Overview
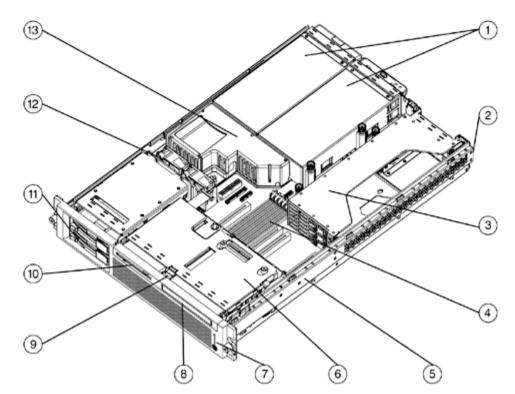

1. Dual 550W Hot Plug Redundant Power
2. 2U (3.5" Height) rack form factor
3. PCI-X Riser Cage, Three 64-bit PCI-X slots
4. Six memory DIMM slots
5. Tool-less "Snap in" Rail Solution
6. Hood
7. LEDs

8. Slimline Removable media Bay with 24x CD-ROM installed
9. Hood latch (accesses processors and fans)
10. 1.44 MB Diskette Drive
11. Wide Ultra3 SCSI drive cage for two hot plug hard drives or one DAT hot plug tape drive (plus 1 hard drive)
12. Hot Plug Fans
13. DC Power Converter Module

What's New

- Intel® Xeon® Processors MP at 3.0 GHz/4MB, 2.7 GHz/2MB, or 2.2 GHz/2MB (Expandable to 4 processors)

At a Glance

- Intel Xeon Processors MP at 3.0 GHz/4MB, 2.7 GHz/2MB, 2.2 GHz/2MB, 2.8 GHz/2MB, 2.5 GHz/1MB, 2.0 GHz/1MB (Expandable to 4 processors)
- The HP ProLiant DL560 delivers extraordinary performance and maximum power efficiency in an ultra dense, rack optimized form factor ServerWorks Grand Champion-LE chipset
- 2x1 interleaved memory, 200MHz DDR SDRAM Memory (PC2100 Registered SDRAM with Advanced ECC functionality)
- 1024 MB or 512 MB (depending on model) standard memory, expandable to 12 GB
- HP Advanced Memory Protection
- Two, full length 64-bit/100 MHz Non-Hot Pluggable PCI slots, one full length 64-bit/133 MHz Non-Hot Pluggable
- Integrated Lights-Out Standard Management (iLO) on system board
- Two NC7781 PCI-X Gigabit NICs (embedded)
- Integrated Smart Array 5i Plus Controller (Ultra3) with 64-MB total memory on 5i Plus Memory Module
- Battery-Backed Write Cache Enabler module on all 2P models (optional on 1P model)
- Internal Hot Plug Drive Storage of up to 600 GB (2 x 300 GB 1" Ultra320 hard drives)
- Redundant Cooling Zones for major subsystems (Memory, I/O, CPUs) assure 7x24 cooling
- Toolless and virtually cable-less internal design
- Rapid Deployment racking solution (rack rails and cable management)
- Protected by HP Services and a worldwide network of resellers and service providers. Three-year Next Business Day,

Overview

on-site limited global warranty. Certain restrictions and exclusions apply. Pre-Failure Notification on processors, memory, and SCSI hard drives.

Standard Features

Processor One of the following depending on Model	(2P) Intel Xeon Processor MP 3.0 GHz/4MB (Expandable to 4 processors) (2P) Intel Xeon Processor MP 2.7 GHz/2MB (Expandable to 4 processors) (1P) Intel Xeon Processor MP 2.2 GHz/2MB (Expandable to 4 processors) (1P) Intel Xeon Processor MP 2.0 GHz/1MB (Expandable to 4 processors)
Cache Memory One of the following depending on Model	4MB Integrated Level 3 Cache **NOTE:** 3.0 GHz Models only. 2MB Integrated Level 3 Cache **NOTE:** 2.7 GHz and 2.2 GHz Models only. 1MB Integrated Level 3 Cache **NOTE:** 2.0 GHz Models only.
Upgradability	Upgradable to quad processing
Chipset	ServerWorks Grand Champion-LE chipset **NOTE:** For more information regarding ServerWorks, please see the following URL: http://www.serverworks.com/products/overview.html.

Memory
One of the following depending on Model

Type	200-MHz (DDR) SDRAM PC2100 Registered SDRAM Memory with Advanced ECC functionality
Standard	1024 MB
Maximum	12 GB

NOTE: Advanced ECC Memory Technology protects the data even in the event of an entire SDRAM component failure. Embedded in the chipset design, this feature allows the use of Industry-Standard Registered DIMMs.

Network Controller	Two NC7781 PCI-X Gigabit NICs (embedded)

Expansion Slots

I/O (3 Total, 3 Available)		PCI Voltage:
64-bit/100-MHz PCI Non-Hot Plug	2 and 3	3.3 Volt only
64-bit/133-MHz PCI-X Non-Hot Plug	1	3.3 Volt only

Manageability	Integrated Lights-Out (iLO) Standard Management (ASIC on the System Board)

Storage Controllers

Smart Array 5i Plus Controller, Ultra3 (supports RAID 0, 1, across internal hard disk drives) with 64 MB of memory

- 64-MB total memory for code, transfer buffers, and read/write cache on the 5i Plus Memory Module
- Connector for Battery Backed Write Cache (BBWC) Enable

NOTE: The Smart Array 5i Plus Controller is integrated on the system board and is designed to support the simplex drive cage. An external SCSI port is not available on the HP ProLiant DL560. External SCSI solutions require the addition of a PCI or PCI-X option card.

Standard Features

Storage Data Protection	The Battery-Backed Write Cache (BBWC) Enabler protects up to 64-MB write cache memory from hard boot, power, controller, or system board failures. ● Standard on HP ProLiant DL560 2P Models, optional on 1P Models ● Battery charge/life: Up to 72 hours/ 3 years ● Transportable data protection ● Increases overall controller performance **NOTE:** Safely transport your write cache data to another HP ProLiant DL560 in the data center be removing the BBWC Enabler and 5i Plus Memory Module simultaneously (connected by short cable).

Storage	Diskette Drive	1.44 MB Diskette Drive
	Optical Drive	24x IDE CD-ROM Drive (slimline) – ejectable for security and serviceability
	Hard Drives	None
	Maximum Internal Storage	600 GB (2 x 300 GB Ultra320 1" SCSI drives) (internal hot plug Ultra3 drive cage)
	Hard Disk Drive Backplane	Internal Wide Ultra3 backplane supports up to two 1" hard disk drives

Interfaces	Serial	1
	Pointing Device (Mouse)	1
	Graphics	1
	Keyboard	1
	Rear USB Ports	2
	iLO Remote Management	1
	Network RJ-45	2
	USB 1.0	1

Graphics	Integrated 1280 x 1024, 16M color on PCI local bus, 8-MB of SDRAM video memory

Form Factor	Rack (2U = 3.5 inches), ships with sliding rails and cable management system Space saving form factor (2U) provides space efficiencies while providing maximum deployment flexibility

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 Lights-Out and Remote Insight Lights-Out 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.

Standard Features

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.	

SmartStart
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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.

ROMPaq, 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.

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

Optional ProLiant Essentials Value Packs
: Optional software offerings that 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.
- Integrated Lights-Out Advanced Pack - upgrades the Integrated Lights-Out processor to full virtual presence and control with graphical console and virtual media.
- 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, plus it provides an extra layer of protection. The virus throttle feature of the solution slows the propagation of fast spreading virus
- 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

Standard Features

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

Industry Standard Compliance	ACPI 2.0 Compliant
	PCI 2.2 Compliant
	PXE Support
	WOL Support
	Physical Address Extension (PAE) Support
	Microsoft® Logo certifications

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 privileges

Integrated Lights-Out (iLO) Advanced Pack (supports Advanced features such as Graphical Remote Console and Virtual Floppy - available as a separate option)
Automatic Server Recovery-2 (ASR-2)
HP Systems Insight Manager
Redundant ROM
Remote Flash ROM
ROM-Based Setup Utility (RBSU)
Integrated Management Log (IML)
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).
Dynamic sector repairing and drive parameter tracking (with Smart Array controllers)
Redundant/adaptive load balancing NIC Support

Standard Features

Availability

- Standard Advanced ECC functionality detects and corrects single bit and specific multi-bit memory errors (4bit and 8bit) while using industry standard registered DIMMS. Functionality is embedded in the chipset design.
- HP Advanced Memory Protection Technology – delivers unsurpassed memory protection and server availability:
- Online Spare Memory:
  - Offers a higher level of memory protection than Advanced ECC alone. If the number of single-bit correctable errors on a bank exceeds the pre-defined error threshold, that bank will fail over to the online spare bank without intervention or server interruption. The failed memory can then be replaced at the user's convenience during a scheduled maintenance window.

NOTE: All HP Advanced Memory Protection modes are user configurable through the ROM-Based Setup Utility (RBSU) and viewable through Insight Manager 7 and the Integrated Management Log (IML.).

- Smart Array 5i Plus Controller with standard Battery Backed Write Cache (BBWC) Enabler provides transportable data protection and increases overall controller performance. Up to 64MB Battery Backed Write Cache protection available on 2P HP ProLiant DL560 models (BBWC Enabler is optional on 1P model).
- Redundant Cooling Zones across major server subsystems (Memory, I/O, CPU) provide 7x24 cooling. Each zone is independent of each other and is able to support N+1 redundancy, as indicated below.

This zone configuration enables the server to withstand up to three fan failures, provided that they are not within the same zone. Each fan is hot plug redundant and individually removable.

- Up to two Hot Plug Ultra3 Drive Bays
- Simplex SCSI Backplane
- Dual Hot Plug Redundant Power Supplies (standard on 2P Models, one ships standard on 1P Models)

Serviceability

- Innovative Diagnostic Lighting
- LED display on front panel indicates power, internal health, external health, Unit ID light.
- Tool-less, virtually cable-less interior design
  - Tool-less access to interior of server
  - Lift up hood access to processors and primary fans
  - Ejectable, slimline media drives (and CD-ROM standard with support for optional DVD-ROM drives) is removable without the use of tools. Also has fixed floppy drive.
  - PCI Card Guides locks full length PCI cards in place during transit
  - Up to ten individually removable fans connect without cables to the system board
  - Processor/VRM Retention mechanism securely locks both processor and VRM into their respective sockets
  - Tool-less removal of system board
- Quick Deploy Rails
  - Tool-less design "snap in" rail

Standard Features

Security	Power-on password	
	Keyboard password	
	Diskette drive control	
	Diskette boot control	
	Network Server Mode	
	Security Provision	
	Serial interface control	
	Administrator's password	
	Disk configuration lock	
	Hot plug access security	
	Removable Diskette drive	
	Removable CD-ROM drive	

UPS and PDU Power Cord Matrix

Please see the UPS and PDU cable matrix that lists cable descriptions, requirements, and specifications for UPS and PDU units:
ftp://ftp.compaq.com/pub/products/servers/ProLiantstorage/power-protection/powercordmatrix.pdf.

Power Supply

550-Watt (low line or high line) Hot Plug Power Supply
NOTE: One 550-Watt Hot Plug Power Supply ships standard with 1P Models (optional Redundant Hot Plug Power Supply Option Kit).
NOTE: Two 550-Watt Hot Plug Power Supplies ship standard with 2P Models.

System Fans

	Standard	5 Hot plug, redundant fans on 1P models (individually removable)
	Maximum	10 Hot plug, redundant fans on 2P models (individually removable)

- Redundant Cooling Zones across major server subsystems (Memory, I/O, CPU) provide 7x24 cooling. Each zone is independent of each other and is able to support n+ 1 redundancy, as indicated below:
  - PCI-X expansion zone is 1+ 1 redundant (fans 1 and 2)
- System can run fully loaded with five fans. This zone configuration enables the server to withstand up to three fan failures, provided that they are not within the same zone. Each fan is hot plug redundant and individually removable.

Required Cabling

For required cabling information, refer to the HP Web site at
http://h18000.www1.hp.com/products/servers/proliantDL560/.

Standard Features

OS Support	Microsoft Windows 2000 Windows Server 2003 Novell NetWare LINUX (Red Hat, SuSE) UnitedLinux VMware Virtualization Software

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

NOTE: For an up-to-date listing of the latest drivers available for the HP ProLiant DL560, please see: http://www.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 website 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

NOTE: For more information on HP's Certified and Supported ProLiant Servers, please visit the VMware Server Support Matrix at:
http://h18004.www1.hp.com/products/servers/software/vmware/hpvmwarecert.html.

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

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

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

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

NOTE: For additional information, refer to the Setup and Installation Guide or the Documentation CD provided with the server, or to the server documentation located in the Support section at the following URL: http://www5.HP.com/products/servers/proliantdl560/index.html.

Rack Mounting Requirements	Tool-free support for racks with square mounting holes (including Compaq/HP 7000, 9000, 10000 and H9 series), with an adjustment range of 24"– 36".

Standard Features

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

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the MSA1000, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches.

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

Custom Builder

Please see the Enterprise Configurator for configuration assistance at: http://www.hp.com/products/configurator.

Service and Support

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

NOTE: 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 HP branded hardware options qualified for the server, purchased at the same time or afterwards, internal to the enclosure, as well as 22" and smaller external monitors and tower UPS options up to 3KVA. 22" and smaller external monitors will be covered at the same service level and coverage period as the server. 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

DL560R01 X3.0GHz-4MB, 1024MB (2P) 346921-xx1	**Processor(s)**	(2) Intel Xeon Processors MP at 3.0 GHz standard (up to 4 supported)
	Cache Memory	4MB Integrated Level 3 Cache
	Memory	1024 MB 200-MHz (DDR) SDRAM (PC2100-MHz Registered SDRAM Memory with Advanced ECC functionality) (Standard) to 12 GB (Maximum)
	Network Controller	Two NC7781 PCI-X Gigabit NICs (embedded)
	Storage Controller	Smart Array 5i Plus Controller (Ultra3) with Battery-Backed Write Cache Enabler (integrated on system board)
	Manageability	Integrated Lights-Out (iLO) Standard management (integrated on system board)
	Hard Drives	None ship standard
	Internal Storage	293.6 GB maximum (with optional hard drives)
	Power Supply	Two 550W Hot Plug Redundant Power Supplies (low line or high line)
	Optical Drive	24x IDE slimline CD-ROM Drive
	Diskette Drive	1.44 MB Diskette Drive
	Form Factor	Rack 2U

DL560R01 X2.7-2MB, 1024MB (2P) 346920-xx1	**Processor(s)**	(2) Intel Xeon Processors MP at 2.7 GHz standard (up to 4 supported)
	Cache Memory	2MB Integrated Level 3 Cache
	Memory	1024 MB 200-MHz (DDR) SDRAM (PC2100-MHz Registered SDRAM Memory with Advanced ECC functionality) (Standard) to 12 GB (Maximum)
	Network Controller	Two NC7781 PCI-X Gigabit NICs (embedded)
	Storage Controller	Smart Array 5i Plus Controller (Ultra3) with Battery-Backed Write Cache Enabler (integrated on system board)
	Manageability	Integrated Lights-Out (iLO) Standard management (integrated on system board)
	Hard Drives	None ship standard
	Internal Storage	293.6 GB maximum (with optional hard drives)
	Power Supply	Two 550W Hot Plug Redundant Power Supplies (low line or high line)
	Optical Drive	24x IDE slimline CD-ROM Drive
	Diskette Drive	1.44 MB Diskette Drive
	Form Factor	Rack 2U

Models

DL560R01 X2.2-2MB, 1024MB (1P)
346919-xx1

Processor(s)	(1) Intel Xeon Processor MP at 2.2 GHz standard (up to 4 supported)
Cache Memory	2MB Integrated Level 3 Cache
Memory	1024 MB 200-MHz (DDR) SDRAM (PC2100-MHz Registered SDRAM Memory with Advanced ECC functionality) (Standard) to 12 GB (Maximum)
Network Controller	Two NC7781 PCI-X Gigabit NICs (embedded)
Storage Controller	Smart Array 5i Plus Controller (Ultra3) (integrated on system board)
Manageability	Integrated Lights-Out (iLO) Standard management (integrated on system board)
Hard Drives	None ship standard
Internal Storage	293.6 GB maximum (with optional hard drives)
Power Supply	One 550W Hot Plug Redundant Power Supplies (low line or high line)
Optical Drive	24x IDE slimline CD-ROM Drive
Diskette Drive	1.44 MB Diskette Drive
Form Factor	Rack 2U

DL560R01 X2.0-1MB, 1024MB (1P)
246638-xx2

Processor(s)	(1) Intel Xeon Processor MP at 2.0 GHz standard (up to 4 supported)
Cache Memory	1MB Integrated Level 3 Cache
Memory	1024 MB 200-MHz (DDR) SDRAM (PC2100-MHz Registered SDRAM Memory with Advanced ECC functionality) (Standard) to 12 GB (Maximum)
Network Controller	Two NC7781 PCI-X Gigabit NICs (embedded)
Storage Controller	Smart Array 5i Plus Controller (Ultra3) (integrated on system board)
Manageability	Integrated Lights-Out (iLO) Standard management (integrated on system board)
Hard Drives	None ship standard
Internal Storage	293.6 GB maximum (with optional hard drives)
Power Supply	One 550W Hot Plug Redundant Power Supplies (low line or high line)
Optical Drive	24x IDE slimline CD-ROM Drive
Diskette Drive	1.44 MB Diskette Drive
Form Factor	Rack 2U

Country Code Key		
	XX=00	US
	XX=01	Australia
	XX=03	UK
	XX=20	Brazil
	XX=29	EURO
	XX=37	APD
	XX=42	Int'l, Europe, Germany, France
	XX=AA	PRC

Options

ProLiant Essentials Value Pack Software	**ProLiant Essentials Integrated Lights-Out Advanced Pack**	
	ProLiant Essentials Integrated Lights-Out Advanced Pack, 1 server	263825-B21
	Featuring: sophisticated virtual administration features for ultimate control of servers in the data centers and remote sites.	
	NOTE: For additional ProLiant Integrated Light-Out Advanced Pack License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11052_div/11052_div.HTML	
	ProLiant Essentials Intelligent Networking Pack	
	ProLiant Essentials Intelligent Networking Pack - Windows Edition, Single Server License	372906-B21
	NOTE: For use with a single server. Contains one license with a unique license activation key and documentation.	
	NOTE: For additional ProLiant Intelligent Networking Pack - Windows License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12062_div/12062_div.HTML	
	ProLiant Essentials Intelligent Networking Pack - Linux Edition, Single Server License	397004-B21
	NOTE: For additional ProLiant Intelligent Networking Pack - Linux License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12327_div/12327_div.HTML	
	ProLiant Essentials Performance Management Pack	
	ProLiant Essentials Performance Management Pack, Single-Server License	306696-B21
	NOTE: For use with a single server. Contains one license with a unique license activation key, HP Management CD and documentation.	
	NOTE: The most recent version of the software can always be downloaded at http://www.hp.com/products/pmp.	
	NOTE: For additional ProLiant Performance Management Pack License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11925_div/11925_div.HTML	
	ProLiant Essentials Rapid Deployment Pack Windows Edition and Linux Edition Release	
	Rapid Deployment Pack, Single-Server License	267196-B21
	NOTE: This license allows 1 server to be deployed and managed via RDP.	
	Rapid Deployment Pack, Single-Server License (Japan)	267196-291
	NOTE: This license allows 1 server to be deployed and managed via RDP.	
	NOTE: For additional ProLiant Essentials Rapid Deployment Pack License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11053_div/11053_div.HTML http://h18000.www1.hp.com/products/quickspecs/11713_div/11713_div.HTML	
	ProLiant Essentials Workload Management Pack	
	ProLiant Essentials Workload Management Pack, Single Server License	303284-B21
	NOTE: For additional ProLiant Workload Management Pack License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11452_div/11452_div.HTML	
	ProLiant Essentials Virtualization Management Software	
	ProLiant Essentials Virtual Machine Management Pack, Single-Server License	372214-B21
	NOTE: For use with a single server. Contains one license with a unique license activation key and documentation.	
	ProLiant Essentials Server Migration Pack, Single-Migration License	375345-B21
	NOTE: Contains one license, enabling 1 server migration, with a unique license activation key and documentation.	
	NOTE: This license allows 1 server to be migrated from a physical server to a	

Options

virtual machine. Or this license can be used to migrate a virtual machine from one virtualization layer i.e. VMware GSX to a different virtualization layer such as VMware ESX or Microsoft Virtual Server 2005.

NOTE: For additional ProLiant Essentials Virtualization Management Software License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12328_div/12328_div.HTML

ProLiant Essentials Vulnerability and Patch Management Pack

ProLiant Essentials Vulnerability and Patch Management Pack, Single-Server License	371645-B21

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

NOTE: For additional ProLiant Vulnerability and Patch Management Pack License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12111_div/12111_div.HTML

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.

Processor	Intel Xeon MP X3.0/4MB Processor Option Kit	346990-B21
	Intel Xeon MP X2.70/2MB Processor Option Kit	346989-B21
	Intel Xeon MP X2.20/2MB Processor Option Kit	346988-B21
	Intel Xeon MP X2.80/2MB Processor Option Kit	331004-B21
	Intel Xeon MP X2.50/1MB Processor Option Kit	331003-B21
	Intel Xeon MP X2.0/1MB Processor Option Kit	331002-B21
Memory (DIMMs)	4 GB of PC2100 DDR SDRAM DIMM Memory Kit (2 x 2 GB)	300682-B21
	2 GB of PC2100 DDR SDRAM DIMM Memory Kit (2 x 1 GB)	300680-B21
	1 GB of PC2100 DDR SDRAM DIMM Memory Kit (2 x 512 MB)	300679-B21
	512 MB of PC2100 ECC DDR DIMM Memory Kit (2 x 256 MB)	300678-B21
Optical Drives	Slimline CD-RW/DVD-ROM Combo Drive Option Kit	331903-B21
	Slimline DVD-ROM Drive (8X/24X) Option Kit (Servers)	264007-B21
	HP DVD+R/RW 8X Slim	383975-B21

Options

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 SCSI 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 (Worldwide)
http://h18000.www1.hp.com/products/quickspecs/11531_na/11531_na.HTML (North America)

Storage Controller	Smart Array 6402/128 Controller	273915-B21
	Smart Array 6404/256 Controller	273914-B21
	512MB DDR BBWC Upgrade	372538-B21
	Smart Array 641 Controller	291966-B21
	Smart Array 642 Controller	291967-B21
	256-MB Battery-Backed Cache Module	254786-B21

NOTE: 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 Array 500.

	Battery-Backed Write Cache Enabler Option Kit	255514-B21

NOTE: This Battery-Backed Write Cache Enable Option Kit (PN 255514-xx1) is optional for the HP ProLiant DL560 1P Model only.

	Battery-Backed Write Cache Enabler Option Kit (Japan)	255514-291

NOTE: This Battery-Backed Write Cache Enable Option Kit (PN 255514-xx1) is optional for the HP ProLiant DL560 1P Model only.

	128MB Battery-Backed Cache Enabler	351580-B21

NOTE: This 128MB BBWC supports the Smart Array 641 Controller and Smart Array 642 Controller.

	64-Bit/133-MHz Dual Channel Ultra320 SCSI Adapter	268351-B21
	64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS	284688-B21
	Ultra320 Expansion Module for SA-6402	273911-B21

NOTE: 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:
http://h18000.www1.hp.com/products/quickspecs/11587_div/11587_div.HTML (Smart Array 6400 Series)
http://h18000.www1.hp.com/products/quickspecs/12067_div/12067_div.HTML (Smart Array 641)
http://h18000.www1.hp.com/products/quickspecs/12069_div/12069_div.HTML (Smart Array 642)
http://h18000.www1.hp.com/products/quickspecs/10429_div/10429_div.HTML

Options

	(SCSI Adapter) http://h18000.www1.hp.com/products/quickspecs/11555_div/11555_div.HTML (U320 Adapter)	

Communications	HP NC310F PCI-X 1000SX Gigabit Server Adapter	368169-B21
	HP NC1020 PCI 1000T Gigabit Server Adapter	353377-B21
	HP NC7170 PCI-X Dual Port 1000T Gigabit Server Adapter	313881-B21
	HP NC7771 PCI-X 1000T Gigabit Server Adapter	290563-B21
	NOTE: Any NIC on the option list can be used for redundancy with the embedded NC7781 Network Controller	

Redundant Options	Hot Plug Redundant Power Supply Option Kit	267555-001
	Hot Plug Redundant Power Supply Option Kit (EMEA)	267555-B21
	Hot Plug Redundant Fan Option Kit	288635-B21

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

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 SCSI Hot-plug Tape Drive (Carbon)	Q1529A
	USB Tape Drives	
	HP StorageWorks DAT 72 USB External Tape Drive (Carbonite)	DW027A
	External and Rack-Mount Ultrium Tape Drives	
	HP StorageWorks Ultrium 232 Internal Tape Drive (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 External Tape Drive (Carbonite)	DW065B
	HP StorageWorks Ultrium 232 External Tape Drive (Carbonite)	DW065B
	HP StorageWorks 1U Rack-mount kit with one Ultrium 448 (Carbonite)	DW028A
	HP StorageWorks Ultrium 960 External Tape Drive (Carbonite)	Q1539B
	HP StorageWorks 3U Rack-mount kit with one Ultrium 960 (Carbonite)	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 (Worldwide) 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	

Options

HP StorageWorks 1U Rack-Mount Kit	A7445B

NOTE: The 1U Rack-mount Kit can support up to (2) half-height tape drives and compatible with multiple Single-Ended and LVD SCSI tape drives including the DAT 24, DAT 40, DAT 72, DLT VS80, DLT VS160, Ultrium 215, Ultrium 232 and Ultrium 448 tape drives.

HP StorageWorks 1U USB Rack-Mount Kit	A8007A
1U USB Cable Option Kit	396114-B21

NOTE: Converts a 1U SCSI rack-mount kit to a USB interface to support the USB tape drives.

HP StorageWorks 3U Rack-Mount Kit	274338-B23

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, DLT VS80, DLT VS160, SDLT 320, SDLT 600, Ultrium 215, Ultrium 230, Ultrium 232, Ultrium 460, Ultrium 448 and Ultrium 960 tape drives.

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

HP StorageWorks 1/8 Tape Autoloader

HP StorageWorks 1/8 Ultrium 960 Tape Autoloader	AF204A
HP StorageWorks 1/8 Ultrium 448 Tape Autoloader	AF203A
HP StorageWorks 1/8 SDLT 320 Tape Autoloader	AA926A
HP StorageWorks 1/8 Ultrium 232 Tape Autoloader	AF202A
1/8 Tape Autoloader Rackmount Kit	C9268R

NOTE: Required to install the unit in a standard 19-inch rack; includes rails and rackmount instructions

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

HP StorageWorks SSL1016 Ultrium 460 Tape Autoloader	330821-B21
HP StorageWorks 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

Options

Tape Libraries	**HP StorageWorks MSL2024 Tape Library**	
	HP StorageWorks MSL2024 1 Ultrium 960 Drive Library	AG115A
	HP StorageWorks MSL2024 1 Ultrium 448 Drive Library	AG116A
	HP StorageWorks MSL2024 2 Ultrium 448 Drive Library	AG117A
	HP StorageWorks MSL6000 Tape Library	
	Ultrium 960 technology	
	HP StorageWorks MSL6030 1 Ultrium 960 Dr LVDS Library	AD606A
	HP StorageWorks MSL6030 1 Ultrium 960 Dr FC Library	AD608A
	HP StorageWorks MSL6030 2 Ultrium 960 Dr LVDS Library	AD607A
	HP StorageWorks MSL6030 2 Ultrium 960 Dr FC Library	AD609A
	Ultrium 460 technology	
	HP StorageWorks MSL6030 1 Ultrium 460 Dr LVDS Library	AD598A
	HP StorageWorks MSL6030 1 Ultrium 460 Dr FC Library	AD600A
	HP StorageWorks MSL6030 2 Ultrium 460 Dr LVDS Library	AD599A
	HP StorageWorks MSL6030 2 Ultrium 460 Dr FC Library	AD601A

NOTE: Please reference the MSL2024 and MSL6000 Tape Library 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.

Magneto-Optical Jukeboxes	**HP StorageWorks 9.1 GB Optical Jukeboxes**	
	600mx, 4 drive, 64 slot jukebox	C1160M
	1200mx, 4 drive, up to 128 slots	C1104M
	2200mx, 6 drive, up to 238 slots	C1107M

NOTE: Please see the HP StorageWorks Magneto-Optical Products data sheet for a complete listing of available jukeboxes at: http://www.hp.com/products1/storage/products/archivalprod/brochures/ MO_family_pb.pdf
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.

Ultra Density Optical Jukeboxes	1900ux, 4 drive, 64 slot jukebox	AA966A
	3800ux, 4 drive, 128 slot jukebox	AA969A
	7100ux, 6 drive, 238 slot jukebox	AA971A

NOTE: Please see the HP StorageWorks Ultra Density Optical Jukeboxes QuickSpecs for a complete listing of available jukeboxes at: http://h18006.www1.hp.com/products/quickspecs/11944_div/11944_div.html
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

Cluster Options	ProLiant Cluster Starter Kit	364023-B21
	NOTE: For additional information regarding the ProLiant Cluster Starter Kit please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11935_na/11935_na.html (North America) http://h18000.www1.hp.com/products/quickspecs/11935_div/11935_div.html (Worldwide)	
	ProLiant Cluster Kit with OpenView Storage Mirroring	364025-B21
	NOTE: For additional information regarding the ProLiant Cluster Kit with OpenView Storage Mirroring please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11934_na/11934_na.html (North America) http://h18000.www1.hp.com/products/quickspecs/11934_div/11934_div.html (Worldwide)	
	HP HA/F200 for Entry SAN Cluster	364026-B22
	HP HA/F200 for Entry SAN Cluster (Japan)	364026-292
	NOTE: For additional information regarding the ProLiant Cluster for Entry Level SAN please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11932_na/11932_na.html (North America) http://h18000.www1.hp.com/products/quickspecs/11932_div/11932_div.html (Worldwide)	
	ProLiant Cluster HA/F500 for the Enterprise SAN	364024-B21
	NOTE: For additional information regarding the ProLiant Cluster HA/F500 for Enterprise SAN please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11933_na/11933_na.html (North America) http://h18000.www1.hp.com/products/quickspecs/11933_div/11933_div.html (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 & 4 (2 node license cluster kit)	305199-B26
	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 & 4 (single license version)	307754-B26
	NOTE: For additional information regarding the HP Serviceguard for Linux License, please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11518_na/11518_na.html (North America) http://h18000.www1.hp.com/products/quickspecs/11518_div/11518_div.html (Worldwide)	

Options

HP StorageWorks Modular Smart Array 20	HP StorageWorks Modular Smart Array 20 **NOTE:** Rack-mountable 12 (SATA) drive enclosure with U320 Host connectivity, redundant power supplies.	335921-B21
	HP StorageWorks Modular Smart Array 20 Starter Kit **NOTE:** Rack-mountable 12 (SATA) drive enclosure with U320 Host connectivity, redundant power supplies. Includes Smart Array 6402/128 Controller. **NOTE:** 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	HP StorageWorks Modular Smart Array 30 SB **NOTE:** Rack-mountable 14 drive enclosure with single bus, redundant power supplies	302969-B21
	HP StorageWorks Modular Smart Array 30 DB **NOTE:** Rack-mountable 14 drive enclosure with dual bus, redundant power supplies **NOTE:** The Modular Smart Array Enclosure 30 Family supports the Wide Ultra3, Ultra320 1" Hot Plug Hard Drives.	302970-B21
HP StorageWorks Modular Smart Array 500	HP StorageWorks Modular Smart Array 500 Generation 2 **NOTE:** 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: http://h18000.www1.hp.com/products/quickspecs/11956_na/11956_na.HTML (North America) http://h18000.www1.hp.com/products/quickspecs/11956_div/11956_div.HTML (Worldwide)	335880-B21
HP StorageWorks Modular Smart Array 1000	HP StorageWorks Modular Smart Array 1000 **NOTE:** Please see the Modular Smart Array 1000 QuickSpecs for additional options and configuration information at http://h18000.www1.hp.com/products/quickspecs/11033_na/11033_na.HTML (North America) http://h18000.www1.hp.com/products/quickspecs/11033_div/11033_div.HTML (Worldwide)	201723-B22
HP StorageWorks Modular Smart Array 1500 cs	Modular Smart Array 1500 Controller Shelf **NOTE:** Please see the StorageWorks Modular SAN Array 1500 cs QuickSpecs for additional options and configuration information at: http://www.hp.com/go/MSA1500cs	AA986A
StorageWorks Options	StorageWorks SAN Switch 2/16	322118-B21
	StorageWorks SAN Switch 2/16-EL Upgrade Kit	325889-B21
	StorageWorks Director 2/64 **NOTE:** Please see the StorageWorks Director 2/64 QuickSpecs for additional information: 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 (Worldwide)	286809-B21

Options

Uninterruptible Power Systems – Rack	HP UPS R1500 XR (1440VA, 1340 Watt), Low Voltage (NA)	204404-001
	HP UPS R1500 XR (1500VA, 1340 Watt), High Voltage (Int'l)	204404-B31
	HP UPS R1500 XR (1500VA, 1340 Watt), Low Voltage (Japan)	204404-291
	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 (2400VA, 2250 Watt), Low Voltage (Japan)	192186-291
	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
	UPS R12000 XR N+x (200-240V) (WW-hardwired) **NOTE:** The UPS R12000 XR has a hardwired input and output connection.	207552-B22

HP Monitored Power Distribution Unit (PDU)	**HP Monitored Power Distribution Unit: Full Rack Version**	
	HP PDU 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
	HP Monitored Power Distribution Unit: Half Rack Version	
	HP PDU with Power Monitoring, Model S1348 - single input, 3-phase, 60A (NA/JPN)	AF916A
	HP PDU with Power Monitoring, Model S1332 - single input, 3-phase, 32A (INTL)	AF917A

Options

Modular Power Distribution Units 1U/0U (Up to 32 outlets) **NOTE:** 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) **NOTE:** 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) **NOTE:** 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) **NOTE:** 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 **NOTE:** 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: http://h18000.www1.hp.com/products/quickspecs/11041_na/11041_na.HTML (North America) http://h18000.www1.hp.com/products/quickspecs/11041_div/11041_div.HTML (Worldwide)	252663-B24
USB Options	USB 2-Button Optical Scroll Mouse (Carbonite/Silver)	DC172B
	USB 1.44-MB External Diskette Drive (Carbonite)	DC141B
Third Party Rack Kit	Rack Adapter Kit **NOTE:** This kit allows HP rack servers to fit in racks that are 24" wide.	332815-B21
HP Rack 10000 Series (Graphite Metallic)	10642 (42U) Infrastructure Rack (Low Voltage)	379006-001
	10642 (42U) Infrastructure Rack (High Voltage)	379005-001
	HP Rack S10614 (14U) Rack Cabinet – Shock Pallet	292302-B22
	HP Rack 10842 (42U, 800mm wide) – Pallet	257415-B21
	HP Rack 10842 (42U, 800mm wide) – Shock Pallet	257415-B22
	HP Rack 10647 (47U) – Pallet	245160-B21
	HP Rack 10647 (47U) – Crated	245160-B23
	HP Rack 10642 (42U) – Pallet	245161-B21
	HP Rack 10642 (42U) – Shock Pallet	245161-B22
	HP Rack 10642 (42U) – Crated	245161-B23
	HP Rack 10636 (36U) – Pallet	245162-B21
	HP Rack 10636 (36U) – Shock Pallet	245162-B22
	HP Rack 10636 (36U) – Crated	245162-B23
	HP Rack 10622 (22U) – Pallet	245163-B21
	HP Rack 10622 (22U) – Shock Pallet	245163-B22
	HP Rack 10622 (22U) – Crated	245163-B23

Options

> **NOTE**: -B21 (pallet) used to ship empty racks shipped on a truck
> -B22 (shock pallet) used to ship racks with equipment installed (by custom systems, VARs and Channels)
> -B23 (crated) used for air shipments of empty racks
>
> **NOTE**: Please see the Rack 10000 QuickSpecs for Technical Specifications such as height, width, depth, weight, and color:
> http://h18000.www1.hp.com/products/quickspecs/10995_div/10995_div.HTML (Worldwide)
> http://h18000.www1.hp.com/products/quickspecs/10995_na/10995_na.HTML (North America)
>
> **NOTE:** For additional information regarding Rack Cabinets, please see the following URL:
> http://h18000.www1.hp.com/products/servers/proliantstorage/rack-options/index.html.

Rack Options for HP Rack 10000 Series

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
TFT7210R Rack Mounted 17" Monitor	348373-B21

NOTE: For a complete list of Monitors please view the following URL: http://h18004.www1.hp.com/products/monitors/.

TFT5600 Rack Keyboard Monitor	221546-xx1

NOTE: For a complete list of Monitors please view the following URL: http://h18004.www1.hp.com/products/monitors/.

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

Country Code Key (for TFT5600 Rack Keyboard Monitor (PN 221546-xx1 and 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.

HP KVM Switch Options

IP Console Switch Box (KVM/IP), 3 x 1 x 16
IP Console Switch Box (KVM/IP), 1 x 1 x 16
Server Console Switch (KVM), 0 x 1 x 8 port
Server Console Switch (KVM), 0 x 2 x 16 port
PS/2 Interface Adapter, 1 pack
PS/2 Interface Adapter, 8 pack
USB Interface Adapter, 1 pack
Serial Interface adapter - 1 Pack with power supply

QuickSpecs

Options

NOTE: Cat5e cables are required to connect Interface Adapters to Console Switches. Cat5e cables can be found at the following URL: http://www.hp.com/go/kvm.

HP 1x 4 USB/PS2 KVM Switch, TT (NA/JPN)

HP 1x 4 USB/PS2 KVM Switch, TT (AU/NZ)

HP 1x 4 USB/PS2 KVM Switch, TT (UK)

HP 1x 4 USB/PS2 KVM Switch, TT (EU)

HP 1x 4 USB/PS2 KVM Switch, RM (ALL)

HP PS2 KVM Cable with audio, 6', 2-pack

HP USB KVM Cable with audio, 6', 2-pack

NOTE: For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: http://www.hp.com/go/kvm.

HP Serial Console Server Options

HP 16 Port Serial Console Server (worldwide)	AF101A
HP 48 Port Serial Console Server (worldwide)	AF102A
Serial Adapter, RJ45-DB9 DCE Female, 1 Pack	AF103A
Serial Adapter, RJ45-DB9 DCE Female, 8 Pack	AF110A

NOTE: Cat5e cables are required to connect Serial Adapters to Serial Console Servers. Additional Serial Adapters and Cat5e cables can be found at the following URL: http://www.hp.com/go/kvm.

NOTE: For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: http://www.hp.com/go/kvm.

Rack Options for Third party Cabinet Racks

Round hole rack cabinet rail kit	293052-B21

NOTE: Support for racks with round mounting holes (include HP Rack System /E and HP Systems) with and adjustment range of 24 inches to 36 inches (60.96 cm to 91.44 cm).

Service and Support Offerings (HP Care Pack Services)

Hardware Services On-site Service

4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic	U4697E
4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	U4698E
6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	U4699E

Options

Installation & Start-up Services

Hardware Installation, Electronic	U4707E
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	U4708E

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, Electronic	U4709E
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	U4711E

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, Electronic	U4710E
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	U4712E

NOTE: For more information, customer/resellers can contact
http://www.hp.com/services/carepack

Memory

HP ProLiant DL560
Standard Memory
1024 MB PC2100 Registered DDR SDRAM DIMM Memory comes installed (2 x 512 MB SDRAM)

Standard Memory Plus Optional Memory
Up to 9216 MB memory is available with the optional installation of PC2100 Registered DDR SDRAM DIMM Memory Option Kit

Standard Memory Replaced with Optional Memory
Up to 12,288 MB of memory is available with the removal of the standard 1024 MB of memory, the optional installation of PC2100 Registered DDR SDRAM DIMM Memory Option Kit

NOTE: This chart does not represent all possible memory configurations.

Memory		Standard Memory Board (Slots)					
		1	2	3	4	5	6
Standard	1024 MB	512 MB	512 MB	Empty	Empty	Empty	Empty
Optional	9,216 MB	512 MB	512 MB	2048 MB	2048 MB	2048 MB	2048 MB
Maximum	12,288 MB	2048 MB	2048 MB	2048 MB	2048 MB	2048 MB	2048 MB

The following memory options are available from HP:
- 512 MB of PC2100 ECC DDR DIMM Memory Kit (2 x 256 MB)   300678-B21
- 1 GB of PC2100 DDR SDRAM DIMM Memory Kit (2 x 512 MB)   300679-B21
- 2 GB of PC2100 DDR SDRAM DIMM Memory Kit (2 x 1 GB)   300680-B21
- 4 GB of PC2100 DDR SDRAM DIMM Memory Kit (2 x 2 GB)   300682-B21

Storage

A	1.44-MB Diskette Drive
B	Ejectable: 24x IDE CD-ROM (Slimline)
0-1	Wide Ultra3/Ultra320 Drive Cage

Drive Support

	Quantity Supported	Position Supported	Controller
Slim Line Drives			
1.44-MB slim-line Diskette Drive	Up to 1	A	Integrated
Ejectable IDE slim-line CD-ROM Drive	Up to 1	B	Integrated IDE
Slimline DVD-ROM Drive (8X/24X) Option Kit (ejectable)	Up to 1	B	Integrated IDE

Hard Drives

Ultra320 Hot Pluggable Drives

	Quantity Supported	Position Supported	Controller
1-inch			
300-GB 10,000 rpm 146.8-GB 10,000 rpm 72.8-GB 10,000 rpm 146.8-GB 15,000 rpm 72.8-GB 15,000 rpm 36.4-GB 15,000 rpm	Up to 2	0-1	Integrated Dual Channel Wide Ultra3 SCSI Adapter Smart Array 6402/128Controller Smart Array 641 Controller Smart Array 642 Controller 64-Bit/133-MHz Dual Channel Ultra320 SCSI Adapter

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.

External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
Modular Smart Array 20	1 per SCSI VHDCI connector	External	Smart Array 6402/128 Controller Smart Array 6404/256 Controller
Modular Smart Array 30 Family	Up to 13	External	Smart Array 6402/128 Controller Smart Array 6404/256 Controller Smart Array 642 Controller 64-Bit/133-MHz Dual Channel Ultra320 SCSI Adapter 64-Bit/66-MHz 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: http://www.hp.com/go/msa500
Modular Smart Array 1000	Please see the Modular Smart Array 1000 QuickSpecs below to	External	Please see the Modular Smart Array 1000 QuickSpecs (URL below) for the latest list of supported HBAs

Storage

	determine configuration requirements		
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 (Worldwide)
http://h18000.www1.hp.com/products/quickspecs/11033_na/11033_na.HTML (North America)

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

Maximum Storage Capacity – (External Enclosure Attached)

Internal	600 GB (2 x 300 GB Ultra320 SCSI 1" Drives)
External	50.40 TB (12 x (14 x 300 GB Ultra320 SCSI 1" Drives))
Total	51.00 TB

Tape Drives, Tape Autoloaders, & Tape Libraries

NOTE: For an up-to-date listing of the latest O/S Support details for each of the Tape Drives listed below, please see the following:
http://h18000.www1.hp.com/products/quickspecs/North_America/10233.html (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 (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
HP StorageWorks DAT Tape Drives, Internal Hot Plug DAT 40 Tape Drive DAT 72 Tape Drive	1	0, 1	Smart Array 5i Plus Controller (integrated on system board) 64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter 64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS
HP StorageWorks Tape Drives, USB External DAT 24 USB DAT 40 USB DAT 72 USB	1 per USB port	External	USB port
HP StorageWorks Tape Drives, External Ultrium 215	Up to 2	External	64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter 64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter,

Storage

Ultrium 230 Ultrium 232 Ultrium 448 Ultrium 460 DAT 40 DAT 72 DLT VS80 DLT VS160 SDLT 320			Alternate OS
HP StorageWorks Tape Drives, External Ultrium 960 SDLT 600	1 drive per SCSI channel	External	64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter 64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS
HP StorageWorks Autoloaders, External DAT 72x6 Tape Autoloader 1/8 Tape Autoloader SSL1016 Tape Autoloader	1 autoloader per SCSI channel	External	64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter 64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS
HP StorageWorks Rack-mount Tape Drive Enclosures 1U Rack-Mount Kit 3U Rack-Mount Kit 5U Rack-Mount Kit	1 per SCSI channel	External	64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter 64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS
HP StorageWorks Tape Libraries, External MSL2024 (Ultrium 960-based) MSL2024 (Ultrium 448-based) MSL6000 (Ultrium 960-based) MSL6000 (SDLT 600-based) MSL6000 (Ultrium 460-based) MSL5026S2 (SDLT 320-based) MSL5052S2 (SDLT 320-based)	Please reference the MSL Tape Library QuickSpecs to determine configuration requirements	External	Please consult the EBS connectivity matrix at http://www.hp.com/go/ebs for detailed connectivity information.

Power Specifications

Part Number	280126-001
Spare Kit	280126-B21
Operational Input Voltage Range (V rms)	90 to 264
Frequency Range (Nominal) (Hz)	47 to 63 (50/60)

Nominal Input Voltage (Vrms)	100	115	208	220	230	240
Max Rated Output Wattage Rating	550	550	550	550	550	550
Nominal Input Current (A rms)	7.1	6.1	3.3	3.1	3.0	2.8
Max Rated Input Wattage Rating (Watts)	696	688	679	671	667	663
Max. Rated VA (Volt-Amp)	710	702	693	684	680	676
Efficiency (%)	79	80	81	82	82.5	83
Power Factor	0.98	0.98	0.98	0.98	0.98	0.98
Leakage Current (mA)	.87	1.00	1.81	1.91	2.00	2.09
Maximum Inrush Current (A peak)	100	100	100	100	100	100
Maximum Inrush Current duration	20	20	20	20	20	20

System Specifications

HP ProLiant DL560 Fully Configured

Up to 4 Processors, 6 Memory Slots, 2 Hard Drives, 3 PCI Slots, and 2 Hot Plug Power Supplies

Nominal Input Voltage (Vrms)	100	115	208	220	230	240
Fully Loaded System Input Wattage (W)	534	527	520	514	507	501
Fully Loaded System Input Current (A rms)	5.4	4.7	2.6	2.4	2.3	2.1
Fully Loaded System Thermal (BTU- Hr)	1820	1707	1774	1752	1730	1709
Fully Loaded System VA (Volt-Amp)	545	538	531	524	518	511
System Leakage with all power supplies loaded (mA)	.87	1.00	1.81	1.91	2.00	2.09
System Inrush Current with all power supplies loaded (A)	200	200	200	200	200	200
Power cord requirements	Nema 5-15P to IEC320-C13			Option no./Spare no: 163719-002		
	IEC320-C13 to IEC320-C14			Option no./Spare no: 142259-001/ 142258-B21		

NOTES:

ActiveAnswers Power Calculation
Power calculator is LIVE on ActiveAnswers Web site. This is an external link.

Follow this link: http://h30099.www3.hp.com/configurator/powercalcs.asp.

To drill down to calculators:
- Click on: "ProLiant Servers"
- Click on the Server of interest. Example: DL560
- Click on: "Power Calculator" link (You may need to scroll down to see it.)

Technical Specifications

System Unit Rack	**Chassis Footprint** (HxWxD)	3.38 x 17.50 x 25.75 in (8.59 x 44.45 x 65.41 cm)	
	Weight	Maximum (2 Power Supplies, 2 Hard Drives)	60 lb (27 kg)
		Minimum (No hard drives installed, one power supply)	35 lb (16 kg)
	Input Requirements	Rated Input Voltage	100 to 120 VAC/200 to 240 VAC
		Rated Input Frequency	50 to 60 Hz
		Input Power	690W @ 115 VAC/675W @ 230 VAC
		Rated Input Current	7A (100 VAC), 6A (115 VAC), 3A (230 VAC)
	Max BTU Rating	2375 BTU (550 Watts)	
	Power Supply Output Power (per power supply)	Rated Steady-State Power	550W/550W (lowline/highline)
		Maximum Peak Power	550W/550W (lowline/highline)
	Temperature Range	Operating	50° to 95° F (10° to 35° C)
		Non-operating	-20° to 140° F (-29° to 60° C)
		Shipping	-22° to 122° F (-30° to 50° C)
	Relative Humidity (non-condensing)	Operating	10% to 70%
		Non-operating	5% to 95%
	Maximum Wet Bulb Temperature	101.7° F (38.7° C)	
	Acoustic Noise	**NOTE:** Listed are the declared A-weighted sound power levels LWAd and the declared average bystander position sound pressure levels LpAm when operating in a 23° C ambient environment. Noise emissions were measured in accordance with ECMA 74 and declared in accordance with ECMA 109.	
		Idle (Fixed Disk Drives Spinning)	
		L WAd (BELS)	6.0
		L pAm (dBA)	46
		NOTE: These values apply to 2U rack configuration. Configuration tested included 2 processors, two 10, 000 rpm hard drive, 1 power supplies, 1 power supply fan and 4 CPU fans.	

Technical Specifications

24X Max (or higher) IDE Disk CD-ROM Drive Slimline			
	Applicable Disk		CD-DA, CD-ROM (Mode 1 and 2)
			CD-XA, CD-I (Mode 2, Form 1 and 2)
			Photo CD (Single and Multi-session)
			Mixed Mode (Audio and Data combined)
	Capacity		540 MB (Mode 1, 12 cm)
			650 MB (Mode 2, 12 cm)
	Diameter		4.7 x 3.15 in/12 x 8 cm
	Rotational Speed		4200 rpm maximum
	Center Hole		0.6 in/15 mm diameter
	Thickness		1.2 mm
	Track Pitch		1.6 μm
Block Size	Mode 1		2,048
	Mode 2		2,340, 2,336, 1,024 bytes
	CD-DA		2,352 bytes
	CD-XA		2,328 bytes
Interface	IDE (ATAPI)		
Access Times (typical)	Random		100 ms
	Full-Stroke		2000 ms
Data Transfer Rate	Sustained		150 KB/s (sustained 1X)
	Burst		2100 to 3600 KB/s
Cache Buffer	128 KB		
Start-up Time (typical)	< 7 seconds		
Stop Time	< 4 seconds		
Laser Parameters	Type		Semiconductor Laser GaA1As
	Wave Length		780 ± 25 nm
	Divergence Angle		53.5° ± 1.5°
	Output Power		0.14 mW
Operating Conditions	Temperature		41° to 113° F (5° to 45° C)
	Humidity		10% to 80%
Dimensions	(HxWxD, maximum)		1.69 x 5.75 x 8.19 in (4.29 x 15 x 20.8 cm)
	Weight		2.66 lb (1.2 kg)

Slimline CD-RW/DVD-ROM 24X Combo Drive (Multibay)			
	Shipping Dimensions		13.88 x 11.38 x 9.25 in (35.26 x 28.91 x 23.50 cm)
	Shipping Weight		5 lb (2.27 kg)
	Disk	**Applicable Disk**	DVD-ROM
			DVD-R (Read Only)
			2.6 GB/side DVD-RAM (Read Only)
			5.2 GB/side DVD-RAM (Read Only)
			CD-ROM Mode-1 data disc
			CD-ROM Mode-2 data disc
			CD Audio disc
			CD-Extra
			CD-RW
			CD-R
			CD Text
			PhotoCD

QuickSpecs

Technical Specifications

		CD-I (mode 2)	
		CD-I Ready	
		CD-Bridge	
	Capacity	DVD-ROM	DVD-SL 4.7 GB/side
			DVD-DL 8.5 GB/side
			Double Sided 9.40 GB/side
		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)
			2352, 2340, 2336, 2048 bytes (Mode-1)
			2352, 2340, 2336, 2048 bytes (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		

QuickSpecs

Technical Specifications

Integrated Lights-Out Standard (integrated on system board)	Architecture	32-bit PCI-based health and remote management ASIC (Application Specific Integrated Circuit)
	Processor	32-bit RISC processor core running at 66 MHz
	Upgradability	Option firmware upgradable via flash ROM.
	Video Support	Utilizes the host server's embedded video chip. Supports VGA/SVGA, 640 x 480 (256 to 16.7M colors), 800 x 600 (256 to 16.7M colors), 1024 x 768 (256 to 65K colors), 1280 x 1024 (256 colors)
	Interfaces	One Ethernet network connection (10/100 Mb/s)
	Memory	2-MB Flash ROM
		8-MB SDRAM
	Operating System Support	United Linux 1.0
		Windows 2000 Server
		Windows 2000 Advanced Server
		Red Hat 7.x
		SLES8
		Novell NetWare 5.x, 6.x
	Client Browser Support	Microsoft Internet Explorer 5.5 or later.
	iLO Standard Features	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 up to 12 user accounts with customizable access privileges
	iLO Advanced Features (optional)	Virtual Graphical Remote Console
		Virtual Floppy Drive

Integrated Smart Array 5i Plus Controller	Data Compatible with all Smart Array Controllers	Yes
	Instant Upgrades to other Smart Array Controllers	Yes
	Consistent Software Manageability Tools	Yes
	PCI-X Bus	64-bit, 100 MHz (integrated on system board)
	PCI-X Peak Data Transfer Rate	800 MB/s
	SCSI Protocols Supported	Ultra3, Ultra2
	SCSI Peak Data Transfer Rate	160 MB/s per channel
	Channels	2 (only one connected)
	SCSI Ports (external/internal)	0/1
	Drives Supported (maximum)	2

NOTE: Maximum is the total number of internal drives on each specific ProLiant server.

	Cache	64 MB Read and/or Write Cache

Technical Specifications

Battery-Backed Write Cache	Yes, with installation of Battery-Backed Write Cache Enabler, up to 64MB	
RAID Support	0, 1	
Logical Drives (maximum)	Maximum = total number of drives	
Online Configuration	Yes	
Online Capacity Expansion	Yes	
Logical Drive Capacity Extension	Yes	
Online Stripe Size Migration	Yes	
Online RAID Level Migration	Yes	
Online Spare Support	Yes	
Automatic Data Recovery	Yes	
Drive Roaming	Yes	
Redundant Controllers	No	

Two NC7781 PCI-X Gigabit NICs (embedded) **Server Adapter**	**Network Interface Compatibility**	10/100/1000-T	
		IEEE 802.3 10Base-T	
		IEEE 802.3ab 1000Base-T	
		IEEE 802.3u 100Base-TX	
	Data Transfer Method	64-bit/133MHz PCI-X	
	Network Transfer Rate	10Base-T (Half-Duplex)	10 Mb/s
		10Base-T (Full-Duplex)	20 Mb/s
		100Base-TX (Half-Duplex)	100 Mb/s
		100Base-TX (Full-Duplex)	200 Mb/s
		1000Base-T (Full and Half-Duplex)	2000 Mb/s
	Connector	RJ-45	
		10Base-T	Category 3,4 or 5 UTP up to 328 ft (100 m)
	Cable Support	10/100/1000Base-T	Category 5 UTP (2 pair); up to 328 ft (100 m)