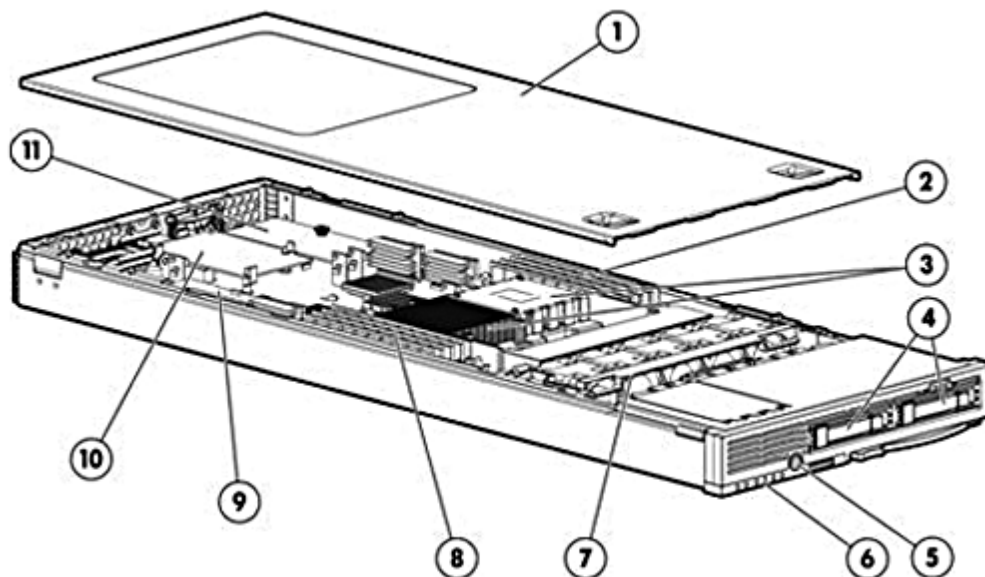


Overview



1. Access Panel
2. Processor 2 Memory Banks C and D
3. Up to two AMD Opteron™ 2000 Series processors (shown here with 1 processor installed)
4. Up to 2 small form factor (SFF) SAS or SATA hot plug hard disk drives (optional)
5. Power On/Standby Button
6. Front panel LEDs
7. Redundant Fan Module
8. Processor 1 Memory Banks A and B
9. Smart Array E200i Controller cache module
10. Optional Dual Port Fibre Channel Adapter (QLogic-based or Emulex-based)
11. Optional NIC Adapter (single function or multifunction Gigabit)

At A Glance

This QuickSpecs provides information for the HP ProLiant BL25p G2 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

The HP ProLiant BL25p Generation 2 server blade delivers maximum dual-processor performance, enterprise manageability and availability, and superior server design to the datacenter.

- **Processor:**
 - Up to two AMD Opteron 2000 Series processors
 - Supports up to two AMD Opteron processor Model 2218 (2.6 GHz) featuring 1MB Level 2 cache memory per core
 - Supports both standard (95W) and low power (68W) versions of AMD Opteron 2000 series processors
 - Processors are connected through 1 GHz HyperTransport™ links
 - ServerWorks HT-1000 and HT-2100 chipsets
- **Memory:**
 - Up to 32 GB of PC2-5300 Registered DDR2 (667 MHz) memory, 8 DIMM slots
 - Advanced ECC memory support
 - Supports 2:1 memory interleaving
- **Storage Controller:**

Overview

- Integrated Smart Array E200i Controller with 64 MB cache
- Supports RAID 0 and 1
- Optional 128MB battery-backed write cache (BBWC) module for internal storage data protection
- **Internal Drive Support:**
 - Up to 2 small form factor (SFF) SAS or SATA hot plug hard disk drives (support for SATA hard drives via Factory Integration only)
- **Network Controller:**
 - Two (2) embedded NC373i Multifunction Gigabit Network Adapters with TCP/IP Offload Engine, including support for Accelerated iSCSI through an optional ProLiant Essentials Licensing Kit
 - One (1) additional 10/100 NIC dedicated to iLO 2 management
- **Optional Mezzanine Card support:**
 - Supports (1) Fibre Channel card:
 - Dual Port Fibre Channel Mezzanine (2-Gb) options for SAN connectivity (Choice of Emulex or QLogic)
 - Supports (1) networking card for two (2) additional Ethernet network ports, choose from the following:
 - HP NC374m PCI Express Dual Port Multifunction Gigabit Server Adapter for HP BladeSystem with TCP/IP Offload Engine, including support for Accelerated iSCSI through an optional ProLiant Essentials Licensing Kit or
 - HP NC320m PCI Express Dual Port Gigabit Server Adapter for HP BladeSystem
- **USB Ports:**
 - One (1) internal USB 2.0 connector for security key devices and USB drive keys
 - I/O cable with two (2) USB 2.0 ports, one (1) video port, one (1) iLO 2 port and one (1) kernel debug port. The cable was specifically designed to aid in initial server image deployment and ships with every HP BladeSystem p-Class server blade enclosure
- **Redundancy:**
 - The HP BL25p G2 server features five (5) integrated fans for sufficient cooling. The redundant fan design allows for uninterrupted server operations
- **Operating Systems:**
 - Supports Windows, Linux, Solaris, and VMware ESX Server
- **Form Factor:**
 - The HP ProLiant BL25p G2 server blade plugs vertically into an HP BladeSystem p-Class server blade enclosure.
 - HP BladeSystem p-Class server blade enclosures with enhanced backplane components might be required depending on which HP ProLiant server blade model is selected. Please visit the enclosure compatibility matrix at <http://www.hp.com/go/bladesystem/enclosure/compatibility>
- **Management:**
 - Integrated Lights-Out 2 (iLO 2) Standard Blade Edition (includes virtual KVM and graphical remote console at no additional cost)
- **Enclosures:**
 - The HP BladeSystem p-Class server blade enclosure is 6U (10.5-inches) in height, 19-inches wide and holds up to 8 HP ProLiant BL25p G2 server blades plugged vertically.
- **Warranty:**
 - 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 SAS hard drives. SATA hard drives have a one year warranty.

Standard Features

| | |
|------------------------|---|
| Processors | AMD Opteron™ processor Model 2218 (2.6 GHz, 95W) AMD Opteron processor Model 2216 (2.4 GHz, 95W)* AMD Opteron processor Model 2210 (1.8 GHz, 95W)* Low Power AMD Opteron processor Model 2216 HE (2.4 GHz, 68W) Low Power AMD Opteron processor Model 2214 HE (2.2 GHz, 68W) Low Power AMD Opteron processor Model 2212 HE (2.0 GHz, 68W)* Low Power AMD Opteron processor Model 2210 HE (1.8 GHz, 68W) NOTE: AMD Opteron 2000 Series processors are 64-bit, dual-core, and support AMD Virtualization™ and DDR2 memory technology. AMD Opteron 2000 Series processors are connected through 1 GHz HyperTransport™ links. NOTE: *Offered via Factory Integration (North America) or Specials (EMEA and APJ) only. |
| Upgradeability | Upgradeable to dual processing (2 processors) |
| Cache Memory | 1MB Level 2 cache memory per core (2MB total) |
| Chipset | ServerWorks HT-1000 and HT-2100 |
| Memory | Type PC2-5300 Registered DDR2 DIMMs (667 MHz) Standard 1 GB (2 x 512 MB) (Depending on model) 2 GB (2 x 1 GB) Maximum 32 GB (8 x 4 GB) NOTE: Memory must be installed in pairs. For additional memory configuration guidelines, see "Memory" section of this HP BL25p G2 QuickSpecs. |
| Network Adapter | Two (2) embedded NC373i Multifunction Gigabit Network Adapters One (1) additional 10/100 NIC dedicated to iLO 2 Management NOTE: Must use a HP BladeSystem p-Class server blade enclosure with enhanced backplane components to utilize all four possible NIC's (HP P/N's 281404-B22, 243564-B22 or 380625-B22). |
| Expansion Slots | No PCI slots; all features are integrated NOTE: Additional network and fibre channel connectivity is available via optional mezzanine cards. I/O cable connectors: (2) USB 2.0 ports, (1) video port, (1) iLO 2 port and (1) kernel debug port (2) I/O cables ship with every HP BladeSystem p-Class 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 2 (iLO 2) Standard Blade Edition (integrated on motherboard)

- Virtual Text Remote Console
- Virtual Power Button Control
- Network connectivity consolidation via Onboard Administrator module
- OS independent hardware health status & current power meter reading
- Browser, command line (SM-CLP) and scripted access
- Integrated Remote Console (ActiveX Control client)
- Automatic IP Configuration via DHCP/DNS/WINS
- Single sign-on authentication through Onboard Administrator
- Industry Standard 128-bit Secure Sockets Layer (SSL) and Secure Shell security (SSH)
- IML and iLO Event Logging
- Support for 12 user accounts with customizable access privilege

| | | |
|---------------------------|------------------------------|---|
| Storage Controller | Smart Array E200i Controller | <ul style="list-style-type: none"> • 64MB memory module supports RAID 0 and 1 • Supports SAS and SATA disk drives • Available upgrades: 128MB battery-backed write cache (BBWC) module |
|---------------------------|------------------------------|---|

| | | | |
|---|-----------------------------------|------------|-----------------------|
| Maximum Internal Storage (internal drive cage) | Hot Plug Serial Attach SCSI (SAS) | 292GB SAS | 2 x 146GB Serial SCSI |
| | Hot Plug Serial ATA (SATA) | 320GB SATA | 2 x 160GB Serial ATA |

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 BL25p G2 server blade The HP ProLiant BL25p G2 supports one (1) optional fiber channel adapter for SAN connectivity. Customers are offered a choice of either a QLogic-based or Emulex-based fiber channel adapter. 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 HP QLogic-based dual port Fibre Channel Adapter (P/N 361426-B21) is compatible with the HP ProLiant BL20p G3, BL20p G4, BL25p G2, and BL45p G2 server blades. It cannot be used with HP ProLiant BL25p G1, BL35p, or BL45p G1 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 HP Emulex-based dual port fibre channel HBA (P/N 394757-B21) is compatible with the HP ProLiant BL20p G3, BL20p G4, BL25p G2, and BL45p G2 server blades. It cannot be used with HP ProLiant BL25p G1, BL35p, or BL45p G1 server blades
 - There are no SFP's included in the Emulex mezzanine kit for use with ProLiant BL p-Class

Standard Features

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

Compatible SAN

HP ProLiant BL25p G2 server blades are optimized for StorageWorks MSA, EVA, and XP arrays.

- HP ProLiant BL25p G2 server blades are compatible with select 3rd party SANs (please see server blade storage page for more details):

<http://h18000.www1.hp.com/products/servers/proliant-bl/p-class/storage.html>

ProLiant Essentials Foundation Pack Software for the ProLiant BL Server

HP Systems Insight Manager

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) extends HP Systems Insight Manager with a complete deployment solution for HP ProLiant blade servers. RDP provides a central location to configure server hardware, deploy Windows, Linux and VMware ESX operating environments and install HP ProLiant Support Pack drivers using images and scripted profiles.

Insight Management Agents

The 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>.

Standard Features

| | |
|---|---|
| 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. |
| ProLiant Support Packs and ROMPaq, software | The latest software, drivers, and firmware fully optimized and tested for your ProLiant server and options, available through ProLiant Support Packs the ProLiant Essentials Rapid Deployment Pack, SmartStart or downloaded from Software and Drivers download pages website at http://www.hp.com/go/support . |

Optional ProLiant Essentials Value Packs

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

- Accelerated iSCSI Pack - enables the embedded Multifunction network controller to serve as both a NIC and an iSCSI HBA providing access to SAN storage over the same connection used for networking. Processing of the protocol stack is offloaded to the NIC reducing CPU utilization and greatly improving the speed with which the requests are processed and sent to the network.
- Integrated Lights-Out Select Pack - upgrades the Integrated Lights-Out processor with scripted and command line virtual media, Power Regulator reporting and enterprise security.
- Insight Control Data Center Edition v1.0 is delivered with HP BladeSystem enclosures in either evaluation of fully licensed packs, and is also available as a software option. For additional product and licensing information about Insight Control Data Center Edition, HP Systems Insight Manager and Essentials software refer to <http://www.hp.com/servers/proliantessentials>
- 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 - detects, analyzes, and explains hardware bottlenecks on HP ProLiant servers, HP Integrity servers and shared storage.
- Rapid Deployment Pack (RDP) - extends HP Systems Insight Manager with a complete deployment solution for HP ProLiant blade servers. RDP provides a central location to configure server hardware, deploy Windows, Linux and VMware ESX operating environments and install HP ProLiant Support Pack drivers using images and scripted profiles.
- RDMA Pack enables Remote Direct Memory Access (RDMA) on an HP Multifunction server adapter. RDMA is a communications protocol that provides direct transmission of data from the memory of one computer to the memory of another with minimal demands on the host CPU. RDMA provides a high-speed, high-performance connection between servers on the same network. RDMA Pack licenses are port-based; the licensed seats are available to individual ports on the Multifunction server adapter.
- 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 operating system configurations that can be

Standard Features

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 7.60 and later can now deploy all HP ProLiant BL25p G2 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 7.60

OS Support

Windows Server 2003, Web edition

Windows Server 2003, Server/Standard edition (32 & 64 bit editions)

Windows Server 2003, Enterprise edition (32 & 64 bit editions)

Red Hat Enterprise Linux 4 (32 & 64 bit editions)

Red Hat Enterprise Linux 3 (32 & 64 bit editions)

SUSE LINUX Enterprise Server 9 (32 & 64 bit editions)

SUSE LINUX Enterprise Server 10 (32 & 64 bit editions)

Solaris 10 (32 & 64 bit editions)

VMware ESX Server 3

NOTE: For a complete and up-to-date listing of supported OSs and versions, please visit our OS Support Matrix at: <http://www.hp.com/go/supportos>.

NOTE: For an up-to-date listing of the latest drivers available for the HP ProLiant BL p-Class, please see: <http://h18004.www1.hp.com/support/files/server/us/family/model/5342.html>.

NOTE: For a more complete and up-to-date information on Linux support, please visit HP Linux Web site at: <http://h18000.www1.hp.com/products/servers/linux/hpLinuxcert.html>.

Supported Software Options

VMware Virtualization Software

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>

Standard Features

Intelligent Manageability Integrated Lights-Out 2 Standard Blade Edition (iLO 2) features include:

- Virtual KVM (Text and Graphical modes)
- Virtual Media (CD ROM ,floppy and USB flash drive)
- Virtual Power Button Control
- Integrated Remote Console
- Embedded system health
- Blade power consumption reading
- Browser, command line and scripted access
- Dedicated LAN Connectivity
- Automatic IP Configuration via DHCP/DNS/WINS
- Industry Standard RC4, 128-bit Secure Sockets Layer (SSL) and Secure Shell (SSH) Security
- IML and iLO Event Logging
- Support for 12 user accounts with customizable access

Upgrade to HP ProLiant Essentials Integrated Lights-Out Select Pack

***NOTE:** Advanced features such as Graphical Remote Console and Virtual Media with browser access are included with iLO 2 based BL Class servers.

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)

Integrated Management Log (IML)

Dynamic sector repairing and drive parameter tracking (with Smart Array controllers)

Network adapter teaming set-up utility

Availability

- Dual Port Fibre Channel Mezzanine Card (optional) for redundant SAN connection
- Two hot plug SAS/SATA hard drive bays and integrated RAID (Smart Array E200i) controller on every server blade (Battery-backed write cache is optional)
- Redundant ROM on every server blade
- Advanced ECC Memory support on every server blade - Advanced ECC can actually correct a multi-bit error (up to 4 bits) that occurs within one memory chip
- Redundant fan design on every server blade - The HP ProLiant BL25p G2 server features five (5) integrated fans for sufficient cooling. A single fan can fail without interrupting server operations indefinitely
- 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 for your specific server model please contact your sales representative or go to <http://www.hp.com/go/factory-express>.

HP Enterprise Configurator

The HP eCo-Enterprise Configurator now provides factory default racking for our HP hardware portfolio. This approach is aligned with our strategic direction to meet the needs and expectations of our valued customers. If you require "custom" rack configuration, please contact HP's Customer Business Center or an Authorized Partner for assistance.

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 25p and HP ProLiant 45p 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 35p 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

NOTE: The p-Class SAN switch limited warranty is unique to the SAN switch which includes 1 year warranty that is upgradeable to 3 years via Care Pack. 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 capitalize on your HP ProLiant 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

Standard Features

varying needs of business. Whether an SMB or large global corporation HP has a ProLiant 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*

Continuance Care - Cost-effective service options designed to extend HP Services committed response and guaranteed fix times, designed to speed problem 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 ProLiant servers - and free customers people to focus on what they do best, their business.

- *Installation & Start-Up of a ProLiant server and Microsoft or Linux O/S per the Customer Description and/or Data Sheet. To be delivered on a scheduled basis 8am-5pm, M-F, excl. HP holidays*

NOTE: For a complete listing of service offerings and information visit:

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

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

Models

Dual-Core Models

| | | |
|--|--|---|
| <p>ProLiant BL25p G2 2218 2GB (1P) 408666-xx1</p> | <p>Processor(s)</p> | <p>(1) AMD Opteron™ processor Model 2218 (2.6 GHz, 95W) (1) Low Power AMD Opteron processor Model 2216 HE (2.4 GHz, 68W) (1) Low Power AMD Opteron processor Model 2214 HE (2.2 GHz, 68W) (1) Low Power AMD Opteron processor Model 2210 HE (1.8 GHz, 68W)</p> |
| <p>ProLiant BL25p G2 2216 HE 2GB (1P) 408665-B21</p> | <p>Cache Memory</p> | <p>1MB Level 2 cache memory per core (2MB total)</p> |
| <p>ProLiant BL25p G2 2214 HE 2GB (1P) 408664-xx1</p> | <p>Memory One of the following depending on model</p> | <p>2 GB (2 x 1 GB) PC2-5300, Registered DDR2-667 1 GB (2 x 512 MB) PC2-5300, Registered DDR2-667</p> |
| <p>ProLiant BL25p G2 2210 HE 1GB (1P) 408663-B21</p> | <p>Network Adapter</p> | <p>Two (2) embedded NC373i Multifunction Gigabit Network Adapters; one (1) additional 10/100 NIC dedicated to iLO 2 management</p> |
| | <p>Storage Controller</p> | <p>Smart Array E200i Controller with 64MB (optional 128MB battery-backed write cache module available)</p> |
| | <p>Hard Drives</p> | <p>(2) SFF SAS/SATA drive bays; no hard drives ship standard</p> |
| | <p>Internal Storage</p> | <p>Up to 292GB SFF SAS (with optional hot plug hard disk drives) Up to 120GB SFF SATA (with optional hot plug hard disk drives)</p> |
| | <p>Optical Drive</p> | <p>None</p> |
| | <p>Form Factor</p> | <p>Up to 8 HP BL25p G2 server blades plug vertically an HP BladeSystem p-Class server blade enclosure. Please visit the enclosure compatibility matrix at http://www.hp.com/go/ bladesystem/ enclosure/ compatibility</p> |

| | | |
|--------------------------------|---|---|
| <p>Country Code Key</p> | <p>xx = B2 xx = 20</p> | <p>Worldwide Brazil only</p> |
|--------------------------------|---|---|

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.

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

Step 1: Base Server Blade Configuration

| | | |
|---------------|--|------------|
| Models | HP ProLiant BL25p G2 CTO Blade (North America) | 404839-B21 |
| | Configurable Model ships with: | |
| | Two (2) embedded NC373i Multifunction Gigabit Network Adapters plus one (1) additional 10/100 NIC dedicated to iLO 2 management | |
| | Integrated Smart Array E200i controller | |
| | NOTE: Controller cache module selection is required. Select either the standard 64 MB cache module or the optional 128 MB battery-backed write cache (BBWC) module in step 2 below. | |
| | Two small form factor (SFF) SAS or SATA hot plug hard drive bays | |
| | Integrated Lights-Out 2 Standard Blade Edition | |

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

| | | |
|-----------------------|---|------------|
| Processors | AMD Opteron™ processor Model 2218 (2.6 GHz, 95W) Option Kit, FIO Base | 409380-L21 |
| | NOTE: If 2 processors are desired, select one 409380-L21 and one 409380-B21. | |
| | AMD Opteron processor Model 2216 (2.4 GHz, 95W) Option Kit, FIO Base | 409381-L21 |
| | NOTE: If 2 processors are desired, select one 409381-L21 and one 409381-B21. | |
| | AMD Opteron processor Model 2210 (1.8 GHz, 95W), Option Kit, FIO Base | 415619-L21 |
| | NOTE: If 2 processors are desired, select one 415619-L21 and one 415619-B21. | |
| | Low Power AMD Opteron processor Model 2216 HE (2.4 GHz, 68W) Option Kit, FIO Base | 415620-L21 |
| | NOTE: If 2 processors are desired, select one 415620-L21 and one 415620-B21. | |
| | Low Power AMD Opteron processor Model 2214 HE (2.2 GHz, 68W) Option Kit, FIO Base | 409383-L21 |
| | NOTE: If 2 processors are desired, select one 409383-L21 and one 409383-B21. | |
| | Low Power AMD Opteron processor Model 2212 HE (2.0 GHz, 68W) Option Kit, FIO Base | 415621-L21 |
| | NOTE: If 2 processors are desired, select one 415621-L21 and one 415621-B21. | |
| | Low Power AMD Opteron processor Model 2210 HE (1.8 GHz, 68W) Option Kit, FIO Base | 432811-L21 |
| | NOTE: If 2 processors are desired, select one 432811-L21 and one 432811-B21. | |
| Memory | HP 1GB REG PC2-5300 2x512MB 1RANK Kit | 408850-B21 |
| | HP 2GB REG PC2-5300 2x1GB 1RANK Kit | 408851-B21 |
| | HP 4GB REG PC2-5300 2x2GB 2RANK Kit | 408853-B21 |
| | HP 8GB REG PC2-5300 2x4GB 2RANK Kit | 408854-B21 |
| | NOTE: Must be installed in pairs. For additional memory configuration guidelines, see "Memory" section of this HP BL25p G2 QuickSpecs. | |
| Communications | 64 MB Cache - FIO Only | 405102-B21 |
| | 128 MB Battery-Backed Cache Enabler | 346914-B21 |
| | NOTE: Supports the Smart Array E200i Controller. | |

Step 3: Choose Additional Factory Integratable Options

| | | |
|------------------------|--|------------|
| Hard Disk Drive | Serial Attached SCSI (SAS) SFF Hot Plug | |
| | HP 146GB 3G SAS 10K SFF HDD | 431958-B21 |
| | HP 72GB 3G SAS 10K SSF SP HDD | 375861-B21 |
| | HP 36GB 3G SAS 10K SSF SP HDD | 375859-B21 |
| | Serial ATA (SATA) SFF Hot Plug | |
| | HP 60GB 1.5G SATA 5.4K SFF HDD | 379306-B21 |
| Communications | HP NC320m PCI Express Dual Port Gigabit server adapter for HP BladeSystem | 405095-B21 |
| | Or upgrade to: HP NC374m PCI Express Dual Port Multifunction Gigabit server adapter for HP BladeSystem | 405094-B21 |
| | NOTE: There are two mezzanine adapter card connectors on the HP BL25p G2 motherboard. There is a dedicated networking connector which supports one (1) optional Ethernet NIC mezzanine adapter card, either the HP NC320m PCI Express Dual Port Gigabit server adapter or the HP NC374m PCI Express Dual Port Multifunction Gigabit server adapter. The other connector(s) is dedicated for the optional, fibre channel mezzanine card adapter. | |
| Fibre Channel Adapters | HP QLogic-based Fibre Channel Mezzanine HBA | 361426-B21 |
| | NOTE: 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.) | |
| | HP Emulex-based Fibre Channel Mezzanine HBA for HP p-Class BladeSystem | 394757-B21 |
| | NOTE: SFPs for use with pass through SAN switches not included with the Emulex-based Fibre Channel Adapter. If SFPs are 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). | |

Step 4: Choose Additional Options for Factory Integration

NOTE: For additional options, including server blade enclosures, interconnect options, and power subsystem options; 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

And/or refer to the "Options" section below.

Options

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| <p>ProLiant Essentials Value Pack Software</p> | <p>ProLiant Essentials Accelerated iSCSI Pack for Embedded Multifunction Gigabit Server Adapters</p> <p>ProLiant Essentials Accelerated iSCSI Pack, Single Server License 407484-B22</p> <p>NOTE: For additional ProLiant Accelerated iSCSI Pack License Kits- please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12466_div/12466_div.HTML</p> <p>ProLiant Essentials Integrated Lights-Out Select Pack</p> <p>ProLiant Essentials Integrated Lights-Out Select Pack, 1 server License 413119-B21</p> <p>ProLiant Essentials Integrated Lights-Out Select Pack 8-server License 413122-B21</p> <p>Featuring: sophisticated remote control and security features for HP BladeSystem servers and ProLiant ML/DL servers in text console environments.</p> <p>NOTE: For additional ProLiant Essentials Integrated Lights-Out Packs please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12362_div/12362_div.HTML</p> <p>ProLiant Essentials Intelligent Networking Pack Window Edition and Linux Edition</p> <p>ProLiant Essentials Intelligent Networking Pack Windows Edition, Single Server License 436225-B21</p> <p>NOTE: For use with a single server. Contains one license with a unique license activation key and documentation.</p> <p>ProLiant Essentials Intelligent Networking Pack Linux Edition, Single Server License 436229-B21</p> <p>NOTE: For use with a single server. Contains one license with a unique license activation key and documentation.</p> <p>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</p> <p>ProLiant Essentials Performance Management Pack</p> <p>ProLiant Essentials Performance Management Pack, Single-Server License 306696-B21</p> <p>NOTE: For use with a single server. Contains one license with a unique license activation key, HP Management CD and documentation.</p> <p>NOTE: The most recent version of the software can always be downloaded at http://www.hp.com/products/pmp.</p> <p>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</p> <p>ProLiant Essentials Rapid Deployment Pack Windows</p> <p>Rapid Deployment Pack, Single-Server License, Flatpack 434559-B21</p> <p>Rapid Deployment Pack, Single-Server License 267196-B21</p> <p>NOTE: This license allows 1 server to be deployed and managed via RDP.</p> <p>Rapid Deployment Pack, Single-Server License (Japan) 267196-291</p> <p>NOTE: This license allows 1 server to be deployed and managed via RDP.</p> <p>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</p> <p>HP ProLiant Essentials RDMA Pack for Embedded Multifunction Gigabit Server Adapters</p> <p>HP ProLiant Essentials RDMA Pack for Embedded Multifunction Gigabit Server Adapters, Single License 407478-B22</p> |
|---|---|

Options

NOTE: For additional ProLiant Essentials RDMA Pack for Embedded Multifunction Gigabit Server Adapter License Kits please see the QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/12573_div/12573_div.HTML

ProLiant Essentials Server Migration Pack

ProLiant Essentials Server Migration Pack, Single-Migration License

435663-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_div/12328_div.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_div/12467_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

ProLiant Essentials Virtual Machine Management Pack, Single-Server License

435661-B21

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

NOTE: For additional ProLiant Virtual Machine Management Pack License Kits please see the QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/12328_div/12328_div.HTML

ProLiant Essentials Vulnerability and Patch Management Pack

ProLiant Essentials Vulnerability and Patch Management Pack, Single-Server License

371645-B21

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

NOTE: For additional ProLiant Vulnerability and Patch Management Pack License Kits, please see the QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/12111_div/12111_div.HTML

NOTE: Flexible and volume quantity license kits are available for ProLiant Essentials Value Packs. Refer to <http://www.hp.com/servers/proliantessentials> or the various ProLiant Essentials Value Pack product QuickSpecs for more information.

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

Options

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| HP Control Tower BladeSystem p-class Management Software | <p>HP Insight Control Linux Edition - MEDIA KIT 412956-B22</p> <p>NOTE: This optional Media pack CD contains the ISO image for the HP Insight Control Linux Edition management appliance (see support servers below under "Management appliance (host) supported servers"). Servers must be acquired separately. For information on HP ProLiant Servers please visit: http://h18000.www1.hp.com/products/quickspecs/Division/11070.html</p> <p>NOTE: This Media pack is optional because the latest ISO image and latest updates may be downloaded at no cost from: http://www.hp.com/go/controltower (click on Download button from this page).</p> |
| | <p>HP Insight Control Linux Edition 1.5 -No Media, -1 License 412957-B22</p> <p>NOTE: This license allows one (1) server blade to be deployed and managed via HP Insight Control Linux Edition.</p> |
| | <p>HP Insight Control Linux Edition 1.5-No Media -8 License 412958-B22</p> <p>NOTE: This license allows eight (8) server blades to be deployed and managed via HP Insight Control Linux Edition.</p> |
| | <p>HP Insight Control Linux Edition 1.5 -No Media -Flex License 412959-B22</p> <p>NOTE: For use with multiple servers (minimum of 5). This part number allows you to specify the license quantity. When ordering this part number, the quantity ordered will be the number of licenses embedded in a single activation key. A single kit containing that key is then delivered to you.</p> |

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| Processor | <p>AMD Opteron™ processor Model 2218 (2.6 GHz, 95W) Option Kit 409380-B21</p> <p>AMD Opteron processor Model 2216 (2.4 GHz, 95W) Option Kit 409381-B21</p> <p>AMD Opteron processor Model 2210 (1.8 GHz, 95W), Option Kit 415619-B21</p> <p>Low Power AMD Opteron processor Model 2216 HE (2.4 GHz, 68W) , Option Kit 415620-B21</p> <p>Low Power AMD Opteron processor Model 2214 HE (2.2 GHz, 68W), Option Kit 409383-B21</p> <p>Low Power AMD Opteron processor Model 2212 HE (2.0 GHz, 68W), Option Kit 415621-B21</p> <p>Low Power AMD Opteron processor Model 2210 HE (1.8 GHz, 68W), Option Kit 432811-B21</p> <p>NOTE: AMD Opteron 2000 Series processors are 64-bit, dual-core, and support AMD Virtualization™ and DDR2 memory technology. AMD Opteron 2000 Series processors are connected through 1 GHz HyperTransport™ links.</p> |
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| Memory (SDRAM DIMMs) | <p>HP 1GB REG PC2-5300 2x512MB 1RANK Kit 408850-B21</p> <p>HP 2GB REG PC2-5300 2x1GB 1RANK Kit 408851-B21</p> <p>HP 4GB REG PC2-5300 2x2GB 2RANK Kit 408853-B21</p> <p>HP 8GB REG PC2-5300 2x4GB 2RANK Kit 408854-B21</p> <p>NOTE: Must be installed in pairs. For additional memory configuration guidelines, see "Memory" section of this HP BL25p G2 QuickSpecs.</p> |
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Options

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| Hard Drives | Serial Attached SCSI (SAS) SFF Hot Plug | |
| | HP 146GB 3G SAS 10K SFF HDD | 431958-B21 |
| | HP 72GB 3G SAS 10K SFF SP HDD | 375861-B21 |
| | HP 36GB 3G SAS 10K SFF SP HDD | 375859-B21 |
| | NOTE: SAS drives have a 3 year warranty. | |
| | NOTE: Please see the SAS Hard Drive QuickSpecs for Technical Specifications such as capacity, height, width, interface, transfer rate, seek time, physical configuration, and operating temperature: http://h18000.www1.hp.com/products/quickspecs/12244_div/12244_div.HTML (Worldwide) | |
| | Serial-ATA (SATA) SFF Hot Plug | |
| | HP 60GB 1.5G SATA 5.4K SFF HDD | 379306-B21 |
| | NOTE: SATA drives have a 1 year warranty. Please see the SATA Hard Drive QuickSpecs for Technical Specifications such as capacity, height, width, interface, transfer rate, seek time, physical configuration, and operating temperature: http://h18000.www1.hp.com/products/quickspecs/12091_div/12091_div.HTML (Worldwide) | |
| Communications | HP NC320m PCI Express Dual Port Gigabit server adapter for HP BladeSystem | 405095-B21 |
| | HP NC374m PCI Express Dual Port Multifunction Gigabit server adapter for HP BladeSystem | 405094-B21 |
| | NOTE: There are two mezzanine adapter card connectors on the HP BL25p G2 motherboard. There is a dedicated networking connector which supports one (1) optional Ethernet NIC mezzanine adapter card, either the HP NC320m PCI Express Dual Port Gigabit server adapter or the HP NC374m PCI Express Dual Port Multifunction Gigabit server adapter. The other connector(s) is dedicated for the optional, fibre channel mezzanine card adapter. | |
| Controller Cache | 128 MB Battery-Backed Cache Enabler | 346914-B21 |
| | NOTE: Supports the Smart Array E200i Controller. | |
| Fibre Channel Adapters | HP QLogic-based dual port Fibre Channel Adapter | 361426-B21 |
| | NOTE: 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.) | |
| | HP Emulex-based dual port Fibre Channel Adapter for p-Class BladeSystem | 394757-B21 |
| | NOTE: SFPs for use with pass through SAN switches not included with the Emulex-based Fibre Channel Adapter. If SFPs are 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). | |

Options

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| <p>HP BladeSystem p-Class Other Options</p> | <p>HP BladeSystem p-Class Diagnostic Station</p> <p>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.</p> | <p>230743-B21</p> |
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Tape Libraries

HP StorageWorks MSL2024 Tape Library

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| HP StorageWorks MSL2024 1 Ultrium 960 Drive Library | AG115A |
| HP StorageWorks MSL2024 1 Ultrium 960 4GB FC Library | AG326B |
| HP StorageWorks MSL2024 1 Ultrium 920 Drive Library | AH169A |
| HP StorageWorks MSL2024 2 Ultrium 920 Drive Library | AH170A |
| HP StorageWorks MSL2024 1 Ultrium 448 Drive Library | AG116A |
| HP StorageWorks MSL2024 2 Ultrium 448 Drive Library | AG117A |

HP StorageWorks MSL4048 Tape Library

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|--|--------|
| HP StorageWorks MSL4048 1 Ultrium 448 Drive Library | AG320A |
| HP StorageWorks MSL4048 2 Ultrium 448 Drive Library | AG321A |
| HP StorageWorks MSL4048 1 Ultrium 960 Drive Library | AG322A |
| HP StorageWorks MSL4048 1 Ultrium 960 4GB FC Library | AG324B |
| HP StorageWorks MSL4048 2 Ultrium 960 Drive Library | AG323A |
| HP StorageWorks MSL4048 2 Ultrium 960 4GB FC Library | AG325B |
| HP StorageWorks MSL4048 1 Ultrium 920 Tape Library | AH171A |
| HP StorageWorks MSL4048 2 Ultrium 920 Tape Library | AH172A |

HP StorageWorks MSL6000 Tape Library

Ultrium 960 technology

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| 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 |

Ultrium 460 technology

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|---|--------|
| 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

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|---|--------|
| HP StorageWorks Virtual Library System, 300 Base Unit | AH138A |
| HP StorageWorks 1002i 2TB Virtual Library System | AG124A |
| HP StorageWorks 6105 Virtual Library System | AF728A |
| HP StorageWorks 6510 Virtual Library System | AF729A |
| HP StorageWorks 6840 Virtual Library System | AG051A |
| HP StorageWorks 6109 Virtual Library System | AG167A |
| HP StorageWorks 6518 Virtual Library System | AG168A |

Options

HP StorageWorks 6870 Virtual Library System AG169A

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 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_div/11033_div.HTML (Worldwide)

HP StorageWorks Modular Smart Array 1500 cs AA986A

NOTE: Please see the StorageWorks Modular Smart Array 1500 cs QuickSpecs for additional options and configuration information at: <http://www.hp.com/go/MSA1500cs>

HP StorageWorks Options 394588-B21

HP StorageWorks Fibre Channel Mezzanine Host Bus Adapter

NOTE: Support HP ProLiant BL25p/45p Server Blades

Cluster Options 364023-B22

ProLiant Cluster Starter Kit

NOTE: For additional information regarding the ProLiant Cluster Starter Kit please see the following QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/11935_div/11935_div.html (Worldwide)

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_div/11932_div.html (Worldwide)

ProLiant Cluster HA/F500 for the Enterprise SAN 364024-B21

NOTE: For additional information regarding the ProLiant Cluster HA/F500 for Enterprise SAN please see the following QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/11933_div/11933_div.html (Worldwide)

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 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, A.11.16 for SUSE SLES 9 & 10 and Red Hat EL 3 & 4 (single license version) 307754-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

Options

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_div/11518_div.html
(Worldwide)

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|-------------|---|------------|
| USB Options | HP USB 2-Button Optical Mouse (Carbonite) | DC172B |
| | 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 |

| | | |
|--|---|------------|
| 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_div/12074_div.HTML (Worldwide)</p> <p>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 |
| | 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 |
| <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_div/12402_div.HTML (Worldwide)</p> <p>NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower.</p> | | |

Options

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| HP Rack 10000 Series (Graphite Metallic) | 10642 (42U) Infrastructure Rack (Low Voltage) | 379006-001 |
| | 10642 (42U) Infrastructure Rack (High Voltage) | 379005-001 |
| | HP S10614 (14U) Rack Cabinet - Shock Pallet | 292302-B22 |
| | HP 10842 (42U, 800mm wide) Rack Cabinet - 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 10842 (42U, 800mm wide) Rack Cabinet - 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 10647 (47U) Rack Cabinet - Pallet | 245160-B21 |
| | HP 10647 (47U) Rack Cabinet - Shock Pallet | 245160-B23 |
| | HP 10622 (22U) Rack Cabinet - Pallet | 245163-B21 |
| | HP 10622 (22U) Rack Cabinet - Shock Pallet | 245163-B22 |
| | HP 10622 (22U) Rack Cabinet - Crated | 245163-B23 |
| | NOTE: xxxxx-B21 (pallet) used to ship empty racks shipped on a truck. 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_div/10995_div.HTML (Worldwide) | |
| NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower . | | |

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|------------------------------------|--|------------|
| Monitors and Keyboards | TFT7210R Rack Mounted 17" Monitor | 348373-B21 |
| | NOTE: For a complete list of Monitors please view the following URL: http://www.hp.com/go/kvm . | |
| | TFT7600 Rackmount Keyboard Monitor US | AG052A |
| | TFT7600 Rackmount Keyboard Monitor UK | AG053A |
| | TFT7600 Rackmount Keyboard Monitor GR | AG054A |
| | TFT7600 Rackmount Keyboard Monitor FR | AG055A |
| | TFT7600 Rackmount Keyboard Monitor IT | AG056A |
| | TFT7600 Rackmount Keyboard Monitor SP | AG057A |
| | TFT7600 Rackmount Keyboard Monitor DEN | AG058A |
| | TFT7600 Rackmount Keyboard Monitor NOR | AG059A |
| | TFT7600 Rackmount Keyboard Monitor SE/FI | AG060A |
| | TFT7600 Rackmount Keyboard Monitor SWI | AG061A |
| | TFT7600 Rackmount Keyboard Monitor PORT | AG062A |
| | TFT7600 Rackmount Keyboard Monitor BEL | AG063A |
| | TFT7600 Rackmount Keyboard Monitor JPN2 | AG064A |
| | TFT7600 Rackmount Keyboard Monitor RUS | AG065A |
| | TFT7600 Rackmount Keyboard Monitor INTL | AG066A |
| 1U Rackmount Keyboard with USB, US | AG072A | |

Options

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| 1U Rackmount Keyboard with USB, UK | AG073A |
| 1U Rackmount Keyboard with USB, GR | AG074A |
| 1U Rackmount Keyboard with USB, FR | AG075A |
| 1U Rackmount Keyboard with USB, ITL | AG076A |
| 1U Rackmount Keyboard with USB, SP | AG077A |
| 1U Rackmount Keyboard with USB, DEN | AG078A |
| 1U Rackmount Keyboard with USB, NOR | AG079A |
| 1U Rackmount Keyboard with USB, SE/FI | AG080A |
| 1U Rackmount Keyboard with USB, SWI | AG081A |
| 1U Rackmount Keyboard with USB, PORT | AG082A |
| 1U Rackmount Keyboard with USB, BEL | AG083A |
| 1U Rackmount Keyboard with USB, JPN2 | AG084A |
| 1U Rackmount Keyboard with USB, RUS | AG085A |
| 1U Rackmount Keyboard with USB, INTL | AG086A |

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

| | | |
|------------------------------|---|------------|
| HP KVM Switch Options | Server Console Switch (KVM), 0 x 1 x 8 port | 336044-B21 |
| | Server Console Switch (KVM), 0 x 2 x 16 port | 336045-B21 |
| | 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 | 373035-B21 |
| | BladeSystem Cat5 KVM Interface Adapter | AF100A |

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>

| | | |
|---|--|--------|
| HP Serial Console Server Options | HP 16 Port Serial Console Server (worldwide) | AF101A |
| | HP 48 Port Serial Console Server (worldwide) | 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>.

Options

Service and Support Offerings (HP Care Pack Services)

NOTE: The HP Care Pack service part numbers below for HP BladeSystem 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 |

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 | UA4971E |
| 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 hours, standard office days.

| | |
|--|--------|
| Provides for the Installation and Start-up of Rapid Deployment Pack Implementation of Rapid Deployment Pack (Basic) (Electronic) | UA042E |
|--|--------|

Options

| | |
|--|--------|
| 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 |
| 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 Rules:

1. All DIMMs must be PC2-5300 Registered DDR2 DIMMs (667 MHz.)
2. Both DIMM slots in a memory bank must be populated.
3. Both DIMMs in a memory bank must be identical.
4. Processor 1 memory bank A must always be populated.
5. DIMM banks are active only when the corresponding processor socket is populated.
6. If installing only one bank on a processor, populate the bank physically farthest from the processor.
7. If mixing DIMM sizes on the same processor, the largest capacity DIMMs must be populated in the bank physically farthest from the processor. The smallest capacity DIMMs must be populated in the bank physically nearest the processor.
8. For optimal performance in most applications, populate the first memory bank for every populated processor socket.

HP ProLiant BL25p G2 Server Blade (1P Model)

Standard Memory

1024-MB (2 x 512 MB) or 2048-MB (2 x 1024 MB) (depending on model) of PC2-5300, Registered DDR2-667 DIMMs.

Standard Memory Plus Optional Memory

Up to 25600-MB or 26624-MB (depending on model) of PC2-5300, Registered DDR2-667 DIMMs is available with the installation of optional PC2-5300, Registered DDR2-667 DIMM memory expansion kits.

Standard Memory Replaced with Optional Memory

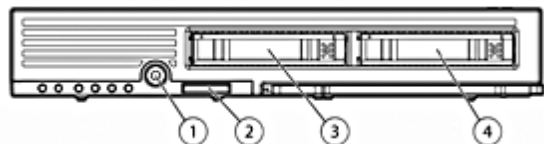
Up to 32768-MB of PC2-5300, Registered DDR2-667 DIMMs. Memory is available with the removal of standard memory and the installation of optional PC2-5300, Registered DDR2-667 DIMM memory expansion kits.

| Memory | | Slot | | | | | | | |
|----------|----------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | 1A | 2A | 3B | 4B | 5C | 6C | 7D | 8D |
| Standard | 1024 MB | 512 MB | 512 MB | Empty | Empty | Empty | Empty | Empty | Empty |
| Optional | 2048 MB | 1024 MB | 1024 MB | Empty | Empty | Empty | Empty | Empty | Empty |
| Optional | 25600 MB | 4096 MB | 4096 MB | 512 MB | 512 MB | 4096 MB | 4096 MB | 4096 MB | 4096 MB |
| Optional | 26624 MB | 4096 MB | 4096 MB | 1024 MB | 1024 MB | 4096 MB | 4096 MB | 4096 MB | 4096 MB |
| Maximum | 32768 MB | 4096 MB | 4096 MB | 4096 MB | 4096 MB | 4096 MB | 4096 MB | 4096 MB | 4096 MB |

Following are memory options available from HP:

| | |
|---------------------------------------|------------|
| HP 1GB REG PC2-5300 2x512MB 1RANK Kit | 408850-B21 |
| HP 2GB REG PC2-5300 2x1GB 1RANK Kit | 408851-B21 |
| HP 4GB REG PC2-5300 2x2GB 2RANK Kit | 408853-B21 |
| HP 8GB REG PC2-5300 2x4GB 2RANK Kit | 408854-B21 |

Storage



- 1 Power On/Standby button
- 2 Local I/O cable connector*
- 3-4 Two (2) SFF SAS or SATA Hot Plug Hard Drives

NOTE: *The local I/O connector is used with the local I/O cable to perform server blade configuration and diagnostic procedures.

Drive Support

SFF SAS Hard Drives Hot Plug

| | Quantity Supported | Position Supported | Controller |
|---|--------------------|--------------------|---|
| 146 GB 10,000 rpm SAS 72 GB 10,000 rpm SAS SFF SP | 2 | 3-4 | Integrated Smart Array E200i Controller |
| 36 GB 10,000 rpm SAS SFF SP | | | |

SFF SATA Hard Drives Hot Plug

| | Quantity Supported | Position Supported | Controller |
|----------------------|--------------------|--------------------|---|
| 60 GB 5,400 rpm SATA | 2 | 3-4 | Integrated Smart Array E200i Controller |

Tape Drives, Tape Autoloaders, & Tape Libraries

NOTE: For an up-to-date listing of the latest O/S Support details for each of the Tape Drives listed below, please see the following:
<http://h18000.www1.hp.com/products/quickspecs/Division/10233.html> (Worldwide)

NOTE: For an up-to-date listing of the latest O/S Support details for each of the Tape Autoloaders & Tape Libraries listed below, please see the following:
<http://h18000.www1.hp.com/products/quickspecs/Division/10809.html> (Worldwide)

NOTE: For complete listing of tape drive offerings see
<http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html>

For details on connecting tape drives to this server, see the following:

| | Position Supported | Controller | Controller/HBA Option Kit Part Number |
|--|--------------------|---|---------------------------------------|
| HP StorageWorks Tape Libraries, External MSL2024 (Ultrium 960 and 448 based) MSL4048 (Ultrium 960 and 448 based) MSL6000 (Ultrium 960 and 460-based) MSL6000 (SDLT 600-based) | External | Please consult the EBS connectivity matrix at http://www.hp.com/go/ebs for detailed connectivity information. | |

Storage

HP StorageWorks Virtual
Library Systems

External

Please consult the EBS connectivity matrix at
<http://www.hp.com/go/ebs> for detailed connectivity information.

N/A

300 VLS
1002i VLS
6105 VLS
6109 VLS
6515 VLS
6840 VLS
6870 VLS

Power Specifications

To review typical system power ratings use the Active Answers Power Calculator which is available via the online tool located at URL:
<http://www.hp.com/go/ bladesystem/powercalculator>

Technical Specifications

| | | | | |
|-------------|---|--|--------------------------------|--|
| System Unit | Dimensions (HxWxD) | 1.69 in (4.29 cm) x 10.29 in (26.14 cm) x 28.00 in (71.1 cm) | | |
| | Weight (maximum) | 18.19 lb (8.25 kg) | | |
| | Temperature Range* | Operating | 50° to 95° F (10° to 35° C) | |
| | | Shipping | -40° to 140° F (-40° to 60° C) | |
| | | Storage | -4 to 140° F (-20° to 60° C) | |
| | Relative Humidity** (non-condensing) | Operating | 10% to 90% | |
| | | Shipping | 10% to 90% | |
| | | Storage | 10% to 95% | |
| | Wet Bulb Temperature | Maximum | 86° F (30° C) | |

*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.

| | | |
|---|------------------------------------|--|
| Smart Array E200i Controller (with optional battery-backed write cache) | Disk Drive and Enclosure Interface | 3G SAS (Serial Attached SCSI) 1.5G SATA (Serial Advanced Technology Attachment) |
| | SAS Connectors | 2 internal (SFF8484) x4 wide port connectors |
| | Cache Memory Speed | DDR-1/266 MHz provides up to 4.2 GB/s maximum bandwidth. |
| | Server Interface | x4 2.5G PCIe provides 2GB/s maximum bandwidth. |
| | SAS Speed | x8 3G SAS provides 2.4GB/s maximum bandwidth. |
| | Cache Memory | 40-bit 64MB or 128MB cache: ECC protection, battery-backed, and transportable |
| | Logical Drives Supported | Up to 32 logical volumes |
| | Maximum Logical Drive Capacity | 120GB (2 x 60GB) |
| | Host Memory Addressing | 64-bit, supporting greater than 4GB server memory space |
| | RAID Support | RAID 1+0 (Striping & Mirroring) |
| | | RAID 1 (Mirroring) |
| | | RAID 0 (Striping) |
| | Upgradeable Firmware | Upgradeable Firmware |

| | | |
|--|-----------------------|------------------------------|
| Two (2) Embedded NC373i Multifunction Gigabit Network Adapters | Network Interface | Blackplane connection |
| | Data Transfer Method | PCI-Express, four lanes (x4) |
| | Network Transfer Rate | 1000Mbps |

Technical Specifications

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