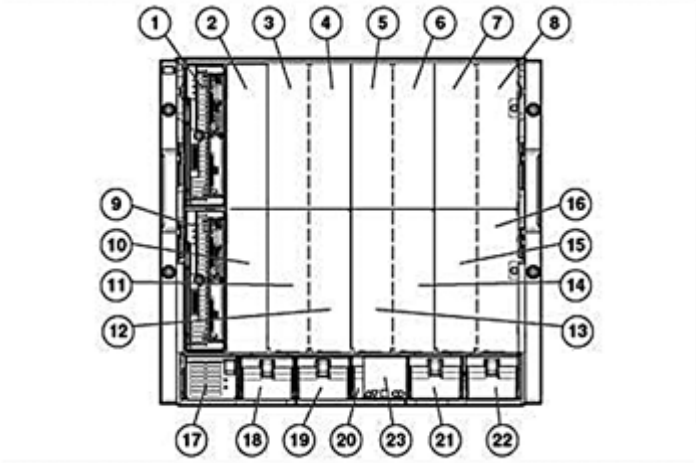
RETIRED: This document has been officially retired, and the base products listed herein are now considered obsolete and are no longer available for sale. Consequently, the information contained within may no longer be current. This document is provided exclusively for reference and informational purposes.

Overview

HPE BladeSystem c7000 Enclosure

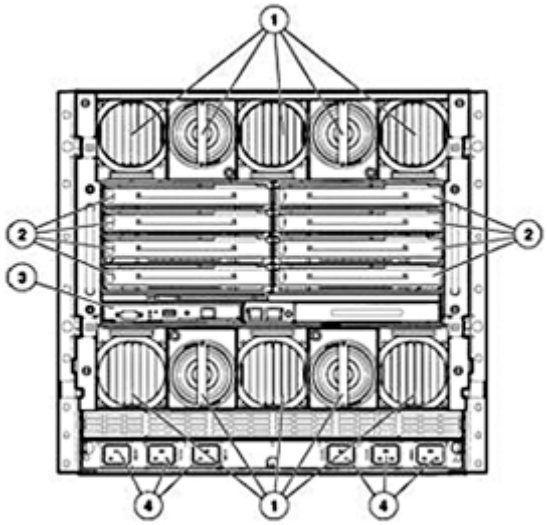


HPE BladeSystem c7000 Enclosure - Front View

1-16. Device Bays 1-16

17-22. Power Supply Bays 1-6

23. Insight Display



HPE 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)

Standard Features

HPE BladeSystem c-Class c7000 Enclosure

An HPE BladeSystem solution starts 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 HPE Active Cool 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, HPE ProLiant or Integrity server blades, expansion blades, and HPE OneView or Insight Control management software. For information on these options please visit: **https://www.hpe.com/us/en/integrated-systems/bladesystem.html**

NOTE: Insight Control is not supported with Gen10 server blades.

A BladeSystem c7000 Enclosure holds up to 16 server blades and up to 8 compute, storage or workstation blades 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 system components.

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.
- HPE Thermal Logic technology to minimize power consumption and reduce cooling.
- A minimum of four hot-plug HPE 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 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.

Standard Features

- 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.

HPE BladeSystem c-Class c3000 Enclosure

For customers that need a smaller blade system, the HPE 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: **https://www.hpe.com/us/en/integrated-systems/bladesystem.html**

HPE ProLiant & Integrity Server Blades

Delivering best-in-class performance, choice and reliability on Intel® Xeon® and Intel® Itanium ® processors for Windows, Linux, Solaris, OpenVMS or HP-UX based servers; the HPE portfolio of server blades supports a variety of application requirements for scale-out architectures. Hewlett Packard Enterprise offers one-, two-, four- , or eight processor server blades, with the widest range of performance, and form factors. For more information please visit: **https://www.hpe.com/us/en/integrated-systems/bladesystem.html**.

HPE Storage Blade

Do you need a direct attached 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.

The D2500sb Storage Blade delivers direct attached storage to the HPE ProLiant BL460c Gen10 , with support for up to 12 (twelve) hot plug small form factor (SFF) SAS or SATA hard disk drives or SAS/SATA SSDs. The enclosure backplane provides a PCI Express connection to the adjacent c-Class server blade and enables high performance storage access without any additional cables. The D2500sb Storage Blade includes an internal Smart Array controller with 2GB flash-backed write cache, for increased performance and data protection. Up to eight D2500sb storage devices can be supported in a single BladeSystem c7000 enclosure.
NOTE: The D2220sb and D2500sb require a c7000 Enclosure configuration with 10 fans.
NOTE: The D2220sb is compatible only with Gen8 and Gen9 server blades.

For more information, please visit: **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111399**.

Dynamic Power Capping

HPE 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. See more in your Onboard Administrator documentation.

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.

Standard Features

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 "HPE BladeSystem c-Class Site Planning Guide" at **http://www.hpe.com/support/hpesc**.

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 "HPE BladeSystem c-Class Site Planning Guide" at **http://www.hpe.com/support/hpesc**.

Factory Express Portfolio for Servers and Storage

HPE Factory Express offers configuration, customization, integration and deployment services for Hewlett Packard Enterprise 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. Hewlett Packard Enterprise products supported through Factory Express include: a wide array of servers and storage: HPE Integrity, HPE ProLiant & HPE ProLiant & Integrity Server Blades, HPE BladeSystem, HPE 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.hpe.com/info/factoryexpress**

HPE Simple Configurator

HPE One Config Simple (OCS) 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 OCS, please contact HPE's Customer Business Center or an Authorized Partner for assistance. **https://h22174.www2.hpe.com/SimplifiedConfig/Welcome.**

Standard Features

HPE OneView Software

The HPE 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. HPE 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 Hewlett Packard Enterprise OneView management, see: **https://www.hpe.com/us/en/product-catalog/detail/pip.5410258.html.**

HPE 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.

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

Software media available for download includes:

- HPE Insight Control
- HPE Insight Control for Microsoft® System Center
- HPE Insight Control for VMware vCenter Server
- HPE Virtual Connect Enterprise Manager (VCEM)
- HPE 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.

Hewlett Packard Enterprise 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 options, see the following website: **http://www.hpe.com/info/servermanagement**

Insight Software Media Kit (DVDs)
Physical media (DVDs) are also available for purchase from Hewlett Packard Enterprise or from your authorized reseller
NOTE: Insight Management is not supported with Gen10 server blades.

Service Pack for ProLiant (SPP)

Customers should use the **HPE Service Pack for ProLiant (SPP)** to perform firmware, driver, and related software updates: **https://www.hpe.com/servers/spp/**

HPE Integrated Lights-Out (iLO)

HPE Integrated Lights-Out (iLO) simplifies server setup, health monitoring, power and thermal control, and lights-out remote administration of ProLiant ML, DL, and BL

Standard Features

servers. HPE iLO functions without additional software and can be accessed from any location via a web browser. HPE iLO works hand-in-hand with HPE 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: **http://www.hpe.com/info/ilo**

HPE Insight Control

HPE 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.hpe.com/info/servermanagement**..

HPE Insight Control includes one year of 24 x 7 HPE Software Technical Support and Update Service ensuring rapid access to Hewlett Packard Enterprise support staff and proactive delivery of software updates. For more information about this service, please visit: **http://www.hpe.com/us/en/services/foundation-care-services.html.**
NOTE: Insight Control is not supported with Gen10 server blades.

HPE Matrix Operating Environment

The HPE 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 HPE Matrix OE includes the automated provisioning, optimization, and recovery management capabilities for HPE CloudSystem Matrix, the ideal platform for private cloud and Infrastructure as a Service (IaaS).
NOTE: For more information, visit: **http://www.hpe.com/info/matrixoe**.

HPE Power Advisor

The **HPE Power Advisor** is a tool provided by Hewlett Packard Enterprise to assist in the estimation of power consumption at power up of a system 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 HPE Power Advisor allows for the mixing of rack, tower, blade, and other products in a single environment.

HPE highly recommends using the HPE 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.

HPE Power Advisor is available at: **http://www.hpe.com/servers/hppoweradvisor**

Warranty

Warranty - This product is covered by a global limited warranty and supported by HPE Services and a worldwide network of Hewlett Packard Enterprise 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 HPE Pointnext operational 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
- HPE BladeSystem Interconnects: 1 year parts and labor, on-site regardless of the warranty period for the system in which they are installed

Standard Features

- HPE 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	**HPE Technology Services for Industry Standard Servers** HPE Technology Services delivers confidence, reduces risk and helps customers realize agility and stability. Connect to Hewlett Packard Enterprise to help prevent problems and solve issues faster. Our support technology lets you to tap into the knowledge of millions of devices and thousands of experts to stay informed and in control, anywhere, any time. **Protect your business beyond warranty with HPE Pointnext operational services** HPE Pointnext operational services enable you to order the right service level, length of coverage and response time as you purchase your new server, giving you full entitlement for the term you select. **NOTE:** Power supplies are covered as a part of the server infrastructure. No separate HPE Pointnext operational need to be purchased.
Connect your devices to HPE:	Unlock all of the benefits of your technology investment by connecting your products to HPE. Achieve up to 77% reduction in down time, near 100% diagnostic accuracy and a single consolidated view of your environment. By connecting, you will receive 24x7monitoring, pre-failure alerts, automatic call logging, and automatic parts dispatch. HPE Proactive Care Service and HPE Datacenter Care Service customers will also benefit from proactive activities to help prevent issues and increase optimization. All of these benefits are already available to you with your server storage and networking products, securely connected to Hewlett Packard Enterprise support.
HPE Support Center	Personalized online support portal with access to information, tools and experts to support Hewlett Packard Enterprise business products. Submit support cases online, chat with Hewlett Packard Enterprise experts, access support resources or collaborate with peers. Learn more: **https://www.hpe.com/us/en/services/it-support.html** The HPE 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. HPE Insight Remote Support and HPE Support Center are available at no additional cost with an Hewlett Packard Enterprise warranty, HPE Pointnext operational or Hewlett Packard Enterprise contractual support agreement. **NOTE:** HPE Support Center Mobile App is subject to local availability.
Parts and Materials	Hewlett Packard Enterprise will provide HPE-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 Hewlett Packard Enterprise due to malfunction.
For more information	To learn more on HPE ProLiant servers and HPE BladeSystem servers, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner. Or visit: **https://www.hpe.com/us/en/integrated-systems/bladesystem.html**

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, Hewlett Packard Enterprise recommends contacting your local sales representative for information on Factory Integrated Model product offerings and requirements.
For a configuration of the HPE BladeSystem, please do the following:

Step 1: Select desired model, configuration, and quantity of HPE 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).

Step 2: Determine the HPE 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)

HPE 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.

HPE BLc7000 Configure-to-order Platinum Enclosure with ROHS Trial Insight Control License	681844-B21
HPE Integrity BLc7000 CTO Enclosure	AD361D

NOTE: The AD361D enclosure is suggested for configurations primarily used with Integrity blades.

NOTE: The TAA-compliant enclosure listed below includes two (2) Onboard Administrators with KVM, six (6) hot-plug power supplies, and ten (10) hot-plug Active Cool 200 Fans. Additional components are added per the steps below.

HPE BLc7000 TAA-compliant Configure-to-order Platinum Enclosure with 2x Onboard Admin 6x PS 10x Fans	681844-B22

NOTE: HPE offers multiple Trade Agreement Act (TAA) compliant configurations to meet the needs of US Federal Government customers. These products are either manufactured or substantially transformed in a designated country.

Select the enclosure power and cooling options (required)

HPE c-Class Power Systems

c-Class Power Modules (1 per enclosure)

HPE BLc7000 Single Phase FIO Intelligent Power Module	677595-B21

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 HPE Power Discovery Services capability. HPE Power Discovery Services are enabled when used with a HPE Power Discovery Services-enabled power system including an Intelligent Power Distribution Unit (iPDU), C19-C20 iPDU cables, and the Platinum power supply kits 733459-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 HPE 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.

Configuration Information Factory Integrated Models

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

HPE BLc7000 1 PH FIO Power Module Option 413379-B21

NOTE: This power module is for single phase, high-line 200-240VAC applications and 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 733459-B21. See the "c-Class Power Supply" section below for the power supply kits.
NOTE: This power module disables HPE Power Discovery Services.

HPE 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 733459-B21. See the "c-Class Power Supply" section below for the power supply kits.
NOTE: This power module disables HPE 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.

HPE 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 733459-B21. See the "c-Class Power Supply" section below for the power supply kits.
NOTE: This power module disables HPE 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.

HPE 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 HPE 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 HPE Power Discovery Services.

HPE 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 HPE 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 J6X03A (277VAC applications) and J6X00A (277VAC or 380VDC applications).
NOTE: This power module disables HPE Power Discovery Services.

c-Class Power Supply (Up to 6)

NOTE: HPE highly recommends using the HPE 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. HPE Power Advisor is available at: **http://www.hpe.com/info/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.

Configuration Information Factory Integrated Models

	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:** HPE 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 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 **https://plugloadsolutions.com/80PlusPowerSupplies.aspx**. DC power supplies are not eligible for 80 PLUS testing; efficiency is per HPE internal testing.	
	HPE 2650W Performance Platinum Hot Plug Power Supply Kit	733459-B21
	NOTE: This power supply kit enables HPE Power Discovery Services when used with the HPE 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.	
	HPE 2650W Performance Universal Hot Plug Power Supply Kit	753618-B21
	NOTE: This power supply kit disables HPE Power Discovery Services. **NOTE:** Compatible with the HPE 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 J6X03A (277VAC applications) and J6X00A (277VAC or 380VDC applications).	
	HPE 2650W Performance -48VDC Platinum Hot Plug Power Supply Kit	789934-B21
	NOTE: This power supply kit disables HPE Power Discovery Services. **NOTE:** Compatible with the HPE BLc7000 -48V DC Power Input Module AH331A. See the "c-Class Power Modules" section above for the power modules.	
HPE 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.	
	HPE BLc7000 Enclosure HPE 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)

HPE Insight Software	**NOTE:** The Insight Control licenses listed below support HPE 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.hpe.com/info/insightmanagement** **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 HPE Software Technical Support Service. **NOTE:** For additional license kits, please see the QuickSpecs at: **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04123391**.	

Configuration Information Factory Integrated Models

NOTE: Insight Control is not supported with Gen10 server blades.

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

HPE c-Class Enclosure Options	HPE BLc7000 Onboard Administrator with KVM Option **NOTE:** The HPE c7000 Onboard Administrator (OA) supports the mixing with the HPE c7000 OA with KVM. The HPE 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 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:** HPE BladeSystem c3000 and c7000 Enclosures support G1 through Gen9 ProLiant and Integrity server blades, subject to support requirements of the Onboard Administrator. If configuring an enclosure with only Gen9 server blades, Onboard Administrator firmware 4.11 or greater is required. If configuring an enclosure with a mix of Gen9 and earlier server blades, G6 to Gen9 is supported and requires Onboard Administrator firmware 4.30 or greater. In addition to these requirements, the Onboard Administrator firmware must be a version that supports all the components in the enclosure. Hewlett Packard Enterprise recommends the current firmware whenever possible for maximum compatibility and stability. Updating the Onboard Administrator firmware may also require other subsystem firmware upgrades. For further information, please see the **HPE Service Pack for ProLiant (SPP) website** and the HPE Support Center documents "**HPE ProLiant Server Blades - Compatibility with HPE BladeSystem c7000 and c3000 Enclosures and Firmware**" and other documents related to **ProLiant Gen9 Servers and Onboard Administrator firmware issues**.	456204-B21

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

The following is a list of various HPE 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: **https://www.hpe.com/h20195/v2/getpdf.aspx/c04284204.pdf?ver=10**

NOTE: Interconnect bays 1 and 2 support the network (i.e. Ethernet capable) interconnects. These bays connect to the included network adapter ports in the server blades (either embedded ports on G7 and earlier server blades or FlexibleLOM adapter(s) on Gen8 and later server blades) via the NonStop passive midplane. An enclosure must be configured with at least a network interconnect in interconnect bay 1.

NOTE: Interconnect bays 3 through 8 support all interconnects. These bays connect to the mezzanine slots in the server blades via the NonStop passive midplane. Interconnect bays 3 and 4 must contain the same type of interconnect (network, SAN, SAS, etc) as they connect to the same mezzanine slot. Likewise for interconnect bays 5, 6, 7, and 8.

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

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.

Configuration Information Factory Integrated Models

HPE BladeSystem c-Class Network Interconnects	HPE 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 HPE Virtual Connect FlexFabric-20/40 F8 module(s) are installed.	
	HPE 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 HPE Virtual Connect FlexFabric-20/40 F8 module(s) are installed.	
	HPE Virtual Connect Flex-10/10D Module for c-Class BladeSystem	638526-B21
	HPE Virtual Connect FlexFabric 10/24 Enterprise Edition BLc7000 Option	605865-B21
	NOTE: 605865-B21 includes 2 x HPE 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.	
	HPE Virtual Connect FlexFabric 10Gb/24-port Module for c-Class BladeSystem	571956-B21
	HPE 10GbE Ethernet Pass-Thru Module for c-Class BladeSystem	538113-B21
	HPE 10GbE Ethernet Pass-Thru TAA-compliant Module II for c-Class BladeSystem	854194-B22
	HPE Cisco B22HP Fabric Extender for BladeSystem c-Class	641146-B21
	HPE 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.	
	HPE 10GBase-T SFP+ Transceiver	813874-B21
	Mellanox SX1018HP Ethernet Switch for c-Class BladeSystem	689638-B21
	HPE Virtual Connect Flex-10/10D Module Enterprise Edition for BLc7000 Option	662048-B21
	NOTE: 662048-B21 includes 2 x HPE 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.	
	HPE 6125G/XG Ethernet Blade Switch	658250-B21
HPE SAS Switch	**NOTE:** The HPE 6Gb SAS switches are supported on c7000 enclosures with the following SKUs: 5XXXXX-B21, 6XXXXX-B21, and 7XXXXX-B21.	
	HPE 6Gb SAS Switch Single Pack for HPE BladeSystem c-Class	BK763A
	HPE 6Gb SAS Switch Dual Pack for HPE BladeSystem c-Class	BK764A

HPE BladeSystem c-Class SAN Interconnects	**NOTE:** HPE Fibre Channel interconnect switches and modules supporting up to a 4Gbps internal port downlink speed (connection speed from the server blades to the interconnect) (SKUs 403626-B21) are supported on all c7000 enclosures. **NOTE:** HPE Fibre Channel interconnect switches and modules supporting up to an 8Gbps internal port downlink speed (connection speed from the server blades to the interconnect) (SKUs 466482-B21, AJ820C, AJ821C, AJ822C, AW563A, and AW564A) are supported on all c7000 enclosures. **NOTE:** HPE Fibre Channel interconnect switches and modules supporting up to a 16Gbps internal port downlink speed (connection speed from the server blades to the interconnect) (SKUs C8S45A, C8S46A, C8S47A, 751465-B21, and 778720-B21) are supported on c7000 enclosures with the following SKUs: 5XXXXX-B21, 6XXXXX-B21, and 7XXXXX-B21. A c7000 Platinum enclosure (SKUs 6XXXXX-B21 and 7XXXXX-B21) is required to permit the 16Gbps speed on the internal downlink ports. A c7000 enclosure with SKU 5XXXXX-B21 will operate the internal ports up to 8Gbps.

Configuration Information Factory Integrated Models

	HPE Virtual Connect 16Gb 24-port Fibre Channel Module for c-Class BladeSystem	751465-B21
	HPE Virtual Connect 16Gb 24-port Fibre Channel TAA Module for c-Class BladeSystem	778720-B21
	HPE 4GB Fibre Channel Pass-thru Module for c-Class BladeSystem	403626-B21
	HPE Virtual Connect 8Gb 24-port Fibre Channel Module for c-Class BladeSystem	466482-B21
	Brocade 8/12c SAN Switch for BladeSystem c-Class	AJ820C
	Brocade 8/24c SAN Switch for BladeSystem c-Class	AJ821C
	Brocade 8/24c Power Pack+ SAN Switch for BladeSystem c-Class	AJ822C
	Brocade 16Gb/28 SAN Switch for HPE BladeSystem c-Class	C8S46A
	Brocade 16Gb/28 SAN Switch for BladeSystem c-Class	C8S46B
	Brocade 16Gb/16 SAN Switch for HPE BladeSystem c-Class	C8S45B
	Brocade 16Gb/28 SAN Switch Power Pack+ for HPE BladeSystem c-Class	C8S47A
	Brocade 16Gb/28 SAN Switch Power Pack+ for BladeSystem c-Class	C8S47B
	Brocade 8/16Gb Embedded FC Switch 12-port Upgrade LTU	T5517A
HPE BladeSystem InfiniBand Interconnects	**NOTE:** The HPE QDR InfiniBand Switches are supported on c7000 enclosures with the following SKUs: 5XXXXX-B21, 6XXXXX-B21, and 7XXXXX-B21. **NOTE:** The HPE FDR InfiniBand Switches are supported on c7000 enclosures with the following SKUs: 686610-B21, 686611-B21, and 7XXXXX-B21.	
	HPE 4X FDR InfiniBand Switch Module for c-Class BladeSystem	648312-B21

Step 6: Select rack (optional)

NOTE: For information on the full line of HPE Data Center Racks and rack accessories, please see **https://www.hpe.com/info/rackandpower**.

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

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

HPE Power Distribution Units (PDUs)	**HPE Basic Power Distribution Units (bPDUs)**	
	HPE G2 Basic 4.9kVA/L6-30P 24A/208V Outlets (36) C13 (6) C19/Vertical NA/JP PDU	P9Q42A
	HPE G2 Basic 7.3kVA/60309 3-wire 32A/230V Outlets (36) C13 (6) C19/Vertical INTL PDU	P9Q46A
	HPE G2 Basic Modular 8.3kVA/CS8265C 40A/208V Outlets (6) C19/1U Horizontal NA/JP PDU	P9Q47A
	HPE G2 Basic 3Ph 8.6kVA/L15-30P 24A/208V Outlets (30) C13 (6) C19/Vertical NA/JP PDU	P9Q53A
	HPE G2 Basic 3Ph 8.6kVA/L21-30P 24A/208V Outlets (24) C13 (3) C19 (3) 5-20R/Vertical NA/JP PDU	P9Q55A
	HPE G2 Basic 3Ph 11kVA/60309 5-wire 16A/230V Outlets (36) C13 (6) C19/Vertical INTL PDU	P9Q58A
	HPE G2 Basic Modular 3Ph 8.6kVA/L15-30P 24A/208V Outlets (6) C19/1U Horizontal NA/JP PDU	P9Q52A
	HPE G2 Basic Modular 3Ph 14.4kVA/CS8365C 40A/208V Outlets (6) C19/1U Horizontal NA/JP PDU	P9Q59A
	HPE G2 Basic Modular 3Ph 17.3kVA/60309 60A 4-wire 48A/208V Outlets (6) C19/1U Horizontal NA/JP PDU	P9Q60A

Configuration Information Factory Integrated Models

	HPE G2 Basic Modular 3Ph 11kVA/60309 5-wire 16A/230V Outlets (6) C19/1U Horizontal INTL PDU	P9Q57A
	HPE G2 Basic Modular 3Ph 22kVA/60309 5-wire 32A/230V Outlets (6) C19/1U Horizontal INTL PDU	P9Q63A

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

NOTE: Additional HPE Uninterruptable Power Systems (UPSs) are available than those listed here. For a complete list of all HPE UPSs and additional information, please visit **https://www.hpe.com/info/rackandpower**.

HPE Uninterruptible Power Systems (UPSs)	**R5000 Uninterruptible Power System (UPS)**	
	HPE R5000 3U L630 High Voltage NA/JP Uninterruptible Power System	AF460A
	HPE R5000 3U IEC309-32A High Voltage INTL Uninterruptible Power System	AF461A
	R7000 Uninterruptible Power System (UPS)	
	HPE R7000 4U 50A High Voltage NA/JP Uninterruptible Power System	AF462A
	HPE R7000 4U IEC-32A High Voltage INTL Uninterruptible Power System	AF463A
	HPE R12000/3 Uninterruptible Power System (UPS)	
	HPE R12000/3 12000VA Three Phase NA 6U Rackmount Uninterruptible Power System	AF429A
	HPE 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: **https://h20195.www2.hpe.com/v2/Getdocument.aspx?docname=4AA6-6836ENW**

HPE Intelligent Power Distribution Units Power cords (HPE C19 to C20)	**NOTE:** Order with HPE Single Phase FIO Intelligent Power Module for c-Class BladeSystem (677595-B21). These power cables enable Power Discovery Services communications between the HPE BladeSystem c7000 Enclosure and HPE Intelligent PDUs. **NOTE:** These power cables are designated by bright blue IEC connectors.	
	HPE 2.0m 250V 16A C19-C20 WW Single IPD Enabled Jumper Cord	TK738A
HPE Power Distribution Units Power cords (HPE C19 to C20)	HPE C19 - C20 WW 250V 16Amp Flint Gray 1.20m Jumper Cord	AF575A
	HPE C19 - C20 WW 250V 16Amp Flint Gray 2.0m Jumper Cord	AF574A
	HPE C19 - C20 WW 250V 16Amp 2.5m Jumper Cord	295633-B22
	HPE C19-C20 IN 250V 2.5m Blk Jumper Cord	R1C66A
Additional HPE power Cords	**HPE High Line Power Cords 200 - 240V AC**	
	HPE C19 - Nema L6-20P NA/JP 250V 20Amp High Voltage 3.6m Power Cord	AF593A
	HPE C19 - CEE-VII EU 250V 16Amp 3.6m Power Cord	AF576A
	HPE C19 - GB-1002 CN 250V 16Amp 2.5m Power Cord	AF584A
	HPE High Voltage Power Cords 277V AC, 380V DC	
	NOTE: Power cable J6X00A is intended for 277VAC or 380VDC APP Saf-D-Grid to APP Saf-D-Grid applications. **NOTE:** Power cable J6X03A is intended for 277VAC APP Saf-D-Grid to LS-25 applications.	
	HPE SAFDGRID-SAFDGRID 277V 15Amp DC 2.0m Jumper Cord	J6X00A
	HPE SAFDGRID-LS-25 277V 15Amp AC 2.0m Jumper Cord	J6X03A

Related Options

HPE Enclosure Options	HPE BLc7000 Onboard Administrator with KVM Option **NOTE:** The HPE c7000 Onboard Administrator (OA) supports the mixing with the HPE c7000 OA with KVM. The HPE 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 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.	456204-B21
	HPE BLc7000 10000 Series Rack Shipping Bracket Option **NOTE:** The shipping bracket is required when shipping a c7000 enclosure when installed in a rack. It is not required for normal operation.	433718-B21
	HPE c-Class BladeSystem Miscellaneous Blanks Option Kit **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.	412148-B21
	HPE c-Class BladeSystem Bay Blank with Coupler Option **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.	412150-B21
HPE Power Supplies	**NOTE:** HPE highly recommends using the HPE 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. HPE Power Advisor is available at: **https://www.hpe.com/info/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:** HPE 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 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	

Related Options

	independently tests power supply efficiency and publically posts the results on **https://plugloadsolutions.com/80PlusPowerSupplies.aspx**. DC power supplies are not eligible for 80 PLUS testing; efficiency is per HPE internal testing.	
	HPE 2650W Performance Platinum Hot Plug Power Supply Kit	733459-B21
	NOTE: This power supply kit enables HPE Power Discovery Services when used with the HPE 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.	
	HPE 2650W Performance Universal Hot Plug Power Supply Kit	753618-B21
	NOTE: This power supply kit disables HPE Power Discovery Services. **NOTE:** Compatible with the HPE 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 J6X03A (277VAC applications) and J6X00A (277VAC or 380VDC applications).	
	HPE 2650W Performance -48VDC Platinum Hot Plug Power Supply Kit	789934-B21
	NOTE: This power supply kit disables HPE Power Discovery Services. **NOTE:** Compatible with the HPE BLc7000 -48V DC Power Input Module AH331A. See the "c-Class Power Modules" section above for the power modules.	
HPE Cooling Options	**HPE c-Class Active Cool Fan**	
	HPE BLc7000 Enclosure HPE 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.	
HPE BladeSystem c-Class Network Interconnects	**NOTE:** For detailed interconnect options, consult the specific interconnect QuickSpecs: **NOTE:** Interconnect bays 1 and 2 support the network (i.e. Ethernet capable) interconnects. These bays connect to the included network adapter ports in the server blades (either embedded ports on G7 and earlier server blades or FlexibleLOM adapter(s) on Gen8 and later server blades) via the NonStop passive midplane. An enclosure must be configured with at least a network interconnect in interconnect bay 1. **NOTE:** Interconnect bays 3 through 8 support all interconnects. These bays connect to the mezzanine slots in the server blades via the NonStop passive midplane. Interconnect bays 3 and 4 must contain the same type of interconnect (network, SAN, SAS, etc) as they connect to the same mezzanine slot. Likewise for interconnect bays 5, 6, 7, and 8. **NOTE:** The HPE BladeSystem c-Class interconnects ship as single units unless otherwise noted. Interconnects must be ordered in quantities of two for redundancy support. **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.	
	HPE 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.	

Related Options

	NOTE: A c7000 enclosure with a 10 fan configuration is required when one or more HPE Virtual Connect FlexFabric-20/40 F8 Module(s) are installed.	
	HPE 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 HPE Virtual Connect FlexFabric-20/40 F8 Module(s) are installed.	
	HPE Virtual Connect Flex-10/10D Module for c-Class BladeSystem	638526-B21
	HPE Virtual Connect FlexFabric 10/24 Enterprise Edition BLc7000 Option	605865-B21
	NOTE: 605865-B21 includes 2 x HPE 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.	
	HPE Virtual Connect FlexFabric 10Gb/24-port Module for c-Class BladeSystem	571956-B21
	HPE 10GbE Ethernet Pass-Thru Module for c-Class BladeSystem	538113-B21
	HPE Cisco B22HP Fabric Extender for BladeSystem c-Class	641146-B21
	HPE Cisco B22HP Fabric Extender with 16 FET for BladeSystem c-Class	657787-B21
	HPE Virtual Connect Flex-10/10D Module Enterprise Edition for BLc7000 Option	662048-B21
	NOTE: 662048-B21 includes 2 x HPE 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.	
	HPE 6125G/XG Ethernet Blade Switch	658250-B21
HPE BladeSystem c-Class SAN Interconnects	**NOTE:** For detailed interconnect options, consult the specific interconnect QuickSpecs: **NOTE:** Interconnect bays 1 and 2 support the network (i.e. Ethernet capable) interconnects. These bays connect to the included network adapter ports in the server blades (either embedded ports on G7 and earlier server blades or FlexibleLOM adapter(s) on Gen8 and later server blades) via the NonStop passive midplane. An enclosure must be configured with at least a network interconnect (listed above) in interconnect bay 1. **NOTE:** Interconnect bays 3 through 8 support all interconnects. These bays connect to the mezzanine slots in the server blades via the NonStop passive midplane. Interconnect bays 3 and 4 must contain the same type of interconnect (network, SAN, SAS, etc) as they connect to the same mezzanine slot. Likewise for interconnect bays 5, 6, 7, and 8. **NOTE:** The HPE BladeSystem c-Class interconnects ship as single units unless otherwise noted. Interconnects must be ordered in quantities of two for redundancy support. **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:** HPE Fibre Channel interconnect switches and modules supporting up to a 4Gbps internal port downlink speed (connection speed from the server blades to the interconnect) (SKU 403626-B21) are supported on all c7000 enclosures. **NOTE:** HPE Fibre Channel interconnect switches and modules supporting up to an 8Gbps internal port downlink speed (connection speed from the server blades to the interconnect) (SKUs 466482-B21, AJ820C, AJ821C, AJ822C, AW563A, and AW564A) are supported on all c7000 enclosures. **NOTE:** HPE Fibre Channel interconnect switches and modules supporting up to a 16Gbps internal port downlink speed (connection speed from the server blades to the interconnect) (SKUs C8S45A, C8S46A, C8S47A, 751465-B21, and 778720-B21) are supported on c7000 enclosures with the following SKUs: 5XXXXX-B21, 6XXXXX-B21, and 7XXXXX-B21. A c7000 Platinum enclosure (SKUs 6XXXXX-B21 and 7XXXXX-B21) is required to permit the 16Gbps speed on the internal downlink ports. A c7000 enclosure with SKU 5XXXXX-B21 will operate the internal ports up to 8Gbps.	
	HPE Virtual Connect 16Gb 24-port Fibre Channel Module for c-Class BladeSystem	P08475-B21

Related Options

	HPE Virtual Connect 16Gb 24-port Fibre Channel TAA Module for c-Class BladeSystem	P08476-B21
	HPE 4GB Fibre Channel Pass-thru Module for c-Class BladeSystem	403626-B21
	HPE Virtual Connect 8Gb 24-port Fibre Channel Module for c-Class BladeSystem	466482-B21
	Brocade 8/12c SAN Switch for BladeSystem c-Class	AJ820C
	Brocade 8/24c SAN Switch for BladeSystem c-Class	AJ821C
	Brocade 8/24c Power Pack+ SAN Switch for BladeSystem c-Class	AJ822C
	Brocade 16Gb/28 SAN Switch for BladeSystem c-Class	C8S46B
	Brocade 16Gb/28 SAN Switch Power Pack+ for BladeSystem c-Class	C8S47B
	Brocade 8/16Gb Embedded FC Switch 12-port Upgrade LTU	T5517A
	NOTE: Licensed per switch.	
HPE SAS Switch	**NOTE:** For detailed interconnect options, consult the specific interconnect QuickSpecs: **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 HPE BladeSystem c-Class interconnects ship as single units unless otherwise noted. Interconnects must be ordered in quantities of two for redundancy support. **NOTE:** The HPE 6Gb SAS switches are supported on c7000 enclosures with the following SKUs: 5XXXXX-B21, 6XXXXX-B21, and 7XXXXX-B21.	
	HPE 6Gb SAS Switch Single Pack for HPE BladeSystem c-Class	BK763A
	HPE 6Gb SAS Switch Dual Pack for HPE BladeSystem c-Class	BK764A
HPE BladeSystem InfiniBand Interconnects	**NOTE:** For detailed interconnect options, consult the specific interconnect QuickSpecs: **https://www.hpe.com/h20195/v2/getpdf.aspx/c04284204.pdf?ver=10**. **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 HPE BladeSystem c-Class interconnects ship as single units unless otherwise noted. Interconnects must be ordered in quantities of two for redundancy support. **NOTE:** The HPE QDR InfiniBand Switches are supported on c7000 enclosures with the following SKUs: 5XXXXX-B21, 6XXXXX-B21, and 7XXXXX-B21. **NOTE:** The HPE FDR InfiniBand Switches are supported on c7000 enclosures with the following SKUs: 686610-B21, 686611-B21, and 7XXXXX-B21.	
	HPE 4X FDR InfiniBand Switch Module for c-Class BladeSystem	648312-B21
HPE OneView Software	HPE OneView Physical Media Kit LTU	E5Y37A
	HPE OneView Advanced licenses for bundling with BladeSystem enclosures	
	HPE OneView Advanced with iLO Advanced (c7000 enclosure required on same purchase order)	
	NOTE: The following HPE OneView part numbers can only be used when ordered on the same order as a BladeSystem c7000 enclosure.	
	HPE OneView including 3yr 24x7 Support Enclosure FIO Bundle 16-server LTU	E5Y41A
	HPE OneView including 3yr 24x7 Support Enclosure Bundle Track 16-server LTU	E5Y42A
	NOTE: Server provisioning (via 'HPE Insight Control server provisioning') is licensed as part of HPE OneView Advanced and provides multi-server OS and driver provisioning. Media kit #BD883A can be ordered for a physical copy of this software	

Related Options

(USB flash drive).

HPE Insight Software	**Insight Control** **NOTE:** Insight Control is not supported with Gen10 server blades. **NOTE:** Licenses ship without media. The Insight Management Media Kit can be ordered separately, or can be downloaded at: **https://www.hpe.com/info/insightmanagement**.. **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 HPE Software Technical Support Service. **NOTE:** For additional license kits, please see the QuickSpecs at: **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04123391**. **NOTE:** HPE 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 HPE Insight Control. A media kit, "HPE 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 HPE Insight Management DVD Media Kit (C6N31A). **NOTE:** The HPE Insight Management Media Kit (C6N31A) contains DVDs without licenses. Contains HPE Systems Insight Manager, HPE Insight Control, HPE Matrix Operating Environment, and Virtual Connect Enterprise Manager software. Uses an integrated installer to perform quick and accurate software installation and updates.	
HPE Virtual Connect Enterprise Manager	HPE Virtual Connect Enterprise Manager including 1yr 24x7 Support Single c7000 Enclosure LTU **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 HPE Software Technical Support and Update Service. **NOTE:** For additional license kits, please visit: **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04154443** (Worldwide)	459864-B21
HPE c-Class Storage Blades	HPE D2220sb Build-to-order Storage Blade **NOTE:** Includes 3yr NBD Parts-Only Warranty Service HPE D2220sb Configure-to-order Storage Blade **NOTE:** Includes 3yr NBD Parts-Only Warranty Service **NOTE:** The D2220sb requires a c7000 Enclosure configuration with 10 fans. **NOTE:** Please see the HPE D2220sb Storage Blade QuickSpecs for technical specifications and additional information at: **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111399**. HPE D2500sb Configure-to-order Storage Blade **NOTE:** Includes 3yr NBD Parts-Only Warranty Service **NOTE:** The D2220sb requires a c7000 Enclosure configuration with 10 fans.	QW917A QW918A 868909-B21
HPE Expansion Blades	HPE BLc PCI Expansion Blade	448018-B21

Related Options

HPE Power Cords-

NOTE: For power cable information, please visit: **https://h20195.www2.hpe.com/v2/Getdocument.aspx?docname=4AA6-6836ENW**

HPE Intelligent Power Distribution Units Power cords

NOTE: Order with HPE Single Phase FIO Intelligent Power Module for c-Class BladeSystem (677595-B21). These power cables enable Power Discovery Services communications between the HPE BladeSystem c7000 Enclosure and HPE Intelligent PDUs.

NOTE: These power cables are designated by bright blue IEC connectors.

HPE 2.0m 250V 16A C19-C20 WW Single IPD Enabled Jumper Cord	TK738A

HPE C19 - C20 Jumper Cords

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

HPE High Line Power Cords 200 - 240V AC

HPE C19 - Nema L6-20P NA/JP 250V 20Amp High Voltage 3.6m Power Cord	AF593A
HPE C19 - CEE-VII EU 250V 16Amp 3.6m Power Cord	AF576A
HPE C19 - GB-1002 CN 250V 16Amp 2.5m Power Cord	AF584A
HPE 240 VAC 4.5M Unterminated End NA Power Cord	E7806A

HPE High Voltage Power Cords 277V AC, 380V DC

NOTE: Power cable J6X00A is intended for 277VAC or 380VDC APP Saf-D-Grid to APP Saf-D-Grid applications.

NOTE: Power cable J6X03A is intended for 277VAC APP Saf-D-Grid to LS-25 applications.

HPE SAFDGRID-SAFDGRID 277V 15Amp DC 2.0m Jumper Cord	J6X00A
HPE SAFDGRID-LS-25 277V 15Amp AC 2.0m Jumper Cord	J6X03A

HPE Uninterruptible Power Systems (UPSs)

NOTE: Additional HPE Uninterruptable Power Systems (UPSs) are available than those listed here. For a complete list of all HPE UPSs and additional information, please visit **https://www.hpe.com/info/rackandpower**.

R5000 Uninterruptible Power System (UPS)

HPE R5000 3U L630 High Voltage NA/JP Uninterruptible Power System	AF460A
HPE R5000 3U IEC309-32A High Voltage INTL Uninterruptible Power System	AF461A

R7000 Uninterruptible Power System (UPS)

HPE R5KVA and R7KVA 3U Extended Runtime Module	AF464A
HPE R7000 4U 50A High Voltage NA/JP Uninterruptible Power System	AF462A
HPE R7000 4U IEC-32A High Voltage INTL Uninterruptible Power System	AF463A

HPE R12000/3 Uninterruptible Power System (UPS)

HPE R12000/3 12000VA Three Phase NA 6U Rackmount Uninterruptible Power System	AF429A
HPE R12000/3 12000VA Three Phase INTL 6U Rackmount Uninterruptible Power System	AF430A
HPE Parallel 3 Phase Uninterruptible Power Systems (UPS RP36000/3)	

HPE Power Distribution Units (PDUs)

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

NOTE: Additional HPE Power Distribution Units (PDUs) are available than those listed below. For a complete list of all HPE PDUs, please visit: **https://www.hpe.com/info/rackandpower**

HPE Basic Power Distribution Units (bPDUs)

HPE G2 Basic 4.9kVA/L6-30P 24A/208V Outlets (36) C13 (6) C19/Vertical NA/JP PDU	P9Q42A

Related Options

	HPE G2 Basic 7.3kVA/60309 3-wire 32A/230V Outlets (36) C13 (6) C19/Vertical INTL PDU	P9Q46A
	HPE G2 Basic Modular 8.3kVA/CS8265C 40A/208V Outlets (6) C19/1U Horizontal NA/JP PDU	P9Q47A
	HPE G2 Basic 3Ph 8.6kVA/L15-30P 24A/208V Outlets (30) C13 (6) C19/Vertical NA/JP PDU	P9Q53A
	HPE G2 Basic 3Ph 8.6kVA/L21-30P 24A/208V Outlets (24) C13 (3) C19 (3) 5-20R/Vertical NA/JP PDU	P9Q55A
	HPE G2 Basic 3Ph 11kVA/60309 5-wire 16A/230V Outlets (36) C13 (6) C19/Vertical INTL PDU	P9Q58A
	HPE G2 Basic Modular 3Ph 8.6kVA/L15-30P 24A/208V Outlets (6) C19/1U Horizontal NA/JP PDU	P9Q52A
	HPE G2 Basic Modular 3Ph 14.4kVA/CS8365C 40A/208V Outlets (6) C19/1U Horizontal NA/JP PDU	P9Q59A
HPE Tape Backup	HPE G2 Basic Modular 3Ph 11kVA/60309 5-wire 16A/230V Outlets (6) C19/1U Horizontal INTL PDU	P9Q57A
	HPE G2 Basic Modular 3Ph 22kVA/60309 5-wire 32A/230V Outlets (6) C19/1U Horizontal INTL PDU	P9Q63A
	HPE StoreEver LTO-6 Ultrium 6250 External Tape Drive	EH970A
HPE Rack Options	**NOTE:** For additional information regarding Rack Options, please see the following URL: **https://www.hpe.com/info/rackandpower**.	
	HPE 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: **https://www.hpe.com/servers/kvm**	
	HPE IP Console Switch G2 with Virtual Media & CAC	
	HPE 1x1Ex8 KVM IP Console Switch G2 with Virtual Media CAC Software	AF620A
	HPE 2x1Ex16 KVM IP Console Switch G2 with Virtual Media CAC Software	AF621A
	HPE 4x1Ex32 KVM IP Console Switch G2 with Virtual Media CAC Software	AF622A
	HPE KVM Interface Adapters	
	HPE KVM Console USB Interface Adapter	AF628A
	HPE KVM Console USB 2.0 Virtual Media CAC Interface Adapter	AF629A
	HPE KVM Console Serial/Power G2 Interface Adapter	AF625A
HPE Packaged Support (Care Pack) Services	**NOTE:** Some options, including Fibre Channel and InfiniBand switches for the HPE c-Class BladeSystem, are not covered under the c7000 enclosure HPE Pointnext operational and carry separate HPE Pointnext operational. 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 Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized ServiceOne partner for Care Pack information.	
	NOTE: Additional HPE Packaged Support (formerly Care Pack) services can be found at: **https://www.hpe.com/us/en/services/it-support.html**.	
	Proactive Care Services	
	HPE 3 year Proactive Care 24x7 c7000 Enclosure Service	U3C33E
	HPE 3 year Proactive Care Call to Repair c7000 Enclosure Service	U3C36E
	HPE 3 year Proactive Care 24x7 c7000 Enclosure with Insight Control Service	U3P10E
	HPE 3 year Proactive Care Call to Repair c7000 Enclosure with Insight Control Service	U3P13E

Related Options

NOTE: Insight Control is not supported with Gen10 server blades.

Installation & Start-up Services

HPE BladeSystem c7000 Infrastructure Startup Service	UE602E
HPE BladSys c7000 Encd Network Startup Service	UE603E
HPE Hardware Install c-Class Enclosure and Server Blade Service	UE494E
HPE Installation during Non Standard Hours c7000 Enclosure + Blade Service	UG870E

HPE Flexible Care Pack Services for your Integrity BladeSystem Enclosure

NOTE: Please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized ServiceONE partner for additional Flexible Care Pack information.

Mission Critical Services

Integrity Blade svr enclosure HW Support	HA111A3#6Q6
Integrity Blade svr enclosure HW Support	HA112A3#6Q6

Installation & Start-up Services

HPE Support - bl860c Enclosure Inst SVC	HA114A1#57A
HP Startup BladSys c-Class Encd Ntwk SVC	HA124A1#56H

Power Input Module and Power Supply Specifications

NOTE: HPE highly recommends using the HPE 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. HPE Power Advisor is available at: **http://www.hpe.com/info/hppoweradvisor**

Power Input Module Specifications

Power Input Module[1]	Power Connection	HPE Power Discovery Services	Rated Input Voltage	Input Frequency	Supported Power Supply Kits[7]	Supported c7000 Enclosures[1] [1]
HPE BLc7000 Single Phase FIO Intelligent Power Module (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
HPE BLc7000 1 PH FIO Power Module Option (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			
HPE BLc7000 3 PH Intl FIO Power Module Option (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]			
HPE BLc7000 -48V DC Power Input Module (AH331A)	45DG 4AWG 1/4 2H terminal lugs		40-60 VDC	N/A	2250W -48VDC (AH332A)	
HPE HVDC 1PH AC Power Module BLc FIO Option (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 HPE Power Discovery Services capability.HPE 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 Distribution 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

Power Input Module and Power Supply Specifications

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 HPE power 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					
HPE 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 (Watts)	2650				
Nominal Input Current (Arms)	14.5	13.9	13.1	12.5	12.0
Maximum Rated Input Wattage (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 (Minimum)	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
HPE 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 (Watts)	2450				
Nominal Input Current (Arms)	13.9	13.4	12.6	12.0	11.4
Maximum Rated Input Wattage (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 Input Module and Power Supply Specifications

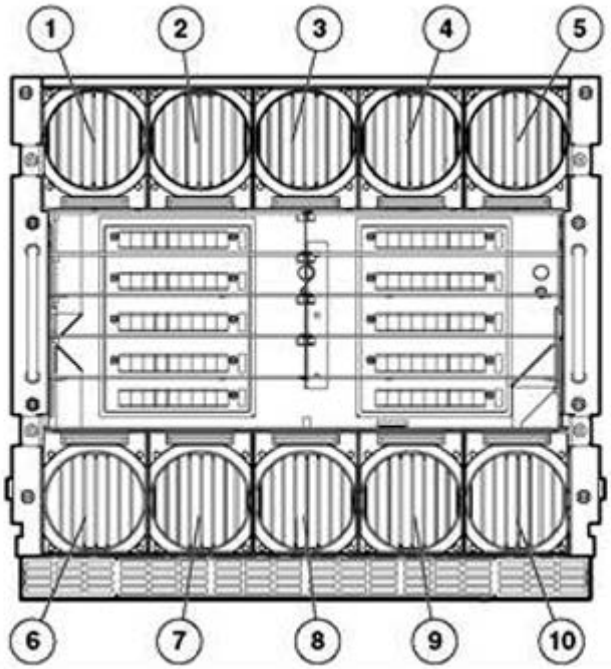
Power Factor (Minimum)	0.98				
Leakage Current (mA)	0.97	1.01	1.06	1.11	1.16
Maximum Inrush Current (A peak)	100				
Maximum Inrush Current duration (mS)	10				
Maximum British Thermal Unit Rating (BTU/Hr)	9186	9186	9136	9136	9086
HPE 2400 Watt Gold Hot Plug Power Supply					
Part Number	499243-B21 (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 (Watts)	2450				
Nominal Input Current (Arms)	14.15	13.58	12.81	12.23	11.70
Maximum Rated Input Wattage (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 (Minimum)	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
HPE 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				

Power Input Module and Power Supply Specifications

Maximum Inrush Current duration (mS)	5		
Maximum British Thermal Unit Rating (BTU/Hr)	8607		
HPE 2650 Watt Universal Hot Plug Power Supply			
Part Number	753618-B21 (single), 753619-B21 (6-pack)		
Input Voltage Range (Vrms)	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 (A rms)	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	
HPE 2650 Watt -48VDC Hot Plug Power Supply			
Part Number	789934-B21 (Single), 753619 (6-pack)		
Input Voltage Range (V dc)	-40 to -72		
Frequency Range (Nominal) (Hz)	N/A		
Nominal Input Voltage (V dc)	-40	-48	-72
Maximum Rated Output Wattage Rating	2650	2650	2650
Nominal Input Current (A)	-72.74	-60.18	-39.96
Maximum Rated Input Wattage Rating (Watts)	2909	2889	2877
Maximum Rated Input VA Rating (Volt-Amp)	2909	2889	2877
Efficiency (%)	91.1	91.7	92.1
Power Factor (Minimum)	1.000	1.000	1.000
Leakage Current (mA)	N/A		
Maximum Inrush Current (A peak)	200		
Maximum Inrush Current duration (mS)	5		
Maximum British Thermal Unit Rating (BTU-Hr)	9927	9857	9817
Hold Up Time (ms)	0.5	0.5	0.5

Fan Bay and Device Bay Numbering and Population Guidelines

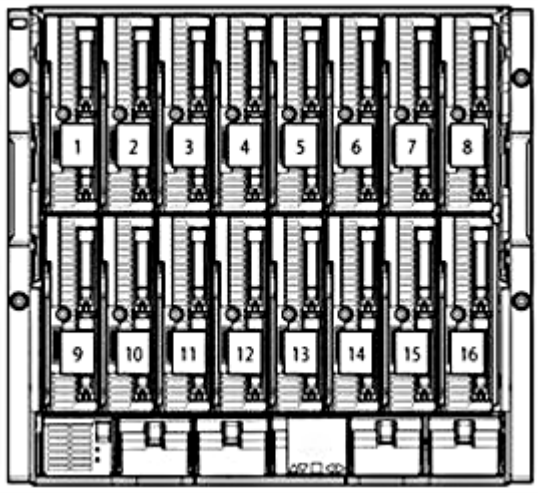
Fan bay numbering



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

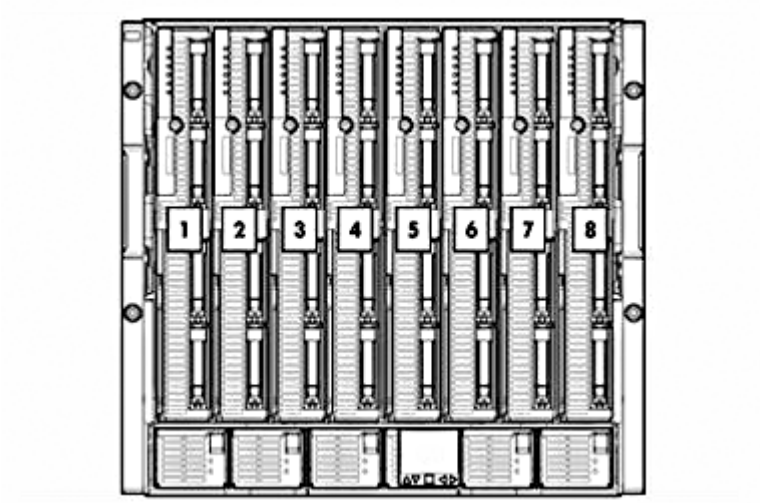


1. Device Bay 1
2. Device Bay 2
3. Device Bay 3
4. Device Bay 4
9. Device Bay 9
10. Device Bay 10
11. Device Bay 11
12. Device Bay 12

Fan Bay and Device Bay Numbering and Population Guidelines

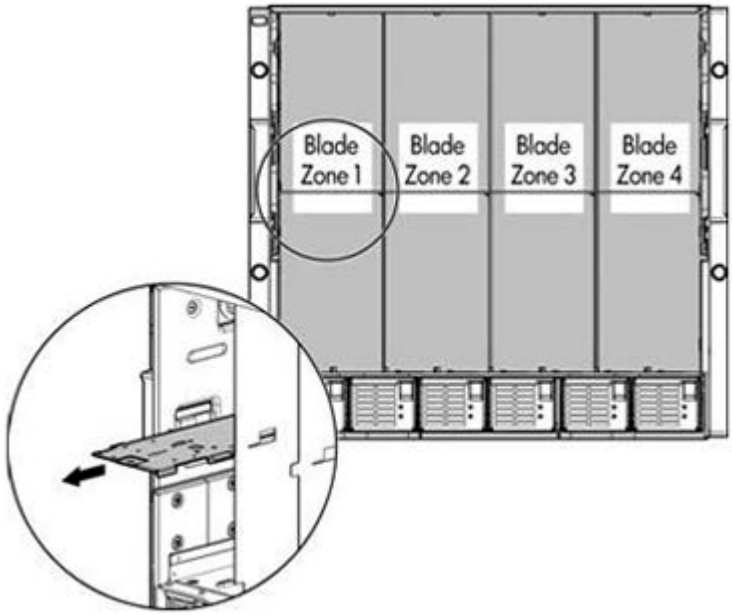
5. Device Bay 5
6. Device Bay 6
7. Device Bay 7
8. Device Bay 8
13. Device Bay 13
14. Device Bay 14
15. Device Bay 15
16. Device Bay 16

Full-height device bay numbering



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

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.

Fan Bay and Device Bay Numbering and Population Guidelines

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
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 HPE 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. Hewlett Packard Enterprise recommends consulting your Hewlett Packard Enterprise sales representative to confirm the validity of any configuration.

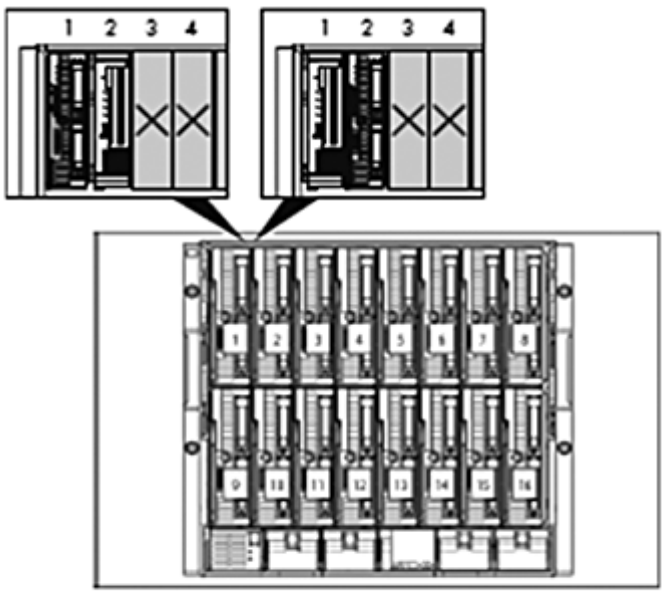


Figure 1 Installing an expansion blade adjacent to a half-height server blade.

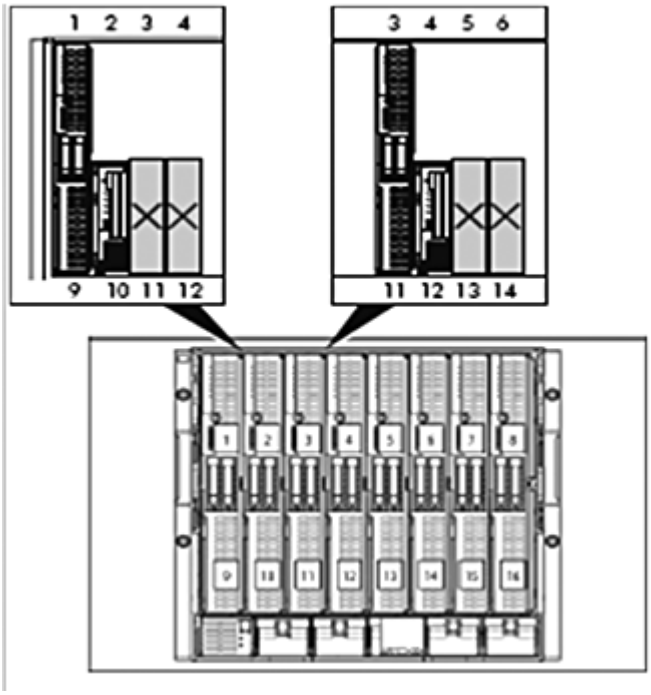


Figure 2 Installing a single expansion blade adjacent to a full-height, single-wide server blade.

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.

Fan Bay and Device Bay Numbering and Population Guidelines

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. 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 HPE 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 HPE 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 provided below. Hewlett Packard Enterprise recommends consulting your Hewlett Packard Enterprise sales representative to confirm the validity of any configuration.

Summary:

Configuration	Supported Device Bays		Minimum Number of Fans	Supported Fan Bays
	Half-Height Bays	Full-Height Bays		
No more than 1 full-height or 2 half-height device bays occupied	1, 9, 2, 10	1, 2	4	4, 5, 9, 10
No more than 4 full-height or 8 half-height device bays occupied	1, 9, 2, 10, 3, 11, 4, 12	1, 2, 3, 4	6	3, 4, 5, 8, 9, 10
At least 5 full-height or 9 half-height device bays occupied	All	All	8	1, 2, 4, 5, 6, 7, 9, 10

NOTE: Ten fans are strongly recommended in all configurations for maximum cooling efficiency and redundancy, reduced power consumption, and reduced noise.

NOTE: Please see the complete detailed list below of device bay and fan bay population rule best practices.

Details:

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.

Fan Bay and Device Bay Numbering and Population Guidelines

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 HPE Virtual Connect FlexFabric-20/40 F8 Modules.
        ii. One or more D2220sb or D2500sb Storage Blades.
        iii. More than half of the enclosure device bays are occupied and any quantity of D2200sb or D2500sb Storage Blades are present.
        iv. Nine or more BL460c G1 and/or BL460c G5 Server Blades.

Technical Specifications

HPE 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)
HPE 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.

Technical Specifications

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

Power

NOTE: HPE highly recommends using the HPE 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. HPE Power Advisor is available at: **http://www.hpe.com/info/hppoweradvisor**.

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 HPE Power Discovery Services capability. HPE 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)	Maximum output (per power supply)	2450W
		Maximum output (total for six power supplies)	14,210W

Technical Specifications

	(588603-B21, single)	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 (413380-B21)	Power connection	Two 3.05m (10 ft) power cables with NEMA L15-30p connectors	
	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

Technical Specifications

		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 (412138-B21)	Maximum output (per power supply)	2250W
		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

Technical Specifications

		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
	2650W -48VDC Power Supply (789934-B21)	Maximum input power per supply	2700W
		Maximum output (per power supply)	2650W
		Maximum output (total for six power supplies)	15,370W
		Maximum input current (per power supply)	73A
		Maximum input power per supply	2892W
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	
	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	Maximum output (per power supply)	2650W

Technical Specifications

		(753619-B21, 6-pack) (753618-B21, single)	Maximum output (total for six power supplies) Maximum input current (per power supply)	15,370W 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 LpAm Operating LWAd LpAm		7.1 Bels 54 dBA 7.2 Bels 54 dBA
Option Kits	**Power Supply Option Shipping Dimensions**	Height Width Depth Weight		8.75 in (223 mm) 8.63 in (219 mm) 35.13 in (892 mm) 8.5 lbs (3.85 kg)
	Fan Option Shipping Dimensions	Height Width Depth Weight		8.75 in (223 mm) 9.75 in (248 mm) 15.88 in (403 mm) 4.0 lbs (1.8 kg)
	BladeSystem Onboard Administrator Option Shipping Dimensions	Height Width Depth Weight		2.50 in (63.5 mm) 9.88 in (251 mm) 13.50 in (343 mm) 4.0 lbs (1.8 kg)
Environmental-friendly Products and Approach	**End-of-life Management and Recycling**	Hewlett Packard Enterprise offers end-of-life Hewlett Packard Enterprise product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to **http://www.hpe.com/info/recycle**. To recycle your product, please go to: **http://www.hpe.com/info/recycle** or contact your nearest Hewlett Packard Enterprise sales office. Products returned to Hewlett Packard Enterprise 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 Enterprise web site at: **http://www.hpe.com/info/recycle**. These instructions may be used by recyclers and other WEEE treatment facilities as well as Hewlett Packard Enterprise OEM customers who integrate and re-sell Hewlett Packard Enterprise equipment.		

Summary of Changes

Date	Version History	Action	Description of Change
15-Apr-2019	Version 79	Changed	Configuration Information Factory Integrated Models and Related Options sections were updated.
		Added	SKUs added: P9Q42A, P9Q46A, P9Q47A, P9Q53A, P9Q55A, P9Q58A, P9Q52A, P9Q59A, P9Q60A, P9Q63A, P08476-B21.
		Removed	SKUs deleted: AF520A, AF535A, AF525A, AF522A, AF523A, AF526A, AF527A, AF538A, AF431A, AF432A, E7804A, AF580A, 778720-B21, C8S45A, 805755-B21, E7804A, AF580A, AF431A, AF432A, AF618A, AF619A, 512489-B21.
03-Dec-2018	Version 78	Changed	Overview, Standard Features, Configuration Information - Factory Integrated Models, and Related Options sections were updated.
		Added	SK(U added: R1C66A
		Removed	SKU was deleted: 763850-B21
01-Oct-2018	Version 77	Changed	Updates applied in document.
04-Sep-2018	Version 76	Added	SKUs added in Configuration Information section: C8S46B, C8S45B, C8S47B.
		Removed	Obsolete SKUs were deleted: TK744A, TK745A,TK739A, TK740A, TK741A, TK742A, TK743A, E7805A, AF592A, 359615-031, AF577A, AF579A, AF581A, AF582A, AF583A, AF585A, AF438A, AF439A, AF436A, AF437A, C0L99A.
04-Jun-2018	Version 75	Changed	Standard Features, Pre-configured Models, Configuration Information Factory Integrated Models, Related Options, and Fan Bay and Device Bay Numbering and Population Guidelines sections were updated.
		Added	SKU added in Related Options section: 868909-B21.
		Removed	Obsolete SKUs were deleted: BW946A, D9N47A, D9N51A, D9N53A, D9N58A, D9N62A, D9N54A, D9N59A, G9Z07A, D9N50A, D9N57A, D9N60A, E2D53A, AF585A, AF512A, 252663-B33, AF518A, BW903A, 681842-B21, 681840-B21, 733460-B21, 517521-B22, 588603-B21, 753619-B21, 789935-B21, 517520-B21, 658247-B21, 406740-B21, 648311-B21, J6W98A, J6W99A, J6X01A, J6X02A.
05-Feb-2018	Version 74	Added	SKU added in Configuration Information Integrated Models section: 689638-B21.
		Removed	OBS SKU was deleted: 572018-B21, T5169A, TA804A, TC367A, H6J66A, H6J68A, H6J88A, H6J70A, BW904A, BW912A, BW947A, , H6J65A, H6J67A, H6J69A, H6J87A, H6J77A, H6J83A, BW911A, BW947A.
06-Nov-2017	Version 73	Changed	Standard Features section was updated.
		Removed	Obsolete SKUs were deleted: BW896A, BW945A, H5M59A, H5M62A, H5M64A, H5M72A, D9N48A, G9Z08A, C6N31A, 252663-D75, AF519A, AF511A, 252663-B34, AF513A, BW895A.
23-Oct-2017	Version 72	Changed	Care Pack naming and Service and Support- Parts and Materials updated.
25-Sep-2017	Version 71	Changed	Configuration Information Factory Integrated Models section was updated.
17-Jul-2017	Version 70	Changed	Standard Features, Pre-Configured Models, Configuration Information Factory Integrated Models, and Related Options, sections were updated.
		Removed	Obsolete SKUs were deleted: H5M70A, 252663-D74.
12-Jun-2017	Version 69	Added	SKU added in Configuration Information Integrated Models section: 854194-B22.
		Removed	Obsolete SKUs were deleted: C6N33ABE, C6N32ABE, 689638-B21.
03-Apr-2017	Version 68	Changed	URLs in document were updated.
		Removed	Obsolete SKUs were deleted: 431643-B21, EH963A, EH964A.
13-Feb-2017	Version 67	Changed	Information in QuickSpecs was updated.

Summary of Changes

		Removed	Obsolete SKUs were deleted: 517521-B21, 499243-B21, AH332A, 516733-B21, AW563A, AW564A, 505959-B21, AF537A, 499243-B21, AH332A, 516733-B21, AW563A, AW564A, 505959-B21, BD883A, BS580B.
25-Mar-2016	Version 66	Changed	SKUs updated in Configuration Information - Factory Integrated Models and Related Options, from: AJ820B, AJ821B, AJ822B; to: AJ820C, AJ821C, AJ822C.
		Removed	Obsolete SKU was deleted: 489184-B21
15-Jan-2016	Version 65	Changed	Overview and Related Options sections were updated.
		Added	Added two OneView option SKUs E5Y41A and E5Y42A.
		Removed	Obsolete SKUs deleted: 451439-B21, 451438-B21, AP880A, E7X08A.
28-Sep-2015	Version 64	Changed	Configuration Information Factory Integrated Models and Related Options sections were updated.
		Added	SKUs added in Related Options section: 813874-B21, 805755-B21
		Removed	Obsolete SKUs were deleted: E5Y41AAE, AZ871A, AZ878A AF616A, 505958-B21, AZ872A, AZ879A, AF617A, TC317A, AZ873A, AZ880A, U6W98E, QW914A, AZ874A, AZ881A, AZ870A, QW915A, AZ875A, AZ883A, AZ877A, AQ697B, AZ876A, AZ884A, AZ885A, AZ870A
17-Aug-2015	Version 63	Changed	What's New was updated with HPE 2650W -48VDC Power Supply Kit for BladeSystem c7000 Enclosure. Service and Support section was revised. Configuration Information Factory Integrated Models, Related Options, Power Input Module and Power Supply Specifications, and Technical Specifications were revised.
9-Feb-2015	Version 62	Changed	Overview, Service and Support, Configuration Information Factory Integrated Models and Related Options sections were updated
		Added	SKUs Added on HPE BladeSystem c-Class Network Interconnects: 751465-B21, 778720-B21, 466482-B21
		Removed	Obsolete SKUs removed: AF536A, AT120A
19-Dec-2014	Version 61	Changed	Notes were updated throughout the QuickSpecs
21-Nov-2014	Version 60	Changed	Sub-header was added: Fan Bay and Device Bay Numbering Populating Guidelines. Device bay and fan population guidelines were updated
7-Nov-2014	Version 59	Changed	Overview, Pre-configured Models and Configuration Information Factory Integrated Models sections were updated
25-Sep-2014	Version 58	Changed	Changes were made throughout the QuickSpecs.
9-Sep-2014	Version 57	Changed	Changes were made throughout the QuickSpecs.
18-Aug-2014	Version 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	Version 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, HPE Power Distribution Units SKUs were deleted
		Added	HPE Data Center Racks SKUs on Configuration Information Factory Integrated Models section, HPE Power Distribution Units SKUs were added

Summary of Changes

10-Jun-2014	Version 54	Changed	Changes were made throughout the QuickSpecs.
31-Mar-2014	Version 53	Added	HPE OneView Software was added.
10-Dec-2013	Version 52	Changed	Changes were made throughout the QuickSpecs.
11-Oct-2013	Version 51	Changed	Changes made to Step 5 & 6 of Configuration Information and to the Related Options section.
13-Sep-2013	Version 50	Changed	Models, throughout Configuration Information - Factory Integrated Models, and Related Options were revised.
30-Aug-2013	Version 49	Changed	Changes made in the Configuration Information, Related Options and Technical Specifications sections.
14-Jun-2013	Version 48	Changed	2650 Watts Platinum Hot Plug Power Supply was added HPE BladeSystem Power Sizer was removed
10-Jun-2013	Version 47	Changed	Changes made in the following sections: Service and Support Configuration Information - Steps 2 & 5 Related Options
28-Mar-2013	Version 46	Changed	Changes made in the North America and Canada versions only.
15-Mar-2013	Version 45	Changed	Changed name of product throughout document. Changes made in the HPE Insight Management software, Configuration Information: Steps 2 - 7 and Related Options sections
1-Mar-2013	Version 44	Removed	Related Options: Removed TC276AAE, 436222-B21 and TC277AAE from the HPE Insight Software section.
19-Feb-2013	Version 42	Added	Added the What's New section Increased mid-plane bandwidth Intelligent Infrastructure 2400W Platinum Hot Plug Power Supply (80 PLUS certified) Single Phase Intelligent Power Module Location Discovery Services Support for HPE Insight Control 7.2 and higher releases
		Changed	Changed name of product throughout document. Changed name of HPE DSB400c Storage Blade to HPE D2200sb Storage Blade throughout document. Completely revised the Service and Support sections. Changes made in the HPE Insight Management software, Configuration Information: Steps 2 - 7 and Related Options sections
14-Dec-2012	Version 41	Changed	Changed SB40c to D2200sb throughout the QuickSpecs. Changes made to Insight Management section. Completely revised the Service and Support sections. Changes made throughout the Configuration Information and Related Options sections
24-Sep-2012	Version 40	Changed	Changes were made in HPE BladeSystem c-Class Overview, Configuration Information Factory Integrated Models and Related Options sections.
31-Aug-2012	Version 39	Changed	Changes made throughout the QuickSpecs.
14-May-2012	Version 38	Changed	Changes made in the Related Options section.
26-Mar-2012	Version 37	Changed	Changes made to the HPE Optical Drives.
6-Mar-2012	Version 36	Added	Added in the reference to G8.
9-Jan-2012	Version 35	Removed	Removed a reference to G8.
14-Nov-2011	Version 34	Changed	Insight Management and HPE Insight Foundation were revised in HPE Insight management software Optimized, Standard and Basic Care Packages were updated in Service and Support HPE Tape Backup was revised in Related Options Note was added to Power Cords
29-Sep-2011	Version 33	Changed	Revisions made in the Configuration Information and Related Options sections.

Summary of Changes

26-Sep-2011	Version 32	Changed	Power Supplies, Cisco MDS 9124e Fabric Switch for HPE c-Class BladeSystem, HPE Ultrium Tape Blades and HPE Pointnext operational services were revised.
30-Aug-2011	Version 31	Changed	Power Distribution Units were revised in Configuration Information Factory Integrated Models Product descriptions were revised throughout Related Options
29-Jun-2011	Version 30	Changed	Changes were made within North America and Canada only.
24-Jun-2011	Version 29	Changed	Changes were made throughout, including removing HPE SAS Switches from Related Options and adding HPE USB Keyboard and Mouse to HPE Rack Options.
23-Jun-2011	Version 28	Changed	Link was corrected in Service and Support.
3-Jun-2011	Version 27	Changed	Changes were made within North America and Canada only.
29-Apr-2011	Version 26	Changed	Changes made to revise the Service and Support section along with other changes to the Overview, Configuration Information and Related Options sections.
14-Feb-2011	Version 25	Changed	HPE BladeSystem BLc7000 c-Class Server Blade Enclosures, HPE Insight Software, HPE Virtual Connect Enterprise Manager, HPE Uninterruptible Power Systems, HPE Rack Series and HPE Tape Backup product descriptions were revised HPE Virtual Connect FlexFabric 10/24 Enterprise Edition for BladeSystem c7000 and HPE Virtual Connect FlexFabric 10Gb/24-port Module for c-Class BladeSystem were added to HPE BladeSystem c-Class Network Interconnects HPE SB40c with (4) 300GB SAS SFF Bundle was added to HPE c-Class Storage Blades TFT7600 Rackmount Keyboard Monitor, USB Interface Adapter - 1 Pack, USB Virtual Media Interface Adapter and Serial Interface adapter - 1 pack with power supply were removed from HPE Rack Options
8-Oct-2010	Version 24	Changed	HPE Tape Backup and HPE Pointnext operational services were revised Service and Support was added HPE Optical Drives was added to Related Options 10642G2 and 10647G2 1200 mm Shock Racks were added to HPE Rack Series HPE TFT7600 G2 KVM Console Rackmount Keyboard Monitors were added to HPE Rack Options HPE 1/10Gb Virtual Connect Ethernet Module for c-Class BladeSystem was removed from HPE BladeSystem c-Class Network Interconnects 2x1x16 IP Console Switch with Virtual Media was removed from HPE KVM Switch Options HPE Disk Backup was removed from Related Options
2-Jul-2010	Version 23	Removed	HPE Virtual Connect FlexFabric 10/24 Enterprise Edition for BladeSystem c7000 was removed from HPE BladeSystem c-Class Network Interconnects.
25-Jun-2010	Version 22	Removed	Removed a reference to an unavailable product.
21-Jun-2010	Version 21	Changed	HPE BLc Virtual Connect FlexFabric 10Gb/24-port Module Option and HPE Virtual Connect FlexFabric 10/24 Enterprise Edition for BladeSystem c7000 were added and HPE BladeSystem c-Class Virtual Connect 1Gb SX SFP Option Kit and RJ-45 SFP Option Kit, HPE GbE2c Layer 2/3 Ethernet Blade Switch Advanced Functionality Software, HPE 1:10 GbE BLc Advanced Functionality Software, HPE 10Gb Ethernet BL-c Switch and HPE 10GbE BLc Advanced Functionality Software were removed from HPE BladeSystem c-Class Network Interconnects HPE 6X 2400W Platinum Efficiency FIO Power Supply and HPE 2400W Platinum Hot-Plug Power Supply were added to HPE Power Supplies NOTE was added to Step 4 HPE 4Gb Virtual Connect Fibre Channel Module for c-Class BladeSystem, HPE Brocade 4/12 SAN Switch and 4/12 SAN Switch Upgrade LTU and

Summary of Changes

			HPE Brocade 4/24 SAN Switch and 4/24 SAN Switch Power Pack were removed HPE Insight Control, No Media 1-Server License including 1 year of 24x7 Technical Support and Updates was removed from HPE Insight Software HPE StorageWorks MSL2024 2 LTO-2 Ultrium 448 SCSI Drive Library, HPE StorageWorks MSL4048 1 LTO-3 Ultrium 960 SCSI Drive Library and 960 4 GB FC Library and HPE StorageWorks Virtual Library Systems were removed from HPE Tape Backup
19-Feb-2010	Version 20	Changed	HPE Power Supplies, HPE Insight Control, HPE Enclosure, HPE Cooling Options, HPE Uninterruptible Power Systems, HPE Tape Backup and HPE Disk Backup were revised throughout the QuickSpecs.
25-Nov-2009	Version 19	Changed	Minor edits were made within the QuickSpecs.
16-Nov-2009	Version 18	Changed	Changes were made throughout the QuickSpecs.
2-Oct-2009	Version 17	Changed	Changes made throughout the QuickSpecs except for the Storage and Technical Specifications sections.
14-Aug-2009	Version 16	Changed	Revised Step 5 of the Configuration Information Factory Integrated Models section Added a NOTE for HPE c7000 Onboard Administrator with KVM to Step 4 of the Configuration Information Factory Integrated Models section and c7000 Enclosure Options in the Related Options section Removed HPE c7000 Redundant Onboard Administrator Options from Step 4 of the Configuration Information Factory Integrated Models section and c7000 Enclosure Options in the Related Options section
17-Jul-2009	Version 15	Changed	Revisions were made in the HPE BladeSystem c-Class Overview section, Configuration Information Factory Integrated Models section and to the Related Options section.
3-Jul-2009	Version 14	Changed	Corrected Part Number for HPE BLc7000 Insight Control suite for Linux 16 License in Step 3 of the Configuration Information Factory Integrated Models section.
2-Jun-2009	Version 13	Added	All c7000 enclosures support both models of Onboard Administrator to NOTE in Step 4 of the Configuration Information Factory Integrated Models section Part numbers starting with 507 to NOTE in HPE BladeSystem InfiniBand Interconnects in Step 5 of the Configuration Information Factory Integrated Models section NOTE to HPE c7000 Redundant Onboard Administrator Options for c7000 Enclosure Options in the Related Options section
		Changed	Updated HPE BladeSystem Power Sizer in the HPE BladeSystem c-Class Overview section Tape Blades were changed to HPE Ultrium Tape Blades in the Related Options section
29-Apr-2009	Version 12	Changed	Changes affected the North America and Canada versions only. Just the date and version were changed in the Worldwide version.
27-Apr-2009	Version 11	Changed	Changes were made throughout the QuickSpecs.
30-Mar-2009	Version 10	Added	Active Cool 200 Fan and HPE ProLiant Onboard Administrator throughout the QuickSpecs HPE StorageWorks 3Gb SAS BL Switch and HPE 4x QRD IB Switch Module for HPE c-Class BladeSystem to Step 5 of the Configuration Information Factory Integrated Models section and Related Options section HPE 14.4 kVA Modular PDU to Step 6 of the Configuration Information Factory Integrated Models section
		Changed	Completely revised Insight Control Suites throughout the QuickSpecs and Server Management Stand Alone Products in the HPE BladeSystem c-Class Overview and Related Options sections and Core Infrastructure Management and URL for HPE BladeSystem Power Sizer in the HPE BladeSystem c-Class Overview section

Summary of Changes

			Revisions were made throughout Step 2 of the Configuration Information section Removed NOTE from HPE BladeSystem c-Class c7000 Enclosure in the HPE BladeSystem c-Class Overview section and 10642 G2 (42U) Rear Extension Kit and HPE Modular Cooling System from the Related Options section
26-Jan-2009	Version 9	Added	NOTE for HPE 2400W High Efficiency Hot Plug Power Supply in Step 2 of the Configuration Information Factory Integrated Models and Related Options sections HPE StorageWorks SB920c Tape Blade to HPE c-Class Tape Blades in the Related Options section HPE Airflow Optimization section to the Related Options
		Changed	HPE Insight Control Environment for Linux section of HPE Insight Control Environment for BladeSystem Management Suites in the Related Options section Updated HPE Rack 10000 G2 Series in the Related Options section Minor formatting and grammatical changes were made within Step 5 of the Configuration Information Factory Integrated Models and the Technical Specifications sections
17-Nov-2008	Version 8	Changed	Changes were made to the following sections: Overview: What's New At A Glance HPE BladeSystem c-Class Overview: Rack Airflor Requirements Server Management Stand Alone Software Configuration Information Factory Integrated Models Step Two Step Five Step Six Related Options Changes were made throughout this section Technical Specifications HPE Blade System Power
15-Sep-2008	Version 7	Added	SAS Enterprise drives have a 3 year warranty regardless of the system in which they are installed to the Warranty section of the At A Glance HPE 1:10 GbE BLc Advanced Functionality Software HPE 10Gb Ethernet BL-c Switch HPE GbE2c Layer 2/3 Ethernet Blade Switch Advanced Functionality Software
		Changed	Server Management Stand Alone Software Product NOTES section for the following: HPE Insight Control Environment for BladeSystem Management Suite HPE Virtual Connect Enterprise Manager HPE PCI Expansion Blades HPE c-Class Tape Blades HPE StorageWorks All-in-One Storage Systems Rack 10000 G2 Series Tape Libraries Power Cords Completely revised the Uninterruptible Power Systems - Rack Width Dimension for the HPE BladeSystem c7000 Server Blade Enclosure
8-Aug-2008	Version 6	Added	2m/6ft IEC C20-C19 jumper cord to the c-Class Power Supply section in Step 2 of the Configuration Information Factory Integrated Models and to the c7000 Power Options section of the Related Options

Summary of Changes

			HPE 17.3 kVA Modular PCU and HP22 kVA Modular PDU to the HPE Modular Power Distribution Units section in Step 6 of the Configuration Information Factory Integrated Models-48V DC Power to Power Cords in the Power section of the Technical Specifications
		Changed	Power Cords section in the Related Options HPE Single Phase and 3-Phase UPS sections in the Related Options
14-Jul-2008	Version 5	Changed	Changes were made to the following sections: HPE BladeSystem c-Class Overview/Insight Control Environment for BladeSystem Management Suite HPE BladeSystem c-Class Overview/Server Management Stand Alone Software Product - ProLiant Essentials Configuration Information Factory Integrated Models/HPE BladeSystem c-Class SAN Interconnects Configuration Information Factory Integrated Models/PDU cords Related Options/HPE BladeSystem c-Class SAN Interconnects Related Options/HPE Insight Control Environment for BladeSystem Management Suite Related Options/Server Management Stand Alone Software Product - ProLiant Essentials Related Options/Power Cords
		Removed	Options were removed from the following sections: Related Options/Tape Libraries Related Options/HPE KVM Switch Options Technical Specifications/Power
12-May-2008	Version 4	Changed	Changes were made throughout the Overview, HPE BladeSystem c-Class Overview, Configuration Information and Related Options sections.
11-Feb-2008	Version 3	Changed	Changes were made throughout the QuickSpecs.
05-Oct-2007	Version 2	Changed	Updated the description for part number AF916A.
12-Sep-2007	Version 1	Created	New QuickSpecs

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