Overview
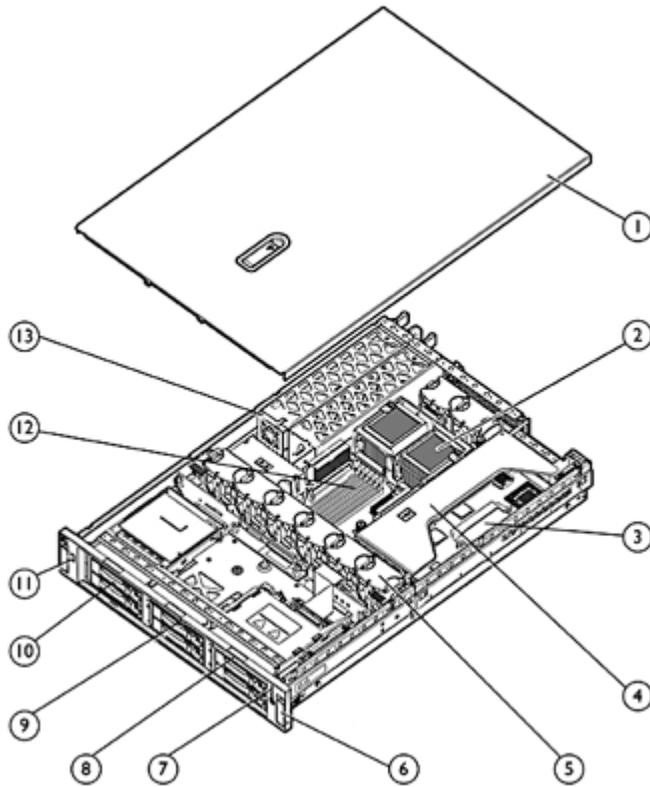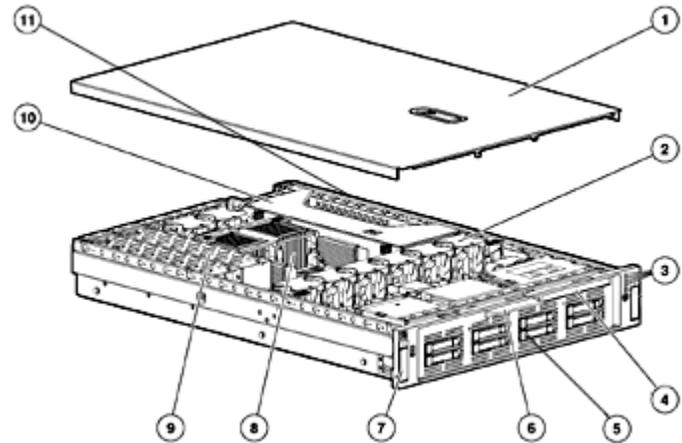
SCSI Model   SAS Model

1. Quick removal access panel

2. Intel Xeon Processor (High performance models include two processors)

3. Smart Array 6i Ultra320 array controller with optional 128MB Battery Backed Write Cache (BBWC) or Smart Array P600 controller with standard 256MB Battery Backed Write Cache. (All High performance models include BBWC)

4. Three PCI-X non-hot plug expansion slots (or optional PCI-X hot plug expansion cage or PCI Express expansion cage)

5. Hot-plug fans, full redundancy option (All 2M Cache models and High performance models include fully redundant fans)

6. Quick release lever for fast server access

7. Front LEDs (show server status) and Unit Identification button/LED (for easy in rack server identification)

8. 24X Max CD-ROM (High performance models include DVD-ROM drive)

9. Optional 1.44 MB (3.5") Diskette Drive (High performance models include Diskette Disk Drive)

10. Support for six 1" Ultra320 SCSI hot plug hard drives (or five hot plug hard drives and one DAT 40 or DAT 72 hot plug tape drive)

11. USB port (USB 2.0 Support)

1. Quick removal access panel

2. Hot-plug fans, full redundancy option (All 2M Cache models and High performance models include fully redundant fans)

3. Front LEDs (show server status) and Unit Identification button/LED (for easy in rack server identification)

4. Hot-plug fans, full redundancy option (All 2M Cache models and High performance models include fully redundant fans)

5. Support for eight universal small form factor hot plug hard drives

6. Optional 1.44 MB (3.5") Diskette Drive (High performance models include Diskette Disk Drive)

7. Quick release lever for fast server access

8. Intel Xeon Processor (High performance models include two processors)

9. Hot plug power supply, redundancy option (High performance models include redundant power supply)

10. Three PCI-X non-hot plug expansion slots (or optional PCI-X hot plug expansion cage or PCI Express expansion cage)

11. Smart Array P600 controller with standard 256MB Battery Backed Write Cache. (All High performance models include BBWC)

Overview

12. Hot plug power supply, redundancy option (High performance models include redundant power supply)
13. Six PC2-3200R 400MHz DDR2 Sockets

What's New

Protect your investment and increase efficiency with new HP ProLiant DL380 G4 SAS Models

- Support for 8 Small Form Factor hot-plug SAS (Serial Attached SCSI) or SATA (Serial ATA) hard drives for ultimate flexibility and improved efficiency
- Featuring the Smart Array P600 performance array controller for maximum throughput and reliable data protection
- Small Form Factor (SFF) drives are the new universal standard

At a Glance

- 64-bit Intel® Xeon™ processors (up to 3.6 GHz), a 800MHz Front Side Bus and 1MB or 2MB of L2 cache (two processors included in High Performance models)
- High performance models based on the 3.4GHz 2MB Intel Xeon Processor and the 3.6GHz 2MB Intel Xeon Processor
- Intel E7520 Chipset
- 1GB PC2-3200R 400MHz DDR2 Memory with online spare capabilities (2GB included in High Performance model)
- Support for dual-rank 400MHz DDR2 memory
- SAS (Serial attached SCSI) models include the Smart Array P600 Performance SAS Array Controller with 256MB Battery-Backed Write Cache. SCSI models include the integrated Smart Array 6i Ultra 320 Array Controller with optional 128MB of Battery Backed Write Cache (BBWC standard on all high performance models)
- (8) small form factor hot-plug drive bays or (6) hot-plug U320 SCSI drive bays, SCSI models have (1) 1.6" bay that supports a hot-plug DAT tape backup drive
- HP Power Regulator for ProLiant, delivering server level, policy based power management with industry leading energy efficiency and savings on system power and cooling costs
- Integrated Lights-Out support for Power Regulator for ProLiant and introducing support for the draft DMTF System Management Architecture for Server Hardware Command Line Protocol standard
- Internal hot plug capacity 1.8 TB standard (6 x 300 GB 1" HD)
- Hot Plug Fans with optional full redundancy (Included in 2M Cache and High performance models)
- Hot Plug Power Supply with optional redundancy (Included in High performance models)
- Tool-less access to all system components for easy in rack serviceability
- Three 64-bit PCI-X slots (2 available on SAS models), including two non-hot plug 100MHz slots and one non-hot plug 133MHz slot or optional PCI-X Hot-plug cage or Optional PCI Express Non-hot plug Cage (U320 SCSI Models only)
- Embedded NC7782 Dual Port PCI-X 10/100/1000T Gigabit network adapter
- Optional dual channel drive backplane (2/4 split) for U320 SCSI models (Included in SCSI High Performance Models)
- Optional dual channel drive backplane (2/4 split) (Included in High Performance Models)
- Optional floppy disk drive (Included in High Performance Models)
- USB 2.0 support, one port up front and two ports in back
- Quick Deploy Rail System includes sliding universal rails, an ambidextrous cable management arm and quick release levers for fast and easy serviceability and in-rack tool-less access to major components
- High performance models available fully loaded for convenience
- Integrated Lights-Out (iLO) Standard Management on system board
- Support for new iLO Shared Network Port enables access to the iLO management processor through one of the embedded system NICs
- Automatic Server Recovery (ASR), ROM Based Setup Utility (RBSU), HP System Insight Manager, Status LEDs including system health and UID and SmartStart
- Protected by HP Services, including a three-year, Next Business Day, on-site limited Global warranty and extended Pre-Failure Warranty, which covers processors, memory, and hard drives - Certain restrictions and exclusions apply.

QuickSpecs

Standard Features

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

Processor One of the following depending on Model	Intel Xeon Processor 3.2 GHz/800MHz -1MB L2
	Intel Xeon Processor 3.4 GHz/800MHz -1MB L2
	Intel Xeon Processor 3.6 GHz/800MHz -1MB L2
	Intel Xeon Processor 3.0 GHz/800MHz -2MB L2
	Intel Xeon Processor 3.2 GHz/800MHz -2MB L2
	Intel Xeon Processor 3.4 GHz/800MHz -2MB L2
	Intel Xeon Processor 3.6 GHz/800MHz -2MB L2

Cache Memory One of the following depending on Model	1-MB Level 2 cache
	2-MB Level 2 cache

Upgradeability	Upgradeable to dual processing

Chipset	Intel E7520 Chipset NOTE: For more information regarding Intel chipsets, please see the following URL: http://www.intel.com/products/server/chipsets/.

Memory Protection	Online spare Advanced ECC

Memory One of the following depending on model	Type	PC2-3200R 400MHz DDR2
	Standard (base models)	1024MB
	Standard (High Performance models)	2048MB
	Maximum	12 GB

Network Controller	Embedded NC7782 Dual Port PCI-X 10/100/1000T Gigabit network adapter

QuickSpecs

HP ProLiant DL380 Generation 4 (G4)

Standard Features

PCI-X Non-Hot Plug Riser

Expansion Slots	Slot Number	Bus Speed	Bus Number*	Device Number**	Hot Plug	PCI Voltage
	1	64-bit/133MHz PCI-X	10	1	no	3.3 Volt
	2	64-bit/100MHz PCI-X	6	1	no	3.3 Volt
	3	64-bit/100MHz PCI-X	6	2	no	3.3 Volt

NOTE: The Smart Array P600 SAS array controller with 256MB BBWC installed in Slot 1 on SAS models.
NOTE: Universal cards are supported.

PCI-X Hot Plug Riser (Optional)

	1	64-bit/133MHz PCI-X	10	1	no	3.3 Volt
	2	64-bit/100MHz PCI-X	6	1	yes	3.3 Volt
	3	64-bit/100MHz PCI-X	6	2	yes	3.3 Volt

NOTE: Universal cards are supported

PCI Express Non-Hot Plug Riser
(Optional on U320 SCSI Models only)

	1	PCI Express x4	8	0	no	NA
	2	PCI Express x4	5	0	no	NA

NOTE: x8 cards are supported but will run at x4 speeds.
*NOTE: Default bus assignment. Inserting cards with PCI bridges may alter the actual bus assignment number.
**NOTE: Slots are enumerated differently based on OS. MS OS's enumerate from lowest to highest Device ID by bus (starting with the lowest bus).
NOTE: For more information regarding PCI-X, please see the following URL: http://www.HP.com/servers/pci-x.

Storage Controller	Smart Array 6i Controller (integrated on system board) OR Smart Array P600 with 256MB battery-backed write cache (SAS Models)

Storage	Diskette Drive	1.44 MB Diskette Drive (optional on some models)
	Optical Drive	24x IDE CD-ROM (IDE DVD-ROM included on High performance models)
	Hard Drives	None Standard NOTE: U320 SCSI models can be operated in single channel or dual channel (2/4 split). SCSI configuration kit (364471-B21) is required for dual channel configurations.

Maximum Internal Storage Type	Hot Plug U320 SCSI	1.8 TB	6 x 300 GB with standard internal hot plug SCSI drive cage
	Hot Plug SAS	576 GB	8 x 72 GB with standard internal hot plug small form factor SAS drive cage

Standard Features

Interfaces	Serial	1
	Pointing Device (Mouse)	1
	Graphics	1
	Keyboard	1
	External SCSI (VHDCI)	1
	Network RJ-45	3 (1 for iLO)
	USB	3 (1 front, 2 back)

NOTE: Please see the following URL for additional information regarding USB support: http://h18004.www1.hp.com/products/servers/platforms/usb-support.html.

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

Form Factor	Rack (2U), (3.5-inch)

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 HP SIM visit http://www.hp.com/go/hpsim.
	SmartStart	SmartStart is a tool that simplifies server setup, providing a rapid way to deploy reliable and consistent server configurations. For more information, please visit the SmartStart Web site at: http://www.hp.com/servers/smartstart SmartStart version supported (minimum): SmartStart 7.10 SmartStart version supported (minimum for SCSI models): SmartStart 7.10 SmartStart version supported (minimum for SAS models): SmartStart 7.30
	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 HP 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

Standard Features

Subscribers 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 http://www.hp.com/go/support.
Insight Diagnostics Online Edition	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.
- 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 WOL Support Microsoft® Logo certifications USB 2.0 Support

Remote Management Integrated Lights Out (iLO) Standard Management:

- Virtual Text Remote Console
- Virtual Power Button Control
- Dedicated & shared LAN Connectivity
- Browser and command line access
- Automatic IP Configuration via DHCP/DNS/WINS
- Industry Standard 128-bit Secure Sockets Layer (SSL) and Secure Shell Security
- IML and iLO Event Logging
- Support for 12 user accounts with customizable access privilege
- Integrated Lights Out Advanced Pack (optional)
- Remote Insight Lights-Out Edition II (optional)

Intelligent Manageability HP Systems Insight Manager
SmartStart
Redundant ROM
Remote Flash ROM
Management Agent
Integrated Management Log
Automatic Server Recovery (ASR)
Dynamic Sector Repairing (with Smart Array Controllers)
Drive Parameter Tracking (with Smart Array Controllers)
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).)
Pre-Failure Warranty (covers processors, hard drives and memory)

Server Power Cords One Lowline NEMA power cord and One Highline IEC Power cord ships standard

Power Supply 575 Watt, CE Mark Compliant
Optional Hot Plug AC Redundant Power Supply

System Fans 5 hot plug fans ship standard. 8 hot plug fans total supported internally for full redundancy
NOTE: The additional 3 fans are available via Redundant Fan Option Kit (PN 293048-B21), this kit is included with all high performance, SAS models and 2MB cache models.

Required Cabling For required cabling information, refer to the Web site at:
http://h18000.www1.hp.com/products/servers/proliantDL380/.

Standard Features

OS Support   Microsoft Windows Server 2000
                Microsoft Windows Server 2003
                Novell NetWare
                LINUX (Red Hat, SuSE)
                SCO UnixWare, OpenServer

NOTE: For more complete and up-to-date information on how to buy server operating systems from HP please visit the OS product site at: http://h18004.www1.hp.com/products/servers/software/OEM.html.
NOTE: For a more complete and up-to-date listing of supported OSs and versions, please visit our OS Support Matrix at: http://www.hp.com/go/supportos.
NOTE: For an up-to-date listing of the latest drivers available for the HP ProLiant DL380 G4, please see: http://h18023.www1.hp.com/support/files/server/us/index.html.
NOTE: For a more complete and up-to-date information on Linux support, please visit HP Linux Web site at: http://h18000.www1.hp.com/products/servers/linux/hpLinuxcert.html.

Rack Airflow   **Rack 10000 series Cabinets**
Requirements   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:

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

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

NOTE: For additional information, refer to the Setup and Installation Guide or the Documentation CD provided with the server, or to the server documentation located in the Support section at the following URL: http://h18000.www1.hp.com/products/servers/proliantdl380/index.html.

Rack Kit   The HP ProLiant DL380 quick deploy rail system provides tool-free support for racks with square or round mounting holes (including Compaq/HP 7000*, 9000, 10000 and HP series), with an adjustment range of 24" - 36". The ambidextrous cable management arm can be mounted on either the left or right side for improved cable management.
NOTE: Cable management arm must be removed to access hot-plug power supplies when the cable management arm is mounted on the right.
*NOTE: High Airflow Inserts (High Air Flow Rack Door Insert for the 7142 Rack (single) – PN: 327281-B21; or High Air Flow Rack Door Insert for the 7142 Rack (6-pack) – PN: 327281-B22) are required to support the HP ProLiant DL380 G4 in 7000 series racks. The DL380 G4 Cable Management Arm is not supported on 7000 series racks.

Standard Features

Telco Rack Support	DL380 G4 Telco Rack Kit: Support for all 2-post Telco racks requires the use of the standard rack kit and an additional option kit from Rack Solutions (http://www.racksolutions.com/hp/)

Factory Express Portfolio for Servers and Storage

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

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the MSA1000, VA7xxx, EVA3000 & EVA5000, XP, rackable tape libraries and configurable network switches.

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

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 next business day on-site support.
NOTE: SATA drives have a 1 year warranty.

From Web-based support…to remote diagnostic tools that help decrease downtime…to dedicated onsite service, HP and its service partners provide "as-you-need-it" access to ProLiant-specific knowledge and skills no other vendor can match.

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 services helps you get your ProLiant servers deployed rapidly
- Education courses provide industry leading training for IT professionals
- Support services for fast, efficient resolution of hardware and software issues
- Extending onsite hardware warranty coverage from next business day to same business day 13 hours, 5 day or 24 hours, 7 days call window with options including 4-hour response or 6-hour Call To Repair
- Comprehensive range of software technical support for Microsoft, Linux, ProLiant Essentials and VMWare-based IT solutions helping to deliver high level of application availability. Response times range from 30 mins for critical problems to 2 hours.
- System Management, Performance Services and Mission Critical Support Solution

HP Care Pack services include coverage for the HP branded hardware options qualified for the server, purchased at the same time or afterward, internal to the enclosure, as well as 22" and smaller external monitors and tower UPS options up to 3kVA; these items will be covered at the same service level and for the same coverage period as the server. Coverage of UPS Battery is not included, standard warranty terms & conditions apply. For servers or storage systems installed within a rack, service also covers all HP qualified rack options installed within the same rack.

Standard Features

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 information on Software Support offers contact any of our worldwide sales offices or resellers or visit our worldwide Web site on the internet at: http://www.hp.com/hps/software

NOTE: For more information on HP ProLiant Essentials support offers contact any of our worldwide sales offices or resellers or visit our worldwide Web site on the internet at: http://www.hp.com/hps/servers/sr_proliant_essentials.html

NOTE: For more information on HP training offers contact any of our worldwide sales offices or resellers or visit our worldwide Web site on the internet at: http://www.hp.com/education/

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

QuickSpecs

Models

SAS Models

**DL380R04 X3.0-
2MB/800, 1GB SAS**
382483-xx1

Processor(s)	(1) Intel Xeon Processor 3.0 GHz (up to 2 supported)
Cache Memory	2MB level 2 cache per processor
Memory	1 GB (2 x 512MB) of 2-way interleaved PC2-3200R 400MHz DDR2 with Advanced ECC and online spare memory capabilities
Network Controller	Embedded NC7782 Dual Port PCI-X 10/100/1000T Gigabit network adapter
Storage Controller	SAS Smart Array P600 Controller with 256MB battery-backed write cache (installed in PCI-X slot)
Hard Drive	None ship standard
Internal Storage	576 GB max - 8 x 72 GB SAS drives (with optional hard drives)
Optical Drive	24x IDE CD-ROM (Universal Media Bay)
Diskette Drive	Optional
Form Factor	Rack (2U), (3.5-inch)
Availability	Hot Plug Fully Redundant Fans Standard

**DL380R04 X3.4-
2MB/800, 1GB SAS**
382484-xx1

Processor(s)	(1) Intel Xeon Processor 3.4 GHz (up to 2 supported)
Cache Memory	2MB level 2 cache per processor
Memory	1 GB (2 x 512MB) of 2-way interleaved PC2-3200R 400MHz DDR2 with Advanced ECC and online spare memory capabilities
Network Controller	Embedded NC7782 Dual Port PCI-X 10/100/1000T Gigabit network adapter
Storage Controller	SAS Smart Array P600 Controller with 256MB battery-backed write cache (installed in PCI-X slot)
Hard Drive	None ship standard
Internal Storage	576 GB max - 8 x 72 GB SAS drives (with optional hard drives)
Optical Drive	24x IDE CD-ROM (Universal Media Bay)
Diskette Drive	Optional
Form Factor	Rack (2U), (3.5-inch)
Availability	Hot Plug Fully Redundant Fans Standard

QuickSpecs

Models

DL380R04 X3.6-2MB/800, 2GB SAS High Performance 382485-xx1		
	Processor(s)	(2) Intel Xeon Processor 3.6 GHz
	Cache Memory	2MB level 2 cache per processor
	Memory	2 GB (2 x 1024MB) of 2-way interleaved PC2-3200R 400MHz DDR2 with Advanced ECC and online spare memory capabilities
	Network Controller	Embedded NC7782 Dual Port PCI-X 10/100/1000T Gigabit network adapter
	Storage Controller	SAS Smart Array P600 Controller with 256MB battery-backed write cache (installed in PCI-X slot)
	Hard Drive	None ship standard
	Internal Storage	576 GB max - 8 x 72 GB SAS drives (with optional hard drives)
	Optical Drive	DVD-ROM Drive
	Diskette Drive	1.44 MB Diskette Drive
	Form Factor	Rack (2U), (3.5-inch)
	Availability	Hot Plug Fully Redundant Fans Standards Hot Plug Redundant Power Supplies Standard

Models (Processors with 2MB Level 2 cache)

DL380R04 X3.6-2MB/800, 1GB 378739-xx1		
	Processor(s)	(1) Intel Xeon Processor 3.6 GHz (up to 2 supported)
	Cache Memory	2MB level 2 cache per processor
	Memory	1 GB (2 x 512MB) of 2-way interleaved PC2-3200R 400MHz DDR2 with Advanced ECC and online spare memory capabilities
	Network Controller	Embedded NC7782 Dual Port PCI-X 10/100/1000T Gigabit network adapter
	Storage Controller	Ultra320 Smart Array 6i Controller (integrated on system board)
	Hard Drive	None ship standard
	Internal Storage	1.8 TB max (with optional hard drives)
	Optical Drive	24x IDE CD-ROM (Universal Media Bay)
	Diskette Drive	Optional
	Form Factor	Rack (2U), (3.5-inch)
	Availability	Hot Plug Fully Redundant Fans Standard

Models

DL380R04 X3.4- 2MB/800, 1GB 378737-xx1	Processor(s)	(1) Intel Xeon Processor 3.4 GHz (up to 2 supported)
	Cache Memory	2MB level 2 cache per processor
	Memory	1 GB (2 x 512MB) of 2-way interleaved PC2-3200R 400MHz DDR2 with Advanced ECC and online spare memory capabilities
	Network Controller	Embedded NC7782 Dual Port PCI-X 10/100/1000T Gigabit network adapter
	Storage Controller	Ultra320 Smart Array 6i Controller (integrated on system board)
	Hard Drive	None ship standard
	Internal Storage	1.8 TB max (with optional hard drives)
	Optical Drive	24x IDE CD-ROM (Universal Media Bay)
	Diskette Drive	Optional
	Form Factor	Rack (2U), (3.5-inch)
	Availability	Hot Plug Fully Redundant Fans Standard

DL380R04 X3.2- 2MB/800, 1GB 378736-xx1	Processor(s)	(1) Intel Xeon Processor 3.2 GHz (up to 2 supported)
	Cache Memory	2MB level 2 cache per processor
	Memory	1 GB (2 x 512MB) of 2-way interleaved PC2-3200R 400MHz DDR2 with Advanced ECC and online spare memory capabilities
	Network Controller	Embedded NC7782 Dual Port PCI-X 10/100/1000T Gigabit network adapter
	Storage Controller	Ultra320 Smart Array 6i Controller (integrated on system board)
	Hard Drive	None ship standard
	Internal Storage	1.8 TB max (with optional hard drives)
	Optical Drive	24x IDE CD-ROM (Universal Media Bay)
	Diskette Drive	Optional
	Form Factor	Rack (2U), (3.5-inch)
	Availability	Hot Plug Fully Redundant Fans Standard

DL380R04 X3.0- 2MB/800, 1GB 378735-xx1	Processor(s)	(1) Intel Xeon Processor 3.0 GHz (up to 2 supported)
	Cache Memory	2MB level 2 cache per processor
	Memory	1 GB (2 x 512MB) of 2-way interleaved PC2-3200R 400MHz DDR2 with Advanced ECC and online spare memory capabilities
	Network Controller	Embedded NC7782 Dual Port PCI-X 10/100/1000T Gigabit network adapter
	Storage Controller	Ultra320 Smart Array 6i Controller (integrated on system board)
	Hard Drive	None ship standard
	Internal Storage	1.8 TB max (with optional hard drives)
	Optical Drive	24x IDE CD-ROM (Universal Media Bay)
	Diskette Drive	Optional
	Form Factor	Rack (2U), (3.5-inch)
	Availability	Hot Plug Fully Redundant Fans Standard

QuickSpecs

Models

DL380R04 X3.6- 2MB/800, 2GB High Performance 378740-xx1	Processor(s)	(2) Intel Xeon Processor 3.6 GHz
	Cache Memory	2MB level 2 cache per processor
	Memory	2 GB (2 x 1024MB) of 2-way interleaved PC2-3200R 400MHz DDR2 with Advanced ECC and online spare memory capabilities
	Network Controller	Embedded NC7782 Dual Port PCI-X 10/100/1000T Gigabit network adapter
	Storage Controller	Ultra320 Smart Array 6i Controller (integrated on system board) with 128MB Battery Backed Write Cache (BBWC) and Duplex backplane standard (SCSI configuration kit)
	Hard Drive	None ship standard
	Optical Drive	DVD-ROM Drive
	Diskette Drive	1.44 MB Diskette Drive
	Form Factor	Rack (2U), (3.5-inch)
	Availability	Hot Plug Fully Redundant Fans Standards Hot Plug Redundant Power Supplies Standard

DL380R04 X3.4- 2MB/800, 2GB High Performance 378738-xx1	Processor(s)	(2) Intel Xeon Processor 3.4 GHz
	Cache Memory	2MB level 2 cache per processor
	Memory	2 GB (2 x 1024MB) of 2-way interleaved PC2-3200R 400MHz DDR2 with Advanced ECC and online spare memory capabilities
	Network Controller	Embedded NC7782 Dual Port PCI-X 10/100/1000T Gigabit network adapter
	Storage Controller	Ultra320 Smart Array 6i Controller (integrated on system board) with 128MB Battery Backed Write Cache (BBWC) and Duplex backplane standard (SCSI configuration kit)
	Hard Drive	None ship standard
	Optical Drive	DVD-ROM Drive
	Diskette Drive	1.44 MB Diskette Drive
	Form Factor	Rack (2U), (3.5-inch)
	Availability	Hot Plug Fully Redundant Fans Standards Hot Plug Redundant Power Supplies Standard

Models (Processors with 1MB Level 2 cache)

Models

DL380R04 X3.2- 1MB/800, 1GB 370596-xx1	Processor(s)	(1) Intel Xeon Processor 3.2 GHz (up to 2 supported)
	Cache Memory	1MB level 2 cache
	Memory	1 GB (2 x 512MB) of 2-way interleaved PC2-3200R 400MHz DDR2 with Advanced ECC and online spare memory capabilities
	Network Controller	Embedded NC7782 Dual Port PCI-X 10/100/1000T Gigabit network adapter
	Storage Controller	Ultra320 Smart Array 6i Controller (integrated on system board)
	Hard Drive	None ship standard
	Internal Storage	1.8 TB max (with optional hard drives)
	Optical Drive	24x IDE CD-ROM (Universal Media Bay)
	Diskette Drive	Optional
	Form Factor	Rack (2U), (3.5-inch)

DL380R04 X3.4- 1MB/800, 1GB 311143-xx1	Processor(s)	(1) Intel Xeon Processor 3.4 GHz (up to 2 supported)
	Cache Memory	1MB level 2 cache
	Memory	1 GB (2 x 512MB) of 2-way interleaved PC2-3200R 400MHz DDR2 with Advanced ECC and online spare memory capabilities
	Network Controller	Embedded NC7782 Dual Port PCI-X 10/100/1000T Gigabit network adapter
	Storage Controller	Ultra320 Smart Array 6i Controller (integrated on system board)
	Hard Drive	None ship standard
	Internal Storage	1.8 TB max (with optional hard drives)
	Optical Drive	24x IDE CD-ROM (Universal Media Bay)
	Diskette Drive	Optional
	Form Factor	Rack (2U), (3.5-inch)

DL380R04 X3.4- 1MB/800, 2GB High Performance 373822-xx1	Processor(s)	(2) Intel Xeon Processor 3.4 GHz
	Cache Memory	1-MB level 2 cache
	Memory	2 GB (2 x 1024MB) of 2-way interleaved PC2-3200R 400MHz DDR2 with Advanced ECC and online spare memory capabilities
	Network Controller	Embedded NC7782 Dual Port PCI-X 10/100/1000T Gigabit network adapter
	Storage Controller	Ultra320 Smart Array 6i Controller (integrated on system board) with 128MB Battery Backed Write Cache (BBWC) and Duplex backplane standard (SCSI configuration kit)
	Hard Drive	None ship standard
	Availability	Hot Plug Fully Redundant Fans Standards Hot Plug Redundant Power Supplies Standard
	Internal Storage	1.8 TB max (with optional hard drives)
	Optical Drive	DVD-ROM Drive
	Diskette Drive	1.44MB Diskette Drive
	Form Factor	Rack (2U), (3.5-inch)

QuickSpecs

HP ProLiant DL380 Generation 4 (G4)

Models

DL380R04 X3.6-1MB/800, 1GB 311144-xx1		
Processor(s)	(1) Intel Xeon Processor 3.6 GHz (up to 2 supported)	
Cache Memory	1MB level 2 cache	
Memory	1 GB (2 x 512MB) of 2-way interleaved PC2-3200R 400MHz DDR2 with Advanced ECC and online spare memory capabilities	
Network Controller	Embedded NC7782 Dual Port PCI-X 10/100/1000T Gigabit network adapter	
Storage Controller	Ultra320 Smart Array 6i Controller (integrated on system board)	
Hard Drive	None ship standard	
Internal Storage	1.8 TB max (with optional hard drives)	
Optical Drive	24x IDE CD-ROM (Universal Media Bay)	
Diskette Drive	Optional	
Form Factor	Rack (2U), (3.5-inch)	

DL380R04 X3.6-1MB/800, 2GB High Performance 361011-xx1		
Processor(s)	(2) Intel Xeon Processor 3.6 GHz	
Cache Memory	1-MB level 2 cache	
Memory	2 GB of 2-way interleaved PC2-3200R 400MHz DDR2 with Advanced ECC and online spare memory capabilities	
Network Controller	Embedded NC7782 Dual Port PCI-X 10/100/1000T Gigabit network adapter	
Storage Controller	Ultra320 Smart Array 6i Controller (integrated on system board) with 128MB Battery Backed Write Cache (BBWC) and Duplex backplane standard (SCSI configuration kit)	
Hard Drive	None ship standard	
Availability	Hot Plug Fully Redundant Fans Standards Hot Plug Redundant Power Supplies Standard	
Internal Storage	1.8 TB max (with optional hard drives)	
Optical Drive	DVD-ROM Drive	
Diskette Drive	1.44MB Diskette Drive	
Form Factor	Rack (2U), (3.5-inch)	

Country Code Key		
XX=00	U.S.	
XX=20	Brazil	
XX=29	Japan	
XX=37	APD	
XX=42	Euro	
XX=AA	PRC	

DA - 12028   Worldwide — Version 34 — July 15, 2005   Page 16

Configuration Information - Factory Integrated Models (North America only)

NOTE: For Configure to Order requirements within EMEA region, please consult local Sales Contact.
NOTE: HP does not allow factory integration of options into standard models listed above.
Configure-to-order servers must start with a CTO Chassis.
NOTE: This product offering does not support HP Factory Express Server Configuration Level 1.

Step 1: Base Configuration

Models	HP ProLiant DL380G4 U320 SCSI Rack Chassis (North America)	371293-405

Factory Integrated Model ships with:

(6) 3.5" U320 SCSI Drive Bays
Ultra320 Smart Array 6i Controller (integrated on system board)
Embedded NC7782 Dual Port PCI-X 10/100/1000T Gigabit network adapter
Three available 64-bit PCI-X slots, including two non-hot plug 100MHz slots and one
non-hot plug 133MHz slot
575 Watt hot plug power supply, CE Mark Compliant
One Lowline NEMA power cord and One Highline IEC Power cord
5 hot plug fans
Rack (2U), (3.5-inch)

	HP ProLiant DL380G4 SAS Model Rack Chassis (North America)	383891-405

Factory Integrated Model ships with:

(8) 2.5" Serial Attached SCSI (SAS) Drive Bays
Embedded NC7782 Dual Port PCI-X 10/100/1000T Gigabit network adapter
Three 64-bit PCI-X slots (2 available after SAS starter kit installed), including two non-
hot plug 100MHz slots and one non-hot plug 133MHz slot
575 Watt hot plug power supply, CE Mark Compliant
One Lowline NEMA power cord and One Highline IEC Power cord
8 hot plug fans
Rack (2U), (3.5-inch)

Step 1A: If SAS Model, Choose SAS Starter Kit or Controller (only one of the following)

SAS Controller	HP Smart Array P600 Controller	337972-B21

NOTE: This is a required selection if one of the two following SAS Starter Kits is not
selected. If choosing this sku, 2.5" SAS hard drives must still be selected under Step 4.

SAS Starter Kit	SAS Starter Kit - 36GB	396221-B21

NOTE: Includes Smart Array P600 Performance Array Controller with 256MB BBWC
and (2) 36GB 2.5" SAS Universal Hard Drives.

	SAS Starter Kit - 72GB	396220-B21

NOTE: Includes Smart Array P600 Performance Array Controller with 256MB BBWC
and (2) 72GB 2.5" SAS Universal Hard Drives.

Configuration Information - Factory Integrated Models (North America only)

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

Processors	Intel X3.2GHz/800-1MB 380G4 FIO BASE	374492-L21
	NOTE: If 2 processors are desired, select one 374492-L21and one 374492-B21	
	Intel X3.4GHz/800-1MB 380G4 FIO BASE	311583-L22
	NOTE: If 2 processors are desired, select one 311583-L22 and one 311583-B21 unless High Performance Model features are sought. If HPM features are desired, select one 311583-L22 and one 380100-001.	
	Intel X3.6GHz/800-1MB 380G4 FIO BASE	311584-L22
	NOTE: If 2 processors are desired, select one 311584-L22 and one 311584-B21 unless High Performance Model features are sought. If HPM features are desired, select one 311584-L22 and one 380101-001.	
	Intel X3.0/800-1M 380 G4 FIO BASE	380040-L22
	NOTE: If 2 processors are desired, select one 380040-L22 and one 380040-B21	
	Intel X3.0/800-2M 380 G4 FIO BASE	378748-L22
	NOTE: If 2 processors are desired, select one 378748-L22 and one 378748-B21	
	Intel X3.2/800-2M 380 G4 FIO BASE	378749-L22
	NOTE: If 2 processors are desired, select one 378749-L22 and one 378749-B21	
	Intel X3.4/800-2M 380 G4 FIO BASE	378750-L22
	NOTE: If 2 processors are desired, select one 378750-L22 and one 378750-B22 unless High Performance Model features are sought. If HPM features are desired, select one 378750-L22 and one 382616-001.	
	Intel X3.6/800-2M 380 G4 FIO BASE	378751-L22
	NOTE: If 2 processors are desired, select one 378751-L22 and one 378751-B22 unless High Performance Model features are sought. If HPM features are desired, select one 378751-L22 and one 382617-001 or 391323-001 if SAS HPM model.	
Base Memory	1GB of Advanced PC2 PC3200 DDR2 SDRAM DIMM Memory Kit (2 x 512 MB)	343055-B21
	2GB of Advanced PC2 PC3200 DDR2 SDRAM DIMM Memory Kit (2x1024 MB)	343056-B21
	4GB of Advanced PC2 PC3200 DDR2 SDRAM DIMM Memory Kit (2x2048 MB)	343057-B21

Step 3: Choose Additional Factory Integratable Options

Optical Drive	Slimline DVD-ROM Drive (8x/24x) Option Kit	264007-B21
	Slimline CD-RW/DVD-ROM Combo Option Kit	331903-B21
	HP ProLiant Slim CD-ROM FIO Base	338732-B21
Performance Packs	The HP ProLiant DL380 G4 performance packs are necessary to configure a HP ProLiant DL380 G4 High Performance Model. HP ProLiant DL380 G4 High Performance model includes the latest performance technologies and enterprise class availability features pre-installed for convenience and value. The performance pack includes a 2nd processor, redundant fans and power supplies, floppy drive, 128MB (U320 SCSI models) or 256MB (SAS models) of BBWC and the duplex backplane option for U320 SCSI (SCSI configuration kit).	
	HP DL380G4 3.4 HPM Perf. Pack, US	380100-001
	HP DL380G4 3.6 HPM Perf. Pack, US	380101-001
	HP DL380G4 3.4/2M HPM Perf Pack FIO US	382616-001
	HP DL380G4 3.6/2M HPM Perf Pack FIO US	382617-001
	HP DL380G4 3.6/2M SAS HPM Perf Pack FIO US	391323-001

Configuration Information - Factory Integrated Models (North America only)

Step 4: Choose Additional Options for Factory Integration

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

Options

NOTE: Some options may not be factory integratable. Please contact your local sales representative for additional information.

HP ProLiant DL380 G4 Unique Options	DL380 G4 Redundant Fan Option Kit NOTE: Hot Plug Redundant Fan Option Kit (PN 293048-B21) contains three fans. This kit is included with all 2MB cache, SAS and high performance models.	293048-B21
	Hot Plug AC Redundant Power Supply Module (NEMA and IEC cords) (NA and Japan)	355892-001
	Hot Plug AC Redundant Power Supply Module (IEC cord only) (WW)	355892-B21
	Floppy Drive Option Kit NOTE: For U320 SCSI models only. NOTE: Included in high performance models.	364507-B21
	Floppy Drive Option Kit, SAS NOTE: For SAS models only.	393998-B21
	SCSI Configuration Kit NOTE: Kit Includes duplex drive backplane terminator and 2 long SCSI cables. Not supported on SAS models.	364471-B21
	PCI-X Hot Plug Riser Cage Option Kit	354676-B21
	PCI Express Riser Cage Option Kit NOTE: Not Supported on SAS models. For information about PCI Express visit: http://www.hp.com/servers/pci-express.	354675-B21

ProLiant Essentials Value Pack Software	Rapid Deployment Pack, 1 User, V1.x NOTE: This license allows 1 server to be managed and deployed via the Deployment Server.	267196-B21
	Rapid Deployment Pack, 1 User, V1.x (Japan) NOTE: This license allows 1 server to be managed and deployed via the Deployment Server.	267196-291
	Rapid Deployment Pack, 10 Users, V1.x NOTE: This license allows 10 servers to be managed and deployed via the Deployment Server.	269817-B21
	Rapid Deployment Pack, 10 Users, V1.x (Japan) NOTE: This license allows 10 servers to be managed and deployed via the Deployment Server.	269817-291
	ProLiant Essentials Workload Management Pack (Featuring Resource Partitioning Manager version 2.0)	303284-B21
	Rapid Deployment Pack, Flexible Quantity License Kit	302127-B21
	License-Only - for use with a Master License Agreement	302128-B21
	ProLiant Essentials Performance Management Pack v2.0, Single License NOTE: This license allows 1 server to be managed by Performance Management Pack.	306696-B21
	Performance Management Pack, flexible license kit NOTE: A single pack is shipped with a single license key for the total number of licenses ordered.	306697-B21
	ProLiant Essentials Integrated Lights-Out Advanced Pack Featuring: sophisticated virtual administration features for ultimate control of servers in the data centers and remote sites.	263825-B21
	ProLiant Essentials Intelligent Networking Pack (1 License)	372906-B21
	ProLiant Essentials Intelligent Networking Pack Flex License	372950-B21
	ProLiant Essentials Intelligent Networking Pack Track License	372951-B21

ProLiant Essentials Server Migration Pack, Single-Server License **NOTE:** For use with a single server. Contains one license with a unique license activation key and documentation.	375345-B21
ProLiant Essentials Server Migration Pack, Flexible-Quantity License **NOTE:** For use with multiple servers. This part number can be used to purchase multiple licenses with a single activation key. The quantity ordered of this part number will be the quantity of licenses included in the kit in the form of a corresponding activation key. Use the same key to activate all licenses in the actual quantity ordered. For a given order, one kit will be delivered with the activation key, and documentation.	375346-B21
ProLiant Essentials Server Migration Pack, 10-Server License **NOTE:** This license allows 10 servers to be migrated from a physical server to a 10 virtual machines. Or this license can be used to migrate a 10 virtual machines from one virtualization layer i.e. VMware GSX to a different virtualization layer such as VMware ESX or Microsoft Virtual Server 2005.	390739-B21
ProLiant Essentials Server Migration Pack, 25-Server License	391674-B21
ProLiant Essentials Server Migration Pack, 50-Server License	391675-B21
ProLiant Essentials Server Migration Pack, 100-Server License	391676-B21
ProLiant Essentials Virtual Machine Management Pack, Single-Server License **NOTE:** For use with a single server. Contains one license with a unique license activation key and documentation.	372214-B21
ProLiant Essentials Virtual Machine Management Pack, Flexible-Quantity License **NOTE:** For use with multiple servers. This part number can be used to purchase multiple licenses with a single activation key.	372215-B21
ProLiant Essentials Virtual Machine Management Pack, Tracking License **NOTE:** For use with signed and implemented Activation Key Agreements only. Purchase of this part number entitles the customer to deploy additional licenses of the product under the terms of the existing Activation Key Agreement.	372216-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
ProLiant Essentials Server Migration Pack, 10-Server License **NOTE:** This license allows 10 servers to be migrated from a physical server to a 10 virtual machines. Or this license can be used to migrate a 10 virtual machines from one virtualization layer i.e. VMware GSX to a different virtualization layer such as VMware ESX or Microsoft Virtual Server 2005.	390739-B21
ProLiant Essentials Server Migration Pack, 25-Server License	391674-B21
ProLiant Essentials Server Migration Pack, 50-Server License	391675-B21
ProLiant Essentials Server Migration Pack, 100-Server License	391676-B21

Options

NOTE: Flexible and volume quantity license kits are available for ProLiant Essentials Value Packs. Refer to http://www.hp.com/servers/proliantessentials or the various ProLiant Essentials Value Pack product QuickSpecs for more information.
NOTE: For more information regarding ProLiant Essentials Software, please see the following URL: http://www.hp.com/servers/proliantessentials.

ProLiant Software Maintenance Subscription	ProLiant Software Maintenance Subscription	355060-B21
	ProLiant Software Maintenance Single Release	356573-B21
	ProLiant Foundation Pack Single Release	356604-B21

NOTE: Please see the SmartStart QuickSpecs for additional information regarding the subscription purchase:
http://h18000.www1.hp.com/products/quickspecs/Division/11073.html (Worldwide)
http://h18000.www1.hp.com/products/quickspecs/North_America/11073.html (North America)

Software	HP digital asset protection	302316-001

Processor	Intel Xeon X3.2-1MB/800MHz Processor Option Kit	374492-B21
	Intel Xeon X3.4-1MB/800MHz Processor Option Kit	311583-B21
	Intel Xeon X3.6-1MB/800MHz Processor Option Kit	311584-B21
	Intel Xeon X3.0-2MB/800MHz Processor Option Kit	378748-B21
	Intel Xeon X3.2-2MB/800MHz Processor Option Kit	378749-B21
	Intel Xeon X3.4-2MB/800MHz Processor Option Kit	378750-B21
	Intel Xeon X3.6-2MB/800MHz Processor Option Kit	378751-B21

Memory	1GB of Advanced PC2 PC3200 DDR2 SDRAM DIMM Memory Kit (2 x 512 MB)	343055-B21
	2GB of Advanced PC2 PC3200 DDR2 SDRAM DIMM Memory Kit (2 x 1024 MB)	343056-B21
	4GB of Single-Ranked PC2 PC3200 DDR2 SDRAM DIMM Memory Kit (2 x 2048 MB)	343057-B21
	4GB of 2-Rank Advanced ECC PC3200 DDR2-400 SDRAM DIMM Memory Kit (2 x 2048 MB)	375004-B21

NOTE: There are configuration limitations associated with this kit, please see memory section for more information.

Options

Optical Drives	Slimline CD-RW/DVD-ROM Combo Option Kit	331903-B21
	Slimline DVD-ROM Drive (8x/24x) Option Kit	264007-B21
	NOTE: Included in high performance models.	
	HP DVD+R/RW 8X Slim	383975-B21
	NOTE: Not supported on SAS models.	

Diskette Drive	Floppy Drive Option Kit	364507-B21
	NOTE: For U320 SCSI models only.	
	NOTE: Included in high performance models.	
	Floppy Drive Option Kit, SAS	393998-B21
	NOTE: For SAS models only.	

Hard Drives	**Ultra320 SCSI - Universal Hot Plug**	
	300-GB 10,000 rpm U320 Universal Hard Drive, 1"	350964-B22
	146.8-GB 10,000 rpm, U320 Universal Hard Drive, 1"	286716-B22
	72.8-GB 10,000 rpm, U320 Universal Hard Drive, 1"	286714-B22
	146.8-GB 15,000 rpm U320 Universal Hard Drive, 1"	347708-B22
	72.8-GB 15,000 rpm, U320 Universal Hard Drive, 1"	286778-B22
	36.4-GB 15,000 rpm, U320 Universal Hard Drive, 1"	286776-B22

NOTE: All U320 Universal Hard Drives are backward compatible to U2 or U3 speeds.
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)

SFF SATA Hot Plug

	60GB SFF SATA 5,400 rpm 2.5" Hard Drive	379306-B21

NOTE: SATA drives have a 1 year warranty. Please see the SATA Hard Drive QuickSpecs for Technical Specifications such as capacity, height, width, interface, transfer rate, seek time, physical configuration, and operating temperature:
SATA Hard Drive QS:
http://h18000.www1.hp.com/products/quickspecs/12091_div/12091_div.HTML (Worldwide)
http://h18000.www1.hp.com/products/quickspecs/12091_na/12091_na.HTML (North America)

SFF SAS - Universal Hot Plug

	36 GB SAS 10,000 rpm Hard Drive (2.5")	375859-B21
	72 GB SFF SAS 10,000 rpm Hard Drive (2.5")	375861-B21

NOTE: All SFF SAS Universal Hard Drives are supported ONLY by HP ProLiant DL380 G4 SAS models.

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

SAS Hard Drive QS:

http://h18000.www1.hp.com/products/quickspecs/12244_div/12244_div.HTML (Worldwide)

http://h18000.www1.hp.com/products/quickspecs/12244_na/12244_na.HTML (North America)

Storage Controllers

NOTE: Please refer to the HP ProLiant DL380 G4 SCSI Cabling Matrix for information on what's required to cable optional array controllers:

ftp://ftp.compaq.com/pub/products/servers/proliantdl380/dl380g4-cabling-matrix.pdf

SCSI Controllers

Smart Array 6i 128MB Battery Backed Write Cache Enabler Option Kit	346914-B21
NOTE: Included in high performance models.	
Smart Array 6i 128MB Battery Backed Write Cache Enabler Option Kit	346914-B21
NOTE: Included in high performance models.	
Smart Array 6402/128 Controller	273915-B21
Smart Array 6404/256 Controller	273914-B21
Smart Array 641 Controller	291966-B21
NOTE: Not supported on SAS model.	
Smart Array 642 Controller	291967-B21
128MB Battery-Backed Cache Enabler	351580-B21
NOTE: This 128MB BBWC supports the Smart Array 641 Controller and Smart Array 642 Controller.	
256MB DDR, Battery-Backed Cache Upgrade Kit for SA-6400	273913-B21
NOTE: This 256MB DDR, Battery-Backed Cache upgrade kit supports the Smart Array 6400 series controller only.	
64-Bit/133-MHz Dual Channel Ultra320 SCSI Adapter	268351-B21
Ultra320 Expansion Module for SA-6402	273911-B21
64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2	374654-B21

Options

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/12030_div/12030_div.HTML (Smart Array 6i)
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)
http://h18000.www1.hp.com/products/quickspecs/11943_div/11943_div.HTML (Single Channel U320 SCSI HBA)

SAS Controller

HP Smart Array P600 Controller	337972-B21

NOTE: Ships standard on SAS models.

512MB DDR BBWC Upgrade	372538-B21

NOTE: Please see the following Controller 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/12247_div/12247_div.HTML (Smart P600 Controller)

Communications

HP NC150T PCI 4-port Gigabit 1000T Combo Switch Adapter	367132-B21
HP NC310F PCI-X 1000SX Gigabit Server Adapter	368169-B21
HP NC320T PCI Express 1000T Gigabit Server Adapter	367047-B21
HP NC370F PCI-X Multifunction 1000SX Gigabit Server Adapter	374193-B21
HP NC370T PCI-X Multifunction 1000T Gigabit Server Adapter	374191-B21
HP NC1020 PCI 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 1000T Gigabit Server Adapter	290563-B21

NOTE: Any Ethernet network controller (NIC) (except the NC1020) on the option list can be used for redundancy with the embedded NC7782 NIC.

HP NC570C PCI-X Dual-port 4x Fabric Adapter	376158-B21
HP NC571C PCI Express Dual-port 4x Fabric Adapter	376160-B21
HP 24-Port 4x Fabric Copper Switch	376227-B21
HP 4x Fabric 1m Copper Cable	376232-B21
HP 4x Fabric 3m Copper Cable	376232-B22
HP 4x Fabric 5m Copper Cable	376232-B23

Options

Redundant Options	Hot Plug AC Redundant Power Supply Module (NEMA and IEC cord) (NA and Japan)	355892-001
	Hot Plug AC Redundant Power Supply Module (IEC cord only) (WW)	355892-B21
	DL380 G4 Redundant Fan Option Kit	293048-B21

NOTE: Hot Plug Redundant Fan Option Kit (PN 293048-B21) contains three fans per kit, it is included in all 2MB Cache, SAS and high performance models.

Management Options	iLO Advanced Pack	263825-B21
	Remote Insight Lights-Out Edition II (NA, LA)	227251-001
	Remote Insight Lights-Out Edition II (EMEA)	227251-021
	Remote Insight Lights-Out Edition II (ROW)	227251-371

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

Tape Drives

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

Hot Plug Tape Drives

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

NOTE: Not supported in SAS models.

USB Tape Drives

HP StorageWorks DAT 72 USB external tape drive	DW027A

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

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

NOTE: No internal tape drives fit inside the HP ProLiant DL380 (except hot plug tape). The internal drive shown here is for the 1U and 3U Rack-mount Kit.

HP StorageWorks Ultrium 232 Tape Drive, External (Carbonite)	DW065A
HP StorageWorks Ultrium 448 Tape Drive, External (Carbonite)	DW017A
HP StorageWorks Ultrium 448 Rack-mount (Carbonite) - Single drive installed in a 1U rack-mount kit	DW028A

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.

External, Rack-Mount, and Array Module DAT Drives

HP StorageWorks DAT 72 Tape Drive, External (Carbon)	Q1523A
HP StorageWorks 1U Rack-Mount Kit with one DAT 72 drive	A7443A

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)
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 DAT drives, please visit: http://www.hp.com/go/connect.

Rack-Mount Tape Drive Enclosures

HP StorageWorks 1U Rack-Mount Kit   A7445A
NOTE: The 1U Rack-mount Kit can support up to 2 half-height tape drives and is compatible with multiple Single-Ended and LVD SCSI tape drives including DAT 24, DAT40, DAT72, DLT VS80, DLT VS160, Ultrium 215, Ultrium 232, and Ultrium 448 tape drives.

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 Tape Autoloader, External (Carbon)   Q1567A
NOTE: Please see the DAT 72x6 Tape Autoloader QuickSpecs for additional options such as host bus adapters, controllers and media:
http://h18006.www1.hp.com/products/quickspecs/11905_div/11905_div.html (Worldwide)
http://h18006.www1.hp.com/products/quickspecs/11905_na/11905_na.html (North America)

HP StorageWorks 1/8 Tape Autoloader

1/8 Ultrium 960 Tape Autoloader, Tabletop	AF204A
1/8 Ultrium 448 Tape Autoloader, Tabletop	AF203A
1/8 SDLT 320 Tape Autoloader, Tabletop	AA926A
1/8 Ultrium 230 Tape Autoloader, Tabletop	C9572CB
1/8 DLT VS80 Tape Autoloader, Tabletop	C9264CB
1/8 Tape Autoloader Rack-mount Kit	C9268R

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

NOTE: Please reference the 1/8 Tape Autoloader QuickSpecs at http://www.hp.com/go/automation for additional information needed to create a complete solution; reference current compatibility information at http://www.hp.com/go/ebs

HP StorageWorks SSL1016 Tape Autoloader

SSL1016 Ultrium 460 Tape Autoloader	330821-B21
SSL1016 SDLT 320 Tape Autoloader	330816-B21

NOTE: Please reference the SSL1016 Tape Autoloader QuickSpecs at http://www.hp.com/go/automation for additional information needed to create a complete solution; reference current compatibility information at http://www.hp.com/go/ebs.

Tape Libraries	**HP StorageWorks MSL6000 Tape Library**	
	Ultrium 960 technology	
	MSL6030, 1 drive, 30 slots, Ultrium 960	AD606A
	MSL6030, 2 drive, 30 slots, Ultrium 960	AD607A
	MSL6030, 1 drive, 30 slots, Ultrium 960, with embedded FC router	AD608A
	MSL6030, 2 drive, 30 slots, Ultrium 960, with embedded FC router	AD609A
	MSL6060, 2 drive, 60 slots, Ultrium 960	AD610A
	MSL6060, 2 drive, 60 slots, Ultrium 960, with embedded FC router	AD611A
	SDLT 600 technology	
	MSL6026, 1 drive, 26 slots, SDLT 600	AD582A
	MSL6026, 2 drive, 26 slots, SDLT 600	AD583A
	MSL6026, 1 drive, 26 slots, SDLT 600, with embedded FC router	AD584A
	MSL6026, 2 drive, 26 slots, SDLT 600, with embedded FC router	AD585A
	MSL6052, 2 drive, 52 slots, SDLT 600	AD587A
	MSL6052, 2 drive, 52 slots, SDLT 600, with embedded FC router	AD588A
	Ultrium 460 technology	
	MSL6030, 1 drive, 30 slots, Ultrium 460	AD598A
	MSL6030, 2 drive, 30 slots, Ultrium 460	AD599A
	MSL6030, 1 drive, 30 slots, Ultrium 460, with embedded FC router	AD600A
	MSL6030, 2 drive, 30 slots, Ultrium 460, with embedded FC router	AD601A
	MSL6060, 2 drive, 60 slot Ultrium 460	AD603A
	MSL6060, 2 drive, 60 slot Ultrium 460, with embedded FC router	AD604A

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

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

NOTE: Please reference the MSL5026S2 Tape Library QuickSpecs at http://www.hp.com/go/automation 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 ESL E-Series Tape Libraries

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

NOTE: Please reference the ESL E-Series Tape Libraries QuickSpecs at http://www.hp.com/go/automation 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 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.

Options

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 50

HP StorageWorks Modular Smart Array 50 Enclosure   364430-B21

NOTE: Supported by the SAS Models only.
NOTE: Please see the Modular Smart Array 50 QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at:
http://h18000.www1.hp.com/products/quickspecs/12245_na/12245_na.HTML (North America)
http://h18000.www1.hp.com/products/quickspecs/12245_div/12245_div.HTML (Worldwide)

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)

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)

Options

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)

PDC/O5000-EVA Windows RAC Cluster Kit	252478-B25
ProLiant Parallel Database Cluster for Linux - Oracle9i Real Application Cluster	308225-B22

NOTE: For additional information regarding the ProLiant Parallel Database Cluster for Linux, please see the following QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/11688_na/11688_na.html (North America)
http://h18000.www1.hp.com/products/quickspecs/11688_div/11688_div.html (Worldwide)

HP Parallel Database Cluster Model PDC/O2000-MSA1000 for Oracle Real Application Cluster on Windows	279406-B24
NOTE: For additional information regarding the HP Parallel Database Cluster Model PDC/O2000-MSA1000, please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/10889_na/10889_na.html (North America) http://h18000.www1.hp.com/products/quickspecs/10889_div/10889_div.html (Worldwide)	279406-B24

QuickSpecs

Options

External Storage - Rack	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 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
	StorageWorks Modular Smart Array 30 OpenView Storage Mirroring HA Kit - WW	359079-B21
	StorageWorks Modular Smart Array 30 OpenView Storage Mirroring HA Kit - Japan	359079-291
	Redundant Power Supply 499W for MSA30	338296-B21
	Ultra320 Single Bus I/O Module for MSA30	287484-B21
	Ultra320 Dual Bus I/O Module for MSA30	287483-B21
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
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
Network Storage Router	M2402 2FCX 4SCSI LVD Network Storage Router	262653-B21
	M2402 2FCX 4SCSI HVD Network Storage Router	262654-B21
	M2402 4 channel LVD SCSI Module	262659-B21
	M2402 4 channel HVD SCSI Module	262660-B21
	M2402 2 channel FC Module	262661-B21

Options

StorageWorks Options	StorageWorks 2 Gb, 64-bit/133 MHz PCI-X-to-Fibre Channel Host Bus Adapter for Windows 2000, Windows Server 2003 and Linux NOTE: FCA2214 2 Gb Fibre Channel Host Bus Adapter is a single channel, 64-bit/133 MHz PCI-X-to Fibre Channel Host Bus Adapter (HBA) with an embedded multi-mode optical interface	281541-B21
	FCA2404DC - HP StorageWorks 2 Gb, Dual Channel, 133 MHz PCI-X-to-Fibre Channel Host Bus Adapter for Windows® 2000, and Windows Server 2003 NOTE: FCA2404DC HP StorageWorks 2 Gb Fibre Channel Host Bus Adapter is a dual channel, 133 MHz, PCI-X to Fibre Channel Host Bus Adapter (HBA) with an embedded multi-mode optical interface.	323264-B21
	FCA2404 - StorageWorks 2 Gb, single channel, 133 MHz PCI-X-to-Fibre Channel Host Bus Adapter for Windows 2000, Windows NT and Windows Server 2003 NOTE: FCA2404 StorageWorks 2 Gb, Fibre Channel Host Bus Adapter is a single channel, multi-path failover, 133 MHz, PCI-X to Fibre Channel Host Bus Adapter (HBA) with an embedded multi-mode optical interface for ProLiant Server connects	305573-B21
	StorageWorks 2 Gb, Dual Port, 64-Bit/133 MHz PCI-X-to-Fibre Channel Host Bus Adapter for W2K, Windows Server 2003 and Linux NOTE: FCA2214DC StorageWorks 2 Gb Dual Port, Fibre Channel Host Bus Adapter is a 64-bit/133 MHz, PCI-X-to Fibre Channel Host Bus Adapter (HBA) with an embedded multi-mode optical interface.	321835-B21
	StorageWorks Director 2/64	286809-B21
	StorageWorks SAN Switch 2/8-EL Upgrade	325888-B21
	NOTE: For additional information on Fibre Channel Host Bus Adapters and San Switches visit the following URL: http://h18000.www1.hp.com/storage/saninfrastructure.html	
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.	
Uninterruptible Power Systems - Rack	HP UPS R1500 XR (100 to 127) (NA)	204404-001
	HP UPS R1500 XR (208 to 480) (Int'l)	204404-B31
	HP UPS R1500 XR (100 to 127) (Japan)	204404-291
	HP UPS R3000 XR (120V) (NA)	192186-001
	HP UPS R3000 XR (208V) (NA)	192186-002
	HP UPS R3000 XR (100V) (Japan)	192186-291
	HP UPS R3000 XR (208V) (Japan) HP UPS R3000 XR (200V) (Japan)	192186-292
	HP UPS R3000 XR (230V) (Int'l - detachable cord)	192186-B31
	HP UPS R3000 XR (230V) (16A IEC309 Plug)	192186-B32
	HP UPS R3000 XR (230V) (16A CEE 7/7 SCHUKO Plug)	192186-B33
	HP UPS R3000 XR (230V) (16A BS-546 Plug)	192186-AR1
	HP UPS R5500 XR, (5000VA, 4500 Watt), High Voltage (NA/Jpn)	326529-D71
	HP UPS R5500 XR, (6000VA, 5400 Watt), High Voltage (Int'l)	326529-B31
	HP UPS R12000 XR N+x (200-240V) (WW-hardwired)	207552-B22
	NOTE: The UPS R12000 XR has a hardwired input and output connection.	

Options

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/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)	252663-B21
	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.	
	HP Modular Power Distribution Unit (mPDU), High Volt Model, 40A, Attached Cord, (NA/JPN)	252663-D73
	HP Modular Power Distribution Unit (mPDU), High Volt Model, 40A, Attached Cord, (Int'l)	252663-B32
	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)	

Options

USB Options	HP USB 2-Button Optical Scroll Mouse (Carbonite/Silver)	DC172B
	USB 1.44-MB External Diskette Drive (Carbonite)	DC141B
	256MB HP Drive Key II (USB 2.0)	PH657A
	Multibay USB cradle	DC373A#ABA
	Multibay USB cradle	DC373A#B13

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

Third Party Rack Adapter Kit (for wide racks) Rack Adapter Kit 332815-B21
NOTE: Not required for most racks. This kit allows HP rack servers to fit in racks that are 24" wide.

Rack Shipping Kit ProLiant DL380 G4, ML370 G4, ML350 G4 Shipping Bracket for Round Hole Racks 371482-B21
NOTE: Required when shipping HP ProLiant DL380 G4, HP ProLiant ML370 G4, or the HP ProLiant ML350 G4 pre-installed in round hole rack. Square hole pre-configured rack shipping hardware included with server mounting rails.

HP Rack 5000 Series (Graphite Metallic) HP 5642 Rack-Unassembled 358254-B21

Rack Options for Rack 5000 Series Stabilizer Kit for 5642 rack (Graphite Carbon) 374493-B21
NOTE: The stabilizing kit is used to prevent rack from tipping over.

Baying Kit for 5642 rack (Graphite Carbon) 374499-B21
NOTE: The baying kit is used to join two or more HP 5642 racks.

HP Rack 10000 Series (Graphite Metallic)

10642 (42U) Infrastructure Rack (Low Voltage)	379006-001
10642 (42U) Infrastructure Rack (High Voltage)	379005-001
HP S10614 (14U) Rack Cabinet - Shock Pallet	292302-B22
HP 10842 (42U) Rack Cabinet - Pallet	257415-B21
HP 10842 (42U) Rack Cabinet - Shock Pallet	257415-B22
HP 10647 (47U) Rack Cabinet - Pallet	245160-B21
HP 10647 (47U) Rack Cabinet - Crated	245160-B23
HP 10642 (42U) Rack Cabinet - Pallet	245161-B21
HP 10642 (42U) Rack Cabinet - Shock Pallet	245161-B22
HP 10642 (42U) Rack Cabinet - Crated	245161-B23
HP 10636 (36U) Rack Cabinet - Pallet	245162-B21
HP 10636 (36U) Rack Cabinet - Shock Pallet	245162-B22
HP 10636 (36U) Rack Cabinet - Crated	245162-B23
HP 10622 (22U) Rack Cabinet - Pallet	245163-B21
HP 10622 (22U) Rack Cabinet - Shock Pallet	245163-B22
HP 10622 (22U) Rack Cabinet - Crated	245163-B23

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: It is mandatory to use a shock pallet in order to ship racks with equipment installed.

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 Light kit for 10000 series rack	361589-B21
HP Plinth kit for 10000 series rack	251960-B21
TFT5600 Rack Keyboard Monitor	221546-xx1
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/.

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

Country Code Key for Keyboards

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

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

Options

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

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	U4544A
	4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic	U4544E
	4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years	U4545A
	4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	U4545E
	Hardware Services 6-Hour Call to Repair On-site Service	
	6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years	U4546A
	6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	U4546E
	Installation & Start-up Services	
	Hardware Installation	U4554A
	Hardware Installation, Electronic	U4554E
	Installation & Start-Up of a ProLiant server and Microsoft or Linux O/S per the Customer Description and/or Data Sheet. To be delivered on a scheduled basis 8am-5pm, M-F, excl. HP holidays.	U4555A
	Installation & Start-Up of a ProLiant server and Microsoft or Linux O/S per the Customer Description and/or Data Sheet. To be delivered on a scheduled basis 8am-5pm, M-F, excl. HP holidays, Electronic	U4555E
	Installation and Startup for Essentials Rapid Deployment Pack, Electronic	U5683E

Options

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.	U4556A
Onsite HW support, 8am-9pm, M-F, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 8am-9pm, M-F 2hr response time excl. HP holidays, Electronic	U4556E

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.	U4557A
Onsite HW support 24x7, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	U4557E
Onsite HW support 24x7, 4hr response and SuSE Linux SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays.	U6312A
Onsite HW support 24x7, 4hr response and SuSE Linux SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	U6312E
Onsite HW support 24x7, 4hr response and Red Hat ES Linux SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays.	U8334A
Onsite HW support 24x7, 4hr response and Red Hat ES Linux SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	U8334E

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

Memory

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

HP ProLiant Model DL380 Generation 4 (G4) Base (1P) Models
Standard Memory
1 GB PC2 3200 DDR2 SDRAM running at 400MHz comes installed (2 x 512 MB SDRAM)

Standard Memory Plus Optional Memory
Up to 9 GB memory is available with the optional installation of PC2 3200 Registered DDR2 SDRAM DIMM Memory Option Kit

Standard Memory Replaced with Optional Memory
Up to 12 GB of memory is available with the removal of the standard 512 MB of memory and the optional installation of PC2 3200 Registered DDR2 SDRAM DIMM Memory Option Kit

NOTE: Chart does not represent all possible memory configurations.

Memory		Slot					
		1	2	3	4	5	6
Standard	1GB	512MB	512MB	Empty	Empty	Empty	Empty
Optional	9GB	512MB	512MB	2GB	2GB	2GB	2GB
Maximum	12GB	2GB	2GB	2GB	2GB	2GB	2GB

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

Following are the single-rank memory options available from HP:

- 1GB of Advanced PC2 PC3200 DDR2 SDRAM DIMM Memory Kit (2 x 512 MB)   343055-B21
- 2GB of Advanced PC2 PC3200 DDR2 SDRAM DIMM Memory Kit (2 x 1024 MB)   343056-B21
- 4GB of Single-Ranked PC2 PC3200 DDR2 SDRAM DIMM Memory Kit (2 x 2048 MB)   343057-B21

HP ProLiant Model DL380 Generation 4 (G4) High Performance (2P) Model
Standard Memory
2 GB PC2 3200 DDR2 SDRAM running at 400MHz comes installed (2 x 1024 MB SDRAM)

Standard Memory Plus Optional Memory
Up to 10 GB memory is available with the optional installation of PC2 3200 Registered DDR2 SDRAM DIMM Memory Option Kit

Standard Memory Replaced with Optional Memory
Up to 12 GB of memory is available with the removal of the standard 512 MB of memory and the optional installation of PC2 3200 Registered DDR2 SDRAM DIMM Memory Option Kit

NOTE: Chart does not represent all possible memory configurations.

Memory		Slot					
		1	2	3	4	5	6
Standard	2 GB	1024 MB	1024 MB	Empty	Empty	Empty	Empty
Optional	9 GB	1024 MB	1024 MB	2 GB	2 GB	2 GB	2 GB
Maximum	12 GB	2 GB	2 GB	2 GB	2 GB	2 GB	2 GB

Memory

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

Following are the single rank memory options available from HP:

- 1GB of Advanced PC2 PC3200 DDR2 SDRAM DIMM Memory Kit (2 x 512 MB)   343055-B21
- 2GB of Advanced PC2 PC3200 DDR2 SDRAM DIMM Memory Kit (2 x 1024 MB)   343056-B21
- 4GB of Advanced PC2 PC3200 DDR2 SDRAM DIMM Memory Kit (2 x 2048 MB)   343057-B21

HP ProLiant Model DL380 Generation 4 (G4) Dual Rank Support:

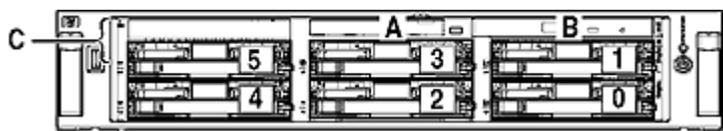Following is the dual rank memory option available from HP:

- 4GB of 2-Rank Advanced ECC PC3200 DDR2-400 SDRAM DIMM Memory Kit (2 x 2048 MB)   375004-B21

Following are the single/dual rank memory population rules for the HP ProLiant DL380 G4.

Key: S denotes single rank kit, D denotes Dual rank kit, and X denotes no install.

Bank A	Bank B	Bank C	NOTES:
S	X	X	
S	S	X	
S	S	S	
D	X	X	Online spare not supported
D	S	X	Online spare not supported
D	S	S	Online spare not supported
D	D	X	Online spare not supported

QuickSpecs

HP ProLiant DL380 Generation 4 (G4)

Storage

0 - 5	Six 1" Ultra320 SCSI hot plug hard drive bays
A	1.44-MB Diskette Drive
B	24x IDE CD-ROM (Universal Media Bay)
C	Six 1" Wide Ultra3/Ultra320 SCSI hot plug hard drives or for five hot plug hard drives and one DAT 40 or DAT 72 hot plug tape drive
1-8	Eight 2.5" SAS hot plug hard drive bays

Drive Support

	Quantity Supported	Position Supported	Controller
Removable Media			
1.44-MB Diskette Drive	1	A	Integrated IDE NOTE: Optional except on high performance models
IDE CD-ROM Drive	1	B	Integrated IDE NOTE: Standard on base models
Slimline DVD-ROM (8x24x) Option Kit (Servers)	1	B	Integrated IDE NOTE: Standard on high performance models

Hard Drives

Ultra320 SCSI - Hot Plug 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 6	0-5	Smart Array 6i Controller (integrated on system board) Smart Array 6402/128 Controller Smart Array 6404/256 Controller 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.

DA - 12028   Worldwide — Version 34 — July 15, 2005   Page 41

Storage

SATA - Hot Plug Drives

	Quantity Supported	Position Supported	Controller
2.5-inch 60-GB 5,400 rpm	Up to 8	0-7	Smart Array P600 Controller

SSF SAS - Hot Plug Drives

	Quantity Supported	Position Supported	Controller
2.5-inch 36-GB 10,000 rpm 72-GB 10,000 rpm	Up to 8	1-8	Smart Array P600 Controller

External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
Modular Smart Array 20	1 per SCSI VHDCI connector	External	Smart Array 6i Controller Smart Array 6402/128 Controller Smart Array 6404/256 Controller
Modular Smart Array 30	1 per SCSI VHDCI connector	External	Smart Array 6i Controller Smart Array 6402/128 Controller Smart Array 6404/256 Controller Smart Array 642 Controller 64-Bit/133-MHz Dual Channel Ultra320 SCSI Adapter
Modular Smart Array 50 Enclosure	2 per connector (supports 1+1 cascading)	External	HP Smart Array P600 Controller
Modular Smart Array 500 G2	1 per SCSI	External	Smart Array 6i Controller Smart Array 642 Controller (used as Host Bus Adapter) Please see the Modular Smart Array 500 G2 QuickSpecs for the latest list of supported HBAs: http://www.hp.com/go/msa500
Modular Smart Array 1500 cs	Please see the Modular Smart Array 1500 cs QuickSpecs link below to determine configuration requirements	External	Please see the Modular Smart Array 1500 QuickSpecs (URL below) for the latest list of supported HBAs
Modular Smart Array 1000	Please see the Modular Smart Array 1000 QuickSpecs link below to determine configuration requirements	External	Please see the Modular Smart Array 1000 QuickSpecs (URL below) for the latest list of supported HBAs

Storage

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 - (Enclosure SCSI Attached)

Internal	1.80 TB (6 x 300 GB Ultra320 1")
External	54.60 TB (13 x (14 x 300 GB Ultra320 1"))
Total	58.20 TB

Maximum Storage Capacity - (SAS Models with MSA50)

Internal	576 GB (8 x 72 GB SAS 2.5")
External	1.44 TB (20 x 72 GB SAS 2.5")
Total	1.728 TB (4 x 72 GB int. + 20 x 72 GB ext.)

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

	Quantity Supported	Position Supported	Controller
HP StorageWorks Tape Drives, Hot Plug DAT 40 Hot Plug DAT 72 Hot Plug	1	C	Smart Array 6i Controller (integrated on system board)
HP StorageWorks Tape Drives, External Ultrium 960 SDLT 600	1 per SCSI channel	External	Smart Array 6i Controller (integrated on system board) 64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter 64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2

Storage

HP StorageWorks Tape Drives, Internal Ultrium 215 Ultrium 230 Ultrium 232 Ultrium 448 Ultrium 460 DAT 72 DAT 40 DAT 24 DLT VS80 DLT VS160 SDLT 320	Up to 2	Rack-mount enclosure	Smart Array 6i Controller (integrated on system board) 64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter 64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2
HP StorageWorks Tape Drives, Internal Ultrium 960 SDLT 600	Up to 1	Rack-mount enclosure	64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter 64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2
HP StorageWorks Tape Drives, External Ultrium 215 Ultrium 230 Ultrium 232 Ultrium 448 Ultrium 460 DAT 24 DAT 40 DAT 72 DLT VS80 DLT VS160 SDLT 320	Up to 2	External	Smart Array 6i Controller (integrated on system board) NOTE: DAT drives require one of the following options. 64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter 64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2
HP StorageWorks Tape Drives, External Ultrium 960 SDLT 600	1 per SCSI channel	External	Smart Array 6i Controller (integrated on system board) 64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter 64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2
HP StorageWorks Tape Drives, External DAT 72 USB DAT 40 USB	1	External	USB Port
HP StorageWorks Rack-mount Tape Drive Enclosures 1U Rack-Mount Kit 3U Rack-Mount Kit 5U Rack-Mount Kit	1 per SCSI channel	External	Smart Array 6i Controller (integrated on system board) 64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter 64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2

Storage

HP StorageWorks Autoloaders, External	1 autoloader per SCSI channel	External	64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter
DAT 72x6 Tape Autoloader 1/8 Tape Autoloader SSL1016 Tape Autoloader			
HP StorageWorks Tape Libraries, External 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	64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter
HP StorageWorks ESL E-Series Tape Libraries ESL 712e ESL 630e ESL 322e ESL 286e	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

QuickSpecs

Power Specifications

Power Supply Specification	Part number	321632-001			
	Spare Kit	355892-B21			
Operational Input Voltage Range (V rms)	90 - 264				
Frequency Range (Nominal) (Hz)	47 - 63 (50 / 60)				
Nominal Input Voltage (V rms)	100	115	208	220	230	240
Max Rated Output Wattage Rating	575	575	575	575	575	575
Nominal Input Current (A rms)	7.4	6.4	3.4	3.2	3.1	2.9
Max Rated Input Wattage Rating (Watts)	728	719	701	693	693	693
Max. Rated VA (Volt-Amp)	743	733	716	707	707	707
Efficiency (%)	79	80	82	83	83	83
Power Factor	0.98				
Leakage Current (mA)	0.31	0.36	0.65	0.69	0.72	0.75
Max. Inrush Current (A peak)	35	35	35	35	35	35
Max. Inrush Current duration (mS)	2-3				
Power cord requirements	Nema 5-15P to IEC320-C13 Option no. / Spare no: See chart on Page 2				
	IEC320-C13 to IEC320-C14 Option no. / Spare no.: 142259-001/142258-B21				

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

- Click on: "ProLiant Servers"
- Click on the Server of interest. Example: DL380 G4
- Click on: "Power Calculator" link. (You may need to scroll down to see it)

# - Power cords (13 Cord Sets)	Country	Power Cord Part Number
	APD	139867-006
	APD	100613-003
	APD	100614-003
	Australia	100611-007
	Europe	100614-003
	France	100614-003
	Germany	100614-003
	Japan	139867-006
	PRC	139867-006
	PRC	100613-003
	PRC	100661-007
	UK	100613-003
	US	163719-002

QuickSpecs

Technical Specifications

System Unit	Dimensions (HxWxD) (with feet/bezel)	3.38 x 17.54 x 26.01 in (8.59 x 44.54 x 66.07 cm)	
	Weight(approximate)	Maximum	60 lb (27.22 kg)
		No drives:	47.18 lb (20.41 kg)
	Input Requirements (per power supply)	Rated Input Voltage	100-132 VAC, 200-240 VAC
		Rated Input Current	7.5A (100VAC), 3.8A (200VAC)
		Rated Input Frequency	50 to 60 Hz
		Rated Input Power	735 W
	BTU Rating	2508 BTU/HR	
	Power Specifications	To review typical system power ratings use the Active Answers Power Calculator which is available via the online tool located at URL: http://h30099.www3.hp.com/configurator/powercalcs.asp. To drill down to calculators: - Click on: "ProLiant Servers" - Click on the Server of interest. Example: DL380 G4 - Click on: "Power Calculator" link. (You may need to scroll down to see it.)	
	SCSI Connectors	One external VHDCI connector	
	Power Supply Output Power (per power supply)	Rated Steady-State Power	575W
		Maximum Peak Power	575W
	Temperature Range NOTE: All temperature ratings shown are for sea level. An altitude derating of 1 C° per 300 m (1.8 FR per 1000 ft) to 3048 m (10,000 ft) is applicable. No direct sunlight allowed.	Operating	50° to 95° F (10° to 35° C)
		Shipping	-40° to 158° F (-40° to 70° C)
	Maximum Wet Bulb Temperature	82.4° F (28° C)	
	Relative Humidity (non-condensing) NOTE: Storage maximum humidity of 95% is based on a maximum temperature of 45°C (113°F). Altitiude maximum for storage corresponds to a pressure minimum of 70 kPa.	Operating	10% to 90%
		Shipping	5% to 95%

Technical Specifications

Acoustic Noise	Idle Minimum (Fixed Disk Drives Spinning)		
	L WAd (BELS)	7.4	
	L pAm (dBA)	58	
	Operating Minimum (Random Seeks to Fixed Disks)		
	L WAd (BELS)	7.4	
	L pAm (dBA)	58	

Smart Array 6i Controller (Ultra320), Integrated	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 up to 133 MHz (integrated on system board)
	Electrical Protocol	Low Voltage Differential (LVD)
	SCSI Protocols Supported	Ultra 320, Ultra3, Ultra2
	SCSI Peak Data Transfer Rate	320 MB/s per channel
	Channels	Two 68-Pin Wide-Ultra SCSI-3 connectors
	SCSI Ports (external/internal)	1/2 NOTE: The HP ProLiant DL380 G4 external SCSI port can only be used if PORT 1 of the system board is NOT connected to the internal SCSI backplane.
	Logical Drives Supported	Supports up to 32 RAID volume
	Cache	64 MB Read Cache
	Battery-Backed Write Cache	Yes, with installation of Battery-Backed Write Cache Enabler, up to 128MB
	RAID Support	0, 1, 1+0, 5
	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

Smart Array P600 Controller (SAS models only)	Disk Drive and Enclosure Protocol Support	3 Gbps SAS (Serial Attached SCSI) 1.5 Gbps SATA (Serial AT Attachment)
	Architecture	1.5 Gb SATA
	SAS Connectors	1 internal SFF8484 & 1 external SFF8470 / internal SFF8484 shared x4 Wide SAS Ports 12 Gbps per x4 Wide SAS Port (4 x 3 Gbps)
	Data Transfer Method	64-bit wide, PCIX 133 MHz (1 GB/s maximum bandwidth)
	PCI Bus Speed	PCIX-133 and 3.3 volt PCI compatibility only
	Memory Bus Speed	DDR-266 and 72 bit wide bus
	PCI	64-bit, 133-MHz PCI-X (1 GB/s maximum bandwidth)
	Simultaneous Drive Transfer Ports	PCI-X and 3.3 volt PCI compatibility only
	Port Transfer Rate	2 x4 Wide SAS Ports
	Software upgradeable Firmware	12 Gb/s per x4 Wide SAS Port (4 x 3 Gb/s)
	Cache Memory	Yes
	Logical Drives Supported	256 MB Read/Write (512-MB module upgrade available); ECC protection, battery-backed, and removable
	Maximum Capacity	Up to 32 logical drives Up to 2.2 TB per logical drive
	Memory Addressing	2.7 TB (38 x 72 GB) 64-bit, supporting servers memory greater than 4 GB
	RAID Support	RAID 6 (Advanced Data Guarding) RAID 5 (Distributed Data Guarding) RAID 1+0 (Striping & Mirroring) RAID 0 (Striping)
	Upgradeable Firmware Disk Drive and	4-MB flashable ROM
	Enclosure Protocol Support	3 Gb SAS and 1.5 Gb SATA

Technical Specifications

Embedded NC7782 Dual Port PCI-X 10/100/1000T Gigabit network adapter	Network Interface	10Base-T/100Base-TX/1000Base-TX	
	Compatibility	IEEE 802.3 10Base-T	
		IEEE 802.3ab 1000Base-T	
		IEEE 802.3u 100Base-TX	
	Data Transfer Method	64-bit bus-master 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-TX (Half and Full-Duplex)	2000 Mb/s
	Connector	Two RJ-45	
	Cable Support	10Base-T	Categories 3, 4 or 5 UTP; up to 328 ft (100 m)
		100Base-TX	Category 5 or higher UTP; up to 328 ft (100 m)
		1000BaseTX	Category 5 or higher UTP; up to 328 ft (100 m)