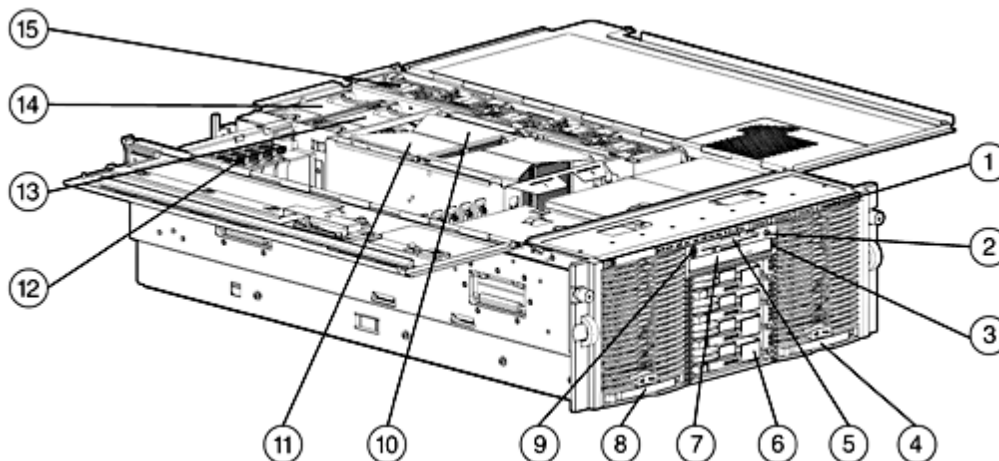


## Overview



- |   |  |
|---|--|
| 1. LED Diagnostic Display (system health and DIMM status)     | 8. Redundant Hot Plug Power Supply #1            |
| 2. Unit ID (UID) LED Switch (front and rear)                  | 9. System Power LED Switch                       |
| 3. Universal Media Bay Ejector Button                         | 10. Processor Board #2                           |
| 4. Redundant Hot Plug Power Supply #2                         | 11. Processor Board #1                           |
| 5. 1.44MB Diskette Drive                                      | 12. Six 100MHz/64-bit PCI-X slots                |
| 6. Ultra3 Hard Disk Drive Bays (up to four)                   | 13. Redundant Hot Plug Fan #2                    |
| 7. CD/DVD-ROM Drive in Universal Media Bay<br>(hot pluggable) | 14. Redundant Hot Plug Fan #1                    |
|   | 15. Hot Plug RAID Memory Cartridges (five total) |

## What's New

- Intel® Xeon® Processor MP 3.0 GHz/4MB, 2.7 GHz/2MB, or 2.2 GHz/2MB Processors (eight processor capability)

## At A Glance

- Uncompromising 8-way performance and availability in an ultra dense, 4U form factor
- Intel Xeon Processor MP 3.0GHz/4MB, 2.7GHz/2MB, 2.2GHz/2MB Processors (eight processor capability)
- HP developed F8 chipset
- 133 MHz SDRAM Memory, expandable to 64 GB addressable memory
- HP Hot Plug RAID Memory Technology
  - Hot Add, Hot Replace, and Hot Upgrade
  - Uses industry standard ECC-protected memory
- Six 64-bit/100MHz PCI-X slots, all hot pluggable
- Integrated Lights-Out Standard Management (iLO) on system board
- Two NC7781 PCI-X Gigabit NICs (embedded)
- Integrated Smart Array 5i Controller (Ultra3 support) (supports RAID 0, 1, 1+0, and 5 across internal hard disk drives)
- Internal Hot Plug Drive Storage of 1.20 TB (4 x 300 GB Ultra320 1" hard drives running at Wide Ultra3) or one DAT hot plug tape drive and two hot plug hard drives
- Tool less and modular chassis for enhanced serviceability
- Innovative diagnostic lighting for rapid response to service events
- Unit ID (UID) lighting, front and rear
- Front bezel system health/RAID memory LEDs
- Two 1100W/800W hot plug redundant power supplies standard
- Two hot plug redundant system fans standard
- Rapid deployment racking solution (rack rails and cable management)

## Standard Features

|  |  |
|--|--|
| <b>Processor</b><br><i>One of the following depending on Model</i> | (4) Intel Xeon Processor MP 3.0 GHz/4MB<br>(4) Intel Xeon Processor MP 2.7 GHz/2MB<br>(4) Intel Xeon Processor MP 2.2 GHz/2MB  |
| <b>Processor</b><br><i>One of the following depending on Model</i> | 4-MB Integrated Level 3 cache (per processor)<br><b>(NOTE: Available with 3.0 GHz models.)</b><br>2-MB Integrated Level 3 cache (per processor)<br><b>(NOTE: Available with 2.7 GHz or 2.2 GHz models.)</b>  |
| <b>Upgradeability</b>  | Upgradeable to eight processors  |
| <b>Chipset</b>   | HP developed F8 chipset  |
| <b>Memory Protection</b>   | Advanced ECC<br>Hot Plug RAID Memory   |
| <b>Memory</b>  | Type 133MHz ECC SDRAM DIMMs<br>Standard (for 2.7 GHz and 3.0 GHz models) 4 GB (2 x 512 MB x 5 HP RAID Memory Cartridges)<br>(The 5th cartridge is populated for redundancy)<br><b>NOTE: Available with 3.0 GHz or 2.7 GHz models.</b><br>Standard (for 2.2 GHz models only) 2 GB (2 x 256 MB x 5 HP RAID Memory Cartridges)<br>(The 5th cartridge is populated for redundancy)<br><b>NOTE: Available with 2.2 GHz model.</b><br>Maximum 64 GB addressable (80 GB total)<br><b>NOTE: All models come standard with all five memory cartridges populated and Hot Plug RAID Memory enabled.</b><br><b>NOTE: In standard Hot Plug RAID Memory mode, addressable memory refers to the portion of memory that is addressable by the OS. Total memory consists of addressable memory plus the redundant memory (stored in the dedicated parity memory cartridge.)</b> |
| <b>Network Controller</b>  | Two NC7781 PCI-X Gigabit NICs (embedded)   |

## Standard Features

| Expansion Slots | Slot Number | Bus Speed              | Bus Number | Hot Plug | PCI Voltage | Notes |
|-----------------|-------------|------------------------|------------|----------|-------------|-------|
|                 | 1           | 64-bit 100MHz<br>PCI-X | 7          | Yes      | 3.3V        |       |
|                 | 2           | 64-bit 100MHz<br>PCI-X | 7          | Yes      | 3.3V        |       |
|                 | 3           | 64-bit 100MHz<br>PCI-X | 11         | Yes      | 3.3V        |       |
|                 | 4           | 64-bit 100MHz<br>PCI-X | 11         | Yes      | 3.3V        |       |
|                 | 5           | 64-bit 100MHz<br>PCI-X | 3          | Yes      | 3.3V        |       |
|                 | 6           | 64-bit 100MHz<br>PCI-X | 3          | Yes      | 3.3V        |       |

**NOTE:** All slots can accept universal keyed PCI cards.

**Storage Controllers** Smart Array 5i Controller (integrated on system board), one internal channel, Ultra3 (supports RAID 0, 1, 1+0, and 5 across internal hard disk drives)  
Optional support for Ultra3 or Ultra320 storage controllers in an I/O slot to internal drives via array bypass cable kit and required cables ships with all HP ProLiant DL740 in the accessories package.

**Storage**  
 Diskette Drive 1.44 MB Diskette Drive  
 Optical Drive (in the Universal Media Bay) Integrated Slimline CD/DVD-ROM (8X/24X) Combo Drive Option Kit  
 Hard Drives None

**Maximum Internal Storage Type** Hot Plug SCSI 1.20 TB 4 x 300 GB Ultra320, 1" Drives (internal hot plug cage only)

**Interfaces**  
 Serial 1  
 Pointing Device (Mouse) 1  
 Graphics 1  
 Hot Plug Keyboard 1  
 USB (rear only) 1  
 iLO remote management port 1  
 Network RJ-45 2

**Graphics** Integrated ATI RAGE XL Video Controller with 8-MB SDRAM Video Memory

**Form Factor** 4U (7") Rack Form Factor; Ships with sliding rack rails and cable management system; Standard 19" rack-mountable

### Standard Features

#### ProLiant Essentials Foundation Pack Software

##### HP Systems Insight Manager

HP's new HP Systems Insight Manager (HP SIM) helps maximize system uptime and performance and reduce system maintenance costs by providing proactive notification of problems before those problems result in unplanned downtime or reduced productivity. HP SIM are both easy to set up work with the Insight Management Agents, integrated Light-Out and Remote Insight Light-Outs Edition, and Version Control Agents to deliver robust fault, configuration, and asset management as well as remote administration. With HP SIM customers will also be able to take advantage of role-based security; the ability to manage ProLiant, Integrity, and HP 9000 systems; and plug-ins for storage, client, printer, and power management as well as server rapid deployment, performance management, and workload management. For more details on HP SIM visit <http://www.hp.com/go/hpsim>.

##### SmartStart

SmartStart is a tool that simplifies server setup, providing a rapid way to deploy reliable and consistent server configurations. For more information, please visit the SmartStart Web site at <http://www.hp.com/servers/smartstart>. SmartStart version supported (minimum): SmartStart 6.20.

##### Management Agents

The Management Agents form the foundation for HP's Intelligent Manageability strategy. They provide direct, browser-based access to in-depth instrumentation built into HP servers, workstations, desktops, and portables, and send alerts to Systems Insight Manager and other enterprise management applications in case of subsystem or environmental failures. For additional information about the Management Agents and other management products from HP, please visit the management Web site at <http://www.hp.com/servers/manage>.

##### Subscriber's Choice

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 <http://www.hp.com/go/subscriberschoice> and customize your profile to receive various new alerts as they become available, on a weekly or monthly basis.

##### ROMPaaS, support software, and configuration utilities

The latest software, drivers, and firmware fully optimized and tested for your ProLiant server and options available in SmartStart or downloadable from Software and Drivers download pages, linked from the SmartStart website at [www.hp.com/servers/smartstart](http://www.hp.com/servers/smartstart).

##### Survey Utility and diagnostics utilities

The most advanced configuration analysis, reporting and troubleshooting utilities used by HP and at your fingertips, available in SmartStart.

## Standard Features

### Optional ProLiant Essentials Value Packs

Optional software offerings that selectively extend the functionality of an Adaptive Infrastructure to address specific business problems and needs:

- Rapid Deployment Pack - an automated solution for multi-server deployment and provisioning, enabling companies to quickly and easily adapt to changing business demands.
- 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.
- 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.
- Intelligent Networking Pack - detects and analyzes network bottlenecks or broken network linkages and steers traffic to the optimum route based on network conditions.
- 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.
- 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.

**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>

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### Industry Standard Compliance

ACPI 1.0b Compliant  
PCI-X and PCI 2.2 Compliant  
PAE Support  
PXE Support  
Microsoft® Logo certifications

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## Standard Features

### Intelligent Manageability Integrated Lights-Out (iLO) Standard Management

- Virtual Text Remote Console
- Virtual Power Button Control
- Dedicated LAN Connectivity
- Automatic IP Configuration via DHCP/DNS/WINS
- Industry Standard 128-bit Secure Sockets Layer (SSL) Security
- IML and iLO Event Logging
- Support for 12 user accounts with customizable access privilege

Integrated Lights-Out (iLO) Advanced Pack (supports Advanced features such as Graphical Remote Console and Virtual Floppy - available as a separate option)

HP Systems Insight Manager

Remote Insight Lights-Out Edition II (optional)

ROM-Based Setup Utility (RBSU)

Integrated Management Log (IML)

Server Health logging

Automatic Server Recovery-2 (ASR-2)

System Interconnect Status Indicators

Remote-Flash Redundant ROM

Hot Spare Boot

**(NOTE: Upon the event of a failed processor or VRM in a multi-processing environment, the system will automatically reboot and use the remaining good processor(s).)**

Power Down Utility

Pre-Failure Warranty (covers processors, as well as hard drives and memory)

Dynamic sector repairing and drive parameter tracking (with Smart Array controllers)

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### Availability

Hot Plug RAID Memory - delivering unsurpassed memory protection and server availability:

- Uses industry standard ECC SDRAM DIMMs
- Fully redundant architecture, with no more performance overhead than is currently experienced with ECC protection.
- Same level of redundancy as achieved with memory mirroring, at only 25% of the additional memory expense when compared to mirroring.
- Customer can choose to run in non-RAID memory mode by populating only the first 4 memory cartridges.
- **Hot Add**
  - Add a new bank of DIMMs while the server is running
  - OS/Application enabled
- **Hot Upgrade**
  - Upgrade from a lower capacity DIMM to a higher capacity DIMM while the server is running
  - OS/Application enabled
- **Hot Replace**
  - Replace a failed DIMM while the server is running
  - OS/Application transparent

Six 64-bit/100MHz PCI-X Hot Plug slots with push button functionality

Dual Redundant Hot Plug Fans

Dynamic sector repairing and drive parameter tracking (with Smart Array controllers)

Fault Tolerant Processor Power Modules

Redundant/adaptive load balancing NIC Support

Dual Redundant Hot Plug Power Supplies

## Standard Features

### Serviceability

- Innovative Diagnostic Lighting throughout server
  - LED display on front bezel indicates system health and DIMM status
  - LED display on memory cartridges indicates cartridge power and attention status
- Tool-less, virtually cable-less interior design
- Tool-less access to interior of server
- Hot pluggable universal media bay (CD/DVD-ROM drive ships standard) ejects without the use of tools
- Front access power supplies
- PCI Card Guides locks full length PCI cards in place during transit
- SCSI Drive Cage connects directly to system board – no cables.
- Modular mechanical design allows tool-less access to major subsystems for easy upgrades and servicing
  - Host Module: Processor, Memory, and I/O Subsystems
  - Power and Media Module: SCSI Backplane, Power Supplies, Universal Media Bay
- Quick Deploy Racking System
- Tool-less design "snap in" rails

### Security

Power-on password  
Diskette drive control  
Diskette boot control  
Network server mode  
Security provision  
Parallel and serial interface control  
Administrator's password  
Disk configuration lock  
Hot plug access security

### Server Power Cords

Two IEC to IEC Highline power cords (PDU adapters) ship standard

### Power Supply

Two Redundant Hot Plug 1100/800-Watt power supplies per system. Power supplies are load sharing and provide 1100 Watts of Redundant power for 220-volt input or 800 Watts of power for 115-volt input.

**NOTE:** To ensure redundancy of server power, HP requires that 200-240 VAC power be used for all deployments. This will ensure that both power supplies can support up to their maximum configurations, and remain in a redundant power supply state.

**NOTE:** A maximum of two power supplies are supported and ship standard with each server. Use of 110V power is not recommended.

**NOTE:** Due to the increased power consumption of the new Intel Xeon MP processors, power redundancy may not be supported on all server configurations when using 115-120 VAC power. Please refer to the Power Supply Calculator <http://activeanswers.compaq.com/> to determine if your configuration is redundant.

**NOTE:** A maximum of two power supplies are supported (shipped standard with each server).

### System Fans

Two Hot-Plug redundant fans ship standard. Two maximum supported.

### Required Cabling

For required cabling information, refer to the HP Web site at:  
<http://h18004.www1.hp.com/products/servers/proliantdl740/index.html>.

## Standard Features

### OS Support

Microsoft Windows 2000  
Microsoft Windows 2000 Advanced Server  
Microsoft Windows Server 2003 (Standard and Enterprise)  
LINUX (Red Hat, SuSE)

**NOTE:** For a more complete and up-to-date listing of supported OS's 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 DL740, 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 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>

### 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://www5.compaq.com/products/servers/ProLiantdl740/index.html>.

**NOTE:** Allow a minimum of 48 inches (121.92 cm) clearance beyond the front of your rack to permit server installation and removal. This applies to both individual rack installations as well as when aligning rack rows so that the front doors are facing each other.

### 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, EVA3000 & EVA5000, 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>.



## Standard Features

### Service and Support

Three-year limited warranty, including hardware diagnostic support, pre-failure warranty (coverage of hard drives, memory and processors). The warranty is fully supported by HP Services and a worldwide network of resellers and service providers. In addition 90-day's getting started software telephone support may be covered under the warranty or available for an additional fee. Enhancements to warranty services are available through HP Care Pack services.

**NOTE:** Limited warranty includes 3 year parts, 3 year labor, 3-year on-site support

Care Pack services provide a range of life cycle support options that let you choose the service levels that meet your business requirements, from basic to mission-critical.

A full range of HP Care Pack hardware and software services are available including:

- Installation and start up
- Education courses
- Extended onsite hardware coverage hours from same business day 13 hours, 5 day to 24 hours, 7 days call window with options including 4-hour response or 6-hour Call To Repair
- Comprehensive range of software technical support for Microsoft, Linux, ProLiant Essentials and VMWare-based IT solutions helping to deliver high level of application availability. Response times range from 30 mins for critical problems to 2 hours.
- System Management, Performance Services and Mission Critical Support Solution

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.

**NOTE:** For more information on HP Care Pack services, contact any of our worldwide sales offices or resellers or visit our worldwide Web site on the internet at: <http://www.hp.com/hps/carepack>

**NOTE:** For more complete information on HP Services offerings, customers and resellers, please visit us at: <http://www.hp.com/hps>

**NOTE:** Additional information regarding worldwide limited warranty and technical support is available at: <http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>

### Models

|  |                           |  |
|--|---------------------------|--|
| <b>DL740R01 X3.0-4MB,<br/>4096MB (4P)<br/>348445-xxx</b> | <b>Processor(s)</b>       | (4) Intel Xeon Processors MP at 3.0 GHz standard (up to 8 supported)   |
|  | <b>Cache Memory</b>       | 4-MB integrated Level 3 cache (per processor)  |
|  | <b>Memory</b>             | 4096 MB (Standard) to 64 GB (Maximum) addressable protected 133MHz ECC SDRAM DIMM (5120 MB total)                        |
|  | <b>Network Controller</b> | Two NC7781 PCI-X Gigabit NICs (embedded)   |
|  | <b>Storage Controller</b> | Integrated Smart Array 5i Controller (Ultra 3 support) (supports RAID 0, 1, 1+0, and 5 across internal hard disk drives) |
|  | <b>Hard Drives</b>        | None   |
|  | <b>Internal Storage</b>   | 1.20 TB maximum (with optional hard drives)  |
|  | <b>Cache Accelerator</b>  | 2-MB Cache coherency accelerator embedded on host board  |
|  | <b>Optical Drive</b>      | Slimline CD/DVD-ROM Drive (8X/24X)   |
|  | <b>Diskette Drive</b>     | 1.44 MB Diskette Drive   |
|  | <b>I/O Slots</b>          | PCI-X  |
|  | <b>Form Factor</b>        | 4U Rack Form Factor  |

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|  |                           |  |
|--|---------------------------|--|
| <b>DL740R01 X2.7-2MB,<br/>4096MB (4P)<br/>348446-xxx</b> | <b>Processor(s)</b>       | (4) Intel Xeon Processors MP at 2.7 GHz standard (up to 8 supported)   |
|  | <b>Cache Memory</b>       | 2-MB Integrated Level 3 cache (per processor)  |
|  | <b>Memory</b>             | 4096 MB (Standard) to 64 GB (Maximum) addressable protected 133MHz ECC SDRAM DIMM (5120 MB total)                        |
|  | <b>Network Controller</b> | Two NC7781 PCI-X Gigabit NICs (embedded)   |
|  | <b>Storage Controller</b> | Integrated Smart Array 5i Controller (Ultra 3 support) (supports RAID 0, 1, 1+0, and 5 across internal hard disk drives) |
|  | <b>Hard Drives</b>        | None   |
|  | <b>Internal Storage</b>   | 1.20 TB maximum (with optional hard drives)  |
|  | <b>Cache Accelerator</b>  | 2-MB Cache coherency accelerator embedded on host board  |
|  | <b>Optical Drive</b>      | Slimline CD/DVD-ROM Drive (8X/24X)   |
|  | <b>Diskette Drive</b>     | 1.44 MB Diskette Drive   |
|  | <b>I/O Slots</b>          | PCI-X  |
|  | <b>Form Factor</b>        | 4U Rack Form Factor  |

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### Models

|  |                           |  |
|--|---------------------------|--|
| <b>DL740R01 X2.2-2MB,<br/>2048MB (4P)<br/>348447-xxx</b> | <b>Processor(s)</b>       | (4) Intel Xeon Processors MP at 2.2 GHz standard (up to 8 supported)   |
|  | <b>Cache Memory</b>       | 2-MB Integrated Level 3 cache (per processor)  |
|  | <b>Memory</b>             | 2048MB (Standard) to 64 GB (Maximum) addressable protected 133MHz ECC SDRAM DIMM (5120 MB total)                         |
|  | <b>Network Controller</b> | Two NC7781 PCI-X Gigabit NICs (embedded)   |
|  | <b>Storage Controller</b> | Integrated Smart Array 5i Controller (Ultra 3 support) (supports RAID 0, 1, 1+0, and 5 across internal hard disk drives) |
|  | <b>Hard Drives</b>        | None   |
|  | <b>Internal Storage</b>   | 1.20 TB maximum (with optional hard drives)  |
|  | <b>Cache Accelerator</b>  | 2-MB Cache coherency accelerator embedded on host board  |
|  | <b>Optical Drive</b>      | Slimline CD/DVD-ROM Drive (8X/24X)   |
|  | <b>Diskette Drive</b>     | 1.44 MB Diskette Drive   |
|  | <b>I/O Slots</b>          | PCI-X  |
|  | <b>Form Factor</b>        | 4U Rack Form Factor  |

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|                         |         |           |
|-------------------------|---------|-----------|
| <b>Country Code Key</b> | XXX=B21 | Worldwide |
|                         | XXX=291 | Japan     |
|                         | XXX=AA1 | PRC       |

### Options

|  |  |            |
|--|--|------------|
| HP ProLiant DL740<br>Unique Options  | Low Line (115V) Cable Kit, C-13 to 5-15P   | 317424-001 |
|  | DL740 Folding Metal Cable Management Arm   | 321716-B21 |
| <p><b>NOTE:</b> The Low Line Cable Kit consists of a single, 9 foot, IEC C-13 to 5-15P, 10 Amp cord. HP highly recommends running your HP ProLiant DL740 at high line (220V) voltage to ensure power redundancy for all of your robust, business-critical configurations. Because of the increasing power requirements of the memory and microprocessor subsystems, the HP ProLiant DL740 does not support power redundancy for all configurations when running at low line voltage. Please refer to the Power Supply Calculator <a href="http://h71019.www7.hp.com/ActiveAnswers/cache/71108-0-0-0-121.aspx">http://h71019.www7.hp.com/ActiveAnswers/cache/71108-0-0-0-121.aspx</a> to determine if your low line configuration is redundant.</p> |  |            |
| ProLiant Essentials<br>Value Pack Software   | ProLiant Essentials Performance Management Pack Single Server License  | 306696-B21 |
|  | <b>NOTE:</b> This license allows 1 server to be managed by Performance Management Pack.  |            |
|  | ProLiant Essentials Performance Management Pack, 10 Pack Server License  | 374055-B21 |
|  | Performance Management Pack, flexible license kit  | 306697-B21 |
|  | <b>NOTE:</b> A single pack is shipped with a single license key for the total number of licenses ordered.  |            |
|  | ProLiant Essentials Workload Management Pack (Featuring Compaq Resource Partitioning Manager version 2.0)  | 303284-B21 |
|  | ProLiant Essentials Integrated Lights-Out Advanced Pack  | 263825-B21 |
|  | ProLiant Essentials Intelligent Networking Pack, 1 License   | 372906-B21 |
|  | ProLiant Essentials Intelligent Networking Pack Flex License   | 372950-B21 |
|  | ProLiant Essentials Intelligent Networking Pack Track License  | 372951-B21 |
|  | ProLiant Essentials Virtual Machine Management Pack, Single-Server License   | 372214-B21 |
|  | <b>NOTE:</b> For use with a single server. Contains one license with a unique license activation key and documentation.  |            |
|  | ProLiant Essentials Virtual Machine Management Pack, Flexible-Quantity License   | 372215-B21 |
|  | <b>NOTE:</b> For use with multiple servers. This part number can be used to purchase multiple licenses with a single activation key.   |            |
|  | ProLiant Essentials Virtual Machine Management Pack, Tracking License  | 372216-B21 |
|  | <b>NOTE:</b> For use with signed and implemented Activation Key Agreements only. Purchase of this part number entitles the customer to deploy additional licenses of the product under the terms of the existing Activation Key Agreement. |            |
|  | ProLiant Essentials Vulnerability and Patch Management Pack, Single-Server License   | 371645-B21 |
|  | ProLiant Essentials Vulnerability and Patch Management Pack, 10-Server License   | 372029-B21 |
|  | ProLiant Essentials Vulnerability and Patch Management Pack, Flexible-Quantity License   | 371646-B21 |
|  | ProLiant Essentials Vulnerability and Patch Management Pack, Tracking license for new servers  | 371647-B21 |
| ProLiant Essentials Vulnerability and Patch Management Pack, Tracking license for installed servers  | 378372-B21   |            |
| ProLiant Essentials Vulnerability and Patch Management Pack, 1-Server 10-Desktop Bundle License  | 389941-B21   |            |
| ProLiant Essentials Server Migration Pack, Single-Server License   | 375345-B21   |            |
| ProLiant Essentials Server Migration Pack, Flexible-Quantity License   | 375346-B21   |            |

## Options

|   |            |
|---|------------|
| ProLiant Essentials Server Migration Pack, Tracking license   | 375347-B21 |
| ProLiant Essentials Server Migration Pack, 10-Server License  | 390739-B21 |
| <p><b>NOTE:</b> This license allows 10 servers to be migrated from a physical server to a 10 virtual machines. Or this license can be used to migrate a 10 virtual machines from one virtualization layer i.e. VMware GSX to a different virtualization layer such as VMware ESX or Microsoft Virtual Server 2005.</p> <p><b>NOTE:</b> Flexible and volume quantity license kits are available for ProLiant Essentials Value Packs. Refer to <a href="http://www.hp.com/servers/proliantessentials">http://www.hp.com/servers/proliantessentials</a> or the various ProLiant Essentials Value Pack product QuickSpecs for more information.</p> <p><b>NOTE:</b> For more information regarding ProLiant Essentials Software, please see the following URL: <a href="http://www.hp.com/servers/proliantessentials">http://www.hp.com/servers/proliantessentials</a>.</p> |            |

|                                   |   |            |
|-----------------------------------|---|------------|
| HP NetServer integration Services | HP NetServer to ProLiant integration and assessment service   | 304164-002 |
|                                   | <p><b>NOTE:</b> HP identifies current levels of NetServer support, services, and management. This service helps maximize customer's ability to add ProLiant platforms into their current environment.</p>   |            |
|                                   | HP TopTools to Insight Manager 7 installation and startup service   | 304163-002 |
|                                   | <p><b>NOTE:</b> Provides on-site review, installation and configuration services for Insight Manager 7. HP will also re-create, as closely as possible, the views and reports from the customer's current TopTools configuration. This service assures a smooth transition to the ProLiant Essentials software.</p> |            |

|   |  |            |
|---|--|------------|
| Processor   | <p><b>NOTE:</b> Intel Xeon 3.0 GHz/4MB, 2.7 GHz/2MB, 2.2 GHz/2MB, 2.8 GHz/2MB, 2.0 GHz/2MB, 2.5 GHz/1MB, 2.0 GHz/1MB, and 1.5 GHz/1MB processors cannot be mixed in the same server. They all have to be of the same speed and cache size.</p> |            |
|   | (4) Intel Xeon MP 3.0GHz -4MB Processor Option Kit   | 351050-B21 |
|   | <p><b>NOTE:</b> This processor option kit (PN 351050-B21) supports the HP ProLiant DL760 G2 and the HP ProLiant DL740 servers. This option kit contains 4 x Intel Xeon MP 3.0 GHz-4MB processors.</p>  |            |
|   | (4) Intel Xeon MP 2.70 GHz -2MB Processor Option Kit   | 351051-B21 |
|   | <p><b>NOTE:</b> This processor option kit (PN 351051-B21) supports the HP ProLiant DL760 G2 and the HP ProLiant DL740 servers. This option kit contains 4 x Intel Xeon MP 2.7 GHz-2MB processors.</p>  |            |
|   | (4) Intel Xeon MP 2.20 GHz -2MB Processor Option Kit   | 351052-B21 |
|   | <p><b>NOTE:</b> This processor option kit (PN 351052-B21) supports the HP ProLiant DL760 G2 and the HP ProLiant DL740 servers. This option kit contains 4 x Intel Xeon MP 2.2 GHz-2MB processors.</p>  |            |
|   | Intel Xeon MP 2.80 GHz -2MB Processor Option Kit (4P)  | 334037-B21 |
| <p><b>NOTE:</b> This processor option kit (PN 334037-B21) supports the HP ProLiant DL740 and the HP ProLiant DL760 G2 servers. This option kit contains 4 x Intel Xeon MP 2.8 GHz-2MB processors.</p> |  |            |
| Intel Xeon MP 2.5 GHz -1MB Processor Option Kit (4P)  | 339072-B21   |            |
| <p><b>NOTE:</b> This processor option kit (PN 339072-B21) supports the HP ProLiant DL740 and the HP ProLiant DL760 G2 servers. This option kit contains 4 x Intel Xeon MP 2.5 GHz-1MB processors.</p> |  |            |
| Intel Xeon MP 2.0 GHz -1MB Processor Option Kit (4P)  | 334036-B21   |            |
| <p><b>NOTE:</b> This processor option kit (PN 334036-B21) supports the HP ProLiant DL740 and the HP ProLiant DL760 G2 servers. This option kit contains 4 x Intel Xeon MP 2.0 GHz-1MB processors.</p> |  |            |

## Options

Intel Xeon MP 2.0 GHz -2MB Processor Option Kit (4P) 287520-B21

**NOTE:** This processor option kit (PN 287520-B21) supports the HP ProLiant DL740 and the HP ProLiant DL760 G2 servers. This option kit contains 4 x Intel Xeon MP 2.0 GHz-2MB processors.

Intel Xeon MP 1.50 GHz-1MB Processor Option Kit (4P) 287519-B21

**NOTE:** This processor option kit (PN 287519-B21) supports the HP ProLiant DL740 and the HP ProLiant DL760 G2 servers. This option kit contains 4 x Intel Xeon MP 1.50 GHz-1MB processors.

**Memory** (SDRAM DIMMs) 2048MB 133MHz ECC SDRAM Memory Option Kit (1 x 2048 MB) 317093-B21  
1024MB 133MHz ECC SDRAM Memory Option Kit (1 x 1024 MB) 236854-B21

512MB 133MHz ECC SDRAM Memory Option Kit (1 x 512 MB) 236853-B21

256MB 133MHz ECC SDRAM Memory Option Kit (1 x 256 MB) 236852-B21

**NOTE:** Memory must be populated in banks of 10. (2 per memory cartridge x 5 cartridges) All DIMMs in a bank must be the same sku number.

**Optical Drives** HP DVD+R/RW 8X Slim 383975-B21

**Hard Drives** *Ultra320 SCSI – Universal Hot Plug*

300-GB 10,000 rpm U320 Universal Hard Drive (1") 350964-B22

146.8-GB 10,000 rpm U320 Universal Hard Drive (1") 286716-B22

72.8-GB 10,000 rpm U320 Universal Hard Drive (1") 286714-B22

146.8-GB 15,000 rpm U320 Universal Hard Drive (1") 347708-B22

72.8-GB 15,000 rpm U320 Universal Hard Drive (1") 286778-B22

36.4-GB 15,000 rpm U320 Universal Hard Drive (1") 286776-B22

**NOTE:** All U320 Universal Hard Drives are backward compatible to U2 or U3 speeds. U320 drives require an optional U320 Smart Array Controller or U320 SCSI HBA to support U320 transfer rates.

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

U320 Hard Drive QS:

[http://h18000.www1.hp.com/products/quickspecs/11531\\_div/11531\\_div.HTML](http://h18000.www1.hp.com/products/quickspecs/11531_div/11531_div.HTML)  
(Worldwide)

[http://h18000.www1.hp.com/products/quickspecs/11531\\_na/11531\\_na.HTML](http://h18000.www1.hp.com/products/quickspecs/11531_na/11531_na.HTML)  
(North America)

## Options

|                            |   |            |
|----------------------------|---|------------|
| <b>Storage Controllers</b> | Smart Array 6402/128 Controller   | 273915-B21 |
|                            | Smart Array 6404/256 Controller   | 273914-B21 |
|                            | Smart Array 641 Controller  | 291966-B21 |
|                            | Smart Array 642 Controller  | 291967-B21 |
|                            | 128MB Battery-Backed Cache Enabler  | 351580-B21 |
|                            | <b>NOTE:</b> This 128MB BBWC supports the Smart Array 641 Controller and Smart Array 642 Controller.  |            |
|                            | 256-MB Battery-Backed Cache Module  | 254786-B21 |
|                            | <b>NOTE:</b> This 256-MB Battery-Backed Cache Module supports the Smart Array 5300 series controllers, HP StorageWorks Modular Smart Array 1000 and the HP StorageWorks Modular Smart Array 500.  |            |
|                            | 256MB DDR, Battery-Backed Cache Upgrade Kit for SA-6400   | 273913-B21 |
|                            | <b>NOTE:</b> This 256-MB DDR, Battery-Backed Cache upgrade kit supports the Smart Array 6400 series controller only.  |            |
|                            | 64-Bit/133Mhz Dual Channel Ultra320 SCSI Adapter  | 268351-B21 |
|                            | (The 64-bit/133-MHz Dual Channel Wide Ultra320 SCSI Adapter (268351-B21) will default to Wide Ultra2 when not used with the Wide Ultra3 hard drives.)   |            |
|                            | Ultra320 Expansion Module for SA-6402   | 273911-B21 |
|                            | <b>NOTE:</b> Please see the following Controller or SCSI Adapter QuickSpecs for Technical Specifications such as PCI Bus, PCI Peak Data Transfer Rate, SCSI Protocols supported, SCSI Peak Data Transfer Rate, Channels, SCSI Ports, Drives supported, Cache, RAID support, and additional information:<br><a href="http://h18000.www1.hp.com/products/quickspecs/1187_div/11587_div.HTML">http://h18000.www1.hp.com/products/quickspecs/1187_div/11587_div.HTML</a><br>(Smart Array 6400 Series)<br><a href="http://h18000.www1.hp.com/products/quickspecs/12067_div/12067_div.HTML">http://h18000.www1.hp.com/products/quickspecs/12067_div/12067_div.HTML</a><br>(Smart Array 641)<br><a href="http://h18000.www1.hp.com/products/quickspecs/12069_div/12069_div.HTML">http://h18000.www1.hp.com/products/quickspecs/12069_div/12069_div.HTML</a><br>(Smart Array 642)<br><a href="http://h18000.www1.hp.com/products/quickspecs/10429_div/10429_div.HTML">http://h18000.www1.hp.com/products/quickspecs/10429_div/10429_div.HTML</a><br>(SCSI Adapter)<br><a href="http://h18000.www1.hp.com/products/quickspecs/11555_div/11555_div.HTML">http://h18000.www1.hp.com/products/quickspecs/11555_div/11555_div.HTML</a><br>(U320 Adapter) |            |
| <hr/>                      |   |            |
| <b>Communications</b>      | HP NC150T PCI 4-port Gigabit 1000T Combo Switch Adapter   | 367132-B21 |
|                            | HP NC310F PCI-X 1000SX Gigabit Server Adapter   | 368169-B21 |
|                            | HP NC6170 PCI-X Dual Port 1000SX Gigabit Server Adapter   | 313879-B21 |
|                            | HP NC7170 PCI-X Dual Port 1000T Gigabit Server Adapter  | 313881-B21 |
|                            | HP NC7771 PCI-X 1000T Gigabit Server Adapter  | 290563-B21 |
|                            | <b>NOTE:</b> Any NIC on the option list can be used for redundancy with the embedded NC7781 Network Controller.   |            |
|                            | HP NC570C PCI-X Dual-port 4x Fabric Adapter   | 376158-B21 |
|                            | HP 24-Port 4x Fabric Copper Switch  | 376227-B21 |
|                            | HP 1m 4x Fabric Copper Cable  | 376232-B21 |
|                            | HP 3m 4x Fabric Copper Cable  | 376232-B22 |
|                            | HP 5m 4x Fabric Copper Cable  | 376232-B23 |

## Options

|                    |   |            |
|--------------------|---|------------|
| Management Options | Remote Insight Lights-Out Edition II (NA, LA) | 227251-001 |
|                    | Remote Insight Lights-Out Edition II (EMEA)   | 227251-021 |
|                    | Remote Insight Lights-Out Edition II (ROW)    | 227251-371 |

|          |   |            |
|----------|---|------------|
| Security | HP/Atalla AXL600L SSL Accelerator Card for ProLiant Servers | 524545-B21 |
|          | AXL300 Accelerator PCI Card for ProLiant Servers            | 227933-B21 |

## Tape Drives

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

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

### Hot Plug Tape Drives

|   |        |
|---|--------|
| HP StorageWorks DAT 72 Tape Drive, Internal Hot-Plug (Carbon) | Q1529A |
|---|--------|

### USB Tape Drives

|   |        |
|---|--------|
| HP StorageWorks DAT 72 USB External Tape Drive (Carbon) | DW027A |
|---|--------|

### External and Rack-Mount Ultrium Tape Drives

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

**NOTE:** No internal tape drives fit inside this HP ProLiant server (except hot plug tape). The internal drive shown here is for the 1U and 3U Rack-mount Kit.

|  |        |
|--|--------|
| HP StorageWorks Ultrium 232 Tape Drive, External (Carbonite) | DW065A |
|--|--------|

|  |        |
|--|--------|
| HP StorageWorks Ultrium 448 Tape Drive, External (Carbonite) | DW017A |
|--|--------|

|  |        |
|--|--------|
| HP StorageWorks Ultrium 448 Rack-mount (Carbonite) - Single drive installed in a 1U rack-mount kit | DW028A |
|--|--------|

|   |        |
|---|--------|
| HP StorageWorks Ultrium 960 Tape Drive , External (Carbonite) | Q1539A |
|---|--------|

|  |        |
|--|--------|
| HP StorageWorks 3U Rack-Mount Kit with one Ultrium 960 drive | Q1595A |
|--|--------|

**NOTE:** Please see the HP StorageWorks Ultrium Tape Drive QuickSpecs for additional options such as controllers, media, and other related items:

[http://h18006.www1.hp.com/products/quickspecs/11739\\_div/11739\\_div.html](http://h18006.www1.hp.com/products/quickspecs/11739_div/11739_div.html)  
(Worldwide)

[http://h18006.www1.hp.com/products/quickspecs/11739\\_na/11739\\_na.html](http://h18006.www1.hp.com/products/quickspecs/11739_na/11739_na.html)  
(North America)

For an up-to-date listing of the latest O/S and software support details for HP Ultrium tape drives, please visit: <http://www.hp.com/go/connect>.

### Rack-Mount Tape Drive Enclosures

|                                   |        |
|-----------------------------------|--------|
| HP StorageWorks 1U Rack-Mount Kit | A7445A |
|-----------------------------------|--------|

**NOTE:** 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 DAT 24, DAT40, DAT72, DLT VS80, DLT VS160, Ultrium 215, Ultrium 232, and Ultrium 448 tape drives.

|                                   |            |
|-----------------------------------|------------|
| HP StorageWorks 3U Rack-Mount Kit | 274338-B21 |
|-----------------------------------|------------|

**NOTE:** The 3U Rack-Mount Kit can support up to 2 full-height or 4 half-height tape drives and compatible with multiple Single-Ended and LVD SCSI tape drives including DAT 24, DAT 40, DAT 72, DAT 72X6 Autoloader, DLT VS80, DLT VS160, SDLT 320, SDLT 600, Ultrium 215, Ultrium 232, Ultrium 230, Ultrium 448, Ultrium 460, and Ultrium 960 tape drives.



## Options

**NOTE:** Please see the Rack-Mount Tape Drive Kits QuickSpecs for additional information regarding these kits:

[http://h18000.www1.hp.com/products/quickspecs/10854\\_div/10854\\_div.HTML](http://h18000.www1.hp.com/products/quickspecs/10854_div/10854_div.HTML)  
(Worldwide)

[http://h18000.www1.hp.com/products/quickspecs/10854\\_na/10854\\_na.HTML](http://h18000.www1.hp.com/products/quickspecs/10854_na/10854_na.HTML)  
(North America)

### Tape Autoloaders

#### DAT Autoloader

HP StorageWorks DAT 72x6 External Autoloader

Q1567A

**NOTE:** Please see the DAT Tape Autoloader QuickSpecs for additional options such as host bus adapters, controllers and media:

[http://h18000.www1.hp.com/products/quickspecs/11985\\_div/11985\\_div.HTML](http://h18000.www1.hp.com/products/quickspecs/11985_div/11985_div.HTML)  
(Worldwide)

[http://h18000.www1.hp.com/products/quickspecs/11985\\_na/11985\\_na.HTML](http://h18000.www1.hp.com/products/quickspecs/11985_na/11985_na.HTML)  
(North America)

#### HP StorageWorks 1/8 Tape Autoloader

1/8 Ultrium 960 Tape Autoloader, Tabletop

AF204A

1/8 Ultrium 448 Tape Autoloader, Tabletop

AF203A

1/8 SDLT 320 Tape Autoloader, Tabletop

AA926A

1/8 Ultrium 230 Tape Autoloader, Tabletop

C9572CB

1/8 DLT VS80 Tape Autoloader, Tabletop

C9264CB

1/8 Tape Autoloader Rackmount Kit

C9268R

**NOTE:** Required to install the 1/8 tape autoloader in a standard 19-inch rack.

**NOTE:** Please reference the 1/8 Tape Autoloader QuickSpecs at

<http://www.hp.com/go/automation> for additional information needed to create a complete solution; reference current compatibility information at <http://www.hp.com/go/ebs>.

#### HP StorageWorks SSL1016 Tape Autoloader

SSL1016 Ultrium 460 Tape Autoloader

330821-B21

SSL1016 SDLT 320 Tape Autoloader

330816-B21

**NOTE:** Please reference the SSL1016 Tape Autoloader QuickSpecs at

<http://www.hp.com/go/automation> for additional information needed to create a complete solution; reference current compatibility information at <http://www.hp.com/go/ebs>.

### Tape Libraries

#### HP StorageWorks MSL6000 Tape Library

##### Ultrium 960 technology

MSL6030, 1 drive, 30 slots, Ultrium 960

AD606A

MSL6030, 2 drive, 30 slots, Ultrium 960

AD607A

MSL6030, 1 drive, 30 slots, Ultrium 960, with embedded FC router

AD608A

MSL6030, 2 drive, 30 slots, Ultrium 960, with embedded FC router

AD609A

MSL6060, 2 drive, 60 slots, Ultrium 960

AD610A

MSL6060, 2 drive, 60 slots, Ultrium 960, with embedded FC router

AD611A

##### SDLT 600 technology

MSL6026, 1 drive, 26 slots, SDLT 600

AD582A

MSL6026, 2 drive, 26 slots, SDLT 600

AD583A

MSL6026, 1 drive, 26 slots, SDLT 600, with embedded FC router

AD584A

## Options

|   |        |
|---|--------|
| MSL6026, 2 drive, 26 slots, SDLT 600, with embedded FC router | AD585A |
| MSL6052, 2 drive, 52 slots, SDLT 600                          | AD587A |
| MSL6052, 2 drive, 52 slots, SDLT 600, with embedded FC router | AD588A |

### Ultrium 460 technology

|  |        |
|--|--------|
| MSL6030, 1 drive, 30 slots, Ultrium 460                          | AD598A |
| MSL6030, 2 drive, 30 slots, Ultrium 460                          | AD599A |
| MSL6030, 1 drive, 30 slots, Ultrium 460, with embedded FC router | AD600A |
| MSL6030, 2 drive, 30 slots, Ultrium 460, with embedded FC router | AD601A |
| MSL6060, 2 drive, 60 slot Ultrium 460                            | AD603A |
| MSL6060, 2 drive, 60 slot Ultrium 460, with embedded FC router   | AD604A |

**NOTE:** Please reference the [MSL6000 Tape Library QuickSpecs at http://www.hp.com/go/automation](http://www.hp.com/go/automation) for additional information needed to create a complete solution; reference current compatibility information at <http://www.hp.com/go/ebs>.

### HP StorageWorks MSL5026S2 Tape Library

|  |            |
|--|------------|
| MSL5026S2, 1 drive, 26 slots, SDLT 320, RM                         | 293472-B22 |
| MSL5026S2, 2 drive, 26 slots, SDLT 320, RM                         | 293472-B23 |
| MSL5026S2, 1 drive, 26 slots, SDLT 320, RM with embedded FC router | 293472-B24 |
| MSL5026S2, 2 drive, 26 slots, SDLT 320, RM with embedded FC router | 293472-B25 |

**NOTE:** Please reference the [MSL5026S2 Tape Library QuickSpecs at http://www.hp.com/go/automation](http://www.hp.com/go/automation) for additional information needed to create a complete solution; reference current compatibility information at <http://www.hp.com/go/ebs>.

### HP StorageWorks MSL5052S2 Tape Library

|  |            |
|--|------------|
| MSL5052S2, 2 drive, 52 slots, SDLT 320, RM                         | 293474-B21 |
| MSL5052S2, 2 drive, 52 slots, SDLT 320, RM with embedded FC router | 293474-B24 |

**NOTE:** Please reference the [MSL5052S2 Tape Library QuickSpecs at http://www.hp.com/go/automation](http://www.hp.com/go/automation) for additional information needed to create a complete solution; reference current compatibility information at <http://www.hp.com/go/ebs>.

### HP StorageWorks ESL E-Series Tape Libraries

|   |        |
|---|--------|
| ESL Extended 712e Tape Library, 0 drive, 712 LTO slots  | AA934B |
| ESL Extended 630e Tape Library, 0 drive, 630 SDLT slots | AA935B |
| ESL Extended 322e Tape Library, 0 drive, 322 LTO slots  | AA939B |
| ESL Extended 286e Tape Library, 0 drive, 286 SDLT slots | AA940B |
| ESL E-Series Ultrium 960 drive kit                      | AD595A |
| ESL E-Series Ultrium 460 drive kit                      | AA937A |
| ESL E-Series Ultrium 460-FC drive kit                   | AA941A |
| ESL E-Series SDLT 320 drive kit                         | AA936A |
| ESL E-Series e2400-FC 2G Interface Controller           | AA928A |

**NOTE:** Please reference the [ESL E-Series Tape Libraries QuickSpecs at http://www.hp.com/go/automation](http://www.hp.com/go/automation) for additional information needed to create a complete solution; reference current compatibility information at <http://www.hp.com/go/ebs>.

## Options

### Magneto-Optical Jukeboxes

#### HP StorageWorks 9.1 GB Mid-range Optical Jukeboxes

|                                 |        |
|---------------------------------|--------|
| 300mx, 2 drive, 32 slot jukebox | C1150M |
| 600mx, 4 drive, 64 slot jukebox | C1160M |
| 700mx, 2 drive, 76 slot jukebox | C1170M |

**NOTE:** Please reference the Magneto-Optical Jukebox data sheets at <http://www.hp.com/go/optical> for additional information needed to create a complete solution.

#### HP StorageWorks 9.1 GB High-end Optical Jukeboxes

|                                   |        |
|-----------------------------------|--------|
| 1200mx, 4 drive, up to 128 slots  | C1104M |
| 1200mx, 6 drive, up to 128 slots  | C1105M |
| 2200mx, 4 drive, up to 238 slots  | C1111M |
| 2200mx, 6 drive, up to 238 slots  | C1107M |
| 2200mx, 10 drive, up to 238 slots | C1110M |

#### Ultra Density Optical Jukeboxes

|   |        |
|---|--------|
| 1000ux, 2 drive, 32 slot jukebox        | AA965A |
| 1900ux, 4 drive, 64 slot jukebox        | AA966A |
| 1900ux, 4 mixed drive, 64 slot jukebox  | AA968A |
| 2300ux, 2 drive, 76 slot jukebox        | AA967A |
| 3800ux, 4 drive, 128 slot jukebox       | AA969A |
| 3800ux, 6 drive, 128 slot jukebox       | AA970A |
| 7100ux, 4 drive, 238 slot jukebox       | AA973A |
| 7100ux, 6 drive, 238 slot jukebox       | AA971A |
| 7100ux, 10 drive, 238 slot jukebox      | AA972A |
| 7100ux, 6 mixed drive, 238 slot jukebox | AA974A |

**NOTE:** Please reference the Ultra Density Optical Jukebox QuickSpecs at <http://www.hp.com/go/optical> for additional information needed to create a complete solution.

## Options

|   |  |            |
|---|--|------------|
| External Storage                            | HP StorageWorks Modular Smart Array 20<br><b>NOTE:</b> Rack-mountable 12 (SATA) drive enclosure with U320 Host connectivity, redundant power supplies.   | 335921-B21 |
|   | HP StorageWorks Modular Smart Array 20 Starter Kit<br><b>NOTE:</b> Rack-mountable 12 (SATA) drive enclosure with U320 Host connectivity, redundant power supplies. Includes Smart Array 6402/128 Controller.<br><b>NOTE:</b> The Modular Smart Array Enclosure 20 Family supports the SATA 1.5Gb/s 1" Hot Plug Hard Drives.  | 366172-B21 |
|   | HP StorageWorks Modular Smart Array 30 SB<br><b>NOTE:</b> Rack-mountable 14 drive enclosure with single bus, redundant power supplies.   | 302969-B21 |
|   | HP StorageWorks Modular Smart Array 30 DB<br><b>NOTE:</b> Rack-mountable 14 drive enclosure with dual bus, redundant power supplies.<br><b>NOTE:</b> The Modular Smart Array Enclosure 30 Family supports the Wide Ultra3, Ultra320 1" Hot Plug Hard Drives.   | 302970-B21 |
|   | Redundant Power Supply 499W  | 338296-B21 |
|   | Ultra320 Dual Bus I/O Module for MSA30   | 287483-B21 |
| Ultra320 Single Bus I/O Module for MSA30    | 287484-B21   |            |
| HP StorageWorks Modular Smart Array 500     | HP StorageWorks Modular Smart Array 500 Generation 2<br><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> (North America)<br><a href="http://h18000.www1.hp.com/products/quickspecs/11956_div/11956_div.HTML">http://h18000.www1.hp.com/products/quickspecs/11956_div/11956_div.HTML</a> (Worldwide) | 335880-B21 |
| HP StorageWorks Modular Smart Array 1500 cs | Modular Smart Array 1500 Controller Shelf<br><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>   | AA986A     |
| HP StorageWorks Modular Smart Array 1000    | HP StorageWorks Modular Smart Array 1000<br><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> (North America)<br><a href="http://h18000.www1.hp.com/products/quickspecs/11033_div/11033_div.HTML">http://h18000.www1.hp.com/products/quickspecs/11033_div/11033_div.HTML</a> (Worldwide)  | 201723-B22 |

## Options

|                 |  |            |
|-----------------|--|------------|
| Cluster Options | ProLiant Cluster Starter Kit   | 364023-B21 |
|                 | <b>NOTE:</b> For additional information regarding the ProLiant Cluster Starter Kit please see the following QuickSpecs at:<br><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><br>(North America)<br><a href="http://h18000.www1.hp.com/products/quickspecs/11935_div/11935_div.html">http://h18000.www1.hp.com/products/quickspecs/11935_div/11935_div.html</a><br>(Worldwide)                         |            |
|                 | ProLiant Cluster Kit with OpenView Storage Mirroring   | 364025-B21 |
|                 | <b>NOTE:</b> For additional information regarding the ProLiant Cluster Kit with OpenView Storage Mirroring please see the following QuickSpecs at:<br><a href="http://h18000.www1.hp.com/products/quickspecs/11934_na/11934_na.html">http://h18000.www1.hp.com/products/quickspecs/11934_na/11934_na.html</a><br>(North America)<br><a href="http://h18000.www1.hp.com/products/quickspecs/11934_div/11934_div.html">http://h18000.www1.hp.com/products/quickspecs/11934_div/11934_div.html</a><br>(Worldwide) |            |
|                 | ProLiant Cluster HA/F200 for the Entry Level SAN   | 364026-B21 |
|                 | ProLiant Cluster HA/F200 for the Entry Level SAN (Japan)   | 364026-291 |
|                 | <b>NOTE:</b> For additional information regarding the ProLiant Cluster for Entry Level SAN please see the following QuickSpecs at:<br><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><br>(North America)<br><a href="http://h18000.www1.hp.com/products/quickspecs/11932_div/11932_div.html">http://h18000.www1.hp.com/products/quickspecs/11932_div/11932_div.html</a><br>(Worldwide)                 |            |
|                 | ProLiant Cluster HA/F500 for the Enterprise SAN  | 364024-B21 |
|                 | <b>NOTE:</b> For additional information regarding the ProLiant Cluster HA/F500 for Enterprise SAN please see the following QuickSpecs at:<br><a href="http://h18000.www1.hp.com/products/quickspecs/11933_na/11933_na.html">http://h18000.www1.hp.com/products/quickspecs/11933_na/11933_na.html</a><br>(North America)<br><a href="http://h18000.www1.hp.com/products/quickspecs/11933_div/11933_div.html">http://h18000.www1.hp.com/products/quickspecs/11933_div/11933_div.html</a><br>(Worldwide)          |            |
|                 | HP Serviceguard for Linux ProLiant Cluster A.11.15 for SUSE SLES 8 / UnitedLinux 1.0 and Red Hat EL 3 (2 node license cluster kit).  | 305199-B24 |
|                 | HP Serviceguard for Linux ProLiant Cluster A.11.16 for SUSE SLES 9 and Red Hat EL 3 (2 node license cluster kit)   | 305199-B25 |
|                 | HP Serviceguard for Linux License A.11.15 for SUSE SLES 8 / UnitedLinux 1.0 and Red Hat EL 3 (single license version)  | 307754-B24 |
|                 | HP Serviceguard for Linux A.11.16 for SUSE SLES9 and Red Hat EL 3 (single license version)   | 307754-B25 |
|                 | <b>NOTE:</b> For additional information regarding the HP Serviceguard for Linux License, please see the following QuickSpecs at:<br><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><br>(North America)<br><a href="http://h18000.www1.hp.com/products/quickspecs/11518_div/11518_div.html">http://h18000.www1.hp.com/products/quickspecs/11518_div/11518_div.html</a><br>(Worldwide)                   |            |

## Options

|                      |   |            |
|----------------------|---|------------|
| StorageWorks Options | StorageWorks SAN Switch 2/16                | 322118-B21 |
|                      | StorageWorks SAN Switch 2/16-EL Upgrade Kit | 325889-B21 |
|                      | StorageWorks Director 2/64                  | 286809-B21 |

**NOTE:** Please see the StorageWorks Director 2/64 QuickSpecs for additional information:

[http://h18000.www1.hp.com/products/quickspecs/11003\\_na/11003\\_na.HTML](http://h18000.www1.hp.com/products/quickspecs/11003_na/11003_na.HTML)  
(North America)

[http://h18000.www1.hp.com/products/quickspecs/11003\\_div/11003\\_div.HTML](http://h18000.www1.hp.com/products/quickspecs/11003_div/11003_div.HTML)  
(Worldwide)

|                               |   |  |
|-------------------------------|---|--|
| UPS and PDU Power Cord Matrix | <i>Please see the UPS and PDU cable matrix that lists cable descriptions, requirements, and specifications for UPS and PDU units.</i>   |  |
|                               | <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> . |  |

|  |   |            |
|--|---|------------|
| Uninterruptible Power Systems – Rack Mountable | HP UPS R1500 XR (1440VA, 1340 Watt), Low Voltage (NA)                       | 204404-001 |
|  | HP UPS R3000 XR (2880VA, 2700 Watt), Low Voltage (NA)                       | 192186-001 |
|  | HP UPS R3000 XR (3000VA, 2700 Watt), High Voltage (NA)                      | 192186-002 |
|  | HP UPS R3000 XR (3000VA, 2700 Watt), High Voltage (Japan)                   | 192186-292 |
|  | HP UPS R3000 XR (3000VA, 2700 Watt), High Voltage (Int'l - detachable cord) | 192186-B31 |
|  | HP UPS R3000 XR (3000VA, 2700 Watt), High Voltage (16A IEC309 Plug)         | 192186-B32 |
|  | HP UPS R3000 XR (3000VA, 2700 Watt), High Voltage (16A CEE 7/7 SCHUKO Plug) | 192186-B33 |
|  | HP UPS R3000 XR (3000VA, 2700 Watt), High Voltage (16A BS-546 Plug)         | 192186-AR1 |
|  | HP UPS R5500 XR, (5000VA, 4500 Watt), High Voltage (NA/Jpn)                 | 326529-D71 |
|  | HP UPS R5500 XR, (6000VA, 5400 Watt), High Voltage (Int'l)                  | 326529-B31 |
|  | HP UPS R12000 XR N+x (200-240V) (WW-hardwired)                              | 207552-B22 |

**NOTE:** The UPS R12000 XR has a hardwired input and output; requires a 100A circuit.

|                |  |  |
|----------------|--|--|
| Custom Builder | Please see the Enterprise Configurator for configuration assistance at:<br><a href="http://www.hp.com/products/configurator">http://www.hp.com/products/configurator</a> . |  |
|----------------|--|--|

## Options

|   |  |            |
|---|--|------------|
| <b>HP Power Distribution Unit with Power Monitoring</b> | HP Power Distribution Unit with Power Monitoring Model S2324 - dual input, 3 phase, 24A (NA/JPN)   | 370959-D71 |
|   | HP Power Distribution Unit with Power Monitoring Model S1324 - single input, 3 phase, 24A (NA/JPN) | 370960-D71 |
|   | HP Power Distribution Unit with Power Monitoring Model S2140 - dual input, 1 phase, 40A (NA/JPN)   | 370961-D71 |
|   | HP Power Distribution Unit with Power Monitoring Model S1140 - single input, 1 phase, 40A (NA/JPN) | 370962-D71 |
|   | HP Power Distribution Unit with Power Monitoring Model S2316 - dual input, 3 phase, 16A (INTL)     | 370963-B31 |
|   | HP Power Distribution Unit with Power Monitoring Model S1316 - single input, 3 phase, 16A (INTL)   | 370964-B31 |
|   | HP Power Distribution Unit with Power Monitoring Model S2132 - dual input, 1 phase, 32A (INTL)     | 370965-B31 |
|   | HP Power Distribution Unit with Power Monitoring Model S1132 - single input, 1 phase, 32A (INTL)   | 370966-B31 |

|   |   |            |
|---|---|------------|
| <b>Modular Power Distribution Units - 1U0U</b><br>(Up to 32 outlets)<br><b>NOTE:</b> 1U/0U mounting brackets shipped with the unit (optimized for 10000 and 9000 series racks). | HP Modular Power Distribution Units (mPDU), Low Volt Model, 24A (100-127 VAC) (NA, Japan)<br><b>NOTE:</b> This mPDU (252663-D71) may also be used to connect the low volt model of the UPS R3000 XR.  | 252663-D71 |
|   | HP Modular Power Distribution Units (mPDU), High Volt Model, 24A (200-240 VAC) (NA, Japan)  | 252663-D72 |
|   | HP Modular Power Distribution Units (mPDU), High Volt Model, 32A (200-240 VAC) (Int'l)  | 252663-B31 |
|   | HP Modular Power Distribution Units (mPDU), High Volt Model, 40A (200-240 VAC) (WW)<br><b>NOTE:</b> This mPDU (252663-B21), 40A model has a hardwired input.  | 252663-B21 |
|   | HP Modular Power Distribution Units (mPDU), High Volt Model, 16A (200-240 VAC) (WW)<br><b>NOTE:</b> This PDU has a detachable input power cord and allows for adaptability to country specific power requirements. This model may also be used with the high volt UPSs R3000 XR and R6000 For North America, need to order cable PN 340653-001.   | 252663-B24 |
|   | HP Modular Power Distribution Unit (mPDU), High Volt Model, 40A, Attached Cord, (NA/JPN)  | 252663-D73 |
|   | HP Modular Power Distribution Unit (mPDU), High Volt Model, 40A, Attached Cord, (Int'l)<br><b>NOTE:</b> Please see the following Modular Power Distribution Unit (Zero-U/1U Modular PDUs) QuickSpecs for additional options including shorter jumper cables and country specific power cords:<br><a href="http://h18000.www1.hp.com/products/quickspecs/11041_na/11041_na.HTML">http://h18000.www1.hp.com/products/quickspecs/11041_na/11041_na.HTML</a><br>(North America)<br><a href="http://h18000.www1.hp.com/products/quickspecs/11041_div/11041_div.HTML">http://h18000.www1.hp.com/products/quickspecs/11041_div/11041_div.HTML</a><br>(Worldwide) | 252663-B32 |

### Options

|   |  |   |
|---|--|---|
| Third Party Rack Kit                        | <p>Third Party Rack Kit</p> <p><b>NOTE:</b> The Third party rack kit supports the HP ProLiant ML530 G2, HP ProLiant ML570 G2, HP ProLiant DL740, and HP ProLiant DL760 G2. Provides support for any rack, square hole or round hole (including HP Rack System /E and HP Systems) with an adjustment range from 23 1/2" - 34" deep.</p> <p><b>NOTE:</b> The Third Party Rack Kit is required for round hole racks or for square hole racks that do not conform to the adjustment range of the standard rail that ships with the server.</p> <p>Telco Rack Support:</p> <p><b>NOTE:</b> Support for all 2-post Telco racks requires the Third Party Rack Kit (PN 274739-B21) kit plus an additional option kit from Rack Solutions. The Rack Solutions brackets can be purchased at: <a href="http://www.racksolutions.com/hp">http://www.racksolutions.com/hp</a>.</p> <p>Rack Adapter Kit</p> <p><b>NOTE:</b> This kit allows HP rack servers to fit in racks that are 24" wide.</p> | 274739-B21  |
| HP Rack 5000 Series<br>(Graphite Metallic)  | HP 5642 Rack-Unassembled   | 358254-B21  |
| Rack Options for Rack 5000 Series           | <p>Stabilizer Kit for 5642 rack (Graphite Carbon)</p> <p><b>NOTE:</b> The stabilizing kit is used to prevent rack from tipping over.</p> <p>Baying Kit for 5642 rack (Graphite Carbon)</p> <p><b>NOTE:</b> The baying kit is used to join two or more HP 5642 racks.</p>   | <p>374493-B21</p> <p>374499-B21</p>   |
| HP Rack 10000 Series<br>(Graphite Metallic) | <p>10642 (42U) Infrastructure Rack (Low Voltage)</p> <p>10642 (42U) Infrastructure Rack (High Voltage)</p> <p>HP Rack S10614 (14U) Rack Cabinet– Shock Pallet</p> <p>HP Rack 10842 (42U, 800mm wide) – Pallet</p> <p>HP Rack 10842 (42U, 800mm wide) – Shock Pallet</p> <p>HP Rack 10647 (47U) – Pallet</p> <p>HP Rack 10647 (47U) – Crated</p> <p>HP Rack 10642 (42U) – Pallet</p> <p>HP Rack 10642 (42U) – Shock Pallet</p> <p>HP Rack 10642 (42U) – Crated</p> <p>HP Rack 10636 (36U) – Pallet</p> <p>HP Rack 10636 (36U) – Shock Pallet</p> <p>HP Rack 10636 (36U) – Crated</p> <p>HP Rack 10622 (22U) – Pallet</p> <p>HP Rack 10622 (22U) – Shock Pallet</p> <p>HP Rack 10622 (22U) – Crated</p> <p>HP Rack 10614 (14U) – Shock Pallet</p>  | <p>379006-001</p> <p>379005-001</p> <p>292302-B22</p> <p>257415-B21</p> <p>257415-B22</p> <p>245160-B21</p> <p>245160-B23</p> <p>245161-B21</p> <p>245161-B22</p> <p>245161-B23</p> <p>245162-B21</p> <p>245162-B22</p> <p>245162-B23</p> <p>245163-B21</p> <p>245163-B22</p> <p>245163-B23</p> <p>292303-B22</p> |
|   | <p><b>NOTE:</b> -B21 (pallet) used to ship empty racks shipped on a truck</p> <p>-B22 (shock pallet) used to ship racks with equipment installed (by custom systems, VARs and Channels)</p> <p>-B23 (crated) used for air shipments of empty racks</p> <p><b>NOTE:</b> It is mandatory to use a shock pallet in order to ship racks with equipment installed. Not all HP equipment is qualified to be shipped in the Rack 10000 series</p>   |   |



## Options

**NOTE:** For additional information regarding Rack Options, please see the following URL: <http://h18000.www1.hp.com/products/servers/proliantstorage/rack-options/index.html>.

### Rack Options for HP Rack 10000 Series

**NOTE:** For additional information regarding Rack Options, please see the following URL: <http://h18000.www1.hp.com/products/servers/proliantstorage/rack-options/index.html>.

|                                    |            |
|------------------------------------|------------|
| HP Rack Light Kit (Neon)           | 361589-B21 |
| HP Rack Plinth Kit (Carbon)        | 251960-B21 |
| 42U Side Panel – Graphite Metallic | 246099-B21 |
| 36U Side Panel – Graphite Metallic | 246102-B21 |
| 47U Side Panel – Graphite Metallic | 255486-B21 |
| TFT5600 Rack Keyboard Monitor      | 221546-xx1 |

**Country Code Key** (for TFT5600 Rack Keyboard Monitor (PN 221546-xx1))

|          |         |          |                |
|----------|---------|----------|----------------|
| XX = 001 | US      | XX = 091 | Norway         |
| XX = 031 | UK      | XX = 101 | Sweden/Finland |
| XX = 041 | Germany | XX = 111 | Switzerland    |
| XX = 051 | France  | XX = 131 | Portugal       |
| XX = 061 | Italy   | XX = 181 | Belgium        |
| XX = 071 | Spain   | XX = 291 | Japan          |
| XX = 081 | Denmark | XX = B31 | International  |

|                                    |            |
|------------------------------------|------------|
| 1U Rack Keyboard & Drawer (Carbon) | 257054-xx1 |
|------------------------------------|------------|

**Country Code Key** (for 1U Rack Keyboard & Drawer (PN 257054-xx1))

|          |         |          |                |
|----------|---------|----------|----------------|
| XX = 001 | US      | XX = 091 | Norway         |
| XX = 031 | UK      | XX = 101 | Sweden/Finland |
| XX = 041 | Germany | XX = 111 | Switzerland    |
| XX = 051 | France  | XX = 131 | Portugal       |
| XX = 061 | Italy   | XX = 181 | Belgium        |
| XX = 071 | Spain   | XX = 291 | Japan          |
| XX = 081 | Denmark | XX = B31 | International  |

**NOTE:** For additional information regarding Rack Options, please see the following URL: <http://h18000.www1.hp.com/products/servers/proliantstorage/rack-options/index.html>.

## Options

|                              |   |            |
|------------------------------|---|------------|
| <b>HP KVM Switch Options</b> | Server Console Switch (KVM), 0 x 1 x 8 port         | 336044-B21 |
|                              | Server Console Switch (KVM), 0 x 2 x 16 port        | 336045-B21 |
|                              | IP Console Switch Box (KVM/IP), 1 x 1 x 16          | 262585-B21 |
|                              | IP Console Switch Box (KVM/IP), 3 x 1 x 16          | 262586-B21 |
|                              | HP 1x4 USB/PS2 KVM Switch, RM (ALL)                 | 371302-B21 |
|                              | HP 1x4 USB/PS2 KVM Switch, TT, (EURO)               | 371301-A21 |
|                              | HP 1x4 USB/PS2 KVM Switch, TT (UK)                  | 371301-031 |
|                              | HP 1x4 USB/PS2 KVM Switch, TT, (AUST/NZ)            | 371301-011 |
|                              | HP 1x4 USB/PS2 KVM Switch, TT, (NA/JPN)             | 371301-D71 |
|                              | PS/2 Interface Adapter, 8 pack                      | 262587-B21 |
|                              | PS/2 Interface Adapter, 1 pack                      | 262588-B21 |
|                              | CAT5 KVM Expansion Module                           | 262589-B21 |
|                              | Serial Interface adapter - 1 Pack with power supply | 373035-B21 |
|                              | CAT5e Cable 3', 4 pack                              | 263474-B21 |
|                              | CAT5e Cable 6', 8 pack                              | 263474-B22 |
|                              | CAT5e Cable 12', 8 pack                             | 263474-B23 |
|                              | CAT5e Cable 20', 4 pack                             | 263474-B24 |
|                              | CAT5e Cable 40', 1 pack                             | 263474-B25 |

## Service and Support Offerings

(HP Care Pack Services)

**NOTE:** The Service and Support Offerings specifying Microsoft O/S in the description cover Windows NT, Windows 2000 Server/Advanced Server or Novell NetWare Operating System.

### Hardware Services On-site Service

|   |        |
|---|--------|
| 4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years             | U4713A |
| 4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic | U4713E |
| 4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years             | U4714A |
| 4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic | U4714E |

### Installation & Start-up Services

|  |        |
|--|--------|
| Hardware Installation  | U4723A |
| Hardware Installation, Electronic  | U4723E |
| 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.            | U4724A |
| 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 | U4724E |

### Support Plus

|  |        |
|--|--------|
| 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.            | U4725A |
| 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 | U4725E |
| Onsite HW support, 8am-9pm, M-F, 4hr response and Linux O/S SW Tech support offsite, onsite at HP's discretion, 8am-9pm, M-F 2hr response time excl. HP holidays                 | U4727A |

## Options

Onsite HW support, 8am-9pm, M-F, 4hr response and Linux O/S SW Tech support offsite, onsite at HP's discretion, 8am-9pm, M-F 2hr response time excl. HP holidays, Electronic U4727E

### **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. U4726A

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 U4726E

Onsite HW support 24x7, 4hr response and Linux O/S SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays. U4728A

Onsite HW support 24x7, 4hr response and Linux O/S SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic U4728E

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

6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years U4715A

6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic U4715E

**NOTE:** For more information, customer/resellers can contact

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

## Memory

### HP ProLiant DL740 2.2 GHz/2MB

#### Standard Memory

2048 MB addressable protected ECC SDRAM DIMM memory (2 x 256 MB DIMMs x 5 Hot-Plug RAID Memory Cartridges. The 5th cartridge is populated for redundancy.)

#### Standard Memory Plus Optional Memory

Up to 51,200 MB of addressable ECC SDRAM DIMM memory is available with the installation of optional ECC SDRAM DIMM memory expansion kits.

#### Standard Memory Replaced with Optional Memory

Up to 65,536 MB of addressable ECC SDRAM DIMM memory is available with the removal of standard memory and the installation of optional ECC SDRAM DIMM memory expansion kits.

**NOTE:** 8 slots per Hot-Plug RAID Memory Cartridge. Memory must be added in banks of two DIMMs per cartridge across all five (four if running in a non-redundant mode) Hot-Plug RAID Memory Cartridges. Tables do not represent all possible configurations.

| Memory              |          | Bank 1<br>(Standard Memory) |         | Bank 2  |         | Bank 3  |         | Bank 4  |         |
|---------------------|----------|-----------------------------|---------|---------|---------|---------|---------|---------|---------|
|                     |          | Slots                       |         |         |         |         |         |         |         |
|                     |          | 1                           | 2       | 3       | 4       | 5       | 6       | 7       | 8       |
| Cartridge 1<br>(C1) | Standard | 256 MB                      | 256 MB  |         |         |         |         |         |         |
|                     | Optional | 256MB                       | 256 MB  | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB |
|                     | Maximum  | 2048 MB                     | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB |
| Cartridge 2<br>(C2) | Standard | 256 MB                      | 256 MB  |         |         |         |         |         |         |
|                     | Optional | 256 MB                      | 256 MB  | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB |
|                     | Maximum  | 2048 MB                     | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB |
| Cartridge 3<br>(C3) | Standard | 256MB                       | 256 MB  |         |         |         |         |         |         |
|                     | Optional | 256 MB                      | 256 MB  | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB |
|                     | Maximum  | 2048 MB                     | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB |
| Cartridge 4<br>(C4) | Standard | 256 MB                      | 256 MB  |         |         |         |         |         |         |
|                     | Optional | 256 MB                      | 256 MB  | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB |
|                     | Maximum  | 2048 MB                     | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB |
| Cartridge 5<br>(C5) | Standard | 256 MB                      | 256 MB  |         |         |         |         |         |         |
|                     | Optional | 256 MB                      | 256 MB  | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB |
|                     | Maximum  | 2048 MB                     | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB |

Following are memory options available from HP:

- 2048MB 133MHz ECC SDRAM Memory Option Kit (1 x 2048 MB) 317093-B21
- 1024MB 133MHz ECC SDRAM Memory Option Kit (1 x 1024 MB) 236854-B21
- 512MB 133MHz ECC SDRAM Memory Option Kit (1 x 512 MB) 236853-B21
- 256MB 133MHz ECC SDRAM Memory Option Kit (1 x 256 MB) 236852-B21

## Memory

### HP ProLiant DL740 3.0 GHz/4MB, 2.7 GHz/2MB

#### Standard Memory

4096 MB addressable protected ECC SDRAM DIMM memory (2 x 512 MB DIMMs x 5 Hot-Plug Memory Cartridges. The 5th cartridge is populated for redundancy.)

#### Standard Memory Plus Optional Memory

Up to 53,248MB of SDRAM DIMM memory is available with the installation of optional SDRAM DIMM memory expansion kits.

#### Standard Memory Replaced with Optional Memory

Up to 65,536 MB of SDRAM DIMM memory is available with the removal of standard memory and the installation of optional SDRAM DIMM memory expansion kits.

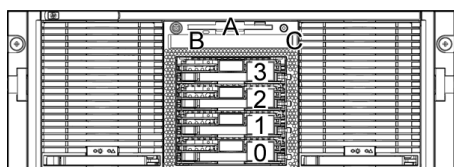
**NOTE:** 8 slots per Hot-Plug RAID Memory Cartridge. Memory must be added in banks of two DIMMs per cartridge across all five (four if running in a non-redundant mode) Hot-Plug RAID Memory Cartridges. Tables do not represent all possible configurations.

|                     |          | Bank 1<br>(Standard Memory) |         | Bank 2  |         | Bank 3  |         | Bank 4  |         |
|---------------------|----------|-----------------------------|---------|---------|---------|---------|---------|---------|---------|
| Memory              |          | Slots                       |         |         |         |         |         |         |         |
|                     |          | 1                           | 2       | 3       | 4       | 5       | 6       | 7       | 8       |
| Cartridge 1<br>(C1) | Standard | 512 MB                      | 512 MB  |         |         |         |         |         |         |
|                     | Optional | 512 MB                      | 512 MB  | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB |
|                     | Maximum  | 2048 MB                     | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB |
| Cartridge 2<br>(C2) | Standard | 512 MB                      | 512 MB  |         |         |         |         |         |         |
|                     | Optional | 512 MB                      | 512 MB  | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB |
|                     | Maximum  | 2048 MB                     | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB |
| Cartridge 3<br>(C3) | Standard | 512 MB                      | 512 MB  |         |         |         |         |         |         |
|                     | Optional | 512 MB                      | 512 MB  | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB |
|                     | Maximum  | 2048 MB                     | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB |
| Cartridge 4<br>(C4) | Standard | 512 MB                      | 512 MB  |         |         |         |         |         |         |
|                     | Optional | 512 MB                      | 512 MB  | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB |
|                     | Maximum  | 2048 MB                     | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB |
| Cartridge 5<br>(C5) | Standard | 512 MB                      | 512 MB  |         |         |         |         |         |         |
|                     | Optional | 512 MB                      | 512 MB  | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB |
|                     | Maximum  | 2048 MB                     | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB | 2048 MB |

Following are memory options available from HP:

- 2048MB 133MHz ECC SDRAM Memory Option Kit (1 x 2048 MB) 317093-B21
- 1024MB 133MHz ECC SDRAM Memory Option Kit (1 x 1024 MB) 236854-B21
- 512MB 133MHz ECC SDRAM Memory Option Kit (1 x 512 MB) 236853-B21
- 256MB 133MHz ECC SDRAM Memory Option Kit (1 x 256 MB) 236852-B21

## Storage



- 0-3 1" Ultra3 Hot Plug Drive Bays
- A 1.44-MB Diskette Drive
- B Slimline CD/DVD-ROM Drive, Hot Pluggable, in Universal Media Bay
- C Universal Media Bay Eject Button

## Drive Support

|                                    | Quantity Supported | Position Supported | Controller     |
|------------------------------------|--------------------|--------------------|----------------|
| <b>Integrated Media</b>            |                    |                    |                |
| Integrated 1.44-MB Diskette Drive  | Up to 1            | A                  | Integrated     |
| Slimline CD/DVD-ROM Drive (8X/24X) | Up to 1            | B                  | Integrated IDE |

### Hard Drives

#### Ultra320 Hot Pluggable Drives

|                     | Quantity Supported | Position Supported | Controller                                       |
|---------------------|--------------------|--------------------|--|
| <b>1-inch</b>       | Up to 4            | 0-3                | Integrated Smart Array 5i Controller             |
| 300-GB 10,000 rpm   |                    |                    | Smart Array 641 Controller                       |
| 146.8-GB 10,000 rpm |                    |                    | Smart Array 642 Controller                       |
| 72.8-GB 10,000 rpm  |                    |                    | 64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter |
| 146.8-GB 15,000 rpm |                    |                    |  |
| 72.8-GB 15,000 rpm  |                    |                    |  |
| 36.4-GB 15,000 rpm  |                    |                    |  |

**NOTE:** All U320 Universal Hard Drives are backward compatible to U2 or U3 speeds. U320 drives require an optional U320 Smart Array Controller or U320 SCSI HBA to support U320 transfer rates.

## Storage

### External Storage

|                                   | Quantity Supported  | Position Supported | Host Controller or Adapter   |
|-----------------------------------|---|--------------------|--|
| Modular Smart Array 30 Family     | Up to 13  | External           | Smart Array 6402/128 Controller<br>Smart Array 6404/256 Controller<br>Smart Array 642 Controller<br>64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter<br>64-Bit/66MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS |
| Modular Smart Array 500 G2 System | 1   | External           | Please see the Modular Smart Array 500 QuickSpecs for the latest list of supported HBAs: <a href="http://www.hp.com/go/msa500">http://www.hp.com/go/msa500</a>   |
| Modular Smart Array 1000          | Please see the Modular Smart Array 1000 QuickSpecs below to determine configuration requirements    | External           | Please see the Modular Smart Array 1000 QuickSpecs (URL below) for the latest list of supported HBAs   |
| Modular Smart Array 1500 cs       | Please see the Modular Smart Array 1500 cs QuickSpecs below to determine configuration requirements | External           | Please see the Modular Smart Array 1500 cs QuickSpecs (URL below) for the latest list of supported HBAs  |

Modular Smart Array 1000:

[http://h18000.www1.hp.com/products/quickspecs/11033\\_div/11033\\_div.HTML](http://h18000.www1.hp.com/products/quickspecs/11033_div/11033_div.HTML) (Worldwide)

[http://h18000.www1.hp.com/products/quickspecs/11033\\_na/11033\\_na.HTML](http://h18000.www1.hp.com/products/quickspecs/11033_na/11033_na.HTML) (North America)

Modular Smart Array 1500 cs: <http://www.hp.com/go/MSA1500cs>

### Maximum Storage Capacity - (SCSI Attached)

|          |   |
|----------|---|
| Internal | 1,20 TB (4 x 300 GB Ultra320 1" Drives)                                 |
| External | 100.80 TB hot plug SCSI storage (24 x (14 x 300 GB Ultra320 1" Drives)) |
| Total    | 102.00 TB   |

### Tape Drives, Tape Autoloaders, & Tape Libraries

## Storage

**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) (North America)  
<http://h18000.www1.hp.com/products/quickspecs/Division/10233.html> (Worldwide)

**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) (North America)  
<http://h18000.www1.hp.com/products/quickspecs/Division/10809.html> (Worldwide)

**NOTE:** For complete listing of tape drive offerings see  
<http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html>

For details on connecting tape drives to this server, see the following:

|  | Quantity Supported | Position Supported | Controller  |
|--|--------------------|--------------------|---|
| <b>HP StorageWorks Tape Drives, Hot Plug</b><br>DAT 40 Hot Plug<br>DAT 72 Hot Plug   | 1                  | 0-3                | Smart Array 5i Controller (integrated on system board)<br>64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter<br><br>64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2<br>64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS |
| <b>HP StorageWorks Tape Drives, USB External</b><br>DAT 40 USB<br>DAT 72 USB   | 1 per USB port     | External           | USB port  |
| <b>HP StorageWorks Tape Drives, External</b><br>Ultrium 215<br>Ultrium 230<br>Ultrium 232<br>Ultrium 448<br>Ultrium 460<br>DAT 40<br>DAT 72<br>DLT VS80<br>DLT VS160<br>SDLT 320 | Up to 2            | External           | 64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter<br>64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2<br>64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS   |
| <b>HP StorageWorks Tape Drives, External</b><br>Ultrium 960<br>SDLT 600  | 1 per SCSI Channel | External           | 64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter<br>64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2<br>64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS   |



## Storage

|  |   |                 |  |
|--|---|-----------------|--|
| <p><b>HP StorageWorks Autoloaders, External</b><br/>         DAT 72x6 Tape Autoloader<br/>         1/8 Tape Autoloader<br/>         SSL1016 Tape Autoloader</p>  | <p>1 autoloader per SCSI channel</p>  | <p>External</p> | <p>64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter<br/>         64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2<br/>         64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS</p> |
| <p><b>HP StorageWorks Rack-mount Tape Drive Enclosures</b><br/>         1U Rack-Mount Kit<br/>         3U Rack-Mount Kit<br/>         5U Rack-Mount Kit</p>  | <p>1 per SCSI channel</p>   | <p>External</p> | <p>64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter<br/>         64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2<br/>         64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS</p> |
| <p><b>HP StorageWorks Tape Libraries, External</b><br/>         MSL6000 (Ultrium 960 - based)<br/>         MSL6000 (SDLT 600-based)<br/>         MSL6000 (Ultrium 460 - based)<br/>         MSL5026S2 (SDLT 320-based)<br/>         MSL5052S2 (SDLT 320-based)</p> | <p>Please reference the MSL Tape Library QuickSpecs to determine configuration requirements</p>                                 | <p>External</p> | <p>64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter<br/>         64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS</p>   |
| <p><b>HP StorageWorks ESL E-Series Tape Libraries</b><br/>         ESL 712e<br/>         ESL 630e<br/>         ESL 322e<br/>         ESL 286e</p>  | <p>Please reference the ESL e-series &amp; ESL9000 Series Tape Libraries QuickSpecs to determine configuration requirements</p> |                 | <p>Alternate OS</p>  |

## Technical Specifications

|  |  |   |  |  |
|--|--|---|--|--|
| <b>System Unit</b>                           | <b>Dimensions (HxWxD)</b>  | 7.00 x 17.5 x 28.7 in (17.78 x 44.45 x 72.90 cm)  |  |  |
|  | <b>Weight</b>  | 105 lb (47.63 kg)   |  |  |
|  | No hard drives installed, two power supplies   |   |  |  |
|  | <b>Input Requirements</b><br>(per power supply)  | Rated Input Voltage   | 115 to 120 VAC/200 to 240 VAC (lowline/highline)   |  |
|  |  | Rated Input Frequency   | 47 to 63 Hz (lowline/highline)   |  |
|  |  | Input Power   | 1060W/1440W (lowline/highline)   |  |
|  |  | Rated Input Current   | 10A at 115 VAC/8A at 200 VAC (lowline/highline)  |  |
|  | <b>BTU Rating</b><br>(Maximum output)<br>(NOTE that the maximum heat output by the server is equal to the electrical power input.) | 1555 Watts [5309 BTU/hr]  | Please refer to the Power Calculator at: <a href="http://h30099.www3.hp.com/configurator/powercalcs.asp">http://h30099.www3.hp.com/configurator/powercalcs.asp</a> . |  |
|  |  | (System is configured to draw maximum power) Use of 110 volt power sources is not recommended.  |  |  |
|  | <b>Power Supply Output Power</b><br>(per power supply)   | Rated Steady-State Power  | 800W/1100W (lowline/highline)  |  |
| Maximum Peak Power                           |  | 800W/1100W (lowline/highline)   |  |  |
| <b>Temperature Range</b>                     | Operating  | 50° to 95° F at sea level, altitude de-rating of 1.8° F per 1,000 ft to 10,000 ft (10° to 35° C at sea level, altitude de-rating of 1° C per 300 m to 3,000 m). Maximum rate of change is 18° F/Hr (10° C/Hr) |  |  |
|  | Non-operating  | -22° to 140° F (-30° to 60° C). Maximum rate of change is 36° F/Hr (20° C/Hr)   |  |  |
|  | Shipping   | 5% to 95% relative humidity, non-condensing   |  |  |
| <b>Relative Humidity</b><br>(non-condensing) | Operating  | 10 to 90% relative humidity, 82.4° F (28° C) maximum wet bulb temperature, non-condensing   |  |  |
|  | Non-operating  | 5 to 95% relative humidity, 101.7° F (38.7° C) maximum wet bulb temperature, non-condensing   |  |  |
| <b>Maximum Wet Bulb Temperature</b>          | 101.7° F(38.7° C)  |   |  |  |
| <b>Acoustic Noise</b>                        | Idle<br>(Fixed Disk Drives Spinning)   |   |  |  |
|  | L WAd (BELS)   | 7.6   |  |  |
|  | L pAm (dBA)  | 59  |  |  |

## Technical Specifications

|                                       |  |  |
|---------------------------------------|--|--|
| <b>Power Supply</b>                   | 1100/800W, Hot Plug Redundant (2 standard) | One Redundant Power Supply (optimized to provide full redundancy at 220 volts)   |
| <b>Input Specifications</b>           |  | Normal Line Voltage 115 to 127 VAC/200 to 240 VAC<br>Range Input Line 115 to 132 VAC/180 to 265 VAC<br>Frequency Range 47 to 63 Hz<br>Power Factor 0.95<br>Input Current 10 A at 115 VAC/8 A at 200 VAC<br>Inrush Current 100 A<br>Holdup Time 21 ms from zero crossing at 120 VAC |
| <b>General Specifications</b>         |  | Full Output Rating To 104° F (40° C) and 5,000 ft (1524 m)<br>To 89.6° F (32° C) and 10,000 ft (3,048 m) (derate linearly)<br>Minimum Load 1 A on + 5 V output; 2 A on + 12 V output; 1 A on + 3.3 V output  |
| <b>Ambient Temperature Range</b>      |  | Operating 41° to 109° F (5° to 43° C) (End use system maximum ambient of 35°C, plus a maximum of 8° C due to rack effect)<br>Non-operating -40° to 185° F (-40° 85° C)   |
| <b>Dielectric Voltage Withstand</b>   |  | Input to Output 3,000 VAC/min<br>Input to Ground 1,500 VAC/min   |
| <b>Input Transient Susceptibility</b> |  | Common and Differential Mode (superimposed on AC line) ± 1kV line on AC power port for 1 minute; ± 0.5kV on signal/control lines   |

|  |                            |   |
|--|----------------------------|---|
| <b>Slimline CD/DVD-ROM Combo Drive (8X/24X) (Multibay)</b> | <b>Shipping Dimensions</b> | 13.88 x 11.38 x 9.25 in (35.26 x 28.91 x 23.50 cm)  |
|  | <b>Shipping Weight</b>     | 5 lb (2.27 kg)  |
|  | <b>Disk</b>                | <b>Applicable Disk</b><br>DVD-ROM<br>DVD-R (Read Only)<br>2.6 GB/side DVD-RAM (Read Only)<br>5.2 GB/side DVD-RAM (Read Only)<br>CD-ROM Mode-1 data disc<br>CD-ROM Mode-2 data disc<br>CD Audio disc<br>CD-Extra<br>CD-R<br>CD Text<br>PhotoCD<br>CD-I (mode 2)<br>CD-I Ready<br>CD-Bridge |
|  | <b>Capacity</b>            | DVD-ROM DVD-SL 4.7 GB/side<br>DVD-DL 8.5 GB/side<br>Double Sided 9.40 GB/side   |

### Technical Specifications

|                                |   |  |  |
|--------------------------------|---|--|--|
|                                |   | DVD-R  | 3.95 GB/side   |
|                                |   | DVD-RAM  | 2.6 GB/side and 5.2 GB/  |
|                                |   | CD-ROM Mode-1  | 650 MB (550 MB)  |
|                                |   | Mode-2   | 742 MB (640 MB)  |
|                                | Block Size  | DVD  | 2,048 bytes  |
|                                |   | CD   | 2,352 (Mode-0)<br>2352, 2340, 2336,<br>2048 bytes<br>(Mode-1)<br>2352, 2340, 2336,<br>2048 bytes<br>(Mode-2) |
|                                | Diameter  | 120 mm, 80 mm (with adapter at vertical mounting mode) |  |
| Loading Mechanism              | Tray type   |  |  |
| Interface                      | EIDE (ATAPI)  |  |  |
| Access Times (typical)         | Random  | DVD-ROM < 120 ms, CD-ROM < 110 ms                      |  |
|                                | Full-Stroke   | DVD-ROM < 240 ms, CD-ROM < 160 ms                      |  |
| Audio Output Level (typical)   | Line-out  | CD 0.7 Vrms at 47 Kohms Load                           |  |
| Data Transfer Rate (sustained) | DVD-ROM   | Single Layer   | 10.8 MB/sec. Max.  |
|                                | DVD-RAM   | 2.77 MB/sec. Max                                       |  |
|                                | CD-ROM  | 7.2 MB/sec. Max.                                       |  |
| Cache Buffer                   | 2 MB  |  |  |
| Spin-up Time (typical)         | less than 10 seconds  |  |  |
| MTBF                           | 120,000 Power On Hours (POH)  |  |  |
| Ambient Temperature            | Operating   | -22° to 140° F (-30° to 60° C)                         |  |
| Relative Humidity              | Operating   | 10% to 80%   |  |
|                                | Storage/Transportation  | 5% to 95%  |  |
| Dimensions                     | (HxWxD, maximum)  | 0.5 x 5.04 x 5.1 in (12.7x128x129.4 mm)                |  |
| Option Kit Contents            | DVD-ROM drive with installation guide, warranty card, registration card |  |  |

## Technical Specifications

|   |   |  |
|---|---|--|
| Smart Array 5i Controller<br>(integrated on system board) | Protocol                                  | Wide Ultra3 SCSI   |
|   | Processor                                 | 32-bit RISC  |
|   | XOR engine                                | Hardware RAID  |
|   | Electrical interface                      | Low Voltage Differential (LVD)   |
|   | Simultaneous Drive Transfer Channels      | 2  |
|   | Channel Transfer Rate                     | 320 MB/s total; 160 MB/s per channel   |
|   | SCSI Port Connectors                      | One external and one internal SCSI port  |
|   | Memory                                    | 32 MB of DRAM used for code, transfer buffers, and non-battery-backed read cache                                   |
|   | Peak transfer rate                        | 160 MB/s   |
|   | Logical Drives Supported                  | 32   |
|   | Software Upgradeable Firmware             | Yes  |
|   | RAID Support                              | RAID 5 (Distributed Data Guarding)<br>RAID 1+0 (Striping and Mirroring)<br>RAID 1 (Mirroring)<br>RAID 0 (Striping) |
|   | Disk Drive and Enclosure Protocol Support | Ultra2 and Ultra3  |

|   |                       |  |  |
|---|-----------------------|--|--|
| Two NC7781 PCI-X Gigabit NICs<br>(embedded) | Network Interface     | 10/100/1000-T  |  |
|   | Compatibility         | IEEE 802.3 10Base-T<br>IEEE 802.3ab 1000Base-T<br>IEEE 802.3u 100Base-TX |  |
|   | Data Transfer Method  | 64-bit/66MHz PCI-X   |  |
|   | Network Transfer Rate | 10Base-T (Half-Duplex),<br>10Base-2                                      | 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-T (Half and Full-Duplex)  | 2000 Mb/s  |
|   | Connector             | RJ-45  |  |
|   | Cable Support         | 10Base-T   | Categories 3, 4 or 5 UTP<br>up to 328 ft (100 m) |
| 100Base-TX                                  |                       | Category 5 UTP up to 328 ft (100 m)                                      |  |

## *Technical Specifications*

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