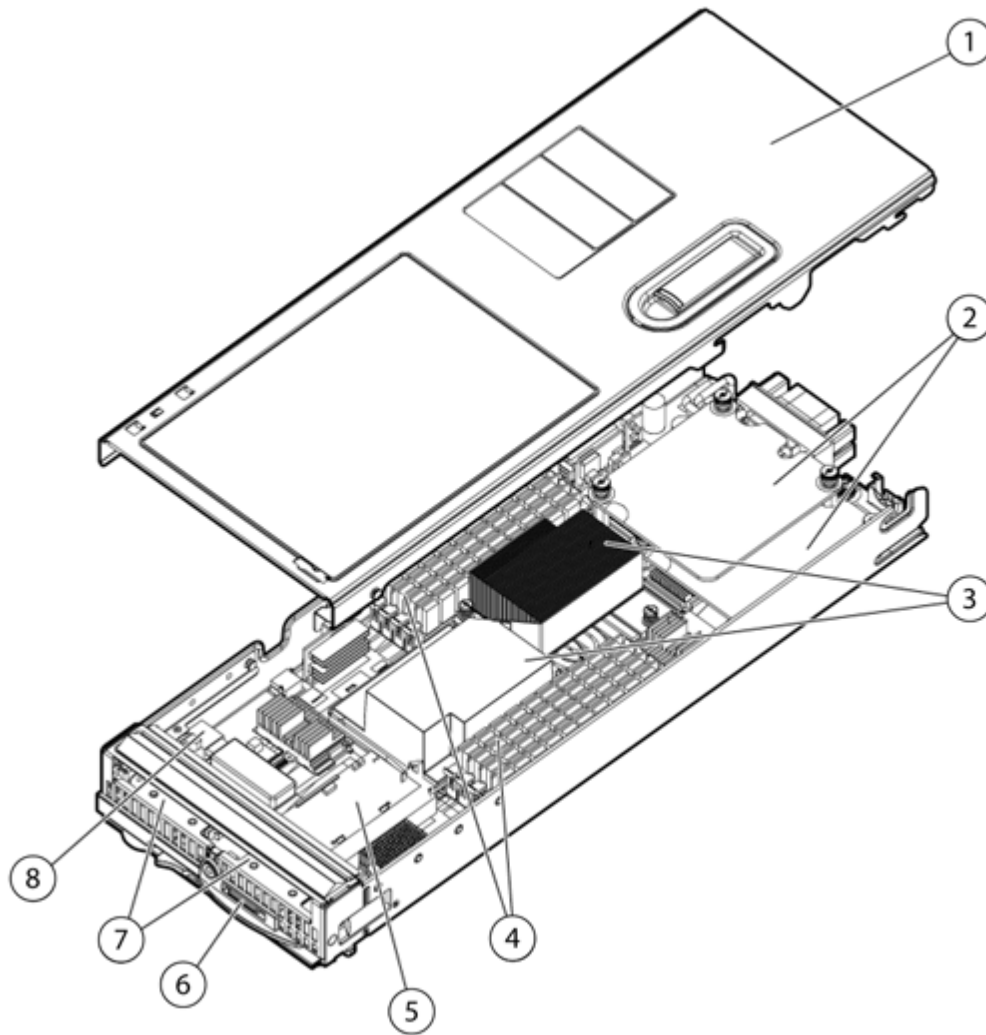


Overview



HP ProLiant BL465c Server Blade

- 1. Access Panel
- 2. Two Mezzanine slots
- 3. Up to two AMD Opteron™ processors
- 4. Eight (8) PC2-5300, Registered DIMMs (DDR2-667) Memory Slots
- 5. Smart Array E200i Controller (optional battery-backed write cache)
- 6. Local I/O connector
- 7. Small form factor (SFF) hot-plug drive bays
- 8. Internal USB Connector

Overview

What's New

- Memory
 - 8 GB Registered PC2-5300 2 x 4 GB Kit
- Mezzanine Support
 - HP NC325m PCI Express Quad Port Gigabit Server Adapter for c-Class BladeSystem
- HP StorageWorks SB40c Storage Blade

At A Glance

This document covers the HP ProLiant BL465c server blade only. For more information on HP BladeSystem c-Class Infrastructure and HP BladeSystem c-Class Interconnect Components, please see the following QuickSpecs:

HP BladeSystem c-Class Infrastructure QuickSpecs:

http://h18000.www1.hp.com/products/quickspecs/12517_div/12517_div.HTML

and HP BladeSystem c-Class Interconnect Components QuickSpecs:

http://h18000.www1.hp.com/products/quickspecs/12524_div/12524_div.HTML

The HP ProLiant BL465c delivers uncompromising performance and expandability, industry-leading management tools, and the latest technologies for dense compute environments.

HP ProLiant BL465c server blade includes:

- **Processor:**
 - Up to two AMD Opteron™ 2000 series processors
 - Supports up to 2.6 GHz 1 GHz HyperTransport™; 1MB Level 2 cache memory per core
 - ServerWorks HT-1000 and HT-2100 chipsets
- **Memory:**
 - Up to 32 GB of memory, supported by (8) slots of PC2-5300 Registered DIMMs at 667 MHz
 - Supporting memory interleaving (2:1)
- **Storage Controller:**
 - Integrated Smart Array E200i RAID controller with 64 MB cache (with optional battery-backed write-cache with an upgrade to 128MB cache (BBWC)). Supports RAID 0,1.
- **Internal Drive Support:**
 - Up to 2 small form factor (SFF) SAS or SATA hot plug hard disk drives
- **Network Controller:**
 - Two (2) Embedded NC370i Multifunction Gigabit Network Adapters
 - One (1) additional 10/100 NIC dedicated to iLO 2 Management
- **Mezzanine Support:**
 - Two (2) additional I/O expansion slots via mezzanine card.
 - Supports up to (2) mezzanine cards
 - Dual-Port Fibre Channel Mezzanine (4-Gb) options for SAN connectivity (Choice of Emulex or QLogic).
 - Ethernet NIC Mezzanine options for additional network ports
 - HP NC325m PCI Express Quad Port Gigabit Server Adapter for c-Class BladeSystem
 - HP NC326m PCI Express Dual Port 1Gb Server Adapter for c-Class BladeSystem
 - HP NC373m PCI Express Dual Port Multifunction Gigabit Server Adapter for c-Class BladeSystem
 - 4X DDR InfiniBand (IB) Mezzanine (20 Gb/s) options for low latency server interconnectivity (based on Mellanox technology)
 - 10GbE planned for future support
- **Internal USB Support:**
 - One (1) internal USB 2.0 connector for security key devices and USB drive keys
- **Form Factor:**
 - HP ProLiant BL465c server blade plugs vertically into the BladeSystem c7000 enclosure
- **Management:**

Overview

- Integrated Lights-Out 2 (iLO 2) Standard Blade Edition (includes virtual KVM and graphical remote console at no additional cost)
- **Operating Systems:**
 - Supports Windows and Linux
- **Enclosures:**
 - HP ProLiant BL465c server blade plugs vertically into the BladeSystem c7000 enclosure
- **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 (Server Blade)

Processor	<p>AMD Opteron™ processor Model 2218 (2.6 GHz, 95W)</p> <p>AMD Opteron processor Model 2216 (2.4 GHz, 95W)*</p> <p>Low Power AMD Opteron processor Model 2216 HE (2.4 GHz, 68W)</p> <p>Low Power AMD Opteron processor Model 2214 HE (2.2 GHz, 68W)</p> <p>Low Power AMD Opteron processor Model 2212 HE (2.0 GHz, 68W)*</p> <p>AMD Opteron processor Model 2210 (1.8 GHz, 95W)*</p> <p>Low Power AMD Opteron processor Model 2210 HE (1.8 GHz, 68W)</p> <p>NOTE: AMD Opteron 2000 series processors are 64-bit, dual-core, and support AMD Virtualization™.</p> <p>NOTE: *Offered through Configure-To-Order process only.</p>
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Upgradeability	Upgradeable to dual processors
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Cache Memory	1MB Level 2 cache memory per core
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Chipset	ServerWorks HT-1000 and HT-2100
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Memory	Type	PC2-5300 Registered DIMMs at 677 MHz
	Standard	1 GB (2 x 512 MB) 2 GB (2 x 1 GB)
	Maximum	32 GB (8 x 4 GB) NOTE: Memory must be installed in pairs.

Network Adapter	(2) Embedded NC370i Multifunction Gigabit Network Adapters with TCP/IP Offload Engine One (1) additional 10/100 NIC dedicated to iLO 2 Management
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Expansion Slots	Two Mezzanine slots (One x8 and one x4)
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Integrated Manageability	Integrated Lights-Out 2 (iLO 2) Standard Blade Edition (integrated on motherboard)
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Storage Controller	Smart Array E200i Controller	64MB memory module supports RAID 0,1 Available upgrades: 128MB with Battery-backed write cache
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Maximum Internal Storage	Hot Plug Serial Attach SCSI (SAS)	292GB SAS	2 x 146GB Serial Attached SCSI
	Hot Plug Serial ATA (SATA)	120GB SATA	2 x 60GB Serial ATA

Graphics	Integrated ATI RN-50 1280 x 1024 x 16M color (32 MB DDR1 memory)
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Standard Features (Server Blade)

Graphics Resolution Supported	Resolution Color Depths	Depths 1280 x 1024, 16.7M, 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
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Fibre Channel on the HP ProLiant BL465c server blade

Two optional Fibre Channel HBAs are supported by the HP ProLiant BL465c. Both mezzanine circuit boards connect directly to the server blade system board. These Fibre Channel HBAs are available via option kits and must be ordered separately.

Two option kits

Emulex LPe1105-HP 4Gb FC HBA for HP c-Class BladeSystem (403621-B21)

- Based on the same field-proven ASIC, firmware, and driver technology as Emulex's renowned LPe1150 HBA, the Emulex LPe1105-HP is fully driver compatible with all Emulex HBAs

QLogic QMH2462 4Gb FC HBA for HP c-Class BladeSystem (403619-B21)

- Uses common drivers which means that customers can standardize on one QLogic driver whether they are using the QMH2462 or other 4Gb and 2Gb HBAs powered by QLogic

Emulex and QLogic Fibre Channel HBAs feature:

- Optimal performance utilizing PCI Express
- 4/2/1Gb/s auto negotiating speeds
- Dual-ports for redundant path connections
- Up to two FC HBAs per server blade providing redundant FC HBA support
- Optimized for HP StorageWorks and supported by third party SAN vendors
- Support for Microsoft® Windows® and Linux operating systems environments

Compatible SAN

HP ProLiant BL465c server blades are optimized for HP StorageWorks MSA, EVA, and XP

HP ProLiant BL465c 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/c-Class/storage.html>)

Standard Features

Insight Control Data Center Edition

Insight Control Data Center Edition delivers foundation management for HP BladeSystem lifecycles, including hardware resource deployment, health monitoring, software version control, performance monitoring, and vulnerability scanning and patch management.

Installs the following components by default using the wizard-based integrated installer:

- HP Systems Insight Manager
- Rapid Deployment Pack
- Performance Management Pack
- Vulnerability and Patch Management Pack

Additional ProLiant Essentials software and management tools included on the Insight Control Data Center Edition DVD can be installed manually.

- Virtualization Management Suite
- Workload Management Pack
- HP Open Service Event Manager
- HP Instant Support Enterprise Edition

NOTE: For Licensing and Packaging Options please see the options section of this QuickSpecs.

NOTE: Insight Control Data Center Edition can be delivered with HP BladeSystem c-Class enclosures with either 8-free evaluation licenses (30-days) or full purchased licenses for 8 or 16 blade servers. For additional information on HP c-Class Infrastructure please visit: HP BladeSystem c-Class Infrastructure QuickSpecs: http://h18000.www1.hp.com/products/quickspecs/12517_div/12517_div.HTML

NOTE: 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>.

Unified Foundation Management and Essentials Software Plugins

HP Systems Insight Manager	HP Systems Insight Manager (HP SIM) provides a unified, secure and extensible standards-based environment to centrally manage servers, storage and other infrastructure devices, (both HP and non-HP) across multiple operating system platforms.
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.
ProLiant Essentials Performance Management Pack	ProLiant Essentials Performance Management Pack detects, analyzes, and explains hardware bottlenecks on HP ProLiant servers, HP Integrity servers and shared storage.
The Vulnerability and Patch Management Pack	The Vulnerability and Patch Management Pack integrates and simplifies the assessment and remediation of operating system vulnerabilities into HP Systems Insight Manager for Windows and Linux platforms.

Standard Features

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>.

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
- 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.
- Remote Directory Memory Access (RDMA) Pack for Embedded Multifunction Gigabit Server Adapters - provides direct and faster communication between application buffers in separate servers for tasks that involves moving large amounts of data, such as network backups, database read/write, and high performance computing.
- 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.
- Workload Management Pack - provides easier management of complex environments, improving

Standard Features

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 the HP ProLiant BL465c using the I/O port with an attached USB CD-ROM device. To obtain a copy of SmartStart for your blade server order or download your copy from the SmartStart web site. For more information, please visit the SmartStart Web site at <http://www.hp.com/servers/smartstart>.

OS Support

Microsoft Windows Server 2003, Standard Edition
Microsoft Windows Server 2003 R2, Standard Edition
Microsoft Windows Server 2003, Standard x64 Edition
Microsoft Windows Server 2003 R2, Standard x64 Edition
Microsoft Windows Server 2003, Web Edition
Microsoft Windows Server 2003 R2, Web Edition
Microsoft Windows Server 2003, Enterprise Edition
Microsoft Windows Server 2003 R2, Enterprise Edition
Microsoft Windows Server 2003, Enterprise x64 Edition
Microsoft Windows Server 2003 R2, Enterprise x64 Edition
Red Hat Enterprise Linux 3
Red Hat Enterprise Linux 4
SUSE LINUX Enterprise Server 9
SUSE LINUX Enterprise Server 10
Solaris 10 32/64-bit

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

NOTE: For an up-to-date listing of the latest drivers available for the ProLiant BL c-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>.

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)
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 browser accessible Virtual Floppy/CD-ROM are included with the BL c-Class server.

Availability Dual-Port Fibre Channel Mezzanine Card 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 each server blade
ECC Memory
Network adapter teaming (network fault tolerance, transmit load balancing, switch-assisted load balancing)

Security Power-on password
Administrator's password
Integrated Lights-Out 2 has 12 customizable user accounts and SSL encryption
Integrated Lights-Out 2 can be disabled via a Global Setting

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 Warranty includes 3 year Parts, 3 year Labor, 3-year on-site support. This warranty

Standard Features

supports the HP ProLiant BL460c, BL465c, and BL480c Server Blades.

Additional information regarding worldwide limited warranty and technical support is available at: <http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>

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 1 year Parts, 1 year Labor, 1-year on-site support.

The HP Care Pack service part numbers below for ProLiant BL c-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 the c7000 Enclosure cover the enclosure, power supplies and fans. HP qualified rack options are covered by these services when installed within the same rack. HP Supported Ethernet devices covered include the Ethernet Pass-Through Module, Fibre Channel Pass-Through Module and GbE2c Ethernet Blade Switch and Cisco Catalyst 3020 Blade Switch.

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 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 vendor 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.*

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/bladestystemsolutions>

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

Dual-core Models

HP ProLiant BL465c 2218 DC, 2GB (1P) 407235-B21	Processor(s) One of the following depending on model	(1) AMD Opteron™ processor Model 2218 (2.6 GHz) (1) Low Power AMD Opteron™ processor Model 2216 HE (2.4 GHz) (1) Low Power AMD Opteron™ processor Model 2214 HE (2.2 GHz) (1) Low Power AMD Opteron™ processor Model 2210 HE (1.8 GHz)
HP ProLiant BL465c 2216 HE DC, 2GB (1P) 407234-B21	Cache Memory Memory One of the following depending on model	1MB Level 2 cache memory per core 2 GB (2 x 1 GB) PC2-5300, Registered DDR2-667 1 GB (2 x 512 MB) PC2-5300, Registered DDR2-667
HP ProLiant BL465c 2214 HE DC, 2GB (1P) 403434-B21	Network Adapter	(2) Embedded NC370i Multifunction Gigabit NICs plus (1) additional 10/100 NIC dedicated to iLO 2 Management
HP ProLiant BL465c 2210 HE DC, 1GB (1P) 403433-B21	Storage Controller Hard Drives Internal Storage Optical Drive Form Factor	Smart Array E200i Controller with 64MB (optional battery-backed write cache) No drives included; (2) SFF SAS/SATA drive bays 292GB SAS 120GB SATA None Up to 16 half-height blades supported in HP BladeSystem c7000 Enclosure

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 a Factory Installable Option.

Step 1: Base Server Blade Configuration

Models	HP ProLiant BL465c CTO Blade (North America) Configurable Model ships with: (2) Embedded NC370i Multifunction Gigabit NICs plus (1) additional 10/100 NIC dedicated to iLO 2 Management Integrated Smart Array E200i RAID controller NOTE: Controller cache module selection is required. Select either the standard 64 MB module or the optional 128 MB module in step 2 below. Two small form factor (SFF) SAS/SATA hot plug hard drive bays Integrated Lights-Out 2 Standard Blade Edition	403435-B21
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Step 2: Choose Required Options (one of the following from each list unless otherwise noted):

Processors	For single processor configuration choose: AMD Opteron™ processor Model 2218 (2.6 GHz, 95W) Processor Option Kit, FIO Base 411948-L21 NOTE: If 2 processors are desired, select one 411948-L21 and one 411948-B21. AMD Opteron processor Model 2216 (2.4 GHz, 95W) Processor Option Kit, FIO Base 411949-L21 NOTE: If 2 processors are desired, select one 411949-L21 and one 411949-B21. Low Power AMD Opteron™ processor Model 2216 HE (2.4 GHz, 68W) Processor Option Kit, FIO Base 414212-L21 NOTE: If 2 processors are desired, select one 414212-L21 and one 414212-B21. Low Power AMD Opteron™ processor Model 2214 HE (2.2 GHz, 68W) Processor Option Kit, FIO Base 411951-L21 NOTE: If 2 processors are desired, select one 411951-L21 and one 411951-B21. Low Power AMD Opteron™ processor Model 2212 HE (2.0 GHz, 68W) Processor Option Kit, FIO Base 414211-L21 NOTE: If 2 processors are desired, select one 414211-L21 and one 414211-B21. AMD Opteron™ processor Model 2210 (1.8 GHz, 95W) Processor Option Kit, FIO Base 414210-L21 NOTE: If 2 processors are desired, select one 414210-L21 and one 414210-B21. Low Power AMD Opteron processor Model 2210 HE (1.8 GHz, 68W) Processor Option Kit, FIO Base 433148-L21 NOTE: If 2 processors are desired, select one 433148-L21 and one 433148-B21.	
Memory	1 GB Registered PC2-5300 2 x 512 MB Kit 408850-B21 2 GB Registered PC2-5300 2 x 1 GB Kit 408851-B21 4 GB Registered PC2-5300 2 x 2 GB Kit 408853-B21 8 GB Registered PC2-5300 2 x 4 GB Kit 408854-B21 NOTE: Must be installed in pairs	

Configuration Information - Factory Integrated Models (North America only)

Controller Cache	64 MB Cache - FIO Only	405102-B21
	128 MB Battery-Backed Cache Enabler	351580-B21

NOTE: Supports the Smart Array E200i Controller, Smart Array 641 Controller, and Smart Array 642 Controller.

Step 3: Choose Additional Factory Integratable Options

Fibre Channel Mezzanine Options	Emulex LPe1105 FC Dual Channel 4Gb, PCI-E-to-Fibre Channel Host Bus Adapter	403621-B21
	QLogic QMH2462 4Gb FC HBA for HP c-Class BladeSystem	403619-B21
Ethernet Mezzanine Options	HP NC325m PCI Express Quad Port Gigabit Server Adapter for c-Class BladeSystem	416585-B21
	NOTE: The NC325m Server Adapter must be installed in Mezzanine Slot 2 of a half-height server blade to provide connectivity on all 4 ports. If installed in Mezzanine Slot 1 of a half-height server blade, the NC325m Server Adapter will provide connectivity on 2 of the 4 ports.	
	HP NC326m PCI Express Dual Port 1Gb Server Adapter for c-Class BladeSystem	406771-B21
	HP NC373m PCI Express Dual Port Multifunction Gigabit Server Adapter for c-Class BladeSystem	406770-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 c-Class Infrastructure QuickSpecs:

http://h18000.www1.hp.com/products/quickspecs/12517_div/12517_div.HTML

and HP BladeSystem c-Class Interconnect Components QuickSpecs:

http://h18000.www1.hp.com/products/quickspecs/12524_div/12524_div.HTML.

Options

<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, 1 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 Windows 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-Windows Edition please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12062_div/12062_div.HTML</p> <p>NOTE: For additional ProLiant Intelligent Networking Pack License Kits-Linux Edition please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12327_div/12327_div.HTML</p> <p>ProLiant Essentials Server Migration Pack</p> <p>ProLiant Essentials Server Migration Pack, Single-Migration License 435663-B21</p> <p>NOTE: Contains one license, enabling 1 server migration, with a unique license activation key and documentation.</p> <p>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.</p> <p>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</p> <p>ProLiant Essentials Server Migration Pack - Physical to ProLiant Edition</p> <p>ProLiant Essentials Server Migration Pack - Physical to ProLiant Edition, Single-Migration License 412978-B21</p> <p>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</p> <p>HP ProLiant Essentials RDMA Pack for Embedded Multifunction Gigabit Server Adapters</p>
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Options

HP ProLiant Essentials RDMA Pack for Embedded Multifunction Gigabit Server Adapters, 1 License 407478-B22

NOTE: For additional ProLiant RDMA Pack for Embedded Multifunction Gigabit Server Adapters please see the QuickSpecs at:

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

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>.

Processors

AMD Opteron™ processor Model 2218 (2.6 GHz, 95W) Processor Option Kit 411948-B21

AMD Opteron processor Model 2216 (2.4 GHz, 95W) Processor Option Kit 411949-B21

Low Power AMD Opteron™ processor Model 2216 HE (2.4 GHz, 68W) Processor Option Kit 414212-B21

Low Power AMD Opteron™ processor Model 2214 HE (2.2 GHz, 68W) Processor Option Kit 411951-B21

Low Power AMD Opteron™ processor Model 2210 HE (1.8 GHz, 68W) Processor Option Kit 414211-B21

AMD Opteron processor Model 2210 HE (1.8 GHz, 95W) Processor Option Kit 414210-B21

Low Power AMD Opteron processor Model 2210 HE (1.8 GHz, 68W) Processor Option Kit 433148-B21

Memory

1 GB Registered PC2-5300 2 x 512 MB Kit 408850-B21

2 GB Registered PC2-5300 2 x 1 GB Kit 408851-B21

4 GB Registered PC2-5300 2 x 2 GB Kit 408853-B21

8 GB Registered PC2-5300 2 x 4 GB Kit 408854-B21

NOTE: Must be installed in pairs.

Options

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 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)	
	SFF SATA 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)	
Controller Cache	128MB Battery-Backed Cache Enabler NOTE: Supports the Smart Array E200i Controller.	351580-B21
Ethernet Mezzanine Options	HP NC325m PCI Express Quad Port Gigabit Server Adapter for c-Class BladeSystem	416585-B21
	NOTE: The NC325m Server Adapter must be installed in Mezzanine Slot 2 of a half-height server blade to provide connectivity on all 4 ports. If installed in Mezzanine Slot 1 of a half-height server blade, the NC325m Server Adapter will provide connectivity on 2 of the 4 ports.	
	HP NC326m PCI Express Dual Port 1Gb Server Adapter for c-Class BladeSystem	406771-B21
	HP NC373m PCI Express Dual Port Multifunction Gigabit Server Adapter for c-Class BladeSystem	406770-B21
Fibre Channel Mezzanine Options	Emulex LPe1105 FC Dual Channel 4Gb, PCI-E-to-Fibre Channel Host Bus Adapter	403621-B21
	QLogic QMH2462 4Gb FC HBA for HP c-Class BladeSystem NOTE: Supports HP c-Class BladeSystems	403619-B21
HP InfiniBand Mezzanine Options	HP 4X DDR InfiniBand Mezzanine HCA for HP c-Class BladeSystem	410533-B21
	HP HPCD 4X DDR IB Mezzanine HCA for HP c-Class BladeSystem NOTE: HP 4X DDR InfiniBand Mezzanine HCAs must be installed in Mezzanine Slot 2 of a half-height server blade	409377-B21

Options

<p>HP StorageWorks SB40c Storage Blade</p>	<p>HP StorageWorks SB40c Storage Blade</p> <p>NOTE: Please see the SB40c Storage Blade QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/12587_div/12587_div.HTML (Worldwide)</p>	<p>411243-B21</p>
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<p>HP StorageWorks Modular Smart Array 1000</p>	<p>HP StorageWorks Modular Smart Array 1000</p> <p>NOTE: Please see the 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)</p>	<p>201723-B22</p>
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Tape Libraries

HP StorageWorks MSL2024 Tape Library

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

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

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

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 300 Virtual Library System Gateway Base Unit	AH138A
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Options

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
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>

Cluster Options

NOTE: For configuration/certification options for the HP Parallel Database Cluster for Oracle RAC please go to: <http://www.hp.com/solutions/highavailability/oracle>

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

http://h18000.www1.hp.com/products/quickspecs/10232_div/10232_div.html
(Worldwide)

ProLiant Cluster Starter Kit	364023-B22
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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
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ProLiant Cluster HA/F500 for the Enterprise SAN	364024-B21
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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)

HP Serviceguard for Linux, A.11.16 for SUSE SLES 9 & 10 and Red Hat EL 3 & 4 (single license version)	307754-B26
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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
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HP Serviceguard for Linux and Red Hat Global File System - 1 year subscription	T2798AA#001
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HP Serviceguard for Linux and Red Hat Global File System - 3 years subscription	T2798AA#003
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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)

USB Options

HP USB 2-Button Optical Scroll Mouse (Carbonite/Silver)	DC172B
HP 512MB DriveKey II- USB Flash Drive	ED516AA
HP 1GB Drive Key II- USB 2.0 Flash Drive	AG382AA
USB 2.0 4-port Hub	DG954A
HP USB 04 Standard Keyboard	DT528A#xxx

Options

Service and Support Offerings (HP Care Pack Services)

NOTE: The HP Care Pack service part numbers below for ProLiant BL c-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	UE458E
4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	UE459E
6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	UE460E

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, Electronic	UE473E
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NOTE: HP Care Pack services for the c7000 Enclosure cover the enclosure, power supplies and fans. HP qualified rack options are covered by these services when installed within the same rack. HP Supported Ethernet devices covered include the Ethernet Pass-Through Module, Fibre Channel Pass-Through Module, Cisco Catalyst 3020 Blade Switch and GbE2c Ethernet Blade Switch.

Hardware Services On-site Service

Next Business Day On-site Service, 5-Day x 9-Hour Coverage, 3 Years, Electronic	UE477E
4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic	UE478E
4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	UE479E
6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	UE480E
Hardware Installation, Electronic	U5988E

NOTE: The HP Care Pack service part numbers below covers the HP 4Gb, 12 Port SAN Switch & 4Gb, 12 Port SAN Switch Upgrade LTU.

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
Hardware Installation, Electronic	U5988E

NOTE: The HP Care Pack service part numbers below covers the HP 4Gb, 24 Port SAN Switch.

Hardware Services On-site Service

Next Business Day On-site Service, 5-Day x 9-Hour Coverage, 3 Years, Electronic	UE436E
4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic	UE437E
4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	UE438E
6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	UE439E
Hardware Installation, Electronic	U5988E

NOTE: The HP Care Pack service part numbers below covers the HP 4Gb, 24 Port SAN Switch Power Pack.

Hardware Services On-site Service

Options

Support Plus

Onsite HW support, 8am-9pm, M-F, 4hr response and SW Tech support offsite, onsite at HP's discretion, 8am-9pm, M-F 2hr response time excl. HP holidays, Electronic UE728E

Support Plus 24

Onsite HW support 24x7, 4hr response and SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic UE729E

Installation & Start-up Services

HP Installation & Startup Service for HP BladeSystem Infrastructure, Electronic UE602E

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 BladeSystem Essential Insight Control Datacenter Edition which includes Systems Insight Manager (SIM), HP Rapid Deployment Pack (RDP), Vulnerability and Patch Management Pack (VPM) and Performance Management Pack (PMP) and deploy up to two editions of either Windows or Linux, using scripted operating system installation software.

ProLiant BL c-Class Blade Server Hardware Installation, Electronic UE493E

ProLiant BL c-Class Enclosure and Server Blade Hardware Installation, Electronic UE494E

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

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 Agents (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

Options

ProLiant Essentials Operating Environment, - 5 Day, 9x5,1 year, 3 incident (Electronic)	U8222E
ProLiant Essentials Operating Environment, - 5 Day, 24x7,1 year, 3 incident (Electronic)	U8301E
ProLiant Essentials Operating Environment, - 5 Day, 9x5,1 year, 10 incident	UE006E
ProLiant Essentials Operating Environment, - 5 Day, 24x7,1 year, 10 incident	UE116E
ProLiant Essentials Operating Environment, - 5 Day, 9x5,1 year, 25 incident	UE117E
ProLiant Essentials Operating Environment, - 5 Day, 24x7,1 year, 25 incident	UE118E
ProLiant Essentials Operating Environment, - 5 Day, 9x5,1 year, 50 incident	UE119E
ProLiant Essentials Operating Environment, - 5 Day, 24x7,1 year,50 incident	UE120E
ProLiant Essentials Operating Environment, - 5 Day, 9x5,1 year, unlimited SW Tech Support	UE121E
ProLiant Essentials Operating Environment, - 5 Day, 24x7,1 year, unlimited SW Tech Support	UE452E
ProLiant Essentials Operating Environment, - 5 Day, 9x5, 3 year, unlimited SW Tech Support	UE453E
ProLiant Essentials Operating Environment, - 5 Day, 24x7, 3 year, unlimited SW Tech Support	UE454E

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

Memory

DIMM installation guidelines:

1. All DIMMs must be PC2-5300 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 BL465c 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 ECC DIMMs.

Standard Memory Plus Optional Memory

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

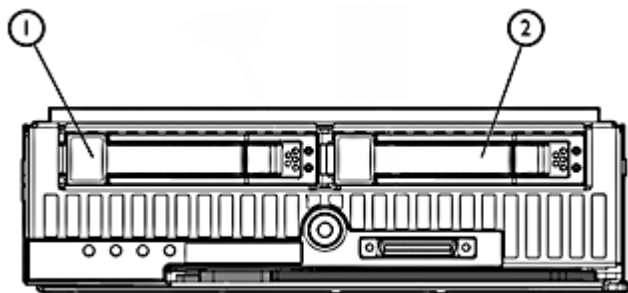
Memory		Slot							
		1A	2A	3B	4B	5C	6C	7D	8D
Standard	1024 MB	512 MB	512 MB	Empty	Empty	Empty	Empty	Empty	Empty
Standard	2048 MB	1024 MB	1024 MB	Empty	Empty	Empty	Empty	Empty	Empty
Optional	25600 MB	4096 MB	4096 MB	512 MB	512 MB	4096 MB	4096 MB	4096 MB	4096 MB
Optional	26624 MB	4096 MB	4096 MB	1024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

- 1 GB Registered PC2-5300 2 x 512MB Kit 408850-B21
- 2GB Registered PC2-5300 2 x 1GB Kit 408851-B21
- 4GB Registered PC2-5300 2 x 2GB Kit 408853-B21
- 8 GB Registered PC2-5300 2 x 4 GB Kit 408854-B21

Storage

1-2 2 x SFF SAS or SATA Hot Plug Hard Drives



Hard Drives

SAS Hard Drive

	Quantity Supported	Position Supported	Controller
146GB 10,000 rpm SAS	2	1-2	Smart Array E200i Controller
72GB 10,000 rpm SAS			
SP			
36GB 10,000 rpm SAS			
SP			

Serial-ATA (SATA) Hard Drive

	Quantity Supported	Position Supported	Controller
60GB 5,400 rpm SATA	2	1-2	Smart Array E200i Controller

External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
Modular Smart Array 1000	Please see the Modular Smart Array 1000 QuickSpecs below to determine configuration requirements	External	Please see the Modular Smart Array 1000 QuickSpecs (URL below) for the latest list of supported HBAs

Modular Smart Array 1000:

http://h18000.www1.hp.com/products/quickspecs/11033_div/11033_div.HTML (Worldwide)

HP StorageWorks 1500cs Modular Smart Array:

http://h18000.www1.hp.com/products/quickspecs/11945_div/11945_div.html (Worldwide)

HP StorageWorks 1510i Modular Smart Array:

http://h18000.www1.hp.com/products/quickspecs/12230_div/12230_div.html (Worldwide)

Storage

XP Disk Array Systems	Please see the XP Disk Array Systems QuickSpecs below to determine configuration requirements	External	Please see the XP Disk Array Systems Quick Specs for the latest list of supported HBAs
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HP StorageWorks XP10000 Disk Array:
<http://h18006.www1.hp.com/products/storageworks/xp10000/index.html> (Worldwide)

Enterprise Virtual Array Systems	Please see the XP Disk Array Systems QuickSpecs below to determine configuration requirements	External	Please see the XP Disk Array Systems Quick Specs for the latest list of supported HBAs
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HP StorageWorks Enterprise Virtual Array Family
http://h18006.www1.hp.com/products/quickspecs/12408_div/12408_div.html (Worldwide)

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

	Position Supported	Controller	Controller/HBA Option Kit Part Number
HP StorageWorks Tape Libraries, External MSL2024 (Ultrium 448 and 960-based) MSL4048 (Ultrium 448 and 960-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.	N/A

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

NOTE: To review maximum system power ratings for facilities planning purposes use the Active Answers Blade Power Sizer which is available via the online tool located at URL: <http://h71019.www7.hp.com/ActiveAnswers/cache/347628-0-0-0-121.html>

Technical Specifications

HP ProLiant BL465c Server Blade	Dimensions	Height	2.19 in (5.56 cm)
		Depth	20.058 in (50.95 cm)
		Width	7.154 in (18.17 cm)
	Weight	Maximum	14.20 lb (6.44 kg)
		Temperature Range*	Operating
	Non-Operating		-40° to 60° C (-40° to 140° F)
	Storage		-20° to 60° C (-4 to 140° F)
	Maximum Wet Bulb Temperature		30° C (86° F)
	Operating		10% to 90%
	Relative Humidity**	Shipping	10% to 90%
		Storage	10% to 95%

*NOTE: Operating temperature has an altitude derating of 1.8° F (1° C) per 1,000 ft (304.8 m). No direct sunlight. Upper operating limit is 10,000 ft (3,048 m) or 70Kpa/10.1 psia. Upper non-operating limit is 30,000 ft (9,144 m) or 30.3 KPa/4.4 psia. Storage maximum humidity of 95% is based on a maximum temperature of 113° F (45° C). Altitude maximum for storage is 70 KPa.

**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	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	292GB (2 x 146GB)
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space
	RAID Support	RAID 1 (Mirroring)
		RAID 0 (Striping)
	Upgradeable Firmware	Upgradeable Firmware

Technical Specifications

Embedded Dual NC370i Multifunction Gigabit NICs	Network Interface	Broadcom 5706	
	Compatibility	IEEE 802.3 10Base-T	
		IEEE 802.3 100Base-TX	
		IEEE 802.3 1000Base-TX	
	Data Transfer Method	100MHz PCI-X	
	Network Transfer Rate (Theoretical Maximum Values)	10Base-T (Half-Duplex)	10 Mb/s
		10Base-T (Full-Duplex)	20 Mb/s
100Base-TX (Half-Duplex)		100 Mb/s	
100Base-TX (Full-Duplex)		200 Mb/s	
1000Base-TX (Full- and Half-Duplex)		2000 Mb/s	
Cable Support	Category 5, 5E, 6 or better twisted pair; 100m (328ft)		
Compliance	IEEE 802.3ab, 802.3u, 802.3x, 802.3ad, 802.3p, 802.1Q		

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