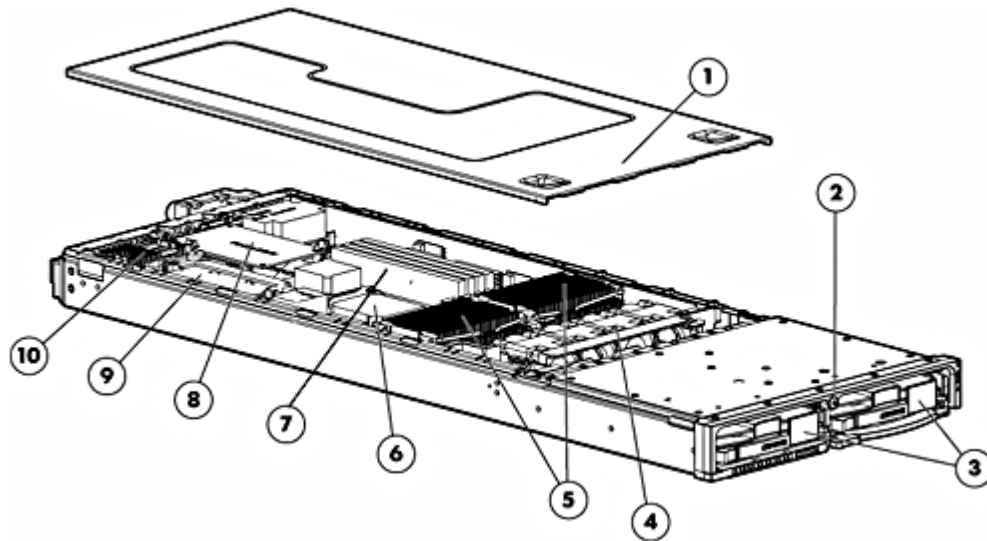


Overview

HP ProLiant BL20p G3 Server Blade



- | | |
|--|--|
| 1. Access panel | 6. Smart Array 6i Controller |
| 2. Power On/Standby button | 7. Four (4) PC2-3200 DDR2 Memory slots |
| 3. Support for up to two U320 SCSI hard drives | 8. Fibre-channel mezzanine card (Optional) |
| 4. Fan Assembly for chassis cooling | 9. Battery-backed write cache (Optional) |
| 5. Up to two single-core or dual-core Intel Xeon processors with 800 MHz FSB | 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

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_na/12330_na.HTML

and HP BladeSystem p-Class Interconnect Components QuickSpecs:

http://h18000.www1.hp.com/products/quickspecs/12331_na/12331_na.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

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 3.4 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

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>)

Standard Features

ProLiant Essentials Foundation Pack Software for the ProLiant BL Server

HP Systems Insight Manager

HP Systems Insight Manager (HP SIM) provides a unified, secure and extensible environment to centrally manage servers, storage and other infrastructure devices across multiple operating system platforms.

Through a single management view, HP SIM provides core management services that include device discovery and identification, event views, health monitoring, inventory data collection, software version control and reporting. HP SIM is built on industry standards and is extensible with value-added ProLiant Essentials, Integrity Essentials and Storage Essentials software to meet individual management needs. For more details on HP SIM visit <http://www.hp.com/go/hpsim>.

HP SIM provides organizations with the following benefits:

- Simplifies and consolidates infrastructure lifecycle management using task and query based functionality
- Provides the foundation for infrastructure automation and virtualization
- Enables IT management based on business processes not hardware platforms
- Lowers infrastructure maintenance cost and frees resources for innovation
- Maximizes resource utilization with virtualization technologies
- Provides a central point of integration between infrastructure and Enterprise management tools such as HP OpenView

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>.

Insight Management Agents

Insight Management Agents should be installed on all HP servers to present system instrumentation, health and configuration information into HP Systems Insight Manager and the HP System Management Homepage. The HP System Management Homepage aggregates systems data from Insight Management Agents and other HP management tools, providing a consolidated browser-based interface for managing individual servers.

Insight Management Agents and The HP System Management Homepage are included on ProLiant Support Packs, and can also be installed using the server profiles provided with the ProLiant Essentials Rapid Deployment Pack. For additional information about the Management Agents and the HP System Management Homepage 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.

Standard Features

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	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>

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.
- Rapid Deployment Pack (RDP) is an automated deployment and provisioning solution for all ProLiant servers. RDP includes the ProLiant Integration Module featuring ProLiant server pre-configured events for OS installation, and optimized software drivers, firmware and management agents. Every RDP disc includes 10-node trial licenses for evaluation purposes. RDP requires a license for each server deployed and is available for purchase with HP servers. For more information, visit: <http://www.hp.com/servers/rdp>.
- Server Migration Pack - P2P Edition: Upgrading or replacing your existing server? Effortlessly transition to new servers with automated, accurate and affordable migration of OS, application and data.
- 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.

Standard Features

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
SUSE Linux Enterprise Server
Solaris 10 32/64-bit

NOTE: For a more complete and up-to-date listing of supported OS 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>.

NOTE: For more Linux OS support & certification information, please visit our the ProLiant & BladeSystem Server Linux matrix <http://h18004.www1.hp.com/products/servers/linux/hpLinuxcert.html>

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_na/12321_na.HTML

Standard Features

Intelligent Manageability	<p>Integrated Lights-Out Advanced (iLO)</p> <ul style="list-style-type: none">Virtual Text and Graphical Remote ConsoleVirtual CD-ROM*Virtual Floppy*Virtual Power Button ControlDedicated LAN ConnectivityAutomatic IP Configuration via DHCP/DNS/WINSIndustry Standard 128-bit Secure Sockets Layer (SSL) SecurityIML and iLO Event LoggingSupport for 12 user accounts with customizable access privilegesAutomatic Server Recovery-2 (ASR-2)Insight Manager 7HP Systems Insight ManagerRedundant ROMRemote Flash ROMROM Based Setup Utility (RBSU)Advanced Configuration and Power Interface Specification Ready (ACPI)Server and Interconnect Switch Health LogsRedundant Power Supply UtilityPre-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
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***NOTE:** Advanced features such as Graphical Remote Console and Virtual Floppy are included with the BL p-Class server.

Availability	<p>Dual-Port Fibre Channel Mezzanine Card for redundant SAN connection</p> <p>Two hot-plug SCSI hard drive bays and integrated RAID (Smart Array 6i Plus) on every server blade (Battery-backed write cache is optional.)</p> <p>Redundant ROM on each server blade ECC Memory</p> <p>Network adapter teaming (network fault tolerance, transmit load balancing, switch-assisted load balancing)</p>
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Security	<p>Power-on password</p> <p>Administrator's password</p> <p>Integrated Lights-Out has 12 customizable user accounts and SSL encryption</p> <p>Integrated Lights-Out can be disabled via a Global Setting</p>
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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. Additional information regarding worldwide limited warranty and technical support is available at: <http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>.

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.

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.

HP services provide continuous care and support expertise with committed response designed to meet your IT and business needs.

To fully capitalizing on your HP BladeSystem servers' capabilities requires a service partner who thoroughly understands your server technology and systems environment. HP Services, an industry leader in provision of multi vender support solutions provides a range of support services designed to meet the varying needs of business. Whether an SMB or large global corporation HP has a HP BladeSystem server support offer to help you speedily deploy and maximize system uptime.

Enhanced Care - Minimum recommended service support offer designed to ensure customers have access to expert assistance, whenever they need it.

- 4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years.

Standard Features

Continuance Care - Recommended service delivering cost-effective support options designed to extend HP Services committed response and guaranteed fix times, designed to speed problem identification and resolution.

- *4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years.*

Total Care - Highest HP Support service level recommend to help increase IT performance and availability with comprehensive, integrated hardware and software services

- *Support Plus 24 - Onsite HW support 24x7, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays.*

Deployment Services - HP Installation and Start Up services designed to take time, risk, and worry out of the deployment of HP BladeSystem servers - and free customers IT support staff to focus on what they do best, their business.

- *Installation & Start-Up service for HP BladeSystem Infrastructure plus HP BladeSystem Enhanced Network Installation and Start-UP as per the Customer Description and/or Data Sheet. To be delivered on a scheduled basis 8am-5pm, M-F, excl. HP holidays*

For a complete listing of service offerings and information visit:

<http://www.hp.com/services/bladeSystemservices>

<http://www.hp.com/go/proliant/carepack>

Models

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

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

Models

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

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

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_na/11567_na.HTML

Configuration Information Factory Integrated Models

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.

NOTE: FIO indicates that this option only available as a Factory Installable Option.

Step 1: Base Server Blade Configuration

Models	HP ProLiant BL20p G3 CTO Blade	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-L21 and one 397436-B21	
	Intel Xeon 3.4 GHz-2M Processor Option Kit FIO BASE	381020-L21
	NOTE: If 2 processors are desired, select one 381020-L21 and 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-L21 and 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-L21 and 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-L21 and 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

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 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.	394757-B21
	HP 2-2Gb SFP for Fibre Channel pass through kit 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).	397577-B21
	HP ProLiant BL20p Dual NC370i Multifunction Network Adapter NOTE: The HP BladeSystem Multifunction iSCSI and RDMA features are not currently supported in a Linux environment. Future support is planned. NOTE: A minimum of 1 GB of memory per port is required for NC370x adapters, with a maximum of two NC370x ports permitted in a server.	374963-B21
	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	372906-B21
	NOTE: For use with a single server. Contains one license with a unique license activation key and documentation.	
	ProLiant Essentials Intelligent Networking Pack Linux Edition, Single Server License	397004-B21
	NOTE: For use with a single server. Contains one license with a unique license activation key and documentation.	
	NOTE: For additional ProLiant Intelligent Networking Pack License Kits please see the QuickSpecs at:	
	http://h18000.www1.hp.com/products/quickspecs/12062_na/12062_na.HTML	
	http://h18000.www1.hp.com/products/quickspecs/12327_na/12327_na.HTML	
	ProLiant Essentials Performance Management Pack	
	ProLiant Essentials Performance Management Pack, Single-Server License	306696-B21
NOTE: For use with a single server. Contains one license with a unique license activation key, HP Management CD and documentation.		
NOTE: The most recent version of the software can always be downloaded at http://www.hp.com/products/pmp .		
NOTE: For additional ProLiant Performance Management Pack License Kits please see the QuickSpecs at:		
http://h18000.www1.hp.com/products/quickspecs/11925_na/11925_na.HTML		
ProLiant Essentials Rapid Deployment Pack		
ProLiant Essentials Rapid Deployment Pack, Flatpack - single server license	434560-B21	
Rapid Deployment Pack, Single-Server License	267196-B21	
NOTE: This license allows 1 server to be deployed and managed via RDP.		
NOTE: For additional ProLiant Essentials Rapid Deployment Pack License Kits please see the QuickSpecs at:		
http://h18000.www1.hp.com/products/quickspecs/11053_na/11053_na.HTML		
ProLiant Essentials Server Migration Pack - Physical to ProLiant Edition		
HP ProLiant Essentials Server Migration Pack - Physical to ProLiant Edition. 1 Year Unlimited Migration License	412982-B21	
ProLiant Essentials Server Migration Pack - Physical to ProLiant Edition, Single-Migration License	412978-B21	
NOTE: For additional ProLiant Server Migration Pack License Kits please see the QuickSpecs at:		
http://h18000.www1.hp.com/products/quickspecs/12467_na/12467_na.HTML		
ProLiant Essentials Server Migration Pack		
ProLiant Essentials Server Migration Pack, Single-Migration License	375345-B21	
NOTE: Contains one license, enabling 1 server migration, with a unique license activation key and documentation.		
NOTE: This license allows 1 server to be migrated from a physical server to a virtual machine. Or this license can be used to migrate a virtual machine from one virtualization layer i.e. VMware GSX to a different virtualization layer such as VMware ESX or Microsoft Virtual Server 2005.		
NOTE: For additional ProLiant Server Migration Pack License Kits please see the QuickSpecs at:		
http://h18000.www1.hp.com/products/quickspecs/12328_na/12238_na.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_na/11452_na.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_na/12238_na.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_na/12111_na.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>.

HP Control Tower BladeSystem p-class Management Software

HP Control Tower for HP p-Class BladeSystem, Media pack (CD) - No licenses included 412956-B21

NOTE: This optional Media pack CD contains the ISO image for the HP Control Tower management appliance that must be installed in a HP ProLiant BL20p G3 server. Servers must be acquired separately.

NOTE: This Media pack is optional because the latest ISO image may be downloaded at no cost from: <http://www.hp.com/go/controltower>

HP Control Tower for HP BladeSystem, Single Server License. No media included. 412957-B21

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

HP Control Tower for HP BladeSystem, Eight-pack (8-pack) Server License. No media included. 412958-B21

NOTE: For use with eight (8) blade servers. Contains eight (8) licenses with a single unique license activation key.

HP Control Tower for HP BladeSystem, Flexible License. No media included. 412959-B21

NOTE: For use with multiple servers (minimum of 5). This part number can be used to purchase multiple licenses with a single activation key. The quantity ordered for this part number will be the quantity of licenses included in the kit in the form of a corresponding activation key. Use the same key to activate all licenses in the actual quantity ordered. For a given order, one kit will be delivered with the activation key.

Options

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 3.4 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	HP Ultra320 Hard Disk Drives	
	HP 300GB U320 10K Universal HDD	350964-B22
	HP 146GB U320 10K Universal HDD	286716-B22
	HP 72GB U320 10K Universal HDD	286714-B22
	HP 300GB U320 15K Universal HDD	411089-B22
	HP 72GB U320 15K Universal HDD	286778-B22
	HP 146GB U320 15K Universal HDD	347708-B22
	HP 36GB U320 15K Universal HDD	286776-B22

Storage Controllers	128MB Battery-Backed Write Cache with Battery Housing	346914-B21
	<p>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:</p> <p>http://h18000.www1.hp.com/products/quickspecs/12030_na/12030_na.HTML (Smart Array 6i)</p>	

Communications	HP ProLiant BL20p Dual NC370i Multifunction Network Adapter	374963-B21
	<p>NOTE: The HP BladeSystem Multifunction iSCSI and RDMA features are not currently supported in a Linux environment. Future support is planned.</p> <p>NOTE: A minimum of 1 GB of memory per port is required for NC370x adapters, with a maximum of two NC370x ports permitted in a server.</p>	

Options

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.		

Tape Libraries	HP StorageWorks MSL6000 Tape Library		
	Ultrium 960 technology		
	HP StorageWorks MSL6030 1 Ultrium 960 Dr LVDS Library	AD606B	
	HP StorageWorks MSL6030 1 Ultrium 960 Dr FC Library	AD608B	
	HP StorageWorks MSL6030 2 Ultrium 960 Dr LVDS Library	AD607B	
	HP StorageWorks MSL6030 2 Ultrium 960 Dr FC Library	AD609B	
	SDLT 600 technology		
	HP StorageWorks MSL6052 2 SDLT 600 Dr LVDS Library	AD587A	
	HP StorageWorks MSL6052 2 SDLT 600 Dr FC Library	AD588A	
	Ultrium 460 technology		
	HP StorageWorks MSL6030 1 Ultrium 460 Dr LVDS Library	AD598B	
	HP StorageWorks MSL6030 1 Ultrium 460 Dr FC Library	AD600B	
	HP StorageWorks MSL6030 2 Ultrium 460 Dr FC Library	AD601B	
	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 StorageWorks 6105 Virtual Library System	AF728A	

Options

HP StorageWorks 6510 Virtual Library System	AF729A
HP StorageWorks 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>

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	

Cluster Options	ProLiant Cluster Starter Kit	364023-B21
	NOTE: For additional information regarding the ProLiant Cluster Starter Kit please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11935_na/11935_na.html	
	HP HA/F200 for Entry SAN Cluster	364026-B22
	NOTE: For additional information regarding the ProLiant Cluster for Entry Level SAN please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11932_na/11932_na.html	
	ProLiant Cluster HA/F500 for the Enterprise SAN	364024-B21
	NOTE: For additional information regarding the ProLiant Cluster HA/F500 for Enterprise SAN please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11933_na/11933_na.html	
	NOTE: For configuration/certification options for the HP Parallel Database Cluster for Oracle RAC please go to: http://www.hp.com/solutions/highavailability/oracle	
	HP Serviceguard for Linux, A.11.16 for SUSE SLES 9 & 10 and Red Hat EL 3 & 4 (single license version)	307754-B26
	HP Serviceguard for Linux ProLiant Cluster, A.11.16 for SUSE SLES 9 & 10 and Red Hat EL 3 & 4 (2 node license cluster kit)	305199-B26
	HP Serviceguard for Linux and Red Hat Global File System - 1 year subscription	T2798AA#001
	HP Serviceguard for Linux and Red Hat Global File System - 3 years subscription	T2798AA#003
	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	
	NOTE: For configuration/certification options for HP Serviceguard for Linux please go to: http://www.hp.com/info/sglx	

Options

USB Options	HP USB 2-Button Optical Scroll Mouse (Carbonite/Silver)	DC172B
	USB 1.44-MB External Diskette Drive (Carbonite)	DC141B
	HP USB 04 Standard Keyboard	DT528A#xxx
	USB 2.0 4-port HUB	DG954A
	HP 1GB Drive Key II- USB 2.0 Flash Drive	AG382AA
	HP 512MB DriveKey II- USB Flash Drive	ED516AA
	USB Optical Scroll Mouse (Carbonite)	DD441B
	256MB HP Drive Key II (USB 2.0)	PH657A

HP Rack 5000 Series (Graphite Metallic)	HP 5642 Rack - Unassembled	358254-B21
	<p>NOTE: Please see the HP Rack 5642 QuickSpecs for additional part numbers and Technical Specifications such as height, width, depth, weight, and color: http://h18000.www1.hp.com/products/quickspecs/12074_na/12074_na.HTML NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower.</p>	

HP Rack 10000 G2 Series (Graphite Metallic)	10642 G2 (42U) Rack Cabinet - Pallet	AF001A
	10642 G2 (42U) Rack Cabinet - Shock Pallet	AF002A
	10642 G2 (42U) Rack Cabinet - Crated	AF003A
	10642 G2 (42U) Rack Cabinet, with Extension - Shock Pallet	AF004A
	10642 G2 (42U) Rack Shock Pallet- for field racking	AF007A
	10636 G2 (36U) Rack Cabinet - Shock Pallet	AF011A
	10636 G2 (36U) Rack Cabinet - Crated	AF012A
	10636 G2 (36U) Rack Cabinet , with Extension - Shock Pallet	AF013A
	10636 G2 (36U) Rack Cabinet, without door - Shock Pallet	AF014A
	10636 G2 (36U) Rack Shock Pallet- for field racking	AF019A
	10622 G2 (22U) Rack Cabinet - Shock Pallet	AF022A
	10842 G2 (42U) 800mm Wide Rack Cabinet - Pallet	AF041A
	10842 G2 (42U) 800mm Wide Rack Cabinet - Shock Pallet	AF042A
	10647 G2 (47U) Rack Cabinet - Pallet	AF031A
	HP 10642 G2 (42U) Side Panels (set of two) (Graphite Metallic)	AF054A
	HP 10636 G2 (36U) Side Panels (set of two) (Graphite Metallic)	AF056A
	HP 10636 G2 Rear Extension Kit	AF060A
	600mm G2 Stabilizer Option Kit (Graphite)	AF062A
	600mm G2, Heavy Duty Stabilizer Option Kit (Graphite)	AF064A
	<p>NOTE: Please see the Rack 10000 G2 QuickSpecs for additional part numbers and Technical Specifications such as height, width, depth, weight, and color: http://h18000.www1.hp.com/products/quickspecs/12402_na/12402_na.HTML NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower.</p>	

Options

Rack 10000 Series (Graphite Metallic)	Rack, HP Infrastructure 42U (LV)	379006-001
	Rack, HP Infrastructure 42U (HV)	379005-001
	HP S10614 (14U) Rack Cabinet - Shock Pallet	292302-B22
	HP Rack 10647 (47U) Cabinet - Crated	245160-B23
	HP Rack 10622 (22U) Cabinet - Crated	245163-B23

NOTE: xxxxx-B22 (shock pallet) used to ship racks with equipment installed (by custom systems, VARs and Channels). xxxxx-B23 (crated) used for air shipments of empty racks.

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

NOTE: Please see the Rack 10000 QuickSpecs for additional part number and Technical Specifications such as height, width, depth, weight, and color:

http://h18000.www1.hp.com/products/quickspecs/10995_na/10995_na.HTML

NOTE: For additional information regarding Rack Cabinets, please see the following URL: <http://www.hp.com/go/rackandpower>.

Monitors and Keyboards	TFT7210R Rack Mounted 17" Monitor	348373-B21
	TFT7600 Rackmount Keyboard Monitor	AG052A
	1U Rackmount Keyboard with USB	AG072A

NOTE: For additional information regarding Rack Options, please see the following URL: <http://www.hp.com/go/rackandpower>

HP KVM Switch Options	HP BladeSystem Cat 5 KVM Interface Adapter	AF100A
	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
	HP 1x4 Server Console Switch	AF611A
	HP PS2 Server Console Cable, 6 foot, 2-Pack	AF612A
	HP USB Server Console Cable, 6 foot, 2-Pack	AF613A

NOTE: required for supporting USB peripherals.

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>

Options

HP Serial Console Server Options	HP 16 Port Serial Console Server	AF101A
	HP 48 Port Serial Console Server	AF102A
	Serial Adapter, RJ45-DB9 DCE Female, 1 Pack	AF103A
	Serial Adapter, RJ45-DB9 DCE Female, 8 Pack	AF110A
	NOTE: Cat5e cables are required to connect Serial Adapters to Serial Console Servers. Additional Serial Adapters and Cat5e cables can be found at the following URL: http://www.hp.com/go/kvm .	
	2x1x16 IP Console Switch with Virtual Media	AF601A
	4x1x16 IP Console Switch with Virtual Media	AF602A
	2x16 Server Console Switch with Virtual Media	AF600A
	PS/2 Virtual Media Interface Adapter, 1 pack	AF604A
	NOTE: Requires PS/2 and one USB port on server.	
	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 UA971E

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
	Non-Operating		-40° to 60° C (-40° to 140° F)
	Storage		-20° to 60° C (-4° to 140° F)
	Relative Humidity**	Maximum Wet Bulb Temperature	-30° C (86° F)
		Operating	10% to 90%
		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.

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For hard drives, 1 GB = 1 billion bytes. Actual formatted capacity is less.