QuickSpecs

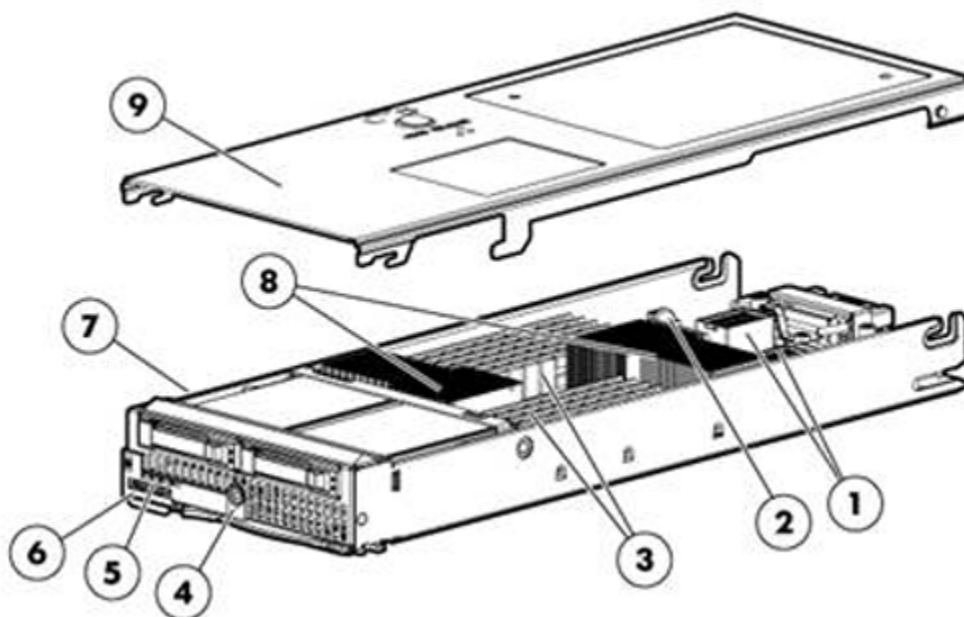*Overview*

HP ProLiant BL460c G6 Server Blade

1. Two (2) mezzanine I/O expansion slots
2. Internal USB connector
3. Twelve (12) DDR3 Registered or Unbuffered DIMM Memory Slots
4. HP Smart Array P410i Controller
5. Two (2) small form factor (SFF) hot-plug drive bays
6. Local I/O Connector
7. Internal SD card slot
8. Up to two (2) Intel® Xeon® 5500 series processors
9. Access Panel

At A Glance

This document covers the HP ProLiant BL460c G6 server blade only. For more information on HP BladeSystems c-Class Infrastructure and HP BladeSystem c-Class Interconnect Components, please see the following QuickSpecs:

HP BladeSystem c-Class Enclosures QuickSpecs:
HP BladeSystem c3000 Enclosure QuickSpecs:
http://h18000.www1.hp.com/products/quickspecs/12790_div/12790_div.html

HP BladeSystem c7000 Enclosure QuickSpecs:
http://h18000.www1.hp.com/products/quickspecs/12810_div/12810_div.html

HP BladeSystem c-Class Interconnect Components QuickSpecs:
http://h18000.www1.hp.com/products/quickspecs/12524_div/12524_div.html

The HP ProLiant BL460c G6 provides greater 2P x86 server blade density without compromise and maximum power-efficiency with flexibility and choice.

HP ProLiant BL460c G6 server blade includes:

- **Processor**:
  - Up to two (2) Intel® Xeon® 5500 Series processors, up to 2.93GHz
  - Intel® 5500 Chipset

Overview

- **Memory**:
  - Twelve (12) DIMM slots
  - Up to 96GB, using PC3-8500 DDR3Registered (RDIMM) memory, operating at 1066MHz when fully populated at 2 DIMMs per Channel in 12 slots
  - Up to 24GB, using PC3-10600 DDR3Unbuffered (UDIMM) memory, operating at 1066MHz when fully populated at 2 DIMMs per Channel in 12 slots
- **Storage Controller**:
  - HP Smart Array P410i Controller (RAID 0/1)
- **Internal Drive Support**:
  - Up to two (2) small form factor (SFF) SAS or SATA hot plug hard disk drives
- **Network Controller**:
  - Embedded NC532i Dual Port Flex-10 10GbE Multifunction Server Adapter
    NOTE: Each port is autosensing 1 Gb/10Gb, and can interoperate with 1Gb HP BladeSystem c-Class interconnect components.
  - One (1) additional 10/100 server adapter dedicated to iLO 2 Management
- **Mezzanine Support**:
  - Two (2) I/O expansion mezzanine slots
  - Supports up to (2) mezzanine cards
    - Dual-Port Fibre Channel Mezzanine options for SAN connectivity (Choice of Emulex or QLogic)
    - iSCSI Ethernet mezzanine option for optimized iSCSI connectivity
    - Ethernet server adapter mezzanine options for additional network ports
    - 4X DDR InfiniBand (IB) Mezzanine (20 Gb/s) options for low latency server interconnectivity (based on Mellanox technology)
- **Ports**:
  - One (1) internal USB 2.0 connector for security key devices and USB drive keys
  - One (1) internal SD-HC Card slot
- **Security - Trusted Platform Module**:
  - One (1) internal TPM 1.2 module connector
- **VMware ESX Server 3i and Citrix XenServer virtualization technology**:
  - Integrated Hypervisors: (Optional)
    - VMware ESX Server 3i virtualization technology
    - Citrix XenServer virtualization technology
- **Form Factor**:
  - HP ProLiant BL460c G6 is a half-height server blade that plugs into the HP BladeSystem c3000 and c7000 enclosures
- **Management**:
  - HP ProLiant Onboard Administrator (powered by the Integrated Lights-Out 2 management processor) provides virtual KVM graphical remote console, virtual media, simplified server setup, and core server control functions out of the box.
  - Unlock the full capabilities of the HP ProLiant Onboard Administrator with iLO Advanced for BladeSystem to take advantage of capabilities such as boot and failure sequence replay, on-demand video record and playback, and multi-user console for up to four users. Learn more at www.hp.com/go/iLO
  - HP Insight Control suite delivers essential management, including proactive health management, lights out remote control, optimization of power usage, rapid server deployment, performance analysis, vulnerability scanning and patch management and virtual machine management. Now with Dynamic Power Capping technology, ICE can potentially triple the capacity of your data center by reclaiming trapped power and cooling capacity. For more information, go to: www.hp.com/go/ice
- **Operating Systems**:
  - Supports Windows, RHEL, SLES, OEL, Solaris, NetWare, VMware, and Citrix XenServer
- **Enclosures**:
  - HP offers three different c-Class server blade enclosures to meet your individual needs:
    - The HP BladeSystem c7000 rack enclosure is 10U high and holds up to sixteen (16) ProLiant BL460c G6 servers plugged vertically.
    - The HP BladeSystem c3000 rack enclosure is 6U high and holds up to eight (8) HP ProLiant BL460c G6 servers plugged horizontally.
    - The HP BladeSystem c3000 tower enclosure is designed with casters for sites without racks and holds up to eight (8) HP ProLiant BL460c G6 servers plugged vertically.
  - Server blades, storage blades, interconnect modules, power supplies, fans, and redundant Onboard

Overview

Administrator modules are all designed to fit into the c3000 and c7000 enclosures.
- For additional enclosure information, please see:
  http://h18004.www1.hp.com/products/blades/components/enclosures/c-class/index.html.
- **Warranty**:
  - This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners. 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. Enhancements to warranty services are available through HP Care Pack services or customized service agreements. Certain restrictions and exclusions apply. SATA hard drives have a one year warranty. SAS drives have a 3 year warranty.
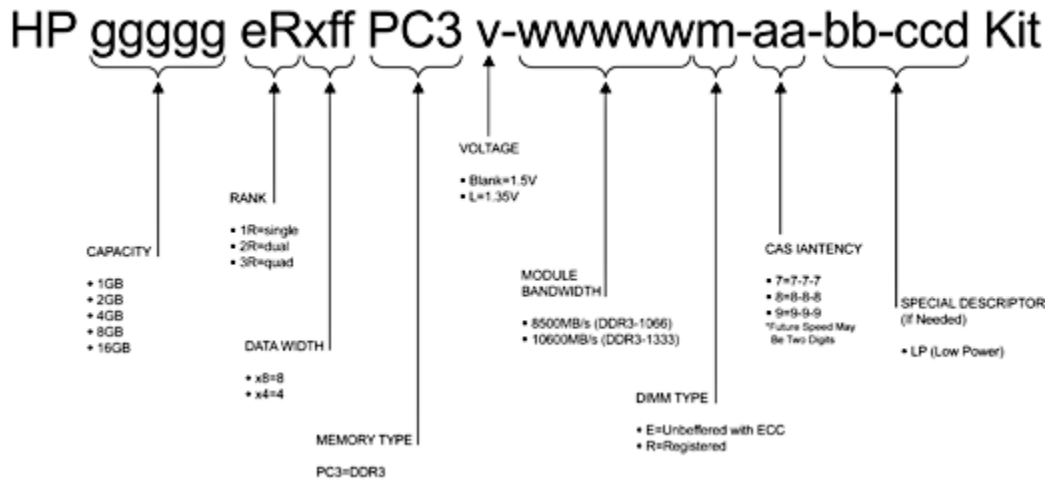 **NOTE:** Server warranty includes 3 year Parts, 3 year Labor, 3-year on-site support. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have HP replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at:
  http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html

Standard Features

Processor	**Quad-Core Processors**
	Intel® Xeon® Processor X5570 (2.93 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3)
	Intel® Xeon® Processor X5560 (2.80 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3)
	Intel® Xeon® Processor X5550 (2.66 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3)
	Intel® Xeon® Processor E5540 (2.53 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)
	Intel® Xeon® Processor E5530 (2.40 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)
	Intel® Xeon® Processor E5520 (2.26 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)
	Intel® Xeon® Processor E5506 (2.13 GHz, 4MB L3 Cache, 80W, DDR3-800)
	Intel® Xeon® Processor E5504 (2.00 GHz, 4MB L3 Cache, 80W, DDR3-800)
	Intel® Xeon® Processor L5520 (2.26 GHz, 8MB L3 Cache, 60W, DDR3-1066, HT, Turbo 1/1/2/2)
	Intel® Xeon® Processor L5506 (2.13 GHz, 4MB L3 Cache, 60W, DDR3-800)

Dual-Core Processors

Intel® Xeon® Processor E5502 (1.86 GHz, 4MB L3 Cache, 80W, DDR3-800)

NOTE: HT indicates that the processor model supports Intel® Hyper-Threading Technology.
NOTE: Turbo indicates the maximum potential frequency increment when using Intel® Turbo Boost Technology, with 4, 3, 2, and 1 cores active.
NOTE: DDR3 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.
NOTE: For the Intel 5500 Series, the letter preceding the model number indicates the performance/wattage of the processor. "X" denotes High Performance/Wattage; "E" denotes Enterprise Performance/Wattage (Mainstream); and "L" denotes Lower Wattage.

Upgradeability	Upgradeable to two (2) processors

Cache Memory	4MB shared L3 cache
	8MB shared L3 cache

Chipset	Intel® 5500 Chipset

Memory	Type	DDR3 Registered (RDIMM) or Unbuffered (UDIMM)
	Standard	6 GB (3 x 2GB) RDIMM
	Maximum(RDIMM)	96GB (12 x 8 GB) for Registered Memory configurations
	Maximum (UDIMM)	24 GB (12 x 2 GB) for Unbuffered Memory configurations

NOTE: Depending on the memory configuration and processor model the memory speed may run at 1333MHz, 1066MHz or 800MHz. Please see the Online Memory Configuration Tool for details: www.hp.com/go/ddr3memory-configurator

DDR3 memory options part number decoder

Standard Features

HP ggggg eRxff PC3 v-wwwwwm-aa-bb-ccd Kit

CAPACITY
- 1GB
- 2GB
- 4GB
- 8GB
- 16GB

RANK
- 1R=single
- 2R=dual
- 3R=quad

DATA WIDTH
- x8=8
- x4=4

MEMORY TYPE

PC3=DDR3

VOLTAGE
- Blank=1.5V
- L=1.35V

MODULE BANDWIDTH
- 8500MB/s (DDR3-1066)
- 10600MB/s (DDR3-1333)

DIMM TYPE
- E=Unbuffered with ECC
- R=Registered

CAS lATENCY
- 7=7-7-7
- 8=8-8-8
- 9=9-9-9
- *Future Speed May Be Two Digits

SPECIAL DESCRIPTOR (If Needed)
- LP (Low Power)

Network Controller	Embedded NC532i Dual Port Flex-10 10GbE Multifunction Server Adapter One (1) additional 10/100 NIC dedicated to iLO 2 Management
I/O Expansion Slots	Two (2) I/O expansion mezzanine slots (x8 PCI Express)
Integrated Manageability	ProLiant Onboard Administrator (powered by the Integrated Lights-Out 2 management processor)

Storage Controller

Type	HP Smart Array P410i Controller (RAID 0/1)

Available Options: 256MB cache, Battery-Backed Write Cache (BBWC) module for 256MB cache, 512MB cache with Battery Backed Write Cache (BBWC), and Smart Array Advanced Pack.
NOTE: 3Gb (6Gb Capable) SAS / 1.5Gb (3Gb Capable) SATA.
NOTE: Supports two (2) Small Form Factor (SFF) Hot Plug drive bays.

Maximum Internal Storage

Hot Plug SAS	600GB	2 x 300GB Serial SCSI
Hot Plug SATA	500GB	2 x 250GB Serial ATA

Graphics

Integrated ATI RN-50 1600x1280x64K 16M color (32 MB DDR1 memory)

Graphics Resolution Supported

Resolution Color Depths
1600 x 1280, 64K, 256, 16
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

Standard Features

Fibre Channel Support

Two (2) optional Fibre Channel HBAs are supported by the HP ProLiant BL460c G6. 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.

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 BL460c G6 server blades are optimized for HP StorageWorks MSA, EVA and XP.

HP ProLiant 460c G6 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

HP Insight Control suite

HP Insight Control suite delivers essential management for HP BladeSystem lifecycles, including proactive health management, lights out remote control, optimization of power usage, rapid server deployment, performance analysis, patch management and virtual machine management.

HP Insight Control suite installs and licenses the following components by default using a wizard-based integrated installer:

- HP Systems Insight Manager
- HP iLO Advanced for BladeSystem or iLO Advanced
  NOTE: iLO Advanced license will be enable when ICE is purchased as standalone software
- HP Insight Power Manager software
- HP Insight Rapid Deployment software
- HP Insight Performance Manager module
- HP Insight Vulnerability and Patch Manager module
- HP Insight Virtual Machine Manager software for ProLiant

NOTE: The Insight Control Environment for BladeSystem suite is no longer being sold as standalone software. You can continue to purchase Insight Control Environment for BladeSystem with the c-Class enclosure as before. For standalone software, you can purchase the Insight Control suite starting January 26, 2009. The standalone Insight Control suite license will license HP ProLiant ML, DL and BL servers.

- ICE standalone license covers iLO Advanced, SIM, RDP, IPM, PMP, VPM, VMM
- ICE license purchased with a c-Class enclosure covers iLO Advanced for BladeSystem, SIM, RDP, IPM, PMP, VPM and VMM

Additional Insight Software products included on the Insight Software media kit can be installed manually:

-

Standard Features

- HP Insight Server Migration software for ProLiant
  NOTE: HP Insight Server Migration software for ProLiant is licensed separately from the Insight Control Environment Suite. HP Insight Remote Support Standard
- HP Insight Remote Support Advanced (previously Service Essentials Remote Support Pack)

NOTE: HP Insight Server Migration software for ProLiant can be installed from the SMP-Universal CD included in the Insight Software media kit.
NOTE: HP Insight Control suite can be installed from the Insight Software DVDs, which can be delivered with HP BladeSystem c-Class enclosures with a choice of licensing options. Licensing options include a free 30 day evaluation license for 8 servers (default option for every enclosure order), a full purchased license for 8 blade servers or a full purchased license for 16 blade servers). For additional information on HP c-Class Infrastructure please visit HP BladeSystem c-Class Enclosures QuickSpecs:
HP BladeSystem c3000 Enclosure QuickSpecs:
http://h18000.www1.hp.com/products/quickspecs/12790_div/12790_div.html
HP BladeSystem c7000 Enclosure QuickSpecs:
http://h18000.www1.hp.com/products/quickspecs/12810_div/12810_div.html
NOTE: For additional product and licensing information about Insight Control suite, HP Systems Insight Manager and Insight Software refer to: http://www.hp.com/servers/proliantessentials.

HP Insight Control Environment for Linux (ICE-Linux) provides comprehensive discovery, imaging & deployment, monitoring, and management for Linux-based ProLiant server platforms. Built on the industry-leading HP Systems Insight Manager framework, this solution integrates open source technology with experience leveraged from HP's Linux products in HP ICLE and HP XC Clusters, while providing paths to the future with developing management technologies.

NOTE: As of February. 1, 2009, HP iLO Power Management Pack for BladeSystem is being discontinued. Customer can either purchase HP Insight Control suite which contains all the components of IPMP or the standalone components: iLO Advanced, HP Insight Power Manager software and HP Systems Insight Manager.

HP Insight Control suite and most Insight Software products include one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. From more information about this service, please visit: http://www.hp.com/services/insight.

HP ProLiant Onboard Administrator	HP ProLiant Onboard Administrator (powered by the Integrated Lights-Out 2 management processor) simplifies server setup, health monitoring, power and thermal control, and lights-out remote administration of ProLiant ML, DL, and BL servers. HP ProLiant Onboard Administrator functions without additional software, and can be accessed from any location via a web browser. It works hand-in-hand with the HP BladeSystem Onboard Administrator, HP Systems Insight Manager, Insight Control, and Insight Dynamics- VSE suite helping customers unlock the value of the ProLiant platform and deliver the highest possible quality of IT service to the business.

Capabilities of the HP ProLiant Onboard Administrator embedded in ProLiant BL servers include, but are not limited to the following:

- Rom-based Setup Utility (RBSU) and Option Rom Configuration for Arrays (ORCA)
- IML and iLO event logging
- Automatic Server Recover (ASR)
- OS independent hardware health status
- Present server power consumption
- Virtual Unit ID control
- Virtual KVM based remote console
- Virtual media (single server, browser based access only)

Standard Features

- Remote serial console
- Virtual power button control
- Dynamic Sector Repairing (with Smart Array controller)
- Drive Parameter Tracking (with Smart Array controller)
- Integrated remote console (ActiveX Control client)
- Single Sign-on from BladeSystem Onboard Administrator

Unlock the full capabilities of the HP ProLiant Onboard Administrator with iLO Advanced for BladeSystem.

Server Management Stand Alone Software Products	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. For additional information, please see: http://www.hp.com/go/insight.
	iLO Advanced for BladeSystem	Unlock the full capabilities of the ProLiant Onboard Administrator with enhanced console sharing and replay, virtual media (floppy, CD/DVD, USB key), virtual folders, historical power reporting, power capping and enterprise security (directory services and two-factor authentication) for servers managed using remote consoles available in iLO 2 Standard Blade Edition. For additional information, please see: www.hp.com/go/iLO
	HP Insight Rapid Deployment Software	HP Insight Rapid Deployment Software (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. For more information, visit: http://www.hp.com/go/rdp.
	Insight Power Manager software (IPM)	Upgrades the single-server remote management capabilities of iLO Advanced for BladeSystem to include centralized reporting and policy-based management of power consumption and thermal output provided by the Insight Power Manager. IPM unifies all of this functionality within a single user interface - HP Systems Insight Manager. For additional information, please see: www.hp.com/go/ipm.
	HP Insight Dynamics - VSE suite for ProLiant	The HP Insight Dynamics - VSE suite for ProLiant is advanced infrastructure management software that allows you to analyze and optimize your adaptive infrastructure to manage physical and virtual resources in the same way. HP Insight Dynamics - VSE gives you a powerful toolkit to accelerate complex technology projects and simplify daily operations. It enables you to plan capacity and power continuously, balance across physical and virtual resources, ensure cost-effective high availability and provision infrastructure consistently. HP Insight Orchestration, an optional extension to Insight Dynamics - VSE, enables IT organizations to provision infrastructure consistently and automatically from pools of shared resources using a self-service portal. Resources provisioned can range from a single virtual machine to complex multi-tier environments and their associated physical and virtual resource requirements. HP Insight Recovery, also an optional extension for Insight Dynamics - VSE, enables cost-effective disaster recovery for physical and virtual environments. Application environments can be reactivated in minutes with the touch of a button to a remote location **NOTE:** For more information, visit:

Standard Features

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http://www.hp.com/go/insightdynamics,
http://www.hp.com/go/insightorchestration,
http://www.hp.com/go/insightrecovery
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<td></td>
<td>HP Insight Server Migration software for ProLiant</td>
<td>
Upgrading, replacing, or virtualizing your existing server? Effortlessly transition to new virtual or physical HP ProLiant servers or BladeSystem with automated, accurate and affordable migration of OS, application and data. SMP Universal automates the manual processes required for migrating servers between physical or virtual platforms, whether migrating to VMware or Microsoft virtual machines. SMP Universal allows all of the following migrations:

- physical to ProLiant
- physical to virtual
- virtual to virtual
- virtual to ProLiant

NOTE: For more information, visit: http://www.hp.com/go/migrate.
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<td>HP Virtual Machine Manager software for ProLiant</td>
<td>
HP Insight Virtual Machine Manager software - provides central management and control of virtual machines from Microsoft and VMware. Integrated approach provides the ability to manage both physical and virtual resources from a single management console. For additional information, please see: www.hp.com/go/vm-manage.

NOTE: Flexible and volume quantity license kits are available for Insight Software products. Refer to: http://www.hp.com/go/insightcontrol or the various Insight Software product QuickSpecs for more information.
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<td>**Core Infrastructure Management**</td>
<td>HP ProLiant Essentials Foundation Pack</td>
<td>
Managing the growing number of servers can be complex and expensive for your organization. IT managers need to address changing business needs with tools that meet the challenges of managing today's complex Datacenters.

HP provides management solutions that are designed to simplify a server's installation, configuration and maintenance throughout the entire server lifecyle. This provides the customer with higher levels of operational efficiency and highly reliable systems:
www.hp.com/go/foundation.
The foundation pack includes:

- HP SmartStart
- HP Management
- HP ProLiant Firmware Maintenance

SmartStart version supported (minimum): SmartStart 8.20
http://www.hp.com/servers/smartstart
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<td>Insight Management Providers (WBEM)</td>
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The HP Insight Management WBEM Providers leverage the rich set of base-level instrumentation provided by the system management controllers and drivers, I/O controllers and drivers, and system firmware interfaces delivering in-depth hardware management, including hardware inventory data, system state, and event notifications.

Key Benefits Include:

- Heightened Security
  - Single integrated Security Model
  - Built using industry standard secure protocols and encryption algorithms (SSL, SSH)
  - Reduce the number of entry points into internal network
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Standard Features

- Reduced complexity of setup and configuration
- Delivers standards-based management across vendor platforms
- Robust in-depth and usable data that is provided to the HP System Management Homepage and Central Management Console
- Guaranteed event delivery
- Reduces overall load on the server by smaller agent footprint and maintenance burden
- Provides in-depth hardware management, inventory data, system state, and event notifications

The Insight Management Providers are included on ProLiant Support Packs.

For additional information about the Management Providers please visit: http://www.hp.com/go/HPwbem

Insight Management Agents (SNMP)	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 HP Insight Rapid Deployment software. 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 HP Insight Rapid Deployment software, SmartStart or downloaded from software and drivers download pages website at: http://www.hp.com/go/support.

QuickSpecs

Standard Features

HP Serviceguard for Linux (SGLX)

HP Serviceguard for Linux is a high availability clustering solution designed to protect applications and services from a wide variety of software and hardware failures, monitoring the health of each server (node) and quickly responding to failures such as those that affect system processes, system memory, LAN media and adapters, and application processes.

The following is a quick summary of HP Serviceguard for Linux features and support. For the most recent list of Linux distributions & kernels, servers and storage supported with Serviceguard for Linux, see the Serviceguard for Linux Datasheet, available at: http://www.hp.com/go/sglx/info.

- Supported Linux Distributions:
  - Red Hat EL 4
  - Red Hat EL 5
  - SUSE SLES10
- Supported Server Platforms
  - HP Integrity BladeSystem to Superdome
  - HP ProLiant BladeSystem p-Class & c-Class
  - HP ProLiant DL
  - HP ProLiant ML
  - IBM System x
  - Dell PowerEdge
  - Sun x64
  - Fujitsu Siemens PRIMERGY
- Supported Virtual Machines
  - SG/LX in HP Integrity Virtual Machines guests
  - SG/LX in VMware ESX guests
  - SG/LX in Red Hat and SUSE Xen hosts (DOM0)
- Application Integration Toolkits
  - HP Serivceguard for Linux Oracle Database Toolkit
  - HP Serviceguard Extension for SAP on Linux (SGeSAP/LX)
  - Free Application Integration Toolkits:
    - Apache
    - MySQL
    - NFS
    - PostgreSQL
    - Samba
    - Tomcat
    - Sendmail
- Disaster Tolerant Solutions
  - HP Serviceguard for Linux Extended Distance Cluster (XDC) extends cluster distances up to 100 km, utilizes software RAID mirroring for data replication and is storage array independent
  - HP StorageWorks XP/EVA Cluster Extension Software for Linux (CLX) works seamlessly with HP Serviceguard for Linux, HP StorageWorks Continuous Access, and HP Disk Arrays to automate failover and failback between sites
- Software updates are distributed by HP Services to customers with support contracts

NOTE: The above is not a complete list of all HP Serviceguard for Linux product numbers. For a detailed list of supported configuration/certification options for HP Serviceguard for Linux, please refer to the HP Serviceguard for Linux Configuration & Ordering Guide available at: http://www.hp.com/go/sglx/info.

Standard Features

OS Support	Microsoft Windows Server Microsoft Windows Server Hyper-V Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) Oracle Enterprise Linux (OEL) Solaris 10 for x86/x64 based Systems VMware HP Citrix Essentials for XenServer NetWare **NOTE:** For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: http://www.hp.com/go/ossupport and our driver download page http://www.hp.com/support/BL460cG6

Availability	● Dual-Port Fibre Channel Mezzanine Card options for redundant SAN connection ● Dual-port embedded 10 Gigabit Ethernet adapters for redundant LAN connections ● Two (2) hot-plug SAS/SATA hard drive bays and integrated RAID (HP Smart Array P410i Controller) ● Optional Battery-backed write cache module for integrated RAID controller ● Redundant ROM ● Advanced ECC Memory ● Support for Memory Mirroring and Memory Lock-Step Mode ● Network adapter teaming (network fault tolerance, transmit load balancing, switch-assisted load balancing)

Industry Standard Compliance	ACPI 2.0 Compliant PCI 2.2 Compliant WOL Support Microsoft® Logo certifications USB 2.0 Support

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

Security - Trusted Platform Module	The TPM (Trusted Platform Module) is a microcontroller chip that can securely store artifacts used to authenticate the server platform. These artifacts can include passwords, certificates and encryption keys. Windows® BitLocker™ Drive Encryption (BitLocker) is a data protection feature available in Windows Server® 2008. BitLocker leverages the enhanced security capabilities of a Trusted Platform Module (TPM) version 1.2. The TPM works with BitLocker to help protect user data and to ensure that a server running Windows Server 2008 has not been tampered with while the system was offline. **NOTE:** For more information about TPM, including a white paper, go to http://www.hp.com/go/TPM **NOTE:** ProLiant OS pre-installed units will come with the partition required for TPM deployment. **NOTE:** The TPM key is unique to every TPM deployed server and must be retained. Misplacing or losing the key could result in data loss.

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 MSAxxxx, 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.

HP Enterprise Configurator

The HP e-Configure 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

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

The HP Care Pack service for HP 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.

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 vender support solutions provides a range of support services designed to meet the varying needs of business. Whether an SMB or large global corporation HP has a HP BladeSystem server support offer to help you speedily deploy and maximize system uptime.

Recommended Service - Simplify ProLiant solution implementation, maintenance and management.

- **Support Service** - 4-Hour Response Coverage, 3-Year, 24 x 7, Same Business Day
- **Deployment Service** - Installation and Start Up for HP BladeSystem Infrastructure

Enhanced Service - Optimize service level to increase IT performance and availability

- **Support Service** - HP Proactive BladeSystem Service, 1-Year
- **Deployment Service** - Enhanced Network Installation and Start-up for HP BladeSystem Switches

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, excluding HP holidays.

For a complete listing of service offerings and information visit:
http://www.hp.com/services/bladesystemservices
http://www.hp.com/go/proliant/carepack

Models

Quad-Core Models

HP BL460c G6 X5550 6GB (1P) 507778-B21	**Processor(s)** One of the following depending on model	(1) Intel® Xeon® Processor X5550 (2.66 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3)
		(1) Intel® Xeon® Processor E5540 (2.53 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)
HP BL460c G6 E5540 6GB (1P) 507779-xx1		(1) Intel® Xeon® Processor E5530 (2.40 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)
		(1) Intel® Xeon® Processor E5520 (2.26 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)
HP BL460c G6 E5530 6GB (1P) 507780-B21		(1) Intel® Xeon® Processor E5506 (2.13 GHz, 4MB L3 Cache, 80W, DDR3-800)
		(1) Intel® Xeon® Processor L5520 (2.26 GHz, 8MB L3 Cache, 60W, DDR3-1066, HT, Turbo 1/1/2/2)
HP BL460c G6 E5520 6GB (1P) 507782-B21		(1) Intel® Xeon® Processor E5502 (1.86 GHz, 4MB L3 Cache, 80W, DDR3-800)
	Cache Memory	4MB or 8MB shared L3 cache
HP BL460c G6 E5506 6GB (1P) 507783-B21	**Memory**	6 GB (3 x 2 GB) PC3-10600 (DDR3-1333) Registered DIMMs
	Network Adapter	Embedded NC532i Dual Port Flex-10 10GbE Multifunction Server Adapter and one (1) additional 10/100 server adapter dedicated to iLO 2 management
HP BL460c G6 E5502 6GB (1P) 507784-B21	**Storage Controller**	HP Smart Array P410i Controller (RAID 0/1)
	Hard Drives	None ship standard
	Internal Storage	SAS: 600GB (2 x 300GB SAS) SATA: 500GB (2 x 250GB SATA)
HP BL460c G6 L5520 6GB (1P) 507781-B21	**Optical Drive**	None
	Form Factor	Up to eight (8) half-height blades supported in the HP BladeSystem c3000 Enclosure Up to sixteen (16) half-height blades supported in HP BladeSystem c7000 Enclosure

Country Code		Rack Code Key	
	XX=Worldwide	-B21	
	XX=Brazil	-201	

Configuration Information - Factory Integrated Models

NOTE: This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for information on CTO product offerings and requirements.
NOTE: HP does not allow factory integration of options into standard models listed above.
Configure-to-order server blades must start with a CTO Blade.
NOTE: FIO indicates that this option is a Factory Installable Option.

Step 1: Base Server Blade Configuration (Select a configurable Blade)

Models	**HP ProLiant BL460c G6 CTO Blade**	507864-B21
	Configurable Model ships with:	
	Embedded NC532i Dual Port Flex-10 10GbE Multifunction Server Adapter and one (1) additional 10/100 server adapter dedicated to iLO 2 management	
	Integrated Lights-Out 2 Standard Blade Edition	

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

Processors	**For single processor configuration choose:**	
	Quad-Core Processor Option Kits	
	Intel® Xeon® Processor X5570 (2.93 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3) BL460c G6 Kit, FIO **NOTE:** If two processors are desired, select one 507791-L21 and one 507791-B21.	507791-L21
	Intel® Xeon® Processor X5560 (2.80 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3) BL460c G6 Kit, FIO **NOTE:** If two processors are desired, select one 507792-L21 and one 507792-B21.	507792-L21
	Intel® Xeon® Processor X5550 (2.66 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3) BL460c G6 Kit, FIO **NOTE:** If two processors are desired, select one 507793-L21 and one 507793-B21.	507793-L21
	Intel® Xeon® Processor E5540 (2.53 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2) BL460c G6 Kit, FIO **NOTE:** If two processors are desired, select one 507794-L21 and one 507794-B21.	507794-L21
	Intel® Xeon® Processor E5530 (2.40 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2) BL460c G6 Kit, FIO **NOTE:** If two processors are desired, select one 507797-L21 and one 507797-B21.	507797-L21
	Intel® Xeon® Processor L5520 (2.26 GHz, 8MB L3 Cache, 60W, DDR3-1066, HT, Turbo 1/1/2/2) BL460c G6 Kit, FIO **NOTE:** If two processors are desired, select one 507798-L21 and one 507798-B21.	507798-L21
	Intel® Xeon® Processor E5520 (2.26 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2) BL460c G6 Kit, FIO **NOTE:** If two processors are desired, select one 507799-L21 and one 507799-B21.	507799-L21
	Intel® Xeon® processor HP L5506 (2.13 GHz, 4MB L3 Cache, 60W, DDR3-800) BL460c G6 Kit, FIO **NOTE:** If two processors are desired, select one 513859-L21 and one 513859-B21.	513859-L21

Configuration Information - Factory Integrated Models

	Intel® Xeon® processor HP E5506 (2.13 GHz, 4MB L3 Cache, 80W, DDR3-800) BL460c G6 Kit, FIO **NOTE:** If two processors are desired, select one 507800-L21 and one 507800-B21.	507800-L21
	Intel® Xeon® processor HP E5504 (2.00 GHz, 4MB L3 Cache, 80W, DDR3-800) BL460c G6 Kit, FIO **NOTE:** If two processors are desired, select one 507801-L21 and one 507801-B21.	507801-L21
	Dual-Core Processor Option Kits	
	Intel® Xeon® processor HP E5502 (1.86 GHz, 4MB L3 Cache, 80W, DDR3-800) BL460c G6 Kit, FIO **NOTE:** If two processors are desired, select one 507802-L21 and one 507802-B21.	507802-L21
Memory	**Registered DIMMS (RDIMMs)**	
	HP 2GB 2Rx8 PC3-10600R -9 Kit	500656-B21
	HP 4GB 2Rx4 PC3-10600R-9 Kit	500658-B21
	HP 4GB 4Rx8 PC3-8500R-7 LP Kit	500660-B21
	HP 8GB 2Rx4 PC3-8500R-7 Kit	516423-B21
	Unbuffered with ECC DIMMs (UDIMMs)	
	HP 1GB 1Rx8 PC3-10600E-9 Kit	500668-B21
	HP 2GB 2Rx8 PC3-10600E-9 Kit	500670-B21
	NOTE: All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator. **NOTE:** Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: http://h18004.www1.hp.com/products/servers/platforms/energyefficient/	

Step 3: Choose Additional Factory Integratable Options (one of the following from each list unless otherwise noted)

VMware ESXi	**NOTE:** HP VMware ESXi free download from: www.software.hp.com - select Virtualization.	
	HP VMware 3i Enterprise 2p Lic SW **NOTE:** For additional information and options kits, please see the QuickSpecs at: www.hp.com/go/vmware	430341-B21
HP Citrix Essentials for XenServer	HP XenServer Select Edition free Download from: http://h20392.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber =HPXS	
	HP Essentials -XenServer Platinum Nm Lic	530753-B21
	HP ProLiant Virtual Console Full License	508293-B21
	XenServer HP Ent Upg iSW Lic	464676-B21
	HP Citrix Essentials for XenServer Enterprise Edition	508294-B21
	NOTE: For additional information and options kits, please see the HP Citrix Essentials for XenServer QuickSpecs at: http://www.hp.com/go/citrix	

Configuration Information - Factory Integrated Models

Storage Controller	256 MB Cache Module	462968-B21
	Battery Kit Upgrade (for BBWC) **NOTE:** Requires 256 MB Cache Module.	462969-B21
	512 MB BBWC Cache Module	462967-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 Core Options and Additional sections below; or the following QuickSpecs:

HP BladeSystem c-Class Enclosures QuickSpecs:

HP BladeSystem c3000 Enclosure QuickSpecs:

http://h18000.www1.hp.com/products/quickspecs/12790_div/12790_div.html

HP BladeSystem c7000 Enclosure QuickSpecs:

http://h18000.www1.hp.com/products/quickspecs/12810_div/12810_div.html

and HP BladeSystem c-Class Interconnect Components QuickSpecs:

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

Core Options

Ethernet Mezzanine Options	**Gigabit Ethernet Mezzanines**	
	HP NC325m PCI Express Quad Port 1Gb Server Adapter for c-Class BladeSystem	416585-B21
	NOTE: If the NC325m is installed in mezzanine slot 1 of a half-height server, connectivity will be provided on 2 of the 4 ports.	
	HP NC326m PCI Express Dual Port 1Gb Server Adapter for c-Class BladeSystem	406771-B21
	HP NC360m Dual Port 1GbE BL-c Adapter	445978-B21
	HP NC364m Quad Port 1GbE BL-c Adapter	447883-B21
	NOTE: If the NC364m is installed in mezzanine slot 1 of a half-height server, connectivity will be provided on only 2 of the 4 ports.	
	HP NC382m Dual Port 1GbE Multifunction BL-c Adapter	453246-B21
	QLogic QMH4062 1Gb E iSCSI Adapter for HP BladeSystem c-Class	488074-B21
	NOTE: The Gigabit Ethernet adapters above transmit from the server at 2000 Mbps, full duplex per port only. For more information, see the "Network Controller" segment in the Standards Features section.	
	10 Gigabit Ethernet Mezzanines	
	HP NC512m Dual Port 10GbE Multifunction BL-c Adapter	440910-B21
	NOTE: The NC512m is supported in type II x8 PCI Express mezzanine slots; maximum two adapters per server. For more information, see the Mezzanine Slot Compatibility matrix within the HP NC512m Dual Port 10GbE Multifunction BL-c Adapter QuickSpecs: http://h18004.www1.hp.com/products/servers/networking/nc512m/index.html. **NOTE:** A minimum of 2 GB of server memory is required per NC512m and supports a maximum of 32 GB for Windows and 64 GB for Linux. **NOTE:** The NC512m adapter transmits from the server only at 20 Gbps, full duplex per port.	
	HP NC532m Dual Port 10GbE BL-c Adapter	467799-B21
	NOTE: The NC532m network adapter card is required for each server blade connecting to a 10Gb interconnect in bays 3-8 (HP BladeSystem c7000 Enclosure) or bays 3-4 (HP BladeSystem c3000 Enclosure). **NOTE:** The NC532m requires a minimum of 2 GB of server memory. **NOTE:** The NC532m will downspeed to 1Gb if paired with a 1Gb interconnect.	
Fiber 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

QuickSpecs

HP ProLiant BL460c Generation 6 Server Blade

Core Options

Processors	**Quad-Core Process Option Kits**	
	Intel® Xeon® Processor X5570 (2.93 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3) BL460c G6 Kit	507791-B21
	Intel® Xeon® Processor X5560 (2.80 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3) BL460c G6 Kit	507792- B21
	Intel® Xeon® Processor X5550 (2.66 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3) BL460c G6 Kit	507793- B21
	Intel® Xeon® Processor E5540 (2.53 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2) BL460c G6 Kit	507794- B21
	Intel® Xeon® Processor E5530 (2.40 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2) BL460c G6 Kit	507797-B21
	Intel® Xeon® Processor L5520 (2.26 GHz, 8MB L3 Cache, 60W, DDR3-1066, HT, Turbo 1/1/2/2) BL460c G6 Kit	507798-B21
	Intel® Xeon® Processor E5520 (2.26 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2) BL460c G6 Kit	507799-B21
	Intel® Xeon® processor HP L5506 (2.13 GHz, 4MB L3 Cache, 60W, DDR3-800) BL460c G6 Kit	513859-B21
	Intel® Xeon® processor HP E5506 (2.13 GHz, 4MB L3 Cache, 80W, DDR3-800) BL460c G6 Kit	507800-B21
	Intel® Xeon® processor HP E5504 (2.00 GHz, 4MB L3 Cache, 80W, DDR3-800) BL460c G6 Kit	507801-B21
	Dual-Core Process Option Kits	
	Intel® Xeon® processor HP E5502 (1.86 GHz, 4MB L3 Cache, 80W, DDR3-800) BL460c G6 Kit	507802-B21

Memory	**Registered DIMMS (RDIMMs)**	
	HP 2GB 2Rx8 PC3-10600R -9 Kit	500656-B21
	HP 4GB 2Rx4 PC3-10600R-9 Kit	500658-B21
	HP 4GB 4Rx8 PC3-8500R-7 LP Kit	500660-B21
	HP 8GB 2Rx4 PC3-8500R-7 Kit	516423-B21
	Unbuffered with ECC DIMMs (UDIMMs)	
	HP 1GB 1Rx8 PC3-10600E-9 Kit	500668-B21
	HP 2GB 2Rx8 PC3-10600E-9 Kit	500670-B21

NOTE: All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator.

NOTE: Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: http://h18004.www1.hp.com/products/servers/platforms/energyefficient/

QuickSpecs

Core Options

Hard Drives

SAS Hot Plug SFF Enterprise (ENT) Drives

HP 300GB 6G SAS 10K SFF DP ENT HDD	507127-B21
HP 300GB 3G SAS 10K SFF DP HDD	492620-B21
HP 146GB 6G SAS 10K SFF DP ENT HDD	507125-B21
HP 146GB 3G SAS 10K SFF DP HDD	418367-B21
HP 146GB 3G SAS 15K SFF DP ENT HDD	504062-B21
HP 72GB 3G SAS 15K SFF DP HDD	418371-B21
HP 72GB 3G SAS 10K SFF DP HDD	384842-B21
HP 36GB 3G SAS 15K SFF DP HDD	418369-B21

NOTE: SAS drives have a 3 year warranty.
NOTE: Please see QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/12244_div/12244_div.html (Worldwide)
NOTE: The hard drive options are not required when configuring a Drive-less Model.

SATA SFF Hot Plug Entry (ETY) Drives

HP 250GB 3G SATA 5.4K SFF ETY HDD	460355-B21
HP 120GB 1.5G SATA 5.4K SFF ETY HDD	458924-B21

NOTE: SATA drives have a 1 year warranty. Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13021_div/13021_div.html (Worldwide)

Additional Options

HP Insight Control suite (ICE)	**NOTE:** Electronic licensing options are available for Insight Control suites software products. Please see the appropriate Insight Control QuickSpecs for additional information.	
	HP Insight Control suite	
	HP Insight Control suite, No Media 1-Server License including 1 year of 24x7 Technical Support and Updates	452148-B22
	NOTE: Customer will receive a printed license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.	
	HP Insight Software Media Kit	436222-B21
	NOTE: Insight Software DVD media without licenses. Contains Insight Software suites, standalone software products and components licensed by Insight Control Environment suites. Uses an integrated installer to perform quick and accurate software installation and updates.	
	NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html	
	HP Insight Control Environment for Linux	
	HP Insight Control Environment for Linux, No Media, 1-Server license, including one year of 24x7 Technical Support and Updates	464423-B22
	NOTE: This part number can be used to purchase one (1) license with a single activation key. Customer will receive a printed license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.	
	NOTE: One certificate is shipped for each license.	
	HP Insight Control Environment for Linux, Media pack (DVD) - No licenses included	464422-B22
	NOTE: This optional Media pack DVD contains the ISO image for HP Insight Control Environment for Linux, HP System Insight Manager, HP Insight Power Manager software, HP Virtual Machine Manager software for ProLiant, and an integrated installer. Servers must be acquired separately.	
	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/ice-linux (click on Download button).	
	NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/13019_div/13019_div.html	
Server Management Stand Alone Software Products	**NOTE:** Electronic licensing options are available for Insight Control suites and select Insight Software products. Please see the appropriate Insight Control and Insight Software product QuickSpecs for additional information.	
	Deploy	
	HP Insight Rapid Deployment software	
	HP Insight Rapid Deployment software, No Media 1-Server License including 1 year of 24x7 Technical Support and Updates	452151-B21
	NOTE: This license allows 1 server to be deployed and managed via RDP. Customer will receive a printed license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.	
	NOTE: This license formerly known as ProLiant Essentials Rapid Deployment Pack.	

Additional Options

NOTE: For additional License Kits- please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/11053_div/11053_div.html

HP Insight Server Migration software for ProLiant

HP Insight Server Migration software for ProLiant, No Media, Physical / Virtual to ProLiant Single Migration License, including 1 year of 24x7 Technical Support **NOTE:** This license allows 1 physical to ProLiant or virtual to ProLiant migration. Customer will receive a printed license entitlement certificate and documentation via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support Service.	460750-B21
HP Insight Server Migration software for ProLiant, No Media, Physical / Virtual to Virtual Single Migration License, including 1 year of 24x7 Technical Support **NOTE:** This license allows 1 physical to virtual or virtual to virtual migration. Customer will receive a printed license entitlement certificate and documentation via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support Service.	460753-B21
HP Insight Server Migration software for ProLiant, No Media, 1-Year Unlimited Migration License, including 1 year of 24x7 Technical Support **NOTE:** This license allows unlimited migrations (physical to ProLiant, physical to virtual, virtual to virtual, and virtual to ProLiant) for one year. Customer will receive a printed license entitlement certificate and documentation via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support Service.	460756-B21

NOTE: For additional License Kits please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/12855_div/12855_div.html

Monitor

HP Insight Dynamics - VSE suite for ProLiant

HP Insight Dynamics-VSE with Insight Control Environment, 1-server license including 1 year of 24x7 Technical Support and Updates **NOTE:** This license supports HP ProLiant ML/DL and c-Class Blade servers. Customer will receive a printed license entitlement certificate via physical shipment.	483527-B21
HP Insight Dynamics-VSE without Insight Control Environment, 1-server license including 1 year of 24x7 Technical Support and Updates **NOTE:** This license supports HP ProLiant ML/DL and c-Class Blade servers. Customer will receive a printed license entitlement certificate via physical shipment.	483531-B21

NOTE: For additional license kits, please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/13050_div/13050_div.html

Control

HP iLO Advanced for BladeSystem

HP Integrated Lights-Out Advanced for BladeSystem, No Media, 1-Server License, including 1 year of 24x7 Technical Support and Updates **NOTE:** For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12362_div/12362_div.html	512488-B21

Featuring: Sophisticated remote control and security features for HP BladeSystem servers and ProLiant ML/DL servers.
NOTE: For additional License Kits please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/12362_div/12362_div.html

Optimize

HP Insight Power Manager software (IPM)

Additional Options

	HP Insight Power Manager, No Media, 1-Server License, including 1 year of 24x7 Technical Support and Updates	452677-B21
	NOTE: Customers purchasing this upgrade must already have an iLO Advanced or Select license on each managed server. Customer will receive a printed license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.	
	NOTE: For additional License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12623_div/12623_div.html	
	HP Insight Virtual Machine Manager software for ProLiant	
	HP Insight Virtual Machine Manager software, No Media, 1-Server License, including 1 year of 24x7 Technical Support and Updates	452153-B21
	NOTE: Customer will receive a printed license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.	
	NOTE: For additional 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 Insight Software products. Refer to: http://www.hp.com/servers/insightcontrol or the various Insight Software product QuickSpecs for more information.	
Security	HP Trusted Platform Module (TPM) Kit	488069-B21
	NOTE: The TPM key is unique to every TPM deployed server and must be retained. Misplacing or losing the key could result in data loss.	
Storage Controller	HP Smart Array P700M/512 Controller	508226-B21
	HP Smart Array P700M/256 Controller	507925-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13175_div/13175_div.html (Worldwide)	
	256 MB Cache Module	462968-B21
	Battery Kit Upgrade (for BBWC)	462969-B21
	NOTE: Requires 256 MB Cache Module.	
	512 MB BBWC Cache Module	462967-B21
	HP Smart Array Advanced Pack (SAAP)	516471-B21
	NOTE: A license key, a minimum of 256MB cache, and battery kit is required to enable Smart Array Advanced Pack features. For more information go to: http://www.hp.com/go/saap	
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13203_div/13203_div.html (Worldwide)	
HP InfiniBand Mezzanine Options	HP 4X QDR IB Dual Port Mezzanine HCA for HP BladeSystem c-Class	492303-B21
	HP 4X DDR IB Dual Port Mezzanine HCA for HP BladeSystem c-Class	448262-B21
	HP 4X DDR IB Mezzanine HCA for HP BladeSystem c-Class	410533-B21

Additional Options

HP c-Class Tape Blades	HP StorageWorks SB1760c Tape Blade **NOTE:** LTO-4 Ultrium tape technology.	AQ697A
	HP StorageWorks SB920c Tape Blade **NOTE:** LTO-3 Ultrium technology.	AJ401A
	HP StorageWorks Ultrium 448c Tape Blade **NOTE:** LTO-2 Ultrium technology.	440947-B21
	NOTE: The HP PCI Express Mezzanine Pass-Thru Card for HP BladeSystem (431643-B21) is required when installing a tape blade adjacent to a full-height server blade. **NOTE:** Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12729_div/12729_div.html	

HP StorageWorks SB40c Storage Blade	HP StorageWorks SB40c Storage Blade	411243-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12587_div/12587_div.html (Worldwide)	

HP PCI Expansion Blade	HP PCI Expansion Blade	448018-B21
	NOTE: Ships with one pre-installed PCI-X connect board. Also includes one PCIe connect board which requires installation. **NOTE:** Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12753_div/12753_div.html	

High Availability Cluster Options	**HP Serviceguard for Linux**	
	HP Serviceguard Linux for HP ProLiant/x86 Servers Licensed per physical server Includes media and One Year 24x7 Software Support & Updates	463831-B21
	HP Serviceguard Linux Oracle Database Toolkit for HP ProLiant/x86 Servers Licensed per cluster Includes media and One Year 24x7 Software Support & Updates	463833-B21
	HP Serviceguard Extension for SAP on Linux for HP ProLiant/x86 Servers Licensed per physical server Includes media and One Year 24x7 Software Support & Updates	463834-B21
	HP Serviceguard Linux Extended Distance Cluster (XDC) for HP ProLiant/x86 Servers Licensed per physical server Includes media and One Year 24x7 Software Support & Updates	463835-B21
	NOTE: The above is not a complete list of all HP Serviceguard for Linux product numbers. For a detailed list of supported configuration/certification options for HP Serviceguard for Linux, please refer to the HP Serviceguard for Linux Configuration & Ordering Guide available at: http://www.hp.com/go/sglx/info. **NOTE:** HP Serviceguard for Linux products running on x86 platforms now include one year of 24 x 7 Software Technical Support and Updates. Please see the Support Information section of the HP Serviceguard for Linux QuickSpecs for details. **NOTE:** For additional information including a complete list of Product Numbers for HP Serviceguard for Linux, please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11518_div/11518_div.html (Worldwide)	

Additional Options

USB Options	HP USB 2-Button Optical Scroll Mouse (Carbonite/Silver)	DC172B

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	UK065E
	4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	UK066E
	6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	UK067E
	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

Memory

NOTE: Memory configurations listed do not apply to "Factory Integrated Models".

Memory Population Guidelines

For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator

Some DIMM installation guidelines are summarized below:

- For the HP ProLiant BL460c G6 server with twelve (12) memory slots:
  - There are three (3) channels per processor; six (6) channels per server
  - There are two (2) DIMM slots for each memory channel; twelve (12) total slots.
  - Memory channel 1 consists of the two (2) DIMMs that are closest to the processor
  - Memory channel 3 consists of the two (2) DIMMs that are furthest from the processor
- DIMM slots that are white should be populated first
- Do not mix Unbuffered memory (UDIMMs) with Registered memory (RDIMMs).
- Do not install DIMMs if the corresponding processor is not installed
- If only one processor is installed in a 2CPU system, only half of the DIMM slots are available
- To maximize performance, balance the total memory capacity between all installed processors
- It is not required, but it is recommended to load the channels similarly if possible
- You can only have up to eight (8) ranks installed per channel
- You can only install two quad-rank DIMMs per channel
- You can only install two UDIMMs per channel; if available, the third slot in the channel must remain empty
- Populate DIMMs from heaviest load (quad-rank) to lightest load (single-rank) within a channel
- Heaviest load (DIMM with most ranks) within a channel goes furthest from the chipset
- For memory mirroring mode, channel 3 must be unpopulated. Channels 1 and 2 are populated identically
- For lock-step mode, channel 3 must be unpopulated. DIMMs in channels 1 and 2 will be installed in pairs. The paired slots will be 1,4; 2,5; 3;6 on a 3DPC system or 1,4; 2,5; on a 2DPC system
- No mixing DIMM voltage; all DIMMs must be the same voltage

DIMM slot/capacity/populated speed table										
DIMM Type	Registered DIMMS (RDIMMs)						Unbuffered with ECC DIMMs (UDIMMs)			
DIMM Rank	Dual Rank (2R)			Quad Rank (4R)			Single Rank (1R)		Dual Rank (2R)	
DIMM Capacity	2GB	4GB	8GB	2GB	4GB	8GB	1GB	2GB	1GB	2GB
DIMM Native Speed (MHz)	1333	1333	1066	*	1066	*	1333	*	*	1333
SLOTS THAT CAN BE POPULATED										
12 slot servers	12	12	12	*	12	*	12	*	*	12
MAXIMUM CAPACITY (GB)										
	24	48	96	*	48	*	12	*	*	24
POPULATED DIMM SPEED (MHz)										
1 DIMM Per Channel	1333	1333	1066	*	1066	*	1333	*	*	1333
2 DIMM Per Channel	1066	1066	1066	*	800	*	1066	*	*	1066
* - not supported by HP at this time.										

NOTES:

- Mixing DIMM speeds is allowed, but the system processor speed rules always override the DIMM capabilities
- If you do mix DIMM speeds, the memory bus will default to the minimum clock rate of all DIMMs in the system - even if the slower DIMM is on the other processor
- If you install 1x 1066MHz DIMM in channel 1 and 1x 1333MHz DIMM in channel 2, you still run at 1066MHz
- If you install 1x 1066MHz DIMM in channel 1 and 5x 1333MHz DIMMs with 1 DIMM Per Channel (DPC) in each of the other channels, you run at 1066MHz

Memory

- If you install 3DPC in one channel (if applicable) and 1DPC in all other channels, you run at 800MHz
- 95 Watt CPU's are required for 1333MHz DIMM speeds
- References to the above MHz speeds are for the various speeds of DDR3 DIMMs; 1333 refers to DDR3-1333, etc.

HP ProLiant BL460c G6 Server Blade DIMM slot and configuration diagrams

Basic memory slot and population diagram

- Population order; start with "A" first, "B" second, "C" third, etc.

12 DIMM SLOTS (6 per CPU node)					
	CPU1		**CPU2**		
	slot #	population order	slot #	population order	
Chnl 1	1	D	1	D	Chnl 1
	2	A	2	A	
Chnl 2	3	E	3	E	Chnl 2
	4	B	4	B	
Chnl 3	5	F	5	F	Chnl 3
	6	C	6	C	

HP ProLiant BL460c G6 Server Blade (1P Model)

Standard memory configuration (1 CPU model)

- 6GB (3 x 2GB) of PC3-10600 (DDR3-1333) RDIMMs

	CPU1		**CPU2**		
	slot #	population order	slot #	population order	
Chnl 1	1	D: empty	1	D: empty	Chnl 1
	2	A: 2GB DIMM	2	A: empty	
Chnl 2	3	E: empty	3	E: empty	Chnl 2
	4	B: 2GB DIMM	4	B: empty	
Chnl 3	5	F: empty	5	F: empty	Chnl 3
	6	C: 2GB DIMM	6	C: empty	

Standard Memory Plus Optional Memory (1 CPU model)

- 30 GB of PC3-10600 (DDR3-1333) RDIMMs (3 x 2GB plus 3 x 8GB)

	CPU1		**CPU2**		
	slot #	population order	slot #	population order	
Chnl 1	1	D: 2GB DIMM	1	D: empty	Chnl 1
	2	A: 8GB DIMM	2	A: empty	
Chnl 2	3	E: 2GB DIMM	3	E: empty	Chnl 2
	4	B: 8GB DIMM	4	B: empty	
Chnl 3	5	F: 2GB DIMM	5	F: empty	Chnl 3
	6	C: 8GB DIMM	6	C: empty	

Memory

Standard Memory Replaced with Optional Memory (1 CPU model)

- 48GB of PC3-8500 Dual-Rank RDIMMs (6 x 8GB)

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	D: 8GB DIMM	1	D: empty	Chnl 1
	2	A: 8GB DIMM	2	A: empty	
Chnl 2	3	E: 8GB DIMM	3	E: empty	Chnl 2
	4	B: 8GB DIMM	4	B: empty	
Chnl 3	5	F: 8GB DIMM	5	F: empty	Chnl 3
	6	C: 8GB DIMM	6	C: empty	

UDIMM maximum configuration (1 CPU model)

- 12GB, consisting of six (6) 2GB dual-rank PC3-10600 UDIMMs

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	D: 2GB DIMM	1	D: empty	Chnl 1
	2	A: 2GB DIMM	2	A: empty	
Chnl 2	3	E: 2GB DIMM	3	E: empty	Chnl 2
	4	B: 2GB DIMM	4	B: empty	
Chnl 3	5	F: 2GB DIMM	5	F: empty	Chnl 3
	6	C: 2GB DIMM	6	C: empty	

Standard Memory Replaced with Optional Memory (2 CPU Model)
RDIMM maximum configuration

- 96GB, consisting of twelve (12) 8GB dual-rank PC3-8500 RDIMMs

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	D: 8GB DIMM	1	D: 8GB DIMM	Chnl 1
	2	A: 8GB DIMM	2	A: 8GB DIMM	
Chnl 2	3	E: 8GB DIMM	3	E: 8GB DIMM	Chnl 2
	4	B: 8GB DIMM	4	B: 8GB DIMM	
Chnl 3	5	F: 8GB DIMM	5	F: 8GB DIMM	Chnl 3
	6	C: 8GB DIMM	6	C: 8GB DIMM	

UDIMM maximum configuration (2 CPU model)

- 24GB, consisting of twelve (12) 2GB dual-rank PC3-10600 UDIMMs

QuickSpecs

Memory

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	D: 2GB DIMM	1	D: 2GB DIMM	Chnl 1
	2	A: 2GB DIMM	2	A: 2GB DIMM	
Chnl 2	3	E: 2GB DIMM	3	E: 2GB DIMM	Chnl 2
	4	B: 2GB DIMM	4	B: 2GB DIMM	
Chnl 3	5	F: 2GB DIMM	5	F: 2GB DIMM	Chnl 3
	6	C: 2GB DIMM	6	C: 2GB DIMM	

NOTE: Capacity references are rounded to the common Gigabyte values.

- 1GB = 1024MB
- 2GB = 2048MB
- 4GB = 4096MB
- 8GB = 8192MB

Following are memory options available from HP:

Registered DIMMs (RDIMMs)

HP 2GB 2Rx8 PC3-10600R-9 Kit   500656-B21
HP 4GB 2Rx4 PC3-10600R-9 Kit   500658-B21
HP 4GB 4Rx8 PC3-8500R-7 LP Kit   500660-B21
HP 8GB 2Rx4 PC3-8500R-7 Kit   516423-B21

Unbuffered with ECC DIMMs (UDIMMs)

HP 1GB 1Rx8 PC3-10600E-9 Kit   500668-B21
HP 2GB 2Rx8 PC3-10600E-9 Kit   500670-B21

NOTE: All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator.

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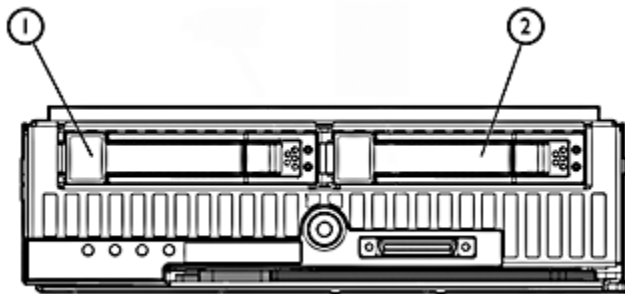
1-2   2 x SFF SAS or SATA Hot Plug Hard Drives

Hard Drives

SAS Hot Plug SFF Enterprise (ENT) Drives

	Quantity Supported	Position Supported	Controller
300GB 6G SAS 10K 300GB 3G SAS 10K 146GB 6G SAS 10K 146GB 3G SAS 10K 146GB 3G SAS 15K 72GB 3G SAS 15K 72GB 3G SAS 10K 36GB 3G 15K SAS	2	1-2	HP Smart Array P410i Controller

SATA SFF Hot Plug Entry (ETY) Drives

	Quantity Supported	Position Supported	Controller
250GB 3G SATA 5.4K 120GB 1.5 G SATA 5.4K	2	1-2	HP Smart Array P410i Controller

External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
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

HP StorageWorks XP10000 Disk Array:
http://h18006.www1.hp.com/products/storageworks/xp10000/index.html (Worldwide)

	Quantity Supported	Position Supported	Host Controller or Adapter
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

HP StorageWorks Enterprise Virtual Array Family:
http://h18006.www1.hp.com/products/quickspecs/12408_div/12408_div.html (Worldwide)

Storage

System Unit	**Dimensions** (H x W x D) 7.154 x 2.19 x 20.058 in (18.17 x 5.56 x 50.95 cm) (with bezel)		
	Weight (approximate)	Maximum (all hard drives and processors installed)	14.20 lb (6.44 kg)
		Minimum (one hard drive and processor installed)	10.75 lb (4.87 kg)
	Power Specifications	For power specifications including Input Requirements, BTU Rating, and Power Supply Output, please see the HP BladeSystem c-Class Enclosures QuickSpecs located at URL: HP BladeSystem c3000 Enclosure QuickSpecs: http://h18000.www1.hp.com/products/quickspecs/12790_div/ 12790_div.html HP BladeSystem c7000 Enclosure QuickSpecs: http://h18000.www1.hp.com/products/quickspecs/12810_div/ 12810_div.html	
		To review typical system power ratings use the HP BladeSystem Power Sizer which is available via the online tool located at URL: http://www.hp.com/go/bladesystem/powercalculator	
	System Inlet Temperature	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed.
			System performance may be reduced if operating with a fan fault or above 30°C (86°F).
		Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
	Relative Humidity (non-condensing)	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
		Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
	Altitude	Operating	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
		Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Acoustic Noise	For acoustic noise specifications, please see the HP BladeSystem c-Class Enclosures QuickSpecs located at URL: HP BladeSystem c3000 Enclosure QuickSpecs: http://h18000.www1.hp.com/products/quickspecs/12790_div/ 12790_div.html HP BladeSystem c7000 Enclosure QuickSpecs:	

Technical Specifications

HP Smart Array P410i Controller	Disk Drive Interface	3Gb (6Gb Capable) SAS (Serial Attached SCSI)
		1.5Gb (3Gb Capable) SATA (Serial Advanced Technology Attachment)
	Server Interface	x4 PCI Express host interface
	Cache Memory	0 MB (none) standard
		Optional 256MB or 512MB Cache Memory
	Logical Drives Supported	2 (with standard 0MB cache)
	Maximum Logical Drive Capacity	32 (with optional 256MB cache)
		64 (with optional 512MB cache)
	Host Memory Addressing	64-bit, supporting servers memory space greater than 4 GB
	RAID Support	RAID 1(Mirroring)
		RAID 0 (Striping)
	Upgradeable Firmware	Controller: Upgradeable Firmware with Recovery ROM feature
		Online Drive Flash (with SAS drives) requires 256MB or 512MB module

Embedded NC532i Dual Port Flex-10 10GbE Multifunction Server Adapter	Type	Integrated dual-port KR 10GbE
	Network Processor	Broadcom 57711
	Data Transfer Method	x4 PCI Express Generation 2
	Network Transfer Rate	Two ports, each at 20 Gbps full duplex; 40 Gbps aggregate full duplex theoretical bandwidth
		NOTE: Each port is autosensing 1 Gb / 10 Gb, and can interoperate with 1 Gb HP BladeSystem c-Class interconnect components.
		NOTE: Each port on the NC532i adapter transmits from the server at only 20 Gbps (theoretical) full duplex.
	IEEE Compliance	802.1p, 802.1q, 802.3u, 802.3ad, 802.3ae, 802.3ap (10GBase-KX4), 802.3x and 802.3z

Environment-friendly Products and Approach	End-of-life Management and Recycling	Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: http://www.hp.com/go/green. To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.
		The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/green. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

Technical Specifications