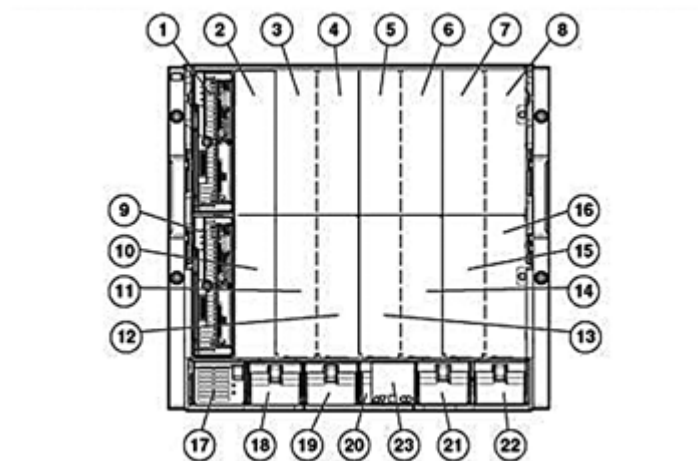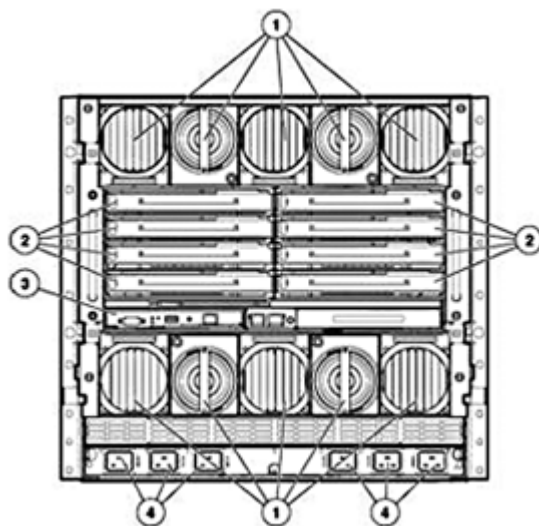## Overview

HP BladeSystem c7000 Enclosure - Front View

1-16.   Device Bays 1-16
17-22. Power Supply Bays 1-6
23.   Insight Display

HP BladeSystem c7000 Enclosure - Rear View

1. Active Cool 200 Fans and Fan Bays
2. Interconnect Module Bays
3. BladeSystem Onboard Administrator (left) and optional redundant Onboard Administrator (right)
4. Power Inputs (single-phase 200-240V AC model shown)

What's New

- Support for the HP ProLiant BL460c Gen9 Server Blade

HP BladeSystem c-Class Overview

HP BladeSystem c-Class c7000 Enclosure

HP BladeSystem solutions start with either a BladeSystem c7000 or c3000 enclosure. For the c7000 enclosure, key enclosure options include hot-plug power supplies, power input module, hot-plug HP Active Cool 200 Fans, and an optional redundant BladeSystem Onboard Administrator module. Once the enclosure and its key components have been selected, the following components can be added: interconnect modules, HP ProLiant and Integrity server blades, expansion blades, and HP OneView or Insight Control management software. For information on these options please visit: http://www.hp.com/go/bladesystem.

NOTE: HP BladeSystem c3000 and c7000 Enclosures support G1 through Gen9 ProLiant and Integrity server blades, subject to support requirements of the Onboard Administrator. Certain HP ProLiant server blades and options may require a specific version of the Onboard Administrator firmware. This firmware release may also require other subsystem firmware upgrades. For further information, please see the HP Service Pack for ProLiant (SPP) website and the HP Support Center document "HP ProLiant Server Blades - Compatibility with HP BladeSystem c7000 and c3000 Enclosures and Firmware"

A BladeSystem c7000 Enclosure holds up to 16 server blades and up to 8 expansion blades (not exceeding 16 blades total) plus redundant network and storage interconnects. It includes a shared, multi-terabit high-speed midplane 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 server blades, 8 full-height server blades, and/or 8 expansion blades per enclosure (not exceeding 16 total blades).
  NOTE: For information on mixing half-height server blades, full-height server blades, and expansion blades, please see the section titled "Device Bay and Fan Bay Numbering and Population Guidelines" later in this document.
- Up to 4 redundant interconnect I/O fabrics (Ethernet, Fibre Channel, InfiniBand, iSCSI, SAS, etc.) supported simultaneously within the enclosure.
- Choice of single-phase high-line AC, three-phase high-line AC, single-phase high voltage AC, -48V DC, or high voltage DC power options for flexibility in connecting to datacenter power.
- HP Thermal Logic technology to minimize power consumption and reduce cooling.
- A minimum of four hot-plug HP Active Cool 200 Fans. For additional capacity, redundancy, and improved power consumption and acoustics, 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, and optional redundant BladeSystem Onboard Administrator management module.

An BladeSystem 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 BladeSystem 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

HP BladeSystem c-Class Overview

can be managed as easily as one server.
- Management and network interconnects extend scalability beyond a single enclosure, allowing resources to be pooled and shared across multiple enclosures.
- 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.
- Reduced and simplified cabling in comparison to rack-mounted servers.
- Investment protection supporting G1 through Gen9 server blades.

HP BladeSystem c-Class c3000 Enclosure

For customers that need a smaller blade system, the HP BladeSystem c-Class c3000 Enclosure 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 please visit: http://www.hp.com/go/bladesystem.

HP ProLiant & Integrity Server Blades

Delivering best-in-class performance, choice and reliability on AMD Opteron™, Intel® Xeon® and Intel® Itanium ® processors for Windows, Linux, Solaris, OpenVMS 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-, four- , or eight processor server blades, with the widest range of performance, and form factors. For more information please visit: http://www.hp.com/go/bladesystem.

HP D2200sb Storage Blade

Do you need a direct attached or shared storage solution within your BladeSystem enclosure?

Direct attached storage
The D2220sb Storage Blade delivers direct attached storage for c-Class Gen8 and greater server blades with support for up to twelve hot plug small form factor (SFF) SAS or SATA Midline hard disk drives or SAS/SATA SSDs. The enclosure backplane provides a PCI Express connection to an adjacent c-Class server blade and enables high performance storage access without any additional cables. The D2220sb Storage Blade features an onboard Smart Array P420i controller with 2GB flash-backed write cache for increased performance and data protection. Up to eight D2220sb storage devices can be supported in a single BladeSystem c7000 Enclosure for up to 115.2 TB of capacity.

Two ways to create shared storage with the D2220sb
Use HP StoreVirtual VSA software to turn the D2220sb into an iSCSI SAN for use by all servers in the enclosure and any server on the network. HP VSA software is installed in a virtual machine on a VMware ESX host server adjacent to the D2220sb. HP StoreVirtual VSA turns the D2220sb into a scalable and robust iSCSI SAN, featuring storage clustering for scalability, network RAID for storage failover, thin provisioning, snapshots, remote replication, and cloning. Expand capacity within the same enclosure or to other BladeSystem enclosures by adding additional D2220sb Storage Blades and HP VSA licenses. A cost effective bundle of the D2220sb Storage Blade and a HP StoreVirtual VSA license makes purchasing convenient. If storage needs increase, add HP P4300 or P4500 systems externally and manage everything via a single pane of glass.

The HP StoreEasy 3830 and 3840 Gateway Storage Blades are flexible storage server solutions for BladeSystem environments. Combine the StoreEasy 3830 or 3840 with the D2220sb Storage Blade to enable file serving and iSCSI shared storage inside the BladeSystem enclosure.
NOTE: The D2220sb requires a c7000 Enclosure configuration with 10 fans.

For more information, please visit:
http://h18004.www1.hp.com/products/quickspecs/14507_div/14507_div.html

HP BladeSystem c-Class Overview

HP Ultrium Tape Blades	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 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 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.

Rack Airflow Requirements	**Rack 10000 G2 series cabinets** The increasing power of new high-performance processor technology requires increased cooling efficiency for rack-mounted servers. The G2 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 –48VDC input module, the G2 1000 Series Rack Extension is required to allow DC power cabling to be installed.
CAUTION: For the complete list of installation requirements, please see the &HP BladeSystem c-Class Site Planning Guide& at http://www.hp.com/support.

Third-party racks
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 server rack includes closing front and rear doors, you must have a minimum of 65% free area compared to the total area of the door evenly distributed from top to bottom to permit adequate airflow.
- Front door: The clearance from face of rack to inside of the front door must be a minimum of 77 mm (3 in).
- Rear door: The clearance between the rear of the enclosure and the rear rack door must be a minimum of 175 mm (6.9 in) to accommodate system cabling.
- Side: The clearance between the installed rack component and the side panels of the rack must be a minimum of 70 mm (2.75 in).
- Width: 483 mm (19 in)
- Depth: Maximum clearance between front and rear RETMA rails is 864 mm (34 in). Minimum clearance for round-hole racks is 627 mm (24.7 in). Minimum clearance for square-hole racks is 635 mm (25 in).
- The rack must be able to accept the adjustable rack rails that are shipped with each enclosure:
  - Minimum rail length: 635 mm (25 in)
  - Maximum rail length: 864 mm (34 in)

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.
CAUTION: For the complete list of installation requirements, please see the zHP BladeSystem c-Class Site Planning Guide" at http://www.hp.com/support.

HP BladeSystem c-Class Overview

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.

HP Simple Configurator

SCE is a guided self-service tool to help sales and non-technical people provide customers with initial configurations in 3 to 5 minutes. You may then send the configuration on for configuration help, or use in your existing ordering processes. If you require custom rack configuration or configuration for products not available in SCE, please contact HP's Customer Business Center or an Authorized Partner for assistance. http://www.hp.com/products/configurator.

HP Insight Management software

Insight Management

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 Insight Management lowers the cost of running your HP ProLiant servers by providing you with best-in-class management tools, including HP Insight Control, HP Virtual Connect Enterprise Manager (VCEM), and HP Insight Dynamics / Matrix Operating Environment. Insight Management increases your productivity and reduces your operating costs to get you higher value from your HP ProLiant servers.

Electronic download of Insight Management Media
Insight Management software media is available for free download (not including license entitlement certificates) at this website http://www.hp.com/go/insightupdates.

Software media available for download includes

- HP Insight Control
- HP Insight Control for Microsoft® System Center
- HP Insight Control for VMware vCenter Server
- HP Virtual Connect Enterprise Manager (VCEM)
- HP Insight Dynamics / Matrix Operating Environment

Customers will receive an Insight Control or Insight Dynamics license entitlement certificate via physical shipment or email. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s).

One year of 24x7 Software Technical Support and Updates are included with your purchased licenses.

HP provides a complete range of installation and support services to ensure the successful deployment and operations of your server infrastructure. For more information about support services and licensing

HP BladeSystem c-Class Overview

options, see the following website‐
http‐//www.hp.com/go/insightsoftware

Insight Software Media Kit (DVDs)
Physical media (DVDs) are also available for purchase from HP or from your
authorized reseller

Service Pack for ProLiant (SPP)	Customers should use the HP Service Pack for ProLiant (SPP) to perform firmware, driver, and related software updates. • SPP main webpage‐www.hp.com/go/spp • SPP downloads webpage‐www.hp.com/go/spp/download
HP Integrated Lights-Out (iLO)	HP Integrated Lights-Out (iLO) simplifies server setup, health monitoring, power and thermal control, and lights-out remote administration of ProLiant ML, DL, and BL servers. HP iLO functions without additional software and can be accessed from any location via a web browser. HP iLO works hand-in-hand with HP Systems Insight Manager, Insight Control and Insight Dynamics for ProLiant, helping customers unleash the value of the ProLiant platform and deliver the highest possible quality of IT service. For more information, visit‐www.hp.com/go/iLO.
HP Insight Control	HP Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, monitor, remote control, and optimize your IT infrastructure through a single, simple management console. For more information, see http‐//www.hp.com/go/insightcontrol. HP Insight Control includes 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‐http‐//www.hp.com/services/insight.
HP Matrix Operating Environment	The HP Matrix Operating Environment (Matrix OE) for ProLiant and Integrity servers is an integrated command center that helps you instantly adjust to dynamic business demands. This advanced infrastructure management software lets you reduce the cost of common data center tasks by up to 40 percent while keeping pace with your changing business. The HP Matrix OE includes the automated provisioning, optimization, and recovery management capabilities for HP CloudSystem Matrix, the ideal platform for private cloud and Infrastructure as a Service (IaaS). **NOTE‐**For more information, visit‐http‐//www.hp.com/go/matrixoe.

HP OneView Software   The HP OneView architecture combines server, storage, and networking with control of datacenter environmentals into a single, integrated management platform. Architected to deliver lifecycle management for the complete Converged Infrastructure, it facilitates collaboration, removes friction, collapses cycle times, eliminates error-prone work, and accelerates time to value. HP OneView combines management of servers and virtual connect with open integration to automate and customize existing tools and processes. With OneView, you'll work smarter-with greater visibility and control-and fully capitalize on the benefits of a Converged Infrastructure.

For more information on HP OneView management, see‐http‐//www.hp.com/go/oneview.

HP BladeSystem c-Class Overview

HP Power Advisor

The HP Power Advisor is a tool provided by Hewlett-Packard to assist in the estimation of power consumption and proper selection of components including power supplies at a system, rack, and multi-rack level. A variety of additional features are also provided including a condensed bill of materials, a cost of owner ship calculator, and a power report. The HP Power Advisor allows for the mixing of rack, tower, blade, and other products in a single environment.

HP highly recommends using the HP Power Advisor tool to ensure the number of power supply options you have selected can fully support your BladeSystem configuration and to review maximum system power ratings for facilities planning purposes.

HP Power Advisor is available at http://www.hp.com/go/hppoweradvisor.

Warranty

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, BladeSystem 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
- Hard drives have either a one year or three year warranty refer to specific hard drive QuickSpecs for details.

Service and Support

Service and Support	**HP Technology Services for Industry Standard Servers and BladeSystem** Capitalizing on HP ProLiant server and HP BladeSystem capabilities requires a service partner who understands your increasingly complex business technology environment. That's why it makes sense to team up with the people who know HP infrastructure hardware and software best - the experienced professionals at HP Services. **Protect your business beyond warranty with HP Care Pack Services** HP Care Pack services offer complete care and support expertise with committed response choices designed to meet your IT and business needs. HP Foundation Care services offer scalable reactive support-packages for HP servers and software. You can choose the type and level of service that is most suitable for your IT and business needs. HP Proactive Care delivers high levels of system availability through proactive service management and advanced technical response. HP Datacenter Care provides highly flexible environmental support to address unique customer business needs. Choose a recommended service appropriate to your ISS or Integrity product or contact your HP sales representative or authorized HP ServiceOne partner for additional HP Care Pack services information.

Recommended HP Care Pack Services for your HP product

Optimized Care	**3-Year HP 6 hour Call to Repair Response, Proactive Care** Combined reactive and proactive support for hardware and software helping optimize your systems and delivering high levels of availability through proactive service management and advanced technical response. Hardware problem resolution to return the hardware in operating condition within 6 hours of the initial service request. A Technical Account Manager, as your single point of contact, will own your call or issue end to end until resolved. http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-8855EEE.pdf. **HP Installation and Startup Service for HP BladeSystem c-Class Infrastructure for c7000 enclosure** Provides for hardware installation (c-Class ProLiant and Integrity server blades, storage blades, Ethernet Interconnects and Virtual Connect) and software installation and startup of a BladeSystem c7000 Infrastructure in a single enclosure including deployment of OS (two servers), HP Insight Control and Server Deployment (formerly RDP). http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA0-5964ENW.pdf. **HP Installation and Startup Service for HP BladeSystem c-Class Enhanced Network** HP Provides for the configuration and testing of BladeSystem Ethernet interconnect switches and Virtual Connect to facilitate proper implementation of network protocols and access to advanced features. http://h20195.www2.hp.com/V2/GetPDF.aspx/4aa0-5969ENW.pdf.
Standard Care	**3-Year HP 24x7 4 hour response, Proactive Care Service** This service gives you combined reactive and proactive support including rapid access to our Advanced Solution Center to manage and prevent problems and a Technical Support Specialist with a broad level of technical knowledge that will engage with additional technical expertise as needed from HP's vast global resources. http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-8855EEE.pdf. **HP Installation and Startup Service for HP BladeSystem c-Class Infrastructure for c7000 enclosure** Provides for hardware installation (c-Class ProLiant and Integrity server blades, storage blades, Ethernet Interconnects and Virtual Connect) and software installation and startup of a BladeSystem c7000 Infrastructure in a single enclosure including deployment of OS (two servers), HP Insight Control and Server Deployment (formerly RDP). http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA0-5964ENW.pdf. **HP Installation and Startup Service for HP BladeSystem c-Class Enhanced Network** HP Provides for the configuration and testing of BladeSystem Ethernet interconnect switches and Virtual Connect to facilitate proper implementation of network protocols and access to advanced features.

Service and Support

http://h20195.www2.hp.com/V2/GetPDF.aspx/4aa0-5969ENW.pdf.

Related Services

HP Proactive Care Personalized Support - Environmental Option

The Personalized Support option provides an assigned Account Support Manager who can bring best practices from across the industry plus extra technical skills to your IT team. This option is only available as an add-on to HP Proactive Care Support.

HP Proactive Select Service

Provides a flexible way to purchase HP best-in-class consultancy and technical services. You can buy Proactive Select Service Credits when you purchase your hardware and then use the credits over the next 12 months. http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA2-3842ENN.pdf.

Additional HP Care Pack services can be found at http://www.hp.com/go/cpc.

Recommended HP Care Pack Services for your HP Integrity product

Optimized Care

3- Year HP Critical Service

This service offers high performance reactive services and proactive components designed to minimize planned and unplanned downtime. The key feature of this service is an assigned support team including an Account Support Manager (ASM), Remote Support Account Advocate, Mission Critical Hardware Specialist and access to HP's Global Mission Critical Solution Center to help resolve complex issues faster. Reactive support components of this service include 24x7 HW and SW coverage, 6-hour Call-to-Repair commitment, enhanced parts inventory and accelerated escalation management. http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA0-1613ENW.pdf.

HP Integrity C7000 Enclosure Startup Service

This service provides efficient and effective HP Integrity Blade infrastructure setup for the server infrastructure including all hardware and networking components. http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA1-1651ENW.pdf.

HP Installation and Startup Service for HP BladeSystem c-Class Enhanced Network

HP Provides for the configuration and testing of BladeSystem Ethernet interconnect switches and Virtual Connect to facilitate proper implementation of network protocols and access to advanced features. http://h20195.www2.hp.com/V2/GetPDF.aspx/4aa0-5969ENW.pdf.

Standard Care

3-Year HP Proactive 24

This service offers improved stability, availability, and operational effectiveness through integrated hardware and software support services that combine industry-leading reactive technical assistance with proactive account services delivered by an ASM, giving you IT management support with a team of service specialists. http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA0-1614ENW.pdf.

HP Integrity C7000 Enclosure Startup Service

This service provides efficient and effective HP Integrity Blade infrastructure setup for the server infrastructure including all hardware and networking components. http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA1-1651ENW.pdf.

HP Installation and Startup Service for HP BladeSystem c-Class Enhanced Network

HP Provides for the configuration and testing of BladeSystem Ethernet interconnect switches and Virtual Connect to facilitate proper implementation of network protocols and access to advanced features. http://h20195.www2.hp.com/V2/GetPDF.aspx/4aa0-5969ENW.pdf.

Related Services

HP Factory Express

When you add additional enclosures to your environment, consider HP Factory Express. HP Factory Express provides customization and deployment services along with your storage and server purchases. You can customize hardware to your exact specifications in the factory-helping speed deployment. http://hp.com/go/factoryexpress.

Insight Online/Insight Remote Support

HP Insight Remote Support provides 24 X 7 remote monitoring, proactive notifications, and problem resolution. This comes at no additional cost with your HP solution. Learn more about Insight Remote Support http://www.hp.com/go/insightremotesupport and Insight Online http://www.hp.com/go/insightonline.

Service and Support

HP Support Center

Personalized online support portal with access to information, tools and experts to support HP business products. Submit support cases online, chat with HP experts, access support resources or collaborate with peers. Learn more http://www.hp.com/go/hpsc.

HP's Support Center Mobile App allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalize IT support anywhere, anytime.
HP Insight Remote Support and HP Support Center are available at no additional cost with a HP warranty, HP Care Pack or HP contractual support agreement.

NOTE: HP Support Center Mobile App is subject to local availability.

Parts and Materials

HP will provide HP-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements.

Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product quick-specs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by HP due to malfunction.

For more information

To learn more on HP ProLiant servers and HP BladeSystem servers, please contact your HP sales representative or HP Authorized Channel Partner. Or visit www.hp.com/services/bladesystem.

Pre-configured Models

HP BladeSystem c-Class Server Blade Enclosures

NOTE: HP does not allow factory integration of options into pre-configured models. Any additional options purchased will be shipped separately.

NOTE: If you desire a custom configuration, please see the &Configuration Information - Factory Integrated Models& section of this QuickSpecs.

NOTE: HP BladeSystem c3000 and c7000 Enclosures support G1 through Gen9 ProLiant and Integrity server blades in the same enclosure. The Onboard Administrator firmware must be at the minimum version level that supports all the devices and options installed within the enclosure. For server blade and option information, please visit: http://www.hp.com/go/bladesystem.

NOTE: HP BladeSystem c3000 and c7000 Enclosures support G1 through Gen9 ProLiant and Integrity server blades, subject to support requirements of the Onboard Administrator. Certain HP ProLiant server blades and options may require a specific version of the Onboard Administrator firmware. This firmware release may also require other subsystem firmware upgrades. For further information, please see the HP Service Pack for ProLiant (SPP) website and the HP Support Center document &HP ProLiant Server Blades - Compatibility with HP BladeSystem c7000 and c3000 Enclosures and Firmware&

HP BLc7000 Platinum Enclosure with 1 Phase 6 Pwr Supplies 10 Fans ROHS 16 OneView Licenses   763850-B21

NOTE: The c7000 Platinum Enclosure 763850-B21 includes sixteen (16) HP OneView licenses, six (6) 2400W Platinum hot-plug power supplies each with a worldwide 250W C19 - C20 2.0m jumper cord, a single-phase 200-240V AC Intelligent Power Module, ten (10) hot-plug Active Cool 200 Ffans, an Onboard Administrator with KVM, and the following blanking panels: 15 device bay, 7 interconnect module bay, and 1 redundant Onboard Administrator module bay.

HP BLc7000 Platinum Enclosure with 1 Phase 6 Power Supplies 10 Fans ROHS 16 Insight Control Licenses   681842-B21

NOTE: The c7000 Platinum Enclosure 681842-B21 includes sixteen (16) HP Insight Control licenses, six (6) 2400W Platinum hot-plug power supplies each with a worldwide 250W C19 - C20 2.0m jumper cord, a single-phase 200-240V AC Intelligent Power Module, ten (10) hot-plug Active Cool 200 Ffans, an Onboard Administrator with KVM, and the following blanking panels: 15 device bay, 7 interconnect module bay, and 1 redundant Onboard Administrator module bay.

HP BLc7000 Platinum Enclosure w/ 1 Phase 2 Power Supplies 4 Fans ROHS Trial Insight Control License   681840-B21

NOTE: The c7000 Platinum Enclosure 681840-B21 includes sixteen (16) HP Insight Control trial licenses, two (2) 2400W Platinum hot-plug power supplies each with a worldwide 250W C19 - C20 2.0m jumper cord, a single-phase 200-240V AC Intelligent Power Module, four (4) hot-plug Active Cool 200 Ffans, an Onboard Administrator with KVM, and the following blanking panels: 15 device bay, 4 power supply bay, 6 fan bay, 7 interconnect module bay, and 1 redundant Onboard Administrator module bay.

Configuration Information Factory Integrated Models

NOTE: This section lists some of the required and optional steps to configure a Factory Integrated Model. To ensure only valid configurations are ordered, HP recommends contacting your local sales representative for information on Factory Integrated Model product offerings and requirements.

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

Step 1: Select desired model, configuration, and quantity of HP ProLiant server and expansion blades per enclosure (required)

NOTE: Each BladeSystem c7000 Enclosure holds up to 16 half-height server blades, 8 full-height server blades, and/or 8 expansion blades per enclosure (not exceeding 16 total blades).

NOTE: HP BladeSystem c3000 and c7000 Enclosures support G1 through Gen9 ProLiant and Integrity server blades, subject to support requirements of the Onboard Administrator. Certain HP ProLiant server blades and options may require a specific version of the Onboard Administrator firmware. This firmware release may also require other subsystem firmware upgrades. For further information, please see the HP Service Pack for ProLiant (SPP) website and the HP Support Center document "HP ProLiant Server Blades - Compatibility with HP BladeSystem c7000 and c3000 Enclosures and Firmware".

Step 2: Determine the HP BladeSystem c-Class Enclosure(s) and choose options (required) (One of the following from each list unless otherwise noted)

Select the base server blade enclosure configuration (required)

HP BladeSystem BLc7000 c-Class Server Blade Enclosures	**NOTE:** The enclosures listed below include an Onboard Administrator with KVM and four (4) hot-plug Active Cool 200 Fans. The power module, power supply kits, power cables, interconnects, additional fans, etc. are added per the steps below. **NOTE:** The enclosures listed below include the required blanking panels (device bay, interconnect module, fan, power, and redundant OA module) as required per the ordered configuration. If the configuration is modified at a later date, additional blanking panels (ordered separately) may be required.	
	HP BLc7000 Configure-to-order Platinum Enclosure with ROHS Trial Insight Control License	681844-B21
	HP Integrity BLc7000 CTO Enclosure **NOTE:** The AD361D enclosure is suggested for configurations primarily used with Integrity blades.	AD361D

Select the enclosure power and cooling options (required)

HP c-Class Power Systems	**c-Class Power Modules** (1 per enclosure)	
	HP BLc7000 Single Phase FIO Intelligent Power Module **NOTE:** This power module is for single phase, high-line 200-240VAC applications and has six blue IEC-320 C20 power connectors that accept IEC C19-C20 power cables. **NOTE:** The blue power connectors indicate HP Power Discovery Services capability. HP Power Discovery Services are enabled when used with a HP Power Discovery Services-enabled power system including an Intelligent Power Distribution Unit (iPDU), C19-C20 iPDU cables, and the Platinum power supply kits 733460-B21, 733459-B21, 517521-B21, or 588603-B21. See the iPDU, iPDU cable, c-Class Power Supply sections below for these options. **NOTE:** Also accepts standard (non-iPDU) C19 to C20 power cables, but HP Power Discovery Services are disabled. One WW 250W C19-C20 2.0m (non-iPDU) cable is included per supported power supply. Supported power supplies are listed here. **NOTE:** This power module may be used with the power supply kits 733460-B21, 733459-B21, 517521-B21, 588603-B21, 517521-B21, or 499243-B21. See the "c-Class Power Supply" section below for the power supply kits.	677595-B21
	HP BLc7000 1 PH FIO Power Module Option **NOTE:** This power module is for single phase, high-line 200-240VAC applications and	413379-B21

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has six IEC-320 C20 power connectors that accept IEC C19-C20 power cables. One WW 250W C19-C20 2.0m (non-iPDU) cable is included per supported power supply. Supported power supplies are listed here.

NOTE: This power module may be used with the power supply kits 733460-B21, 733459-B21, 517521-B21, 588603-B21, 517521-B21, or 499243-B21. See the "c-Class Power Supply" section below for the power supply kits.

NOTE: This power module disables HP Power Discovery Services.

HP BLc7000 3 PH Intl FIO Power Module Option   413381-B21

NOTE: This power module is for three phase, high-line 200-240VAC international applications and has two 3.05m (10 ft) power cables with IEC-309 200/346 V - 240/415 V, 5-Pin, 6h, 16A connectors.

NOTE: This power module may be used with the power supply kits 733460-B21, 733459-B21, 517521-B21, 588603-B21, 517521-B21, or 499243-B21. See the "c-Class Power Supply" section below for the power supply kits.

NOTE: This power module disables HP Power Discovery Services.

NOTE: This power module requires a minimum of 3 power supply option kits. For full redundancy, 6 power supply option kits are required.

HP BLc7000 3 PH NA/JP FIO Power Module Option   413380-B21

NOTE: This power module is for three phase, high-line 200-208VAC North America and Japan applications and has two 3.05m (10 ft) power cables with NEMA L15-30p connectors.

NOTE: This power module may be used with the power supply kits 733460-B21, 733459-B21, 517521-B21, 588603-B21, 517521-B21, or 499243-B21. See the "c-Class Power Supply" section below for the power supply kits.

NOTE: This power module disables HP Power Discovery Services.

NOTE: This power module requires a minimum of 3 power supply option kits. For full redundancy, 6 power supply option kits are required.

HP BLc7000 -48V DC Power Input Module   AH331A

NOTE: This power module is for -36VDC to -72VDC applications and has 45DG 4AWG 1/4 2H terminal lug connectors. It is used with the HP 2250W -48VDC Hot Plug Power Supply Kit, AH332A. See the "c-Class Power Supply" section below for the power supply kits.

NOTE: This power module disables HP Power Discovery Services.

HP HVDC 1PH AC Power Module BLc FIO Option   753623-B21

NOTE: This power module is for 277VAC and 380VDC applications and has six APP Saf-D-Grid connectors. It is used with the HP 2650W Universal Hot Plug Power Supply Kits (753618-B21 or 753619-B21). See the "c-Class Power Supply" section below for the power supply kits.

NOTE: Cables are not included and may be ordered separately–see cable options J6X01A, J6X02A, J6X03A (277VAC applications) and J6W98A, J6W99A, J6X00A (277VAC or 380VDC applications).

NOTE: This power module disables HP Power Discovery Services.

c-Class Power Supply (Up to 6)

NOTE: HP highly recommends using the HP Power Advisor tool to ensure the number of power supply options you have selected can fully support your BladeSystem configuration and to review maximum system power ratings for facilities planning purposes. HP Power Advisor is available at http://www.hp.com/go/hppoweradvisor.

NOTE: Each enclosure must include only one type of power supply. Mixing of power supplies is not supported, except during hot swaps to different level or higher efficient power supplies. The Onboard Administrator will exhibit a mismatch error due to mixed power supplies until all power supplies are matched.

NOTE: If a three phase power module is selected (413380-B21 or 413381-B21), a minimum of 3 power supply option kits is required. For full redundancy, 6 power supply option kits are required.

NOTE: HP c7000 enclosure AC power supplies meet 80 PLUS Platinum or Gold power

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efficiency requirements–Platinum (94%) and Gold (92%). The 80 PLUS program is a unique forum that unites electric utilities, the computer industry, and consumers in an effort to bring energy efficient technology solutions to the marketplace. 80 PLUS independently tests power supply efficiency and publically posts the results on 80Plus.org. DC power supplies are not eligible for 80 PLUS testing–efficiency is per HP internal testing.

HP 6X 2650W Platinum Hot Plug FIO Power Supply Kit	733460-B21

NOTE– This power supply kit enables HP Power Discovery Services when used with the HP BLc7000 Single Phase FIO Intelligent Power Module 677595-B21. See the &-Class Power Modules& section above for the power modules.
NOTE– Includes a quantity of 6 HP 2650W Platinum 94% power supplies so a full enclosure can be configured with a single part number.
NOTE– Includes six WW 250W C19 - C20 2.0m Jumper Cords.
NOTE– This power supply kit meets multiple energy efficiency initiatives–2650W, 94%–Climate Savers Computing Initiative PLATINUM and ECOS Consulting 80 PLUS Platinum.

HP 2650W Platinum Hot Plug Power Supply Kit	733459-B21

NOTE– This power supply kit enables HP Power Discovery Services when used with the HP BLc7000 Single Phase FIO Intelligent Power Module 677595-B21. See the &-Class Power Modules& section above for the power modules.
NOTE– Includes one WW 250W C19 - C20 2.0m Jumper Cord.
NOTE– This power supply kit meets multiple energy efficiency initiatives–2650W, 94%–Climate Savers Computing Initiative PLATINUM and ECOS Consulting 80 PLUS Platinum.

HP 6X 2400W Platinum Hot Plug Factory Integrated Power Supply Kit	517521-B22

NOTE– This power supply kit enables HP Power Discovery Services when used with the HP BLc7000 Single Phase FIO Intelligent Power Module 677595-B21. See the &-Class Power Modules& section above for the power modules.
NOTE– Includes a quantity of 6 HP 2400W Platinum 94% efficient power supplies so a full enclosure can be configured with a single part number.
NOTE– Includes six WW 250W C19 - C20 2.0m Jumper Cords.
NOTE– This power supply kit meets multiple energy efficiency initiatives–2400W, 94%–Climate Savers Computing Initiative PLATINUM and ECOS Consulting 80 PLUS Platinum.

HP 2400W Platinum Hot Plug Power Supply Kit	588603-B21

NOTE– This power supply kit enables HP Power Discovery Services when used with the HP BLc7000 Single Phase FIO Intelligent Power Module 677595-B21. See the &-Class Power Modules& section above for the power modules.
NOTE– Includes one WW 250W C19 - C20 2.0m Jumper Cord.
NOTE– This power supply kit meets multiple energy efficiency initiatives–2400W, 94%–Climate Savers Computing Initiative PLATINUM and ECOS Consulting 80 PLUS Platinum.

HP 6X 2400W Gold Hot Plug Factory Integrated Power Supply Kit	517521-B21

NOTE– This power supply kit disables HP Power Discovery Services.
NOTE– Includes six WW 250W C19 - C20 2.0m Jumper Cords.
NOTE– Includes a quantity of 6 HP 2400W Gold 92% efficient power supplies so a full enclosure can be configured with a single part number.

HP 2400W Gold Hot Plug Power Supply Kit	499243-B21

NOTE– This power supply kit disables HP Power Discovery Services.
NOTE– Includes one WW 250W C19 - C20 2.0m Jumper Cord.

HP 2250W -48VDC Hot Plug Power Supply Kit	AH332A

NOTE– This power supply kit disables HP Power Discovery Services.
NOTE– Compatible with the HP BLc7000 -48V DC Power Input Module AH331A. See the &-Class Power Modules& section above for the power modules.

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HP 2650W Universal Hot Plug Power Supply Kit — 753618-B21
NOTE: This power supply kit disables HP Power Discovery Services.
NOTE: Compatible with the HP HVDC 1PH AC Power Module BLc FIO Option 753623-B21. See the "c-Class Power Modules" section above for the power modules.
NOTE: Cables are not included and may be ordered separately—see cable options J6X01A, J6X02A, J6X03A (277VAC applications) and J6W98A, J6W99A, J6X00A (277VAC or 380VDC applications).

HP 6X 2650W Universal Hot Plug Power Supply Kit — 753619-B21
NOTE: This power supply kit disables HP Power Discovery Services.
NOTE: Compatible with the HP HVDC 1PH AC Power Module BLc FIO Option 753623-B21. See the "c-Class Power Modules" section above for the power modules.
NOTE: Cables are not included and may be ordered separately—see cable options J6X01A, J6X02A, J6X03A (277VAC applications) and J6W98A, J6W99A, J6X00A (277VAC or 380VDC applications).
NOTE: Includes a quantity of 6 2650W universal power supplies so a full enclosure can be configured with a single part number.

HP Cooling Options

c-Class Active Cool 200 Fan (Up to 6)

NOTE: A minimum of 4 Active Cool 200 Fans is required to a maximum of 10 Active Cool 200 Fans. The enclosure selected in Step 2 already includes 4 fans allowing up to 6 additional.
NOTE: Ten Active Cool 200 Fans are strongly recommended for maximum cooling efficiency and redundancy, reduced power consumption, and reduced noise.
NOTE: Enclosures configured with a three-phase power input module require a minimum of 6 Active Cool 200 Fans.
NOTE: Some blade configurations require 10 Active Cool 200 Fans.
NOTE: For the complete list of fan requirements and recommendations, see the "Server Blade and Fan Population Guidelines" section of this document.

HP BLc 6X Active Cool 200 Factory Integrated Fan Option — 517520-B21
NOTE: This option (517520-B21) includes a quantity of 6 HP Active Cool 200 Fans so a full enclosure can be configured with 10 fans using a single part number.

HP BLc7000 Enclosure HP Single Active Cool Fan Option Kit — 412140-B21

Step 3: Select a software bundle (optional)
(if nothing is selected the enclosure will ship with 16 Insight Control Trial Licenses)

HP OneView Software

HP OneView incl 3yr 24x7 Supp Enclosure Bundle 16 Svr E-LTU — E5Y41AAE
NOTE: Server provisioning capability (i.e. 'Insight Control server provisioning') is included and licensed as part of HP OneView. This capability is ideal for multi-server OS and driver provisioning to ProLiant and BladeSystem servers. A media kit ("HP Insight Control server provisioning USB media kit" BD883A), which includes a USB flash drive, is available for customers who require a physical copy of the software on media. This media kit is separate and in addition to the "HP OneView Media Kit" E5Y37A.
NOTE: HP OneView licenses ship without media. The HP OneView Media Kit can be ordered separately (part number E5Y37A), or can be downloaded at: http://www.hp.com/go/oneview.

HP Insight Software

NOTE: The Insight Control licenses listed below support HP ProLiant c-Class server blades.
NOTE: Licenses ship without media. The Insight Management Media Kit can be ordered separately, or can be downloaded at: http://www.hp.com/go/insightupdates.
NOTE: Customer will receive a license entitlement certificate, which 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:

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http://h18000.www1.hp.com/products/quickspecs/12631«div/12631«div.html

HP Insight Control for BladeSystem including 1yr 24x7 Support Enclosure 16 Svr FIO Electronic License	C6N33ABE
HP Insight Control for BladeSystem including 1yr 24x7 Support Enclosure 8 Svr FIO Electronic License	C6N32ABE

Step 4: Select a redundant BladeSystem Onboard Administrator (optional)

HP c-Class Enclosure Options

HP BLc7000 Onboard Administrator with KVM Option   456204-B21

NOTE: The HP c7000 Onboard Administrator (OA) supports the mixing with the HP c7000 OA with KVM. The HP c7000 OA with KVM must be the active OA to provide the enclosure KVM feature. The KVM menu has an OA CLI button at the bottom, which allows an OA administrator to log into the OA and be able to force a takeover so the OA with KVM will become the standby OA. The OA Firmware Sync feature cannot be used to update mismatched OA modules. Mismatched OA firmware versions between the original c7000 OA and c7000 OA with KVM require the administrator to use the GUI or CLI to update the OA from a file (http, ftp, tftp, local client file using the GUI or USB key containing the OA firmware file).

NOTE: The c7000 enclosure (part numbers 681840-B21, 681842-B21, 681844-B21, 763850-B21, and AD361D) come with a BladeSystem Onboard Administrator with KVM as standard. Order this part number (456204-B21) when a second redundant BladeSystem Onboard Administrator is desired for a c7000 enclosure.

NOTE: HP BladeSystem c3000 and c7000 Enclosures support G1 through Gen9 ProLiant and Integrity server blades, subject to support requirements of the Onboard Administrator. Certain HP ProLiant server blades and options may require a specific version of the Onboard Administrator firmware. This firmware release may also require other subsystem firmware upgrades. For further information, please see the HP Service Pack for ProLiant (SPP) website and the HP Support Center document &HP ProLiant Server Blades - Compatibility with HP BladeSystem c7000 and c3000 Enclosures and Firmware&

Step 5: Select 1 or more interconnect modules for each enclosure (required)

The following is a list of various HP BladeSystem c-Class interconnect modules (Virtual Connect, Ethernet, Fibre Channel, InfiniBand, and SAS interconnects). A pair of interconnects must be ordered if redundancy is required. For detailed interconnect options, consult the specific interconnect QuickSpecs: http://h18004.www1.hp.com/products/blades/components/c-class-interconnects.html.

NOTE: Options to specific c-Class interconnects are not included in the list below. Consult the individual interconnect QuickSpecs to obtain part numbers for interconnect options such as cables, SFPs, etc.

NOTE: Interconnect Bay 1 must contain one of the Network Interconnects.

NOTE: The HP BladeSystem c-Class interconnects ship as single units unless otherwise noted. Interconnects must be ordered in quantities of two for redundancy support.

HP BladeSystem c-Class Network Interconnects

HP Virtual Connect FlexFabric-20/40 F8 Module for c-Class BladeSystem   691367-B21

NOTE: Virtual Connect FlexFabric-20/40 F8 modules are supported on c7000 enclosures with the following SKUs: 5XXXXX-B21, 6XXXXX-B21, and 7XXXXX-B21.

NOTE: A c7000 enclosure with a 10 fan configuration is required when one or more HP Virtual Connect FlexFabric-20/40 F8 module(s) are installed.

HP Virtual Connect FlexFabric-20/40 F8 Module for c-Class BladeSystem with TAA   691367-B22

NOTE: Virtual Connect FlexFabric-20/40 F8 modules are supported on c7000 enclosures with the following SKUs: 5XXXXX-B21, 6XXXXX-B21, and 7XXXXX-B21.

NOTE: A c7000 enclosure with a 10 fan configuration is required when one or more HP Virtual Connect FlexFabric-20/40 F8 module(s) are installed.

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HP Virtual Connect Flex-10/10D Module Enterprise Edition for BLc7000 Option	662048-B21

NOTE: 662048-B21 includes 2 x HP Virtual Connect Flex-10/10D modules plus 1 x VCEM enclosure license. Customer will receive a printed license entitlement certificate and 2 Virtual Connect modules as a single deliverable. The license entitlement certificate must be redeemed online or via fax to obtain the VCEM license activation key.

HP Virtual Connect Flex-10/10D Module for c-Class BladeSystem	638526-B21
HP Virtual Connect FlexFabric 10/24 Enterprise Edition BLc7000 Option	605865-B21

NOTE: 605865-B21 includes 2 x HP Virtual Connect FlexFabric 10Gb/24-port modules plus 1 x VCEM BL-c7000 enclosure license. Customer will receive a printed license entitlement certificate and 2 Virtual Connect modules as a single deliverable. The license entitlement certificate must be redeemed online or via fax to obtain the VCEM license activation key.

HP Virtual Connect FlexFabric 10Gb/24-port Module for c-Class BladeSystem	571956-B21
HP 6125G Ethernet Blade Switch	658247-B21
HP 6125G/XG Ethernet Blade Switch	658250-B21
HP 6120XG Blade Switch	516733-B21
HP 1GB Ethernet Pass-Thru Module for c-Class BladeSystem	406740-B21
HP 10GbE Ethernet Pass-Thru Module for c-Class BladeSystem	538113-B21
Mellanox SX1018HP Ethernet Switch for c-Class BladeSystem	689638-B21
Cisco Catalyst 1/10GbE 3120X Blade Switch	451439-B21
Cisco Catalyst 1GbE 3120G Blade Switch	451438-B21
HP Cisco B22HP Fabric Extender for BladeSystem c-Class	641146-B21
HP Cisco B22HP Fabric Extender with 16 FET for BladeSystem c-Class	657787-B21

NOTE: 657787-B21 includes 16 Cisco Fabric Extender Transceivers. These transceivers can be used to connect the Fabric Extender with a parent Nexus 5000 over optical cable up to 100 meters using OM3 grade fiber.

HP SAS Switch

NOTE: The HP 6Gb SAS switches are supported on c7000 enclosures with the following SKUs: 5XXXXX-B21, 6XXXXX-B21, and 7XXXXX-B21.

HP 6Gb SAS Switch Single Pack for HP BladeSystem c-Class	BK763A
HP 6Gb SAS Switch Dual Pack for HP BladeSystem c-Class	BK764A

HP BladeSystem c-Class SAN Interconnects

NOTE: HP Fibre Channel interconnect switches and modules with 8Gb downlinks (connection speed from the server blades to the interconnect) are supported on c7000 enclosures with the following SKUs: 5XXXXX-B21, 6XXXXX-B21, and 7XXXXX-B21.

HP Virtual Connect 8Gb 24-port Fibre Channel Module for c-Class BladeSystem	466482-B21
HP Virtual Connect 8Gb 20-port Fibre Channel Module for c-Class BladeSystem	572018-B21
HP 4GB Fibre Channel Pass-thru Module for c-Class BladeSystem	403626-B21
Brocade 8/12c SAN Switch for BladeSystem c-Class	AJ820B
Brocade 8/24c SAN Switch for BladeSystem c-Class	AJ821B
Brocade 8/24c Power Pack+ SAN Switch for BladeSystem c-Class	AJ822B
Cisco MDS 8/12c Fabric Switch for HP BladeSystem c-Class	AW563A
Cisco MDS 8/24c Fabric Switch for HP BladeSystem c-Class	AW564A
Brocade 16Gb/28 SAN Switch for BladeSystem c-Class	C8S46A
Brocade 16Gb/16 SAN Switch for BladeSystem c-Class	C8S45A
Brocade 16Gb/28 SAN Switch Power Pack+ for BladeSystem c-Class	C8S47A
Brocade 8/16Gb Embedded FC Switch 12-port Upgrade LTU	T5517A

HP BladeSystem

NOTE: The HP QDR InfiniBand Switches are supported on c7000 enclosures with the

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InfiniBand Interconnects	following SKUs: 5XXXXX-B21, 6XXXXX-B21, and 7XXXXX-B21.	
	NOTE: The HP FDR InfiniBand Switches are supported on c7000 enclosures with the following SKUs: 686610-B21, 686611-B21, and 7XXXXX-B21.	
	HP 4X QDR QLogic InfiniBand Switch Module for c-Class BladeSystem	505958-B21
	QLogic InfiniBand 4X QDR Management Module for c-Class BladeSystem	505959-B21
	HP 4X QDR InfiniBand Switch Module for c-Class BladeSystem	489184-B21
	HP 4X FDR InfiniBand Managed Switch Module for c-Class BladeSystem	648311-B21
	HP 4X FDR InfiniBand Switch Module for c-Class BladeSystem	648312-B21

Step 6: Select rack (optional)

NOTE: Additional HP Data Center racks are available than those listed below. For information on the full line of HP Data Center Racks and rack accessories, please see http://www.hp.com/go/rackandpower.

HP Data Center Racks	**HP 11000 G2 Series Racks**	
	HP 11642 1075mm Shock Universal Rack	H6J66A
	HP 11642 1200mm Shock Universal Rack	H6J68A
	HP 11648 1075mm Shock Universal Rack	H6J88A
	HP 11842 1200mm Shock Universal Rack	H6J70A
	HP Intelligent Series Rack	
	HP 636 1075mm Shock Intelligent Series Rack	BW896A
	HP 642 1075mm Shock Intelligent Series Rack	BW904A
	HP 647 1075mm Shock Intelligent Series Rack	BW912A
	HP Location Discovery Services	
	NOTE: For information on HP Location Discovery Services, please see http://www.hp.com/go/rackandpower.	
	HP 47U Location Discovery Kit	BW947A
	HP 42U Location Discovery Kit	BW946A
	HP 36U Location Discovery Kit	BW945A

Step 7: Select rack power distribution unit (PDU) (optional)

NOTE: A pair of PDUs must be ordered for AC feed redundancy.
NOTE: Additional HP Power Distribution Units (PDUs) are available than those listed below. For a complete list of all HP PDUs, please visit: http://www.hp.com/go/rackandpower.

HP Power Distribution Units (PDUs)	**HP Basic Power Distribution Units (bPDUs)**	
	HP 4.9kVA 208 Volt L6-30 Input (24xC13/6xC19) NA/JP Basic PDU	H5M59A
	HP 8.6kVA 208 Volt L15-30 3-Phase Input (24xC13/6xC19) NA/JP Basic PDU	H5M62A
	HP 8.6kVA 208 Volt L21-30 3-Phase Input (24xC13/3xC19/3xNEMA 5-20R) NA/JP Basic PDU	H5M64A
	HP 7.3kVA 230 Volt IEC309 32A Input (24xC13/6xC19) INTL Basic PDU	H5M70A
	HP 11kVA 400 Volt IEC309 16A 3-Phase Input (30xC13/6xC19) INTL Basic PDU	H5M72A
	HP Remote Monitoring Power Distribution Units (mPDUs)	
	HP 4.9kVA 208 Volt L6-30 Input (20xC13/4xC19) NA/JP Monitored PDU	D9N47A
	HP 8.6kVA 208 Volt L15-30 3-Phase Input (18xC13/3xC19) NA/JP Monitored PDU	D9N51A

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HP 8.6kVA 208 Volt L21-30 3-Phase Input (20xC13/3xC19/3xNEMA 5-20R) NA/JP Monitored PDU	D9N53A
HP 14.4kVA 208 Volt CS8365C 3-Phase Input (12xC13/12xC19) NA Monitored PDU	D9N58A
HP 16.6kVA 400 Volt IEC309 30A 3-Phase Input (12xC13/12xC19) NA Monitored PDU	D9N62A
HP 17.3kVA 208 Volt IEC309 60A 3-Phase Input (24xC13/3xC19) NA/JP Monitored PDU	D9N54A
HP 17.3kVA 208 Volt IEC309 60A 3-Phase Input (12xC13/12xC19) NA/JP Monitored PDU	D9N59A
HP 17.3kVA 208 Volt IEC309 60A 3-Phase Watertight Input (12xC13/12xC19) NA/JP Monitored PDU	G9Z07A
HP 7.3kVA 230 Volt IEC309 32A Input (20xC13/4xC19) INTL Monitored PDU	D9N48A
HP 7.3kVA 230 Volt IEC309 32A Input (32xC13/4xC19) INTL Monitored PDU	D9N50A
HP 11kVA 400 Volt IEC309 16A 3-Phase Input (30xC13/3xC19) INTL Monitored PDU	D9N57A
HP 22kVA 400 Volt IEC309 32A 3-Phase Input (12xC13/12xC19) INTL Monitored PDU	D9N60A
HP 22kVA 400 Volt IEC309 32A 3-Phase Watertight Input (12xC13/12xC19) INTL Monitored PDU	G9Z08A
HP Environmental Sensor for Remote Monitored PDUs	E2D53A

NOTE: The HP Environmental Sensor collects temperature and humidity information in the rack and can be monitored via the local LCD display or remotely using Telnet or a standard web interface. The sensor can also monitor the status of two user supplied contact devices.

HP Intelligent Power Distribution Units (iPDUs)

HP 4.9kVA 24A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF520A
HP 8.6kVA 24A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF522A
HP 17.3kVA 48A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF523A
HP 17.3kVA 48A 208V Three Phase 12 Outlet Core NA/JP Intelligent Power Distribution Unit	AF535A
HP 17.3kVA 24A 415V Three Phase 12 Outlet Core NA/JP Intelligent Power Distribution Unit	AF537A
HP 7.3kVA 32A Single Phase INTL Core Intelligent Modular Power Distribution Unit	AF525A
HP 7.3kVA 32A Single Input Three Phase INTL Intelligent Modular Power Distribution Unit	AF536A
HP 11kVA 16A Three Phase INTL Core Intelligent Modular Power Distribution Unit	AF526A
HP 22kVA 32A Three Phase INTL Core Intelligent Modular Power Distribution Unit	AF527A
HP 22kVA 32A 400V Three Phase 12 Outlet Core INTL Intelligent Power Distribution Unit	AF538A

Step 8: Select an uninterruptible power system (UPS) (optional)

NOTE: Additional HP Uninterruptable Power Systems (UPSs) are available than those listed here. For a complete list of all HP UPSs and additional information, please visit http://www.hp.com/go/rackandpower

HP Uninterruptible Power Systems (UPSs)

R5000 Uninterruptible Power System (UPS)

HP R5KVA 3U L630 High Voltage NA/JP Uninterruptible Power System	AF460A
HP R5KVA 3U IEC309-32A High Voltage INTL Uninterruptible Power System	AF461A

R7000 Uninterruptible Power System (UPS)

HP R7KVA 4U 50A High Voltage NA/JP Uninterruptible Power System	AF462A
HP R7KVA 4U IEC-32A High Voltage INTL Uninterruptible Power System	AF463A

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HP R8000/3 Uninterruptible Power System (UPS)

HP R8000/3 8000kVA Three Phase NA 6U Rackmount Uninterruptible Power System	AF431A
HP R8000/3 8000kVA Three Phase INTL 6U Rackmount Uninterruptible Power System	AF432A

HP R12000/3 Uninterruptible Power System (UPS)

HP R12000/3 12000VA Three Phase NA 6U Rackmount Uninterruptible Power System	AF429A
HP R12000/3 12000VA Three Phase INTL 6U Rackmount Uninterruptible Power System	AF430A

Step 9: Select power cords (optional)

NOTE: For additional power cable information, please visit http://h18000.www1.hp.com/products/servers/proliantstorage/power-protection/options/power-cable.html.

HP Intelligent Power Distribution Units Power cords (HP C19 to C20)	NOTE: Order with HP Single Phase FIO Intelligent Power Module for c-Class BladeSystem (677595-B21). These power cables enable Power Discovery Services communications between the HP BladeSystem c7000 Enclosure and HP Intelligent PDUs. NOTE: These power cables are designated by bright blue IEC connectors.	
	HP 1.37m 250V 16A C19-C20 WW Single IPD Enabled Jumper Cord	TK744A
	HP 1.37m 250V 16A C19-C20 WW 3PC Kit IPD Enabled Jumper Cord	TK745A
	HP 2.0m 250V 16A C19-C20 WW Single IPD Enabled Jumper Cord	TK738A
	HP 2.0m 250V 16A C19-C20 WW 3PC Kit IPD Enabled Jumper Cord	TK739A
	HP 2.5m 250V 16A C19-C20 WW Single IPD Enabled Jumper Cord	TK740A
	HP 2.5m 250V 16A C19-C20 WW 3PC Kit IPD Enabled Jumper Cord	TK741A
	HP 3.0m 250V 16A C19-C20 WW Single IPD Enabled Jumper Cord	TK742A
	HP 3.0m 250V 16A C19-C20 WW 3PC Kit IPD Enabled Jumper Cord	TK743A
HP Power Distribution Units Power cords (HP C19 to C20)	HP C19 - C20 WW 250V 16Amp Flint Gray 1.20m Jumper Cord	AF575A
	HP C19 - C20 WW 250V 16Amp Flint Gray 2.0m Jumper Cord	AF574A
	HP C19 - C20 WW 250V 16Amp 2.5m Jumper Cord	295633-B22
	HP C19 - C20 WW 250V 16Amp 4.5m Jumper Cord	E7804A

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Additional HP power Cords	**HP High Line Power Cords 200 - 240V AC**	
	HP C19 –Nema L6-30P US/CA 250V 16Amp 4.5m Power Cord	E7805A
	HP C19 - Nema L6-20P NA/JP 250V 20Amp High Voltage 3.6m Power Cord	AF593A
	HP C19 - NBR-14136 BR 250V 16Amp 2.5m Power Cord	AF592A
	HP C19 - BS-1363/A UK/HK/SG 250V 13Amp 3.6m Power Cord	359615-031
	HP C19 - CEE-VII EU 250V 16Amp 3.6m Power Cord	AF576A
	HP C19 - AS3112-3 AU/NZ 250V 15Amp 3.6m Power Cord	AF577A
	HP C19 - SABS-164 ZA 250V 16Amp 3.6m Power Cord	AF579A
	HP C19 - CEI-23-50 IT/CL 250V 16Amp 3.6m Power Cord	AF580A
	HP C19 - IEC-309 DK/SE/AR 250V 16Amp 3.6m Power Cord	AF581A
	HP C19 - IS-1293 IN/PK/BD 250V 16Amp 2.5m Power Cord	AF582A
	HP C19 - ISI-32 IL 250V 16Amp 2.5m Power Cord	AF583A
	HP C19 - GB-1002 CN 250V 16Amp 2.5m Power Cord	AF584A
	HP C19 - CNS-690 TW 250V 16Amp 2.5m Power Cord	AF585A
	HP High Voltage Power Cords 277V AC, 380V DC	
	NOTE: Power cables J6W98A, J6W99A, and J6X00A are intended for 277VAC or 380VDC APP Saf-D-Grid to APP Saf-D-Grid applications.	
	NOTE: Power cables J6X01A, J6X02A, and J6X03A are intended for 277VAC APP Saf-D-Grid to LS-25 applications.	
	HP SDGRD-SDGRD 380V 15A DC 0.76m Jpr Crd	J6W98A
	HP SDGRD-SDGRD 380V 15A DC 1.37m Jpr Crd	J6W99A
	HP SDGRD-SDGRD 380V 15A DC 2.0m Jpr Crd	J6X00A
	HP SDGRD-LS25 277V 15A AC 0.76m Jpr Crd	J6X01A
	HP SDGRD-LS25 277V 15A AC 1.37m Jpr Crd	J6X02A
	HP SDGRD-LS25 277V 15A AC 2.0m Jpr Crd	J6X03A

Related Options

HP Enclosure Options	HP BLc7000 Onboard Administrator with KVM Option	456204-B21

NOTE: The HP c7000 Onboard Administrator (OA) supports the mixing with the HP c7000 OA with KVM. The HP c7000 OA with KVM must be the active OA to provide the enclosure KVM feature. The KVM menu has an OA CLI button at the bottom, which allows an OA administrator to log into the OA and be able to force a takeover so the OA with KVM will become the standby OA. The OA Firmware Sync feature cannot be used to update mismatched OA modules. Mismatched OA firmware versions between the original c7000 OA and c7000 OA with KVM require the administrator to use the GUI or CLI to update the OA from a file (http, ftp, tftp, local client file using the GUI or USB key containing the OA firmware file).

NOTE: The c7000 enclosure (part numbers 681840-B21, 681842-B21, 681844-B21, 763850-B21, and AD361D) come with a BladeSystem Onboard Administrator with KVM as standard. Order this part number (456204-B21) when a second redundant BladeSystem Onboard Administrator is desired for a c7000 enclosure.

NOTE: HP BladeSystem c3000 and c7000 Enclosures support G1 through Gen9 ProLiant and Integrity server blades, subject to support requirements of the Onboard Administrator. Certain HP ProLiant server blades and options may require a specific version of the Onboard Administrator firmware. This firmware release may also require other subsystem firmware upgrades. For further information, please see the HP Service Pack for ProLiant (SPP) website and the HP Support Center document &HP ProLiant Server Blades - Compatibility with HP BladeSystem c7000 and c3000 Enclosures and Firmware&

	HP BLc7000 10000 Series Rack Shipping Bracket Option	433718-B21

NOTE: The shipping bracket is required when shipping a c7000 enclosure when installed in a rack. It is not required for normal operation.

	HP c-Class BladeSystem Miscellaneous Blanks Option Kit	412148-B21

NOTE: Contains 1 each of c3000/c7000 Active Cool Fan blank, c3000/c7000 interconnect module blank, c7000 Onboard Administrator blank, c3000 local KVM blank, c3000 power supply blank, c7000 power supply blank, c3000 DVD blank, and a c3000 mini-divider.

NOTE: This kit is designed to replace lost or damaged blanks, or if reconfiguring an enclosure where additional blanks are required.

	HP c-Class BladeSystem Bay Blank with Coupler Option	412150-B21

NOTE: This is option contains one half-height device blank and a coupler that can be used for the c3000 and c7000 enclosures.

NOTE: Order quantity of one 412150-B21 for filling a half-height bay - the coupler is not used.

NOTE: Order quantity of two 412150-B21 for filling a full-height bay. One coupler is installed between the two half-height blanks to be connected together to create a full-height blank.

NOTE: This kit is designed to replace lost or damaged blanks, or if reconfiguring an enclosure where additional blanks are required.

HP Power Supplies	**NOTE:** HP highly recommends using the HP Power Advisor tool to ensure the number of power supply options you have selected can fully support your BladeSystem configuration and to review maximum system power ratings for facilities planning purposes. HP Power Advisor is available at: http://www.hp.com/go/hppoweradvisor.

NOTE: Mixing of power supplies is not supported on BladeSystem c7000 Enclosures, except during hot swaps to different level power supplies. The Onboard Administrator will exhibit a mismatch error due to mixed power supplies until all power supplies are matched.

NOTE: If a three phase power module is selected (413380-B21 or 413381-B21), a minimum of 3 power supply option kits are required. For full redundancy, 6 power supply option kits are required.

NOTE: HP c7000 enclosure AC power supplies meet 80 PLUS Platinum or Gold power efficiency requirements - Platinum (94%) and Gold (92%). The 80 PLUS program is a

Related Options

unique forum that unites electric utilities, the computer industry, and consumers in an effort to bring energy efficient technology solutions to the marketplace. 80 PLUS independently tests power supply efficiency and publically posts the results on 80Plus.org. DC power supplies are not eligible for 80 PLUS testing–efficiency is per HP internal testing.

HP 2650W Platinum Hot Plug Power Supply Kit	733459-B21

NOTE: This power supply kit enables HP Power Discovery Services when used with the HP BLc7000 Single Phase FIO Intelligent Power Module 677595-B21. See the "c-Class Power Modules" section above for the power modules.
NOTE: Includes one WW 250W C19 - C20 2.0m Jumper Cord.
NOTE: This power supply kit meets multiple energy efficiency initiatives–2650W, 94%–Climate Savers Computing Initiative PLATINUM and ECOS Consulting 80 PLUS Platinum.

HP 2400W Platinum Hot Plug Power Supply Kit	588603-B21

NOTE: This power supply kit enables HP Power Discovery Services when used with the HP BLc7000 Single Phase FIO Intelligent Power Module 677595-B21. See the "c-Class Power Modules" section above for the power modules.
NOTE: Includes one WW 250W C19 - C20 2.0m Jumper Cord.
NOTE: This power supply kit meets multiple energy efficiency initiatives–2400W, 94%–Climate Savers Computing Initiative PLATINUM and ECOS Consulting 80 PLUS Platinum.

HP 2400W Gold Hot Plug Power Supply Kit	499243-B21

NOTE: This power supply kit disables HP Power Discovery Services.
NOTE: Includes one WW 250W C19 - C20 2.0m Jumper Cord.

HP 2250W -48VDC Hot Plug Power Supply Kit	AH332A

NOTE: This power supply kit disables HP Power Discovery Services.
NOTE: Only compatible with the HP BLc7000 -48V DC Power Input Module AH331A. See the "c-Class Power Modules" section above for the power modules.

HP 2650W Universal Hot Plug Power Supply Kit	753618-B21

NOTE: This power supply kit disables HP Power Discovery Services.
NOTE: Compatible with the HP HVDC 1PH AC Power Module BLc FIO Option 753623-B21. See the "c-Class Power Modules" section above for the power modules.
NOTE: Cables are not included and may be ordered separately–see cable options J6X01A, J6X02A, J6X03A (277VAC applications) and J6W98A, J6W99A, J6X00A (277VAC or 380VDC applications).

HP Cooling Options	**HP c-Class Active Cool Fan**	
	HP BLc7000 Enclosure HP Single Active Cool Fan Option Kit	412140-B21

NOTE: A minimum of 4 Active Cool 200 Fans is required to a maximum of 10 Active Cool 200 Fans.
NOTE: Ten Active Cool 200 Fans are strongly recommended for maximum cooling efficiency and redundancy, reduced power consumption, and reduced noise.
NOTE: Enclosures configured with a three-phase power input module require a minimum of 6 Active Cool 200 Fans.
NOTE: Some blade configurations require 10 Active Cool 200 Fans.
NOTE: For the complete list of fan requirements and recommendations, see the "Server Blade and Fan Population Guidelines" section of this document.

HP BladeSystem c-Class Network Interconnects

NOTE: For detailed interconnect options, consult the specific interconnect QuickSpecs–http://h18004.www1.hp.com/products/blades/components/c-class-interconnects.html.
NOTE: Options to specific c-Class interconnects are NOT included in the list below. Consult the individual interconnect QuickSpecs to obtain part numbers for interconnect options such as cables, SFPs, etc.
NOTE: Interconnect Bay 1 must contain one of the Ethernet capable interconnect modules.
NOTE: The HP BladeSystem c-Class interconnects ship as single units unless otherwise noted. Interconnects must be ordered in quantities of two for redundancy support.

Related Options

	HP Virtual Connect FlexFabric-20/40 F8 Module for c-Class BladeSystem	691367-B21
	NOTE: Virtual Connect FlexFabric-20/40 F8 modules are supported on c7000 enclosures with the following SKUs: 5XXXXX-B21, 6XXXXX-B21, and 7XXXXX-B21. **NOTE:** A c7000 enclosure with a 10 fan configuration is required when one or more HP Virtual Connect FlexFabric-20/40 F8 Module(s) are installed.	
	HP Virtual Connect FlexFabric-20/40 F8 Module for c-Class BladeSystem with TAA	691367-B22
	NOTE: Virtual Connect FlexFabric-20/40 F8 modules are supported on c7000 enclosures with the following SKUs: 5XXXXX-B21, 6XXXXX-B21, and 7XXXXX-B21. **NOTE:** A c7000 enclosure with a 10 fan configuration is required when one or more HP Virtual Connect FlexFabric-20/40 F8 Module(s) are installed.	
	HP Virtual Connect Flex-10/10D Module Enterprise Edition for BLc7000 Option	662048-B21
	NOTE: 662048-B21 includes 2 x HP Virtual Connect Flex-10/10D modules plus 1 x VCEM enclosure license. Customer will receive a printed license entitlement certificate and 2 Virtual Connect modules as a single deliverable. The license entitlement certificate must be redeemed online or via fax to obtain the VCEM license activation key.	
	HP Virtual Connect Flex-10/10D Module for c-Class BladeSystem	638526-B21
	HP Virtual Connect FlexFabric 10/24 Enterprise Edition BLc7000 Option	605865-B21
	NOTE: 605865-B21 includes 2 x HP Virtual Connect FlexFabric 10Gb/24-port modules plus 1 x VCEM BL-c7000 enclosure license. Customer will receive a printed license entitlement certificate and 2 Virtual Connect modules as a single deliverable. The license entitlement certificate must be redeemed online or via fax to obtain the VCEM license activation key.	
	HP Virtual Connect FlexFabric 10Gb/24-port Module for c-Class BladeSystem	571956-B21
	HP 6125G Ethernet Blade Switch	658247-B21
	HP 6125G/XG Ethernet Blade Switch	658250-B21
	HP 6120XG Blade Switch	516733-B21
	HP 1GB Ethernet Pass-Thru Module for c-Class BladeSystem	406740-B21
	HP 10GbE Ethernet Pass-Thru Module for c-Class BladeSystem	538113-B21
	Mellanox SX1018HP Ethernet Switch for c-Class BladeSystem	689638-B21
	Cisco Catalyst 1/10GbE 3120X Blade Switch	451439-B21
	Cisco Catalyst 1GbE 3120G Blade Switch	451438-B21
	HP Cisco B22HP Fabric Extender for BladeSystem c-Class	641146-B21
	HP Cisco B22HP Fabric Extender with 16 FET for BladeSystem c-Class	657787-B21
HP BladeSystem c-Class SAN Interconnects	**NOTE:** For detailed interconnect options, consult the specific interconnect QuickSpecs: http://h18004.www1.hp.com/products/blades/components/c-class-interconnects.html. **NOTE:** Options to specific c-Class interconnects are NOT included in the list below. Consult the individual interconnect QuickSpecs to obtain part numbers for interconnect options such as cables, SFPs, etc. **NOTE:** Interconnect Bay 1 must contain one of the Ethernet capable interconnect modules. **NOTE:** The HP BladeSystem c-Class interconnects ship as single units unless otherwise noted. Interconnects must be ordered in quantities of two for redundancy support. **NOTE:** HP Fibre Channel interconnect switches and modules with 8Gb downlinks (connection speed from the server blades to the interconnect) are supported on c7000 enclosures with the following SKUs: 5XXXXX-B21, 6XXXXX-B21, and 7XXXXX-B21.	
	HP Virtual Connect 8Gb 24-port Fibre Channel Module for c-Class BladeSystem	466482-B21
	HP Virtual Connect 8Gb 20-port Fibre Channel Module for c-Class BladeSystem	572018-B21
	HP 4GB Fibre Channel Pass-thru Module for c-Class BladeSystem	403626-B21
	Brocade 8/12c SAN Switch for BladeSystem c-Class	AJ820B
	Brocade 8/24c SAN Switch for BladeSystem c-Class	AJ821B

Related Options

	Brocade 8/24c Power Pack+ SAN Switch for BladeSystem c-Class	AJ822B
	Cisco MDS 8/12c Fabric Switch for HP BladeSystem c-Class	AW563A
	Cisco MDS 8/24c Fabric Switch for HP BladeSystem c-Class	AW564A
	Cisco MDS 9124e Switch for BladeSystem c-Class 12-port Upgrade LTU	T5169A
	Brocade 16Gb/28 SAN Switch for BladeSystem c-Class	C8S46A
	Brocade 16Gb/16 SAN Switch for BladeSystem c-Class	C8S45A
	Brocade 16Gb/28 SAN Switch Power Pack+ for BladeSystem c-Class	C8S47A
	Brocade 8/16Gb Embedded FC Switch 12-port Upgrade LTU	T5517A
	HP MDS 8/12c Fabric Switch 12-port Upgrade LTU **NOTE:** Licensed per switch.	TA804A
	HP StoreFabric Data Center Network Manager BladeSystem LTU **NOTE:** Installed on DCNM Server, each license can be assigned to only one switch.	TC367A
	HP MDS Enterprise Package for BladeSystem c-Class LTU **NOTE:** Licensed per switch.	TC317A
HP SAS Switch	**NOTE:** For detailed interconnect options, consult the specific interconnect QuickSpecs: http://h18004.www1.hp.com/products/blades/components/c-class-interconnects.html. **NOTE:** Options to specific c-Class interconnects are NOT included in the list below. Consult the individual interconnect QuickSpecs to obtain part numbers for interconnect options such as cables, SFPs, etc. **NOTE:** Interconnect Bay 1 must contain one of the Ethernet capable interconnect modules. **NOTE:** The HP BladeSystem c-Class interconnects ship as single units unless otherwise noted. Interconnects must be ordered in quantities of two for redundancy support. **NOTE:** The HP 6Gb SAS switches are supported on c7000 enclosures with the following SKUs: 5XXXXX-B21, 6XXXXX-B21, and 7XXXXX-B21.	
	HP 6Gb SAS Switch Single Pack for HP BladeSystem c-Class	BK763A
	HP 6Gb SAS Switch Dual Pack for HP BladeSystem c-Class	BK764A
HP BladeSystem InfiniBand Interconnects	**NOTE:** For detailed interconnect options, consult the specific interconnect QuickSpecs: http://h18004.www1.hp.com/products/blades/components/c-class-interconnects.html. **NOTE:** Options to specific c-Class interconnects are NOT included in the list below. Consult the individual interconnect QuickSpecs to obtain part numbers for interconnect options such as cables, SFPs, etc. **NOTE:** Interconnect Bay 1 must contain one of the Ethernet capable interconnect modules. **NOTE:** The HP BladeSystem c-Class interconnects ship as single units unless otherwise noted. Interconnects must be ordered in quantities of two for redundancy support. **NOTE:** The HP QDR InfiniBand Switches are supported on c7000 enclosures with the following SKUs: 5XXXXX-B21, 6XXXXX-B21, and 7XXXXX-B21. **NOTE:** The HP FDR InfiniBand Switches are supported on c7000 enclosures with the following SKUs: 686610-B21, 686611-B21, and 7XXXXX-B21.	
	HP 4X QDR QLogic InfiniBand Switch Module for c-Class BladeSystem	505958-B21
	QLogic InfiniBand 4X QDR Management Module for c-Class BladeSystem	505959-B21
	HP 4X QDR InfiniBand Switch Module for c-Class BladeSystem	489184-B21
	HP 4X FDR InfiniBand Managed Switch Module for c-Class BladeSystem	648311-B21
	HP 4X FDR InfiniBand Switch Module for c-Class BladeSystem	648312-B21
HP Optical Drives	HP Integrity USB External DVD/RW Drive	AT120A

Related Options

HP Insight Software	**Insight Control**	
	NOTE: Licenses ship without media. The Insight Management Media Kit can be ordered separately, or can be downloaded at http://www.hp.com/go/insightupdates. **NOTE:** Customer will receive a license entitlement certificate, which 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/12631_div/12631_div.html.	
	HP Insight Control for BladeSystem including 1yr 24x7 Support Enclosure 8 Svr FIO Electronic License	C6N32ABE
	HP Insight Control for BladeSystem including 1yr 24x7 Support Enclosure 16 Svr FIO Electronic License	C6N33ABE
	HP Insight Control Server Provisioning Media Kit	BD883A
	NOTE: HP Insight Control 7.2 introduced Insight Control server provisioning, a new capability ideal for multi-server OS and firmware provisioning to ProLiant and BladeSystem servers. Insight Control server provisioning is included and licensed as part of HP Insight Control. A media kit, &HP Insight Control server provisioning USB media kit&(# BD883A), including a USB, is available for customers who require a physical copy of the media loaded with Insight Control server provisioning software. Please note that this media kit is separate and in addition to the HP Insight Management DVD Media Kit (C6N31A).	
	HP Insight Management Media Kit	C6N31A
	NOTE: The HP Insight Management Media Kit (C6N31A) contains DVDs without licenses. Contains HP Systems Insight Manager, HP Insight Control, HP Matrix Operating Environment, and Virtual Connect Enterprise Manager software. Uses an integrated installer to perform quick and accurate software installation and updates.	
HP OneView Software	HP OneView incl 3yr 24x7 Supp Enclosure Bundle 16 Svr E-LTU	E5Y41AAE
	NOTE: Server provisioning capability (i.e. 'Insight Control server provisioning') is included and licensed as part of HP OneView. This capability is ideal for multi-server OS and driver provisioning to ProLiant and BladeSystem servers. A media kit (&HP Insight Control server provisioning USB media kit&BD883A), which includes a USB flash drive, is available for customers who require a physical copy of the software on media. This media kit is separate and in addition to the &HP OneView Media Kit&E5Y37A. **NOTE:** OneView licenses ship without media. The HP OneView Media Kit can be ordered separately (E5Y37A) or can be downloaded at http://www.hp.com/go/oneview.	
	HP OneView Media Kit Phys No Lic	E5Y37A

Related Options

HP iLO Advanced for BladeSystem License	HP iLO Advanced for BladeSystem including 1yr 24x7 Support Eight Server License	512489-B21

HP Virtual Connect Enterprise Manager	HP Virtual Connect Enterprise Manager including 1yr 24x7 Support Single c7000 Enclosure Lic	459864-B21

NOTE: This license (459864-B21) allows One 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.
NOTE: For additional license kits, please visit:
http://h18000.www1.hp.com/products/quickspecs/12860_div/12860_div.html (Worldwide)

HP c-Class Storage Blades	HP D2200sb PCIe Storage Blade	AP880A

NOTE: Please see the HP D2200sb Storage Blade QuickSpecs for technical specifications and additional information at:
http://h18000.www1.hp.com/products/quickspecs/13714_div/13714_div.html

HP D2220sb PCIe and StoreVirtual VSA Bundle	QW914A

NOTE: Includes the D2220sb Storage Blade and a single HP StoreVirtual VSA license. VSA software is installed in a virtual machine on a VMware ESX/ESXi & Microsoft Hyper-V host server adjacent to the D2220sb.
NOTE: Includes 3yr NBD Parts-Only Warranty Service for D2220sb hardware.
NOTE: Includes 3yr 9x5 remote technical support for HP StoreVirtual VSA software and free updates.
NOTE: HP StoreVirtual VSA is supported on VMware ESX/ESXi & Microsoft Hyper-V.

HP D2220sb PCIe w/(12) 900 GB 6G SAS HDD Bundle	QW915A

NOTE: Includes 3yr NBD Parts-Only Warranty Service for D2220sb hardware

HP D2220sb Build-to-order Storage Blade	QW917A

NOTE: Includes 3yr NBD Parts-Only Warranty Service

HP D2220sb Configure-to-order Storage Blade	QW918A

NOTE: Includes 3yr NBD Parts-Only Warranty Service

NOTE: The D2220sb requires a c7000 Enclosure configuration with 10 fans.
NOTE: Please see the HP D2220sb Storage Blade QuickSpecs for technical specifications and additional information at:
http://h18000.www1.hp.com/products/quickspecs/14507_div/14507_div.html.

HP BL c-Class PCI Express Mezzanine Pass Thru Option Kit	431643-B21

NOTE: The HP PCI Express Mezzanine Pass-Thru Card (P/N 431643-B21) is required to support an expansion blade with the ProLiant BL620c G7 Server Blade. Up to two expansion blades are supported per server mix and match (Ultrium Tape, D2220sb/D2220sb PCIe Storage, and/or PCI Expansion Blades). See the "Expansion blade" section later in this document for more information.

HP StoreEasy 3840 Gateway Storage Blade	E7X08A

Related Options

HP Expansion Blades	HP BLc PCI Expansion Blade	448018-B21

NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12753_div/12753_div.html

	HP BL c-Class PCI Express Mezzanine Pass Thru Option Kit	431643-B21

NOTE: The HP PCI Express Mezzanine Pass-Thru Card (P/N 431643-B21) is required to support an expansion blade with the ProLiant BL620c G7 Server Blade. Up to two expansion blades are supported per server mix and match (Ultrium Tape, D2220sb/D2220sb PCIe Storage, and/or PCI Expansion Blades). See the "Expansion blade" section later in this document for more information.

HP Ultrium Tape Blades	HP StoreEver LTO-5 Ultrium SB3000c Tape Blade	BS580B
	HP StoreEver LTO-4 Ultrium SB1760c Tape Blade	AQ697B

NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12729_div/12729_div.html

	HP BL c-Class PCI Express Mezzanine Pass Thru Option Kit	431643-B21

NOTE: The HP PCI Express Mezzanine Pass-Thru Card (P/N 431643-B21) is required to support an expansion blade with the ProLiant BL620c G7 Server Blade. Up to two expansion blades are supported per server mix and match (Ultrium Tape, D2220sb/D2220sb PCIe Storage, and/or PCI Expansion Blades). See the "Expansion blade" section later in this document for more information.

HP Power Cords	**NOTE:** For power cable information, please visit: http://h18000.www1.hp.com/products/servers/proliantstorage/power-protection/options/power-cable.html

HP Intelligent Power Distribution Units Power cords

NOTE: Order with HP Single Phase FIO Intelligent Power Module for c-Class BladeSystem (677595-B21). These power cables enable Power Discovery Services communications between the HP BladeSystem c7000 Enclosure and HP Intelligent PDUs.
NOTE: These power cables are designated by bright blue IEC connectors.

HP 1.37m 250V 16A C19-C20 WW Single IPD Enabled Jumper Cord	TK744A
HP 2.0m 250V 16A C19-C20 WW Single IPD Enabled Jumper Cord	TK738A
HP 3.0m 250V 16A C19-C20 WW Single IPD Enabled Jumper Cord	TK742A

HP C19 - C20 Jumper Cords

HP C19 - C20 WW 250V 16Amp Flint Gray 1.20m Jumper Cord	AF575A
HP C19 - C20 WW 250V 16Amp Flint Gray 2.0m Jumper Cord	AF574A
HP C19 - C20 WW 250V 16Amp 2.5m Jumper Cord	295633-B22
HP C19 - C20 WW 250V 16Amp 4.5m Jumper Cord	E7804A

HP HV Power Cords 200 - 240V AC

HP C19 -Nema L6-30P US/CA 250V 16Amp 4.5m Power Cord	E7805A
HP C19 - Nema L6-20P NA/JP 250V 20Amp High Voltage 3.6m Power Cord	AF593A
HP C19 - NBR-14136 BR 250V 16Amp 2.5m Power Cord	AF592A
HP C19 - BS-1363/A UK/HK/SG 250V 13Amp 3.6m Power Cord	359615-031
HP C19 - CEE-VII EU 250V 16Amp 3.6m Power Cord	AF576A
HP C19 - AS3112-3 AU/NZ 250V 15Amp 3.6m Power Cord	AF577A

Related Options

HP C19 - SABS-164 ZA 250V 16Amp 3.6m Power Cord	AF579A
HP C19 - CEI-23-50 IT/CL 250V 16Amp 3.6m Power Cord	AF580A
HP C19 - IEC-309 DK/SE/AR 250V 16Amp 3.6m Power Cord	AF581A
HP C19 - IS-1293 IN/PK/BD 250V 16Amp 2.5m Power Cord	AF582A
HP C19 - ISI-32 IL 250V 16Amp 2.5m Power Cord	AF583A
HP C19 - GB-1002 CN 250V 16Amp 2.5m Power Cord	AF584A
HP C19 - CNS-690 TW 250V 16Amp 2.5m Power Cord	AF585A
HP 240 VAC 4.5M Unterminated End NA Power Cord	E7806A
HP High Voltage Power Cords 277V AC, 380V DC **NOTE:** Power cables J6W98A, J6W99A, and J6X00A are intended for 277VAC or 380VDC APP Saf-D-Grid to APP Saf-D-Grid applications. **NOTE:** Power cables J6X01A, J6X02A, and J6X03A are intended for 277VAC APP Saf-D-Grid to LS-25 applications.	
HP SDGRD-SDGRD 380V 15A DC 0.76m Jpr Crd	J6W98A
HP SDGRD-SDGRD 380V 15A DC 1.37m Jpr Crd	J6W99A
HP SDGRD-SDGRD 380V 15A DC 2.0m Jpr Crd	J6X00A
HP SDGRD-LS25 277V 15A AC 0.76m Jpr Crd	J6X01A
HP SDGRD-LS25 277V 15A AC 1.37m Jpr Crd	J6X02A
HP SDGRD-LS25 277V 15A AC 2.0m Jpr Crd	J6X03A

HP Uninterruptible Power Systems (UPSs)

NOTE: Additional HP Uninterruptable Power Systems (UPSs) are available than those listed here. For a complete list of all HP UPSs and additional information, please visit http://www.hp.com/go/rackandpower.

R5000 Uninterruptible Power System (UPS)

HP R5KVA 3U L630 High Voltage NA/JP Uninterruptible Power System	AF460A
HP R5KVA 3U IEC309-32A High Voltage INTL Uninterruptible Power System	AF461A

R7000 Uninterruptible Power System (UPS)

HP R7KVA 4U 50A High Voltage NA/JP Uninterruptible Power System	AF462A
HP R7KVA 4U IEC-32A High Voltage INTL Uninterruptible Power System	AF463A
HP R5KVA and R7KVA 3U Extended Runtime Module	AF464A

HP R8000/3 Uninterruptible Power System (UPS)

HP R8000/3 8000kVA Three Phase NA 6U Rackmount Uninterruptible Power System	AF431A
HP R8000/3 8000kVA Three Phase INTL 6U Rackmount Uninterruptible Power System	AF432A

HP R12000/3 Uninterruptible Power System (UPS)

HP R12000/3 12000VA Three Phase NA 6U Rackmount Uninterruptible Power System	AF429A
HP R12000/3 12000VA Three Phase INTL 6U Rackmount Uninterruptible Power System	AF430A

HP Parallel 3 Phase Uninterruptible Power Systems (UPS RP36000/3)

HP RP36000/3 36000VA Three Phase NA Uninterruptible Power System	AF438A
HP RP36000/3 36000VA Three Phase INTL Uninterruptible Power System	AF439A

Expansion modules for RP36000/3 UPS

HP RP12000/3 12000VA Three Phase NA 6U Rackmount Uninterruptible Power System	AF436A
HP RP12000/3 12000VA Three Phase INTL 6U Rackmount Uninterruptible Power System	AF437A

Related Options

HP Power Distribution Units (PDUs)

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

NOTE: Additional HP Power Distribution Units (PDUs) are available than those listed below. For a complete list of all HP PDUs, please visit http://www.hp.com/go/rackandpower.

HP Basic Power Distribution Units (bPDUs)

HP 4.9kVA 208 Volt L6-30 Input (24xC13/6xC19) NA/JP Basic PDU	H5M59A
HP 7.3kVA 230 Volt IEC309 32A Input (24xC13/6xC19) INTL Basic PDU	H5M70A
HP 8.6kVA 208 Volt L15-30 3-Phase Input (24xC13/6xC19) NA/JP Basic PDU	H5M62A
HP 8.6kVA 208 Volt L21-30 3-Phase Input (24xC13/3xC19/3xNEMA 5-20R) NA/JP Basic PDU	H5M64A
HP 11kVA 400 Volt IEC309 16A 3-Phase Input (30xC13/6xC19) INTL Basic PDU	H5M72A

HP Modular Power Distribution Units (PDU Cores)

NOTE: Modular PDU Cores do not include extension bars.

HP 4.9kVA 24A High Voltage NA/JP Core Modular Power Distribution Unit	252663-D74.
HP 8.3kVA 40A High Voltage NA/JP Core Modular Power Distribution Unit	252663-D75
HP 8.6kVA 24A Three Phase NA/JP Modular Power Distribution Unit	AF512A
HP 14.4kVA 40A Three Phase NA/JP Modular Power Distribution Unit	AF519A
HP 17.3kVA 48A Three Phase NA/JP Modular Power Distribution Unit	AF511A
HP 9.2kVA 40A High Voltage INTL Core Modular Power Distribution Unit	252663-B34
HP 7.3kVA 32A High Voltage INTL Core Modular Power Distribution Unit	252663-B33
HP 11kVA 16A Three Phase INTL Modular Power Distribution Unit	AF513A
HP 22kVA 32A Three Phase INTL Core Modular Power Distribution Unit	AF518A

HP Remote Monitoring Power Distribution Units (mPDUs)

HP 4.9kVA 208 Volt L6-30 Input (20xC13/4xC19) NA/JP Monitored PDU	D9N47A
HP 7.3kVA 230 Volt IEC309 32A Input (20xC13/4xC19) INTL Monitored PDU	D9N48A
HP 7.3kVA 230 Volt IEC309 32A Input (32xC13/4xC19) INTL Monitored PDU	D9N50A
HP 8.6kVA 208 Volt L15-30 3-Phase Input (18xC13/3xC19) NA/JP Monitored PDU	D9N51A
HP 8.6kVA 208 Volt L21-30 3-Phase Input (20xC13/3xC19/3xNEMA 5-20R) NA/JP Monitored PDU	D9N53A
HP 11kVA 400 Volt IEC309 16A 3-Phase Input (30xC13/3xC19) INTL Monitored PDU	D9N57A
HP 17.3kVA 208 Volt IEC309 60A 3-Phase Input (24xC13/3xC19) NA/JP Monitored PDU	D9N54A
HP Environmental Sensor for Remote Monitored PDUs	E2D53A

NOTE: The HP Environmental Sensor collects temperature and humidity information in the rack and can be monitored via the local LCD display or remotely using Telnet or a standard web interface. The sensor can also monitor the status of two user supplied contact devices.

HP Intelligent Power Distribution Units (iPDUs)

HP 4.9kVA 24A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF520A
HP 7.3kVA 32A Single Phase INTL Core Intelligent Modular Power Distribution Unit	AF525A
HP 8.6kVA 24A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF522A
HP 11kVA 16A Three Phase INTL Core Intelligent Modular Power Distribution Unit	AF526A
HP 17.3kVA 48A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF523A
HP 22kVA 32A Three Phase INTL Core Intelligent Modular Power Distribution Unit	AF527A

Related Options

HP Data Center Racks	NOTE: Additional HP Data Center racks are available than those listed below. For information on the full line of HP Data Center Racks and rack accessories, please see http://www.hp.com/go/rackandpower.	
	HP 11000 G2 Series Racks	
	HP 11642 1075mm Pallet Universal Rack	H6J65A
	HP 11642 1200mm Pallet Universal Rack	H6J67A
	HP 11842 1200mm Pallet Universal Rack	H6J69A
	HP 11648 1075mm Pallet Universal Rack	H6J87A
	HP 11636 1075mm Pallet Universal Rack	H6J77A
	HP 11622 G2 1075mm Pallet Universal Rack	H6J83A
	HP Intelligent Series Rack	
	HP 636 1075mm Pallet Intelligent Series Rack	BW895A
	HP 642 1075mm Pallet Intelligent Series Rack	BW903A
	HP 647 1075mm Pallet Intelligent Series Rack	BW911A
	HP Location Discovery Services	
	NOTE: For information on HP Location Discovery Services, please see http://www.hp.com/go/rackandpower.	
	HP 47U Location Discovery Kit	BW947A
	HP 42U Location Discovery Kit	BW946A
	HP 36U Location Discovery Kit	BW945A

HP Tape Backup	NOTE: For the complete range of tape drives, autoloaders, libraries and media see: http://www.hp.com/go/tape. For hardware and software compatibility of HP tape backup products see: http://www.hp.com/storage/SPOCK.	
	HP StoreEver LTO-6 Ultrium 6250 Tape Drive in 1U Rack-mount Kit	C0L99A
	HP StoreEver LTO-6 Ultrium 6650 SAS Internal Tape Drive	EH963A
	HP StoreEver LTO-6 Ultrium 6650 SAS External Tape Drive	EH964A
	HP StoreEver LTO-6 Ultrium 6250 Internal Tape Drive	EH969A
	HP StoreEver LTO-6 Ultrium 6250 External Tape Drive	EH970A

HP Rack Options	NOTE: For additional information regarding Rack Options, please see the following URL: http://www.hp.com/go/rackandpower.	
	HP TFT7600 G2 KVM Console and Monitor	
	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 TFT7600 G2 KVM Console Rackmount Keyboard US Monitor	AZ870A
	HP TFT7600 G2 KVM Console Rackmount Keyboard UK Monitor	AZ871A
	HP TFT7600 G2 KVM Console Rackmount Keyboard DE Monitor	AZ872A
	HP TFT7600 G2 KVM Console Rackmount Keyboard FR Monitor	AZ873A
	HP TFT7600 G2 KVM Console Rackmount Keyboard IT Monitor	AZ874A
	HP TFT7600 G2 KVM Console Rackmount Keyboard ES Monitor	AZ875A
	HP TFT7600 G2 KVM Console Rackmount Keyboard DK Monitor	AZ876A
	HP TFT7600 G2 KVM Console Rackmount Keyboard NO Monitor	AZ877A
	HP TFT7600 G2 KVM Console Rackmount Keyboard SE/FI Monitor	AZ878A
	HP TFT7600 G2 KVM Console Rackmount Keyboard CH Monitor	AZ879A
	HP TFT7600 G2 KVM Console Rackmount Keyboard PT Monitor	AZ880A
	HP TFT7600 G2 KVM Console Rackmount Keyboard BE Monitor	AZ881A

Related Options

HP TFT7600 G2 KVM Console Rackmount Keyboard JP Monitor	AZ882A
HP TFT7600 G2 KVM Console Rackmount Keyboard RU Monitor	AZ883A
HP TFT7600 G2 KVM Console Rackmount Keyboard Intl Monitor	AZ884A
HP TFT7600 G2 KVM Console Rackmount Keyboard US TAA Monitor	AZ885A

HP KVM Server Console Switches

HP Server Console 0x2x8 Port Analog Switch	AF616A
HP Server Console 0x2x16 Port Analog Switch	AF617A

HP Server Console Switch G2 with Virtual Media & CAC

HP 0x2x16 KVM Server Console Switch G2 with Virtual Media CAC Software	AF618A
HP 0x2x32 KVM Server Console Switch G2 with Virtual Media CAC Software	AF619A

HP IP Console Switch G2 with Virtual Media & CAC

HP 1x1Ex8 KVM IP Console Switch G2 with Virtual Media CAC Software	AF620A
HP 2x1Ex16 KVM IP Console Switch G2 with Virtual Media CAC Software	AF621A
HP 4x1Ex32 KVM IP Console Switch G2 with Virtual Media CAC Software	AF622A

HP KVM Interface Adapters

HP KVM Console USB Interface Adapter	AF628A
HP KVM Console USB 2.0 Virtual Media CAC Interface Adapter	AF629A
HP KVM Console Serial/Power G2 Interface Adapter	AF625A

HP Care Pack Services

NOTE: Some options, including Fibre Channel and InfiniBand switches for the HP c-Class BladeSystem, are not covered under the c7000 enclosure Care Packs and carry separate Care Packs. Care Pack service level support for these options should always be uplifted to match existing storage or server service level. Please view the option QuickSpecs or contact your HP sales representative or HP authorized ServiceOne partner for Care Pack information.

NOTE: Additional HP Care Pack services can be found at http://www.hp.com/go/cpc.

Proactive Care Services

HP 3 year 4 hour 24x7 c7000 Enclosure Proactive Care Service	U3C33E
HP 3 year 6 hour Call To Repair 24x7 c7000 Enclosure Proactive Care Service	U3C36E
HP 3 year 4 hour 24x7 c7000 Enclosure with Insight Control Proactive Care Service	U3P10E
HP 3 year 6 hour Call To Repair 24x7 c7000 Enclosure with Insight Control Proactive Care Service	U3P13E

HP Proactive Care Personalized Support - Environmental Option

HP 3 year ISS ProactiveCare Personalized Support	U6W98E

Installation & Start-up Services

HP Startup BladeSystem c7000 Infrastructure Service	UE602E
HP Enhanced Network Installation and Startup Service for HP BladeSystem	UE603E
HP Hardware Install c-Class Enclosure and Server Blade Service	UE494E
HP Installation during Non Standard Hours c7000 Enclosure & Blade Service	UG870E

HP Flexible Care Pack Services for your Integrity BladeSystem Enclosure

NOTE: Please contact your HP sales representative or HP authorized ServiceONE partner for additional Flexible Care Pack information.

Mission Critical Services

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

Related Options

HP BladeSystem c7000 Infrastructure Installation and Startup Service for Blade Hardware and Insight Control Software	HA114A1#57A
HP Enhanced Network Installation and Startup Service for HP BladeSystem	HA124A1#56H

Power Input Module and Power Supply Specifications

Power Input Module Specifications

Power Input Module[1]	Power Connection	HP Power Discovery Services	Rated Input Voltage	Input Frequency	Supported Power Supply Kits[7]	Supported c7000 Enclosures[11]
Single Phase AC Intelligent (677595-B21)	6x IEC-320 C20 blue power connectors[2,3,4]	Supported[3]	200-240 VAC	50-60 Hz	2650W Platinum[9,10a] 2400W Platinum[8,9,10b] 2400W Gold[8,9,10c] 2250W[9,10d]	4XXXXX-B21 4XXXXX-B22 4XXXXX-B23 5XXXXX-B21 6XXXXX-B21 7XXXXX-B21
Single Phase AC (413379-B21)	6x IEC-320 C20 power connectors[5]	Not supported				
Three Phase AC NA/JPN (413380-B21)[9]	Two 3.05m (10 ft) power cables with NEMA L15-30p connectors		200-208 VAC line to line, 3-phase delta			
Three Phase AC International (413381-B21)[9]	Two 3.05m (10 ft) power cables with IEC-309 220/380 V - 240/415 V, 5-Pin, 6h, 16A connectors		380-415 VAC line to line, 220-240 VAC line to neutral, 3-Phase WYE[6]			
-48V DC (AH331A)	45DG 4AWG 1/4 2H terminal lugs		40-60 VDC	N/A	2250W -48VDC (AH332A)	
High Voltage (753623-B21)	6x APP Saf-D-Grid receptacle connectors[12]		277 VAC, 380 VDC	50-60 Hz (AC), N/A (DC)	2650W Universal (753618-B21 and 753619-B21)	

1. See the "Technical Specifications" section for additional power specifications.The blue power connectors indicate HP Power Discovery Services capability.HP Power Discovery Services are enabled when used with an Intelligent Power Distribution Unit (iPDU), iPDU cables, and the Platinum power supply kits 733460-B21, 733459-B21, 517521-B21, or 588603-B21. See the iPDU, iPDU cable, and c-Class Power Supply sections for these options.Accept IEC C19-C20 and C19-C20 Intelligent Power Distributio Unit (iPDU) power cables. One WW 250W C19-C20 2.0m (non-iPDU) power cable is included per supported power supply. iPDU power cables are ordered separately.Accept IEC C19-C20 power cables. One WW 250W C19-C20 2.0m power cable is included per supported power supply. Rated 220 to 240 VAC line-to-neutral. The enclosure will not operate from higher line-to-line voltage with the WYE wall plug configuration. This power input module is configured to provide 220 to 240 VAC to the power supplies.Each enclosure must include only one type of power supply. Mixing of power supplies is not supported, except during hot swaps to different level or higher efficient power supplies. The Onboard Administrator will exhibit a mismatch error due to mixed power supplies until all power supplies are matched.The three-phase power input modules (413380-B21 and 413381-B21) require a minimum of 6 fans and 3 power supplies. For full redundancy, 6 power supplies are required.Supported HP powe supply kits include: 2650W Platinum: 733460-B21 (6-pack) and 733459-B21 (single). 2400W Platinum: 517521-B22 (6-pack) and 588603-B21 (single). 2400W Gold: 517521-B21 (6-pack) and 499243-B21 (single). 2250W: 412138-B21 (single).The Onboard Administrator firmware must be at least the minimum version that supports all components installed within the enclosure. Power cables with APP Saf-D-Grid connectors are ordered separately.

Power Supply Specifications

Power Input Module and Power Supply Specifications

Power Supply Specifications

HP 2650 Watt Platinum Hot Plug Power Supply

Part Number	733459-B21 (single), 733460-B21 (6-pack)				
Input Voltage Range (Vrms)	200-240				
Frequency Range (Nominal) (Hz)	50 / 60				
Nominal Input Voltage (Vrms)	200	208	220	230	240
Maximum Rated Output Wattage	2650				
Nominal Input Current (A rms)	14.5	13.9	13.1	12.5	12.0
Maximum Rated Input Wattage Rating (Watts)	2898	2901	2904	2887	2884
Maximum Rated VA (Volt-Amp)	2896	2888	2887	2882	2878
Efficiency (%) at Maximum Rated Output Wattage	91.2	91.3	91.4	91.8	91.9
Power Factor	0.98				
Leakage Current (mA)	0.97	1.01	1.06	1.11	1.16
Maximum Inrush Current (A peak)	100				
Maximum Inrush Current duration (mS)	10				
Maximum British Thermal Unit Rating (BTU-Hr)	9888	9899	9910	9850	9840

HP 2400 Watt Platinum Hot Plug Power Supply

Part Number	588603-B21 (single), 517521-B22 (6-pack)				
Input Voltage Range (Vrms)	200-240				
Frequency Range (Nominal) (Hz)	50 / 60				
Nominal Input Voltage (Vrms)	200	208	220	230	240
Maximum Rated Output Wattage	2450				
Nominal Input Current (A rms)	13.9	13.4	12.6	12.0	11.4
Maximum Rated Input Wattage Rating (Watts)	2692	2692	2678	2678	2663
Maximum Rated VA (Volt-Amp)	2778	2778	2762	2762	2747
Efficiency (%) at Maximum Rated Output Wattage	91	91	91.5	91.5	92
Power Factor	0.98				
Leakage Current (mA)	0.97	1.01	1.06	1.11	1.16
Maximum Inrush Current (A peak)	100				
Maximum Inrush Current duration (mS)	10				
Maximum British Thermal Unit Rating (BTU-Hr)	9186	9186	9136	9136	9086

Power Input Module and Power Supply Specifications

HP 2400 Watt Gold Hot Plug Power Supply					
Part Number	499243-B21 (single), 517521-B21 (6-pack)				
Input Voltage Range (Vrms)	200-240				
Frequency Range (Nominal) (Hz)	50 / 60				
Nominal Input Voltage (Vrms)	200	208	220	230	240
Maximum Rated Output Wattage	2450				
Nominal Input Current (A rms)	14.15	13.58	12.81	12.23	11.70
Maximum Rated Input Wattage Rating (Watts)	2742	2737	2730	2724	2720
Maximum Rated VA (Volt-Amp)	2830	2825	2817	2812	2807
Efficiency (%) at Maximum Rated Output Wattage	87.5	87.7	87.9	88.1	88.2
Power Factor	0.98				
Leakage Current (mA)	0.97	1.01	1.06	1.11	1.16
Maximum Inrush Current (A peak)	100				
Maximum Inrush Current duration (mS)	5				
Maximum British Thermal Unit Rating (BTU-Hr)	9356	9338	9313	9295	9280

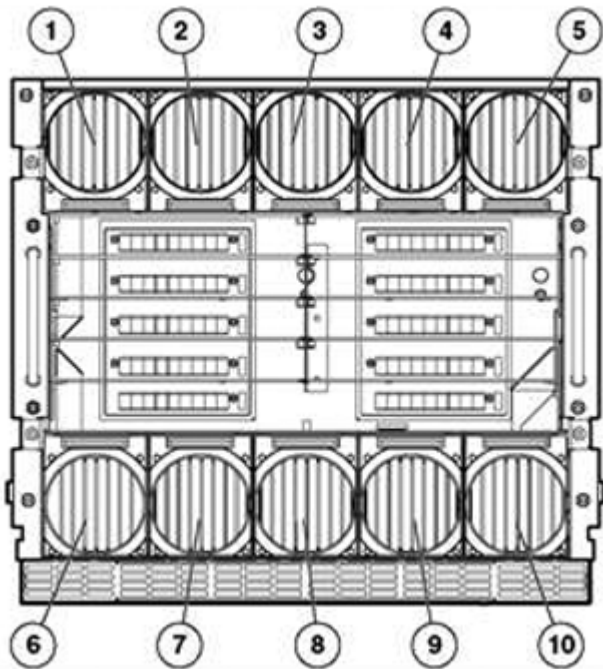| **HP 2250 Watt -48VDC Hot Plug Power Supply**	
Part Number	AH332A (single)
Input Voltage Range (V DC)	40-60
Frequency Range (Nominal) (Hz)	N/A
Nominal Input Voltage (Vrms)	48
Maximum Rated Output Wattage (Watts)	2250
Nominal Input Current (Arms)	53.15
Maximum Rated Input Wattage (Watts)	2523
Maximum Rated VA (Volt-Amp)	2523
Efficiency (%) at Maximum Rated Output Wattage	89.2
Power Factor (Minimum)	1.00
Leakage Current (mA)	N/A
Maximum Inrush Current (A peak)	200
Maximum Inrush Current duration (mS)	5
Maximum British Thermal Unit Rating (BTU/Hr)	8607

Power Input Module and Power Supply Specifications

HP 2650 Watt Universal Hot Plug Power Supply		
Part Number	753618-B21 (single), 753619-B21 (6-pack)	
Input Voltage Range (V DC)	277 VAC, 380 VDC	
Frequency Range (Nominal) (Hz)	50 / 60 (AC), N/A (DC)	
Nominal Input Voltage (Vrms)	277 VAC	380 VDC
Maximum Rated Output Wattage (Watts)	2650	
Nominal Input Current (Arms)	10.40	7.51
Maximum Rated Input Wattage (Watts)	2868	2853
Maximum Rated VA (Volt-Amp)	2881	2853
Efficiency (%) at Maximum Rated Output Wattage	92.4	92.9
Power Factor (Minimum)	0.996 (AC), 1.000 (DC)	
Leakage Current (mA)	1.16	N/A
Maximum Inrush Current (A peak)	100	
Maximum Inrush Current duration (mS)	10	
Maximum British Thermal Unit Rating (BTU/Hr)	9785	9735

Fan Bay and Device Bay Numbering and Population Guidelines

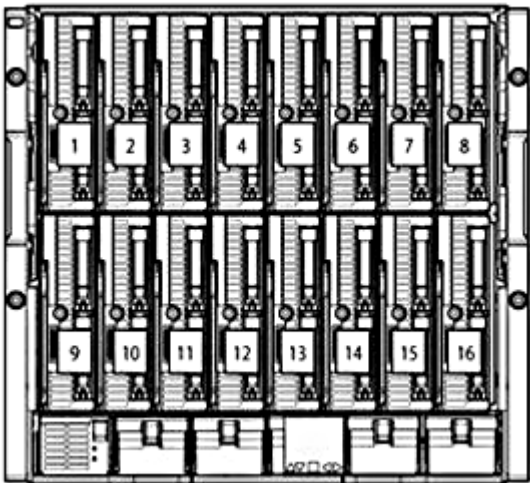**Fan Bay and Device Bay Numbering and Population Guidelines**
Fan bay numbering

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

Half-height device bay numbering

1. Device Bay 1
2. Device Bay 2
3. Device Bay 3
4. Device Bay 4
5. Device Bay 5

9. Device Bay 9
10. Device Bay 10
11. Device Bay 11
12. Device Bay 12
13. Device Bay 13

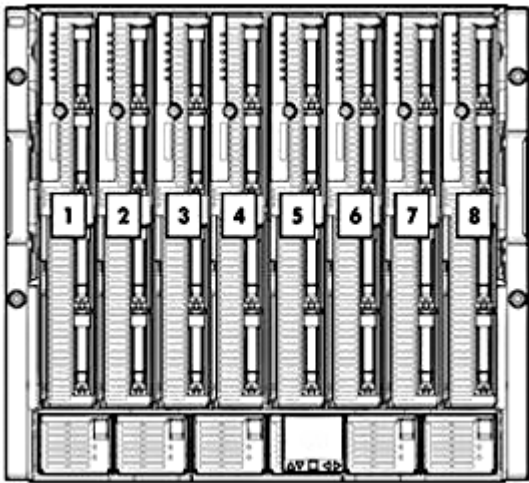## Fan Bay and Device Bay Numbering and Population Guidelines

6. Device Bay 6	14. Device Bay 14
7. Device Bay 7	15. Device Bay 15
8. Device Bay 8	16. Device Bay 16

Full-height device bay numbering

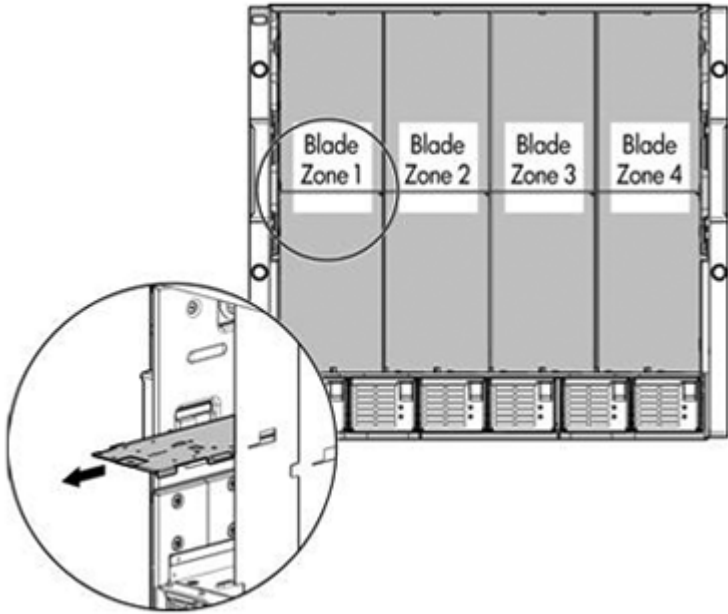|	
1. Device Bay 1	5. Device Bay 5
2. Device Bay 2	6. Device Bay 6
3. Device Bay 3	7. Device Bay 7
4. Device Bay 4	8. Device Bay 8

Full-height and half-height blade mixed configurations

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

NOTE: Expansion blades can be installed in the same zone as both full-height, single-wide and half-height blades. For more information, please see the &Expansion blades&later in this document.

The following device bays are located in each zone:

Zone	Half-Height Device Bays	Full-Height Device Bays

Fan Bay and Device Bay Numbering and Population Guidelines

1	1, 9, 2, 10	1, 2
2	3, 11, 4, 12	3, 4
3	5, 13, 6, 14	5, 6
4	7, 15, 8, 16	7, 8

Expansion blades

Expansion blades consist of storage blades, tape blades, and the PCI Expansion Blade. Up to 8 expansion blades are supported per HP BladeSystem c-Class c7000 Enclosure. Expansion blades may be installed in the same zone as half-height and full-height, single-wide server blades. Expansion blades are not supported with full-height, double-wide server blades. An expansion blade is installed directly adjacent to a server blade, also known as a partner server blade. Expansion blade population rule best practices are detailed below. For additional expansion blade rules and guidelines, please see the documentation that ships with the enclosure and expansion blade. HP recommends consulting your HP sales representative to confirm the validity of any configuration.
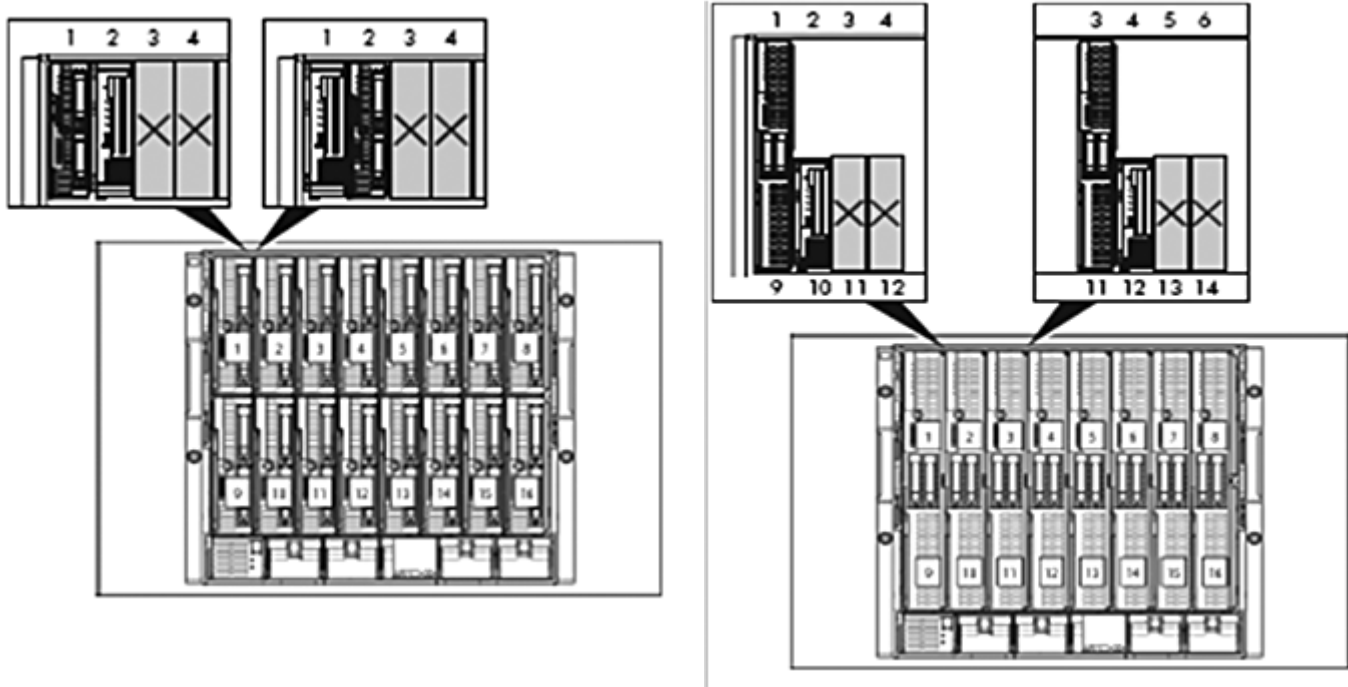

Figure 1 Installing an expansion blade adjacent to a half-height server blade.

Figure 2 Installing a single expansion blade adjacent to a full-height, single-wide server blade.

Expansion blade population best practices for half-height server blades

1. One half-height partner server blade supports one expansion blade (Figure 1).
2. Identify the partner server blade to be installed with the expansion 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.
3. If the partner server blade is installed in an odd-numbered bay, the expansion blade is installed in the adjacent even-numbered bay to the right.
4. If the partner server blade is installed in an even-numbered bay, the expansion blade is installed in the adjacent odd-numbered bay to the left.
5. Each c7000 zone contains a removable divider that is used to support half-height devices. This divider is remains installed whether the half-height devices are server or expansion blades.

Expansion blade population best practices for full-height, single-wide server blades:

1. One full-height, single-wide partner server blade supports one or two expansion blades. Figure 2 shows installation of one expansion blade.
2. Identify the partner server blade to be installed with the first expansion blade. The two blades always occupy a pair of slots, as follows: 9 & 10, 11 & 12, 13 & 14, 15 & 16.
3. The partner server blade is installed in an odd-numbered bay. The first expansion blade is installed on the lower row of the enclosure in an even-numbered bay (slots 10, 12, 14 or 16) adjacent to the partner server blade.
4. If only a single expansion blade is installed:
   a.

Fan Bay and Device Bay Numbering and Population Guidelines

     a. A half-height server blade may be installed in the empty bay directly above the expansion blade—this server blade cannot be partnered with the expansion blade. A coupler bracket is installed on the expansion blade. A coupler bracket is not installed on the server blade. A coupler bracket is included with each expansion blade.

     b. If no device is desired in the empty bay above the expansion blade, a device bay blank is installed.

     c. The upper half-height server blade or device bay blank must be removed before removing the lower expansion blade.

5. If a second expansion blade is installed:

     a. It is always located directly above the first installed expansion blade. A coupler bracket is installed on the lower expansion blade. A coupler bracket is not installed on the upper expansion blade. A coupler bracket is included with each expansion blade.

     b. Two storage blades, two tape blades, two PCI Expansion Blades, or a mixture of any two. For a mixed configuration that contains a storage blade, the storage blade is installed on the bottom bay and the tape blade or PCI Expansion Blade is installed on the top bay.

     c. The upper expansion blade must be removed before removing the lower expansion blade.

6. When partnering an expansion blade with a ProLiant BL620c G7 Server Blade, an HP PCI Express Mezzanine Pass-Thru Card for BladeSystem c-Class (431643-B21) is required. This card is installed in the mezzanine 3 connector in the server blade for a lower bay expansion blade installation and a second card in installed in mezzanine 2 connector if a second expansion blade is required.

7. The HP ProLiant BL680c G7 Server Blade is a full-height, double-wide device. It does not support expansion blades.

Device bay and fan population guidelines

The device bay and fan bay population rule best practices are detailed below. HP recommends consulting your HP sales representative to confirm the validity of any configuration.

1. Half-height devices are populated from top and bottom from left to right from the front of the enclosure. So the first two half-height devices would be placed in bays 1 & 9, the second two half-height devices would be placed in bays 2 & 10, and so on until the enclosure is full. Please refer to the above section "half-height device bay numbering" for additional information.

2. Full-height servers are populated from left to right. Please see the above section "full-height device bay numbering" for additional information.

3. An enclosure zone can only contain either full-height server blades or half-height server blades—mixing of the two form factors is not allowed except when connecting an expansion blade to a server partner blade. Please refer to the above sections "full-height and half-height blade mixed configurations" and "expansion blades" for more information.

4. The type and number of installed blade devices and interconnect modules determine the number of required fans.

5. The enclosure supports a minimum of 4 Active Cool 200 Fans to a maximum of 10 Active Cool 200 Fans. Ten fans are strongly recommended for maximum cooling efficiency and redundancy, reduced power consumption, and reduced noise.

6. For proper operation, fans and 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.

7. A minimum of 4 fans are required for a configuration that occupies 2 half-height device bays. Examples include up to 2 half-height, single-wide server blades, 1 half-height, double-wide server blade, 1 full-height, single-wide server blade, or 1 half-height, single-wide server blade and 1 expansion blade. The blades are installed in zone 1 (device bays 1, 9, 2, and/or 10). The fans are installed in fan bays 4, 5, 9, and 10.

8. A minimum of 6 fans are required for a configuration that occupies up to 8 half-height device bays. Examples include up to 8 half-height, single-wide server blades, 4 half-height, double-wide server blades, or 2 full-height, double-wide server blades. The blades are installed in zones 1 and 2 (device bays 1, 9, 2, 10, 3, 11, 4, and/or 12). The fans are installed in fan bays 3, 4, 5, 8, 9, and 10.

9. A minimum of 8 fans are required for a configuration that occupies at least 9 half-height device bays. The blades can be installed in any device bays. The fans are installed in fan bays 1, 2, 4, 5, 6, 7, 9, and 10.

10. Ten fans support all device bays. The blades can be installed in any device bays. The fans are installed in all fan bays.

11. Device bay blanks and fan bay blanks are installed in all unoccupied bays.

12. In addition to the above, please observe the following:

     a. A minimum of 6 fans are required for any enclosure configured with a three-phase power input module. The fans are installed in fan bays 3, 4, 5, 8, 9, and 10.

     b. A minimum of 8 fans are required if at least one switch module is installed in interconnect bay 1, 3, 5, or 7 and at least one switch module is installed in interconnect bay 2, 4, 6, or 8. This does not apply to pass-thru modules. The fans are installed in fan bays 1, 2, 4, 5, 6, 7, 9, and 10.

     c. Ten fans are required for a configuration with:

         i. One or more HP Virtual Connect FlexFabric-20/40 F8 Modules.

         ii. One or more D2220sb Storage Blades.

         iv.

Fan Bay and Device Bay Numbering and Population Guidelines

       iii. More than half of the enclosure device bays are occupied and any quantity of D2200sb Storage Blades are present.

       iv. Nine or more BL460c G1 and/or BL460c G5 Server Blades.

Technical Specifications

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)
	Enclosure Weight	Unboxed	148 lb (67 kg)
		Shipping	191 lb (87 kg)

NOTE: The enclosure weight above includes only an empty enclosure- servers, the power input module, power supplies, fans, interconnect modules, and Onboard Administrator(s) are not included. The weight for the power input module, power supplies, fans, and Onboard Administrator(s) is listed below. Please see the specific server blade and interconnect module QuickSpecs for their respective weight.

Power Input Module Weight (minimum 1, maximum 1)	3 lbs (1.4 kg)
Power Supply Weight (minimum 1, maximum 6)	6 lbs (2.7 kg)
HP Active Cool 200 Fan Weight (minimum 4, maximum 10)	4 lbs (1.8 kg)
Onboard Administrator Weight (minimum 1, maximum 2)	3 lbs (1.4 kg)

Maximum Enclosure Weight (approximate)	Unboxed	482 lb (219 kg)
	Shipping	525 lb (238 kg)

NOTE: The approximate maximum enclosure weight above includes 16 server blades fully configured, the power input module, six power supplies, ten fans, eight interconnect modules, and two Onboard Administrators.

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.

NOTE: For detailed environmental and other installation requirements, please see the "HP BladeSystem c-Class Site Planning Guide" at http://www.hp.com/support.

Power

NOTE: HP highly recommends using the HP Power Advisor tool to ensure the number of power supply options you have selected can fully support your BladeSystem configuration and to review maximum system power ratings for facilities planning purposes. HP Power Advisor is available at http://www.hp.com/go/poweradvisor.

Technical Specifications

Single Phase AC Power Input Module (413379-B21) **Single Phase AC Intelligent Power Input Module** (677595-B21)	Power connection	677595-B21 – 6x IEC-320 C20 blue power connectors 413379-B21 – 6x IEC-320 C20 power connectors **NOTE:** The blue power connectors indicate HP Power Discovery Services capability. HP Power Discovery Services are enabled when used with an Intelligent Power Distribution Unit (iPDU), iPDU cables, and a Platinum power supply kit. **NOTE:** One WW 250W C19-C20 2.0m power cable is included per power supply. iPDU power cables are ordered separately.	
	Rated input voltage	200 to 220 VAC	
	Rated input frequency	50 to 60 Hz	
	Number of power supplies supported	Minimum – One (1) Maximum – Six (6)	
	2250W Power Supply (412138-B21)	Maximum output (per power supply)	2250W
		Maximum output (total for six power supplies)	13,050W
		Maximum input current (per power supply)	13.1 A at 200 VAC 12.6 A at 208 VAC 11.9 A at 220 VAC
		Maximum input power (per power supply)	2621 VA
	2400W Gold Power Supply (517521-B21, 6-pack) (499243-B21, single)	Maximum output (per power supply)	2450W
		Maximum output (total for six power supplies)	14,210W
		Maximum input current (per power supply)	13.9 A at 200 VAC 13.3 A at 208 VAC 12.6 A at 220 VAC
		Maximum input power (per power supply)	2780 VA
	2400W Platinum Power Supply (517521-B22, 6-pack) (588603-B21, single)	Maximum output (per power supply)	2450W
		Maximum output (total for six power supplies)	14,210W
		Maximum input current (per power supply)	13.2 A at 200 VAC 12.7 A at 208 VAC 12.2 A at 220 VAC
		Maximum input power (per power supply)	2640 VA
	2650W Platinum Power Supply (733460-B21, 6-pack) (733459-B21, single)	Maximum output (per power supply)	2650W
		Maximum output (total for six power supplies)	15,370W
		Maximum input current (per power supply)	14.4 A at 200 VAC 13.8 A at 208 VAC 13.1 A at 220 VAC
		Maximum input power (per power supply)	2880 VA
Three Phase AC NA/JPN Power Input Module	Power connection	Two 3.05m (10 ft) power cables with NEMA L15-30p connectors	

Technical Specifications

(413380-B21)	Rated input voltage	200 to 208 VAC line to line 3-phase delta	
	Rated input frequency	50 to 60 Hz	
	Number of power supplies supported	Minimum=Three (3) Maximum=Six (6)	
2250W Power Supply (412138-B21)	Maximum output (per power supply)	2250W	
	Maximum output (total for six power supplies)	13,050W	
	Maximum input current per line cord	22.8 A at 200 VAC 21.8 A at 208 VAC	
	Maximum input power per line cord	7863 VA	
2400W Gold Power Supply (517521-B21, 6-pack) (499243-B21, single)	Maximum output (per power supply)	2450W	
	Maximum output (total for six power supplies)	14,210W	
	Maximum input current per line cord	24.2 A at 200 VAC 23. 2 A at 208 VAC	
	Maximum input power per line cord	8352 VA	
2400W Platinum Power Supply (517521-B22, 6-pack) (588603-B21, single)	Maximum output (per power supply)	2450W	
	Maximum output (total for six power supplies)	14,210W	
	Maximum input current per line cord	22.9 A at 200 VAC 22 A at 208 VAC	
	Maximum input power per line cord	7920 VA	
2650W Platinum Power Supply (733460-B21, 6-pack) (733459-B21, single)	Maximum output (per power supply)	2650W	
	Maximum output (total for six power supplies)	15,370W	
	Maximum input current per line cord	25 A at 200 VAC 24 A at 208 VAC	
	Maximum input power per line cord	8640 VA	
Three Phase AC International Power Input Module (413381-B21)	Power connection	Two 3.05m (10 ft) power cables with IEC-309 220/380 V - 240/415 V, 5-Pin, 6h, 16A connectors	
	Rated input voltage	380 to 415 VAC line to line 220 to 240 VAC line to neutral 3-Phase WYE **NOTE=** Rated 220 to 240 VAC line-to-neutral. The enclosure will not operate from higher line-to-line voltage with the WYE wall plug configuration. This power input module is configured to provide 220 to 240 VAC to the power supplies.	
	Rated input frequency	50 to 60 Hz	
	Number of power supplies supported	Minimum=Three (3) Maximum=Six (6)	
2250W Power Supply	Maximum output (per	2250W	

Technical Specifications

	(412138-B21)	power supply)	
		Maximum output (total for six power supplies)	13,050W
		Maximum input current per line cord	11.9 A at 220/380 VAC 10.9 A at 240/415 VAC
		Maximum input power per line cord	7854 VA
	2400W Gold Power Supply (517521-B21, 6-pack) (499243-B21, single)	Maximum output (per power supply)	2450W
		Maximum output (total for six power supplies)	14,210W
		Maximum input current per line cord	12.6 A at 220/380 VAC 11.5 A at 240/415 VAC
		Maximum input power per line cord	8316 VA
	2400W Platinum Power Supply (517521-B22, 6-pack) (588603-B21, single)	Maximum output (per power supply)	2450W
		Maximum output (total for six power supplies)	14,700W
		Maximum input current per line cord	12.2 A at 220/380 VAC 11.2 A at 240/415 VAC
		Maximum input power per line cord	8064 VA
	2650W Platinum Power Supply (733460-B21, 6-pack) (733459-B21, single)	Maximum output (per power supply)	2650W
		Maximum output (total for six power supplies)	15,370W
		Maximum input current per line cord	13.1 A at 220/380 VAC 12 A at 240/415 VAC
		Maximum input power per line cord	8646 VA
-48VDC Power Input Module (AH331A)	Power connection	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	
	Rated input voltage	40 to 60 VDC	
	Number of power supplies supported	Minimum═One (1) Maximum═Six (6)	
	2250W -48VDC Power Supply (AH332A)	Maximum output (per power supply)	2250W
		Maximum output (total for six power supplies)	13,050W
		Maximum input current (per power supply)	75A
		Maximum input power per supply	2700W
High Voltage Power Input Module (753623-B21)	Power connection	6x APP Saf-D-Grid receptacle connectors **NOTE═**Power cables with APP Saf-D-Grid connectors are ordered separately.	
	Rated input voltage	277 VAC, 380 VDC	

Technical Specifications

Rated input frequency	50 to 60 Hz (AC), N/A (DC)	
Number of power supplies supported	Minimum=One (1) Maximum=Six (6)	
2650W Universal Power Supply (753619-B21, 6-pack) (753618-B21, single)	Maximum output (per power supply)	2650W
	Maximum output (total for six power supplies)	15,370W
	Maximum input current (per power supply)	10.5 A at 277 VAC 7.6 A at 380 VDC

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	7.1 Bels
LpAm	54 dBA

Operating

LWAd	7.2 Bels
LpAm	54 dBA

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	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)
BladeSystem 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.

Summary of Changes

Date	Version History	Action	Description of Change
21-Nov-2014	From Version 59 to 60	Changed	Subheader was changed to Fan Bay and Device Bay Numbering Populating Guidelines. Device bay and fan population guidelines were updated
07-Nov-2014	From Version 58 to 59	Changed	Overview, Pre-configured Models and Configuration Information Factory Integrated Models sections were updated
25-Sep-2014	From Version 57 to 58	Changed	Changes were made throughout the QuickSpecs.
9-Sep-2014	From Version 56 to 57	Changed	Changes were made throughout the QuickSpecs.
18-Aug-2014	From Version 55 to 56	Changed	Overview, Related Options and Technical Specifications sections were updated
		Added	Skus added on configuration Information Factory Integrated Models section: • 753623-B21 • 753618-B21 • 753619-B21 • C6N33ABE Skus added on related options section: • J6W98A • J6W99A • J6X00A • J6X01A • J6X02A • J6X03A Power Input Module and Power Supply Specifications section added
24-Jun-2014	From Version 54 to 55	Changed	Overview, Configuration Information Factory Integrated Models, Related Option, Device Bay and Fan Bay Numbering and Population Guidelines, Technical Specifications sections were updated
		Removed	Sku 691380-B21 was deleted, HP Power Distribution Units skus were deleted
		Added	HP Data Center Racks skus on Configuration Information Factory Integrated Models section, HP Power Distribution Units skus were added