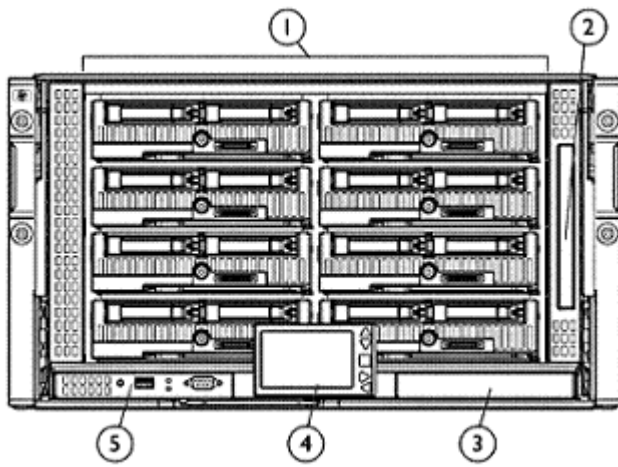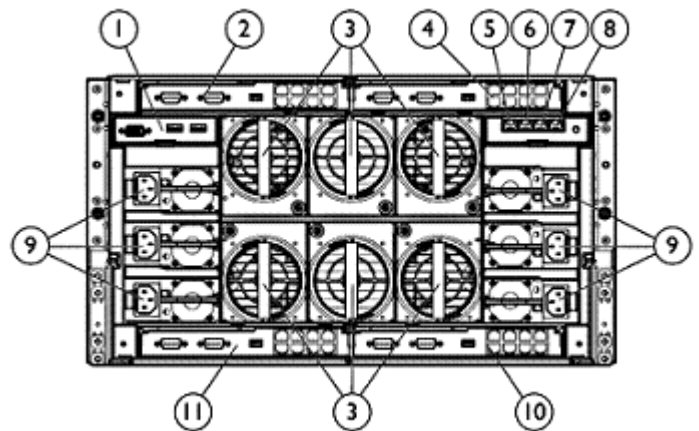## Overview

HP BladeSystem c3000 Platinum Enclosure - Rack - Front View

1. Device Bays 1 thru 8
2. Enclosure DVD Drive
3. Standby Onboard Administrator
4. Insight Display
5. Active Onboard Administrator

HP BladeSystem c3000 Platinum Enclosure - Rack - Rear View

1. Local KVM interface
2. Interconnect Bay 1
3. Active Cool Fans
4. Interconnect Bay 2
5. Enclosure Up-link and Service Port
6. Enclosure Down-link
7. iLO/Onboard Administrator Port
8. iLO/Onboard Administrator Port 2 (reserved for future)
9. Power Supplies
10. Interconnect Bay 4
11. Interconnect Bay 3

- Intelligent Infrastructure
  - 1200W Platinum Hot Plug Power Supply (80 Plus certified)
  - Single Phase Intelligent Power Module
- Support for HP Insight Control 7.2 and higher releases

At A Glance

This document covers the HP BladeSystem c3000 enclosure only. For more information on the HP c7000 enclosure, the HP ProLiant Server Blades, and HP BladeSystem c-Class Interconnect and Mezzanine Components please see the following:

HP c7000 Platinum Enclosure: HP ProLiant Server Blades:
http://h18000.www1.hp.com/products/quickspecs/division/12534.html
HP BladeSystem c7000 Platinum Enclosure QuickSpecs:
http://h18000.www1.hp.com/products/quickspecs/12810_div/12810_div.html
HP BladeSystem c-Class Interconnect and Mezzanine Components:
http://h18004.www1.hp.com/products/blades/components/c-class-interconnects.html
http://h18004.www1.hp.com/products/blades/components/c-class-adapters.html

HP BladeSystem solutions start with a either a c7000 or c3000 Platinum Enclosure. For the c3000 Platinum Enclosure, customers can add c3000 Platinum power supplies, Active Cool Fans, a c3000 DVD drive, and if needed, an optional local KVM module. Once the

Overview

enclosure has been selected, the following components can be added: networking interconnect modules, HP ProLiant and Integrity Server Blades, and optional Insight Control for BladeSystem management software. Please reference the QuickSpecs listed above.

- HP BladeSystem c3000 Platinum Enclosures:
- The c3000 Enclosure for racking in standard 19 inch racks. Server blades (excluding the BL 2x220c G6), storage blades, interconnect modules, power supplies, fans, and Onboard Administrator modules are designed to fit into the c3000 enclosure.
- HP BladeSystem c3000 Platinum enclosure options:
  - A single-phase enclosure available worldwide for use with in-rack PDUs & UPSs which accept C13/C14 power cords; or
  - Alternatively, in countries with low-line (100VAC to 110VAC) power outlets, the enclosure's power supplies can be connected directly to low-line wall outlets.
    NOTE: Caution: when connecting directly to wall outlets, customers should determine the maximum amperage of the wall outlet circuit to prevent power overload. See Technical specification section in this document for the individual power supply amperage.
- HP BladeSystem c3000 enclosure options:
  - Optional HP 1200W Common Slot Platinum Hot Plug Power Supply Kit (up to 6 total)
  - Optional c-Class Active Cool fans (between 4 and 6 total)
  - Optional KVM module
  - Optional DVD drive (if not part of an enclosure bundled part number)
  - Optional HP 1200W Common Slot -48VDC Hot Plug Power Supply Kit (up to 6 total)
- The c3000 Platinum enclosure is 6U and holds up to 8 HP c-Class server blades:
  - Up to 8 half-height server blades or 4 full-height server blades, please visit:
    http://h10010.www1.hp.com/wwpc/us/en/sm/WF02d/3709945-3709945-3328410.html?dnr=1
  - Up to 4 PCI Expansion blades attached to half-height server blades
  - Or combinations of the above.
  - For additional server & storage blade information, please visit:
    http://h18000.www1.hp.com/products/quickspecs/division/12534.html
- Types of interconnect modules available: (up to 4 per enclosure)
  - Ethernet Interconnect Switches from HP Networking, Cisco & Blade Network Technologies (BNT)
  - Ethernet Pass-Thru modules
  - Virtual Connect Ethernet modules (requires VC Management firmware v1.20 or greater)
  - Fibre Channel Interconnect Switches from Brocade & Cisco
  - Virtual Connect Fibre Channel modules
  - Fibre Channel Pass-Thru module.
  - InfiniBand Switch modules
  - For additional HP BladeSystem c-Class Interconnect and Mezzanine Components:
    http://h18004.www1.hp.com/products/blades/components/c-class-interconnects.html
    http://h18004.www1.hp.com/products/blades/components/c-class-adapters.html
- Infrastructure Management:
  - HP Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, control and optimize your IT infrastructure through a single, simple management console. Insight Control supports Windows -based central management servers.
  - HP Matrix Operating Environment for ProLiant, a product option, is an integrated command center that enables IT Staff personnel to continuously analyze and optimize a converged infrastructure, while automating and reducing the cost of common data center tasks by as much as 40 percent. This ultimately enables them to dynamically keep pace with the organization's changing business requirements.
- Mixed Configuration - Full Height and Half Height Population
  - The c3000 enclosure is divided into 2 zones or quadrants by the horizontal support metalwork. Zone 1 includes bays 1, 2, 5, and 6; Zone 2 contains bays 3, 4, 7, and 8. Within each zone a removable divider is used to support half height devices. To install a full-height blade in either zone this divider must be removed. An optional mini-divider support bracket is included with every c3000 enclosure. When using a mix of full-height and half height blades in Zone 2, the optional mini-divider can be used to help support the half-height blades if they are being used in slots 7 and/or 8. Each zone can support

Overview

up to 2 full-height blades, or up to 4 half height blades, or a mix of 1 full-height blade and up to 2 half-height blades.

- ○ **NOTE:** Please read the RTF card (included with each c3000 enclosure) and the "HP BladeSystem c3000 Setup and Installation Guide" for more information on using bay dividers and the mini-divider for mixed configurations.
- ○ **NOTE:** Storage or tape blades can be installed in the same zone as both full-height and half-height blades, a bracket ships with each D2200sb that allows a half-height blade to be mounted to the storage or tape blade.
- ○ **NOTE:** In this case, the D2200sb or tape blade cannot be removed without first removing the half height blade and mounting bracket.
- ○ **NOTE:** For Mixed configurations of full height and half height population rules; please see the c3000 Enclosure installation and users guide at: http://h71028.www7.hp.com/enterprise/cache/316682-0-0-0-121.html and the user guides for the blades being configured.

- Warranty:
  - ○ This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HP Care Pack services or customized service agreements. Hard Drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.
    NOTE: Server Blade Enclosure Limited Warranty includes 3 year Parts, 3 year Labor, 3-year on-site support.
  - ○ For additional information please visit:
    http://h18004.www1.hp.com/products/blades/components/components.html

Models

HP BladeSystem c-Class Server Blade Enclosures	**Rack Models** - Supports a full enclosure of 8 blades

HP BLc3000 Platinum Enclosure with 4 AC Power Supplies 6 Fans ROHS 8 Insight Control Licenses   696908-B21

NOTE: Includes 4 AC Power Supplies, 6 Active Cool 100 Fans, DVD drive, Rail Kit, Onboard Administrator DDR2 module and 8 Insight Control Licenses.

HP BLc3000 Platinum Enclosure with 4 AC Power Supplies 6 Fans ROHS Trial Insight Control License   696909-B21

NOTE: Includes 4 AC Power Supplies, 6 Active Cool 100 Fans, DVD drive, Rail Kit, Onboard Administrator DDR2 module, and 8 Insight Control Trial Licenses.

Rack Models - A "starter" enclosure that supports up to 4 blades

HP BladeSystem c-Class Overview

HP BladeSystem Overview As server, storage and network technologies have changed; traditional rack-mounted infrastructure solutions have generated increased complexity of both infrastructure management and physical datacenter deployment.

HP BladeSystem is the evolution of rack-mounted and pedestal infrastructure. A BladeSystem reduces costs and simplifies the management, building, and maintenance of the infrastructure behind your multi-server environment. It consolidates and repackages all the supporting infrastructure elements-compute, storage, network, and power into a single platform that can accelerate the integration and optimization of your data center.

The HP BladeSystem c3000 enclosure has the flexibility to scale from a single enclosure holding up to 8 blades, to a rack containing 7 enclosures holding up to 56 blades, the c-Class infrastructure is designed to meet the needs of today's businesses. The c3000 enclosure is designed for several markets:

- Remote sites or branch offices holding between 3 and 8 servers, and in deployment sites such as retail stores, branch offices, manufacturing sites, and wiring closets. This enclosure is also designed for harsh environments not found in modern datacenters (high ambient temperatures, dusty environments, and in ships, airplanes, platforms, and vehicles).
- Small and medium businesses, who own between 3 and 100 servers. The enclosure is designed for use with management devices such as local KVM switches for local administration.
- Datacenters with special power and cooling constraints, such as datacenters needing DC powered racks, and/or datacenters with low power & cooling capacities (under 3000 watts per rack).
- HPC clusters with InfiniBand interconnection, where the applications need a 1 to 1 IB network subscription ratio between physical nodes in the compute cluster.

HP BladeSystem c-Class infrastructure is made up of several components:

- HP ProLiant and/or HP Integrity Server blades for HP-UX, Windows, Linux, and HP Open VMS.
- Choice of Intel® or AMD processors, HP BladeSystem c-Class enclosure (either a c7000 or c3000) that provides connectivity, power, and cooling options. The c-Class enclosure is designed for full redundancy and high availability. A configurable choice of either redundant or non-redundant power, cooling, enclosure management, and interconnect modules are part of the standard enclosure design.
- Onboard Administrator module which provides a single point of control for intelligent management of the entire enclosure.
- Insight Display powered by the Onboard Administrator provides local management through an LCD display conveniently sited on the front of the system.
- Virtual Connect, Ethernet, Fibre Channel, InfiniBand, iSCSI, and other interconnect choices
- A power subsystem that provides either redundant or non-redundant power modes and Dynamic Power Saving mode, which uses up to 30% less power than traditional rack-mounted servers AC or DC power supplies are available.
- PARSEC (Parallel, Redundant, Scaleable, Enclosure Cooling) architecture: for maximum cooling that consumes less power and reduces datacenter noise.
- Direct-attach storage blades, and shared storage blades, which will provide file-based or block-based shared storage capacity for the servers within the enclosure.

HP BladeSystem c-Class Overview

HP ProLiant & Integrity Server Blades

Delivering best-in-class performance, choice and reliability on AMD Opteron™, Intel® Xeon® and Intel® Itanium® processors for Windows, Linux, Solaris, OpenVMS, or HP-UX based servers; the HP portfolio of server blades supports a variety of application requirements for scale-out architectures. HP offers one-, two-, four- and eight -processor server blades, with the widest range of performance, and form factors.

For more information please see:
http://h18000.www1.hp.com/products/quickspecs/division/12534.html

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HP D2200sb Storage Blade Direct attached storage

The D2200sb Storage Blade delivers direct attached storage for c-Class servers, with support for up to twelve hot plug small form factor (SFF) SAS hard disk drives. The enclosure backplane provides a PCI Express connection to the adjacent c-Class server blade and enables high performance storage access without any additional cables. The D2200sb Storage Blade features an onboard Smart Array P410i controller with 1 GB flash-backed write cache, for increased performance and data protection.

Two ways to create shared storage with the D2200sb

Use HP StoreVirtual VSA software to turn the D2200sb into an iSCSI SAN for use by all severs in the enclosure and any server on the network. HP VSA software is installed in a virtual machine on a VMware ESX host server adjacent to the D2200sb. HP StoreVirtual VSA turns the D2200sb 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 D2200sb Storage Blades and HP VSA licenses. A cost effective bundle of the D2200sb Storage Blade and a HP VSA license makes purchasing convenient. If storage needs increase, add HP P4300 or P4500 systems externally and manage everything via a single pane of glass.

The HP X1800sb Network Storage Blade is a flexible storage server solution for BladeSystem environments. Combine the X1800sb with the D2200sb Storage Blade to enable file serving and iSCSI shared storage inside the BladeSystem enclosure.

For more information, please visit:
http://h18000.www1.hp.com/products/quickspecs/13714_div/13714_div.html

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HP Ultrium Tape Blades

HP Ultrium Tape Blades provide integrated data protection for HP BladeSystem c-Class enclosures:

- SB1760c Tape Blade is LTO-4 Ultrium tape technology with capacity up to 1.6 TB on a single data cartridge (2:1 compression) and performance up to 576 GB/hr (2:1 compression). SB1760c also includes hardware data encryption capability which can help safeguard data on tape cartridges.

HP Ultrium Tape Blades provide direct attach data protection for the adjacent server and network backup protection for all other data within the enclosure. The HP Ultrium Tape Blades are the industry's first bladed tape drives and are developed exclusively for the BladeSystem c-Class enclosures.

For more information, please visit:
http://h18000.www1.hp.com/products/quickspecs/12729_div/12729_div.html

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QuickSpecs

HP BladeSystem c-Class Overview

HP Network Storage Servers	HP X1800sb G2 Network Storage Blade is a flexible storage server solution for BladeSystem environments. Combine the X1800sb G2 with the D2200sb Storage Blade to enable file serving and iSCSI shared storage inside the BladeSystem enclosure. The flexibility of the X1800sb G2 extends to external storage as well. The X1800sb G2 can also be used as a low cost SAN gateway to provide consolidated file-serving access to FC, SAS, or iSCSI SANs.

Built on the HP ProLiant BL460c G7 Server Blade, the HP X1800sb G2 Network Storage Blade with an D2200sb is a ready to deploy shared storage solution, with Microsoft Storage Server 2008 R2, Standard x64 Edition pre-installed. The HP Rapid Start-up Wizard accelerates new deployments by walking you through basic system settings step-by-step. The X1800sb G2 also includes Microsoft iSCSI Software Target.

NOTE: See the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13840_div/13840_div.html

The X3800sb G2 Network Storage Gateway Blade is used to access FC, SAS, or iSCSI SAN storage, translating file data from the server into blocks for storage to provide consolidated file, print, and management hosting services in a cluster-able package.

Built on the HP ProLiant BL460c G7 Server Blade, the HP X3800sb G2 Network Storage Gateway Blade is a ready to deploy SAN gateway solution, with Microsoft Storage Server 2008 R2, Enterprise x64 Edition pre-installed. The HP Rapid Start-up Wizard accelerates new deployments by walking you through basic system settings step-by-step. The X3800sb G2 also includes a Microsoft Cluster Server (MSCS) license and Microsoft iSCSI Software Target.

NOTE: See the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13842_div/13842_div.html

HP BladeSystem c-Class c3000 Platinum Enclosure

A BladeSystem c3000 Platinum enclosure holds up to 8 server and/or storage blades plus redundant or non-redundant network and storage switches. It includes a shared, multi-terabit high-speed mid-plane for wire-once connectivity of server blades to network and shared storage. Power is delivered through a pooled power backplane that ensures the full capacity of the power supplies is available to all blades.

Each c3000 enclosure is built with the following functions:

- Up to 8 half-height and/or up to 4 full-height server blades and/or storage blades per enclosure.
- Up to 3 different interconnect fabrics (Ethernet, FC, IB, iSCSI, SAS, etc.) supported simultaneously within the enclosure.
- A single-phase power subsystem - for flexibility in connecting to datacenter power, or to UPS's or to low-line wall outlets.
- Choice of AC or DC power supplies.
- PARSEC enclosure design - Parallel, redundant and scalable cooling and airflow design.
- Six (6) Active Cool fans
- Fully redundant design - no single point of failure; redundant interconnections between servers and interconnect modules; a mid-plane with no active components; redundant cooling using Active Cool fans; all devices are hot-pluggable and customer replaceable.
- Best performance per watt - lower wattage per server blade, in comparison to rack-mounted servers
- Full AC redundancy - with no power zones.
- Single or Dual Onboard Administrator management modules

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

- Robust, multiple enclosure setup and control.
- Reports asset and inventory information for the devices in the enclosure.

HP BladeSystem c-Class Overview

- Reports thermal and power information, including real-time actual power usage per server and per enclosure.
- Front-mounted Insight Display for easy management at the deployment site.
- Integrated access to all server blade iLOs from a single cable.
- Provides integrated access to interconnect bay device management ports from the single Onboard Administrator cable.
- Single sign-on capability for all devices in the enclosure
- Role-based security locally and/or with LDAP directory services.
- Provides a wizard-based initial setup process for easy configuration.
- An optional DVD drive for local software deployment, and HP SmartStart deployment
- An optional local KVM interface for connection to KVM switches.

A BladeSystem c3000 enclosure provides the following benefits:

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

HP BladeSystem c-Class Interconnect Options

HP also offers one of the broadest selections of interconnect fabric options in the industry to provide network, SAN/network attached storage (NAS), and cluster connectivity.
HP BladeSystem interconnects provide:

- New HP Virtual Connect devices, designed to reduce networking costs and simplify network configuration and provisioning.
- Seamless integration of Ethernet, FC, InfiniBand, iSCSI, and SAS fabrics: Standard-based switch options include Cisco, Brocade, and HP (BNT) products that integrate within your existing standards.
- Built-in redundancy: Rear-mounting interconnect modules designed for redundant interconnections between server blades and switches.
- Cable reduction: Interconnect switches provide up to 32-to-1 network cable reductions per server blade enclosure

HP BladeSystem c-Class Interconnect and Mezzanine Components:
http://h18004.www1.hp.com/products/blades/components/c-class-interconnects.html
http://h18004.www1.hp.com/products/blades/components/c-class-adapters.html

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QuickSpecs

HP BladeSystem c-Class Overview

Factory Express Portfolio for Servers and Storage

HP Factory Express offers configuration, customization, integration and deployment services for HP servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed.

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging and custom packaging. HP products supported through Factory Express include: a wide array of servers and storage: HP Integrity, HP ProLiant & HP ProLiant & Integrity Server Blades, HP BladeSystem, HP 9000 servers as well as the MSAxxxx, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches.

For more information on Factory Express services for your specific server model please contact your sales representative or go to: http://www.hp.com/go/factory-express

HP Simple Configurator

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

HP Insight management software

Insight Management

Managing the growing number of servers can be complex and expensive for your organization. IT managers need to address changing business needs with tools that meet the challenges of managing today's complex Datacenters.

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

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

Software media available for download includes:

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

Customers will receive an Insight Control or Matrix Operating Environment 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

HP BladeSystem c-Class Overview

your purchased licenses.

HP provides a complete range of installation and support services to ensure the successful deployment and operations of your server infrastructure. For more information about support services and licensing options, see the following website: http://www.hp.com/go/insightsoftware

Insight Software Media Kit (DVDs)
Physical media (DVDs) are also available for purchase from HP or from your authorized reseller (PN 436222-B21)

Service Pack for ProLiant (SPP)	Customers should use the HP Service Pack for ProLiant to update firmware, drivers, and related utilities.: • Main SPP page: www.hp.com/go/spp • SPP download page: www.hp.com/go/spp/download
ProLiant Onboard Administrator	HP ProLiant Onboard Administrator (powered by the HP Integrated Lights-Out 2 management processor) simplifies server setup, health monitoring, power and thermal control, and lights-out remote administration of ProLiant ML, DL, and BL servers. HP ProLiant Onboard Administrator functions without additional software, and can be accessed from any location via a web browser. It works hand-in-hand with HP Systems Insight Manager, Insight Control, and the Matrix Operating Environment for ProLiant helping customers unlock the value of the ProLiant platform and deliver the highest possible quality of IT service to the business. See: www.hp.com/go/ProLiantOA
HP Insight Control	HP Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, remote control, and optimize your IT infrastructure through a single, simple management console. For more information, see http://www.hp.com/go/insightcontrol. HP Insight Control includes one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, please visit: http://www.hp.com/services/insight
HP Matrix Operating Environment	The HP Matrix Operating Environment (Matrix OE) for ProLiant and Integrity servers is an integrated command center that helps you instantly adjust to dynamic business demands. This advanced infrastructure management software lets you reduce the cost of common data center tasks by up to 40 percent while keeping pace with your changing business. The HP Matrix OE includes the automated provisioning, optimization, and recovery management capabilities for HP CloudSystem Matrix, the ideal platform for private cloud and Infrastructure as a Service (IaaS). For more information, see http://www.hp.com/go/matrixoe.

HP BladeSystem c-Class Overview

HP BladeSystem Power Sizer

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

The sizer enables you to:

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

The sizing estimate is based on component level power measurements for a system stressed to maximum capability.

Values obtained from the BladeSystem Sizer tool are measured with all components stressed to 100% load and are intended for facilities planning purposes only. Actual power consumption varies with application type, application utilization, and ambient temperature.

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

Available at: http://www.hp.com/go/bladesystem/powercalculator

HP Power Advisor

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

Available at: http://www.hp.com/go/hppoweradvisor

Service and Support

Service and Support	**HP Technology Services for Industry Standard Servers and BladeSystem** Capitalizing on HP ProLiant server and HP BladeSystem capabilities requires a service partner who understands your increasingly complex business technology environment. That's why it makes sense to team up with the people who know HP infrastructure hardware and software best - the experienced professionals at HP Services.

Protect your business beyond warranty with HP Care Pack Services
HP Care Pack services offer complete care and support expertise with committed response choices designed to meet your IT and business needs.

HP Foundation Care services offer scalable reactive support-packages for HP servers and software. You can choose the type and level of service that is most suitable for your IT and business needs. HP Proactive Care delivers high levels of system availability through proactive service management and advanced technical response. HP Datacenter Care provides highly flexible environmental support to address unique customer business needs.

Choose recommended services for your c3000 BladeSystem enclosure or contact your HP sales representative or authorized HP ServiceOne partner for additional HP Care Pack services information

Recommended HP Care Pack Services for your HP product

Optimized Care	**3-Year HP 6 hour Call to Repair Response, Proactive Care** Combined reactive and proactive support for hardware and software helping optimize your systems and delivering high levels of availability through proactive service management and advanced technical response. Hardware problem resolution to return the hardware in operating condition within 6 hours of the initial service request. A Technical Account Manager, as your single point of contact, will own your call or issue end to end until resolved. http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-8855EEE.pdf

HP Installation and Startup Service for HP BladeSystem c-Class Infrastructure for c3000 enclosure
Provides for hardware installation (c-Class ProLiant and Integrity server blades, storage blades, Ethernet Interconnects and Virtual Connect) and software installation and startup of a BladeSystem c3000 Infrastructure in a single enclosure including deployment of OS on all blades or deployment of OS (two blades) and HP Insight Control, plus Server Deployment (formerly RDP).
http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA0-5964ENW.pdf

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

Standard Care	**3-Year HP 24x7 4 hour response, Proactive Care Service** This service gives you combined reactive and proactive support including rapid access to our Advanced Solution Center to manage and prevent problems and a Technical Support Specialist with a broad level of technical knowledge that will engage with additional technical expertise as needed from HP's vast global resources. http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-8855EEE.pdf

HP Installation and Startup Service for HP BladeSystem c-Class Infrastructure for c3000 enclosure
Provides for hardware installation (c-Class ProLiant and Integrity server blades, storage blades, Ethernet Interconnects and Virtual Connect) and software installation and startup of a BladeSystem c3000 Infrastructure in a single enclosure including deployment of OS on all blades or deployment of OS on two

Service and Support

blades and HP Insight Control, plus Server Deployment (formerly RDP).
http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA0-5964ENW.pdf

Related Services	**HP Installation and Startup Service for HP BladeSystem c-Class Enhanced Network** HP Provides for the configuration and testing of BladeSystem Ethernet interconnect switches to facilitate proper implementation of network protocols and access to advanced features. http://h20195.www2.hp.com/V2/GetPDF.aspx/4aa0-5969ENW.pdf **HP Proactive Care Personalized Support - Environmental Option** The Personalized Support option provides an assigned Account Support Manager who can bring best practices from across the industry plus extra technical skills to your IT team. This option is only available as an add-on to HP Proactive Care Support. **HP Proactive Select Service** Provides a flexible way to purchase HP best-in-class consultancy and technical services. You can buy Proactive Select Service Credits when you purchase your hardware and then use the credits over the next 12 months. http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA2-3842ENN.pdf Additional HP Care Pack services can be found at: http://www.hp.com/go/cpc
Insight Online/Insight Remote Support	HP Insight Remote Support provides 24 X 7 remote monitoring, proactive notifications, and problem resolution. This comes at no additional cost with your HP solution. Learn more about Insight Remote Support http://www.hp.com/go/insightremotesupport and Insight Online http://www.hp.com/go/insightonline **NOTE:** Insight Remote Support is a prerequisite for Proactive Care. All blades within a single HP BladeSystem enclosure must be at the same service level.
HP Support Center	Personalized online support portal with access to information, tools and experts to support HP business products. Submit support cases online, chat with HP experts, access support resources or collaborate with peers. Learn more http://www.hp.com/go/hpsc HP's Support Center Mobile App allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalized IT support anywhere, anytime. HP Insight Remote Support and HP Support Center are available at no additional cost with a HP warranty, HP Care Pack or HP contractual support agreement. **NOTE:** HP Support Center Mobile App is subject to local availability.
Parts and Materials	HP will provide HP-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements. Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product quick-specs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services. The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by HP due to malfunction
For more information	To learn more on HP ProLiant servers and HP BladeSystem servers, please contact your HP sales representative or HP Authorized ServiceOne partner. Or visit: www.hp.com/services/bladesystem

Configuration Information Factory Integrated Models

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

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

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

NOTE: HP BladeSystem c3000 and c7000 enclosures support mixing of G1 through Gen8 and Integrity server blades in the same enclosure
NOTE: For server blade information, please visit:
http://h18000.www1.hp.com/products/quickspecs/division/12534.html
NOTE: For Storage Blade information, please visit:
http://h18000.www1.hp.com/products/quickspecs/12587_div/12587_div.html

Step 2: Determine quantity of HP BladeSystem c-3000 Enclosures to purchase and choose Required Options
(One of the following from each list unless otherwise noted):
NOTE: Each HP BladeSystem c3000 Server Blade Enclosure holds up to 8 half-height blades, or up to 4 full-height server blades. Server blanks will be shipped in all empty bays.

Select Base Server Blade Enclosure Configuration

HP BladeSystem c3000 c-Class Server Blade Enclosures	**Choose one of the following CTO enclosures**	
	HP BLc3000 Platinum Configure-to-order Enclosure with 6 Fans ROHS Trial Insight Control License	696910-B21
	NOTE: CTO model includes 0 AC power supplies and 6 Active Cool 100 Fans, a DVD drive, rack rails, and a single DDR2 Onboard Administrator module.	
	HP Integrity BLc3000 CTO Enclosure	AH257C
	NOTE: CTO model includes 0 AC power supplies and 6Active Cool 100 Fans, a DVD drive, rack rails, and a single DDR2 Onboard Administrator module.	

Select additional optional enclosure options:

HP Redundant Onboard Administrator	HP BLc3000 Dual DDR2 Onboard Administrator	488100-B21
	NOTE: The BLxxxc G7 requires the latest version of the Onboard Administrator firmware. This firmware release may also require other subsystem firmware upgrades. For information on the latest firmware versions, please see the Blades Firmware Maintenance website at: http://h18004.www1.hp.com/products/blades/components/c-class-compmatrix.html	
	NOTE: Second Onboard Administrator Module for the DDR2 OA module included in (P/N 696910-B21and AH257C).	
HP Additional c3000 Power Supplies	**NOTE:** Please choose AC or DC power supplies.	
	HP 1200W Common Slot Platinum Plus Hot Plug Power Supply Kit	656364-B21
	NOTE: Platinum power supplies required to enable intelligent power module.	
	HP 1200W Common Slot Silver Hot Plug Power Supply Kit	500172-B21

Configuration Information Factory Integrated Models

	NOTE: AC power supplies include a C13 to C14 PDU power cord.	
	NOTE: HP BladeSystem Power supplies meet multiple Energy Efficiency Initiatives: 1200W Climate Savers Computing Initiative and ECOS Consulting 80 Plus : (Platinum (94%) - PN 656364-B21and Silver (90%) - PN 500172-B21).	
	NOTE: The 80 PLUS program is a unique forum that unites electric utilities, the computer industry, and consumers in an effort to bring energy efficient technology solutions to the marketplace. 80 Plus independently tests power supply efficiency and publically posts the results on 80Plus.org.	
	HP 1200W Common Slot -48VDC Hot Plug Power Supply Kit	437573-B21
	NOTE: DC power supplies contain a -48V DC power cord designed for in rack DC power rectifiers.	
	NOTE: When this DC power supply (437573-B21) is ordered as a factory integrated enclosure option, standard AC supplies are not included in the order shipment. When this DC power supply is ordered with an enclosure, but not factory integrated, standard AC power supplies are included in the order shipment and DC power supplies are shipped separately.	
	NOTE: Order additional power supplies for rack models, as determined by the use of the HP BladeSystem Power Calculator.	
	NOTE: For a full enclosure, order 4 power supplies in a Power Supply Redundant (N+1) configuration; order 6 power supplies in an AC Redundant (N+N) configuration.	
	NOTE: Order 6 power supplies for AC or DC Redundant (N+N) configuration.	
	NOTE: Each enclosure must include only 1 type of power supplies. All AC or all DC power supplies.	
	NOTE: The HP ProLiant 1200w AC Common Slot Power supply meets multiple Energy Efficiency Initiatives: Climate Savers Computing Initiative Silver and ECOS Consulting 80PLUS Silver. Efficiency test results can be viewed at: 80Plus.org.	
HP c-Class Active Cool Fan	HP BLc3000 Enclosure HP Single Active Cool 100 Fan Option	507082-B21
	NOTE: These fans are for the HP BladeSystem c3000 CTO Enclosure (P/Ns 696910-B21 and AH257C only).	
HP c3000 KVM Modules and Adapters	HP BLc3000 KVM Option	437575-B21
	NOTE: For use with in-rack KVM switches.	
	HP KVM USB2 1-pack Interface Adapter	AF603A
	NOTE: Order one KVM Adapter per c3000 enclosure, to support KVM switches accepting RJ45 cables. Please see Options section of this QuickSpecs for additional product information.	
HP Insight Control for BladeSystem Licenses	HP Insight Control for BladeSystem including 1yr 24x7 Support Enclosure 8 Server FIO License	439034-B23
	NOTE: This license supports HP ProLiant c-Class blade servers.	
	NOTE: Must be purchased as an option to an HP BladeSystem enclosure. FIO can only be ordered as part of a factory-configured platform. Customer will receive a printed license entitlement certificate via physical shipment.	
	HP Insight Control for BladeSystem including 1yr 24x7 Support Enclosure 16 Server FIO License	417688-B23
	NOTE: This license supports HP ProLiant c-Class blade servers.	
	NOTE: Must be purchased as an option to an HP BladeSystem enclosure. FIO can only be ordered as part of a factory-configured platform. Customer will receive a printed license entitlement certificate via physical shipment.	
	HP Insight Control Encl FIO Bundle 8 Lic	C6N32A
	HP Insight Control Enc FIO Bundle 16 Lic	C6N33A

Configuration Information Factory Integrated Models

HP Optional Power Cords	HP C20 - C13 WW 250V 15Amp 2.0m Jumper Cord	AF590A
	NOTE: For use with PDU's accepting C20 power cords.	
	NOTE: Order 1 for each power supply.	
	HP C13 - Nema 6-15P US 250V 15A JP 3.6m Power Cord	A0N33A

Step 3: Select additional (one to four) interconnects.

NOTE: Interconnect Bay 1 must contain one of the "Ethernet" interconnect modules For additional information on Interconnect and Mezzanine Options, please visit the following:

HP BladeSystem c-Class Interconnect and Mezzanine Components:

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

HP BladeSystem c-Class Ethernet Interconnects	HP Virtual Connect Flex-10/10D Module for c-Class BladeSystem	638526-B21
	HP Virtual Connect Flex-10 10Gb Ethernet Module for c-Class BladeSystem	455880-B21
	HP 6125G/XG Ethernet Blade Switch	658250-B21
	HP 6125G Ethernet Blade Switch	658247-B21
	HP 6120G/XG Ethernet Blade Switch	498358-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
	Cisco Catalyst 1/10GbE 3120X Blade Switch	451439-B21
	Cisco Catalyst 1GbE 3120G Blade Switch	451438-B21
	Cisco Catalyst Blade Switch 3020 for HP c-Class BladeSystem	410916-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: The Cisco Fabric Extender for HP BladeSystem with 16 FET - (PN 657787-B21), comes packaged with 16 Cisco Fabric Extender Transceivers. These Cisco transceivers can be used to connect the Fabric Extender with a parent Nexus 5000 over optical cable up to 100 meters using OM3 grade fiber.	
	HP GbE2c Layer 2/3 Ethernet Blade Switch	438030-B21
	HP 1:10Gb Ethernet Blade Switch for c-Class BladeSystem	438031-B21
	NOTE: HP Virtual Connect FlexFabric 10Gb/24-port Module for c-Class BladeSystem (P/N 571956-B21) is not compatible with the c3000 enclosure	
HP SAS Switch	HP 6Gb SAS BL Switch Single Pack	BK763A
	HP 6Gb SAS BL Switch Dual Pack	BK764A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information at: http://h18000.www1.hp.com/products/quickspecs/13960_div/13960_div.html (Worldwide)	
	HP 3Gb 8-port SAS 2.0 BL-c Switch Module for BladeSystem c-Class Enclosure	AJ864A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information at: http://h18000.www1.hp.com/products/quickspecs/13170_div/13170_div.html (Worldwide)	
HP BladeSystem c-Class FC SAN Interconnects	HP 3Gb 8-port SAS 2.0 BL-c Switch Module for BladeSystem c-Class Enclosure	AJ864A
	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

Configuration Information Factory Integrated Models

HP 4GB Fibre Channel Pass-thru Module for c-Class BladeSystem	403626-B21
HP B-series 8/12c SAN Switch for BladeSystem c-Class	AJ820B
HP B-series 8/24c SAN Switch for BladeSystem c-Class	AJ821B
HP B-series 8/24c Power Pack+ SAN Switch for BladeSystem c-Class	AJ822B
HP MDS 8/12c BladeSystem Fabric Switch	AW563A
HP MDS 8/24c BladeSystem Fabric Switch	AW564A
HP MDS 8/12c Fabric Switch 12-port Upgrade LTU	TA804A
NOTE: Licensed per switch.	
HP MDS Fabric Manager Server for BladeSystem c-Class LTU	TC316A
NOTE: Licensed per switch.	
HP MDS Enterprise Package for BladeSystem c-Class LTU	TC317A
NOTE: Licensed per switch.	
HP MDS Fabric Manager Server Enterprise Package for BladeSystem c-Class LTU	TC318A
NOTE: Licensed per switch.	

Step 4: Select rack power distribution for installing the enclosure into a rack.

NOTE: For use with the c3000 rack-able model only.

NOTE: A pair of PDUs must be ordered for AC Feed redundancy. If AC redundancy is not required, a single PDU or UPS may be acceptable.

HP Monitored Power Distribution Unit	HP 8.6kVA 24A Single Input Three Phase NA/JP Monitored Power Distribution Unit	AF504A
	HP 11kVA 16A Single Input Three Phase INTL Monitored Power Distribution Unit	AF508A
HP Modular Power Distribution Unit	HP 8.3kVA 40A High Voltage NA/JP Modular Power Distribution Unit	252663-D73
	HP 9.2kVA 40A High Voltage INTL Modular Power Distribution Unit	252663-B32
	HP 7.3kVA 32A High Voltage INTL Modular Power Distribution Unit	252663-B31
	HP 4.9kVA 24A High Voltage NA/JP Modular Power Distribution Unit	252663-D72
	HP Two C13 PDU Extension Bar	AF500A

Step 5: Select Wall Outlet Power Cords (For connection to standard wall outlets)

NOTE: Select one wall outlet power cord for each power supply when plugging the power supplies into a wall outlet.

NOTE: Wall Outlet power cords should only be used with low-line (100v to 110V) power sources. If high-line power outlets are required, safety regulations require the use of a PDU or a UPS between the c3000 enclosures power supplies and wall outlets.

NOTE: A standard PDU power cord(c13 to C14) is included with each AC power supply, so these wall outlet power cords are not required if you plan to plug the power supplies into a PDU or UPS.

Order the appropriate power cord for your countries standard electrical outlets.

HP Power Cords	HP C13 - Nema 5-15P US/CA 110V 10Amp 1.83m Power Cord	AF556A
	NOTE: HP Power cord (6 ft) 1.83 meter 10A C-13-UL domestic power cord, for grounded USA 110V wall outlets.	
	HP C13 - JIS C8303 JP 100V 12Amp 2.0m Power Cord	AF572A
	NOTE: HP Power cord 2 meter C13 Japan low-line power cord, for Japanese 100V wall outlets.	
	HP C20 - C13 WW 250V 15Amp 2.0m Jumper Cord	AF590A
	NOTE: For use with PDUs accepting C20 power cords.	
	NOTE: For additional power cable information, please visit:	
	http://h18000.www1.hp.com/products/servers/proliantstorage/power-protection/options/power-cable.html	

Related Options

HP c3000 Enclosure Options	HP BLc7000 Miscellaneous Blanks Option Kit **NOTE:** Contains 1 each of Power Supply Blank, Interconnect Module Blank, Local KVM option blank, DVD Blank, Active Cool Fan Blank, and c3000 minidivider) **NOTE:** This kit should only be ordered to replace lost or damaged blanks.	412148-B21
	HP BLc7000 Server Blank w/Coupler Option **NOTE:** The coupler allows half-height server blanks to be coupled together to create a full-height server blank. **NOTE:** This kit should only be ordered to replace lost or damaged blanks.	412150-B21
HP c3000 Rack Brackets	HP BLc3000 10000 Series Rack Shipping Bracket Option **NOTE:** Required when shipping a c3000 enclosure in a HP 10000 series rack. Please order 1 kit per enclosure.	461384-B21
HP Onboard Administrator	HP BLc3000 DDR2 Onboard Administrator Rotate LCD Kit **NOTE:** The BLxxxc G7 requires the latest version of the Onboard Administrator firmware. This firmware release may also require other subsystem firmware upgrades. For information on the latest firmware versions, please see the Blades Firmware Maintenance website at: http://h18004.www1.hp.com/products/blades/components/c-class-compmatrix.html **NOTE:** For field upgrades of previous generation enclosures only. **NOTE:** This Redundant Onboard Administrator module supports either single mode, or dual/redundant mode Onboard Administrators.	590863-B21
	HP BLc3000 Dual DDR2 Onboard Administrator **NOTE:** Second Onboard Administrator Module for the DDR2 OA module. **NOTE:** Support for second Order Administrator Module for c3000 Enclosure. **NOTE:** This module fits into an HP c3000 DDR2 Onboard Administrator.	488100-B21
HP c-Class Power Supply	HP 1200W Common Slot Platinum Plus Hot Plug Power Supply Kit **NOTE:** Platinum power supplies required to enable intelligent power module	656364-B21
	HP 1200W Common Slot Silver Hot Plug Power Supply Kit **NOTE:** AC power supplies include a C13 to C14 PDU power cord. **NOTE:** HP BladeSystem Power supplies meet multiple Energy Efficiency Initiatives: 1200W, Climate Savers Computing Initiative SILVER and ECOS Consulting 80 Plus; (Platinum (94%) - PN 656364-B21 and Silver (90%) - PN 500172-B21). **NOTE:** The 80 PLUS program is a unique forum that unites electric utilities, the computer industry, and consumers in an effort to bring energy efficient technology solutions to the marketplace. 80 Plus independently tests power supply efficiency and publically posts the results on 80Plus.org.	500172-B21
	HP 1200W Common Slot -48VDC Hot Plug Power Supply Kit **NOTE:** DC power supplies contain a -48V DC power cord designed for in rack DC power rectifiers. **NOTE:** When this DC power supply (437573-B21) is ordered as a factory integrated enclosure option, standard AC supplies are not included in the order shipment. When this DC power supply is ordered with an enclosure, but not factory integrated, standard AC power supplies are included in the order shipment and DC power supplies are shipped separately.	437573-B21

Related Options

NOTE: For c-3000 Low-line Power Cords, please order the appropriate power cord for your countries standard electrical outlets. Please see Step 5 above for power cord part numbers.

HP c-Class Active Cool Fans	HP BLc3000 Enclosure HP Single Active Cool 100 Fan Option	507082-B21

HP c3000 KVM Module and Adapters	HP BLc3000 KVM Option	437575-B21
	NOTE: For use with in-rack KVM switches	
	HP KVM USB2 1-pack Interface Adapter	AF603A
	NOTE: Order one KVM Adapter per c3000 enclosure, to support KVM switches accepting RJ45 cables. Please see Options section of this QuickSpecs for additional product information.	

HP BladeSystem c-Class Ethernet Interconnects	HP Virtual Connect Flex-10 10Gb Ethernet Module for c-Class BladeSystem	455880-B21
	HP 6125G Ethernet Blade Switch	658247-B21
	HP 6125G/XG Ethernet Blade Switch	658250-B21
	HP 6120G/XG Ethernet Blade Switch	498358-B21
	HP 6120XG Blade Switch	516733-B21
	HP 1GB Ethernet Pass-Thru Module for c-Class BladeSystem	406740-B21
	NOTE: The Ethernet Pass-Thru Module is shipped as a single unit and should be ordered in quantities of two.	
	Cisco Catalyst 1/10GbE 3120X Blade Switch	451439-B21
	Cisco Catalyst 1GbE 3120G Blade Switch	451438-B21
	Cisco Catalyst Blade Switch 3020 for HP c-Class BladeSystem	410916-B21
	HP GbE2c Layer 2/3 Ethernet Blade Switch	438030-B21
	HP 1:10Gb Ethernet Blade Switch for c-Class BladeSystem	438031-B21
	NOTE: HP Virtual Connect FlexFabric 10Gb/24-port Module for c-Class BladeSystem (P/N 571956-B21) is not compatible with the c3000 enclosure	

HP BladeSystem c-Class FC SAN Interconnects	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 SAN Switch for HP BladeSystem c-Class	HP B-series 8/12c SAN Switch for BladeSystem c-Class	AJ820B
	HP B-series 8/24c SAN Switch for BladeSystem c-Class	AJ821B
	HP B-series 8/24c Power Pack+ SAN Switch for BladeSystem c-Class	AJ822B
	Brocade 4/12 SAN Switch Upgrade RTU for HP BladeSystem c-Class	AE373A

Related Options

Cisco MDS Fabric Switch for HP BladeSystem c-Class	HP MDS 8/12c BladeSystem Fabric Switch	AW563A
	HP MDS 8/24c BladeSystem Fabric Switch	AW564A
	HP MDS Fabric Manager Server Enterprise Package for BladeSystem c-Class LTU	TC318A
	HP B-series 8/12c SAN Switch for BladeSystem c-Class 12-port Upgrade LTU	T5517A
	Cisco MDS 9124e Switch for c-Class BladeSystem 12-port Upgrade LTU	T5169A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information at:
http://h18000.www1.hp.com/products/quickspecs/13821_div/13821_div.html (Worldwide)

HP Insight Software	**HP Insight Control**	
	HP Insight Control for BladeSystem including 1yr 24x7 Support Enclosure 8 Server Electronic License	C6N32AAE
	HP Insight Control for BladeSystem including 1yr 24x7 Support Enclosure 16 Server Electronic License	C6N33AAE
	HP Insight Management Media Kit	436222-B21

NOTE: HP Insight Management Media Kit contains DVDs without licenses. Contains HP Systems Insight Manager, HP Insight Control, HP Matrix Operating Environment, and Virtual Connect Enterprise Manager software. Uses an integrated installer to perform quick and accurate software installation and updates.

NOTE: Licenses ship without media. The Insight Control Media Kit can be ordered separately, or can be downloaded at: http://www.hp.com/go/insightupdates.

NOTE: The "for bundling with an enclosure" license kits can only be ordered together with a BladeSystem c3000 or c7000 enclosure on the same order.

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

NOTE: For additional License Kits, please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html (Worldwide)

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

HP Virtual Connect Enterprise Manager	HP Virtual Connect Enterprise Manager including 1yr 24x7 Support Single c3000 Enclosure Lic	459867-B21

NOTE: This license allows 1 BL-c3000 enclosure to be managed with VCEM. Customer will receive a printed license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online or via fax to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.

NOTE: For additional License Kits, please visit:
http://h18000.www1.hp.com/products/quickspecs/12860_div/12860_div.html (Worldwide)

Related Options

HP c-Class Storage Blades	HP StoreEver LTO-5 Ultrium SB3000c Tape Blade	BS580B

NOTE: Please see the QuickSpecs for Technical Specifications and additional information at:
http://h18000.www1.hp.com/products/quickspecs/12729_div/12729_div.html (Worldwide)
NOTE: Please see the QuickSpecs for Technical Specifications and additional information at:
http://h18000.www1.hp.com/products/quickspecs/13839_div/13839_div.html (Worldwide)
NOTE: Please see the QuickSpecs for Technical Specifications and additional information at:
http://h18000.www1.hp.com/products/quickspecs/13841_div/13841_div.html (Worldwide)

HP Ultrium Tape Blades	HP StoreEver LTO-4 Ultrium SB1760c Tape Blade	AQ697B

NOTE: LTO-4 Ultrium tape technology
NOTE: The HP PCI Express Mezzanine Pass-Thru Card (P/N 431643-B21) is required to support the HP D2200sb PCIe Storage Blade with HP c-Class BladeSystem full-height server blades. Up to two storage blades are supported per server mix and match (Ultrium Tape, D2200sb PCIe Storage, and/or PCI Expansion Blades).

HP BL c-Class SB40c PCI Express Mezzanine Pass Thru Option Kit	431643-B21

NOTE: The HP PCI Express Mezzanine Pass-Thru Card for HP BladeSystem (431643-B21) is required when installing a tape blade adjacent to a full-height server blade
NOTE: Please see the QuickSpecs for Technical Specifications and additional information at:
http://h18000.www1.hp.com/products/quickspecs/12587_div/12587_div.html (Worldwide)

HP Storage Blade	HP D2200sb Storage Blade	AP880A

NOTE: The HP PCI Express Mezzanine Pass-Thru Card (P/N 431643-B21) is required to support the HP D2200sb PCIe Storage Blade with HP c-Class BladeSystem full-height server blades. Up to two storage blades are supported per server mix and match (Ultrium Tape, D2200sb PCIe Storage, and/or PCI Expansion Blades).
NOTE: The HP PCI Express Mezzanine Pass-Thru Card can be placed in mezzanine slot 2 and/or 3.

HP D2200sb PCIe and P4000 VSA with Smart Array Advance Pack LTU Bundle	AP881A
HP D2200sb PCIe w/12 600GB 6G SAS HDD with Smart Array Advance Pack LTU Bundle	AP882A
HP D2200sb PCIe Storage Blade with Smart Array Advance Pack LTU Bundle	BK781A
HP D2220sb PCIe and StoreVirtual VSA Bundle with SAAP License	QW914A
HP D2220sb PCIe w/(12) 900 GB 6G SAS HDD Bundle with SAAP License	QW915A
HP D2220sb Storage Blade Bundle with SAAP License	QW916A

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

HP StoreEasy 3830sb Gtwy Blade Storage	B7E01A

Related Options

NOTE: Please see the HP D2200sb PCIe Storage Blade QuickSpecs for technical specifications and additional information at:
http://h18006.www1.hp.com/storage/bladesystem/index.html

HP Expansion Blade	HP BLc PCI Expansion Blade	448018-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information at: http://h18000.www1.hp.com/products/quickspecs/12753_div/12753_div.html (Worldwide)	
HP Power Distribution Units	**Monitored PDU**	
	HP 8.6kVA 24A Single Input Three Phase NA/JP Monitored Power Distribution Unit	AF504A
	HP 11kVA 16A Single Input Three Phase INTL Monitored Power Distribution Unit	AF508A
	NOTE: Please see the following QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/12118_div/12118_div.html (Worldwide)	
	Modular PDUs	
	HP 8.3kVA 40A High Voltage NA/JP Modular Power Distribution Unit	252663-D73
	HP 9.2kVA 40A High Voltage INTL Modular Power Distribution Unit	252663-B32
	HP 7.3kVA 32A High Voltage INTL Modular Power Distribution Unit	252663-B31
	HP 4.9kVA 24A High Voltage NA/JP Modular Power Distribution Unit	252663-D72
	NOTE: Please see the following QuickSpecs for additional options including shorter jumper cables and country specific power cords: http://h18000.www1.hp.com/products/quickspecs/11041_div/11041_div.html (Worldwide)	
	HP Two C13 PDU Extension Bar	AF500A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/pdu (Worldwide)	
	NOTE: Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: www.hp.com/products/powercords.	
HP Power Cords	HP C20 - C13 WW 250V 15Amp 2.0m Jumper Cord	AF590A
	NOTE: For use with PDU's that accept C20 power cords.	

QuickSpecs

Related Options

HP Uninterruptible Power Systems	**R5000 Uninterruptible Power System (UPS)**	
	HP R5KVA 3U IEC309-32A High Voltage INTL Uninterruptible Power System	AF461A
	HP R5KVA 3U L630 High Voltage NA/JP Uninterruptible Power System	AF460A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information at:
http://h18000.www1.hp.com/products/quickspecs/14109_div/14109_div.html (Worldwide)

R7000 Uninterruptible Power System (UPS)

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

NOTE: Please see the QuickSpecs for Technical Specifications and additional information at:
http://h18000.www1.hp.com/products/quickspecs/14110_div/14110_div.html (Worldwide)

HP Rack Series
(Graphite Metallic)

HP Intelligent Series Rack

HP 642 1075mm Pallet Intelligent Series Rack	BW903A
HP 642 1075mm Shock Intelligent Series Rack	BW904A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information at:
http://h18000.www1.hp.com/products/quickspecs/14223_div/14223_div.html (Worldwide)

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

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HP Rack Options

Keyboards and Monitors

HP USB BFR with PVC Free IN Keyboard/Mouse Kit	672097-D63
HP USB BFR with PVC Free AP-Intl Keyboard/Mouse Kit	672097-373
HP USB BFR with PVC Free Intl Keyboard/Mouse Kit	672097-B33
HP USB BFR with PVC Free PT Keyboard/Mouse Kit	672097-133
HP USB BFR with PVC Free TR Keyboard/Mouse Kit	672097-143
HP USB BFR with PVC Free CZ Keyboard/Mouse Kit	672097-223
HP USB BFR with PVC Free FI Keyboard/Mouse Kit	672097-353
HP USB BFR with PVC Free SE Keyboard/Mouse Kit	672097-103
HP USB BFR with PVC Free CH Keyboard/Mouse Kit	672097-113
HP USB BFR with PVC Free KR Keyboard/Mouse Kit	672097-KD3
HP USB BFR with PVC Free US Keyboard/Mouse Kit	631341-B21
HP USB BFR with PVC Free UK Keyboard/Mouse Kit	631344-B21
HP USB BFR with PVC Free FR Keyboard/Mouse Kit	631346-B21
HP USB BFR with PVC Free ES Keyboard/Mouse Kit	631348-B21
HP USB BFR with PVC Free DE Keyboard/Mouse Kit	631358-B21
HP USB BFR with PVC Free JP Keyboard/Mouse Kit	631360-B21
HP USB BFR with PVC Free IT Keyboard/Mouse Kit	631362-B21
HP USB BFR with PVC Free CN Keyboard/Mouse Kit	631364-B21

Related Options

HP USB BFR with PVC Free AE Keyboard/Mouse Kit	638212-B21
HP USB BFR with PVC Free RU Keyboard/Mouse Kit	638214-B21

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13972_div/13972_div.html (Worldwide)

HP TFT7600 G2 KVM Console Rackmount Keyboard US Monitor	AZ870A
HP TFT7600 G2 KVM Console Rackmount Keyboard UK Monitor	AZ871A
HP TFT7600 G2 KVM Console Rackmount Keyboard DE Monitor	AZ872A
HP TFT7600 G2 KVM Console Rackmount Keyboard FR Monitor	AZ873A
HP TFT7600 G2 KVM Console Rackmount Keyboard IT Monitor	AZ874A
HP TFT7600 G2 KVM Console Rackmount Keyboard ES Monitor	AZ875A
HP TFT7600 G2 KVM Console Rackmount Keyboard DK Monitor	AZ876A
HP TFT7600 G2 KVM Console Rackmount Keyboard NO Monitor	AZ877A
HP TFT7600 G2 KVM Console Rackmount Keyboard SE/FI Monitor	AZ878A
HP TFT7600 G2 KVM Console Rackmount Keyboard CH Monitor	AZ879A
HP TFT7600 G2 KVM Console Rackmount Keyboard PT Monitor	AZ880A
HP TFT7600 G2 KVM Console Rackmount Keyboard BE Monitor	AZ881A
HP TFT7600 G2 KVM Console Rackmount Keyboard JP Monitor	AZ882A
HP TFT7600 G2 KVM Console Rackmount Keyboard RU Monitor	AZ883A
HP TFT7600 G2 KVM Console Rackmount Keyboard Intl Monitor	AZ884A
HP TFT7600 G2 KVM Console Rackmount Keyboard US TAA Monitor	AZ885A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18006.www1.hp.com/products/quickspecs/13731_div/13731_div.html

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

HP Server Console Switch G2 with Virtual Media & CAC

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

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13475_div/13475_div.html (Worldwide)

HP IP Console Switch G2 with Virtual Media & CAC

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

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13474_div/13474_div.html (Worldwide)

Related Options

HP KVM Switches

HP BladeSystem c-Class KVM Interface Adapter	AF605A
HP Server Console 0x2x8 Port Analog Switch	AF616A
HP Server Console 0x2x16 Port Analog Switch	AF617A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/11834_div/11834_div.html (Worldwide)

HP 1x4 USB/PS2 KVM Console Switch	AF611A
HP 1x4 KVM Console 6ft USB Cable	AF613A

NOTE: required for supporting USB peripherals.

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/12662_div/12662_div.html (Worldwide)

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

Rack Options

HP Universal 10636 G2 Front Door	AF019A

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

HP Care Pack Services

NOTE: Some options, including Fibre Channel and InfiniBand switches for the HP c-Class BladeSystem, are not covered under the c3000 enclosure Care Packs and carry separate Care Packs. Care Pack service level support for these options should always be uplifted to match existing storage or server service level.

Please view the option QuickSpecs or contact your HP sales representative or HP authorized ServiceOne partner for Care Pack information.

Proactive Care Services

HP 3 year 4 hour 24x7 c3000 Enclosure Proactive Care Service	U3C42E
HP 3 year 6 hour Call To Repair 24x7 c3000 Enclosure Proactive Care Service	U3C45E
HP 3 year 4 hour 24x7 c3000 Enclosure with Insight Control Proactive Care Service	U3P19E
HP 3 year 6 hour Call To Repair 24x7 c3000 Enclosure with Insight Control Proactive Care Service	U3P22E

HP Proactive Care Personalized Support (Environmental Option)

HP 3yr Provides annual personalized proactive supp for existing Proactive Care ISS centric environmt	U6W98E

Installation & Start-up Services

|	
HP Startup c3000 with Insight Control and Operating System and Server Blade Service	UF817E
HP Startup BladeSystem c3000 + Operating System Service	UF818E
HP Startup BladeSystem c3000 Enclosed Network Service	UF814E
HP Hardware Install c-Class Enclosure and Server Blade Service	UE494E

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

Power Specifications

HP 1200W Common Slot Silver Hot Plug Power Supply Kit

Part Number	500172-B21						
Input Voltage Range (V rms)	100-240						
Frequency Range (Nominal) (Hz)	50 / 60						
Nominal Input Voltage (Vrms)	**100**	**120**	**200**	**208**	**220**	**230**	**240**
Maximum Rated Output Wattage	800	900	1200	1200	1200	1200	1200
Nominal Input Current (A rms)	9.7	9.0	7.0	6.8	6.4	6.1	5.9
Maximum Rated Input Wattage Rating (Watts)	930	1034	1348	1348	1348	1348	1348
Maximum Rated VA (Volt-Amp)	970	1079	1406	1406	1406	1406	1406
Efficiency (%)	86	87	89	89	89	89	89
Power Factor				0.97			
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current (A peak)				30			
Maximum Inrush Current duration (mS)				20			
Maximum British Thermal Unit Rating (BTU-Hr)	3174	3530	4600	4600	4600	4600	4600

HP 1200W Common Slot -48VDC Hot Plug Power Supply Kit

Part Number	437573-B21						
Input Voltage Range (V rms)	36-72						
Frequency Range (Nominal) (Hz)	DC						
Nominal Input Voltage (Vrms)	**100**	**120**	**200**	**208**	**220**	**230**	**240**
Maximum Rated Output Wattage	800	900	1200	1200	1200	1200	1200
Nominal Input Current (A rms)	9.7	9.0	7.0	6.8	6.4	6.1	5.9
Maximum Rated Input Wattage Rating (Watts)	930	1034	1348	1348	1348	1348	1348
Maximum Rated VA (Volt-Amp)	970	1079	1406	1406	1406	1406	1406
Efficiency (%)	86	87	89	89	89	89	89
Power Factor				0.97			
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current (A peak)				30			
Maximum Inrush Current duration (mS)				20			
Maximum British Thermal Unit Rating (BTU-Hr)	3174	3530	4600	4600	4600	4600	4600

Technical Specifications

Server Blade, Power Supply and Fan Population Guidelines

Fan & power supply bay numbering
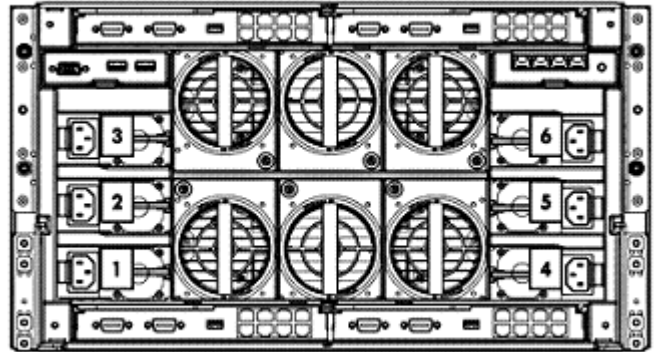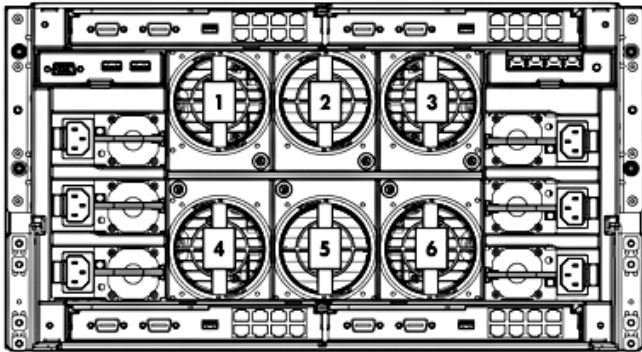
HP BladeSystem c3000 Enclosure - Rack
Power supply bay numbering

Fan bay numbering

Power Supplies & Fans must be placed in the following bays

Number of Fans	Fan Bays Used
4	2,4,5, 6
6	all bays filled

Number of Power Supplies (for PS Redundant or non-redundant mode)	**Power Supply Bays Used**
2	1 & 2
3	1, 2, & 3
4	1, 2, 3, 4
5	1 through 5
6	All bays

Number of Power Supplies (For AC Redundant mode)	**Place Power Supplies in bays:**
2	1 & 4
4	1, 2, 4, & 5
6	all bays filled

NOTE: With four fans, the enclosure will support only 4 half-Height Server blades in the bottom half of the enclosure device bays. With six fans, all 8 server bays may be filled.

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

Technical Specifications
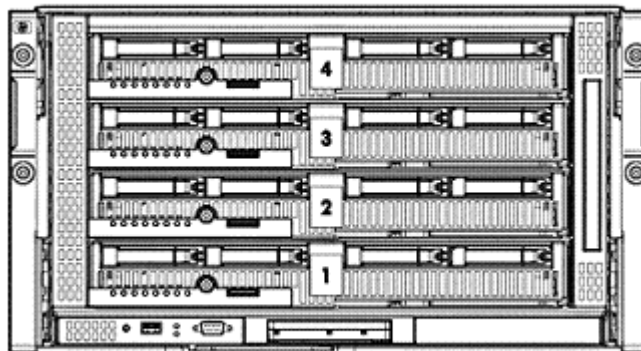
Half-height server blade bay numbering
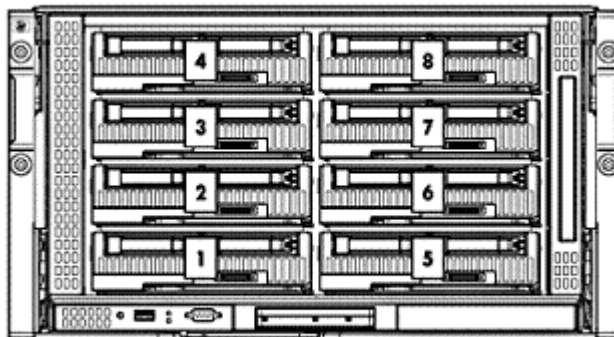
HP BladeSystem c3000 Enclosure – Racks

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

NOTE: Half-height server blades should be populated from the bottom half of the enclosure, in the following order (bays 1, 5, 2, 6, 3, 7, 4, & 8)

Full-height server blade bay numbering

HP BladeSystem c3000 Enclosure – Racks

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

Technical Specifications

4. Device Bay 4

NOTE: Full-height servers should be populated from the bottom to the top (bays 1 thru 4). With four fans, only the bottom 2 bays can be used; with six fans, all bays can be used.

Mixed Configuration – Full Height and Half Height Population

The c3000 Platinum enclosure is divided into 2 zones or quadrants by the horizontal support metalwork. Zone 1 includes bays 1, 2, 5, and 6; Zone 2 contains bays 3, 4, 7, and 8. Within each zone a removable divider is used to support half height devices. To install a full-height blade in either zone this divider must be removed. An optional mini-divider support bracket is included with every c3000 enclosure. When using a mix of full-height and half height blades in Zone 2, the optional mini-divider can be used to help support the half-height blades if they are being used in slots 7 and/or 8. Each zone can support up to 2 full-height blades, or up to 4 half height blades, or a mix of 1 full-height blade and up to 2 half-height blades.

NOTE: Please read the RTF card (included with each c3000 enclosure) and the "HP BladeSystem c3000 Platinum enclosure Setup and Installation Guide" for more information on using bay dividers and the mini-divider for mixed configurations.
NOTE: Storage or tape blades can be installed in the same zone as both full-height and half-height blades, a bracket ships with each D2200sb that allows a half-height blade to be mounted to the storage or tape blade.
NOTE: In this case, the D2200sb or tape blade cannot be removed without first removing the half height blade and mounting bracket.
NOTE: For Mixed configurations of full height and half height population rules; please see the c3000 Platinum enclosure installation and users guide at: http://h71028.www7.hp.com/enterprise/cache/316682-0-0-0-121.html and the user guides for the blades being configured.

Enclosure Unit – Rack Model	**Dimensions** (H x W x D) (with bezel)	10.4 x 19.1 x 32.977 in (265 x 485 x 835 mm)	
	Weight (approximate)	Maximum (one enclosure with 8 blades and 4 interconnects installed)	300 lb (136 kg)
		Minimum (one enclosure without blades and interconnects)	130 lb (59 kg)
	Input Requirements (per AC power supply)	Rated Line Voltage	90 – 132 VAC 180 – 264 VAC
		Rated Input Current	9.3 A (at 100 VAC) 9.7 A (at 120VAC) 7.8 A (at 200 VAC) 7.2 A (at 208 VAC) 6.8 A (at 220 VAC) 6.2 A (at 240 VAC)
		Rated Input Frequency	47 to 63 Hz
	BTU Rating	Maximum per power supply	2728 BTU/hr (at 100 VAC) 3069 BTU/hr (at 120VAC) 4092 BTU/hr (at 200 to 240 VAC)
	Power Specifications	To review typical system power ratings use the Power Calculator which is available via the online tool located at URL: www.hp.com/go/bladesystem/powercalculator	
	Power Supply Output (per power supply)	Rated Steady-State Power	800 W (at 100 VAC) 900 W (at 120 VAC)

Technical Specifications

	Maximum Peak Power		1200 W (at 200 to 240 VAC) 880 W (at 100 VAC) 990 W (at 120 VAC) 1350 W (at 200 to 240 VAC)
System Inlet Temperature	Operating		10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).
	Non-operating		-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
Relative Humidity (non-condensing)	Operating		10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
	Non-operating		5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
Altitude	Operating		3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Non-operating		9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
Acoustic Noise			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		depends on server configuration & mix of server blades
	Operating		varies by CPU utilization, server configuration, and mix of server blades

Option Kits	**Power Supply Dimensions**	Size	Height: 1.515 in (38.48 mm) Width: 3.4 in (86.36 mm) Depth: 7.5 in (190.5 mm)
		Weight	2.5 lbs (1.13 kg)
	Fan Option Shipping Dimensions	Size	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)

Technical Specifications

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

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