HPE BladeSystem c7000 Enclosure

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

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)
HPE BladeSystem c-Class c7000 Enclosure

Overview

An HPE BladeSystem solutions 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: http://www.hp.com/go/bladesystem.

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.
Overview

- 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.
- 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: http://www.hp.com/go/bladesystem.

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: http://www.hp.com/go/bladesystem.

HPE D2200sb Storage Blade

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

Direct attached storage

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

Two ways to create shared storage with the D2220sb

Use HPE StoreVirtual VSA software to turn the D2220sb into an iSCSI SAN for use by all servers in the enclosure and any server on the network. HPE VSA software is installed in a virtual machine on a VMware ESX host server adjacent to the D2220sb. HPE StoreVirtual VSA turns the D2220sb into a scalable and robust iSCSI SAN, featuring storage clustering for scalability, network RAID for storage failover, thin provisioning, snapshots, remote replication, and cloning. Expand capacity within the same enclosure or to other BladeSystem enclosures by adding additional D2220sb Storage Blades and HPE VSA licenses. A cost effective bundle of the D2220sb Storage Blade and a HPE StoreVirtual VSA license makes purchasing convenient. If storage needs increase, add HPE P4300 or P4500 systems externally and manage everything via a single
The HPE StoreEasy 3830 and 3840 Gateway Storage Blades are flexible storage server solutions for BladeSystem environments. Combine the StoreEasy 3830 or 3840 with the D2220sb Storage Blade to enable file serving and iSCSI shared storage inside the BladeSystem enclosure.

**NOTE:** The D2220sb requires a c7000 Enclosure configuration with 10 fans.


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**HPE Ultrium Tape Blades**

Tape blades are ideal for HPE BladeSystem c-Class customers who need a data protection solution but are not connected into a storage area network (SAN). They provide direct attach data protection for the adjacent server and network backup protection for all other data within the enclosure. The HPE tape blades are the industry’s first bladed tape drives and are developed exclusively for the BladeSystem c-Class enclosures.


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**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.

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**Rack Airflow Requirements**

**Rack 10000 G2 series cabinets**

The increasing power of new high-performance processor technology requires increased cooling efficiency for rack-mounted servers. The G2 10000 Series Racks provide enhanced airflow for maximum cooling, allowing these racks to be fully loaded with servers using the latest processors.

**NOTE:** For operation with the -48VDC input module, the G2 1000 Series Rack Extension is required to allow DC power cabling to be installed.

**CAUTION:** For the complete list of installation requirements, please see the “HPE BladeSystem c-Class Site Planning Guide” at [http://www.hp.com/support](http://www.hp.com/support).

**Third-party racks**

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

- Front and rear doors: If your server rack includes closing front and rear doors, you must have a minimum of 65% free area compared to the total area of the door evenly distributed from top to bottom to permit adequate airflow.
- Front door: The clearance from face of rack to inside of the front door must be a minimum of 77 mm (3 in).
- Rear door: The clearance between the rear of the enclosure and the rear rack door must be a minimum of 175 mm (6.9 in) to accommodate system cabling.
- Side: The clearance between the installed rack component and the side panels of the rack must be a minimum of 70 mm (2.75 in).
- Width: 483 mm (19 in)
Overview

- **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.hp.com/support](http://www.hp.com/support).

### 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.hp.com/go/factory-express](http://www.hp.com/go/factory-express).

### HPE Simple Configurator

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

### HPE OneView Software

The HPE OneView architecture combines server, storage, and networking with control of datacenter environmnetals 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 HPE OneView management, see: [http://www.hp.com/go/oneview](http://www.hp.com/go/oneview).

### HPE 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...
Overview

software

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.hp.com/go/insightupdates](http://www.hp.com/go/insightupdates).

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.hp.com/go/insightsoftware](http://www.hp.com/go/insightsoftware).

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

**Service Pack for ProLiant (SPP)**
Customers should use the HPE Service Pack for ProLiant (SPP) to perform firmware, driver, and related software updates.


**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
Overview

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.hp.com/go/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.hp.com/go/insightcontrol

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.hp.com/services/insight

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.hp.com/go/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.hp.com/go/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 Care Pack services or customized service agreements.

- Enclosure: Three-year parts and labor, on-site limited global warranty. Certain restrictions and
exclusions apply

- Enclosure options: Fans, power supplies, BladeSystem Onboard Administrator, 1 year parts only or enclosure warranty
- HPE BladeSystem Interconnects: 1 year parts and labor, on-site regardless of the warranty period for the system in which they are installed
- 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

**HPE Technology Services for Industry Standard Servers**
HPE Technology Services delivers confidence, reduces risk and helps customers realize agility and stability. Connect to HPE 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 Care Pack Services**
HPE Care Pack 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 care packs 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 24x7 monitoring, 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 HPE 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 HPE experts, access support resources or collaborate with peers. Learn more [http://www.hp.com/go/hpsc](http://www.hp.com/go/hpsc).

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 a HPE warranty, HPE Care Pack 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 QuickSpecs, 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 HPE due to malfunction.
Service and Support

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: http://www.hp.com/services/bladesystem.
QuickSpecs

HPE BladeSystem c-Class Server Blade Enclosures

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

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

NOTE: 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).

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

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

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

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

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

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

**NOTE:** This section lists some of the required and optional steps to configure a Factory Integrated Model. To ensure only valid configurations are ordered, 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.

- HP BLc7000 Platinum Configure-to-order Enclosure with ROHS Trial IC Lic
  - 681844-B21
- HP Integrity BLc7000 CTO Enclosure
  - AD361D

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

### Select the enclosure power and cooling options (required)

**HPE c-Class Power Systems**

**c-Class Power Modules** (1 per enclosure)

- HP BLc7000 Single Phase FlO 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 733460-B21, 733459-B21, 517521-B21, or 588603-B21. See the iPDU, iPDU cable, c-Class Power Supply sections below for these options.

**NOTE:** Also accepts standard (non-iPDU) C19 to C20 power cables, but 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.
NOTE: This power module may be used with the power supply kits 733460-B21, 733459-B21, 517521-B21, 517521-B21, or 499243-B21. See the "c-Class Power Supply" section below for the power supply kits.

HP BLc7000 1 PH FIO Power Module Option

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 733460-B21, 733459-B21, 517521-B21, 588603-B21, 517521-B21, or 499243-B21. See the "c-Class Power Supply" section below for the power supply kits.

NOTE: This power module disables HPE Power Discovery Services.

HP BLc7000 3 PH NA/JP FIO Power Module Option

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

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

NOTE: This power module disables 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.

HP BLc7000 -48V DC Power Input Module

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.

HP HVDC 1PH AC Power Module BLc FIO Option

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 J6X01A, J6X02A, J6X03A (277VAC applications) and J6W98A, J6W99A, 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:

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

NOTE: If a three phase power module is selected (413380-B21), 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 http://80plus.org/. DC power supplies are not eligible for 80 PLUS testing; efficiency is per HPE internal testing.

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

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 a quantity of 6 HPE 2650W Platinum 94% power supplies so a full enclosure can be configured with a single part number.

NOTE: Includes six WW 250W C19 - C20 2.0m Jumper Cords.

NOTE: This power supply kit meets multiple energy efficiency initiatives: 2650W, 94%; Climate Savers Computing Initiative PLATINUM and ECOS Consulting 80 PLUS Platinum.

HP 2650W Platinum Hot Plug Power Supply Kit

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.

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

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 a quantity of 6 HPE 2400W Platinum 94% efficient power supplies so a full enclosure can be configured with a single part number.

NOTE: Includes six WW 250W C19 - C20 2.0m Jumper Cords.

NOTE: This power supply kit meets multiple energy efficiency initiatives: 2400W, 94%; Climate Savers Computing Initiative PLATINUM and ECOS Consulting 80 PLUS Platinum.

HP 2400W Platinum Hot Plug Power Supply Kit

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: 2400W, 94%: Climate Savers Computing Initiative PLATINUM and ECOS Consulting 80 PLUS Platinum.

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

NOTE: This power supply kit disables HPE Power Discovery Services.

NOTE: Includes six WW 250W C19 - C20 2.0m Jumper Cords.

NOTE: Includes a quantity of 6 HPE 2400W Gold 92% efficient power supplies so a full enclosure can be configured with a single part number.

HP 2400W Gold Hot Plug Power Supply Kit

NOTE: This power supply kit disables HPE Power Discovery Services.

NOTE: Includes one WW 250W C19 - C20 2.0m Jumper Cord.

HP 2250W -48VDC Hot Plug Power Supply Kit

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.

HP 2650W Universal Hot Plug Power Supply Kit

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 J6X01A, J6X02A, J6X03A (277VAC applications) and J6W98A, J6W99A, J6X00A (277VAC or 380VDC applications).

HP 6X 2650W Universal Hot Plug Power Supply Kit

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 J6X01A, J6X02A, J6X03A (277VAC applications) and J6W98A, J6W99A, J6X00A (277VAC or 380VDC applications).

NOTE: Includes a quantity of 6 2650W universal power supplies so a full enclosure can be configured with a single part number.

HP 2650W -48VDC Hot Plug Power Supply Kit

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.
QuickSpecs

HPE BladeSystem c7000 Enclosure

Configuration Information Factory Integrated Models

HP 6X 2650W -48VDC Hot Plug Factory Integrated Power Supply Kit

**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.

**NOTE:** Includes a quantity of 6 2650W -48VDC power supplies so a full enclosure can be configured with a single part number.

---

**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.

HP BLc 6X Active Cool 200 Factory Integrated Fan Option

**NOTE:** This option (517520-B21) includes a quantity of 6 HPE Active Cool 200 Fans so a full enclosure can be configured with 10 fans using a single part number.

---

**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.hp.com/go/insightupdates](http://www.hp.com/go/insightupdates).

  **NOTE:** Customer will receive a license entitlement certificate, which must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HPE Software Technical Support Service.

  **NOTE:** For additional license kits, please see the QuickSpecs at: [http://h18000.www1.hp.com/products/QuickSpecs/12631_na/12631_na.html](http://h18000.www1.hp.com/products/QuickSpecs/12631_na/12631_na.html).

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

  C6N33ABE

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

  C6N32ABE

---

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

**HPE c-Class Enclosure Options**

- **HP BLc7000 Onboard Administrator with KVM Option**

  **NOTE:** The HPE c7000 Onboard Administrator (OA) supports the mixing with the...
QuickSpecs

HPE BladeSystem c7000 Enclosure

Configuration Information Factory Integrated Models

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

NOTE: 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 "ProLiant Gen9 Servers - Onboard Administrator Firmware Version 4.11 (or Later) Support for Gen9 Server Blades and Possible Issues That May Arise".

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: http://h18004.www1.hp.com/products/blades/components/c-class-interconnects.html.

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

**c-Class Network Interconnects**

**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.

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

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

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

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

**NOTE:** 662048-B21 includes 2 x 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.

HP Virtual Connect Flex-10/10D Module for c-Class BladeSystem 638526-B21

HP Virtual Connect FlexFabric 10/24 Enterprise Edition BLc7000 Option 605865-B21

**NOTE:** 605865-B21 includes 2 x 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.

HP Virtual Connect FlexFabric 10Gb/24-port Module for c-Class BladeSystem 571956-B21

HP 6125G Ethernet Blade Switch 658247-B21

HP 6125G/XG Ethernet Blade Switch 658250-B21

HP 6120XG Blade Switch 516733-B21

HP 1GB Ethernet Pass-Thru Module for c-Class BladeSystem 406740-B21

HP 10GbE Ethernet Pass-Thru Module for c-Class BladeSystem 538113-B21

HP 10GBase-T SFP+ Transceiver 813874-B21

Mellanox SX1018HP Ethernet Switch for c-Class BladeSystem 689638-B21

HP Cisco B22HP Fabric Extender for BladeSystem c-Class 641146-B21

HP Cisco B22HP Fabric Extender with 16 FET for BladeSystem c-Class 657787-B21

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

**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.

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

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

**HPE BladeSystem c-Class SAN Interconnects**

**NOTE:** HPE Fibre Channel interconnect switches and modules supporting up to a 4Gb/s 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 8Gb/s internal port...
downlink speed (connection speed from the server blades to the interconnect) (SKUs 466482-B21, 572018-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.

HP Virtual Connect 16Gb 24-port Fibre Channel Module for c-Class BladeSystem 751465-B21
HP Virtual Connect 16Gb 24-port Fibre Channel TAA Module for c-Class BladeSystem 778720-B21
HP Virtual Connect 8Gb 24-port Fibre Channel Module for c-Class BladeSystem 466482-B21
HP Virtual Connect 8Gb 20-port Fibre Channel Module for c-Class BladeSystem 572018-B21
HP 4GB Fibre Channel Pass-thru Module for c-Class BladeSystem 403626-B21
Brocade 8/12c SAN Switch for BladeSystem c-Class AJ820C
Brocade 8/24c SAN Switch for BladeSystem c-Class AJ821C
Brocade 8/24c Power Pack+ SAN Switch for BladeSystem c-Class AJ822C
Cisco MDS 8/12c Fabric Switch for HP BladeSystem c-Class AW563A
Cisco MDS 8/24c Fabric Switch for HP BladeSystem c-Class AW564A
Brocade 16Gb/28 SAN Switch for BladeSystem c-Class C8S46A
Brocade 16Gb/16 SAN Switch for BladeSystem c-Class C8S45A
Brocade 16Gb/28 SAN Switch Power Pack+ for BladeSystem c-Class C8S47A
Brocade 8/16Gb Embedded FC Switch 12-port Upgrade LTU T5517A

**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.

QLogic InfiniBand 4X QDR Management Module for c-Class BladeSystem 505959-B21
HP 4X FDR InfiniBand Managed Switch Module for c-Class BladeSystem 648311-B21
HP 4X FDR InfiniBand Switch Module for c-Class BladeSystem 648312-B21

**Step 6: Select rack (optional)**

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

**HPE Data Center Racks**

**HPE 11000 G2 Series Racks**

- HP 42U 600mm x 1075mm Advanced Shock Rack H6J66A
- HP 42U 600mm x 1200mm Advanced Shock Rack H6J68A
- HP 48U 600mm x 1075mm Advanced Shock Rack H6J88A
- HP 42U 800mm x 1200mm Advanced Shock Rack H6J70A
Configuration Information Factory Integrated Models

**HPE Intelligent Series Rack**
- HP 36U 600mm x 1075mm Enterprise Shock Rack
- HP 42U 600mm x 1075mm Enterprise Shock Rack
- HP 47U 600mm x 1075mm Enterprise Shock Rack

**HPE Location Discovery Services**
*NOTE:* For information on HPE Location Discovery Services, please see [http://www.hp.com/go/rackandpower](http://www.hp.com/go/rackandpower).
- HP 47U Location Discovery Kit
- HP 42U Location Discovery Kit
- HP 36U Location Discovery Kit

---

**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: [http://www.hp.com/go/rackandpower](http://www.hp.com/go/rackandpower).

### HPE Power Distribution Units (PDUs)

#### HPE Basic Power Distribution Units (bPDUs)
- HPE Basic 4.9kVA/L6-30P 24A/208V Outlets (24) C13 (6) C19/Vertical NA/JP PDU
- HPE Basic 3Ph 8.6kVA/L15-30P 24A/208V Outlets (24) C13 (6) C19/Vertical NA/JP PDU
- HPE Basic 3Ph 8.6kVA/L21-30P 24A/120-208V Outlets (24) C13 (3) C19 (3) 5-20R/Vertical NA/JP PDU

#### HPE Remote Monitoring Power Distribution Units (mPDUs)
- HPE Metered 4.9kVA/L6-30P 24A/208V Outlets (20) C13 (4) C19/Vertical NA/JP PDU
- HPE Metered 3Ph 8.6kVA/L15-30P 24A/208V Outlets (18) C13 (3) C19/Vertical NA/JP PDU
- HPE Metered 3Ph 8.6kVA/L21-30P 24A/120-208V Outlets (18) C13 (3) C19 (3) 5-20R/Vertical NA/JP PDU
- HPE Metered 3Ph 14.4kVA/CS8365C 40A/208V Outlets (12) C13 (12) C19/Vertical NA/JP PDU
- HPE Metered 3Ph 17.3kVA/60309 60A 4-wire 48A/208V Outlets (24) C13 (3) C19/Vertical NA/JP PDU
- HPE Metered 3Ph 17.3kVA/60309 60A 4-wire 48A/208V Outlets (12) C13 (12) C19/Vertical NA/JP PDU
- HPE Metered 3Ph 17.3kVA/60309 60A 4-wire 48A/208V Outlets (12) C13 (12) C19/Vertical NA/JP PDU
- HP Environmental Sensor for Remote Monitored and Managed PDUs

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

**HPE Intelligent Power Distribution Units (iPDUs)**

- HPE Intelligent Modular 4.9kVA/L6-30P 24A/208V Outlets (6) C19/Horizontal NA/JP PDU
  - AF520A
- HPE Intelligent Modular 3Ph 8.6kVA/L15-30P 24A/208V Outlets (6) C19/Horizontal NA/JP PDU
  - AF522A
- HPE Intelligent Modular 3Ph 17.3kVA/60309 60A 4-wire 48A/208V (6) C19/Horizontal NA/JP PDU
  - AF523A
- HPE Intelligent Modular 3Ph 17.3kVA/IEC 60309 60A 4-wire 48A/208V (12) C19/Horizontal NA/JP PDU
  - AF535A
- HPE Intelligent Modular 3Ph 17.3kVA/IEC 60309 30A 5-wire 24A/240V (12) C19/Horizontal NA/JP PDU
  - AF537A

### 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 [http://www.hp.com/go/rackandpower](http://www.hp.com/go/rackandpower).

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<thead>
<tr>
<th>HPE Uninterruptible Power Systems (UPSs)</th>
<th>R5000 Uninterruptible Power System (UPS)</th>
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<td></td>
<td>HP R5000 3U L630 High Voltage NA/JP Uninterruptible Power System</td>
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<th>R7000 Uninterruptible Power System (UPS)</th>
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<tr>
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<td>HP R7000 4U 50A High Voltage NA/JP Uninterruptible Power System</td>
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<tr>
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<th>HPE R8000/3 Uninterruptible Power System (UPS)</th>
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<tbody>
<tr>
<td></td>
<td>HP R8000/3 8000kVA Three Phase NA 6U Rackmount Uninterruptible Power System</td>
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<tr>
<th></th>
<th>HPE R12000/3 Uninterruptible Power System (UPS)</th>
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<tbody>
<tr>
<td></td>
<td>HP R12000/3 12000VA Three Phase NA 6U Rackmount Uninterruptible Power System</td>
</tr>
</tbody>
</table>

### Step 9: Select power cords (optional)

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

<table>
<thead>
<tr>
<th>HPE Intelligent Power Distribution Units Power cords (HPE C19 to C20)</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
</tr>
<tr>
<td>NOTE: These power cables are designated by bright blue IEC connectors.</td>
</tr>
<tr>
<td>HP 1.37m 250V 16A C19-C20 WW Single IPD Enabled Jumper Cord TK744A</td>
</tr>
<tr>
<td>HP 1.37m 250V 16A C19-C20 WW 3PC Kit IPD Enabled Jumper Cord TK745A</td>
</tr>
<tr>
<td>HP 2.0m 250V 16A C19-C20 WW Single IPD Enabled Jumper Cord TK738A</td>
</tr>
<tr>
<td>HP 2.0m 250V 16A C19-C20 WW 3PC Kit IPD Enabled Jumper Cord TK739A</td>
</tr>
<tr>
<td>HP 2.5m 250V 16A C19-C20 WW Single IPD Enabled Jumper Cord TK740A</td>
</tr>
<tr>
<td>HP 2.5m 250V 16A C19-C20 WW 3PC Kit IPD Enabled Jumper Cord TK741A</td>
</tr>
<tr>
<td>HP 3.0m 250V 16A C19-C20 WW Single IPD Enabled Jumper Cord TK742A</td>
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</table>
### Configuration Information Factory Integrated Models

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
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<tbody>
<tr>
<td>HP 3.0m 250V 16A C19-C20 WW 3PC Kit IPD Enabled Jumper Cord</td>
<td>TK743A</td>
</tr>
<tr>
<td>HP C19 - C20 WW 250V 16Amp Flint Gray 1.20m Jumper Cord</td>
<td>AF575A</td>
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<td>HP C19 - C20 WW 250V 16Amp Flint Gray 2.0m Jumper Cord</td>
<td>AF574A</td>
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<td>HP C19 - C20 WW 250V 16Amp 2.5m Jumper Cord</td>
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<td>HP C19 - C20 WW 250V 16Amp 4.5m Jumper Cord</td>
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<tr>
<td>HP C19 - C20 WW 250V 16Amp Flint Gray 2.0m Jumper Cord</td>
<td>AF574A</td>
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<tr>
<td>HP C19 - Nema L6-30P US/CA 250V 16Amp 4.5m Power Cord</td>
<td>E7805A</td>
</tr>
<tr>
<td>HP C19 - Nema L6-20P NA/JP 250V 20Amp High Voltage 3.6m Power Cord</td>
<td>AF593A</td>
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<tr>
<td>HP SAFDGRID-SAFDGRID 277V 15Amp DC 0.76m Jumper Cord</td>
<td>J6W98A</td>
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<tr>
<td>HP SAFDGRID-SAFDGRID 277V 15Amp DC 1.37m Jumper Cord</td>
<td>J6W99A</td>
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<td>HP SAFDGRID-SAFDGRID 277V 15Amp DC 2.0m Jumper Cord</td>
<td>J6X00A</td>
</tr>
<tr>
<td>HP SAFDGRID-LS-25 277V 15Amp AC 0.76m Jumper Cord</td>
<td>J6X01A</td>
</tr>
<tr>
<td>HP SAFDGRID-LS-25 277V 15Amp AC 1.37m Jumper Cord</td>
<td>J6X02A</td>
</tr>
<tr>
<td>HP SAFDGRID-LS-25 277V 15Amp AC 2.0m Jumper Cord</td>
<td>J6X03A</td>
</tr>
</tbody>
</table>

**HPE Power Distribution Units**

**Power cords** (HPE C19 to C20)

**HPE High Line Power Cords 200 - 240V AC**

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

**NOTE:** Power cables J6W98A, J6W99A, and J6X00A are intended for 277VAC or 380VDC APP Saf-D-Grid to APP Saf-D-Grid applications.

**NOTE:** Power cables J6X01A, J6X02A, and J6X03A are intended for 277VAC APP Saf-D-Grid to LS-25 applications.
Related Options

**HPE Enclosure Options**

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

**HP 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.

**HP 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.

**HP c-Class BladeSystem Bay Blank with Coupler Option**

*NOTE:* This 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.

**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: http://www.hp.com/go/hppoweradvisor.

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

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 independently tests power supply efficiency and publically posts the results on http://80plus.org/. DC power supplies are not eligible for 80 PLUS testing; efficiency is per HPE internal testing.

HP 2650W Platinum Hot Plug Power Supply Kit

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.

HP 2400W Platinum Hot Plug Power Supply Kit

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: 2400W, 94%: Climate Savers Computing Initiative PLATINUM and ECOS Consulting 80 PLUS Platinum.

HP 2400W Gold Hot Plug Power Supply Kit

NOTE: This power supply kit disables HPE Power Discovery Services.

NOTE: Includes one WW 250W C19 - C20 2.0m Jumper Cord.

HP 2250W -48VDC Hot Plug Power Supply Kit

NOTE: This power supply kit disables HPE Power Discovery Services.

NOTE: Only compatible with the HPE BLc7000 -48V DC Power Input Module AH331A. See the "c-Class Power Modules" section above for the power modules.

HP 2650W Universal Hot Plug Power Supply Kit

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 J6X01A, J6X02A, J6X03A (277VAC applications) and J6W98A, J6W99A, J6X00A (277VAC or 380VDC applications).
Related Options

HP 2650W -48VDC Hot Plug Power Supply Kit

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 c-Class Active Cool Fan

HP BLc7000 Enclosure HP Single Active Cool Fan Option Kit

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: 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.

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

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.

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

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.

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

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.

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

**NOTE:** 605865-B21 includes 2 x 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.

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

**HPE BladeSystem c-Class SAN Interconnects**


**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 6Gbps 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, 572018-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: 5XXX-X-B21, 6XXX-X-B21, and 7XXX-X-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.

HP Virtual Connect 16Gb 24-port Fibre Channel Module for c-Class BladeSystem 751465-B21
HP Virtual Connect 16Gb 24-port Fibre Channel TAA Module for c-Class BladeSystem 778720-B21
HP Virtual Connect 8Gb 24-port Fibre Channel Module for c-Class BladeSystem 466482-B21
HP Virtual Connect 8Gb 20-port Fibre Channel Module for c-Class BladeSystem 572018-B21
HP 4GB Fibre Channel Pass-thru Module for c-Class BladeSystem 403626-B21
Brocade 8/12c SAN Switch for BladeSystem c-Class AJ820C
Brocade 8/24c SAN Switch for BladeSystem c-Class AJ821C
Brocade 8/24c Power Pack+ SAN Switch for BladeSystem c-Class AJ822C
Cisco MDS 8/12c Fabric Switch for HP BladeSystem c-Class AW563A
Cisco MDS 8/24c Fabric Switch for HP BladeSystem c-Class AW564A
Cisco MDS 9124e Switch for BladeSystem c-Class 12-port Upgrade LTU TS169A
Brocade 16Gb/28 SAN Switch for BladeSystem c-Class C8546A
Brocade 16Gb/16 SAN Switch for BladeSystem c-Class C8545A
Brocade 16Gb/28 SAN Switch Power Pack+ for BladeSystem c-Class C8547A
Brocade 8/16Gb Embedded FC Switch 12-port Upgrade LTU TS517A
HP MDS 8/12c Fabric Switch 12-port Upgrade LTU TA804A

**NOTE:** Licensed per switch.

HP StoreFabric Data Center Network Manager BladeSystem LTU TC367A

**NOTE:** Installed on DCNM Server, each license can be assigned to only one switch.

**HPE SAS Switch**


**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.

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

**HPE BladeSystem InfiniBand Interconnects**


**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:
## Related Options

<table>
<thead>
<tr>
<th>HPE OneView Software</th>
<th>HP OneView Media Kit Phys No Lic</th>
<th>E5Y37A</th>
</tr>
</thead>
</table>

**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.

- HP OneView incl 3yr 24x7 Supp Enclosure FIO Bundle Phys 16 Svrs Lic | E5Y41A
- HP OneView incl 3yr 24x7 Supp Enclosure Bundle Track 16 Svrs Lic | 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 (USB flash drive).

### HPE Insight Software

**Insight Control**

**NOTE:** Licenses ship without media. The Insight Management Media Kit can be ordered separately, or can be downloaded at: [http://www.hp.com/go/insightupdates](http://www.hp.com/go/insightupdates).

**NOTE:** Customer will receive a license entitlement certificate, which must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HPE Software Technical Support Service.

**NOTE:** For additional license kits, please see the QuickSpecs at: [http://h18000.www1.hp.com/products/QuickSpecs/12631_div/12631_div.html](http://h18000.www1.hp.com/products/QuickSpecs/12631_div/12631_div.html).

- HP Insight Control Server Provisioning Media Kit | BD883A

**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).

- HP Insight Management 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
Related Options

integrated installer to perform quick and accurate software installation and updates.

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

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

NOTE: This license (459864-B21) allows One BL-c7000 enclosure to be managed with VCEM. Customer will receive a printed license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online or via fax to obtain the license activation key(s). Includes one year of 24 x 7 HPE Software Technical Support and Update Service.
NOTE: For additional license kits, please visit: http://h18000.www1.hp.com/products/QuickSpecs/12860_na/12860_na.html

HPE c-Class Storage Blades
NOTE: Please see the HPE D2200sb Storage Blade QuickSpecs for technical specifications and additional information at: http://h18000.www1.hp.com/products/QuickSpecs/13714_na/13714_na.html
HP D2220sb Build-to-order Storage Blade QW917A
NOTE: Includes 3yr NBD Parts-Only Warranty Service
HP D2220sb Configure-to-order Storage Blade QW918A
NOTE: Includes 3yr NBD Parts-Only Warranty Service
NOTE: The D2220sb requires a c7000 Enclosure configuration with 10 fans.
NOTE: Please see the HPE D2220sb Storage Blade QuickSpecs for technical specifications and additional information at:
HP BL c-Class PCI Express Mezzanine Pass Thru Option Kit 431643-B21
NOTE: The HPE PCI Express Mezzanine Pass-Thru Card (P/N 431643-B21) is required to support an expansion blade with the ProLiant BL620c G7 Server Blade. Up to two expansion blades are supported per server mix and match (Ultrium Tape, D2220sb/D2220sb PCIe Storage, and/or PCI Expansion Blades). See the "Expansion blade" section later in this document for more information.

HPE Expansion Blades
HP BLc PCI Expansion Blade 448018-B21
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/QuickSpecs/12753_na/12753_na.html
HP BL c-Class PCI Express Mezzanine Pass Thru Option Kit 431643-B21
NOTE: The HPE PCI Express Mezzanine Pass-Thru Card (P/N 431643-B21) is required to support an expansion blade with the ProLiant BL620c G7 Server Blade. Up to two expansion blades are supported per server mix and match (Ultrium Tape, D2220sb/D2220sb PCIe Storage, and/or PCI Expansion Blades). See the "Expansion blade" section later in this document for more information.
**QuickSpecs**

**HPE BladeSystem c7000 Enclosure**

### Related Options

<table>
<thead>
<tr>
<th>HPE Ultrim Tape Blades</th>
<th>HP StoreEver LTO-5 Ultrium SB3000c Tape Blade</th>
<th>BS580B</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>HP BL c-Class PCI Express Mezzanine Pass Thru Option Kit</td>
<td>431643-B21</td>
</tr>
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</table>

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

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>HPE Intelligent Power Distribution Units Power cords</td>
<td><strong>NOTE:</strong> 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. <strong>NOTE:</strong> These power cables are designated by bright blue IEC connectors.</td>
</tr>
<tr>
<td>HP 1.37m 250V 16A C19-C20 WW Single IPD Enabled Jumper Cord</td>
<td>TK744A</td>
</tr>
<tr>
<td>HP 2.0m 250V 16A C19-C20 WW Single IPD Enabled Jumper Cord</td>
<td>TK738A</td>
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<tr>
<td>HP 3.0m 250V 16A C19-C20 WW Single IPD Enabled Jumper Cord</td>
<td>TK742A</td>
</tr>
</tbody>
</table>

### HPE C19 - C20 Jumper Cords

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

### HPE High Line Power Cords 200 - 240V AC

- HP C19 - Nema L6-30P US/CA 250V 16Amp 4.5m Power Cord E7805A
- HP C19 - Nema L6-20P NA/JP 250V 20Amp High Voltage 3.6m Power Cord AF593A
- HP 240 VAC 4.5M Unterminated End NA Power Cord E7806A

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

**NOTE:** Power cables J6W98A, J6W99A, and J6X00A are intended for 277VAC or 380VDC APP Saf-D-Grid to APP Saf-D-Grid applications. **NOTE:** Power cables J6X01A, J6X02A, and J6X03A are intended for 277VAC APP Saf-D-Grid to LS-25 applications.

- HP SAFDGRID-SAFDGRID 277V 15Amp DC 0.76m Jumper Cord J6W98A
- HP SAFDGRID-SAFDGRID 277V 15Amp DC 1.37m Jumper Cord J6W99A
- HP SAFDGRID-SAFDGRID 277V 15Amp DC 2.0m Jumper Cord J6X00A
- HP SAFDGRID-LS-25 277V 15Amp AC 0.76m Jumper Cord J6X01A
## Related Options

### HPE Uninterruptible Power Systems (UPSs)

<table>
<thead>
<tr>
<th>UPS Model</th>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP SAFDGRID-LS-25 277V 15Amp AC 1.37m Jumper Cord</td>
<td></td>
<td>J6X02A</td>
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<tr>
<td>HP SAFDGRID-LS-25 277V 15Amp AC 2.0m Jumper Cord</td>
<td></td>
<td>J6X03A</td>
</tr>
</tbody>
</table>

**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 [http://www.hp.com/go/rackandpower](http://www.hp.com/go/rackandpower).

- **R5000 Uninterruptible Power System (UPS)**
  - HP R5000 3U L630 High Voltage NA/JP Uninterruptible Power System
  - Part Number: AF460A

- **R7000 Uninterruptible Power System (UPS)**
  - HP R7000 4U 50A High Voltage NA/JP Uninterruptible Power System
  - Part Number: AF462A
  - HP R5KVA and R7KVA 3U Extended Runtime Module
  - Part Number: AF464A

- **HPE R8000/3 Uninterruptible Power System (UPS)**
  - HP R8000/3 8000kVA Three Phase NA 6U Rackmount Uninterruptible Power System
  - Part Number: AF431A

- **HPE R12000/3 Uninterruptible Power System (UPS)**
  - HP R12000/3 12000VA Three Phase NA 6U Rackmount Uninterruptible Power System
  - Part Number: AF429A
  - HPE Parallel 3 Phase Uninterruptible Power Systems (UPS RP36000/3)
  - HP RP36000/3 36000VA Three Phase NA Uninterruptible Power System
  - Part Number: AF438A

- **Expansion modules for RP36000/3 UPS**
  - HP RP12000/3 12000VA Three Phase NA 6U Rackmount Uninterruptible Power System
  - Part Number: AF436A

### 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 [http://www.hp.com/go/rackandpower](http://www.hp.com/go/rackandpower).

- **HPE Basic Power Distribution Units (bPDUs)**
  - HPE Basic 4.9kVA/L6-30P 24A/208V Outlets (24) C13 (6) C19/Vertical NA/JP PDU
  - Part Number: HSM59A
  - HPE Basic 3Ph 8.6kVA/L15-30P 24A/208V Outlets (24) C13 (6) C19/Vertical NA/JP PDU
  - Part Number: HSM62A
  - HPE Basic 3Ph 8.6kVA/L21-30P 24A/120-208V Outlets (24) C13 (3) C19 (3) 5-20R/Vertical NA/JP PDU
  - Part Number: HSM64A

- **HPE Modular Power Distribution Units (PDU Cores)**
  - **NOTE:** Modular PDU Cores do not include extension bars.
  - HPE Basic Modular 4.9kVA/L6-30P 24A/208V Outlets (4) C19/Horizontal NA/JP Core Only PDU
  - Part Number: 252663-D74
  - HPE Basic Modular 8.3kVA/CS8265C 40A/208V Outlets (4) C19/Horizontal NA/JP PDU
  - Part Number: 252663-D75
  - HPE Basic Modular 3Ph 8.6kVA/L15-30P 24A/208V Outlets (6) C19/Horizontal NA/JP PDU
  - Part Number: AF512A
  - HPE Basic Modular 3Ph 14.4kVA/CS8365C 40A/208V Outlets (6) C19/Horizontal NA/JP PDU
  - Part Number: AF519A
Related Options

HPE Basic Modular 3Ph 17.3kVA/60309 60A 4-wire 48A/208V Outlets (6) C19/Horizontal NA/JP PDU

HPE Remote Monitoring Power Distribution Units (mPDUs)

- HPE Metered 4.9kVA/L6-30P 24A/208V Outlets (20) C13 (4) C19/Vertical NA/JP PDU
  D9N47A
- HPE Metered 3Ph 8.6kVA/L15-30P 24A/208V Outlets (18) C13 (3) C19/Vertical NA/JP PDU
  D9N51A
- HPE Metered 3Ph 8.6kVA/L21-30P 24A/120-208V Outlets (18) C13 (3) C19 (3) 5-20R/Vertical NA/JP PDU
  D9N53A
- HPE Metered 3Ph 17.3kVA/60309 60A 4-wire 48A/208V Outlets (24) C13 (3) C19/Vertical NA/JP PDU
  D9N54A

HPE Environmental Sensor for Remote Monitored and Managed PDUs

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

HPE Intelligent Power Distribution Units (iPDUs)

- HPE Intelligent Modular 4.9kVA/L6-30P 24A/208V Outlets (6) C19/Horizontal NA/JP PDU
  AF520A
- HPE Intelligent Modular 3Ph 8.6kVA/L15-30P 24A/208V Outlets (6) C19/Horizontal NA/JP PDU
  AF522A
- HPE Intelligent Modular 3Ph 17.3kVA/60309 60A 4-wire 48A/208V (6) C19/Horizontal NA/JP PDU
  AF523A

HPE Data Center Racks

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

- HP 42U 600mm x 1075mm Advanced Pallet Rack
  H6J65A
- HP 42U 600mm x 1200mm Advanced Pallet Rack
  H6J67A
- HP 42U 800mm x 1200mm Advanced Pallet Rack
  H6J69A
- HP 48U 600mm x 1075mm Advanced Pallet Rack
  H6J87A
- HP 36U 600mm x 1075mm Advanced Pallet Rack
  H6J77A
- HP 22U 600mm x 1075mm Advanced Pallet Rack
  H6J83A

HPE Intelligent Series Rack

- HP 36U 600mm x 1075mm Enterprise Pallet Rack
  BW895A
- HP 42U 600mm x 1075mm Enterprise Pallet Rack
  BW903A
- HP 47U 600mm x 1075mm Enterprise Pallet Rack
  BW911A

HPE Location Discovery Services

NOTE: For information on HPE Location Discovery Services, please see: http://www.hp.com/go/rackandpower.

- HP 47U Location Discovery Kit
  BW947A
- HP 42U Location Discovery Kit
  BW946A
Related Options

HP 36U Location Discovery Kit BW945A

HPE Tape Backup
NOTE: For the complete range of tape drives, autoloaders, libraries and media see: http://www.hp.com/go/tape. For hardware and software compatibility of HPE tape backup products see: http://www.hp.com/storage/SPOCK.

- HP StoreEver LTO-6 Ultrium 6250 Tape Drive in 1U Rack-mount Kit COL99A
- HP StoreEver LTO-6 Ultrium 6650 SAS Internal Tape Drive EH963A
- HP StoreEver LTO-6 Ultrium 6650 SAS External Tape Drive EH964A
- HP StoreEver LTO-6 Ultrium 6250 Internal Tape Drive EH969A
- HP StoreEver LTO-6 Ultrium 6250 External Tape Drive EH970A

HPE Rack Options
NOTE: For additional information regarding Rack Options, please see the following URL: http://www.hp.com/go/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: http://www.hp.com/go/kvm.
  - HP 0x2x16 KVM Server Console Switch G2 with Virtual Media CAC Software AF618A
  - HP 0x2x32 KVM Server Console Switch G2 with Virtual Media CAC Software AF619A

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

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

HPE 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 Care Packs and carry separate Care Packs. Care Pack service level support for these options should always be uplifted to match existing storage or server service level. Please view the option QuickSpecs or contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized ServiceOne partner for Care Pack information.

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

- 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

### 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

- Proactive 24 Service - Mission Critical proactive environment 24x7 4hr onsite HW support  
  HA111A3#6Q6
- Critical Service - Mission Critical proactive environment 6-Hour Call-to-Repair onsite HW support  
  HA112A3#6Q6

#### Installation & Start-up Services

- HPE BladeSystem c7000 Infrastructure Installation and Startup Service for Blade Hardware and Insight Control Software  
  HA114A1#57A
- HPE Enhanced Network Installation and Startup Service for HPE BladeSystem  
  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.hp.com/go/hppoweradvisor](http://www.hp.com/go/hppoweradvisor).

### Power Input Module Specifications

<table>
<thead>
<tr>
<th>Power Input Module</th>
<th>Power Connection</th>
<th>HPE Power Discovery Services</th>
<th>Rated Input Voltage</th>
<th>Input Frequency</th>
<th>Supported Power Supply Kits</th>
<th>Supported c7000 Enclosures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Phase AC Intelligent (677595-B21)</td>
<td>6x IEC-320 C20 blue power connectors</td>
<td>Supported</td>
<td>200-240 VAC</td>
<td>50-60 Hz</td>
<td>2650W Platinum&lt;sup&gt;9,10a&lt;/sup&gt; 2400W Platinum&lt;sup&gt;8,9,10b&lt;/sup&gt; 2400W Gold&lt;sup&gt;8,9,10c&lt;/sup&gt; 2250W&lt;sup&gt;9,10d&lt;/sup&gt;</td>
<td>4XXXXX-B21 4XXXXX-B22 4XXXXX-B23 5XXXXX-B21 6XXXXX-B21 7XXXXX-B21</td>
</tr>
<tr>
<td>Single Phase AC (413379-B21)</td>
<td>6x IEC-320 C20 power connectors</td>
<td>Not supported</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Three Phase AC NA/JPN (413380-B21)&lt;sup&gt;9&lt;/sup&gt;</td>
<td>Two 3.05m (10 ft) power cables with NEMA L15-30p connectors</td>
<td></td>
<td>200-208 VAC line to line, 3-phase delta</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-48V DC (AH331A)</td>
<td>45DG 4AWG 1/4 2H terminal lugs</td>
<td></td>
<td>40-60 VDC</td>
<td>N/A</td>
<td>2250W -48VDC (AH332A)</td>
<td></td>
</tr>
<tr>
<td>High Voltage (753623-B21)</td>
<td>6x APP Saf-D-Grid receptacle connectors</td>
<td></td>
<td>277 VAC, 380 VDC</td>
<td>50-60 Hz (AC), N/A (DC)</td>
<td>2650W Universal (753618-B21 and 753619-B21)</td>
<td></td>
</tr>
</tbody>
</table>

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 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

---

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# Power Input Module and Power Supply Specifications

## HPE 2650 Watt Platinum Hot Plug Power Supply

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

## HPE 2400 Watt Platinum Hot Plug Power Supply

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>588603-B21 (single), 517521-B22 (6-pack)</td>
</tr>
<tr>
<td>Input Voltage Range (Vrms)</td>
<td>200-240</td>
</tr>
<tr>
<td>Frequency Range (Nominal) (Hz)</td>
<td>50 / 60</td>
</tr>
<tr>
<td>Nominal Input Voltage (Vrms)</td>
<td>200 208 220 230 240</td>
</tr>
<tr>
<td>Maximum Rated Output Wattage (Watts)</td>
<td>2450</td>
</tr>
<tr>
<td>Nominal Input Current (Arms)</td>
<td>13.9 13.4 12.6 12.0 11.4</td>
</tr>
<tr>
<td>Maximum Rated Input Wattage (Watts)</td>
<td>2692 2692 2678 2678 2663</td>
</tr>
<tr>
<td>Maximum Rated VA (Volt-Amp)</td>
<td>2778 2778 2762 2762 2747</td>
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<tr>
<td>Efficiency (%) at Maximum Rated Output Wattage</td>
<td>91 91 91.5 91.5 92</td>
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<tr>
<td>Power Factor (Minimum)</td>
<td>0.98</td>
</tr>
<tr>
<td>Leakage Current (mA)</td>
<td>0.97 1.01 1.06 1.11 1.16</td>
</tr>
<tr>
<td>Maximum Inrush Current (A peak)</td>
<td>100</td>
</tr>
<tr>
<td>Maximum Inrush Current duration (mS)</td>
<td>10</td>
</tr>
<tr>
<td>Maximum British Thermal Unit Rating (BTU/Hr)</td>
<td>9186 9186 9136 9136 9086</td>
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## HPE 2400 Watt Gold Hot Plug Power Supply

<table>
<thead>
<tr>
<th>Specification</th>
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<tbody>
<tr>
<td>Part Number</td>
<td>499243-B21 (single), 517521-B21 (6-pack)</td>
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<tr>
<td>Input Voltage Range (Vrms)</td>
<td>200-240</td>
</tr>
<tr>
<td>Frequency Range (Nominal) (Hz)</td>
<td>50 / 60</td>
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<tr>
<td>Nominal Input Voltage (Vrms)</td>
<td>200 208 220 230 240</td>
</tr>
<tr>
<td>Maximum Rated Output Wattage (Watts)</td>
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</tr>
<tr>
<td>Nominal Input Current (Arms)</td>
<td>14.15 13.58 12.81 12.23 11.70</td>
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<tr>
<td>Maximum Rated Input Wattage (Watts)</td>
<td>2742 2737 2730 2724 2720</td>
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## Power Input Module and Power Supply Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>AH332A (single)</th>
<th>AH332A (single)</th>
<th>AH332A (single)</th>
<th>AH332A (single)</th>
<th>AH332A (single)</th>
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<tbody>
<tr>
<td>Maximum Rated VA (Volt-Amp)</td>
<td>2830</td>
<td>2825</td>
<td>2817</td>
<td>2812</td>
<td>2807</td>
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<tr>
<td>Efficiency (%) at Maximum Rated Output Wattage</td>
<td>87.5</td>
<td>87.7</td>
<td>87.9</td>
<td>88.1</td>
<td>88.2</td>
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<td>Power Factor (Minimum)</td>
<td>0.98</td>
<td>0.98</td>
<td>0.98</td>
<td>0.98</td>
<td>0.98</td>
</tr>
<tr>
<td>Leakage Current (mA)</td>
<td>0.97</td>
<td>1.01</td>
<td>1.06</td>
<td>1.11</td>
<td>1.16</td>
</tr>
<tr>
<td>Maximum Inrush Current (A peak)</td>
<td>268</td>
<td>268</td>
<td>268</td>
<td>268</td>
<td>268</td>
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<tr>
<td>Maximum Inrush Current duration (mA)</td>
<td>50</td>
<td>50</td>
<td>50</td>
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<tr>
<td>Maximum British Thermal Unit Rating (BTU/Hr)</td>
<td>9356</td>
<td>9338</td>
<td>9313</td>
<td>9295</td>
<td>9280</td>
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### HPE 2250 Watt -48VDC Hot Plug Power Supply

<table>
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<tr>
<th>Specification</th>
<th>AH332A (single)</th>
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<th>AH332A (single)</th>
<th>AH332A (single)</th>
<th>AH332A (single)</th>
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<tbody>
<tr>
<td>Part Number</td>
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<td>AH332A (single)</td>
<td>AH332A (single)</td>
<td>AH332A (single)</td>
<td>AH332A (single)</td>
</tr>
<tr>
<td>Input Voltage Range (V DC)</td>
<td>40-60</td>
<td>40-60</td>
<td>40-60</td>
<td>40-60</td>
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<tr>
<td>Frequency Range (Nominal) (Hz)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Nominal Input Voltage (Vrms)</td>
<td>48</td>
<td>48</td>
<td>48</td>
<td>48</td>
<td>48</td>
</tr>
<tr>
<td>Maximum Rated Output Wattage (Watts)</td>
<td>2250</td>
<td>2250</td>
<td>2250</td>
<td>2250</td>
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<tr>
<td>Nominal Input Current (Arms)</td>
<td>53.15</td>
<td>53.15</td>
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<td>53.15</td>
</tr>
<tr>
<td>Maximum Rated Input Wattage (Watts)</td>
<td>2523</td>
<td>2523</td>
<td>2523</td>
<td>2523</td>
<td>2523</td>
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<tr>
<td>Maximum Rated VA (Volt-Amp)</td>
<td>2523</td>
<td>2523</td>
<td>2523</td>
<td>2523</td>
<td>2523</td>
</tr>
<tr>
<td>Efficiency (%) at Maximum Rated Output Wattage</td>
<td>89.2</td>
<td>89.2</td>
<td>89.2</td>
<td>89.2</td>
<td>89.2</td>
</tr>
<tr>
<td>Power Factor (Minimum)</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Leakage Current (mA)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Maximum Inrush Current (A peak)</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>Maximum Inrush Current duration (mS)</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Maximum British Thermal Unit Rating (BTU/Hr)</td>
<td>8607</td>
<td>8607</td>
<td>8607</td>
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</tbody>
</table>

### HPE 2650 Watt Universal Hot Plug Power Supply

<table>
<thead>
<tr>
<th>Specification</th>
<th>753618-B21 (single), 753619-B21 (6-pack)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>753618-B21 (single), 753619-B21 (6-pack)</td>
</tr>
<tr>
<td>Input Voltage Range (Vrms)</td>
<td>277 VAC, 380 VDC</td>
</tr>
<tr>
<td>Frequency Range (Nominal) (Hz)</td>
<td>50 / 60 (AC), N/A (DC)</td>
</tr>
<tr>
<td>Nominal Input Voltage (Vrms)</td>
<td>277 VAC</td>
</tr>
<tr>
<td>Maximum Rated Output Wattage (Watts)</td>
<td>2650</td>
</tr>
<tr>
<td>Nominal Input Current (A rms)</td>
<td>10.40</td>
</tr>
<tr>
<td>Maximum Rated Input Wattage (Watts)</td>
<td>2868</td>
</tr>
<tr>
<td>Maximum Rated VA (Volt-Amp)</td>
<td>2881</td>
</tr>
<tr>
<td>Efficiency (%) at Maximum Rated Output Wattage</td>
<td>92.4</td>
</tr>
<tr>
<td>Power Factor (Minimum)</td>
<td>0.996 (AC), 1.000 (DC)</td>
</tr>
<tr>
<td>Leakage Current (mA)</td>
<td>1.16</td>
</tr>
<tr>
<td>Maximum Inrush Current (A peak)</td>
<td>100</td>
</tr>
<tr>
<td>Maximum Inrush Current duration (mS)</td>
<td>10</td>
</tr>
<tr>
<td>Maximum British Thermal Unit Rating (BTU/Hr)</td>
<td>9785</td>
</tr>
</tbody>
</table>

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### HPE 2650 Watt -48VDC Hot Plug Power Supply

<table>
<thead>
<tr>
<th>Specification</th>
<th>-40</th>
<th>-48</th>
<th>-72</th>
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</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>789934-B21 (Single), 753619 (6-pack)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input Voltage Range (V dc)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Frequency Range (Nominal) (Hz)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominal Input Voltage (V dc)</td>
<td>-40</td>
<td>-48</td>
<td>-72</td>
</tr>
<tr>
<td>Maximum Rated Output Wattage Rating</td>
<td>2650</td>
<td>2650</td>
<td>2650</td>
</tr>
<tr>
<td>Nominal Input Current (A)</td>
<td>-72.74</td>
<td>-60.18</td>
<td>-39.96</td>
</tr>
<tr>
<td>Maximum Rated Input Wattage Rating (Watts)</td>
<td>2909</td>
<td>2889</td>
<td>2877</td>
</tr>
<tr>
<td>Maximum Rated Input VA Rating (Volt-Amp)</td>
<td>2909</td>
<td>2889</td>
<td>2877</td>
</tr>
<tr>
<td>Efficiency (%)</td>
<td>91.1</td>
<td>91.7</td>
<td>92.1</td>
</tr>
<tr>
<td>Power Factor (Minimum)</td>
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<td>1.000</td>
<td>1.000</td>
</tr>
<tr>
<td>Leakage Current (mA)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum Inrush Current (A peak)</td>
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<td>200</td>
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</tr>
<tr>
<td>Maximum Inrush Current duration (mS)</td>
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<tr>
<td>Maximum British Thermal Unit Rating (BTU-Hr)</td>
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<td>9817</td>
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<tr>
<td>Hold Up Time (ms)</td>
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<td>0.5</td>
<td>0.5</td>
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</table>
Fan Bay and Device Bay Numbering and Population Guidelines

**Fan bay numbering**

Fans must be placed in the following bays

<table>
<thead>
<tr>
<th>Number of Fans</th>
<th>Fan Bays Used</th>
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</thead>
<tbody>
<tr>
<td>4</td>
<td>4, 5, 9, 10</td>
</tr>
<tr>
<td>6</td>
<td>3, 4, 5, 8, 9, 10</td>
</tr>
<tr>
<td>8</td>
<td>1, 2, 4, 5, 6, 7, 9, 10</td>
</tr>
<tr>
<td>10</td>
<td>1, 2, 3, 4, 5, 6, 7, 8, 9, 10</td>
</tr>
</tbody>
</table>

**Half-height device bay numbering**

1. Device Bay 1
2. Device Bay 2
9. Device Bay 9
10. Device Bay 10
**Fan Bay and Device Bay Numbering and Population Guidelines**

3. Device Bay 3  
4. Device Bay 4  
5. Device Bay 5  
6. Device Bay 6  
7. Device Bay 7  
8. Device Bay 8  
9. Device Bay 9  
10. Device Bay 10  
11. Device Bay 11  
12. Device Bay 12  
13. Device Bay 13  
14. Device Bay 14  
15. Device Bay 15  
16. Device Bay 16

---

**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
Fan Bay and Device Bay Numbering and Population Guidelines

Support half-height devices. To install a full-height blade in any zone this divider must be removed. As a consequence a zone can only contain either full-height server blades or half-height server blades.

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

The following device bays are located in each zone:

<table>
<thead>
<tr>
<th>Zone</th>
<th>Half-Height Device Bays</th>
<th>Full-Height Device Bays</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1, 9, 2, 10</td>
<td>1, 2</td>
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<tr>
<td>2</td>
<td>3, 11, 4, 12</td>
<td>3, 4</td>
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<td>3</td>
<td>5, 13, 6, 14</td>
<td>5, 6</td>
</tr>
<tr>
<td>4</td>
<td>7, 15, 8, 16</td>
<td>7, 8</td>
</tr>
</tbody>
</table>

**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.

**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-
Fan Bay and Device Bay Numbering and Population Guidelines

numbered bay to the right.
4. If the partner server blade is installed in an even-numbered bay, the expansion blade is installed in the adjacent odd-numbered bay to the left.
5. Each c7000 zone contains a removable divider that is used to support half-height devices. This divider is remains installed whether the half-height devices are server or expansion blades.

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

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

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Supported Device Bays</th>
<th>Minimum Number of Fans</th>
<th>Supported Fan Bays</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Half-Height Bays</td>
<td>Full-Height Bays</td>
<td></td>
</tr>
<tr>
<td>No more than 1 full-height or 2 half-height device bays occupied</td>
<td>1, 9, 2, 10</td>
<td>1, 2</td>
<td>4, 5, 9, 10</td>
</tr>
<tr>
<td>No more than 4 full-height or 8 half-height device bays occupied</td>
<td>1, 9, 2, 10, 3, 11, 4, 12</td>
<td>1, 2, 3, 4</td>
<td>3, 4, 5, 8, 9, 10</td>
</tr>
<tr>
<td>At least 5 full-height or 9 half-height</td>
<td>All</td>
<td>All</td>
<td>1, 2, 4, 5, 6, 7, 9, 10</td>
</tr>
</tbody>
</table>
**Fan Bay and Device Bay Numbering and Population Guidelines**

<table>
<thead>
<tr>
<th>device bays occupied</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>

**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.
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 Storage Blades.
      iii. More than half of the enclosure device bays are occupied and any quantity of D2200sb Storage Blades are present.
      iv. Nine or more BL460c G1 and/or BL460c G5 Server Blades.
## Technical Specifications

| 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**

3 lbs (1.4 kg)

**Power Supply Weight**

6 lbs (2.7 kg)

**HPE Active Cool 200 Fan Weight**

4 lbs (1.8 kg)

**Onboard Administrator Weight**

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**

Operating: 50° to 95° F (10° to 35° C)
Technical Specifications

<table>
<thead>
<tr>
<th>Range</th>
<th>Non-Operating</th>
<th>-22° to 140° F (-30° to 60° C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative Humidity</td>
<td>Operating</td>
<td>10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.</td>
</tr>
<tr>
<td></td>
<td>Non-Operating</td>
<td>5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.</td>
</tr>
</tbody>
</table>

**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 70 KPa/10.1 psia. Upper non-operating limit is 30,000 ft (9,144 m) or 30.3 KPa/4.4 psia. Storage maximum humidity of 95% is based on a maximum temperature of 113° F (45° C). Altitude maximum for storage is 70 KPa.

**NOTE:** For detailed environmental and other installation requirements, please see the “HPE BladeSystem c-Class Site Planning Guide” at [http://www.hp.com/support](http://www.hp.com/support).

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.hp.com/go/hppoweradvisor](http://www.hp.com/go/hppoweradvisor).

**Single Phase AC Power Input Module**

| Power connection | 677595-B21: 6x IEC-320 C20 blue power connectors |
| Single Phase AC Intelligent Power Input Module | 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 |
## Technical Specifications

<table>
<thead>
<tr>
<th>Power Supply</th>
<th>Maximum output (per power supply)</th>
<th>Maximum output (total for six power supplies)</th>
<th>Maximum input current (per power supply)</th>
<th>Maximum input power (per power supply)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2400W Gold Power Supply (517521-B21, 6-pack) (499243-B21, single)</td>
<td>2450W</td>
<td>14,210W</td>
<td>13.9 A at 200 VAC</td>
<td>2780 VA</td>
</tr>
<tr>
<td>2400W Platinum Power Supply (517521-B22, 6-pack) (588603-B21, single)</td>
<td>2450W</td>
<td>14,210W</td>
<td>13.2 A at 200 VAC</td>
<td>2640 VA</td>
</tr>
<tr>
<td>2650W Platinum Power Supply (733460-B21, 6-pack) (733459-B21, single)</td>
<td>2650W</td>
<td>15,370W</td>
<td>14.4 A at 200 VAC</td>
<td>2880 VA</td>
</tr>
</tbody>
</table>

### Three Phase AC NA/JPN Power Input Module

<table>
<thead>
<tr>
<th>Power Supply</th>
<th>Maximum output (per power supply)</th>
<th>Maximum output (total for six power supplies)</th>
<th>Maximum input current (per power supply)</th>
<th>Maximum input power (per power supply)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2250W Power Supply (412138-B21)</td>
<td>2250W</td>
<td>13,050W</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Technical Specifications

<table>
<thead>
<tr>
<th>Power Supply Configuration</th>
<th>Maximum Input Current per Line Cord</th>
<th>Maximum Input Power per Line Cord</th>
</tr>
</thead>
<tbody>
<tr>
<td>2400W Gold Power Supply</td>
<td>22.8 A at 200 VAC</td>
<td>7863 VA</td>
</tr>
<tr>
<td>(517521-B21, 6-pack)</td>
<td>21.8 A at 208 VAC</td>
<td></td>
</tr>
<tr>
<td>(499243-B21, single)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2400W Platinum Power Supply</td>
<td>24.2 A at 200 VAC</td>
<td>8352 VA</td>
</tr>
<tr>
<td>(517521-B22, 6-pack)</td>
<td>23.2 A at 208 VAC</td>
<td></td>
</tr>
<tr>
<td>(588603-B21, single)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2650W Platinum Power Supply</td>
<td>22.9 A at 200 VAC</td>
<td>7920 VA</td>
</tr>
<tr>
<td>(733460-B21, 6-pack)</td>
<td>22 A at 208 VAC</td>
<td></td>
</tr>
<tr>
<td>(733459-B21, single)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### -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

- **2650W -48VDC Power Supply**
  - Maximum output (total for six power supplies): 15,370W
### Technical Specifications

<table>
<thead>
<tr>
<th>Power Supply Module</th>
<th>Power connection</th>
<th>Maximum input current (per power supply)</th>
<th>Maximum input power per supply</th>
<th>Maximum output (per power supply)</th>
<th>Maximum output (total for six power supplies)</th>
<th>Maximum input current (per power supply)</th>
<th>Maximum input power per supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>2650W Universal Power Supply</td>
<td>6x APP Saf-D-Grid receptacle connectors</td>
<td>75A</td>
<td>2700W</td>
<td>2650W</td>
<td>15,370W</td>
<td>73A</td>
<td>2892W</td>
</tr>
</tbody>
</table>

**High Voltage Power Input Module**

- **Power connection**: 6x APP Saf-D-Grid receptacle connectors
- **NOTE**: Power cables with APP Saf-D-Grid connectors are ordered separately.

<table>
<thead>
<tr>
<th>Power Supply Module</th>
<th>Rated input voltage</th>
<th>Rated input frequency</th>
<th>Number of power supplies supported</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>277 VAC, 380 VDC</td>
<td>50 to 60 Hz (AC), N/A (DC)</td>
<td>Minimum: One (1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Maximum: Six (6)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Power Supply Module</th>
<th>Maximum output (per power supply)</th>
<th>Maximum output (total for six power supplies)</th>
<th>Maximum input current (per power supply)</th>
<th>Maximum input power per supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>2650W Universal Power Supply</td>
<td>2650W</td>
<td>15,370W</td>
<td>10.5 A at 277 VAC</td>
<td>7.6 A at 380 VDC</td>
</tr>
</tbody>
</table>

**Acoustic Noise**

Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).

- **Idle**
  - LWAd: 7.1 Bels
  - LpAm: 54 dBA

- **Operating**
  - LWAd: 7.2 Bels
  - LpAm: 54 dBA

### Option Kits

<table>
<thead>
<tr>
<th>Power Supply</th>
<th>Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>8.75 in (223 mm)</td>
</tr>
</tbody>
</table>
Technical Specifications

| Option Shipping Dimensions | Width       | 8.63 in (219 mm) |
|                           | Depth       | 35.13 in (892 mm) |
|                           | Weight      | 8.5 lbs (3.85 kg) |

| Fan Option Shipping Dimensions | Height       | 8.75 in (223 mm) |
|                                | Width       | 9.75 in (248 mm) |
|                                | Depth       | 15.88 in (403 mm) |
|                                | Weight      | 4.0 lbs (1.8 kg) |

| BladeSystem Onboard Administrator Option Shipping Dimensions | Height       | 2.50 in (63.5 mm) |
|                                                             | Width       | 9.88 in (251 mm) |
|                                                             | Depth       | 13.50 in (343 mm) |
|                                                             | Weight      | 4.0 lbs (1.8 kg) |

Environmental-friendly Products and Approach

End-of-life Management and Recycling

Hewlett Packard 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.hp.com/go/green](http://www.hp.com/go/green). To recycle your product, please go to: [http://www.hp.com/go/green](http://www.hp.com/go/green) 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 website at: [http://www.hp.com/go/green](http://www.hp.com/go/green). 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

<table>
<thead>
<tr>
<th>Date</th>
<th>Version History</th>
<th>Action</th>
<th>Description of Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Removed</td>
<td>Obsolete SKU was deleted: 489184-B21                                                                ---------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>15-Jan-2016</td>
<td>From Version 64 to 65</td>
<td>Changed</td>
<td>Overview and Related Options sections were updated.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Added</td>
<td>Added two OneView option SKUs E5Y41A and E5Y42A.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Removed</td>
<td>Obsolete SKUs deleted: 451439-B21, 451438-B21, AP880A, E7X08A.</td>
</tr>
<tr>
<td>28-Sep-2015</td>
<td>From version 63 to 64</td>
<td>Changed</td>
<td>Configuration Information Factory Integrated Models and Related Options sections were updated.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Added</td>
<td>SKUs added in Related Options section: 813874-B21, 805755-B21.</td>
</tr>
<tr>
<td>17-Aug-2015</td>
<td>From Version 62 to 63</td>
<td>Changed</td>
<td>What’s New was updated with HPE 2650W -48VDC Power Supply Kit for BladeSystem c7000 Enclosure. Service and Support section was revised.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Configuration Information Factory Integrated Models, Related Options, Power Input Module and Power Supply Specifications, and Technical Specifications were revised.</td>
</tr>
<tr>
<td>09-Feb-2015</td>
<td>From Version 61 to 62</td>
<td>Changed</td>
<td>Overview, Service and Support, Configuration Information Factory Integrated Models and Related Options sections were updated.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Added</td>
<td>SKUs Added on HPE BladeSystem c-Class Network Interconnects: 751465-B21, 778720-B21, 466482-B21.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Removed</td>
<td>Obsolete SKUs removed: AF536A, AT120A</td>
</tr>
<tr>
<td>19-Dec-2014</td>
<td>From Version 60 to 61</td>
<td>Changed</td>
<td>Notes were updated throughout the QuickSpecs.</td>
</tr>
<tr>
<td>21-Nov-2014</td>
<td>From Version 59 to 60</td>
<td>Changed</td>
<td>Subheader was added: Fan Bay and Device Bay Numbering Populating Guidelines. Device bay and fan population guidelines were updated.</td>
</tr>
<tr>
<td>07-Nov-2014</td>
<td>From Version 58 to 59</td>
<td>Changed</td>
<td>Overview, Pre-configured Models and Configuration Information Factory Integrated Models sections were updated.</td>
</tr>
<tr>
<td>25-Sep-2014</td>
<td>From Version 57 to 58</td>
<td>Changed</td>
<td>Changes were made throughout the QuickSpecs.</td>
</tr>
<tr>
<td>9-Sep-2014</td>
<td>From Version 56 to 57</td>
<td>Changed</td>
<td>Changes were made throughout the QuickSpecs.</td>
</tr>
<tr>
<td>18-Aug-2014</td>
<td>From Version 55 to 56</td>
<td>Changed</td>
<td>Overview, Related Options and Technical Specifications sections were updated.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Added</td>
<td>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.</td>
</tr>
</tbody>
</table>
## Summary of Changes

<table>
<thead>
<tr>
<th>Date</th>
<th>Version Range</th>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>24-Jun-2014</td>
<td>From Version 54 to 55</td>
<td>Changed</td>
<td>Overview, Configuration Information Factory Integrated Models, Related Option, Device Bay and Fan Bay Numbering and Population Guidelines, Technical Specifications sections were updated</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Removed</td>
<td>SKU 691380-B21 was deleted, HPE Power Distribution Units SKUs were deleted</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Added</td>
<td>HPE Data Center Racks SKUs on Configuration Information Factory Integrated Models section, HPE Power Distribution Units SKUs were added</td>
</tr>
<tr>
<td>10-Jun-2014</td>
<td>From Version 53 to 54</td>
<td>Changed</td>
<td>Changes were made throughout the QuickSpecs.</td>
</tr>
<tr>
<td>31-Mar-2014</td>
<td>From Version 52 to 53</td>
<td>Added</td>
<td>HPE OneView Software was added.</td>
</tr>
<tr>
<td>10-Dec-2013</td>
<td>From Version 51 to 52</td>
<td>Changed</td>
<td>Changes were made throughout the QuickSpecs.</td>
</tr>
<tr>
<td>11-Oct-2013</td>
<td>From Version 50 to 51</td>
<td>Changed</td>
<td>Changes made to Step 5 &amp; 6 of Configuration Information and to the Related Options section.</td>
</tr>
<tr>
<td>13-Sep-2013</td>
<td>From Version 49 to 50</td>
<td>Changed</td>
<td>Models, throughout Configuration Information - Factory Integrated Models, and Related Options were revised.</td>
</tr>
<tr>
<td>30-Aug-2013</td>
<td>From Version 48 to 49</td>
<td>Changed</td>
<td>Changes made in the Configuration Information, Related Options and Technical Specifications sections.</td>
</tr>
<tr>
<td>14-Jun-2013</td>
<td>From Version 47 to 48</td>
<td>Changed</td>
<td>2650 Watts Platinum Hot Plug Power Supply was added.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>HPE BladeSystem Power Sizer was removed</td>
</tr>
<tr>
<td>10-Jun-2013</td>
<td>From Version 46 to 47</td>
<td>Changed</td>
<td>Changes made in the following sections: Service and Support Configuration Information - Steps 2 &amp; 5 Related Options</td>
</tr>
<tr>
<td>28-Mar-2013</td>
<td>From Version 45 to 46</td>
<td>Changed</td>
<td>Changes made in the North America and Canada versions only.</td>
</tr>
<tr>
<td>15-Mar-2013</td>
<td>From Version 44 to 45</td>
<td>Changed</td>
<td>Changed name of product throughout document. Changes made in the HPE Insight Management software, Configuration Information: Steps 2 - 7 and Related Options sections</td>
</tr>
</tbody>
</table>
### Summary of Changes

<table>
<thead>
<tr>
<th>Date</th>
<th>Version Range</th>
<th>Change Type</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>24-Sep-2012</td>
<td>From Version 39 to 40</td>
<td>Changed</td>
<td>Changes were made in HPE BladeSystem c-Class Overview, Configuration Information Factory Integrated Models and Related Options sections.</td>
</tr>
<tr>
<td>31-Aug-2012</td>
<td>From Version 38 to 39</td>
<td>Changed</td>
<td>Changes made throughout the QuickSpecs.</td>
</tr>
<tr>
<td>14-May-2012</td>
<td>From Version 37 to 38</td>
<td>Changed</td>
<td>Changes made in the Related Options section.</td>
</tr>
<tr>
<td>26-Mar-2012</td>
<td>From Version 36 to 37</td>
<td>Changed</td>
<td>Changes made to the HPE Optical Drives.</td>
</tr>
<tr>
<td>06-Mar-2012</td>
<td>From Version 35 to 36</td>
<td>Added</td>
<td>Added in the reference to G8.</td>
</tr>
<tr>
<td>09-Jan-2012</td>
<td>From Version 34 to 35</td>
<td>Removed</td>
<td>Removed a reference to G8.</td>
</tr>
<tr>
<td>14-Nov-2011</td>
<td>From Version 33 to 34</td>
<td>Changed</td>
<td>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.</td>
</tr>
<tr>
<td>29-Sep-2011</td>
<td>From Version 32 to 33</td>
<td>Changed</td>
<td>Revisions made in the Configuration Information and Related Options sections.</td>
</tr>
<tr>
<td>26-Sep-2011</td>
<td>From Version 31 to 32</td>
<td>Changed</td>
<td>Power Supplies, Cisco MDS 9124e Fabric Switch for HPE c-Class BladeSystem, HPE Ultrium Tape Blades and HPE Care Pack Services were revised.</td>
</tr>
<tr>
<td>30-Aug-2011</td>
<td>From Version 30 to 31</td>
<td>Changed</td>
<td>Power Distribution Units were revised in Configuration Information Factory Integrated Models. Product descriptions were revised throughout Related Options.</td>
</tr>
<tr>
<td>29-Jun-2011</td>
<td>From Version 29 to 30</td>
<td>Changed</td>
<td>Changes were made within North America and Canada only.</td>
</tr>
<tr>
<td>24-Jun-2011</td>
<td>From Version 28 to 29</td>
<td>Changed</td>
<td>Changes were made throughout, including removing HPE SAS Switches from Related Options and adding HPE USB Keyboard and Mouse to HPE Rack Options.</td>
</tr>
<tr>
<td>23-Jun-2011</td>
<td>From Version 27 to 28</td>
<td>Changed</td>
<td>Link was corrected in Service and Support.</td>
</tr>
<tr>
<td>03-Jun-2011</td>
<td>From Version 26 to 27</td>
<td>Changed</td>
<td>Changes were made within North America and Canada only.</td>
</tr>
<tr>
<td>29-Apr-2011</td>
<td>From Version 25 to 26</td>
<td>Changed</td>
<td>Changes made to revise the Service and Support section along with other changes to the Overview, Configuration Information and Related Options sections.</td>
</tr>
<tr>
<td>14-Feb-2011</td>
<td>From Version 24 to 25</td>
<td>Changed</td>
<td>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.</td>
</tr>
</tbody>
</table>
## Summary of Changes

<table>
<thead>
<tr>
<th>Date</th>
<th>Version Change</th>
<th>Action</th>
<th>Details</th>
</tr>
</thead>
</table>
| 08-Oct-2010| From Version 23 to 24 | Changed    | HPE Tape Backup and HPE Care Pack 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  |
| 02-Jul-2010| From Version 22 to 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| From Version 21 to 22 | Removed    | Removed a reference to an unavailable product. |
| 21-Jun-2010| From Version 20 to 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 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 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| From Version 19 to 20 | Changed    | HPE Power Supplies, HPE Insight Control, HPE Enclosure, HPE Cooling Options, HPE Uninterruptible Power Systems, |
### Summary of Changes

<table>
<thead>
<tr>
<th>Date</th>
<th>Version Change</th>
<th>Status</th>
<th>Description</th>
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<tbody>
<tr>
<td>25-Nov-2009</td>
<td>From Version 18 to 19</td>
<td>Changed</td>
<td>Minor edits were made within the QuickSpecs.</td>
</tr>
<tr>
<td>16-Nov-2009</td>
<td>From Version 17 to 18</td>
<td>Changed</td>
<td>Changes were made throughout the QuickSpecs.</td>
</tr>
<tr>
<td>02-Oct-2009</td>
<td>From Version 16 to 17</td>
<td>Changed</td>
<td>Changes made throughout the QuickSpecs except for the Storage and Technical Specifications sections.</td>
</tr>
<tr>
<td>14-Aug-2009</td>
<td>From Version 15 to 16</td>
<td>Changed</td>
<td>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.</td>
</tr>
<tr>
<td>17-Jul-2009</td>
<td>From Version 14 to 15</td>
<td>Changed</td>
<td>Revisions were made in the HPE BladeSystem c-Class Overview section, Configuration Information Factory Integrated Models section and to the Related Options section.</td>
</tr>
<tr>
<td>03-Jul-2009</td>
<td>From Version 13 to 14</td>
<td>Changed</td>
<td>Corrected Part Number for HPE BLC7000 Insight Control suite for Linux 16 License in Step 3 of the Configuration Information Factory Integrated Models section.</td>
</tr>
<tr>
<td>02-Jun-2009</td>
<td>From Version 12 to 13</td>
<td>Added</td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Changed</td>
<td>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.</td>
</tr>
<tr>
<td>29-Apr-2009</td>
<td>From Version 11 to 12</td>
<td>Changed</td>
<td>Changes affected the North America and Canada versions only. Just the date and version were changed in the Worldwide version.</td>
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<tr>
<td>27-Apr-2009</td>
<td>From Version 10 to 11</td>
<td>Changed</td>
<td>Changes were made throughout the QuickSpecs.</td>
</tr>
<tr>
<td>30-Mar-2009</td>
<td>From Version 9 to 10</td>
<td>Added</td>
<td>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 section.</td>
</tr>
</tbody>
</table>
## Summary of Changes

<table>
<thead>
<tr>
<th>Date</th>
<th>Version</th>
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<th>Changes</th>
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<tbody>
<tr>
<td>15-Sep-2008</td>
<td>From 6 to 7</td>
<td>Added</td>
<td>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</td>
</tr>
<tr>
<td></td>
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<td>HPE 1:10 GbE BLc Advanced Functionality Software</td>
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<td></td>
<td>HPE 10Gb Ethernet BL-c Switch</td>
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<td></td>
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<td></td>
<td>HPE GbE2c Layer 2/3 Ethernet Blade Switch Advanced</td>
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<tr>
<td>17-Nov-2008</td>
<td>From 7 to 8</td>
<td>Changed</td>
<td>Changes were made to the following sections:</td>
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<td>Overview:</td>
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<td>What's New</td>
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<td></td>
<td></td>
<td>At A Glance</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>HPE BladeSystem c-Class Overview:</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Rack Airflow Requirements</td>
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<td>Server Management Stand Alone Software</td>
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<td>Configuration Information Factory Integrated Models</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Step Two</td>
</tr>
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<td>Step Five</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Step Six</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Related Options</td>
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<td></td>
<td></td>
<td>Changes were made throughout this section</td>
</tr>
<tr>
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<td>Technical Specifications</td>
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<td></td>
<td></td>
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<td>HPE Blade System</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Power</td>
</tr>
<tr>
<td>26-Jan-2009</td>
<td>From 8 to 9</td>
<td>Added</td>
<td>NOTE for HPE 2400W High Efficiency Hot Plug Power Supply in Step 2 of the Configuration Information Factory Integrated Models and Related Options sections</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>HPE StorageWorks SB920c Tape Blade to HPE c-Class Tape Blades in the Related Options section</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>HPE Airflow Optimization section to the Related Options</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Changed</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>HPE Insight Control Environment for Linux section of HPE Insight Control Environment for BladeSystem Management Suites in the Related Options section</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Updated HPE Rack 10000 G2 Series in the Related Options section</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Minor formatting and grammatical changes were made within Step 5 of the Configuration Information Factory Integrated Models and the Technical Specifications sections</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Added</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>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</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Revisions were made throughout Step 2 of the Configuration Information section</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Removed NOTE from HPE BladeSystem c-Class c7000 Enclosure in the HPE BladeSystem c-Class Overview section</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>and 10642 G2 (42U) Rear Extension Kit and HPE Modular Cooling System from the Related Options section</td>
</tr>
<tr>
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<td>Changed</td>
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<tr>
<td></td>
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<td>Information Factory Integrated Models section</td>
</tr>
</tbody>
</table>

### Notes

- **Information Factory Integrated Models section**
- **Related Options section**
- **Technical Specifications**
- **HPE Blade System Power**
- **Configuration Information Factory Integrated Models**
# Summary of Changes

<table>
<thead>
<tr>
<th>Date</th>
<th>Change Type</th>
<th>Action</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>08-Aug-2008</td>
<td>Changed</td>
<td>Added</td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>Changed</td>
<td>Changed</td>
<td>Changes were made to the following sections: HPE BladeSystem c-Class Overview/Insight Control Environment for BladeSystem Management Suite.</td>
</tr>
<tr>
<td>14-Jul-2008</td>
<td>Changed</td>
<td>Removed</td>
<td>Options were removed from the following sections: Related Options/Tape Libraries, Related Options/HPE KVM Switch Options, Technical Specifications/Power.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>Change Type</th>
<th>Action</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Changed</td>
<td></td>
<td>HPE Insight Control Environment for BladeSystem Management Suite.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>HPE Virtual Connect Enterprise Manager.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>HPE PCI Expansion Blades.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>HPE c-Class Tape Blades.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>HPE StorageWorks All-in-One Storage Systems.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Rack 10000 G2 Series.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Tape Libraries.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Power Cords.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Completely revised the Uninterruptible Power Systems - Rack.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Width Dimension for the HPE BladeSystem c7000 Server Blade Enclosure.</td>
</tr>
</tbody>
</table>
## Summary of Changes

<table>
<thead>
<tr>
<th>Date</th>
<th>From Version</th>
<th>Changed</th>
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<tbody>
<tr>
<td>12-May-2008</td>
<td>3 to 4</td>
<td>Changed</td>
<td>Changes were made throughout the Overview, HPE BladeSystem c-Class Overview, Configuration Information and Related Options sections.</td>
</tr>
<tr>
<td>11-Feb-2008</td>
<td>2 to 3</td>
<td>Changed</td>
<td>Changes were made throughout the QuickSpecs.</td>
</tr>
<tr>
<td>05-Oct-2007</td>
<td>1 to 2</td>
<td>Changed</td>
<td>Updated the description for part number AF916A.</td>
</tr>
</tbody>
</table>

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