBDIMMs, use RBSU to configure the system for mirrored memory support ("Configuring mirrored memory" on page 57).

Storage



1-8      Eight SFF SAS hot plug hard drive bays

Drive Support

|                                                                                         | Quantity Supported                   | Position Supported | Controller                                   |
|-----------------------------------------------------------------------------------------|--------------------------------------|--------------------|----------------------------------------------|
| <b>Removable Media</b>                                                                  |                                      |                    |                                              |
| 1.44-MB Diskette Drive                                                                  | Only 1 available removable media bay | Slimline bay       | Integrated diskette<br><b>NOTE:</b> Optional |
| Slimline CD-RW/DVD-ROM Combo Option Kit<br><b>NOTE:</b> Included in performance models. | Only 1 available removable media bay | Slimline bay       | Integrated IDE<br><b>NOTE:</b> Optional      |
| Slimline DVD-ROM Drive (8x/24x) Option Kit                                              | Only 1 available removable media bay | Slimline bay       | Integrated IDE<br><b>NOTE:</b> Optional      |
| HP ProLiant Slim CD-ROM x24                                                             | Only 1 available removable media bay | Slimline bay       | Integrated IDE<br><b>NOTE:</b> Optional      |
| HP DVD±R/RW 8X Slim                                                                     | Only 1 available removable media bay | Slimline bay       | Integrated IDE<br><b>NOTE:</b> Optional      |

Hard Drives

SAS - Hot Plug Drives

|                         | Quantity Supported | Position Supported | Controller                                                                                                                                                                                                                                                                                                             |
|-------------------------|--------------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 146GB 3G SAS 10K SFF SP | Up to 8            | 1-8                | HP Smart Array E200/64MB Controller<br>HP Smart Array E200/128 BBWC Controller<br>HP Smart Array P400/256MB Controller<br>HP Smart Array P400/512MB BBWC Controller<br>HP Smart Array P600/256 BBWC Controller<br><b>NOTE:</b> Optional mixed PCI-X/E required for SA-P600.<br>HP Smart Array P800/512 BBWC Controller |
| 72GB 3G SAS 10K SFF SP  |                    |                    |                                                                                                                                                                                                                                                                                                                        |
| 36GB 3G SAS 10K SFF SP  |                    |                    |                                                                                                                                                                                                                                                                                                                        |
|                         |                    |                    |                                                                                                                                                                                                                                                                                                                        |
|                         |                    |                    |                                                                                                                                                                                                                                                                                                                        |

SATA - Hot Plug Drives

|                     | Quantity Supported | Position Supported | Controller                                                                                                                                                                                                                                                                                                             |
|---------------------|--------------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 60GB 1.5G SATA 5.4K | Up to 8            | 1-8                | HP Smart Array E200/64MB Controller<br>HP Smart Array E200/128 BBWC Controller<br>HP Smart Array P400/256MB Controller<br>HP Smart Array P400/512MB BBWC Controller<br>HP Smart Array P600/256 BBWC Controller<br><b>NOTE:</b> Optional mixed PCI-X/E required for SA-P600.<br>HP Smart Array P800/512 BBWC Controller |
|                     |                    |                    |                                                                                                                                                                                                                                                                                                                        |
|                     |                    |                    |                                                                                                                                                                                                                                                                                                                        |
|                     |                    |                    |                                                                                                                                                                                                                                                                                                                        |
|                     |                    |                    |                                                                                                                                                                                                                                                                                                                        |

Storage

External Storage

|                                  | Quantity Supported                                                                                                                                      | Position Supported | Host Controller or Adapter                                                                                                                                                    |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Modular Smart Array 20 Family    | 1 per SCSI VHDCI connector                                                                                                                              | External           | Smart Array 6402/128 Controller<br>Smart Array 6404/256 Controller<br><b>NOTE:</b> Optional mixed PCI-X/E cage required.                                                      |
| Modular Smart Array 50 Enclosure | 2 per connector (supports 1+1 cascading)                                                                                                                | External           | HP Smart Array P600/256 BBWC Controller<br><b>NOTE:</b> Optional mixed PCI-X/E cage required.                                                                                 |
| Modular Smart Array 500 G2       | 1 per SCSI                                                                                                                                              | External           | Please see the Modular Smart Array 500 or 500 G2 QuickSpecs for the latest list of supported HBAs:<br><a href="http://www.hp.com/go/msa500">http://www.hp.com/go/msa500</a> . |
| Modular Smart Array 1000:        | <a href="http://h18000.www1.hp.com/products/quickspecs/11033_na/11033_na.HTML">http://h18000.www1.hp.com/products/quickspecs/11033_na/11033_na.HTML</a> |                    |                                                                                                                                                                               |
| Modular Smart Array 1500 cs:     | <a href="http://www.hp.com/go/MSA1500cs">http://www.hp.com/go/MSA1500cs</a>                                                                             |                    |                                                                                                                                                                               |

Maximum Storage Capacity - (with MSA50)

|          |                              |
|----------|------------------------------|
| Internal | 1.168TB (8 x 146GB SAS SFF)  |
| External | 2.920TB (20 x 146GB SAS SFF) |
| Total    | 4.088TB                      |

Tape Drives, Tape Autoloaders, & Tape Libraries

**NOTE:** For an up-to-date listing of the latest O/S Support details for each of the Tape Drives listed below, please see the following: [http://h18000.www1.hp.com/products/quickspecs/North\\_America/10233.html](http://h18000.www1.hp.com/products/quickspecs/North_America/10233.html)

**NOTE:** For an up-to-date listing of the latest O/S Support details for each of the Tape Autoloaders & Tape Libraries listed below, please see the following: [http://h18000.www1.hp.com/products/quickspecs/North\\_America/10809.html](http://h18000.www1.hp.com/products/quickspecs/North_America/10809.html)

**NOTE:** SAS Tape Drives: Connecting hard drive cage and SAS tape to the same SAS Controller using split cable (supplied with tape drive) deactivates 1 of the hard drive bays. Actual hard drive bay deactivated depends on where split cable plugs into SAS drive connector. Example: 3x SAS cable connector plugged into SAS drive connector (5-8) on the back of the hard drive cage would mean drive bay 8 is deactivated.

**NOTE:** For complete listing of tape drive offerings see <http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html>  
For recommended tape drive offerings for this ProLiant server see the following:

|                                       | Position Supported | Controller                 | Part Number |
|---------------------------------------|--------------------|----------------------------|-------------|
| HP StorageWorks Tape Drives, External | External           | HP SC11Xe Host Bus Adapter | 412911-B21  |
| Ultrium 232                           |                    |                            |             |
| Ultrium 448                           |                    |                            |             |
| Ultrium 460                           |                    |                            |             |
| Ultrium 960                           |                    |                            |             |
| Ultrium 920                           |                    |                            |             |
| DAT 40                                |                    |                            |             |
| DAT 72                                |                    |                            |             |
| DLT VS160                             |                    |                            |             |
| SDLT 320                              |                    |                            |             |
| SDLT 600                              |                    |                            |             |



Storage

|                                                                                                                                                                                                   |          |                                                                                                                                                                                                                                                                                                                             |                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| <b>HP StorageWorks Tape Drives, External</b><br>DAT 24 USB<br>DAT 40 USB<br>DAT 72 USB                                                                                                            | External | USB 2.0 Port                                                                                                                                                                                                                                                                                                                | N/A                          |
| <b>HP StorageWorks Tape Drives, SCSI External</b><br>Ultrium 232<br>Ultrium 448<br>Ultrium 460<br>Ultrium 920<br>Ultrium 960<br>DAT 40<br>DAT 72<br>DLT VS80<br>DLT VS160<br>SDLT 320<br>SDLT 600 | External | HP SC11Xe Host Bus Adapter<br><br>64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2<br><b>NOTE:</b> Mixed Riser Cage Option (410570-B21) required to connect the HBA.                                                                                                                                                      | 412911-B21<br><br>374654-B21 |
| <b>HP StorageWorks Tape Drives, SAS External</b><br>Ultrium 448 SAS<br>Ultrium 920 SAS                                                                                                            | External | HP 8 Internal Port SAS HBA with RAID 0/1<br><b>NOTE:</b> Please visit <a href="http://www.hp.com/go/connect">http://www.hp.com/go/connect</a> for details about minimum SAS controller firmware version and SAS cabling requirements.                                                                                       | 347786-B21                   |
| <b>HP StorageWorks Autoloaders, External</b><br>DAT 72x10 Autoloader<br>1/8 Tape Autoloader                                                                                                       | External | HP SC11Xe Host Bus Adapter                                                                                                                                                                                                                                                                                                  | 412911-B21                   |
| <b>HP StorageWorks SCSI Rack-Mount Tape Drive Enclosures</b><br>1U Rack-Mount Kit<br>3U Rack-Mount Kit                                                                                            | External | HP SC11Xe Host Bus Adapter                                                                                                                                                                                                                                                                                                  | 412911-B21                   |
| <b>HP StorageWorks SAS Rack-Mount Tape Drive Enclosures</b><br>1U Rack-Mount Kit                                                                                                                  | External | HP 8 Internal Port SAS HBA with RAID 0/1<br><b>NOTE:</b> Mixed Riser Cage Option (410570-B21) required to connect the SAS HBA.<br><b>NOTE:</b> Please visit <a href="http://www.hp.com/go/connect">http://www.hp.com/go/connect</a> for details about minimum SAS controller firmware version and SAS cabling requirements. | 347786-B21                   |
| <b>HP StorageWorks USB Rack-Mount Tape Drive Enclosures</b><br>1U Rack-Mount Kit                                                                                                                  | External | USB 2.0 Port                                                                                                                                                                                                                                                                                                                | N/A                          |
| <b>HP StorageWorks SAS Rack-Mount Tape Drive Enclosures</b><br>1U Rack-Mount Kit                                                                                                                  | External | HP 8 Internal Port SAS HBA with RAID 0/1<br><b>NOTE:</b> Please visit <a href="http://www.hp.com/go/connect">http://www.hp.com/go/connect</a> for details about minimum SAS controller firmware version and SAS cabling requirements.                                                                                       | 347786-B21                   |



Storage

|                                                                                                                                                                                                                            |          |                                                                                                                                                     |     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| <b>HP StorageWorks Tape Libraries, External</b><br>MSL2024 (Ultrium 448, Ultrium 920 and 960-based)<br>MSL4048 (Ultrium 448, Ultrium 920 and 960-based)<br>MSL6000 (Ultrium 960 and 460-based)<br>MSL6000 (SDLT 600-based) | External | Please consult the EBS connectivity matrix at <a href="http://www.hp.com/go/ebs">http://www.hp.com/go/ebs</a> for detailed connectivity information | N/A |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-----|

Power Specifications

|                                        |                  |      |            |      |      |      |
|----------------------------------------|------------------|------|------------|------|------|------|
| Power Supply Specification - AC        | Part number      |      | 380622-001 |      |      |      |
|                                        | Spare Kit        |      | 403781-001 |      |      |      |
| Operational Input Voltage Range (Vrms) | 90 to 264        |      |            |      |      |      |
| Frequency Range (Nominal) (Hz)         | 47 to 63 (50/60) |      |            |      |      |      |
| Nominal Input Voltage (Vrms)           | 100              | 120  | 208        | 220  | 230  | 240  |
| Max Rated Output Wattage Rating        | 800              | 850  | 1000       | 1000 | 1000 | 1000 |
| Nominal Input Current (A rms)          | 10.0             | 8.8  | 5.85       | 5.5  | 5.2  | 4.97 |
| Max Rated Input Wattage Rating (Watts) | 980              | 1035 | 1193       | 1186 | 1172 | 1169 |
| Max. Rated VA (Volt-Amp)               | 1000             | 1056 | 1217       | 1210 | 1196 | 1193 |
| Efficiency (%)                         | 81.5             | 82   | 84         | 84   | 85   | 85.5 |
| Power Factor                           | 0.98             | 0.98 | 0.98       | 0.98 | 0.98 | 0.98 |
| Leakage Current (mA)                   | 0.44             | 0.52 | 0.91       | 0.96 | 1.00 | 1.04 |
| Max. Inrush Current (A peak)           | 30               | 30   | 30         | 30   | 30   | 30   |
| Max. Inrush Current duration (mS)      | 3                | 3    | 3          | 3    | 3    | 3    |

|                                        |                    |      |            |  |  |
|----------------------------------------|--------------------|------|------------|--|--|
| Power Supply Specification - DC        | Part number        |      | 433634-B21 |  |  |
|                                        | Spare Kit          |      | 419613-001 |  |  |
| Operational Input Voltage Range (Vrms) | -36.0 to -72.0V DC |      |            |  |  |
| Frequency Range (Nominal) (Hz)         | DC                 |      |            |  |  |
| Nominal Input Voltage (Vrms)           | 36                 | 48   | 72         |  |  |
| Max Rated Output Wattage Rating        | 1210               | 1210 | 1210       |  |  |
| Nominal Input Current (A rms)          | 38                 | 29   | 20         |  |  |
| Max Rated Input Wattage Rating (Watts) | 1368               | 1392 | 1440       |  |  |
| Efficiency (%)                         | 87.6               | 87.6 | 86         |  |  |
| Max. Inrush Current (A peak)           | 60                 | 60   | 60         |  |  |
| Max. Inrush Current duration (mS)      | 100                | 100  | 100        |  |  |

**NOTES:**

- To review typical system power ratings use the Active Answers Power Calculator which is available via the online tool located at url: <http://h30099.www3.hp.com/configurator/calc/Power%20Calculator%20Catalog.xls>

To drill down to calculators:

- Click on: "ProLiant Servers"
- Click on the Server of interest. Example: DL380 G5
- Click on: "Power Calculator" link. (You may need to scroll down to see it)

Technical Specifications

|             |                                                 |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                   |
|-------------|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| System Unit | Dimensions (HxWxD)<br>(with feet/bezel)         | 3.38 x 17.54 x 26.01 in (8.59 x 44.54 x 66.07 cm)                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                   |
|             | Weight (approximate)                            | Maximum                                                                                                                                                                                                                                                                                               | 60 lb (27.22 kg)                                                                                                                                                                                                                                                                                                                                                  |
|             |                                                 | Minimum                                                                                                                                                                                                                                                                                               | 47.18 lb (20.41 kg)                                                                                                                                                                                                                                                                                                                                               |
|             | Input Requirements<br>(per power supply)        | Rated Line Voltage                                                                                                                                                                                                                                                                                    | 100-132 VAC, 200-240 VAC                                                                                                                                                                                                                                                                                                                                          |
|             |                                                 | Rated Input Current                                                                                                                                                                                                                                                                                   | 10A (100VAC), 10A (120VAC), 6.1A (200VAC)                                                                                                                                                                                                                                                                                                                         |
|             |                                                 | Rated Input Frequency                                                                                                                                                                                                                                                                                 | 50 to 60 Hz                                                                                                                                                                                                                                                                                                                                                       |
|             |                                                 | Rated Input Power                                                                                                                                                                                                                                                                                     | 1000/1056/1205 W                                                                                                                                                                                                                                                                                                                                                  |
|             | BTU Rating                                      | BTU/HR                                                                                                                                                                                                                                                                                                | 3490/3680/4150                                                                                                                                                                                                                                                                                                                                                    |
|             | Power Specifications                            | To review typical system power ratings use the Active Answers Power Calculator which is available via the online tool located at URL:<br><a href="http://h30099.www3.hp.com/configurator/powercalcs.asp">http://h30099.www3.hp.com/configurator/powercalcs.asp</a> .<br>To drill down to calculators: |                                                                                                                                                                                                                                                                                                                                                                   |
|             |                                                 | <ul style="list-style-type: none"><li>- Click on: "ProLiant Servers"</li><li>- Click on the Server of interest. Example: DL380 G5</li><li>- Click on: "Power Calculator" link. (You may need to scroll down to see it.)</li></ul>                                                                     |                                                                                                                                                                                                                                                                                                                                                                   |
|             | Power Supply Output Power<br>(per power supply) | Rated Steady-State Power                                                                                                                                                                                                                                                                              | 800/850/1000 W                                                                                                                                                                                                                                                                                                                                                    |
|             |                                                 | Maximum Peak Power                                                                                                                                                                                                                                                                                    | 800/850/1000 W                                                                                                                                                                                                                                                                                                                                                    |
|             | Temperature Range                               | Operating                                                                                                                                                                                                                                                                                             | 50° to 95° F (10° to 35° C) at sea level with an altitude de-rating of 1.8° F per 1000 ft (1.0° C per 304.8 m) to 10,000 ft (3048 m) no direct sunlight allowed. Maximum rate of change is 18° F/Hr (10° C/Hr). Upper operating limit is 10,000 ft (3,048 m) or 70 Kpa/10.1 psia. System performance may be reduced if operating with a fan fault or above 30° C. |
|             |                                                 | Non-operating                                                                                                                                                                                                                                                                                         | -22° to 140° F (-30° to 60° C) Maximum rate of change is 36° F/Hr (20° C/Hr). Upper non-operating limit is 30,000 ft (9,144 m) or 30.3KPa/4.4 psia.                                                                                                                                                                                                               |
|             | Maximum Wet Bulb Temperature                    | 101.7° F (38.7° C)                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                   |
|             | Relative Humidity<br>(non-condensing)           | Operating                                                                                                                                                                                                                                                                                             | 10% to 90% relative humidity (Rh), 28° C maximum wet bulb temperature.                                                                                                                                                                                                                                                                                            |
|             |                                                 | Non-operating                                                                                                                                                                                                                                                                                         | 5% to 95% relative humidity (Rh), 38.7° C maximum wet bulb temperature.                                                                                                                                                                                                                                                                                           |
|             | Acoustic Noise                                  | Idle Minimum (Fixed Disk Drives Spinning)                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                   |
|             |                                                 | L WAd (BELS)                                                                                                                                                                                                                                                                                          | 6.4                                                                                                                                                                                                                                                                                                                                                               |
|             |                                                 | L pAm (dBA)                                                                                                                                                                                                                                                                                           | 47                                                                                                                                                                                                                                                                                                                                                                |
|             |                                                 | Operating Minimum (Random Seeks to Fixed Disks)                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                   |
|             |                                                 | L WAd (BELS)                                                                                                                                                                                                                                                                                          | 6.6                                                                                                                                                                                                                                                                                                                                                               |
|             |                                                 | L pAm (dBA)                                                                                                                                                                                                                                                                                           | 49                                                                                                                                                                                                                                                                                                                                                                |

Technical Specifications

|                             |                                    |                                                                                                                                                                                    |
|-----------------------------|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Smart Array P400 Controller | Disk Drive and Enclosure Interface | 3G SAS (Serial Attached SCSI)<br>1.5G SATA (Serial Advanced Technology Attachment)                                                                                                 |
|                             | SAS Connectors                     | 2 internal (SFF8484) x4 wide port connectors                                                                                                                                       |
|                             | Cache Memory Speed                 | DDR2-533MHz with 40 or 72-bit wide bus provides up to 4.2 GB/s maximum bandwidth.                                                                                                  |
|                             | Server Interface                   | x8 2.5G PCIe provides 2GB/s maximum bandwidth.                                                                                                                                     |
|                             | SAS Speed                          | x8 3G SAS provides 2.4GB/s maximum bandwidth.                                                                                                                                      |
|                             | Cache Memory                       | 40-bit 256MB cache (72-bit 512MB module upgrades available); ECC protection, battery-backed, and transportable                                                                     |
|                             | Logical Drives Supported           | Up to 32 logical drives                                                                                                                                                            |
|                             | Maximum Logical Drive Capacity     | 3TB (6 x 500GB)                                                                                                                                                                    |
|                             | Host Memory Addressing             | 64-bit, supporting greater than 4GB server memory space                                                                                                                            |
|                             | RAID Support                       | RAID 6 with ADG (Advanced Data Guarding) requires Battery Backed Write Cache Upgrade<br>RAID 5 (Distributed Data Guarding)<br>RAID 1+0 (Striping & Mirroring)<br>RAID 0 (Striping) |
|                             |                                    |                                                                                                                                                                                    |
|                             |                                    |                                                                                                                                                                                    |

|                             |                                    |                                                                                                      |
|-----------------------------|------------------------------------|------------------------------------------------------------------------------------------------------|
| Smart Array E200 Controller | Disk Drive and Enclosure Interface | 3G SAS (Serial Attached SCSI)<br>1.5G SATA (Serial Advanced Technology Attachment)                   |
|                             | SAS Connectors                     | 2 internal (SFF8484) x4 wide port connectors                                                         |
|                             | Cache Memory Speed                 | DDR1-266 MHz provides up to 4.2 GB/s maximum bandwidth.                                              |
|                             | Server Interface                   | x8 2.5G PCIe provides 2GB/s maximum bandwidth.                                                       |
|                             | SAS Speed                          | x8 3G SAS provides 2.4GB/s maximum bandwidth.                                                        |
|                             | Cache Memory                       | 40-bit 64MB cache or a 128MB battery backed cache: ECC protection, battery-backed, and transportable |
|                             | Logical Volumes Supported          | Up to 32 logical volumes                                                                             |
|                             | Maximum Volume Capacity            | 3TB (6 x 500 GB)                                                                                     |
|                             | Host Memory Addressing             | 64-bit, supporting greater than 4GB server memory space                                              |
|                             | RAID Support                       | RAID 5 (Distributed Data Guarding)<br>RAID 1, 1+0 (Striping & Mirroring)<br>RAID 0 (Striping)        |
|                             |                                    |                                                                                                      |
|                             |                                    |                                                                                                      |

Technical Specifications

|                                                     |                       |                                    |                                                |
|-----------------------------------------------------|-----------------------|------------------------------------|------------------------------------------------|
| Embedded NC373i<br>Multifunction Server<br>Adapters | Network Interface     | 10Base-T/100Base-TX/1000Base-TX    |                                                |
|                                                     | Compatibility         | IEEE 802.3 10Base-T                |                                                |
|                                                     |                       | IEEE 802.3ab 1000Base-T            |                                                |
|                                                     |                       | IEEE 802.3u 100Base-TX             |                                                |
|                                                     | Data Transfer Method  | PCI Express, four lanes (x4)       |                                                |
|                                                     | Network Transfer Rate | 10Base-T (Half-Duplex)             | 10 Mb/s                                        |
|                                                     |                       | 10Base-T (Full-Duplex)             | 20 Mb/s                                        |
|                                                     |                       | 100Base-TX (Half-Duplex)           | 100 Mb/s                                       |
|                                                     |                       | 100Base-TX (Full-Duplex)           | 200 Mb/s                                       |
|                                                     |                       | 1000Base-TX (Half and Full-Duplex) | 2000Mb/s                                       |
|                                                     | Connector             | Two RJ-45                          |                                                |
|                                                     | Cable Support         | 10Base-T                           | Categories 3, 4 or 5 UTP; up to 328 ft (100 m) |
|                                                     |                       | 100Base-TX                         | Category 5 or higher UTP; up to 328 ft (100 m) |
|                                                     |                       | 1000BaseTX                         | Category 5 or higher UTP; up to 328 ft (100 m) |

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