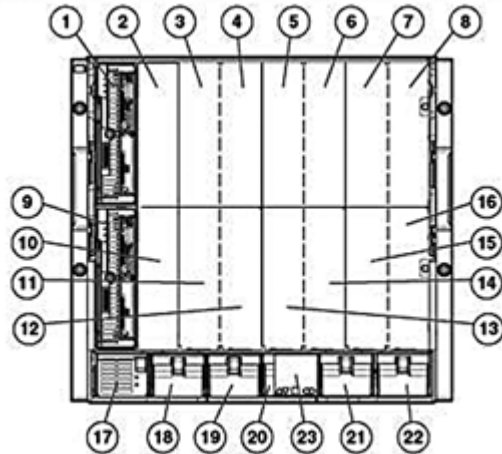
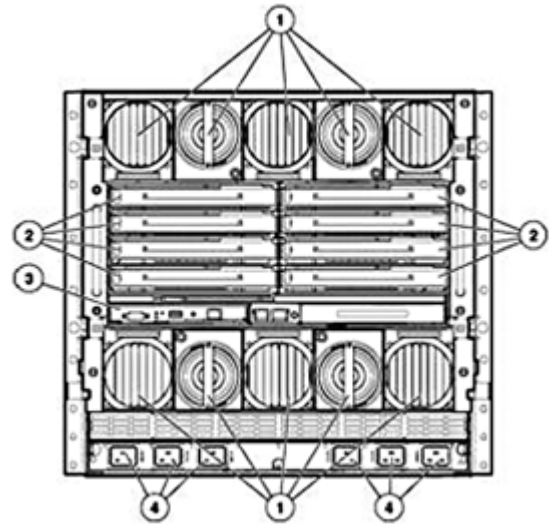


Overview



HP BladeSystem c7000 Enclosure - Front View

1. Device Bay 1
2. Device Bay 2
3. Device Bay 3
4. Device Bay 4
5. Device Bay 5
6. Device Bay 6
7. Device Bay 7
8. Device Bay 8
9. Device Bay 9
10. Device Bay 9
11. Device Bay 11
12. Device Bay 12
13. Device Bay 13
14. Device Bay 14
15. Device Bay 15
16. Device Bay 16
17. Power Supply Bay 1
18. Power Supply Bay 2
19. Power Supply Bay 3
20. Power Supply Bay 4
21. Power Supply Bay 5
22. Power Supply Bay 6
23. Insight Display



HP BladeSystem c7000 Enclosure - Rear View

1. Active Cool 200 Fans & fan bays
2. Interconnect Bays
3. Onboard Administrator
4. Power Inputs (single phase model shown)

Overview

What's New

- Support for HP StorageWorks D2D2504i Backup System

At A Glance

This document covers the HP BladeSystem c7000 Enclosure. For more information on HP ProLiant Server Blades and HP BladeSystem c-Class Interconnect Components please see the following QuickSpecs:

HP ProLiant c-Class Server Blades:

<http://h18000.www1.hp.com/products/quickspecs/division/12534.html>

HP BladeSystem c-Class Interconnect QuickSpecs:

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

HP BladeSystem c3000 Enclosure QuickSpecs:

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

HP BladeSystem solutions start with a BladeSystem c7000 Enclosure, optional c7000 hot-plug power supplies, HP Active Cool Fans, and an optional redundant Onboard Administrator module. Once the enclosure has been selected, the following components can be added: networking interconnect modules, HP ProLiant and Integrity Server Blades, and Insight Control management tools. Reference the QuickSpecs listed above.

- **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. 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.
 - Enclosure: Three-year parts and labor, on-site limited global warranty. Certain restrictions and exclusions apply
 - Enclosure options: Fans, Power Supplies, Onboard Administrator, 1 Year parts only or enclosure warranty
 - HP BladeSystem Interconnects: 1 Year parts and labor, on-site regardless of the warranty period for the system in which they are installed
 - HP Storage Fibre Channel switches have a maximum warranty period of one (1) year regardless of the warranty period for the system in which they are installed
 - SATA hard drives have a one year parts and labor on-site warranty regardless of the system in which they are installed
 - SAS Enterprise drives have a 3 year warranty regardless of the system in which they are installed.

For additional information please visit: <http://www.hp.com/go/bladeSystem>

HP BladeSystem c-Class Overview

HP BladeSystem c-Class c7000 Enclosure

A BladeSystem c7000 enclosure holds up to 16 server and/or storage blades plus redundant network and storage switches. It includes a shared, multi-terabit high-speed mid-plane for wire-once connectivity of server blades to network and shared storage. Power is delivered through a pooled power backplane that ensures the full capacity of the redundant hot-plug power supplies is available to all blades.

Each c7000 enclosure is built with the following functions:

- Up to 16 half-height and/or up to 8 full-height server blades and/or storage blades per enclosure.
- Up to 4 different interconnect fabrics (Ethernet, FC, IB, iSCSI, SAS, etc.) supported simultaneously within the enclosure.
- Choice of a single-phase, three-phase or a -48V DC power subsystem for flexibility in connecting to datacenter power.
- HP Thermal Logic technology for lower power consumption and airflow.
- Four (4) or Ten (10) Active Cool 200 fans as standard. For redundancy and improved power consumption and acoustics; additional Active Cool 200 Fan kits can be added for a maximum of 10 fans.
- Redundant hot-plug cooling, redundant hot-plug power supplies, redundant connections, redundant interconnect modules, optional redundant Onboard Administrator management modules.
- Lowest cost of ownership.
- Full AC redundancy - with no power zones.

An Onboard Administrator management module is built in to the enclosure with the following functions:

- Robust, multiple enclosure setup and control.
- Reports asset and inventory information for the devices in the enclosure.
- Reports thermal and power information, including real-time actual power usage per server and per enclosure.
- Front-mounted Insight Display for easy management within the datacenter.
- Integrated access to all server blade iLOs from a single cable.
- Provides integrated access to interconnect bay device management ports from the single Onboard Administrator cable.
- Single sign-on capability for all devices in the enclosure
- Role-based security locally and/or with LDAP directory services.
- Provides a wizard-based initial setup process for easy configuration.

A BladeSystem c7000 enclosure provides the following benefits:

- With local and remote hardware management integrated across the solution, one full enclosure can be managed as easily as one server.
- Scalable: Management and network interconnects extend scalability beyond a single enclosure, allowing resources to be pooled and shared across multiple enclosures.
- Investment protection: Accommodates multiple server and network designs in one enclosure.
- Lower costs per server, in comparison to rack-mounted servers
- Lower power consumption, in comparison to rack-mounted servers.
- Lower airflow requirements, in comparison to rack-mounted servers

HP BladeSystem c-Class Overview

HP c3000 Enclosure For customers that need a smaller system the c3000 is the perfect solution. Supporting up to 8 blades and 4 interconnects the c3000 enclosure provides an ideal solution for Small and Medium businesses and remote sites for more information refer to the c3000 QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12790_div/12790_div.html

HP ProLiant & Integrity Server Blades Delivering best-in-class performance, choice and reliability on AMD Opteron™, Intel® Xeon® and Intel® Itanium 2® processors for Windows, Linux, Solaris, or HP-UX based servers; the HP portfolio of server blades supports a variety of application requirements for scale-out architectures. HP offers one-, two-, and four-processor server blades, with the widest range of performance, and form factors. For more information please see: <http://h18000.www1.hp.com/products/quickspecs/division/12534.html>

HP SB40c Storage Blade The StorageWorks SB40c is a half-height c-Class storage blade featuring support for up to six hot-plug Small Form Factor (SFF) Serial Attached SCSI (SAS) or Serial ATA (SATA) hard disk drives. The SB40c connects directly to the adjacent server blade to provide up to 1.8TB additional storage capacity to that blade. For maximum fault tolerance the SB40c uses supports hardware RAID 0, 1, 1+0, 5, and 6 (ADG), using the onboard Smart Array P400 with up to 256MB of battery-backed write cache. For more information please see: http://h18000.www1.hp.com/products/quickspecs/12587_div/12587_div.html

HP StorageWorks Tape Blades The HP StorageWorks SB920c Tape Blade is an LTO-3 Ultrium tape blade that provides up to 800GB of capacity on a single data cartridge (2:1 compression) and performance up to 432GB/hr (2:1 compression). The Ultrium 448c Tape Blade is an LTO-2 Ultrium tape blade that provides up to 400GB of capacity on a single data cartridge (2:1 compression) and performance up to 173GB/hr (2:1 compression). Both tape blades are ideal for HP BladeSystem c-Class customers who need a data protection solution but are not connected into a Storage Area Network (SAN). They provide direct attach data protection for the adjacent server and network backup protection for all other data within the enclosure. The HP StorageWorks tape blades are the industry's first bladed tape drives and are developed exclusively for the BladeSystem c-Class enclosures. For more information, please visit: http://h18000.www1.hp.com/products/quickspecs/12729_div/12729_div.html

Dynamic Power Capping HP Dynamic Power Capping is the industry's first and only power capping solution that lets you reclaim trapped power and cooling capacity without putting electrical infrastructure or server performance at risk. The enclosure Dynamic Power Cap will be shared amongst all of the installed devices and individual server caps will be changed to match the server load. This will optimize the performance of the servers while ensuring that the enclosure stays below the cap value.

HP BladeSystem c-Class Overview

Rack Airflow Requirements

Rack 10000 series cabinets

The increasing power of new high-performance processor technology requires increased cooling efficiency for rack-mounted servers. The 10000 Series Racks provide enhanced airflow for maximum cooling, allowing these racks to be fully loaded with servers using the latest processors.

NOTE: For operation with the DC Input Module the 1000 Series Rack Extension is required to allow DC Power Cabling to be installed.

CAUTION: If a third-party rack is used, observe the following additional requirements to ensure adequate airflow and to prevent damage to the equipment:

- Front and rear doors: If your 42U server rack includes closing front and rear doors, you must allow 830 square inches (5,350 sq cm) of hole evenly distributed from top to bottom to permit adequate airflow (equivalent to the required 64 percent open area for ventilation).
- The clearance from face of rack to inside of the front door needs to be 1.75" minimum.
- Side: The clearance between the installed rack component and the side panels of the rack must be a minimum of 2.75 inches (7 cm).
- Depth: Minimum 39.4 inches (1000mm) for AC power, 47 inches (1200mm) for DC Power Input
- Adjustable rack rails are shipped with each enclosure:
 - Minimum rail length: 25 inches (635mm)
 - Maximum rail length: 34 inches (864mm)

CAUTION: Always use blanking panels to fill all remaining empty front panel U-spaces in the rack. This arrangement ensures proper airflow. Using a rack without blanking panels results in improper cooling that can lead to thermal damage.

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 & Integrity 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 for your specific server model please contact your sales representative or go to: <http://www.hp.com/go/factory-express>

Insight Control suites

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, vulnerability scanning and patch management and virtual machine management.

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

- HP Systems Insight Manager (SIM)
- HP iLO Advanced for BladeSystem or iLO Advanced
- **NOTE:** When ICE is purchased as standalone software
- HP Insight Power Manager software (IPM)
-
-
- DA - 12810 Worldwide QuickSpecs — Version 14 — 7/3/2009

HP BladeSystem c-Class Overview

- HP Insight Rapid Deployment software (RDP)
- HP Insight Performance Manager module (PMP)
- HP Insight Vulnerability and Patch Manager module (VPM)
- HP Insight Virtual Machine Manager software (VMM)

NOTE: As of January 26, 2009, HP Insight Control Environment for BladeSystem is being combined into HP Insight Control suite.

- ICE standalone license covers iLO Advanced Pack, 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 tools included on the Insight Software media kit can be installed manually.

- HP Insight Server Migration software for ProLiant
NOTE: HP Insight Server Migration software for ProLiant is licensed separately from the Insight Control 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: 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 c-Class c7000 Enclosure QuickSpecs:

http://h18004.www1.hp.com/products/quickspecs/12810_div/12810_div.html

HP BladeSystem c-Class c3000 Enclosure QuickSpecs:

http://h18004.www1.hp.com/products/quickspecs/12790_div/12790_div.html

NOTE: For additional product and licensing information about Insight Control suite, HP Systems Insight Manager and other Insight Software titles refer to:

<http://www.hp.com/servers/insightcontrol>.

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 which include iLO Advanced, Insight Power Manager and System Insight Manager.

HP Insight Control suite 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

HP Insight Control suites and most HP Insight Software titles 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. For more information about this service, please visit:

HP BladeSystem c-Class Overview

<http://www.hp.com/services/insight>. HP Insight Rapid Deployment software, HP Insight Power Manager software, HP Insight Virtual Machine Manager software, HP Insight Performance Manager module, HP Insight Vulnerability and Patch Manager module, HP Insight Server Migration software for ProLiant, HP Insight Server Migration software for ProLiant, HP Insight Server Migration software for ProLiant

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 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)
- 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 HP ProLiant Onboard Administrator with iLO Advanced for BladeSystem.

Server Management Stand Alone 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: www.hp.com/go/insight
HP Insight Rapid Deployment software	HP Insight Rapid Deployment software (RDP) extends HP Systems Insight Manager with a complete deployment solution for HP ProLiant 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 .
HP Insight Server Migration software for ProLiant	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



HP BladeSystem c-Class Overview

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>.

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.

NOTE: For more information, visit: <http://www.hp.com/go/insightdynamics>

Virtual Connect Enterprise Manager

Simplifies the management of BladeSystem environments that use Virtual Connect to control LAN and SAN connectivity, helping organizations increase productivity, respond more quickly to business demands, and significantly reduce operating costs.

HP Insight Virtual Machine Manager 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.

LO Advanced for BladeSystem

Unlocks the full capabilities of the HP 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).

HP Insight Power Manager software (IPM)

Upgrades the single-server remote management capabilities of iLO Select/Advanced 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.

NOTE: Flexible and volume quantity license kits are available for Insight Software titles. Refer to: <http://www.hp.com/go/insightcontrol> or the various Insight Software product QuickSpecs for more information.

HP BladeSystem c-Class Overview

Core Infrastructure Management

HP ProLiant Essentials Foundation Pack

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 lifecycle. 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 7.60

<http://www.hp.com/servers/smartstart>

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 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 (RDP), SmartStart or downloaded from software and drivers download pages website at: <http://www.hp.com/go/support>.

HP BladeSystem c-Class Overview

HP Software Support HP Insight Control suite for Linux will include one year of 24 x 7 HP Software Technical Support and Update Service. This service provides access to HP technical resources for help in resolving software implementation or operations problems. The service also provides access to software updates and reference manuals either in electronic form or on physical media as they are made available from HP.

With this service, HP Insight Control suite and Insight Control suite for Linux customers will benefit from expedited problem resolution and proactive notification and delivery of software updates.

To activate your HP Software Technical Support and Update Service for HP Insight Control suite and Insight Control suite for Linux, you must register your software purchase through the HP website at: <http://www.hp.com/services/insight>.

Failure to register your service will jeopardize service fulfillment.

Your Service Agreement Identifier (SAID) will be delivered to you after registration. After you have received your SAID, you can go to the software update manager (SUM) web page to view your contract online and elect electronic delivery (in addition to standard media-based updates). For more information about this service, see: <http://www.hp.com/services/insight>.

HP Enterprise Configurator

The HP eConfigure 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.

HP BladeSystem Power Sizer The HP BladeSystem Power Sizer helps in sizing the power infrastructure needed for a HP BladeSystem solution. This sizer enables effective planning for the power consumption and heat load of the BladeSystem at its site.

The sizer enables you to:

- Select the type and number of components within each Blade Server and Blade Enclosure.
- View the effect of component changes on the power consumption and heat loading.
- Review server loading and determine power supply and power subsystem requirements.
- Approximate electrical and heat load for facilities planning purposes.

The sizing estimate is based on component level power measurements for a system operating at very high enterprise application loads..

Values obtained from the BladeSystem Power Sizer are estimates for planning purposes only. Actual measured power consumption can be significantly lower or higher than the Power Sizer estimates. Actual power consumption varies with application type, application utilization, and ambient temperature.

The p-class BladeSystem and the c-Class BladeSystem solutions are supported in the BladeSystem Power Sizer.

Available at: www.hp.com/go/bladeSystem/powercalculator

HP BladeSystem c-Class Overview

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.

HP Care Pack services for the c7000 and c3000 enclosures cover the enclosure, power supplies and fans. HP qualified rack options are covered by these services when installed within the same rack. HP supported c-Class enclosure devices including pass thru, Ethernet interconnect and virtual connect modules are also covered by the c7000 and c3000 enclosure Care Pack services.

NOTE: SAN/Fabric switches for the HP c-Class BladeSystem are not covered under the c7000 enclosure Care Packs, SAN/Fabric switches carry separate Care Packs. SAN/Fabric Switch Care Pack service level support should always be uplifted to match existing storage or server service level.

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/bladessystemservices>

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

Configuration Information Factory Integrated Models

For a complete configuration of the HP BladeSystem, please do the following:

Step 1: Select desired model, configuration and quantity of HP ProLiant server and Storage blades

NOTE: For server blade information, please visit:

<http://h18000.www1.hp.com/products/quickspecs/division/12534.html>

NOTE: For Storage Blade information, please visit:

http://h18000.www1.hp.com/products/quickspecs/12587_div/12587_div.html

Step 2: Determine quantity of HP BladeSystem c-Class Enclosures to purchase and choose Required Options (One of the following from each list unless otherwise noted):

NOTE: Each HP BladeSystem c-Class Server Blade Enclosure holds up to 16 half-height blades. Server blanks will be shipped in all empty bays.

Base Server Blade Enclosure Configuration

HP BladeSystem BLc7000 c-Class Server Blade Enclosures	HP BLc7000 CTO Enclosure HP BLc7000 BCS CTO c-Class Enclosure NOTE: CTO models include 1x Onboard Administrator with KVM, 4x Active Cool 200 Fans and 0x power supplies. NOTE: All c-Class enclosures support HP ProLiant, Integrity and StorageWorks blades in either mixed or homogenous configurations. The AD361C enclosure is suggested for configurations primarily used with Integrity blades.	507019-B21 AD361C
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Required Options (one of the following from each category unless otherwise noted)

c-Class Power Modules (1 per enclosure)	HP BLc7000 Single Phase Power Module, FIO HP BLc7000 Three Phase Power Module, FIO, INT'L HP BLc7000 Three Phase Power Module, FIO, NA/JPN HP BLc7000 -48V DC Power Input Module	413379-B21 413381-B21 413380-B21 AH331A
c-Class Power Supply (Up to 6)	6x HP 2400W High Efficiency Hot-Plug Power Supply Bundle, FIO NOTE: The bundle includes a quantity of 6 HP 2400W High Efficiency PSU so a full enclosure can be configured with a single part number. HP 2400W High Efficiency Hot-Plug Power Supply (Single PSU supplied with 2m/6ft IEC C20 - C19 jumper cord) HP c7000 Enclosure 2250W Hot-Plug Power Supply Option Kit (single PSU supplied with 2m/6ft IEC C20 - C19 jumper cord) HP c7000 Enclosure 2250W Hot-Plug -48V DC Power Supply (single PSU) NOTE: Only compatible with -48V DC Power Input Module. NOTE: Mixing of power supplies in the same enclosure is not supported. All power supplies must be of the same type. All HP 2400W HE, all HP2250W or all -48V DC. NOTE: If Three Phase Power Module selected, a minimum of 3 Power Supply Option Kits are needed. For full redundancy 6 Power Supply Option Kits are required.	517521-B21 499243-B21 412138-B21 AH332A
c-Class Active Cool	6x HP Active Cool 200 Fan Bundle, FIO	517520-B21



Configuration Information Factory Integrated Models

Fan (Up to 6)	<p>NOTE: The bundle includes a quantity of 6 HP Active Cool 200 Fans so a full enclosure can be configured with a single part number.</p> <p>HP Active Cool 200 Fan Option Kit (single fan) 412140-B21</p> <p>NOTE: A minimum of 4 Active Cool 200 Fans is required, 8 Active Cool 200 Fans can support a full blade enclosure, 10 Active Cool 200 Fans should be ordered for reduced power consumption and noise reduction.</p> <p>NOTE: Single-Phase models may require additional power supplies. Fans should be added to provide redundancy, reduce power consumption and reduce noise.</p> <p>NOTE: Three-Phase models require a minimum of 6 Active Cool 200 Fans.</p> <p>NOTE: Some Blade configurations require 10 fans.</p>
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Step 3: Select optional software bundle (if nothing is selected system will ship with 16 ICE and ICE-LX Trial Licenses):

Enclosure Options	HP BLc7000 Insight Control suite for Linux 16 License, including 1 year of 24x7 Technical Support and Updates, FIO 464432-B22
	HP c-Class Insight Control suite for BladeSystem 16 License, including 1 year of 24x7 Technical Support and Updates, FIO 417688-B23
	HP c-Class Insight Control suite for BladeSystem 8 License, including 1 year of 24x7 Technical Support and Updates, FIO 439034-B23

Step 4: Select optional Redundant Onboard Administrator Capability

HP c7000 Onboard Administrator with KVM Option	456204-B21
HP c7000 Redundant Onboard Administrator Option	412142-B21

NOTE: New models of the c7000 enclosure (part numbers starting with 507) come with an Onboard Administrator with KVM as standard. All c7000 enclosures support both models of Onboard Administrator. Mixing new and old OA modules in the same enclosure is supported as long as the firmware revisions are matched.

Step 5: Select an interconnect kit

A pair of interconnects must be ordered if redundancy is required. For additional information on Interconnect Options, please visit:

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

HP BladeSystem c-Class Network Interconnects	HP Virtual Connect Flex-10 10Gb Ethernet Module for the c-Class BladeSystem 455880-B21
	HP 1/10Gb-F Virtual Connect Ethernet Module 447047-B21
	HP 1/10Gb Virtual Connect Ethernet Module 399593-B22
	Ethernet Pass-Through Module for HP BladeSystem 406740-B21
	Cisco Catalyst Blade Switch 3120X for HP 451439-B21
	Cisco Catalyst Blade Switch 3120G for HP 451438-B21
	Cisco Catalyst Blade Switch 3020 for HP c-Class BladeSystem 410916-B21
	GbE2c Ethernet Blade Switch for HP c-Class BladeSystem 410917-B21
	HP 1:10 Gb Ethernet BL-c Switch 438031-B21



Configuration Information Factory Integrated Models

	HP 1:10 GbE BLc Advanced Functionality Software	485193-B21
	NOTE: Provides additional feature functionality such as Hot Links, PVLAN Edge and IGMPv3 Snooping. Purchase of this SW entitles users to three years of additional software upgrades as made available. This option may be purchased at any time.	
	HP 10Gb Ethernet BL-c Switch	445860-B21
	NOTE: The purchase the HP 10Gb Ethernet BL0c Switch, also requires the purchase of one (1) HP NC512m Dual Port 10GbE Multifunction BL-c Adapter (P/N 440910-B21) per server blade that requires 10Gbit support.	
	HP 10GbE BLc Advanced Functionality Software	485194-B21
	NOTE: Provides additional feature functionality such as Hot Links, PVLAN Edge and IGMPv3 Snooping. Purchase of this SW entitles users to three years of additional software upgrades as made available. This option may be purchased at any time.	
	NOTE: The HP BladeSystem c-Class Network Interconnects ship as single units. The above interconnects must be ordered in quantities of two for redundancy support.	
HP BladeSystem c-Class SAN Interconnects	HP Virtual Connect 8Gb 24-Port Fibre Channel Module for c-Class BladeSystem	466482-B21
	HP 4Gb Virtual Connect Fibre Channel Module for c-Class BladeSystem	409513-B21
	16 port FC Pass-thru Module for c-Class BladeSystem	403626-B21
	Brocade 8/12c SAN Switch for HP BladeSystem c-Class, Full Fabric	AJ820A
	Brocade 8/24c SAN Switch for HP BladeSystem c-Class, Full Fabric	AJ821A
	Brocade 8/24c SAN Switch Power Pack for HP BladeSystem c-Class, Full Fabric	AJ822A
	Brocade 8/12c SAN Switch 12-port Upgrade LTU	T5517A
	HP Brocade 4/12 SAN Switch	AE370A
	HP Brocade 4/24 SAN Switch Power Pack	AE371A
	HP Brocade 4/24 SAN Switch	AE372A
	HP Brocade 4/12 SAN Switch Upgrade LTU	AE373A
	Cisco MDS 9124e 12-port Fabric Switch	AG641A
	Cisco MDS 9124e 24-port Fabric Switch	AG642A
	Cisco MDS 9124e 12-port Upgrade LTU	T5169A
HP StorageWorks SAS Switch	HP StorageWorks 3Gb SAS BL Switch (CTO Only)	AJ864A
HP BladeSystem InfiniBand Interconnects	HP BLc 4X QDR IB Switch for HP BladeSystem c-Class	489184-B21
	HP 4X DDR IB Switch Module for HP c-Class BladeSystem	410398-B21
	HP 4X QDR IB Switch Module for HP c-Class BladeSystem	489184-B21
	NOTE: Quad Data Rate (QDR) InfiniBand Switch Modules are only supported in the RoHS 6 of 6 compliant enclosures (part numbers starting with 507) and G6 Blades. Dual Data Rate (DDR) InfiniBand devices are supported in all Blades and enclosures.	

Step 6: Select rack power distribution for single-phase models

NOTE: A pair of PDUs must be ordered for AC Feed redundancy.

Configuration Information Factory Integrated Models

HP Monitored Power Distribution Unit	HP 17.3 kVA S348 Monitored PDU- single input, 3Ø, 48A (NA/JPN)	AF916A
	HP 14.4 kVA S340 Monitored PDU - single input 3Ø, 40A (NA/JPN)	AF536A
	HP 22 kVA S332 Monitored PDU- single input, 3-phase, 32A (INTL)	AF917A
HP Modular Power Distribution Units	HP 17.3 kVA Modular PDU, 48A 3Ø, Core Only (NA/JPN)	AF511A
	HP 14.4 kVA Modular PDU, 40A 3Ø, Core Only (NA/JPN)	AF519A
	HP 22 kVA Modular PDU, 32A 3Ø, Core Only (Intl)	AF518A
	HP 8.6 kVA Modular PDU 24A 3Ø Core Only (NA/JPN)	AF512A
	HP 11 kVA Modular PDU 16A 3Ø Core Only (Intl)	AF513A
	HP 8,3k VA Modular PDU 40 Amp Core Only (NA/JPN)	252663-D75
	HP 9.2kVA Modular PDU 40 Amp Core Only (Intl)	252663-B34
	HP7.3kVA Modular PDU 32 Amp Core Only (Intl)	252663-B33
	HP 4.9kVA Modular PDU 24 Amp Core Only (NA/JPN)	252663-D74
	NOTE: The Core Only Modular Power Distribution Unit Kits excludes the extension bars as they are not required with the HP BladeSystem	
HP Two C-13 PDU Extension Bars	AF500A	
NOTE: Each extension bar has a C19 input and 7 C13 receptacles. The option is ideal for model S348, and, model S332, which both have only C19 outlets (12) and for all Core Only Modular PDUs.		

Step 7: Select optional Power Cords for Single Phase Model (country specific power cords are listed under options)

NOTE: Default power cord is a 6ft IEC C19 - C20 cord

PDU cords (HP C19 to C20)	HP 16A IEC320-C19 to C20 1.2m/4ft PDU cord, Grey	AF575A
	HP 16A IEC320-C19 to C20 2m /6ft PDU cord, Grey	AF574A
	HP 16A IEC320-C19 to C20 2.5m/8ft PDU cord, Black	295633-B22
	HP 16A IEC320-C19 to C20 4.5m/15ft PDU cord, Black	E7804A

Related Options

HP BladeSystem c-Class Server Blade Enclosures	HP BladeSystem c7000 Enclosure, Single-Phase with 6 Power Supplies, 10 Fans with 16 Insight Control Environment Licenses	507015-B21
	HP BladeSystem c7000 Enclosure, Three-Phase North America/Japan with 6 Power Supplies, 10 Fans with 16 Insight Control Environment Licenses	507017-B21
	HP BladeSystem c7000 Enclosure, Three-Phase International with 6 Power Supplies, 10 Fans with 16 Insight Control Environment Licenses	507016-B21
	HP BladeSystem c7000 Enclosure, Single-Phase with 2 Power Supplies, 4 Fans with 8 Insight Control Environment 30 Day Trial Licenses	507014-B21
	<p>NOTE: All c7000 BTO enclosures will ship with 15 server blanks. CTO enclosures will ship with the required number of server blanks.</p> <p>NOTE: New models of the c7000 enclosure (part numbers 5070xx-B21) come as standard with the HP 2400W HE PSU and Onboard Administrator with KVM.</p>	
c7000 Enclosure Options	HP c7000 Onboard Administrator with KVM	456204-B21
	HP c7000 Redundant Onboard Administrator Option	412142-B21
	<p>NOTE: New models of the c7000 enclosure (part numbers starting with "507") come with an Onboard Administrator with KVM as standard. All c7000 enclosures support both models of Onboard Administrator. Mixing new and old OA modules in the same enclosure is supported as long as the firmware revisions are matched.</p>	
	HP c7000 Enclosure 10K Rack Ship Bracket Option Kit	433718-B21
	<p>NOTE: The shipping bracket is required when shipping a c7000 enclosure when installed in a rack. It is not required for normal operation.</p>	
	HP BladeSystem Replacement Enclosure Miscellaneous Blanks kit (contains 1 each of Power Supply Blank, Interconnect Module Blank, Onboard Administrator Blank, Active Cool Fan Blank)	412148-B21
c7000 Power Options	HP c-Class Server Blank and Coupler Option Kit (contains 1 x half-height server blank with coupler)	412150-B21
	<p>NOTE: The coupler allows half-height server blanks to be coupled together to create a full-height server blank.</p> <p>NOTE: This kit should only be ordered to replace lost or damaged blanks.</p>	
	HP 2400W High Efficiency Hot-Plug Power Supply (supplied with 2m/6ft IEC C20 - C19 jumper cord)	499243-B21
	HP c7000 Enclosure 2250W Hot-Plug Power Supply Option Kit (supplied with 2m/6ft IEC C20 - C19 jumper cord)	412138-B21
	HP c7000 Enclosure 2250W Hot-Plug -48V DC Power Supply	AH332A
	HP BLc7000 -48V DC Power Input Module	AH331A
<p>NOTE: Mixing of power supplies in the same enclosure is not supported. All power supplies must be of the same type, all HP 2400W HE, all HP2250W or all -48V DC</p>		
c-Class Active Cool Fan	HP Active Cool 200 Fan Option Kit	412140-B21
<p>NOTE: A minimum 4 Active Cool 200 Fans is required, 8 Active Cool 200 Fans can support a full blade enclosure, 10 Active Cool 200 Fans should be ordered for reduced power consumption and noise reduction. Some Blade configurations require 10 fans.</p>		
HP BladeSystem	HP Virtual Connect Flex-10 10Gb Ethernet Module for the c-Class BladeSystem	455880-B21



Related Options

c-Class Network Interconnects

HP 1/10Gb-F Virtual Connect Ethernet Module	447047-B21
HP 1Gb Virtual Connect Ethernet Module for c-Class BladeSystem	399593-B22
Ethernet Pass-Through Module for HP BladeSystem	406740-B21
Cisco Catalyst Blade Switch 3120X for HP	451439-B21
Cisco Catalyst Blade Switch 3120G for HP	451438-B21
Cisco Catalyst Blade Switch 3020 for HP c-Class BladeSystem	410916-B21
HP GbE2c Ethernet Blade Switch for HP c-Class BladeSystem	410917-B21
HP GbE2c Layer 2/3 Ethernet Blade Switch	438030-B21
HP GbE2c Layer 2/3 Ethernet Blade Switch Advanced Functionality Software NOTE: Provides additional feature functionality such as Hot Links, PVLAN Edge and IGMPv3 Snooping. Purchase of this SW entitles users to three years of additional software upgrades as made available. This option may be purchased at any time.	485192-B21
Cisco 10GBASE-CX4 X2 Module	459005-B21
Cisco 10GBASE-SR X2 Module	459006-B21
Cisco 10GBASE-LX4 X2 Module	459007-B21
HP 10Gb SR XFP Module	443756-B21
HP 10Gb LR XFP Module	443757-B21
HP 1:10 Gb Ethernet BL-c Switch	438031-B21
HP 1:10 GbE BLc Advanced Functionality Software NOTE: Provides additional feature functionality such as Hot Links, PVLAN Edge and IGMPv3 Snooping. Purchase of this SW entitles users to three years of additional software upgrades as made available. This option may be purchased at any time.	485193-B21
HP BladeSystem c-Class Virtual Connect 1Gb SX SFP Option Kit	453151-B21
HP BladeSystem c-Class Virtual Connect 1Gb RJ-45 SFP Option Kit	453154-B21
HP 10Gb Ethernet BL-c Switch NOTE: The purchase the HP 10Gb Ethernet BL0c Switch, also requires the purchase of one (1) HP NC512m Dual Port 10GbE Multifunction BL-c Adapter (P/N 440910-B21) per blade that requires 10Gbit support.	445860-B21
HP 10GbE BLc Advanced Functionality Software NOTE: Provides additional feature functionality such as Hot Links, PVLAN Edge and IGMPv3 Snooping. Purchase of this SW entitles users to three years of additional software upgrades as made available. This option may be purchased at any time. NOTE: The HP BladeSystem c-Class Network Interconnects ship as single units. The above interconnects must be ordered in quantities of two for redundancy support.	485194-B21

HP BladeSystem c-Class SAN Interconnects

HP Virtual Connect 8Gb 24-Port Fibre Channel Module for c-Class BladeSystem	466482-B21
HP Virtual Connect 4Gb Fibre Channel Module for c-Class BladeSystem	409513-B22
HP 4Gb Virtual Connect Fibre Channel Module for c-Class BladeSystem	409513-B21
16 port FC Pass-thru Module for c-Class BladeSystem	403626-B21
Brocade 8/12c SAN Switch for HP BladeSystem c-Class, Full Fabric	AJ820A
Brocade 8/24c SAN Switch for HP BladeSystem c-Class, Full Fabric	AJ821A
Brocade 8/24c SAN Switch Power Pack for HP BladeSystem c-Class, Full Fabric	AJ822A

Related Options

	Brocade 8/12c SAN Switch 12-port Upgrade LTU	T5517A
	HP Brocade 4/12 SAN Switch	AE370A
	HP Brocade 4/24 SAN Switch Power Pack	AE371A
	HP Brocade 4/24 SAN Switch	AE372A
	HP Brocade 4/12 SAN Switch Upgrade LTU	AE373A
	Cisco MDS 9124e 12-port Fabric Switch	AG641A
	Cisco MDS 9124e 24-port Fabric Switch	AG642A
	Cisco MDS 9124e 12-port Upgrade LTU	T5169A
HP StorageWorks SAS Switch	HP StorageWorks 3Gb SAS BL Switch - dual pack	AJ865A
HP BladeSystem InfiniBand Interconnects	HP BLc 4X QDR IB Switch for HP BladeSystem c-Class	489184-B21
	HP 4X DDR IB Switch Module for HP c-Class BladeSystem	410398-B21
	HP 4X QDR IB Switch Module for HP c-Class BladeSystem	489184-B21
	NOTE: Quad Data Rate (QDR) InfiniBand Switch Modules are only supported in the RoHS 6 of 6 compliant enclosures and G6 Blades. Dual Data Rate (DDR) InfiniBand devices are supported in all Blades and enclosures.	

HP Insight Control suite for BladeSystem Management Suite	NOTE: Electronic licensing options are available for Insight Control suites software products. Please see the appropriate Insight Control QuickSpecs for additional information. www.hp.com/go/ice	
	Insight Control suite for HP BladeSystem	
	HP Insight Control suite, No Media, 1-Server License including 1 year of 24x7 Technical Support and Updates	452148-B22
	HP Insight Control Management Software Media Kit	436222-B21
	NOTE: Insight Control Management DVD media without licenses. Contains Insight Manager and Essentials software products and components licensed by Insight Control Management suites. Uses an integrated installer to perform quick and accurate software installation and updates.	
	NOTE: Contains 1 license for each of RDP, PMP, VPM, IPM and iLO Select. 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/12631_div/12631_div.html	
	HP Insight Control suite for Linux	
	HP Insight Control suite 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 suite for Linux, Media pack (DVD) - No licenses included HP Insight Control suite for Linux Media Only Kit	464422-B22
	NOTE: This optional Media pack DVD contains the ISO image for HP Insight Control suite for Linux, HP System Insight Manager, HP Insight Power Manager software, HP Insight Virtual Machine Manager software for ProLiant, and an integrated installer. Servers must be acquired separately.	

Related Options

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
Product**

Deploy

HP Insight Rapid Deployment software

HP Insight Rapid Deployment software (RDP) 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: 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 460750-B21

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.

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 suite for ProLiant with Insight Control suite, 1-server license including 1 year of 24x7 Technical Support and Updates 483527-B21

NOTE: This license supports HP ProLiant ML/DL and c-Class Blade servers. Customer will receive a printed license entitlement certificate via physical shipment.

HP Insight Dynamics-VSE suite for ProLiant with Insight Control suite, 16-server license including 1 year of 24x7 Technical Support and Updates, Factory Integrated Only (FIO) 483454-B21

NOTE: This license supports HP ProLiant c-Class blade servers.

NOTE: Must be purchased as an option to an HP BladeSystem enclosure. FIO can only be ordered as part of a factory-configured platform. Customer will receive a printed license entitlement certificate via physical shipment.

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

Related Options

HP Virtual Connect Enterprise Manager	<p>HP Virtual Connect Enterprise Manager for BL-c7000, No Media, 1-Enclosure License including 1 year of 24x7 Technical Support and Updates</p> <p>NOTE: This license allows 1 BL-c7000 enclosure to be managed with VCEM. Customer will receive a printed license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online or via fax to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.</p> <p>NOTE: For additional license kits, please visit: http://h18000.www1.hp.com/products/quickspecs/12860_div/12860_div.html</p>	459864-B21
HP c-Class Storage Blades	<p>HP StorageWorks SB40c storage blade</p> <p>HP PCI Express Mezzanine pass-thru card for HP BladeSystem</p> <p>NOTE: The mezzanine card is needed to support the SB40c storage blade (P/N 411243-B21) with HP c-Class BladeSystem full-height server blades.</p>	411243-B21 431643-B21
HP PCI Expansion Blades	<p>PCI Expansion Blade</p> <p>NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12753_div/12753_div.html</p> <p>HP PCI Express Mezzanine pass-thru card for HP BladeSystem</p> <p>NOTE: The mezzanine card is needed to support the SB40c storage blade (P/N 411243-B21) with HP c-Class BladeSystem full-height server blades.</p>	448018-B21 431643-B21
HP Ultrium Tape Blades	<p>HP Ultrium 448c Tape Blade</p> <p>HP StorageWorks SB920c Tape Blade</p> <p>NOTE: LTO-3 Ultrium technology</p> <p>HP StorageWorks SB920c Tape Blade</p> <p>HP PCI Express Mezzanine pass-thru card for HP BladeSystem</p> <p>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</p> <p>NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12729_div/12729_div.html</p>	440947-B21 AJ401A AJ401A 431643-B21

Related Options

HP StorageWorks All-in-One Storage Systems	<p>HP StorageWorks AiO SB600c Storage Blade - 1.16TB AG780A</p> <p>NOTE: Shared storage blade for server blades within the enclosure. The SB600c can be either NAS (file-based shared storage or iSCSI Shared Storage connected to server blades within the enclosure using an Ethernet switch in the enclosures interconnect bays.</p> <p>StorageWorks Storage Mirroring for AiO Edition 1 LTU T5321A</p> <p>NOTE: This optional software is for mirroring data between AiO Storage blades in different locations. This is host-based data replication software for disaster recovery and data protection.</p> <p>NOTE: Order 1 unit for each AiO SB600c Storage Blade.</p> <p>NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12786_div/12786_div.html</p>
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Power Cords

HP LV Power Cords100 - 120V AC

HP 15A 125V NEMA 5-15P/IEC320-C19 3.6m/12ft, NA	235603-001
HP 12A 125V NEMA 5-15P/ IEC320-C19 3.6m/12ft, JAPAN	391222-291
HP 18A 125V NEMA 5-20P 4.5m/15ft, NA	E7802A

HP C19 - C20 Jumper Cords

HP 16A IEC320-C19 to C20 1.2m/4ft, PDU cord, Flint Gray	AF575A
HP 16A IEC320-C19 to C20 2m/6ft, PDU cord, Flint Gray	AF574A
HP 16A IEC320--C19 to C20 2.5m/8ft PDU cord, Black	295633-B22
HP 16A IEC320-C19 to C20 4.5m/15ft, PDU cord, Black	E7804A

HP HV Power Cords 200 - 240V AC

HP 16A 250V L6-30P/IEC320-C19 4.5m/15ft, NA	E7805A
HP 16A 250V NEMA L 6-20P/IEC320-C19 3.6m/12ft, NA	AF593A
HP 16A 250V NBR 14136/ IEC320-C19 2.5m/8ft, Brazil	AF592A
HP 16A 250V IRAM 2073/IEC320-C19 2.5m/8ft, AR	AF578A
HP 13A 250V BS-1363/IEC320-C19 3.6m /12ft, UK/Sing/HK	359615-031
HP 16A 250V CEE7-VII/IEC320- C19 3.6m/12ft, EU	AF576A
HP 15A 250V AS3112-3/IEC320-C19 3.6m/12ft, AU/NZ	AF577A
HP 16A 250V SABS 164/IEC320-C-9 3.6m /12ft, S.AFRICA	AF579A
HP 16A 250V CEI23-50/IEC320-C19 3.6m /12ft, ITALY/CHILE	AF580A
HP 16A 250V IEC309/IEC320-C19 3.6m/12ft, Denmark/Switzerland	AF581A
HP 16A 250V IS 1293/IEC320-C19 2.5m /8ft, INDIA	AF582A
HP 16A 250V SI-32/IEC320-C19 2.5m/8ft, ISRAEL	AF583A
HP 16A 250V GB1002/IEC320-C19 2.5m/8 ft, CHINA	AF584A
HP 16A 250V CNS690/IEC320-C19 2.5m/8 ft, TAWAIN	AF585A
HP 16A 250V stripped end/IEC320-C19 4.5m /15ft, WW	E7806A

Related Options

HP Single-Phase UPS	HP R5500 VA 3U UPS, International	AF416A
	HP R5500 VA 3U UPS, NA/JPN	AF426A

NOTE: For more information on the R5500 please consult the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/11871_div/11871_div.html

HP 3-Phase UPS	HP R8000/3 Uninterruptible Power System 6U North America	AF431A
	HP R8000/3 Uninterruptible Power System 6U International	AF432A
	HP R12000/3 Uninterruptible Power System 6U North America	AF429A
	HP R12000/3 Uninterruptible Power System 6U International	AF430A

NOTE: For more information on the HP 3-Phase UPS products please consult the QuickSpecs at:
http://h18004.www1.hp.com/products/quickspecs/12857_div/12857_div.html

HP Rack 10000 G2 Series (Graphite Metallic)	10622 G2 (22U) Rack Cabinet Shock	AF022A
	10622 G2 (22U) Rack Cabinet Pallet	AF021A
	10642 G2 (42U) Rack Cabinet - Pallet	AF001A
	10642 G2 (42U) Rack Cabinet 1200mm Deep - Shock Pallet	AF034A
	10642 G2 (42U) Rack Cabinet 1200mm Deep - Pallet	AF038A
	10642 G2 (42U) Rack Cabinet - Shock Pallet	AF002A
	10642 G2 (42U) Rack Cabinet - Crated	AF003A
	10642 G2 (42U) Rack Shock Pallet- for field racking (NA only)	AF007A
	10636 G2 (36U) Rack Cabinet - Shock Pallet	AF011A
	10636 G2 (36U) Rack Cabinet - Crated	AF012A
	10636 G2 (36U) Rack Cabinet, with Extension - Shock Pallet	AF013A
	10636 G2 (36U) Rack Cabinet, without door - Shock Pallet	AF014A
	10647 G2 (47U) Rack Cabinet 1200mm Deep - Shock Pallet	AF044A
	10647 G2 (47U) Rack Cabinet 1200mm Deep - Pallet	AF045A
	10647 G2 (47U) Rack Cabinet - Pallet	AF031A
	10842 G2 (42U) Rack Cabinet Shock	AF042A
	10842 G2 (42U) Rack Cabinet Pallet	AF041A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:

http://h18000.www1.hp.com/products/quickspecs/12402_div/12402_div.html
 (Worldwide)

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

Related Options

HP Airflow Optimization

HP 10000 Series Rack Airflow Optimization Kit

AF090A

NOTE: The Airflow Optimization kit is designed to prevent hot and cold air from mixing thus optimizing the temperature at which the chilled air enters the racked servers.

NOTE: When configuring racks through Factory Express, a Rack Optimization kit will automatically ship with the rack. This kit is recommended for all other rack configurations also.

Tape Libraries

The following options are supported in an Enterprise Backup Solution (EBS) environment with the HP BladeSystem c-Class enclosure. Please visit: <http://www.hp.com/go/ebs> for complete compatibility details.

HP StorageWorks MSL2024 Tape Library

HP StorageWorks MSL2024 1 LTO-4 Ultrium 1840 SCSI Drive Library	AJ033A
HP StorageWorks MSL2024 1 LTO-4 Ultrium 1840 4GB FC Library	AJ034A
HP StorageWorks MSL2024 1 LTO-3 Ultrium 960 SCSI Drive Library	AG115A
HP StorageWorks MSL2024 1 LTO-3 Ultrium 960 4GB FC Library	AG326B
HP StorageWorks MSL2024 1 LTO-3 Ultrium 920 SCSI Drive Library	AH169A
HP StorageWorks MSL2024 2 LTO-3 Ultrium 920 SCSI Drive Library	AH170A
HP StorageWorks MSL2024 1 LTO-2 Ultrium 448 SCSI Drive Library	AG116A
HP StorageWorks MSL2024 2 LTO-2 Ultrium 448 SCSI Drive Library	AG117A

HP StorageWorks MSL4048 Tape Library

HP StorageWorks MSL4048 1 LTO-4 Ultrium 1840 SCSI Drive Library	AJ035A
HP StorageWorks MSL4048 2 LTO-4 Ultrium 1840 SCSI Drive Library	AJ037A
HP StorageWorks MSL4048 1 LTO-4 Ultrium 1840 4GB FC Library	AJ036A
HP StorageWorks MSL4048 2 LTO-4 Ultrium 1840 4GB FC Library	AJ038A
HP StorageWorks MSL4048 1 LTO-3 Ultrium 920 SCSI Tape Library	AH171A
HP StorageWorks MSL4048 2 LTO-3 Ultrium 920 SCSI Tape Library	AH172A
HP StorageWorks MSL4048 1 LTO-3 Ultrium 960 SCSI Drive Library	AG322A
HP StorageWorks MSL4048 1 LTO-3 Ultrium 960 4GB FC Library	AG324B
HP StorageWorks MSL4048 2 LTO-3 Ultrium 960 SCSI Drive Library	AG323A
HP StorageWorks MSL4048 2 LTO-3 Ultrium 960 4GB FC Library	AG325B

NOTE: Please see the QuickSpecs for Technical Specifications and additional information or to create a complete solution; reference current compatibility information at: <http://www.hp.com/go/ebs>.

HP StorageWorks Virtual Library Systems

HP StorageWorks 12000 Virtual Library System Gateway Base Library	AH814A
HP StorageWorks 9030 Virtual Library System	AG306A
HP StorageWorks 6218 Virtual Library System	AH809A
HP StorageWorks 6227 Virtual Library System	AH810A
HP StorageWorks 6636 Virtual Library System	AH811A
HP StorageWorks 6653 Virtual Library System	AH812A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information or to create a complete solution. Reference current compatibility information at: <http://www.hp.com/go/ebs>.



Related Options

Disk-Based Backup	HP D2D Backup Systems	
	HP StorageWorks D2D2504i Backup System	EJ002A
Rack Options for Rack 10000 G2 Series	HP 10642 G2 Front Door ALL	AF009A
	HP 10636 G2 Front Door ALL	AF019A
	10642 G2 (42U) Side Panels (set of two) (Graphite Metallic)	AF054A
	10636 G2 (36U) Side Panels (set of two) (Graphite Metallic)	AF056A
	10636 G2 Rear Extension Kit	AF060A
	600mm G2 Stabilizer Option Kit (Graphite)	AF062A
	600mm G2, Heavy Duty Stabilizer Option Kit (Graphite)	AF064A
	800mm G2, Heavy Duty Stabilizer Option Kit (Graphite)	AF068A
	NOTE: Supports 10000 G2 Series only.	
	HP 10000 G2 Rack Grounding Kit	AF074A
	600W 10K G2 Rack Tie Down	AF076A
	NOTE: For additional information regarding Rack Options, please see the following URL: http://www.hp.com/go/rackandpower .	
	Keyboards and Monitors	TFT7600 Rackmount Keyboard Monitor US
TFT7600 Rackmount Keyboard Monitor UK		AG053A
TFT7600 Rackmount Keyboard Monitor FR		AG055A
TFT7600 Rackmount Keyboard Monitor SP		AG057A
TFT7600 Rackmount Keyboard Monitor DEN		AG058A
TFT7600 Rackmount Keyboard Monitor NOR		AG059A
TFT7600 Rackmount Keyboard Monitor SWI		AG061A
TFT7600 Rackmount Keyboard Monitor BEL		AG063A
TFT7600 Rackmount Keyboard Monitor RUS		AG065A
TFT7600 Rackmount Keyboard Monitor INTL		AG066A
1U Rackmount Keyboard with USB, US		AG072A
1U Rackmount Keyboard with USB, UK		AG073A
1U Rackmount Keyboard with USB, GR		AG074A
1U Rackmount Keyboard with USB, FR		AG075A
1U Rackmount Keyboard with USB, ITL		AG076A
1U Rackmount Keyboard with USB, SP		AG077A
1U Rackmount Keyboard with USB, DEN		AG078A
1U Rackmount Keyboard with USB, NOR		AG079A
1U Rackmount Keyboard with USB, SE/FI		AG080A
1U Rackmount Keyboard with USB, SWI		AG081A
1U Rackmount Keyboard with USB, PORT		AG082A
1U Rackmount Keyboard with USB, BEL		AG083A
1U Rackmount Keyboard with USB, JPN2		AG084A

Related Options

1U Rackmount Keyboard with USB, RUS	AG085A
1U Rackmount Keyboard with USB, INTL	AG086A

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

HP KVM Switch Options

2x1x16 IP Console Switch with Virtual Media	AF601A
4x1x16 IP Console Switch with Virtual Media	AF602A
2x16 Server Console Switch with Virtual Media	AF600A
HP 1x8 Server Console Switch	336044-B21
HP 2x16 Server Console Switch	336045-B21
USB Interface Adapter - 1 pack	336047-B21
USB Virtual Media Interface Adapter	AF603A
Serial Interface adapter - 1 Pack with power supply	373035-B21

NOTE: VT100 terminal emulation.

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

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

HP Serial Console Server Options

HP 16 Port Serial Console Server (worldwide)	AF101A
HP 48 Port Serial Console Server (worldwide)	AF102A
Serial Adapter, RJ45-DB9 DCE Female, 1 Pack	AF103A
Serial Adapter, RJ45-DB9 DCE Female, 8 Pack	AF110A

NOTE: Cat5e cables are required to connect Serial Adapters to Serial Console Servers. Additional Serial Adapters and Cat5e cables can be found at the following URL: <http://www.hp.com/go/kvm>.

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

Service and Support Offerings

(HP Care Pack Services)

NOTE: 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 c-Class enclosure devices including pass thru, Ethernet interconnect and virtual connect modules are also covered by the c7000 enclosure Care Pack services.

NOTE: SAN/Fabric switches for the HP c-Class BladeSystem are not covered under the c7000 enclosure Care Packs, SAN/Fabric switches carry separate Care Packs. SAN/Fabric Switch Care Pack service level support should always be uplifted to match existing storage or server service level.

Hardware Services On-site Service

Next Business Day On-site Service, 5-Day x 9-Hour Coverage, 3 Years, Electronic	UE477E
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NOTE: Uplifts the Ethernet devices to the same level of service as the c-class enclosure



Related Options

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

Support Plus 24

Onsite HW support 24x7, 4hr response and Insight Control suite for Linux SW Updates, SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time including. HP holidays, Electronic	UK137E
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Onsite HW support 24x7, 4hr response and Insight Control suite for BladeSystem SW Updates, SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time including. HP holidays, Electronic	UH322E
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Onsite HW support 24x7, 4hr response and Insight Control Data Center Edition SW Updates, SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time including. HP holidays, Electronic	UH323E
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Installation & Start-up Services

HP BladeSystem c7000 Infrastructure Installation and Startup Service for Blade Hardware and Insight Control Software, Electronic	UE602E
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HP BladeSystem C7000 Enhanced Network Installation and Startup Service, Electronic	UE603E
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ProLiant BL c-Class Enclosure and Blade Hardware Installation, Electronic	UE494E
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ProLiant BL c-Class Blade Server Hardware Installation, Electronic	UE493E
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NOTE: For more information, customer/resellers can contact:

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

NOTE: The HP Care Pack service part numbers below covers the HP Brocade 4Gb, 12 Port SAN Switch and Brocade 4/24/ SAN Switch.

Hardware Services On-site Service

Next Business Day On-site Service, 5-Day x 9-Hour Coverage, 3 Years, Electronic	UE436E
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4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic	UE437E
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4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	UE438E
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6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	UE439E
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Hardware Installation, Electronic	U5988E
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NOTE: The HP Care Pack service part numbers below covers the Brocade 4/24 SAN Switch Power Pack.

Hardware Services On-site Service

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 excluding HP holidays, Electronic	UE728E
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Support Plus 24

Onsite HW support 24x7, 4hr response and SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time including HP holidays, Electronic	UE729E
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NOTE: The HP Care Pack service part numbers below covers the HP Cisco MDS 9124e 12 port and 24 port Fabric Switch.

Hardware Services On-site Service



Related Options

Next Business Day On-site Service, 5-Day x 9-Hour Coverage, 3 Years, Electronic	UF313E
4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic	UF972E
4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	UF973E
6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	UF974E
Hardware Installation, Electronic	U5988E
Software Installation and StartUp Services	
Provides for the Installation and Start-up of HP Insight Rapid Deployment software, 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 HP Insight Rapid Deployment software Implementation of HP Insight Rapid Deployment software (Basic) (Electronic)	UA042E
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
Provides for the Installation and Startup of Insight Control suite for Linux	UF372E
Provides for the Installation and Startup of HP Insight Virtual Machine Manager software for ProLiant & HP Insight Server Migration software for ProLiant	UD546E
Software Operating Environment Care Packs	
1 Year Microsoft operating environment software support 24x7 - 10 incidents	U9269E
1 Year Red Hat operating system software support 24x7 - 10 incidents	U3408E
1 Year SuSE operating system software support 24x7 - 10 incidents	U9936E
NOTE: For more information, customer/resellers can contact: http://www.hp.com/hps/carepack/services/	
BCS Flexible Care Packs Integrity blade server enclosure	
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 c-Class enclosure devices including pass thru, Ethernet interconnect and virtual connect modules are also covered by the c7000 enclosure Care Pack services.	
NOTE: SAN/Fabric switches for the HP c-Class BladeSystem are not covered under the c7000 enclosure Care Packs, SAN/Fabric switches carry separate Care Packs. SAN/Fabric Switch Care Pack service level support should always be uplifted to match existing storage or server service level.	
Hardware Services On-site Service	
Next Business Day On-site Service, 5-Day x 9-Hour Coverage, 3 Years, Electronic	HA101A3#6Q6
NOTE: Uplifts the Ethernet devices to the same level of service as the c-class enclosure.	
4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic	HA103A3#6Q6

Related Options

4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	HA104A3#6Q6
6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	HA105A3#6Q6
Support Plus	
Support Plus Service, 5-Day x 13-Hour Coverage	HA109A3#6Q6
Support Plus 24	
Support Plus 24 Service	HA110A3#6Q6
Proactive 24 Service - Mission Critical proactive environment 24x7 4hr onsite HW support	HA111A3#6Q6
Critical Service - Mission Critical proactive environment 6-Hour Call-to-Repair onsite HW support	HA112A3#6Q6
Installation & Start-up Services	
HP BladeSystem c7000 Infrastructure Installation and Startup Service for Blade Hardware and Insight Control Software, Electronic	HA114A1#57A
NOTE: The HP Care Pack service part numbers below covers the HP Brocade 4Gb, 12 Port SAN Switch and Brocade 4/24 SAN Switch.	
Hardware Services On-site Service	
Next Business Day On-site Service, 5-Day x 9-Hour Coverage, 3 Years, Electronic	HA101A3#85J
4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic	HA103A3#85J
4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	HA104A3#85J
6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	HA105A3#85J
Hardware Installation, Electronic	HA113A1#5D2
NOTE: The HP Care Pack service part numbers below covers the Brocade 4/24 SAN Switch Power Pack.	
Hardware Services On-site Service	
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 excluding HP holidays, Electronic	HA109A3#85K
Support Plus 24	
Onsite HW support 24x7, 4hr response and SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time including HP holidays, Electronic	HA110A3#85K
NOTE: The HP Care Pack service part numbers below covers the HP Cisco MDS 9124e 12 port and 24 port Fabric Switch.	
Hardware Services On-site Service	
Next Business Day On-site Service, 5-Day x 9-Hour Coverage, 3 Years, Electronic	HA101A3#87L
NOTE: Uplifts the Ethernet devices to the same level of service as the c-class enclosure.	
4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic	HA103A3#87L
4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	HA104A3#87L
6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	HA105A3#87L

Related Options

Hardware Installation, Electronic

HA113A1#5D2

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

Storage

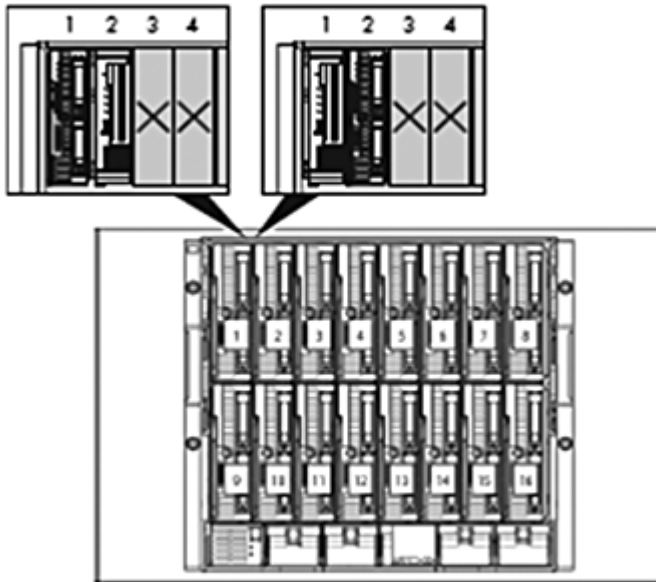


Figure 1 Installing a tape blade adjacent to a half-height server blade.

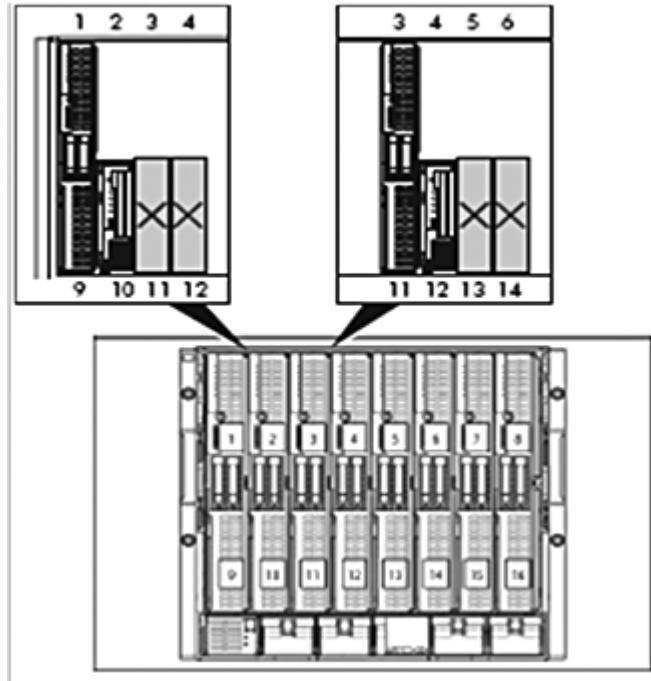


Figure 2 Installing a tape blade adjacent to a full-height server blade.

HP StorageWorks Ultrium 448c & 920c Tape Blades

Description	Quantity Supported	Position Supported	Comments
HP Ultrium Tape Blades NOTE: Connected adjacent to a half-height server blade (Figure 1)	Up to 8 per HP BladeSystem c-Class c7000 Enclosure	Odd or Even slots next to partner server blade	<ul style="list-style-type: none"> • A tape blade supports one partner server blade, and one partner server blade supports one tape blade. • Identify the partner server blade to be installed with the HP Ultrium 448c Tape Blade. The two blades always occupy a pair of slots, as follows: 1 & 2, 3 & 4, 5 & 6, 7 & 8, 9 & 10, 11 & 12, 13 & 14, 15 & 16. • If the partner server blade is installed in an odd-numbered bay, the HP Ultrium 448c Tape Blade is installed in the adjacent even-numbered bay to the right. • If the partner server blade is installed in an even-numbered bay, the HP Ultrium 448c Tape Blade is installed in the adjacent odd-numbered bay to the left.
HP Ultrium Tape Blades NOTE: Connected adjacent to a full-height server blade (Figure 2)	Up to 4 per HP BladeSystem c-Class c7000 Enclosure	Slots 10, 12, 14, or 16 (lower bays only)	

- A tape blade supports one partner server blade, and one partner server blade supports one tape blade.
- Identify the partner server blade to be installed with the HP Ultrium 448c Tape Blade. The two blades always occupy a pair of slots, as follows: 1 & 2, 3 & 4, 5 & 6, 7 & 8, 9 & 10, 11 & 12, 13 & 14, 15 & 16.
- If the partner server blade is installed in an odd-numbered bay, the HP Ultrium 448c Tape Blade is installed in the adjacent even-numbered bay to the right.
- If the partner server blade is installed in an even-numbered bay, the HP Ultrium 448c Tape Blade is installed in the adjacent odd-numbered bay to the left.
- A tape blade supports one partner server blade, and one partner server blade supports one tape blade.
- When partnering a tape blade with a full height server blade, an HP PCI Express Mezzanine Pass-Thru Card for BladeSystem c-Class (431643-B21) is required. This card is installed in mezzanine 3 connector in the server blade.
- Identify the partner server blade to be installed with the HP Ultrium 448c Tape Blade. The two blades always occupy a pair of slots, as follows: 9 & 10, 11 & 12, 13 & 14, 15 & 16.
- The partner server blade is installed in an odd-numbered

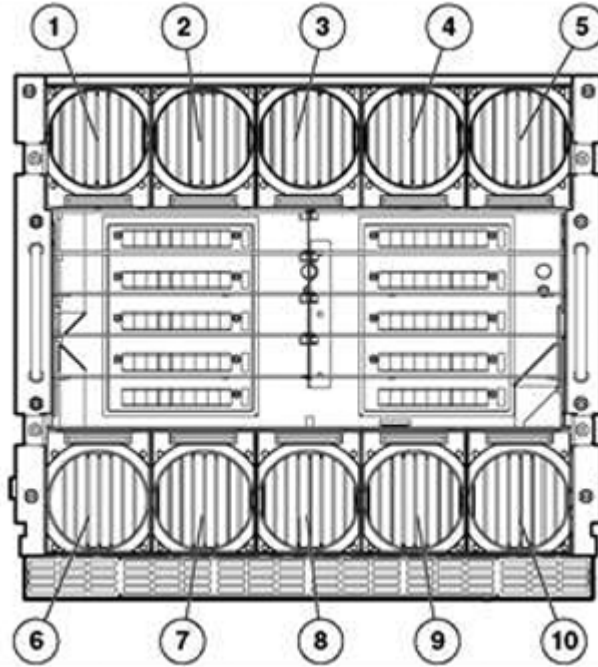
Storage

bay. The HP Ultrium 448c Tape Blade is installed in the adjacent even-numbered bay to the right.

- The tape blade is always located on the lower row of the enclosure in an even-numbered bay (slots 10, 12, 14 or 16)

Server Blade and Fan Population Guidelines

Fan bay numbering



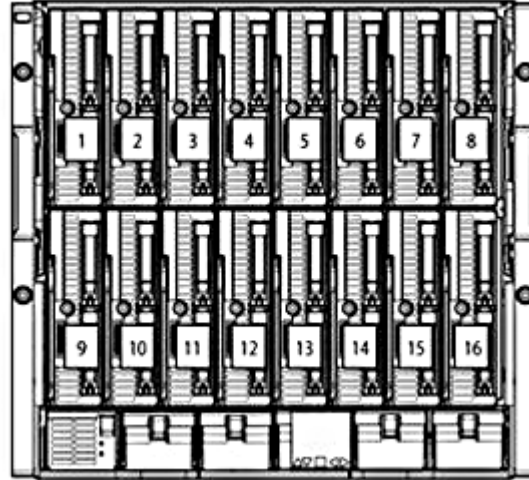
Fans must be placed in the following bays

Number of Fans	Fan Bays Used
4	4, 5, 9, 10
6	3, 4, 5, 8, 9, 10
8	1, 2, 4, 5, 6, 7, 9, 10
10	1, 2, 3, 4, 5, 6, 7, 8, 9, 10

NOTE: For correct operation fans and server blades must be installed in the correct bays. The Onboard Administrator will ensure that fans and blades are correctly placed before allowing systems to power on.

Technical Specifications

Half-height server blade bay numbering

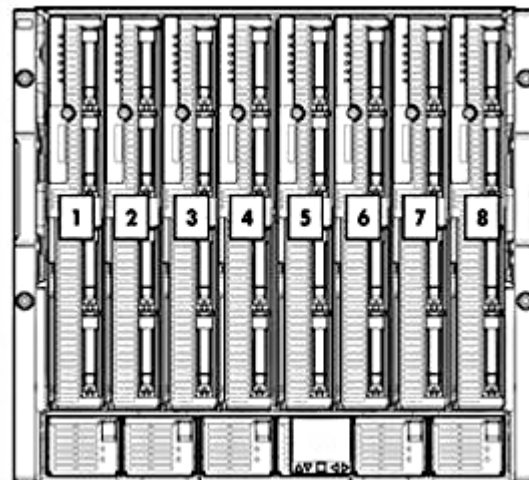


1. Device Bay 1
2. Device Bay 2
3. Device Bay 3
4. Device Bay 4
5. Device Bay 5
6. Device Bay 6
7. Device Bay 7
8. Device Bay 8

9. Device Bay 9
10. Device Bay 10
11. Device Bay 11
12. Device Bay 12
13. Device Bay 13
14. Device Bay 14
15. Device Bay 15
16. Device Bay 16

NOTE: Half-height servers should be populated from top and bottom from left to right from the front of the enclosure. So the first two half-height servers would be placed in bays 1 & 9 the second two half-height servers would be placed in bays 2 & 10 and so on until the enclosure is full.

Full-height server blade bay numbering



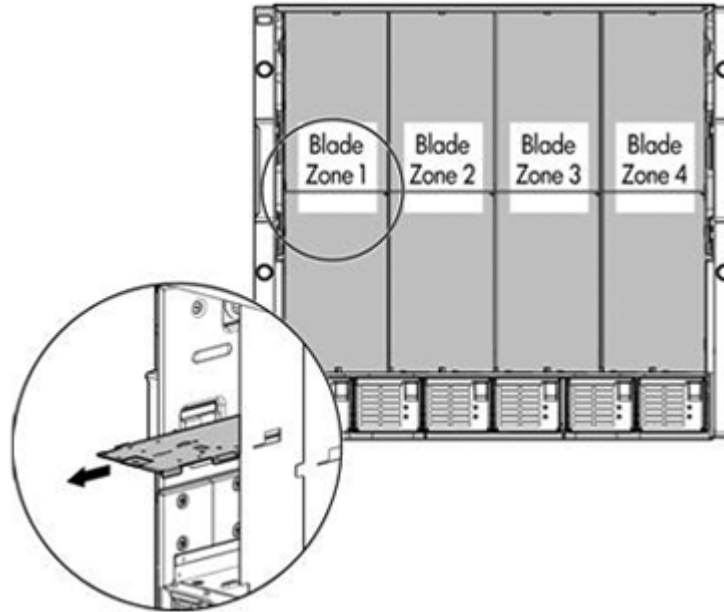
1. Device Bay 1
2. Device Bay 2
3. Device Bay 3
4. Device Bay 4

5. Device Bay 5
6. Device Bay 6
7. Device Bay 7
8. Device Bay 8

Technical Specifications

NOTE: Full-height servers should be populated from left to right.

Mixed Configuration - Full Height and Half-Height Population rules



The c7000 enclosure is divided into 4 quadrants by the vertical support metalwork. Within each quadrant a removable divider is used to support half height devices. To install a full-height blade in any quadrant this divider must be removed. As a consequence a quadrant can only contain either full-height server blades or half-height server blades.

NOTE: Storage blades and Tape blades can be installed in the same quadrant as both full-height and half-height blades, a bracket ships with each SB40c/Tape Blade that allows a half-height blade to be mounted on top of the storage blade.

NOTE: The lower tape or storage blade cannot be removed without first removing the upper half height blade.

HP BladeSystem c7000 Server Blade Enclosure	Dimensions	Height	17.4 in (442 mm)
		Width	17.6 in (447.04 mm)
		Depth	32 in (813 mm)
	Shipping Dimensions	Height	29.88 in (759 mm)
		Width	23.88 in (607 mm)
		Depth	39.88 in (1013 mm)
	Single Phase Enclosure Weight	Unboxed	192 lb (87 Kg)
		Shipping	235 lb (106.6 Kg)
	Three -Phase Enclosure NA/JPN Weight	Unboxed	222 lb (100.7 Kg)
		Shipping	265 lb (120.2 Kg)
	Three-Phase Enclosure International Weight	Unboxed	222 lb (100.7 Kg)
		Shipping	265 lb (120.2 Kg)
	DC Input Enclosure Weight	Unboxed	151 lb (68.5 Kg)
		Shipping	194 lb (88 Kg)
	Max Enclosure Weight (approximate)	Unboxed	450 lb (204 Kg)
Shipping		493 lb (223.6 Kg)	

Technical Specifications

Temperature Range	Operating	50° to 95° F (10° to 35° C)
	Non-Operating	-22° to 140° F (-30° to 60° C)
Relative Humidity	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.

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.

Power	Input Requirements - Single Phase Model	Rated input frequency	50 to 60 Hz		
			2250W PSU	Rated input voltage	100 to 120 VAC 200 to 240 VAC
				Rated input current per power supply	12.3A at 100 - 120 VAC 13.1 A at 200 VAC 12.6 A at 208 VAC 11.9 A at 220 VAC
		2400W PSU	Rated input power per power supply	2612 VA Max	
			Rated input voltage	200 to 240 VAC	
			Rated input current per power supply	13.9 A at 200 VAC 13.3 A at 208 VAC 12.6 A at 220 VAC	
		Input Requirements - Three Phase NA/JPN Model	Rated input voltage	200 to 208 VAC Line to Line 3-Phase Delta	
			Rated input frequency	50 to 60 Hz	
			2250W PSU	Max input current per line cord	22.6A at 200 VAC 21.8A at 208 VAC
	Max input power per line cord			7836VA Max	
	2400W PSU		Max input current per line cord	24A at 200 VAC 23.1A at 208 VAC	
			Max input power per line cord	8340 VA Max	
	Input Requirements - Three Phase International Model	Rated input voltage	346 VAC to 415 VAC Line to Line 200 VAC to 240 VAC Line to Neutral 3-Phase WYE		
		Rated input frequency	50 to 60 Hz		

Technical Specifications

	2250W PSU	Max input current per line cord	11.9 A at 220 VAC 10.9 A at 240VAC
		Max input power per line cord	7836 VA Max
	2400W PSU	Max input current per line cord	12.6 A at 220 VAC 11.5 A at 240VAC
		Max input power per line cord	8340 VA Max
Input Requirements DC Power	Rated Input Voltage		36 to -72 VDC
	Max Input Current per line cord		75A
	Max Input Power per line Cord		2700W
Power Cords	Single Phase		IEC-320 C19-C20 1.22m (6 ft)
	3-Phase NA/JPN		2 x NEMA L15-30p 2.44m (10 ft)
	3-Phase International		2 x IEC-309 200/346 V - 240/415 V, 5-Pin, 6h 16A 2.44m (10 ft)
	-48V DC Power		Terminal lug: 45DG 4AWG 1/4 2H
			Two-hole lug 45 degree bend 0.25in. (6.4mm) stud hole size 0.63in. (16mm) hole spacing
Output Specifications (per power supply)	HP 2250W Hot-Plug Power Supply		200 - 240 VAC 2250 W 100 - 120 VAC 960 W
	HP 2400W High Efficiency Hot-Plug Power Supply		200 - 240 VAC 2400 W
	HP 2250W -48V DC Hot-Plug Power Supply		2250W
Acoustic Noise	Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).		
	Idle		
	LWAd		7.5 Bels
	LpAm		57 dB
	Idle		
	LWAd		7.5 Bels
	LpAm		57 dB

Technical Specifications

Option Kits	Power Supply Option Shipping Dimensions	Height	8.75 in (223 mm)
		Width	8.63 in (219 mm)
		Depth	35.13 in (892 mm)
		Weight	8.5 lbs (3.85 Kg)
Fan Option Shipping Dimensions	Fan Option Shipping Dimensions	Height	8.75 in (223 mm)
		Width	9.75 in (248 mm)
		Depth	15.88 in (403 mm)
		Weight	4.0 lbs (1.8 Kg)
Onboard Administrator Option Shipping Dimensions	Onboard Administrator Option Shipping Dimensions	Height	2.50 in (63.5 mm)
		Width	9.88 in (251 mm)
		Depth	13.50 in (343 mm)
		Weight	4.0 lbs (1.8 Kg)

Environmental-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.

Power Specifications

NOTE:

To review maximum system power ratings for facilities planning purposes use the Active Answers Power Calculator which is available via the online tool located at URL: <http://www.hp.com/go/bladeSystem/powercalculator>

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