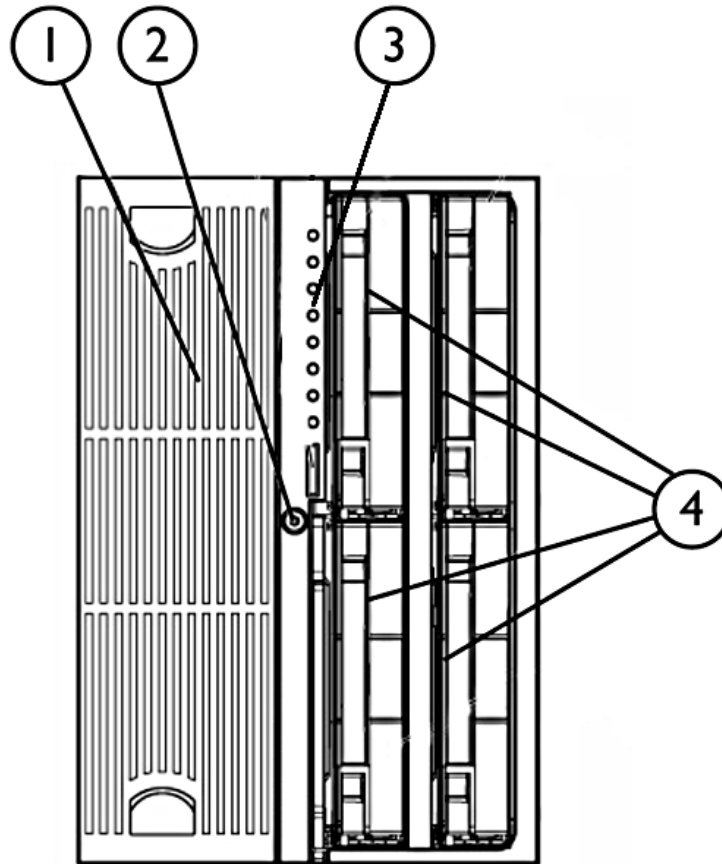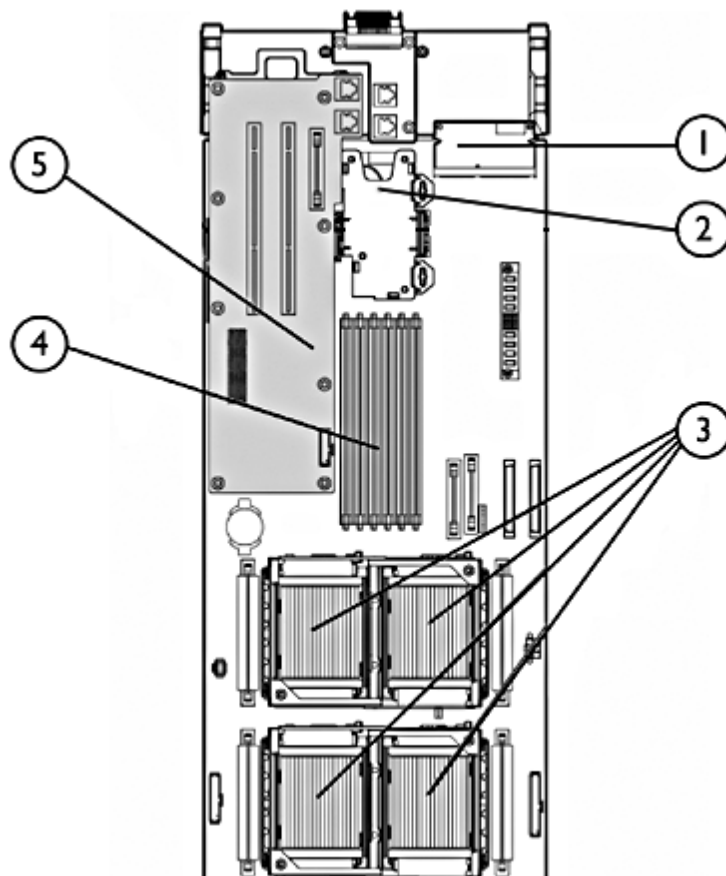*Overview*

HP ProLiant BL40p Server Blade (Front)

1. Removable fan cage - supports six (6) hot plug, redundant fans
2. Power On/Standby button
3. Front panel LEDs
4. Up to four (4) Ultra320 hot plug, hard disk drives (optional)

Overview

HP ProLiant BL40p Server Blade (Interior System Board)

1. Smart Array 5i Plus memory module
2. Battery-Backed Write Cache Enabler for Smart Array 5i Plus (optional)
3. Up to four Intel Xeon MP processors
4. Six PC2100 ECC DDR DIMM slots
5. PCI-X Mezzanine Board - supports two (2) 64-bit/100MHz PCI-X adapter cards

What's New

- New HP BladeSystem p-Class 1U Power Enclosure
- The HP BladeSystem Management Suite is delivered in a convenient to purchase pack which includes a BL p-Class Server Blade Enclosure with enhanced backplane components, a single copy of Systems Insight Manager (SIM) and 8 licenses for each of the following products: Rapid Deployment Pack (RDP), Performance Management Pack (PMP) and the Vulnerability and Patch Management Pack (VPM).

Overview

At A Glance

This document covers the HP ProLiant BL40p server blade only. For more information on HP BladeSystems p-Class Infrastructure and HP BladeSystem p-Class Interconnect Components, please see the following QuickSpecs:
HP BladeSystem p-Class Infrastructure QuickSpecs:
http://h18000.www1.hp.com/products/quickspecs/12330_div/12330_div.HTML
and HP BladeSystem p-Class Interconnect Components QuickSpecs:
http://h18000.www1.hp.com/products/quickspecs/12331_div/12331_div.HTML

HP ProLiant BL40p Server Blade includes:

- Intel Xeon MP 3.0GHz\4MB or 2.2GHz\2MB processor (quad capability)
- ServerWorks GC-LE Chipset
- 512 -MB or 1024 MB of 2-way interleaved PC2100 ECC DDR (2 x 1 Interleaved Memory), expandable to 12 GB
- Advanced Memory Protection with Online Spare
- Five NC7781 PCI-X Gigabit NICs (embedded) with WOL (Wake On LAN) and Preboot eXecution Environment (PXE)
- One additional 10/100T NIC dedicated to Integrated Lights-Out (iLO) Management
- Smart Array 5i Plus Controller with battery-backed write cache (integrated on system board) standard on the 3.0GHz/4M model, optional on the 2.2GHz/2M model
- Wide Ultra3 SCSI Drive Cage standard supports up to four 1" hot plug hard drives
- Two PCI-X slots (64b/100MHz capable) for redundant SAN connectivity
- Integrated Lights-Out (iLO) Management (ASIC on motherboard)
- Plugs vertically into p-Class server enclosure
- Up to 12 HP ProLiant BL40p server blades fit in 42U rack
- Protected by HP Services and a worldwide network of resellers and service providers. HP ProLiant BL40p Server Blade Limited Warranty includes 3 year Parts, 1 year Labor, 1-year on-site support. Certain restrictions and exclusions apply. Pre-Failure Notification on processors, memory, and SCSI hard drives.

Standard Features (Server Blade)

Processor **NOTE:** One of the following depending on Model:	Xeon MP processor 3.0 GHz/4MB Xeon MP processor 2.2 GHz/2MB		

Upgradeability	Upgradeable to quad processing

Cache Memory	4-MB Level 3 Cache (on the 3.0GHz Model) 2-MB Level 3 Cache (on the 2.2GHz Models)

Chipset	ServerWorks GC-LE chipset **NOTE:** For more information regarding ServerWorks, please see the following URL: http://www.serverworks.com/products/overview.html.

Memory Protection	Advanced Memory Protection with Online Spare

Memory	Type	2-way interleaved PC2100 ECC DDR	(2 X 256 MB)
	Standard	512 MB (1 processor model)	
	Maximum	12,288 MB	(2 X 512 MB)
	Standard	1024 MB (2 processor model)	
	Maximum	12,288 MB	
	NOTE: Memory must be installed in pairs. Advanced Memory Protection with Online Spare.		

Network Adapter	Six network adapters total: Five NC7781 PCI-X Gigabit NICs (embedded) with WOL and PXE One 10/100T iLO NIC dedicated to management

Expansion Slots **I/O cable**	Two Dedicated PCI-X slots (64b/100MHz capable) for redundant SAN connectivity **I/O cable connectors:** (2)USB 1.1 ports, (1) video port, (1) iLO port and (1) kernel debug port (2) I/O cables ship with every server blade enclosure Tested USB devices (keyboard, mouse, floppy) are listed in options section of this QuickSpecs

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

Standard Features (Server Blade)

Internal Storage	Hard Drives	None ship standard	
Maximum Internal Storage	SCSI	1200-GB (internal drive cage)	(4 x 300-GB)

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

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

---

Graphics Resolution Supported   Resolution Color Depths   Depths 1280 x 1024, 64k, 256,16
1024 x 768, 16.7M, 64k, 256, 16
800 x 600, 16.7M, 64k, 256, 16
640 x 480, 16.7M, 64k, 256, 16

Dimensions   6U high x 7" wide. Fits within p-Class Server Blade Enclosure. One HP ProLiant BL40p server blade takes up four (4) server blade bays within a server blade enclosure. Two HP ProLiant BL40p server blades can fit within one server blade enclosure.

Standard Features

ProLiant Essentials Foundation Pack Software for the ProLiant BL Server Blades	HP Systems Insight Manger	HP Systems Insight Manager (HP SIM) help 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 is easy to set up to work with the Insight Management Agents, integrated Light-Out and Remote Insight Light-Out Edition, and Version Control Agents to deliver robust fault, configuration, and asset management as well as remote administration. With HP Systems Insight Manager customers will also be able to take advantage of role-based security; the ability to manage ProLiant, Integrity, and HP9000 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 Systems Insight Manager visit http://www.hp.com/go/hpsim.
	ProLiant Essentials Rapid Deployment Pack	Rapid Deployment Pack (RDP) is an automated deployment and provisioning solution for all ProLiant servers. RDP includes the Altiris Deployment Solution and ProLiant Integration Module featuring ProLiant server pre-configured events for OS installation, and optimized software drivers, firmware and management agents. Every RDP CD includes 10-node trial licenses for evaluation purposes. RDP requires a license for each server deployed and are available for purchase with blade servers. For more information, visit http://www.hp.com/servers/rdp.
	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.
	Subscriber's Choice	Subscriber's Choice Driver and Support Alerts/Notifications is a web-based email subscription service that provides 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 the RDP CD, SmartStart or downloadable from Software and Drivers download pages, linked from the SmartStart website at 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.

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

Standard Features

Optional ProLiant Essentials Value Packs

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

- Intelligent Networking Pack - detects and analyzes network bottlenecks or broken network linkages and steers traffic to the optimum route based on network conditions, plus it provides an extra layer of protection. The virus throttle feature of the solution slows the propagation of fast spreading virus
- 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
- 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.
- 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
- 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.

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.

SmartStart

SmartStart is a tool that simplifies single server setup, providing a rapid way to deploy reliable and consistent server configurations. SmartStart 7.00 and later can now deploy the HP ProLiant BL20P G3 and HP ProLiant BL40P server blades, using the I/O port with an attached USB CD-ROM device. To obtain a copy of SmartStart for your blade server, redeem the coupon that is included with your Blade server or order your copy from the SmartStart web site. For more information, please visit the SmartStart Web site at http://www.hp.com/servers/smartstart.
SmartStart version supported (minimum): SmartStart 6.20

OS Support

Microsoft® Windows 2000 Advanced Server
Red Hat Linux 8.0
Red Hat Enterprise Linux AS
SuSE Linux Enterprise Server 7
United Linux
Microsoft Windows Server 2003

NOTE: For a 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 BL p-Class, please see: http://h18004.www1.hp.com/support/files/server/us/family/model/5342.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.

Standard Features

Supported Software Options	VMware Virtualization Software Red Hat Enterprise Linux and management bundle for HP BladeSystems **NOTE:** For more information on HP's Certified and Supported HP ProLiant Servers, please visit the VMware Server Support Matrix at: http://h18004.www1.hp.com/products/servers/software/vmware/hpvmwarecert.html **NOTE:** For a more complete and up-to-date information on Linux for HP BladeSystems support, please visit HP Linux website at: http://h18000.www1.hp.com/products/quickspecs/12321_div/12321_div.HTML
Intelligent Manageability	Integrated Lights-Out Advanced (iLO) Virtual CD-ROM Virtual Floppy * Virtual Power Button Control Dedicated LAN Connectivity Automatic IP Configuration via DHCP/DNS/WINS Industry Standard 128-bit Secure Sockets Layer (SSL) Security IML and iLO Event Logging Support for 12 user accounts with customizable access privileges **NOTE:** For more information on iLO Advanced visit the website: http://www.hp.com/servers/ilo/ Automatic Server Recovery-2 (ASR-2) HP Systems Insight Manager Redundant ROM Remote Flash ROM ROM Based Setup Utility (RBSU) Advanced Configuration and Power Interface Specification Ready (ACPI) Server Health Logs HP Redundant Power Supply Utility Pre-Failure Warranty (covers processors, as well as hard drives and memory) HP Interconnect Switch Management System and Utilities (interconnect switch option) Integrated Management Log (IML) Dynamic sector repairing and drive parameter tracking (with Smart Array controllers)Redundant/adaptive load balancing NIC Support * **NOTE:** Advanced features such as Graphical Remote Console and Virtual Floppy are included with the BL p-Class server.
Availability	Four hot-plug SCSI hard drive bays and integrated RAID (Smart Array 5i Plus Controller with 64-MB total Memory on the 5i Plus Memory Module) on every server blade. Battery Backed Write Cache Enabler Module standard on the 2 processor model and optional on the 1 processor model. Redundant ROM on each server blade ECC Memory
Security	Power-on password Administrator's password Integrated Lights-Out has 12 customizable user accounts and SSL encryption Integrated Lights-Out can be disabled via a Global Setting

Standard Features

Factory Express Portfolio for Servers and Storage

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

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

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

Service and Support

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

NOTE: Server Blade Limited Warranty includes 3 year Parts, 3 year Labor, 3-year on-site support.

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

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

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

HP has introduced a new building block approach which allows customers to purchase the right coverage at the right time whether purchasing an initial server blade plus enclosure or purchasing additional ProLiant server blades over time. HP will offer two sets of Care Pack services, one designed to support the server blade and one designed to support the enclosure.

HP Care Pack services for HP ProLiant Server Blades cover the server blade and all HP branded hardware options qualified for the server, purchased at the same time or afterwards, internal to the server.

HP Care Pack services for HP BladeSystem p-Class Server Blade Enclosure covers the enclosure including patch panels, HP supported Ethernet interconnects, power enclosure with power supplies and power distribution.

NOTE: For more information regarding the Blade service portfolio visit our worldwide web site on the internet at: http://h20219.www2.hp.com/services/cache/81725-0-0-225-121.html
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

Standard Features

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

ProLiant BL40p P3.0-4MB, 1GB (2P) 344286-B21	Processor(s)	(2) Xeon MP 3.0 GHz standard (up to 4 supported)
	Cache Memory	4-MB Level 3 Cache (per processor)
	Memory	1024 MB (Standard) of 2-way interleaved PC2100 ECC DDR (2 X 512 MB)
	Network Controller	Five NC7781 PCI-X Gigabit NICs (embedded) with WOL and PXE One additional 10/100T NIC dedicated to iLO Management
	Storage Controller	Smart Array 5i Plus Controller (integrated on system board) with BBWC
	Hard Drives	None ship standard
	Internal Storage	Up to 1200-GB maximum
	Optical Drive	None
	Form Factor	6U high x 7" wide. Fits within HP BladeSystem p-Class Enhanced Server Blade Enclosure

ProLiant BL40p P2.2-2MB, 512MB (1P) 345628-B21	Processor(s)	(1) Xeon MP 2.2 GHz standard (up to 4 supported)
	Cache Memory	2-MB Level 3 Cache (per processor)
	Memory	512 MB (Standard) of 2-way interleaved PC2100 ECC DDR (2 X 256 MB)
	Network Controller	Five NC7781 PCI-X Gigabit NICs (embedded) with WOL and PXE One additional 10/100T NIC dedicated to iLO Management
	Storage Controller	Smart Array 5i Plus Controller (integrated on system board)
	Hard Drives	None ship standard
	Internal Storage	Up to 1200-GB maximum
	Optical Drive	None
	Form Factor	6U high x 7" wide. Fits within HP BladeSystem Enhanced Server Blade Enclosure

Options

HP ProLiant BL40p server blade Unique Options	Xeon MP 3.0 GHz 4MB Processor Option Kit	344287-B21
	Xeon MP 2.2 GHz 2MB Processor Option Kit	345627-B21
	HP BladeSystem p-Class Diagnostic Station Upgrade Kit for the HP ProLiant BL40p server blade	309329-B21

ProLiant Essentials Value Pack Software	**ProLiant Essentials Intelligent Networking Pack Windows Edition and Linux Edition**	
	ProLiant Essentials Intelligent Networking Pack, Single Server License NOTE: For use with a single server. Contains one license with a unique license activation key and documentation.	372906-B21
	ProLiant Essentials Intelligent Networking Pack Linux Edition, Single Server License NOTE: For use with a single server. Contains one license with a unique license activation key and documentation.	397004-B21
	NOTE: For additional ProLiant Intelligent Networking Pack License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12062_div/12062_div.HTML http://h18000.www1.hp.com/products/quickspecs/12327_div/12327_div.HTML	
	ProLiant Essentials Performance Management Pack	
	ProLiant Essentials Performance Management Pack, Single-Server License NOTE: For use with a single server. Contains one license with a unique license activation key, HP Management CD and documentation. NOTE: The most recent version of the software can always be downloaded at http://www.hp.com/products/pmp. NOTE: For additional ProLiant Performance Management Pack License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11925_div/11925_div.HTML	306696-B21
	ProLiant Essentials Rapid Deployment Pack Windows Edition and Linux Edition Release	
	Rapid Deployment Pack, Single-Server License NOTE: This license allows 1 server to be deployed and managed via RDP.	267196-B21
	Rapid Deployment Pack, Single-Server License (Japan) NOTE: This license allows 1 server to be deployed and managed via RDP.	267196-291
	NOTE: For additional ProLiant Essentials Rapid Deployment Pack License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11053_div/11053_div.HTML http://h18000.www1.hp.com/products/quickspecs/11713_div/11713_div.HTML	
	ProLiant Essentials Server Migration Pack	
	ProLiant Essentials Server Migration Pack, Single-Migration License NOTE: Contains one license, enabling 1 server migration, with a unique license activation key and documentation. NOTE: This license allows 1 server to be migrated from a physical server to a virtual machine. Or this license can be used to migrate a virtual machine from one virtualization layer i.e. VMware GSX to a different virtualization layer such as VMware ESX or Microsoft Virtual Server 2005.	375345-B21
	NOTE: For additional ProLiant Server Migration Pack License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12328_div/12328_div.HTML	
	ProLiant Essentials Workload Management Pack	
	ProLiant Essentials Workload Management Pack, Single Server License	303284-B21

Options

NOTE: For additional ProLiant Workload Management Pack License Kits please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/11452_div/11452_div.HTML

ProLiant Essentials Virtual Machine Management Pack

ProLiant Essentials Virtual Machine Management Pack, Single-Server License 372214-B21
NOTE: For use with a single server. Contains one license with a unique license activation key and documentation.

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

ProLiant Essentials Vulnerability and Patch Management Pack

ProLiant Essentials Vulnerability and Patch Management Pack, Single-Server License 371645-B21
NOTE: For use with a single server. Contains one license with a unique license activation key and documentation.

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

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

Processor	Xeon MP 3.0GHz 4MB Processor Option Kit	344287-B21
	Xeon MP 2.2GHz 2MB Processor Option Kit	345627-B21

Memory (DDR DIMMs)	512 MB of PC2100 ECC DDR DIMM Memory Kit (2x256 MB)	300678-B21
	1024 MB of PC2100 ECC DDR DIMM Memory Kit (2x512 MB)	300679-B21
	2048 MB of PC2100 ECC DDR DIMM Memory Kit (2x1024 MB)	300680-B21
	4096 MB of PC2100 ECC DDR DIMM Memory Kit (2x2048 MB)	300682-B21

Options

Hard Drives	Wide Ultra320 – 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)

Storage Controllers	Battery Backed Write Cache Enabler Option Kit	255514-B21
	Battery Backed Write Cache Enabler Option Kit (Japan)	255514-291
	Smart Array 6402/128 Controller	273915-B21
	Smart Array 6404/256 Controller	273914-B21
	Smart Array 642 Controller	291967-B21
	256MB DDR, Battery-Backed Cache Upgrade Kit for SA-6400	273913-B21

NOTE: This 256-MB Battery-Backed Cache Module upgrade kit supports the Smart Array 6400 series controller only.

128MB Battery-Backed Cache Enabler
NOTE: This 128MB BBWC supports the Smart Array 641 Controller and Smart Array 642 Controller.

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/11063_div/11063_div.HTML
(Smart Array 5i Plus)
http://h18000.www1.hp.com/products/quickspecs/11587_div/11587_div.HTML
(Smart Array 6400 Series)
http://h18000.www1.hp.com/products/quickspecs/12069_div/12069_div.HTML
(Smart Array 642)

Options

Tape Libraries	HP StorageWorks MSL6000 Tape Library	
	Ultrium 960 technology	
	MSL6030, 1 drive, 30 slots, Ultrium 960	AD606A
	MSL6030, 1 drive, 30 slots, Ultrium 960, with embedded FC router	AD608A
	MSL6060, 2 drive, 60 slots, Ultrium 960	AD607A
	MSL6060, 2 drive, 60 slots, Ultrium 960, with embedded FC router	AD609A
	SDLT 600 technology	
	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, 1 drive, 30 slots, Ultrium 460, with embedded FC router	AD600A
	MSL6060, 2 drive, 60 slot Ultrium 460, with embedded FC router	AD601A

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 Virtual Library Systems

HP 6105 Virtual Library System	AF728A
HP 6510 Virtual Library System	AF729A
HP 6840 Virtual Library System	AG051A

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

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

NOTE: Please see the HP StorageWorks Magneto-Optical Products data sheet for a
complete listing of available jukeboxes at:
http://www.hp.com/products1/storage/products/archivalprod/brochures/MO_family_pb.pdf
NOTE: Please reference the Magneto-Optical Jukebox data sheets at
http://www.hp.com/go/optical for additional information needed to create a complete
solution.

Options

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

NOTE: Please see the HP StorageWorks Ultra Density Optical Jukeboxes QuickSpecs for a complete listing of available jukeboxes at: http://h18006.www1.hp.com/products/quickspecs/11944_div/11944_div.html
NOTE: Please reference the Ultra Density Optical Jukebox QuickSpecs at http://www.hp.com/go/optical for additional information needed to create a complete solution

Diagnostic Options	HP BladeSystem p-Class Diagnostic Station	230743-B21

NOTE: The Diagnostic Station allows access to the ProLiant p-Class server blades and the BL p-Class interconnect switches outside of the server enclosure. The option provides power and a data interface so that "offline" upgrade and diagnostic functions may be performed.

	HP BladeSystem p-Class Diagnostic Station Upgrade Kit for the HP ProLiant BL40p server blade	309329-B21

Other Options	HP BladeSystem BL p-Class Server Enclosure Shipping Bracket Option Kit	293121-B21

NOTE: Used to secure one server blade enclosure in a rack when moving.

	HP BladeSystem BL p-Class Power Enclosure Shipping Bracket Option Kit	365044-B21

NOTE: Used to secure one power enclosure in a rack when moving.

External Storage - Rack	HP StorageWorks Modular Smart Array 20	335921-B21

NOTE: Rack-mountable 12 (SATA) drive enclosure with U320 Host connectivity, redundant power supplies.

	HP StorageWorks Modular Smart Array 20 Starter Kit	366172-B21

NOTE: Rack-mountable 12 (SATA) drive enclosure with U320 Host connectivity, redundant power supplies. Includes Smart Array 6402/128 Controller.

NOTE: The Modular Smart Array Enclosure 20 Family supports the SATA 1.5Gb/s 1" Hot Plug Hard Drives.

	HP StorageWorks Modular Smart Array 30 SB	302969-B21

NOTE: Rack-mountable 14 drive enclosure with single bus, redundant power supplies

	HP StorageWorks Modular Smart Array 30 DB	302970-B21

NOTE: Rack-mountable 14 drive enclosure with dual bus, redundant power supplies

NOTE: The Modular Smart Array Enclosure 30 Family supports the Wide Ultra3, Ultra320 1" Hot Plug Hard Drives.

	Redundant Power Supply 499W	338296-B21
	Ultra320 Dual Bus I/O Module for MSA30	287483-B21
	Ultra320 Single Bus I/O Module for MSA30	287484-B21

Options

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)	
HP StorageWorks Modular Smart Array 1500 cs	Modular Smart Array 1500 Controller Shelf	AA986A
	NOTE: Please see the StorageWorks Modular SAN Array 1500 cs QuickSpecs for additional options and configuration information at: http://www.hp.com/go/MSA1500cs	
HP StorageWorks Modular Smart Array 1000	HP StorageWorks Modular Smart Array 1000	201723-B22
	NOTE: Please see the Modular Smart Array 1000 QuickSpecs for additional options and configuration information at http://h18000.www1.hp.com/products/quickspecs/11033_na/11033_na.HTML (North America) http://h18000.www1.hp.com/products/quickspecs/11033_div/11033_div.HTML (Worldwide)	
StorageWorks Enterprise Modular Array 16000 FC	StorageWorks Director 2/64	286809-B21
	NOTE: Please see the StorageWorks SAN Director 2/64 QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/11003_na/11003_na.HTML (North America) http://h18000.www1.hp.com/products/quickspecs/11003_div/11003_div.HTML (Worldwide)	
Controllers and Host Bus Adapters	FCA2404DC 2Gb PCI-X-to-FC HBA for W2K and Windows Server 2003	323264-B21
	FCA2404 2Gb PCI-X HBA for W2K and Windows Server 2003	305573-B21
	FCA2214 2Gb PCI-X FC HBA for Windows and Linux	281541-B21
	FCA2214DC 2 Gb Dual Channel PCI-X FC HBA for Windows	321835-B21

Options

Cluster Options	HP Serviceguard for Linux ProLiant Cluster, A.11.15 (2 license version)	305199-B24
	HP Serviceguard for Linux ProLiant Cluster, A.11.16 (2 license version) - Red Hat EL 3&4, SUSE SLES9	305199-B26
	HP Serviceguard for Linux, A.11.15 (single license version - SUSE SLES8)	307754-B24
	HP Serviceguard for Linux, A.11.16 (single license version- Red Hat EL 3&4, SUSE SLES9)	307754-B26

NOTE: For additional information regarding the HP Serviceguard for Linux License, please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11518_na/11518_na.html

	ProLiant Cluster Kit with OpenView Storage Mirroring	364025-B21
	ProLiant Cluster Starter Kit	364023-B21

NOTE: For additional information regarding the ProLiant Cluster for HA/F100, HA/F200 for Modular Smart Array 1000 please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11035_na/11035_na.html (North America) http://h18000.www1.hp.com/products/quickspecs/11035_div/11035_div.html (Worldwide)

	ProLiant Cluster F500 for the Enterprise SAN	364024-B21

NOTE: For additional information regarding the HP ProLiant Cluster for ProLiant Cluster HA/F500 for Enterprise Virtual Array please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11055_na/11055_na.html (North America) http://h18000.www1.hp.com/products/quickspecs/11055_div/11055_div.html (Worldwide)

NOTE: For additional information regarding the HP ProLiant Cluster for HA/F500 please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/10232_na/10232_na.html (North America) http://h18000.www1.hp.com/products/quickspecs/10232_div/10232_div.html (Worldwide)

USB Options	USB 1.44-MB External Diskette Drive (Carbonite)	DC141B
	USB 2-Button Optical Mouse (Carbonite)	DC172B
	USB 2-Button Scroll Mouse (carbonite)	DD441B
	256MB Hp Drive Key II (USB 2.0)	PH657A

Options

HP Rack 5000 Series (Graphite Metallic)	HP5642 Rack-Unassembled	358254-B21

Rack Options for Rack 5000 Series (Graphite Metallic)	Stabilizer Kit for 5642 Rack (Graphite Carbon) NOTE; The stabilizer kit is used to prevent rack from tipping over.	374493-B21
	Baying Kit for 5642 Rack (Graphite Carbon) NOTE: The baying kit is used to join two or more HP 5642 rack.	374499-B21

HP Rack 10000 Series (Graphite Metallic)	Rack, HP Infrastructure 42U (HV)	379005-001
	Rack, HP Infrastructure 42U (LV)	379006-001
	HP S10614 (14U) Rack Cabinet - Shock Pallet	292302-B22
	HP Rack 10842 (42U) - Pallet NOTE: Server Blade Enclosures must be field integrated into the 10842 racks. Factory integration of Server Blade Enclosures into the 10842 is not supported.	257415-B21
	HP Rack 10842 (42U) - Shock Pallet NOTE: Server Blade Enclosures must be field integrated into the 10842 racks. Factory integration of Server Blade Enclosures into the 10842 is not supported.	257415-B22
	HP Rack 10842 (42U, 800mm wide) - Pallet	245160-B21
	HP Rack 10842 (42U, 800mm wide) - Shock Pallet	245160-B23
	HP Rack 10647 (47U) - Pallet	245161-B21
	HP Rack 10647 (47U) - Crated	245161-B22
	HP Rack 10642 (42U) - Pallet	245161-B23
	HP Rack 10642 (42U) - Shock Pallet	245162-B21
	HP Rack 10642 (42U) - Crated	245162-B22
	HP Rack 10636 (36U) - Pallet	245162-B23
	HP Rack 10636 (36U) - Shock Pallet	245163-B21
	HP Rack 10636 (36U) - Crated	245163-B22
	HP Rack 10622 (22U) - Pallet	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: Not all HP equipment is qualified to be shipped in the Rack 10000 series.	

Rack Options for HP Rack 10000 Series	HP Rack Light Kit (Neon)	361589-B21
	HP Rack Plinth Kit (Carbon)	251960-B21
	800mm Wide Stabilizer Kit (Graphite) NOTE: Supported by the Rack 10842 cabinet only.	255488-B21
	600mm Stabilizer Kit – Graphite	246107-B21
	Baying Kit for Rack 10000 series (Carbon)	248929-B21
	42U Side Panel – Graphite Metallic	246099-B21
	110V Fan Kit (Graphite) NOTE: Roof Mount Includes power cord with IEC320-C13 to Nema 5-15P.	257413-B21
	220V Fan Kit (Graphite)	257414-B21

NOTE: Roof Mount Includes power cord with IEC320-C13 to Nema 6-15P.

36U Side Panel – Graphite Metallic	246102-B21
47U Side Panel – Graphite Metallic	255486-B21
9000/10000 Series Offset Baying Kit (42U)	248931-B21

NOTE: This kit can be used to connect 9000 and 10000 series racks of the same U height together. Kit contents include hardware for connecting racks and a panel to cover the 100mm gap at the rear of the two racks.

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

Ballast Option Kit	120672-B21
9000/10000 Series Offset Baying Kit (42U)	248931-B21

NOTE: This kit can be used to connect 9000 and 10000 series racks of the same U height together. Kit contents include hardware for connecting racks and a panel to cover the 100mm gap at the rear of the two racks.

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

100 kg Sliding Shelf	234672-B21
Monitor/Utility Shelf - Graphite	253449-B21
Depth Adjustable Fixed Rail	332558-B21
Cable Management D-Rings Kit	168233-B21
TFT5600 Rack Keyboard Monitor	221546-xx1
TFT7210R Rack Mounted 17" Monitor	348373-B21
TFT5600 Rack Keyboard Monitor	221546-xx1
1U Rack Keyboard & Drawer (Carbon)	257054-xx1

Country Code Key (for TFT5600 RKM Rack Keyboard Monitor
(P/N 221546-xx1)and 1U Rack Keyboard & Drawer (P/N 257054-xx1))

XX = 00	US	XX = 09	Norway
XX = 03	UK	XX = 10	Sweden/Finland
XX = 04	Germany	XX = 11	Switzerland
XX = 05	France	XX = 13	Portugal
XX = 06	Italy	XX = 18	Belgium
XX = 07	Spain	XX = 29	Japan
XX = 08	Denmark	XX = B3	International

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

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	HP BladeSystem CAT5 KVM Interface Adapter - 1 pack	AF100A
	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 KVM CAT5 0x1x8 Server Console	336044-B21
	HP KVM CAT5 0x2x16 Server Console Switch	

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

Rack Options for Telco Racks	Bus Bar Telco Rail Option Kit	245249-B21
	Enclosure Telco Rail Option Kit	266076-B21

Service and Support Offerings (HP Care Pack Services)

NOTE: The HP Care Pack service part numbers below for ProLiant BL p-Class server blades, cover the server blade and all HP branded hardware options qualified for the server, purchased at the same time or afterwards, internal to the server.

Hardware Services On-site Service

4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic	UD187E
4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	UD188E
6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	UD189E

The HP Care Pack service part numbers below for HP BladeSystem p-Class server blade enclosure covers the enclosure including patch panels, HP supported Ethernet interconnects, power enclosure with power supplies and power distribution.

Hardware Services On-site Service

4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic	HC031E
4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	HC032E
6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	HC033E

NOTE: The HP Care Pack service part numbers below covers the HP BladeSystem Brocade and McData SAN Switches.

Hardware Services On-site Service

Next Business Day On-site Service, 5-Day x 9-Hour Coverage, 3 Years, Electronic	UC007E
4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic	UC008E
4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	UC009E
6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	UC023E

Options

Installation & Start-up Services

HP Installation & Startup Service for HP BladeSystem Infrastructure	UC905E

NOTE: provides for an integrated hardware and software implementation that includes remote service planning, onsite deployment of hardware and software, installation verification testing and customer orientation. Hardware deployment covers the installation of a single BladeSystem enclosure that include server blades (up to 16), Ethernet network interconnect, and power options. Software deployment covers the installation and configuration of HP Systems Insight Manager (SIM), HP Rapid Deployment Pack (RDP), and deploy up to two operating system editions of either Windows or Linux, using scripted operating system installation software.

ProLiant BL p-Class Blade Server Hardware Installation, Electronic	UA219E
HP BladeSystem p-Class Enclosure and Server Blade Hardware Installation, Electronic	U4971E
Provides for the Installation and Start-up of Rapid Deployment Pack, Electronic NOTE:	U5683E

Provides for the installation on a Customer supplied server designated as a Deployment Server. Includes the deployment of a single server. This new server will be deployed using either one of the pre-configured scripts or an image. In addition, the service will provide for the capture and storage of the configuration of the newly deployed server and orientation on product usage. To be delivered during standard office ours, standard office days.

Provides for the Installation and Start-up of Rapid Deployment Pack Implementation of Rapid Deployment Pack (Basic) (Electronic)	UA042E
HP ProLiant Essentials Vulnerability and Patch Management Pack, Electronic	UC929E

NOTE: Service coverage: onsite installation of the Vulnerability and Patch Management (VPM) software on a customer designated server, configuration of the VPM software to acquire security patches, enabling the VPM software to scan up to five (5) systems, applying the security patches to the designated servers, generating a report from VPM that shows the vulnerability assessment results, and providing customer with an orientation to the software.

Provides for the Installation and Start-up of System Insight Manager (Electronic)	UA041E
Provides for the Installation and Start-up of System Insight Manager (Electronic)	UA040E

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

Software Operating Environment Care Packs

Microsoft Software Operating Environment Software Telephone 9x5 - 3 incident (Electronic)	U8169E
Red Hat Software Operating Environment Software Telephone 9x5 - 10 incident (Electronic)	U3402E
SUSE Software Operating Environment Software Telephone 9x5 - 3 incident (Electronic)	U9615E
ProLiant Essentials Operating Environment, - 5 Day, 8x5,1 year, 3 incident (Electronic)	U8222E

Memory

HP ProLiant BL40p Server Blade (2P Model)

Standard Memory

1024-MB of 2-way interleaved PC2100 ECC DDR installed (2 x 512-MB SDRAM DIMM)

Standard Memory Plus Optional Memory

Up to 9216-MB of 2-way interleaved PC2100 ECC DDR memory is available with the installation of optional DDR DIMM memory expansion kits.

Standard Memory Replaced with Optional Memory

Up to 12288-MB of 2-way interleaved PC2100 ECC DDR memory is available with the removal of standard memory and the installation of optional DDR DIMM memory expansion kits.

Memory		Slot					
		1	2	3	4	5	6
Standard	1,024MB	512 MB	512 MB	Empty	Empty	Empty	Empty
Optional	9,216MB	512 MB	512 MB	2048 MB	2048 MB	2048 MB	2048 MB
Maximum	12,288 MB	2048 MB	2048 MB	2048 MB	2048 MB	2048 MB	2048 MB

Following are memory options available from HP:
- 2512MB of PC2100 ECC DDR DIMM Memory Kit (2x256MB)   300678-B21
- 1024MB of PC2100 ECC DDR DIMM Memory Kit (2x512MB)   300679-B21
- 2048MB of PC2100 ECC DDR DIMM Memory Kit (2x1024MB)   300680-B21
- 4096MB of PC2100 ECC DDR DIMM Memory Kit (2x2048MB)   300682-B21

HP ProLiant BL40p Server Blade (1P Model)

Standard Memory

512MB of 2-way interleaved PC2100 ECC DDR installed (2 x 256-MB SDRAM DIMM)

Standard Memory Plus Optional Memory

Up to 8704-MB of 2-way interleaved PC2100 ECC DDR memory is available with the installation of optional DDR DIMM memory expansion kits.

Standard Memory Replaced with Optional Memory

Up to 12288-MB of 2-way interleaved PC2100 ECC DDR memory is available with the removal of standard memory and the installation of optional DDR DIMM memory expansion kits.

Memory		Slot					
		1	2	3	4	5	6
Standard	512MB	256 MB	256 MB	Empty	Empty	Empty	Empty
Optional	4,608MB	256 MB	256 MB	2048 MB	2048 MB	2048 MB	2048 MB
Maximum	12,288MB	2048 MB	2048 MB	2048 MB	2048 MB	2048 MB	2048 MB

Memory

Following are memory options available from HP:
- 512MB of PC2100 ECC DDR DIMM Memory Kit (2x256MB)   300678-B21
- 1024MB of PC2100 ECC DDR DIMM Memory Kit (2x512MB)   300679-B21
- 2048MB of PC2100 ECC DDR DIMM Memory Kit (2x1024MB)   300680-B21
- 4096MB of PC2100 ECC DDR DIMM Memory Kit (2x2048MB)   300682-B21

Technical Specifications

System Unit	Dimensions (HxWxD)	17.50 cm (6.89 in) H x 26.14 cm (10.29 in) W x 17.50 cm (6.89 in)	
	Weight (maximum)	25.86 kg (57.0 lb)	
	Temperature Range*	Operating	10°C to 35°C (50°F to 95°F)
		Shipping	-40°C to 60°C (-40°F to 140°F)
		Storage	-20°C to 60°C (-4°F to 140°F)
	Relative Humidity** (non-condensing)	Operating	10% to 90%
		Shipping	10% to 90%
		Storage	10% to 95%
	Wet Bulb Temperature (maximum)	28°C (82°F)	

*NOTE: Operating temperature has an altitude derating of 1°C per 304.8 m (1.8°F per 1,000 ft). No direct sunlight. Upper operating limit is 3,048 m (10,000 ft) or 70 Kpa/10.1 psia. Upper non-operating limit is 9,144 m (30,000 ft) or 30.3 KPa/4.4 psia.

** NOTE: Storage maximum humidity of 95% is based on a maximum temperature of 45°C (113°F). Altitude maximum for storage is 70 KPa.