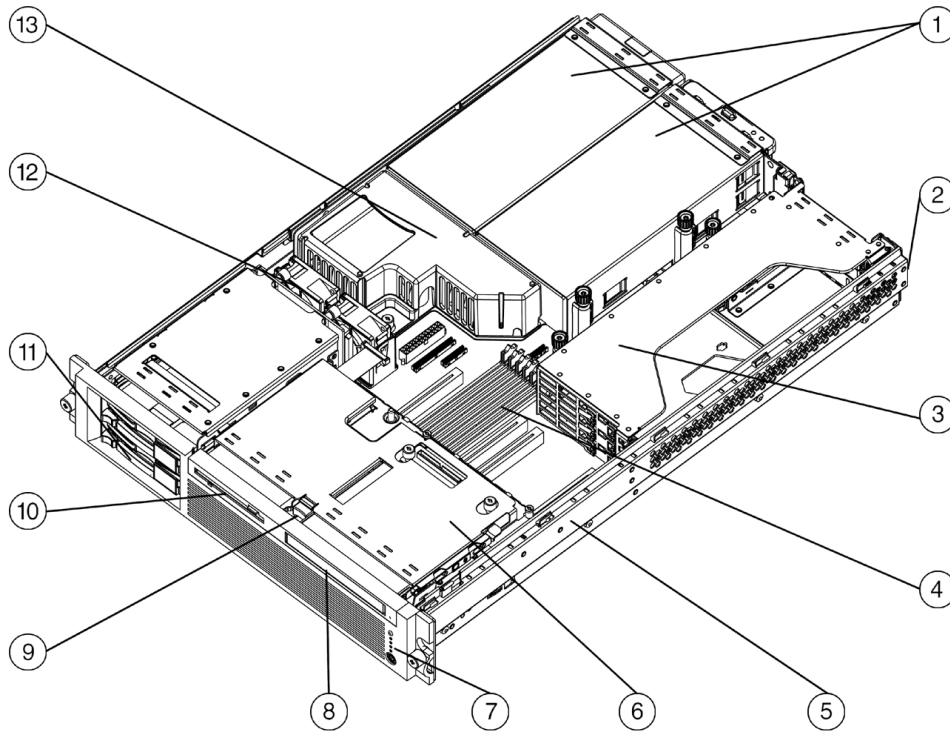


Overview



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. Slim Line 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 AIT or 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 3.0GHz/4MB, 2.7GHz/2MB, or 2.2GHz/2MB (Expandable to 4 processors)

At a Glance

- Intel Xeon Processors MP at 3.0GHz/4MB, 2.7GHz/2MB, 2.2GHz/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)
- 1024MB 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, including a three-year, Next Business Day on-site, limited, Global warranty and extended Pre-Failure Warranty that covers processors, memory and disk drives - Certain restrictions and exclusions apply.

Standard Features

Processor	(2P) Intel Xeon Processor MP 3.0 GHz/4MB (Expandable to 4 processors)
One or more of the following depending on Model	(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)
	(2P) Intel Xeon Processor MP 2.8 GHz/2MB (Expandable to 4 processors)
	(2P) Intel Xeon Processor MP 2.5 GHz/1MB (Expandable to 4 processors)
	(1P) Intel Xeon Processor MP 2.0 GHz/1MB (Expandable to 4 processors)

Cache Memory	4-MB Integrated Level 3 Cache
One of the following depending on Model	NOTE: 3.0 GHz Models only.
	2-MB Integrated Level 3 Cache
	NOTE: 2.8 GHz, 2.7 GHz, and 2.2 GHz Models only.
	1-MB Integrated Level 3 Cache
	NOTE: 2.5 GHz, 2.0 GHz Models only.

Upgradability	Upgradable to quad processing
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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	Standard	1024 MB 200-MHz (DDR) SDRAM (PC2100 Registered SDRAM Memory with Advanced ECC functionality) (2P Models and the 2.0 GHz (1P) model)
	Maximum	12 GB
	Standard	512 MB, 1024 MB, or 2048 MB 200-MHz (DDR) SDRAM PC2100 Registered SDRAM Memory with Advanced ECC functionality depending on model (see section below)
	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)
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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)
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Standard Features

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.

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 by 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 (slim line) – ejectable for security and serviceability
Hard Drives	None
Maximum Internal Storage	600 GB (2 x 300 GB Ultra320 1" 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 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>.

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.
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 .
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: <ul style="list-style-type: none">● 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>

Standard Features

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

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.)

Standard Features

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, slim line 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

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

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

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>

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".

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 how to order please contact your sales representative or go to 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 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	4-MB 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 slim-line 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	2-MB 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 slim-line CD-ROM Drive
	Diskette Drive	1.44 MB Diskette Drive
Form Factor	Rack 2U	

DL560R01 X2.2-2MB, 1024MB (1P) 346919-xx1	Processor(s)	(1) Intel Xeon Processors MP at 2.2 GHz standard (up to 4 supported)
	Cache Memory	2-MB 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 slim-line CD-ROM Drive
	Diskette Drive	1.44 MB Diskette Drive
Form Factor	Rack 2U	

Models

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

Processor(s)	(1) Intel Xeon Processors MP at 2.0 GHz standard (up to 4 supported)
Cache Memory	1-MB 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 slim-line 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	Rapid Deployment Pack, 1 User, V1.x	267196-B21
	NOTE: This license allows 1 server to be managed and deployed via the Deployment Server.	
	Rapid Deployment Pack, 1 User, V1.x (Japan)	267196-291
	NOTE: This license allows 1 server to be managed and deployed via the Deployment Server.	
	Rapid Deployment Pack, 10 Users, V1.x	269817-B21
	NOTE: This license allows 10 servers to be managed and deployed via the Deployment Server.	
	Rapid Deployment Pack, 10 Users, V1.x (Japan)	269817-291
	NOTE: This license allows 10 servers to be managed and deployed via the Deployment Server.	
	Flexible Quantity License Kit	302127-B21
	License-Only - for use with a Master License Agreement	302128-B21
	ProLiant Essentials Workload Management Pack (Featuring Compaq Resource Partitioning Manager version 2.0)	303284-B21
	Integrated Lights-Out (iLO) Advanced Pack	263825-B21
	ProLiant Essentials Performance Management Pack, Single License	306696-B21
	NOTE: 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
	NOTE: A single pack is shipped with a single license key for the total number of licenses ordered	
	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 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	
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 .		
Software	HP digital asset protection	302316-001
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
	Intel Xeon MP X2.0/2MB Processor Option Kit	270765-B21
	Intel Xeon MP X1.90/1MB Processor Option Kit	270764-B21
	Intel Xeon MP X1.50/1MB Processor Option Kit	270763-B21

Options

Memory (DIMMs)	4096MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (2x 2048 MB)	300682-B21
	2048MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (2x1024MB)	300680-B21
	1024MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (2x512MB)	300679-B21
	512MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (2x256MB)	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
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 Ultra320 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
<p>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.</p> <p>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)</p>		

Options

Storage Controller	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
	128-MB Cache Module for Smart Array 5302 Controller	153506-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.	
	256MB DDR, Battery-Backed Cache Upgrade Kit for SA-6400	273913-B21
	NOTE: This 256-MB Battery-Backed Cache Module upgrade kit supports the Smart Array 6400 series controller only.	
	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 (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 Single Port 1000T Gigabit Server Adapter	353377-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 Single Port 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

Options

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

Tape Drives

NOTE: External tape devices, including both tape drives and tape arrays/enclosures, can be directly connected to the VHDCI SCSI port located on the back of the server. Use of a SCSI adapter to connect these devices is optional, not required.

External, Rack-Mount, and Array Module Ultrium Tape Drives

HP StorageWorks Ultrium 215 Tape Drive, External (Carbon)	Q1545A
HP StorageWorks Ultrium 215 rack-mount (Carbon) - Single drive installed in a 3U rack-mount kit	350544-B21
HP StorageWorks Ultrium 215 Array Module (Carbon) - Offline hot-swap drive for Tape Array 5300	C7492B
HP StorageWorks Ultrium 230 Tape Drive, External (Carbon)	Q1517A
HP StorageWorks Ultrium 230, Rack-mount (Carbon) - Single drive installed in a 3U rack-mount kit	350545-B21
HP StorageWorks Ultrium 230 Array Module (Carbon) - Offline hot-swap drive for Tape Array 5300	C7470B
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 460 Tape Drive, External (Carbon)	Q1520A
HP StorageWorks Ultrium 460, Rack-mount (Carbon) - Single drive installed in a 3U rack-mount kit	350546-B21
HP StorageWorks Ultrium 460 Array Module (Carbon) - Offline hot-swap drive for Tape Array 5300	Q1512B
HP StorageWorks Ultrium 960 Tape Drive, External (Carbonite)	Q1539A
HP StorageWorks Ultrium 960 Rack-mount (Carbonite) - Single drive installed in a 3U rack-mount kit	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)

http://h18006.www1.hp.com/products/quickspecs/12128_div/12128_div.html (Worldwide)

http://h18006.www1.hp.com/products/quickspecs/12128_na/12128_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>

External, Hot-Plug, and Array Module DAT Drives

HP StorageWorks DAT 72 Tape Drive, External (Carbon)	Q1523A
HP StorageWorks DAT 72 Tape Drive, Internal Hot-Plug (Carbon)	Q1529A
HP StorageWorks DAT 72 Array Module (Carbon) - Offline hot-swap drive for Tape Array 5300	Q1524B
HP StorageWorks DAT 40 Tape Drive, External (Carbon)	C5687C
HP StorageWorks DAT 40 Tape Drive, Internal Hot-Plug (Carbon)	Q1546A
HP StorageWorks DAT 40 Array Module (Carbon) - Offline hot-swap drive for Tape Array 5300	C7497B
HP StorageWorks DAT 24e Tape Drive, External (Flint)	C1556D
HP StorageWorks DAT 24 Array Module (Carbon) - Offline hot-swap drive for Tape Array 5300	C7498A

NOTE: Please see the DAT Tape Drive QuickSpecs for controllers, media, and other options:

http://h18000.www1.hp.com/products/quickspecs/11883_div/11883_div.HTML (Worldwide)

http://h18000.www1.hp.com/products/quickspecs/11883_na/11883_na.HTML (North America)

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

External DLT VS Tape Drives

HP StorageWorks DLT VS80 Tape Drive, External (Carbon) NA	337699-B22
HP StorageWorks DLT VS80 Tape Drive, External (Carbon) Int'l	337699-B31
HP StorageWorks DLT VS80 Tape Drive, External (Carbon) Japan	337699-291

Options

NOTE: Please see the DLT VS80 Tape Drive QuickSpecs for additional options such as host bus adapters, controllers, media, and other options:

http://h18006.www1.hp.com/products/quickspecs/11403_div/11403_div.HTML (Worldwide)

http://h18006.www1.hp.com/products/quickspecs/11403_na/11403_na.HTML

(North America)

For an up-to-date listing of the latest O/S and software support details for the DLT VS80, please visit:

<http://www.hp.com/go/connect>

External and Rack-mount SDLT Tape Drives

HP StorageWorks SDLT 320 Tape Drive, External (Carbon) NA 257319-001

HP StorageWorks SDLT 320 Tape Drive, External (Carbon) Int'l 257319-B31

HP StorageWorks SDLT 320 Tape Drive, External (Carbon) Japan 257319-291

NOTE: Please see the SDLT 320 Tape Drive QuickSpecs for additional options such as adapters, controllers, and media.

http://h18006.www1.hp.com/products/quickspecs/11840_div/11840_div.HTML (Worldwide)

http://h18006.www1.hp.com/products/quickspecs/11840_na/11840_na.HTML

(North America)

For an up-to-date listing of the latest O/S and software support details for HP SDLT 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 compatible with multiple Single-Ended and LVD SCSI tape drives including DAT 24, DAT40, DAT72, DLT VS 80, and Ultrium 215 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, DLT VS80, SDLT 320, Ultrium 215, Ultrium 230, and Ultrium 460 Tape Drives.

HP StorageWorks 5U Rack-Mount Kit 274339-B21

NOTE: The 5U Rack-Mount Kit can support up to 4 full-height tape drives and is compatible with SDLT 320, Ultrium 230, and Ultrium 460 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)

HP StorageWorks Tape Array 5300 C7508A

NOTE: The Tape Array 5300 is a 3U enclosure that supports up to 2 full-height or 4 half-height hot-swap array modules, including DAT and Ultrium tape drives. Cables and terminators are not included and must be ordered separately.

NOTE: Please see the Tape Array 5300 QuickSpecs for additional information regarding this product.

http://h18000.www1.hp.com/products/quickspecs/11878_div/11878_div.HTML (Worldwide)

http://h18000.www1.hp.com/products/quickspecs/11878_na/11878_na.HTML

(North America)

Accessories for 3U & 5U Rack-mount Tape Drive Kits

LVD Cable Kit, VHDCI/HD68 168048-B21

NOTE: For use with the 3U Rack-mount Kit and 5U Rack-mount Kit only.

LVD Cable Kit, HD68/HD68 242381-B21

NOTE: For use with the 3U Rack-mount Kit and 5U Rack-mount Kit only.

Accessories for 3U & 5U Rack-mount Tape Drive Kits

PSU/Fan Upgrade Kit - Redundant hot-swap power supply unit and fan for Tape Array 5300.

68-pin HD multi-mode terminator C2364A

1.0m 68-pin VHDCI to 68-pin HD cable C2361B

2.5m 68-pin VHDCI to 68-pin HD cable C2362B

5.0m 68-pin VHDCI to 68-pin HD cable C2365A

10.0m 68-pin VHDCI to 68-pin HD cable C2363B

Options

0.5m 68-pin HDI to 68-pin HD cable LVD/SE	C2978B
1.5m 68-pin HDI to 68-pin HD cable LVD/SE	C2979B
0.9m 68-pin HDI to 68-pin HD cable LVD/SE	C2911C
2.5m 68-pin HDI to 68-pin HD cable LVD/SE	C2924C
NOTE: For use with Tape Array 5300 only	

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

1/8 Ultrium 460 Tape Autoloader, Tabletop	AA927A
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

MSL6030, 1 drive, 30 slots, Ultrium 460, RM	330731-B22
MSL6030, 2 drive, 30 slots, Ultrium 460, RM	330731-B23
MSL6030, 1 drive, 30 slots, Ultrium 460, RM with embedded FC router	330731-B24
MSL6030, 2 drive, 30 slots, Ultrium 460, RM with embedded FC router	330731-B25
MSL6060, 2 drive, 60 slot, Ultrium 460, RM	331196-B21
MSL6060, 2 drive, 60 slot, Ultrium 460, RM with embedded FC router	331196-B22

NOTE: Please reference the 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>

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

Options

NOTE: Please reference the MSL5026S2 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>

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

HP StorageWorks MSL5030 Tape Library

MSL5030, 1 drive, 30 slots, Ultrium 230, RM	301897-B22
MSL5030, 2 drive, 30 slots, Ultrium 230, RM	301897-B23
MSL5030, 1 drive, 30 slots, Ultrium 230, RM with embedded FC router	301897-B24
MSL5030, 2 drive, 30 slots, Ultrium 230, RM with embedded FC router	301897-B25

NOTE: Please reference the MSL5030 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>

HP StorageWorks MSL5060 Tape Library

MSL5060, 2 drive, 60 slots, Ultrium 230, RM	301899-B22
MSL5060, 2 drive, 60 slots, Ultrium 230, RM with embedded FC router	301899-B23

NOTE: Please reference the MSL5060 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>

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

HP StorageWorks ESL9000 Series Tape Libraries

ESL9595 Extended Tape Library, 0 drive, 400 slots (card cage, Interface Mgr card, Command View license)	343378-B21
ESL9322 Extended Tape Library, 0 drive, 222 slots (card cage, Interface Mgr card, Command View license)	343377-B21
ESL9000 Ultrium 460 drive kit	330834-B21
ESL9000 Ultrium 230 drive kit	301930-B21
ESL9000 SDLT 320 drive kit	293414-B21

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

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

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

HP StorageWorks Modular Smart Array 500

HP StorageWorks Modular Smart Array 500 Generation 2

335880-B21

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)

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)	
	ProLiant Cluster HA/F200 for the Entry Level SAN	364026-B21
	ProLiant Cluster HA/F200 for the Entry Level SAN (Japan)	364026-291
	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 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
	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

External Storage – Rack	HP StorageWorks Modular Smart Array 20	335921-B21
	NOTE: Rack-mountable 12 (SATA) drive enclosure with U320 Host connectivity, redundant power supplies.	
	HP StorageWorks Modular Smart Array 20 Starter Kit	366172-B21
	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.	
	HP StorageWorks Modular Smart Array 30 SB	302969-B21
	NOTE: Rack-mountable 14 drive enclosure with single bus, redundant power supplies.	
HP StorageWorks Modular Smart Array 30 DB	HP StorageWorks Modular Smart Array 30 DB	302970-B21
	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.	
	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
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HP StorageWorks Modular Smart Array 1500 cs	Modular Smart Array 1500 Controller Shelf	AA986A
	NOTE: Please see the StorageWorks Modular SAN Array 1500 cs QuickSpecs for additional options and configuration information at: http://www.hp.com/go/MSA1500cs	
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HP StorageWorks Modular Smart Array 1000	HP StorageWorks Modular Smart Array 1000	201723-B22
	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)	
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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 (North America) http://h18000.www1.hp.com/products/quickspecs/11003_div/11003_div.HTML (Worldwide)	
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UPS Power Cord Matrix	<i>Please see the UPS Power Cord Matrix for cable descriptions, requirements, and specifications for UPS units.</i> ftp://ftp.compaq.com/pub/products/servers/ProLiantstorage/power-protection/powercordmatrix.pdf .	
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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)	207552-B22
	NOTE: The UPS R12000 XR has a hardwired input and output connection.	
HP Power Distribution Unit with Power Monitoring	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	
Modular Power Distribution Units 1U/OU (Up to 32 outlets) NOTE: 1U/OU 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)	252663-D71
	NOTE: This mPDU (252663-D71) may also be used to connect the low volt model of the UPS R3000 XR.	
	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)	252663-B21
NOTE: This mPDU (252663-B21), 40A model has a hardwired input.		
HP Modular Power Distribution Units (mPDU), High Volt Model, 16A (200-240 VAC) (WW)	252663-B24	
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)		
USB Options	USB 2-Button Optical Scroll Mouse (Carbonite/Silver)	DC172B
	USB 1.44-MB External Diskette Drive (Carbonite)	DC141B

Options

Custom Builder	Please see the Enterprise Configurator for configuration assistance at: http://www.hp.com/products/configurator .	
Rack Kit	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".	
Telco Rack Support	DL380 G3 Telco Rack Kit: Support for all 2-post Telco racks requires the use of the standard rack kit and an additional option kit from Rack Solutions (http://www.racksolutions.com/hp).	
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 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	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

Options

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>.

HP KVM Switch Options	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

NOTE: For additional information regarding HP KVM Switches and options, please see the following URL:
<http://h18004.www1.hp.com/products/servers/proliantstorage/rack-options/list.html#console>

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).	

Options

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	U4697A
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	U4698A
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	U4699A
6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	U4699E

Installation & Start-up Services

Hardware Installation	U4707A
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.	U4708A
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.	U4709A
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	U4711A
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.	U4710A
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.	U4712A
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 2P Models or 2.0 GHz (1P) Model 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:

- 512MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (2x256MB) 300678-B21
- 1024MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (2x512MB) 300679-B21
- 2048MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (2x1024MB) 300680-B21
- 4096MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (2x 2048 MB) 300682-B21

HP ProLiant DL560 1P Models Standard Memory

512 MB PC2100 Registered DDR SDRAM DIMM Memory comes installed (2 x 256-MB SDRAM)

Standard Memory Plus Optional Memory

Up to 8,704-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 512-MB of memory, the optional installation of PC2100 Registered DDR SDRAM DIMM Memory Option Kit

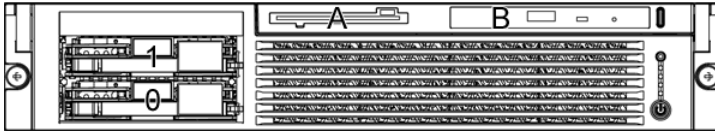
NOTE: Memory must be added in banks of two DIMMS. This chart does not represent all possible memory configurations.

Memory		Standard Memory Board (Slots)					
		1	2	3	4	5	6
Standard	512 MB	256 MB	256 MB	Empty	Empty	Empty	Empty
Optional	8,704 MB	256 MB	256 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:

- 512MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (2x256MB) 300678-B21
- 1024MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (2x512MB) 300679-B21
- 2048MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (2x1024MB) 300680-B21
- 4096MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (2x 2048 MB) 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	C	Integrated
Ejectable IDE slim-line CD-ROM Drive	Up to 1	B	Integrated IDE
Ejectable Slimline DVD-ROM Drive (8X/24X) Option Kit	Up to 1	B	Integrated IDE

Hard Drives

Ultra320 Hot Pluggable Drives

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

	Quantity Supported	Position Supported	Controller
HP StorageWorks DAT 40 Tape Drive, Internal Hot-Plug HP StorageWorks DAT 72 Tape Drive, Internal Hot-Plug	Up to 1	0+ 1 or 2+ 3	Smart Array 5i Controller (integrated on system board) Smart Array 6402/128 Controller Smart Array 6404/256 Controller Smart Array 642 Controller Smart Array 641 Controller 64-Bit/133-MHz Dual Channel Ultra320 SCSI Adapter 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS
HP StorageWorks Tape Drives, External Ultrium 215 Ultrium 230	Up to 2 per controller	External	64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS

Storage

Ultrium 448
 Ultrium 460
 SDLT 320 Tape Drive

HP StorageWorks Tape Drives, External Up to 3 per controller External 64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter
 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS
 DAT 72 Tape Drive
 DAT 40 Tape Drive
 DAT 24 Tape Drive
 DLT VS80 Tape Drive

HP StorageWorks Autoloaders, External 1 autoloader per SCSI channel External 64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter
 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS
 DAT 72x6 Tape Autoloader
 1/8 Tape Autoloader
 SSL1016 Tape Autoloader

HP StorageWorks Rack-mount Tape Drive Enclosures 1 per SCSI channel External 64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter
 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS
 1U Rack-Mount Kit
 3U Rack-Mount Kit
 5U Rack-Mount Kit

HP StorageWorks Tape Libraries, External Please reference the MSL Tape Library QuickSpecs to determine configuration requirements External 64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter
 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS
 MSL6060 (Ultrium 460 -based)
 MSL6030 (Ultrium 460 -based)
 MSL5026S2 (SDLT 320-based)
 MSL5052S2 (SDLT 320-based)
 MSL5030 (Ultrium 230 -based)
 MSL5060 (Ultrium 230 -based)

HP StorageWorks ESL E-Series Tape Libraries Please reference the ESL E-series Tape Libraries QuickSpecs to determine configuration requirements External 64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter
 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS
 ESL 712e
 ESL 630e
 ESL 322e
 ESL 286e

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	<p>Maximum (2 Power Supplies, 2 Hard Drives) 60 lb (27 kg)</p> <p>Minimum (No hard drives installed, one power supply) 35 lb (16 kg)</p>
	Input Requirements	<p>Rated Input Voltage 100 to 120 VAC/200 to 240 VAC</p> <p>Rated Input Frequency 50 to 60 Hz</p> <p>Input Power 690W @ 115 VAC/675W @ 230 VAC</p> <p>Rated Input Current 7A (100 VAC), 6A (115 VAC), 3A (230 VAC)</p>
	Max BTU Rating	2375 BTU (550 Watts)
	Power Supply Output Power (per power supply)	<p>Rated Steady-State Power 550W/550W (lowline/highline)</p> <p>Maximum Peak Power 550W/550W (lowline/highline)</p>
	Temperature Range	<p>Operating 50° to 95° F (10° to 35° C)</p> <p>Non-operating -20° to 140° F (-29° to 60° C)</p> <p>Shipping -22° to 122° F (-30° to 50° C)</p>
	Relative Humidity (non-condensing)	<p>Operating 10% to 70%</p> <p>Non-operating 5% to 95%</p>
	Maximum Wet Bulb Temperature	101.7° F (38.7° C)
	Acoustic Noise	<p>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.</p> <p>Idle (Fixed Disk Drives Spinning)</p> <p>L WAd (BELS) 6.0</p> <p>L pAm (dBA) 46</p> <p>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.</p>

Technical Specifications

24X Max (or higher) IDE CD-ROM Drive Slim Line	Disk	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 μ m
	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)	< 7seconds	
	Stop Time	< 4seconds	
	Laser Parameters	Type	Semiconductor Laser GaAlAs
		Wave Length	780 \pm 25 nm
		Divergence Angle	53.5 $^{\circ}$ \pm 1.5 $^{\circ}$
		Output Power	0.14 mW
	Operating Conditions	Temperature	41 $^{\circ}$ to 113 $^{\circ}$ F (5 $^{\circ}$ to 45 $^{\circ}$ 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)

Slim Line 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 CD-I (mode 2) CD-I Ready

Technical Specifications

		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		

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

Technical Specifications

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
	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

Technical Specifications

Two NC7781 PCI-X Gigabit NICs (embedded) Server Adapter	Network Interface	10/100/1000-T	
	Compatibility	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		
Cable Support	10Base-T	Category 3,4 or 5 UTP up to 328 ft (100 m)	
	10/100/1000Base-T	Category 5 UTP (2 pair); up to 328 ft (100 m)	

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