QuickSpecs

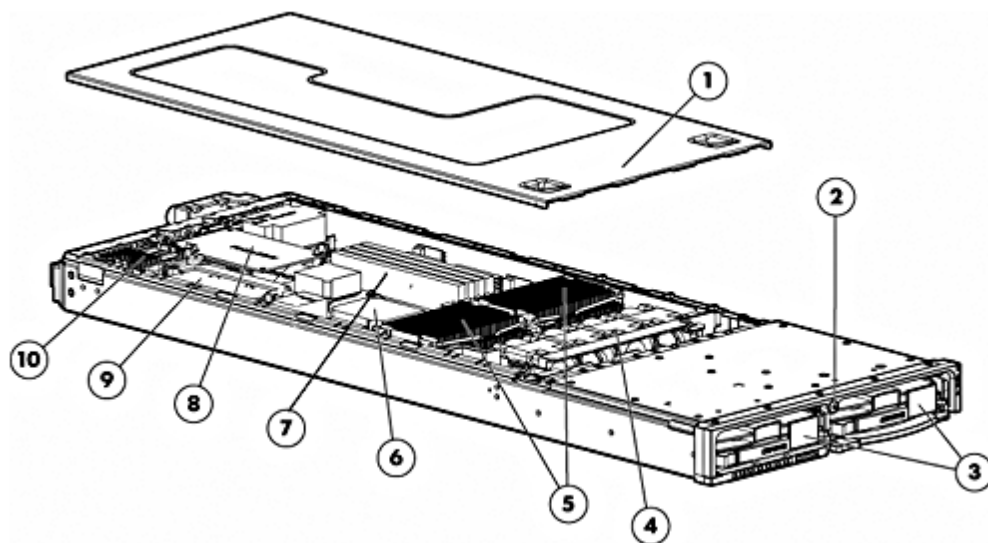*Overview*

HP ProLiant BL20p G3 Server Blade

1. Access panel
2. Power On/Standby button
3. Support for up to two U320 SCSI hard drives
4. Fan Assembly for chassis cooling
5. Up to two single-core or dual-core Intel Xeon processors with 800 MHz FSB

6. Smart Array 6i Controller
7. Four (4) PC2-3200 DDR2 Memory slots
8. Fibre-channel mezzanine card (Optional)
9. Battery-backed write cache (Optional)
10. Power converter modules

What's New

- Up to 2 Intel® Xeon™ dual-core 2.80 GHz processor with 4MB cache, EM64T, 800 MHz FSB
- Support for Intel Xeon X2.8-2MB/800 MHz DC Processor Option Kit

At A Glance

QuickSpecs

Overview

This document covers the HP ProLiant BL20p G3 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

- Performance dual processor server blade designed with enterprise availability
- HP ProLiant BL20p Generation 3 server blade includes:
    - Up to two 64-bit Intel® Xeon™ dual-core processors: 2.8GHz, or
    - Up to two 64-bit Intel Xeon single-core processors: 2.8GHz, 3.0GHz, 3.2 GHz, 3.4 GHz, 3.6 GHz or 3.8 GHz with 1MB or 2MB cache depending on processor
    - Intel E7520 Chipset
    - 1024 MB or 2048 MB PC2-3200 Registered ECC 400 MHz DDR2 memory standard, (2 x 1 Interleaved Memory), expandable to 8 GB maximum
    - Four NC7781 PCI-X Gigabit NICs (embedded)
    - One additional 10/100 NIC dedicated to iLO Management
    - Smart Array 6i (integrated on system board Controller with optional battery-backed write cache)
    - Ultra320 SCSI Drive Cage standard; supports up to two 1" Ultra320 SCSI hot plug hard drives
- New 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 featuring new firmware v 1.70 with support for Power Regulator for ProLiant and introducing support for the draft DMTF System Management Architecture for Server Hardware Command Line Protocol standard
- Dual-Port Fibre Channel Adapter (2-Gb) option for SAN connectivity
- Emulex-based Fibre Channel Mezzanine card for HP p-Class BladeSystem
- HP ProLiant BL20p server blade plugs vertically into 6U enclosure
- I/O cable with two USB ports, one video port, one iLO port and kernel debug port. The cable was specifically designed to aid in initial server image deployment.
- Integrated Access Tool for blade management and enhanced server blade documentation including Best Practices and Common Procedures guides
- Protected by HP Services and a worldwide network of resellers and service providers. Three-year parts, 3 Year Labor and 3 Year on-site limited global warranty. Certain restrictions and exclusions apply. Pre-Failure Notification on processors, memory, and SCSI hard drives

Standard Features (Server Blade)

Processor	Dual-Core Intel Xeon processor 2.8 GHZ/800MHz - 4MB
	Single-Core Intel Xeon processor 3.8 GHz/800MHz - 2MB
	Single-Core Intel Xeon processor 3.6 GHz/800MHz - 2MB
	Single-Core Intel Xeon processor 3.4 GHz/800MHz - 2MB
	Single-Core Intel Xeon processor 3.2 GHz/800MHz - 2MB
	Single-Core Intel Xeon processor 3.0 GHz/800MHz - 2MB (Low Voltage)
	Single-Core Intel Xeon processor 3.6 GHz/800MHz - 1MB
	Single-Core Intel Xeon processor 3.4 GHz/800MHz - 1MB
	Single-Core Intel Xeon processor 3.2 GHz/800MHz - 1MB
	Single-Core Intel Xeon processor 2.8 GHz - 1MB (Low-Voltage)

Upgradeability

Upgradeable to dual processing (2 Processors)
NOTE: Single-Core Models are not upgradeable to Dual-Core Models.

Cache Memory

1MB Level 2 Cache, Single-Core (Depending on model)
2MB Level 2 Cache, Single- Core (Depending on model)
4MB Level 2 Cache, Dual-Core, (Depending on model)

Chipset

Intel E7520 chipset

Memory

Type	2-way interleaved PC3200 DDR2 SDRAM running at 400 MHz
Standard	1024 MB (On 1P models)
	2048 MB (On 2P models)
Maximum	8 GB

NOTE: Memory must be installed in pairs.

Network Adapter

Five network adapters total:

Four NC7781 PCI-X Gigabit NICs (embedded) with WOL and PXE

One 10/100 iLO NIC dedicated to management
NOTE: Must use HP BladeSystem p-class server blade enclosure with enhanced backplane to utilize all four NIC's (281404-B22).

Expansion Slots

No PCI slots all features are integrated

I/O cable connectors:

(2)USB ports, (1) video port, (1) iLO port and (1) kernel debug port

(2) I/O cable ships with every server blade enclosure

Tested USB devices (keyboard, mouse, floppy) are listed in the "Options" section of this QuickSpecs

Standard Features (Server Blade)

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

Internal Storage	Hard Drives	None ship standard	
Maximum Internal Storage	SCSI	600 GB (internal drive cage)	(2 x 300 GB Ultra320, 1" drive)

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

Fiber Channel on the HP ProLiant BL20p G3 server blade   Two optional fiber channel adapters are supported by the HP ProLiant BL20p G3. Both adapters are mezzanine circuit boards which connect directly to the server blade system board. These optional fiber channel adapters are available via option kits and must be ordered separately
- QLogic based
- Utilizes a QLogic ISP2312 chipset
  - The Qlogic BL20pG3 dual-port Fibre Channel Adapter (P/N 361426-B21) is compatible with the HP ProLiant BL20p G3 server blade. Cannot be used for HP ProLiant BL20p G2 or HP ProLiant BL25p/30p/35p/40p/45p server blades)
  - Includes two small form factor pluggable transceivers with LC connectors for installation into the Patch Panel 2, CGESM or GbE2 Interconnect Switch (with the Storage Connectivity Kit)
- Emulex-based
  - Utilizes an Emulex Thor chipset
  - The Emulex based HP ProLiant 20p G3 Dual Port Fibre Channel HBA (P/N 394757-B21) is compatible with the HP ProLiant BL20p, server blade. It cannot be used with HP ProLiant BL25p/30p/35p/40p/45p server blades.
  - There are no SFP's included in the Emulex mezzanine kit for use with ProLiant BL p-Class Fibre Channel pass-through interconnects. If you require SFPs for use with an Emulex mezzanine and a FC pass through interconnect please order an SFP option kit (P/N 397577-B21) which will provide 2 FC SFPs per option kit.
- Two ports on each Dual-port Fibre Channel Mezzanine Card provide a redundant Fibre Channel connection to each server blade
- Supports up to 2 Gb/s Fibre Channel equipment
- The HP ProLiant BL20p G3 server blade can be ordered with the Dual-port Fibre Channel Adapter installed or the Dual-port Fibre Channel Adapter Option Kit can be ordered separately.

Compatible SAN   HP ProLiant BL20p G3 server blades are optimized for StorageWorks arrays

- HSG80 (MA8000, EMA12000, EMA16000); EVA5000; EVA3000; XP48, XP128, XP512, XP1024; HP StorageWorks Modular Smart Array 1000

HP ProLiant 20p G3 server blades are compatible with select 3rd party SANs (please see blade storage page for more details: http://h18000.www1.hp.com/products/servers/proliant-bl/p-class/storage.html)

QuickSpecs

Standard Features

ProLiant Essentials Foundation Pack Software for the ProLiant BL Server	HP Systems Insight Manager	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 is 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.
- Virtualization Management Software - Get the most out of server virtualization by unifying the management of physical and virtual servers in HP Systems Insight Manager. The Virtual Machine Management Pack plug-in provides central management and control of VMware and Microsoft virtual machines and provides physical host to virtual machine association. The Server Migration Pack plug-in automates the manual task of migrating servers between physical or virtual platforms.
- Vulnerability and Patch Management Pack - identifies and remediates software security vulnerabilities due to missing patches as well as 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 Server
Microsoft Windows 2000 Advanced Server
Windows Server 2003, Standard Edition
Windows Server 2003, Enterprise Edition
Red Hat Enterprise Linux 3
Red Hat Enterprise Linux 4
SuSE Linux Enterprise Server 8
SuSE Linux Enterprise Server 9

NOTE: For a more complete and up-to-date listing of supported Ross 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 ProLiant BL p-Class, please see: http://www.compaq.com/support/files/server/us/index.html.
NOTE: For a more complete and up-to-date information on Linux support, please visit HP Linux website at: http://h18000.www1.hp.com/products/servers/linux/hpLinuxcert.html.

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 Text and Graphical Remote Console
	    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
	
	    Automatic Server Recovery-2 (ASR-2)
	    Insight Manager 7
	    HP Systems Insight Manager
	    Redundant ROM
	    Remote Flash ROM
	    ROM Based Setup Utility (RBSU)
	    Advanced Configuration and Power Interface Specification Ready (ACPI)
	    Server and Interconnect Switch Health Logs
	    Redundant Power Supply Utility
	    Pre-Failure Warranty (covers processors, as well as hard drives and memory)
	    Interconnect Switch Management System and Utilities (Interconnect Switch option)
	    Integrated Management Log (IML)
	    Dynamic sector repairing and drive parameter tracking (with Smart Array controllers)
	    Network adapter teaming set-up utility
	
	*NOTE: Advanced features such as Graphical Remote Console and Virtual Floppy are included with the BL p-Class server.

Availability	Dual-Port Fibre Channel Mezzanine Card for redundant SAN connection Two hot-plug SCSI hard drive bays and integrated RAID (Smart Array 6i Plus) on every server blade (Battery-backed write cache is optional.) Redundant ROM on each server blade ECC Memory Network adapter teaming (network fault tolerance, transmit load balancing, switch-assisted load balancing)

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 on 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. This warranty supports the HP ProLiant BL20p, HP ProLiant BL25p, HP ProLiant BL40p and HP ProLiant BL45p Server Blades.
NOTE: Server Blade Limited Warranty includes 3 year Parts, 1 year Labor, 1-year on-site support. This warranty supports the HP ProLiant BL30p and HP ProLiant BL35p Server Blades.
NOTE: Server Blade Enclosure Limited Warranty includes 3 year Parts, 3 year Labor, 3-year on-site support.
NOTE: Server Blade Interconnect 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.

Standard Features

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
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

Dual-Core Model

HP ProLiant BL20p G3 2.8 GHz- 4MB, DC, 1GB (1P) 407213-B21		
	Processor(s)	(1) Intel Xeon Dual-Core 2.8 GHz standard (up to 2 supported)
	Cache Memory	2MB Level 2 writeback per core – 2MB Level 2 writeback per processor
	Memory	1024 MB (Standard) to 8 GB (Maximum) of 2-way interleaved capable PC3200 DDR2 SDRAM running at 400 MHz
	Network Adapter	Four NC7781 PCI-X Gigabit NICs (embedded) with WOL and PXE One additional 10/100 NIC dedicated to iLO Management
	Storage Controller	Smart Array 6i Controller (integrated on system board)
	Hard Drives	None ship standard
	Internal Storage	Up to 600-GB maximum (with optional hard drives)
	Optical Drive	None
	Form Factor	Plugs vertically into ProLiant BL p-Class Server Blade Enclosure

Single-Core Models

HP ProLiant BL20p G3 3.8 GHz-2MB, SC, 2GB (2P) 397435-B21		
	Processor(s)	(2) Intel Xeon 3.8 GHz standard (up to 2 supported)
	Cache Memory	2MB Level 2 writeback per processor
	Memory	2048 MB (Standard) to 8 GB (Maximum) of 2-way interleaved capable PC3200 DDR2 SDRAM running at 400 MHz
	Network Adapter	Four NC7781 PCI-X Gigabit NICs (embedded) with WOL and PXE One additional 10/100 NIC dedicated to iLO Management
	Storage Controller	Smart Array 6i Controller (integrated on system board)
	Hard Drives	None ship standard
	Internal Storage	Up to 600-GB maximum (with optional hard drives)
	Optical Drive	None
	Form Factor	Plugs vertically into ProLiant BL p-Class Server Blade Enclosure

HP ProLiant BL20p G3 3.6 GHz-2MB, SC, 2GB (2P) 380636-B21		
	Processor(s)	(2) Intel Xeon 3.6 GHz standard (up to 2 supported)
	Cache Memory	2MB Level 2 writeback per processor
	Memory	2048 MB (Standard) to 8 GB (Maximum) of 2-way interleaved capable PC3200 DDR2 SDRAM running at 400 MHz
	Network Adapter	Four NC7781 PCI-X Gigabit NICs (embedded) with WOL and PXE One additional 10/100 NIC dedicated to iLO Management
	Storage Controller	Smart Array 6i Controller (integrated on system board)
	Hard Drives	None ship standard
	Internal Storage	Up to 600-GB maximum (with optional hard drives)
	Optical Drive	None
	Form Factor	Plugs vertically into ProLiant BL p-Class Server Blade Enclosure

QuickSpecs

Models

HP ProLiant BL20p G3 3.4 GHz-2MB, SC, 2GB (2P) 380634-B21		
	Processor(s)	(2) Intel Xeon 3.4 GHz standard (up to 2 supported)
	Cache Memory	2MB Level 2 writeback per processor
	Memory	2048 MB (Standard) to 8 GB (Maximum) of 2-way interleaved capable PC3200 DDR2 SDRAM running at 400 MHz
	Network Adapter	Four NC7781 PCI-X Gigabit NICs (embedded) with WOL and PXE One additional 10/100 NIC dedicated to iLO Management
	Storage Controller	Smart Array 6i Controller (integrated on system board)
	Hard Drives	None ship standard
	Internal Storage	Up to 600-GB maximum (with optional hard drives)
	Optical Drive	None
	Form Factor	Plugs vertically into ProLiant BL p-Class Server Blade Enclosure

HP ProLiant BL20p G3 3.4 GHz-2MB, SC, 1GB (1P) 380633-B21		
	Processor(s)	(1) Intel Xeon 3.4 GHz standard (up to 2 supported)
	Cache Memory	2MB Level 2 writeback per processor
	Memory	1024 MB (Standard) to 8 GB (Maximum) of 2-way interleaved capable PC3200 DDR2 SDRAM running at 400 MHz
	Network Adapter	Four NC7781 PCI-X Gigabit NICs (embedded) with WOL and PXE One additional 10/100 NIC dedicated to iLO Management
	Storage Controller	Smart Array 6i Controller (integrated on system board)
	Hard Drives	None ship standard
	Internal Storage	Up to 600-GB maximum (with optional hard drives)
	Optical Drive	None
	Form Factor	Plugs vertically into ProLiant BL p-Class Server Blade Enclosure

HP ProLiant BL20p G3 3.2 GHz-2MB, SC, 1GB (1P) 380631-B21		
	Processor(s)	(1) Intel Xeon 3.2 GHz standard (up to 2 supported)
	Cache Memory	2MB Level 2 writeback per processor
	Memory	1024 MB (Standard) to 8 GB (Maximum) of 2-way interleaved capable PC3200 DDR2 SDRAM running at 400 MHz
	Network Adapter	Four NC7781 PCI-X Gigabit NICs (embedded) with WOL and PXE One additional 10/100 NIC dedicated to iLO Management
	Storage Controller	Smart Array 6i Controller (integrated on system board)
	Hard Drives	None ship standard
	Internal Storage	Up to 600-GB maximum (with optional hard drives)
	Optical Drive	None
	Form Factor	Plugs vertically into ProLiant BL p-Class Server Blade Enclosure

QuickSpecs

Models

**HP ProLiant BL20p G3
3.0 GHz-2MB, SC, 1GB
(1P)**
380632-B21

Processor(s)	(1) Intel Xeon 3.0 GHz standard (up to 2 supported)
Cache Memory	2MB Level 2 writeback per processor
Memory	1024 MB (Standard) to 8 GB (Maximum) of 2-way interleaved capable PC3200 DDR2 SDRAM running at 400 MHz
Network Adapter	Four NC7781 PCI-X Gigabit NICs (embedded) with WOL and PXE One additional 10/100 NIC dedicated to iLO Management
Storage Controller	Smart Array 6i Controller (integrated on system board)
Hard Drives	None ship standard
Internal Storage	Up to 600-GB maximum (with optional hard drives)
Optical Drive	None
Form Factor	Plugs vertically into ProLiant BL p-Class Server Blade Enclosure

**HP ProLiant BL20p G3
3.6 GHz-1MB, SC, 1GB
(1P)**
368328-B21

Processor(s)	(1) Intel Xeon 3.6 GHz standard (up to 2 supported)
Cache Memory	1MB Level 2 writeback per processor
Memory	1024 MB (Standard) to 8 GB (Maximum) of 2-way interleaved capable PC3200 DDR2 SDRAM running at 400 MHz
Network Adapter	Four NC7781 PCI-X Gigabit NICs (embedded) with WOL and PXE One additional 10/100 NIC dedicated to iLO Management
Storage Controller	Smart Array 6i Controller (integrated on system board)
Hard Drives	None ship standard
Internal Storage	Up to 600-GB maximum (with optional hard drives)
Optical Drive	None
Form Factor	Plugs vertically into ProLiant BL p-Class Server Blade Enclosure

**HP ProLiant BL20p G3
3.6 GHz-1MB, SC, 2GB
(2P) with FC Adapter**
361411-B21

Processor(s)	(2) Intel Xeon 3.6 GHz standard (up to 2 supported)
Cache Memory	1MB Level 2 writeback per processor
Memory	2048 MB (Standard) to 8 GB (Maximum) of 2-way interleaved capable PC3200 DDR2 SDRAM running at 400 MHz
Network Adapter	Four NC7781 PCI-X Gigabit NICs (embedded) with WOL and PXE One additional 10/100 NIC dedicated to iLO Management
Storage Controller	Smart Array 6i Controller (integrated on system board)
Hard Drives	None ship standard
Internal Storage	Up to 600-GB maximum (with optional hard drives)
Optical Drive	None
Form Factor	Plugs vertically into ProLiant BL p-Class Server Blade Enclosure
Dual Port Fibre Channel Adapter	Provides redundant SAN connection

Models

HP ProLiant BL20p G3 3.4 GHz-1MB, SC, 1GB (1P) 347955-B21	Processor(s)	(1) Intel Xeon 3.4 GHz standard (up to 2 supported)
	Cache Memory	1MB Level 2 writeback per processor
	Memory	1024 MB (Standard) to 8 GB (Maximum) of 2-way interleaved capable PC3200 DDR2 SDRAM running at 400 MHz
	Network Adapter	Four NC7781 PCI-X Gigabit NICs (embedded) with WOL and PXE One additional 10/100 NIC dedicated to iLO Management
	Storage Controller	Smart Array 6i Controller (integrated on system board)
	Hard Drives	None ship standard
	Internal Storage	Up to 600-GB maximum (with optional hard drives)
	Optical Drive	None
	Form Factor	Plugs vertically into ProLiant BL p-Class Server Blade Enclosure

HP ProLiant BL20p G3 3.2 GHz-1MB, SC, 1GB (1P) 347957-B21	Processor(s)	(1) Intel Xeon 3.2 GHz standard (up to 2 supported)
	Cache Memory	1MB Level 2 writeback per processor
	Memory	1024 MB (Standard) to 8 GB (Maximum) of 2-way interleaved capable PC3200 DDR2 SDRAM running at 400 MHz
	Network Adapter	Four NC7781 PCI-X Gigabit NICs (embedded) with WOL and PXE One additional 10/100T NIC dedicated to iLO Management
	Storage Controller	Smart Array 6i Controller (integrated on system board)
	Hard Drives	None ship standard
	Internal Storage	Up to 600-GB maximum (with optional hard drives)
	Optical Drive	None
	Form Factor	Plugs vertically into ProLiant BL p-Class Server Blade Enclosure

HP ProLiant BL20p G3 3.2 GHz-1MB, SC, 2GB (2P) with FC Adapter 347956-B21	Processor(s)	(2) Intel Xeon 3.2 GHz standard (up to 2 supported)
	Cache Memory	1MB Level 2 writeback per processor
	Memory	2048 MB (Standard) to 8 GB (Maximum) of 2-way interleaved capable PC3200 DDR2 SDRAM running at 400 MHz
	Network Adapter	Four NC7781 PCI-X Gigabit NICs (embedded) with WOL and PXE One additional 10/100T NIC dedicated to iLO Management
	Storage Controller	Smart Array 6i Controller (integrated on system board)
	Hard Drives	None ship standard
	Internal Storage	Up to 600-GB maximum (with optional hard drives)
	Optical Drive	None
	Form Factor	Plugs vertically into ProLiant BL p-Class Server Blade Enclosure
	Dual Port Fibre Channel Adapter	Provides redundant SAN connection

Models

HP ProLiant BL20p G3 2.8 GHz-1MB, SC, 1GB (1P) 391791-B21	Processor(s)	(1) Intel Xeon 2.8 GHz /1M (Low Voltage) (up to 2 supported)
	Cache Memory	1MB Level 2 cache
	Memory	1024 MB (Standard) to 8 GB (Maximum) of 2-way interleaved capable PC3200 DDR2 SDRAM running at 400 MHz
	Network Adapter	Four NC7781 PCI-X Gigabit NICs (embedded) with WOL and PXE One additional 10/100T NIC dedicated to iLO Management
	Storage Controller	Smart Array 6i Controller (integrated on system board)
	Hard Drives	None ship standard
	Internal Storage	Up to 600-GB maximum (with optional hard drives)
	Optical Drive	None
	Form Factor	Plugs vertically into ProLiant BL p-Class Server Blade Enclosure

NOTE: For additional information on HP ProLiant BL20p server blades starter bundles, please see the following URL:
http://h18004.www1.hp.com/products/quickspecs/11567_div/11567_div.HTML (Worldwide)
http://h18004.www1.hp.com/products/quickspecs/11567_na/11567_na.HTML (North America)

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 Server Blade Configuration

Models	HP ProLiant BL20p G3 CTO Blade (North America)	396226-405
	Configurable Model ships with:	
	Two NC7781 PCI-X Gigabit NICs (embedded) with WOL and PXE	
	One additional 10/100 NIC dedicated to iLO Management	
	Smart Array 6i Plus Controller (integrated on system board)	

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

For single processor configuration choose:

Processors	Intel Xeon 2.8 GHz - 4M Dual-Core Processor Option Kit FIO BASE	407223-L21
	NOTE: If 2 processors are desired, select one 407223-L21 and one 407223-B21	
	Intel Xeon 3.8 GHz -2M Processor Option Kit FIO BASE	397436-L21
	NOTE: If 2 processors are desired, select one 397436-L21and one 397436-B21	
	Intel Xeon 3.6 GHz-2M Processor Option Kit FIO BASE	381021-L21
	NOTE: If 2 processors are desired, select one 381021-L21and one 381021-B21	
	Intel Xeon 3.4 GHz-2M Processor Option Kit FIO BASE	381020-L21
	NOTE: If 2 processors are desired, select one 381020-L21and one 381020-B21	
	Intel Xeon 3.2 GHz-2M Processor Option Kit FIO BASE	381019-L21
	NOTE: If 2 processors are desired, select one 381019-L21and one 381019-B21	
	Intel Xeon 3.0 GHz-2M Processor Option Kit FIO BASE	381018-L21
	NOTE: If 2 processors are desired, select one 381018-L21and one 381018-B21	
	Intel Xeon 2.8 GHz -1M BL20pG3 Processor Option Kit (Low-Voltage) FIO BASE	391793-L21
	NOTE: If 2 processors are desired, select one 391793-L21and one 391793-B21	
Memory	NOTE: Two-way memory interleaving is enabled when an identical pair of DIMMs is installed.	
	1 GB Advanced PC2 PC3200 DDR2 SDRAM DIMM Memory Kit (2 x 512 MB)	343055-B21
	NOTE: Must order in pairs	
	2 GB Advanced PC2 PC3200 DDR2 SDRAM DIMM Memory Kit (2 x 1024 MB)	343056-B21
	NOTE: Must order in pairs	
	4 GB Advanced ECC PC2-3200 DDR2 SDRAM DIMM Dual Rank Memory Kit (2 x 2 GB)	375004-B21
	NOTE: Must order in pairs	

Configuration Information Factory Integrated Models (North America only)

Step 3: Choose Additional Factory Integratable Options

Fibre Channel Options	QLogic-based HP ProLiant BL20p G3 Fibre Channel Adapter Card	361426-B21
Communications	Emulex-based Fibre Channel Mezzanine card for HP p-Class BladeSystem	394757-B21

NOTE: SFPs for use with pass through SAN switches not included with the Emulex based Fibre Channel Mezzanine card. If SFPs required please order the SFP option kit (P/N 397577-B21) which includes 2 2Gb SFPs per option kit.

	HP 2-2Gb SFP for Fibre Channel pass through kit	397577-B21

NOTE: Must select if SFP for use with pass through SAN switches is required when ordering Emulex based Fibre Channel Mezzanine card for HP p-Class BladeSystem (P/N 394757-B21).

	HP ProLiant BL20p Dual NC370i Multifunction Network Adapter	374963-B21

NOTE: The HP BladeSystem Multifunction iSCSI and RDMA features are not currently supported in a Linux environment. Future support is planned.

NOTE: All systems upgraded to include the HP ProLiant BL20p Dual NC370i Multifunction Network Adapter must be configured with at least 2GB of memory (1GB per multifunction adapter port).

	HP ProLiant BL20p G3 NIC MEZZ FIO	396754-B21

Step 4: Choose Additional Options for Factory Integration

NOTE: For additional options, including server blade enclosure with enhanced backplanes, interconnect options and power subsystem options, please refer to the "Options" section below.

Options

ProLiant Essentials Value Pack Software	**ProLiant Essentials Intelligent Networking Pack Windows Edition and Linux Edition**	
	ProLiant Essentials Intelligent Networking Pack Windows Edition, 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.	306696-B21
	NOTE: For additional ProLiant Performance Management Pack License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11925_div/11925_div.HTML	
	ProLiant Essentials Rapid Deployment Pack Windows Edition and Linux Edition Release	
	Rapid Deployment Pack, Single-Server License **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/12238_div.HTML	
	ProLiant Essentials Workload Management Pack	
	ProLiant Essentials Workload Management Pack, Single Server License	303284-B21
	NOTE: For additional ProLiant Workload Management Pack License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11452_div/11452_div.HTML	
	ProLiant Essentials Virtual Machine Management Pack	

Options

	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/12238_div.HTML	

ProLiant Essentials Vulnerability and Patch Management Pack

	ProLiant Essentials Vulnerability and Patch Management Pack, Single-Server License	371645-B21
	NOTE: For use with a single server. Contains one license with a unique license activation key and documentation.	
	NOTE: For additional ProLiant Vulnerability and Patch Management Pack License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12111_div/12111_div.HTML	
	NOTE: Flexible and volume quantity license kits are available for ProLiant Essentials Value Packs. Refer to http://www.hp.com/servers/proliantessentials or the various ProLiant Essentials Value Pack product QuickSpecs for more information.	
	NOTE: For more information regarding ProLiant Essentials Software, please see the following URL: http://www.hp.com/servers/proliantessentials.	

Processor	Intel Xeon Dual-Core Processor 2.8 GHz-4M Processor Option Kit	407223-B21
	Intel Xeon Single-Core 3.8 GHz-2M Processor Option Kit	397436-B21
	Intel Xeon Single-Core 3.6 GHz-2M Processor Option Kit	381021-B21
	Intel Xeon Single-Core 3.4 GHz-2M Processor Option Kit	381020-B21
	Intel Xeon Single-Core 3.2 GHz-2M Processor Option Kit	381019-B21
	Intel Xeon Single-Core 3.0 GHz-2M Processor Option Kit	381018-B21
	Intel Xeon Single-Core 3.6 GHz-1M Processor Option Kit	355928-B21
	Intel Xeon Single-Core 3.4 GHz-1M Processor Option Kit	361412-B21
	Intel Xeon Single-Core 3.2 GHz-1M Processor Option Kit	361413-B21
	Intel Xeon Single-Core 2.8 GHz-1M Processor Option Kit(Low-Voltage)	391793-B21

Memory (SDRAM DIMMs)	1 GB Advanced PC2 PC3200 DDR2 SDRAM DIMM Memory Kit (2 x 512 MB)	343055-B21
	2 GB Advanced PC2 PC3200 DDR2 SDRAM DIMM Memory Kit (2 x 1024 MB)	343056-B21
	4 GB Advanced ECC PC2-3200 DDR2 SDRAM DIMM Dual Rank Memory Kit (2 x 2 GB)	375004-B21

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

QuickSpecs

Options

Storage Controllers	128MB Battery Backed Write Cache Enabler Option Kit	346914-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/12030_div/12030_div.HTML (Smart Array 6i)	

Communications	HP ProLiant BL20p Dual NC370I Multifunction Network Adapter	374963-B21
	NOTE: The HP BladeSystem Multifunction iSCSI and RDMA features are not currently supported in a Linux environment. Future support is planned.	
	NOTE: All systems upgraded to include the HP ProLiant BL20p Dual NC370i Multifunction Network Adapter must be configured with at least 2GB of memory (1GB per multifunction adapter port).	

HP ProLiant BL20p G3 - Fibre Channel Adapter	Emulex based BL20p Dual Port Fibre Channel HBA	394757-B21
	Dual port Fibre Channel Adapter (2-Gb) for ProLiant BL20p G3*	361426-B21
	HP 2-2Gb SFP for Fibre Channel pass through kit	397577-B21
	NOTE: Must select if SFP for use with pass through SAN switches is required when ordering Emulex based Fibre Channel Mezzanine card for HP p-Class BladeSystem (p/N 394757-B21.	
	*NOTE: When using this card, the Patch Panel 2 , CGESM or GbE2 Interconnect Switch (with Storage Connectivity Kit) must be used to provide the Fibre Channel pass through.	
	*NOTE: The HP ProLiant BL20p G2 dual-port Fibre Channel adapter is not compatible with the HP ProLiant BL20p G3.	

HP BladeSystem Entry Bundle	HP BladeSystem Entry Bundle	390738-B21
	Bundle Contents:	
	Server Blade Enclosure Server Blade Enclosure with enhanced backplane components	
	Power Subsystem 1U Power Enclosure with 2 power supplies	
	NOTE: This bundle includes the 1U Power Enclosure with 2 power supplies and a server blade enclosure with enhanced backplane components.	

HP BladeSystem p-Class Other Options	HP BladeSystem p-Class Diagnostic Station	230743-B21
	NOTE: The Diagnostic Station allows access to the HP ProLiant p-Class server blades and the BL p-Class interconnect switch outside of the server blade enclosure. The option provides power and a data interface so that "offline" upgrade and diagnostic functions may be performed.	

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 http://www.hp.com/go/ebs

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

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

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

HP StorageWorks Modular Smart Array 1000	HP StorageWorks Modular Smart Array 1000	201723-B22

NOTE: Please see the StorageWorks 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)

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

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

USB Options	USB 1.44-MB External Diskette Drive (Carbonite)	DC141B
	USB Optical Scroll Mouse (Carbonite)	DD441B
	256MB HP Drive Key II (USB 2.0)	PH657A

Options

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

Rack Options for Rack 5000 Series	Stabilizer Kit for 5642 Rack (Graphite Carbon) NOTE: The stabilizing 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 racks.	374499-B21

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

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

Options

Rack Options for HP Rack 10000 Series	HP Light kit for 10000 series rack	361589-B21
	HP Plinth kit for 10000 series rack	251960-B21
	42U Side Panel – Graphite Metallic	246099-B21
	36U Side Panel – Graphite Metallic	246102-B21
	47U Side Panel – Graphite Metallic	255486-B21

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

TFT7210R Rack Mounted 17" Monitor	348373-B21
TFT5600 Rack Keyboard Monitor	221546-xx1

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

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

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

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

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

HP KVM Switch Options	HP BladeSystem Cat 5 KVM Interface Adapter	AF100A
	HP 1x1x16 IP Console Switch	262585-B21
	HP 3x1x16 IP Console Switch	262586-B21
	HP 0x1x8 Server Console Switch	336044-B21
	HP 0x2x16 Server Console Switch	336045-B21
	PS/2 Interface Adapter, 1-pack	262588-B21
	PS/2 Interface Adapter, 8-pack	262587-B21
	USB Interface Adapter, 1-pack	336047-B21
	Serial Interface Adapter, 1-pack with power supply	373045-B21

NOTE: Cat5e cables are required to connect Interface Adapters to Consoles Switches. Cat52 cables can be found at the following URL: http://www.hp.com/go/kvm

HP 1x4 USB/PS2 KVM Switch, TT (NA/JPN)	371301-D71
HP 1x4 USB/PS2 KVM Switch, TT (AU/NZ)	371301-011
HP 1x4 USB/PS2 KVM Switch, TT (UK)	371301-031
HP 1x4 USB/PS2 KVM Switch, TT (EU)	371301-A21
HP 1x4 USB/PS2 KVM Switch, RM (ALL)	371302-B21

Options

HP PS2 KVM Cable with audio, 6'-2-pack		371730-B21
HP USB KVM Cable with audio, 6'-2-pack		371729-B21

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

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

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

NOTE: Provides 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 Installation and Startup Service, 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

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

Memory

DIMM installation guidelines:

1. All DIMMs must be PC2-3200 DDR2 400 MHz SDRAM ECC DIMMs.
2. Both DIMM slots in a memory bank must be populated.
3. Both DIMMs in a memory bank must be identical. Install identical DIMMs as pairs only, starting with DIMM socket 1, bank A.
4. Populate both slots in a bank at the same time: DIMMs 1 and 2 reside in bank A, and DIMMs 3 and 4 reside in bank B.

HP ProLiant BL20p G3 Server Blade (2P Model)

Standard Memory
2048 MB PC2-3200 Registered DDR2 SDRAM DIMM installed (2 x 1 GB SDRAM DIMM)

Standard Memory Plus Optional Memory
Up to 6144 MB of DDR2 SDRAM DIMM memory is available with the installation of optional DDR2 SDRAM DIMM memory expansion kits.

Standard Memory Replaced with Optional Memory
Up to 8192-MB of DDR2 SDRAM DIMM memory is available with the removal of standard memory and the installation of optional SDRAM DDR DIMM memory expansion kits.

Memory		Slot			
		1	2	3	4
Standard	2048 MB	1024 MB	1024 MB	Empty	Empty
Optional	6144 MB	1024 MB	1024 MB	2048 MB	2048 MB
Maximum	8192 MB	2048 MB	2048 MB	2048 MB	2048 MB

Following are memory options available from HP:
- 1 GB Advanced PC2 PC3200 DDR2 SDRAM DIMM Memory Kit (2 x 512 MB)   343055-B21
- 2 GB Advanced PC2 PC3200 DDR2 SDRAM DIMM Memory Kit (2 x 1024 MB)   343056-B21
- 4 GB Advanced ECC PC2-3200 DDR2 SDRAM DIMM Dual Rank Memory Kit (2 x 2 GB)   375004-B21

HP ProLiant BL20p G3 Server Blade (1P Model)

Standard Memory
1024 MB PC2-3200 400 MHz Registered DDR2 SDRAM DIMM installed

Standard Memory Plus Optional Memory
Up to 5120 MB of DDR2 SDRAM DIMM memory is available with the installation of optional DDR2 SDRAM DIMM memory expansion kits.

Standard Memory Replaced with Optional Memory
Up to 8192 MB of DDR2 SDRAM DIMM memory is available with the removal of standard memory and the installation of optional DDR2 SDRAM DIMM memory expansion kits.

Memory		Slot			
		1	2	3	4
Standard	1024 MB	512 MB	512 MB	Empty	Empty
Optional	5120 MB	512 MB	512 MB	2048 MB	2048 MB
Maximum	8192 MB	2048 MB	2048 MB	2048 MB	2048 MB

Memory

Following are memory options available from HP:

- 1 GB Advanced PC2 PC3200 DDR2 SDRAM DIMM Memory Kit (2 x 512 MB)   343055-B21
- 2 GB Advanced PC2 PC3200 DDR2 SDRAM DIMM Memory Kit (2 x 1024 MB)   343056-B21
- 4 GB Advanced ECC PC2-3200 DDR2 SDRAM DIMM Dual Rank Memory Kit (2 x 2 GB)   375004-B21

Technical Specifications

HP ProLiant BL20p G3 Server Blade	Dimensions	Height	10.29 in (26.14 cm)
		Depth	1.69 in (4.29 cm)
		Width	28 in (71.10 cm)
	Weight	Maximum	20.8 lbs (9.43 kg)
	Temperature Range*	Operating	10°C to 43°C (50°F to 109°F)
		Non-Operating	-40°C to 60°C (-40°F to 140°F)
		Storage	-20°C to 60°C (-4°F to 140°F)
		Maximum Wet Bulb Temperature	-30°C (86°F)
		Operating	10% to 90%
	Relative Humidity**	Shipping	10% to 90%
		Storage	10% to 95%

*NOTE: All temperature ratings shown are for sea level. An altitude derating of 1°C per 304.8 m (1.8°F per 1,000 ft) to 3048 m (10,000 ft) is applicable. No direct sunlight allowed. Upper operating limit is 3,048m (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 corresponds to a pressure minimum of 70 KPa.