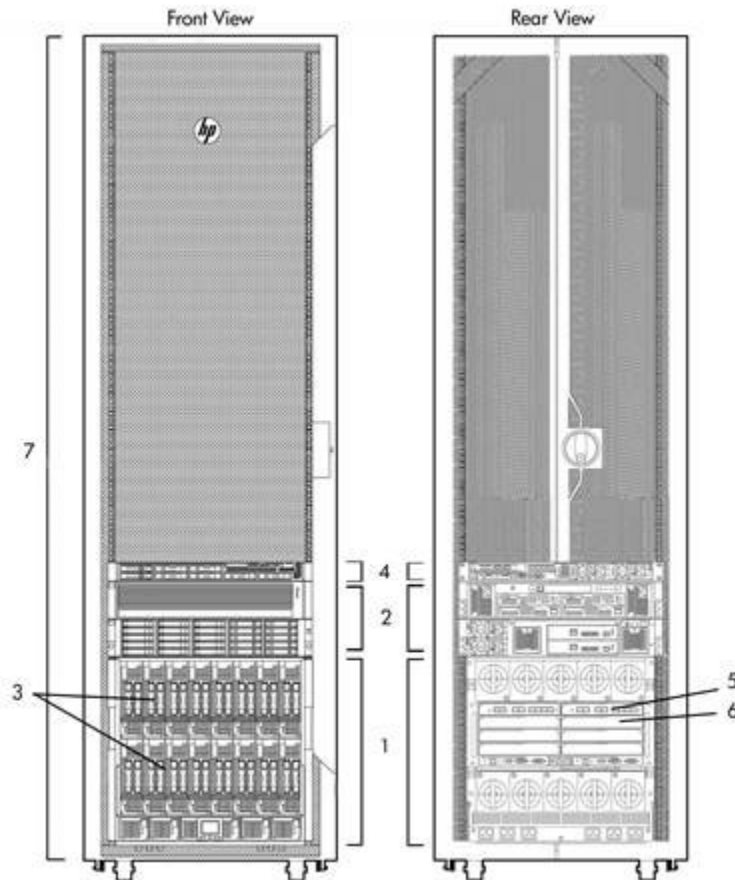


Overview

HPE Helion CloudSystem built on ConvergedSystem 700x

Starter Kit



1. HPE BladeSystem c7000 enclosure, single phase
2. Shown above with HPE 3PAR StoreServ 7200 Storage. HPE Fibre Channels SAN supported include 3PAR F-Series, T-Series, P10000 and 3PAR StoreServ 7000, 8000, 10000 and 20000
3. 16 half-height device bays available for populating with server blades
4. Central Management Server (CMS)
HPE ProLiant DL360 Gen9 server (recommended CMS)
5. HPE Virtual Connect FlexFabric modules (redundant pair)
6. Interconnect bays 3 & 4 available for additional HPE Virtual Connect FlexFabric modules (redundant pair)
7. HPE Intelligent Series rack, and rack and power options

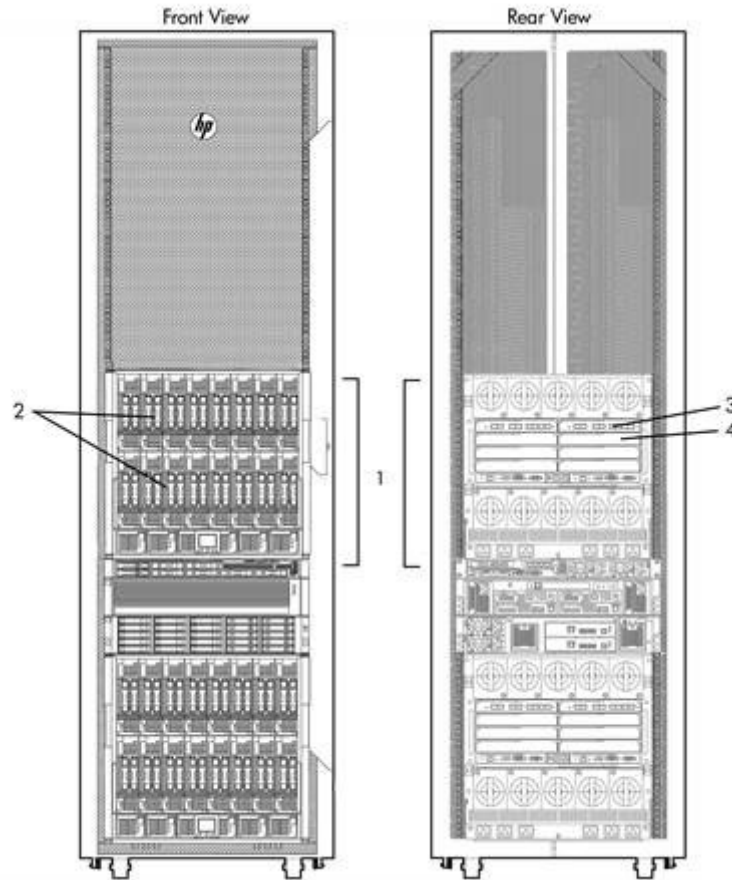
NOTE: Rack is not included with the CloudSystem Starter Kit

Software and Services (not shown in picture)

1. Onsite HPE Helion CloudSystem Solution Installation and Startup Service
2. HPE Helion CloudSystem Enterprise or HPE Helion CloudSystem Foundation software

Overview

Expansion Kit



1. HPE BladeSystem c7000 enclosure, single phase
2. 16 half-height device bays available for populating with server blades
3. HPE Virtual Connect FlexFabric modules (redundant pair)
4. Interconnect bays 3 & 4 available for additional HPE Virtual Connect FlexFabric modules (redundant pair)

Software and Services (not shown in picture)

1. Onsite CloudSystem Expansion Kit Implementation Service (for Expansion Kit orders purchased after an initial CloudSystem environment is implemented)
2. HPE Helion CloudSystem Enterprise or HPE Helion CloudSystem Foundation software

Standard Features

Product Features

HPE Helion CloudSystem is the industry's most complete, fully-integrated, end-to-end private cloud solution, delivering automation, orchestration and control, across multiple clouds. Depending on where you are on your cloud journey HPE Helion CloudSystem built on ConvergedSystem 700x offers different cloud software options to address your specific needs from simple to advanced infrastructure cloud services as well as application cloud services along with lifecycle management. Here are the different CloudSystem software options:

HPE Helion CloudSystem Foundation software:

HPE Helion CloudSystem Foundation software is cloud management software designed to deliver core infrastructure services.

- Provision core infrastructure services within minutes, powered by HPE's enterprise-grade OpenStack® technology
- Now built on HPE Helion OpenStack 3.0 version, which utilizes the Liberty OpenStack release. All OpenStack projects are now exposed by HPE Helion CloudSystem Foundation, as well as all associated API's, for a robust cloud infrastructure management environment.
- Deploy a fast and easy installation via software appliance delivery model
- Manage complex heterogeneous and ever changing datacenter compute node environments through support for Microsoft Hyper-V, VMware ESXi, HPE Linux KVM, and Red Hat KVM hypervisors
- Improved separation of usage by different groups and services through support for availability zones and host aggregation
- Ability to seamlessly upgrade to HPE Helion CloudSystem Enterprise software
- Offers users the rights to use HPE Helion Stackato within the CloudSystem solution.

HPE Helion CloudSystem Enterprise software

HPE Helion CloudSystem Enterprise software is cloud management software designed to deliver advanced infrastructure services, as well as platform and application services.

- Provision advanced infrastructure and application services for multi-tier architectures in minutes
- Provide marketplace portal and full topological designer interfaces through integrated HPE Cloud Service Automation (CSA) and HPE Operations Orchestration (OO)
- Manage multiple OpenStack®-based resource pools across geographies and data centers
- Implement capacity planning, disaster recovery and bursting to public clouds
- Provide enterprise-class lifecycle management for hybrid cloud services

HPE Helion CloudSystem Enterprise software includes HPE Helion CloudSystem Foundation software and HPE Matrix Operating Environment as resource providers as well as the CloudSystem Enterprise appliance with HPE Cloud Server Automation (CSA) and HPE Operations Orchestration (OO) for advanced infrastructure services.

The platform and application services with lifecycle management are delivered through an optional HPE Helion CloudSystem Enterprise add-on package (not covered in this document).

HPE Helion CloudSystem Enterprise software supports a variety of different hypervisors, such as

Standard Features

VMware ESXi, Microsoft Hyper-V, HPE Linux KVM, and Red Hat KVM, as well as HPE and non-Hewlett Packard Enterprise infrastructure. For a detailed overview of supported components, please compare the HPE CloudSystem compatibility web site.

For more information above HPE Helion CloudSystem information, see:

[**http://www.hpe.com/info/cloudsystem**](http://www.hpe.com/info/cloudsystem)

For more information about HPE BladeSystem, see: [**http://www.hpe.com/info/bladesystem**](http://www.hpe.com/info/bladesystem)

For more information about HPE OneView, see: [**http://www.hpe.com/info/oneview**](http://www.hpe.com/info/oneview)

For more information about HPE Insight software, see:

[**http://www.hpe.com/info/insightmanagement**](http://www.hpe.com/info/insightmanagement)

For more information about HPE Virtual Connect, see: [**http://www.hpe.com/info/virtualconnect**](http://www.hpe.com/info/virtualconnect)

For more information about HPE Storage, see: [**http://www.hpe.com/info/storage**](http://www.hpe.com/info/storage)

For more information about Factory Express, see: [**http://www.hpe.com/info/factoryexpress**](http://www.hpe.com/info/factoryexpress)

HPE CloudSystem built on ConvergedSystem 700x

How to order HPE Helion CloudSystem built on ConvergedSystem 700x

Ordering HPE Helion CloudSystem built on ConvergedSystem 700x

The method for purchasing HPE Helion CloudSystem built on ConvergedSystem 700x is simple. Start by ordering a HPE Helion CloudSystem built on ConvergedSystem 700x Starter Kit, which contains the infrastructure needed for a fully-working environment supporting up to 16 HPE ProLiant half-height server blades. Add additional kits now or in the future to expand your HPE Helion CloudSystem built on ConvergedSystem 700x infrastructure with additional infrastructure and blades. The central management server (CMS) or Management Server host implemented with the first kit simply extends its domain to manage additional infrastructure that might be added with additional CloudSystem kits.

NOTE: Additional expansion kits may also be purchased separately. Expansion kits ordered separately will come with the CloudSystem Expansion Kit Integration Implementation Service.

NOTE: Additional expansion kits purchased must be co-located with the initial kit to which they are connecting to.

NOTE: For detailed ordering information please see the Configuration Information Factory Integrated Models section of this QuickSpecs.

With all HPE Helion CloudSystem built on ConvergedSystem 700x kit orders, the following services are included:

- Factory services to default configure, rack, and cable the infrastructure in a rack
- Verify and update firmware for the entire solution being purchased (the CloudSystem built on ConvergedSystem 700x kits and the supported blades and options purchased with those kits) to the latest current HPE CloudSystem built on ConvergedSystem 700x firmware release set. This ensures that the HPE CloudSystem built on ConvergedSystem 700x solution will leave the factory with the right levels of firmware needed for the end to end solution to be successful. (For specific version numbers supported and required, please refer to the HPE CloudSystem built on ConvergedSystem 700x Compatibility Chart on <http://www.hpe.com/info/cloudsystem/solution/docs>)
- Coordinate hand-off to Technology Services (TS) or authorized partner. A TS or partner project manager is assigned for managing pre-engagement and assigning a team of engineers to perform the implementation service at the customer's site.

While Factory Integration/Factory Express are building the HPE Helion CloudSystem built on ConvergedSystem 700x environment for a given customer, an assigned project manager from Technology Services (TS) will begin managing a team of TS engineers to start planning the rollout of the implementation service, including engaging with the customer on environmental requirements and related details. TS engineers will start the actual implementation on the HPE CloudSystem built on ConvergedSystem 700x equipment as soon as possible after its arrival date at the customer site.

The Technology Services CloudSystem Starter Kit Implementation Service is detailed in a section below.

HPE Helion CloudSystem Starter Kit Implementation Service (onsite), plus additional services

In addition to the HPE Helion CloudSystem Solution Installation and Startup Service, HPE highly recommends HPE Education Services (for customer training and education) and additional Technical Services, as well as in-depth installation or implementation services as needed. These recommended services are listed in the "HPE Pointnext operational services" section later in this document. The onsite HPE Helion CloudSystem Solution Installation and Startup Service consists of these steps:

HPE CloudSystem built on ConvergedSystem 700x

- Upon delivery to customers site, unpack and inspect for damages
- Integrate kits (included in the initial kit order, maximum of 5 total CloudSystem built on ConvergedSystem 700x kits. Additional CloudSystem expansion kits on same order require CloudSystem Expansion Kit Implementation Service) hardware in to customers environment, power, network cabling
- Installation and configuration of the central management server (CMS)
 - Installation and configuration of the software required for management
- Deployment of operating systems to configured LUNs on the optionally purchased 3PAR or other HPE SAN or an existing SAN
 - 1 HPE server blade running a native OS of the customer's choice (Windows, Linux) on a boot LUN
 - 2 HPE server blades each running a single hypervisor of the customer's choice (VMware ESX, Microsoft Hyper-V or KVM), each on their own boot LUN (hypervisor licenses are customer provided unless purchased from HPE as part of the order)

NOTE: Installing Matrix from within HPE CloudSystem Enterprise requires the HPE Implementation service for the CloudSystem Matrix Starter Kit in place of the HPE CloudSystem Installation and Startup Services.

NOTE: Installing both Matrix and CloudSystem from HPE CloudSystem Enterprise requires the HPE Implementation service for the CloudSystem Matrix Starter Kit in place of the HPE CloudSystem Installation and Startup Services and in addition the HPE CloudSystem Enterprise Software Installation and Startup Services are needed.

NOTE: Installation and deployment of KVM requires additional service credits. See section on Ordering CloudSystem.

- **Configuration of up to 2 VMs**
 - 1 HPE server blade installed and configured to be a target for a blade move
- Configure up to two physical target server operating systems to boot from SAN
 - Orientation of the CloudSystem solution
 - Navigation through installed components and all management software
 - Review of the configured hardware components and their configuration
 - Review of the completed system topology
 - How to call HPE for support
 - Availability of additional services, educational services, etc. See: <http://www.hp.com/services/insight> and <http://www.hp.com/learn/proliant> and <http://www.hpe.com/info/oneview>

HPE CloudSystem Expansion Kit Integration Implementation Service (onsite)

Ordering additional HPE Helion CloudSystem built on ConvergedSystem 700x expansion kits after the initial CloudSystem starter kit order or installing more than 5 total kits during the initial installation, includes the CloudSystem Expansion Kit Integration Implementation Service. Each CloudSystem Expansion Kit Implementation Service will integrate up to four CloudSystem built on ConvergedSystem 700x expansion kits to an existing CloudSystem built on ConvergedSystem 700x customer environment (single CMS server). The onsite CloudSystem Expansion Kit Integration Implementation Service for the Expansion Kits consists of these steps:

- Upon delivery to customers site, unpack and inspect for damages
- Integrate HPE Helion CloudSystem built on ConvergedSystem 700x Expansion Kits hardware

HPE CloudSystem built on ConvergedSystem 700x

in to customers environment, power, network cabling

- Change the firmware versions to be compatible with the version requirements of the existing CloudSystem customer environment
- Configure up to one physical target server operating systems to boot from SAN
- Perform one of the CloudSystem demonstrations to verify the Expansion Kits integration is completed successfully.

Warranty services

The support provided for HPE Helion CloudSystem built on ConvergedSystem 700x uplifts the standard BladeSystem warranty to include 24x7 4hr onsite response for CS700x hardware and 2 hr response for software. HPE Helion CloudSystem built on ConvergedSystem 700x customers will have a system identifier that, when provided to the call center by the customer, routes the call to a specially trained team that can expertly support HPE CloudSystem built on ConvergedSystem 700x specifically as well as the necessary software and firmware revisions to support it.

The HPE CS700x for CloudSystem infrastructure 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.

- Offered for HPE Helion CloudSystem built on ConvergedSystem 700x are "uplift" HPE Pointnext operational services options that extend warranty service period up to 4-, or 5-years across the entire hardware and software infrastructure from the following default included levels of warranty support:
 - Platinum Enclosure: Three-year, 24x7 (4 hour response) parts and labor, on-site limited global warranty. Certain restrictions and exclusions apply
 - Platinum Enclosure options: fans, power supplies, Onboard Administrator, covered with the enclosure warranty
 - HPE Virtual Connect interconnects: 3 Year parts and labor, on-site regardless of the warranty period for the system in which they are installed
 - HPE Insight software: 3 Year 24 x 7 Technical Support and Update Service
 - 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

NOTE: For additional information, see: <http://www.hpe.com/info/ bladesystem> and <http://www.hp.com/services/insight>.

HPE CloudSystem Support

HPE Helion CloudSystem Environment includes three years of 24 x 7 HPE Software Technical Support and Update Service. This service provides access to HPE technical resources for help in resolving software implementation or operations problems. The service also provides access to software updates and reference manuals either in electronic form or on physical media as they are made available from HPE.

With this service, HPE Helion CloudSystem users benefit from expedited problem resolution and proactive notification and delivery of software updates.

As part of your implementation service, HPE services personnel or your authorized provider will activate your HPE Software Technical Support and Update Service for CloudSystem at: <http://www.hp.com/services/insight>.

Your Service Agreement Identifier (SAID) will be delivered to you after registration. After you have received your SAID, you can go to the software update manager (SUM) web page to view your contract

HPE CloudSystem built on ConvergedSystem 700x

online and elect electronic delivery (in addition to standard media-based updates). For more information about this service, see: <http://www.hp.com/services/insight>.

Hewlett Packard Enterprise offers a number of software support services, many of which are provided to customers at no additional charge.

Join the Discussion at: <http://community.hpe.com/>

The HPE Support Forum is a community-based, user supported tool for HPE customers to participate in discussions amongst the customer community about Hewlett Packard Enterprise products. For discussions related to HPE Insight software, see the "Management Software and System Tools" area.

HPE Worldwide Customer Service contact numbers are available at:
<http://www.hp.com/country/us/en/wwcontact.html>.

HPE Financial Services

To support customers' transition, HPE Financial Services (HPFS) can help in a way that you may not have considered. HPFS can help you invest in your business while preserving precious capital.

For more information, contact your local HPE Financial Services Representative. In the United States, call 1-888-277-5942. In Canada, dial 1-800-HPE-LEASE. For more information please visit: <http://www.hp.com/hpfinancialservices> for links to HPE Financial Services around the world.

Factory Express Portfolio for Servers and Storage

For HPE Helion CloudSystem built on ConvergedSystem 700x, HPE Factory Express services are added if the 3PAR is purchased with the HPE Helion CloudSystem built on ConvergedSystem 700x Starter Kit. If other custom requirements or intents are required for a given customer's HPE CloudSystem built on ConvergedSystem 700x order, Factory Express capabilities may also be called upon. 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 ProLiant servers, HPE ProLiant c-Class BladeSystem server blades, as well as the 3PAR storage products, rackable tape libraries and configurable network switches.

For more information on Factory Express services please contact your sales representative or go to: <http://www.hpe.com/info/factoryexpress>

Rack Airflow Requirements

HPE rack cabinets

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

NOTE: For operation with the DC Input Module the HPE 1200mm deep rack is required to allow DC power cabling to be installed

CAUTION: HPE Helion CloudSystem built on ConvergedSystem 700x infrastructures are best fulfilled with HPE racks. However, if a third-party rack is used, observe the following additional requirements to ensure adequate airflow and to prevent damage to the equipment:

HPE CloudSystem built on ConvergedSystem 700x

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

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

Ordering CloudSystem

Configuration Information Factory Integrated Models - HPE Helion CloudSystem built on ConvergedSystem 700x - Starter Kit

NOTE: This section lists the required steps for ordering a HPE CloudSystem built on ConvergedSystem 700x.

NOTE: To ensure only valid configurations are ordered, Hewlett Packard Enterprise recommends the use of an Hewlett Packard Enterprise approved configurator or contact your local sales representative for additional information on product offerings and requirements.

NOTE: FIO indicates that this option is a Factory Integrated Option.

Step 1: Select HPE Intelligent Series Rack (Recommended, per notes immediately below)

NOTE: For additional HPE Rack information please visit:

<http://h18004.www1.hp.com/products/servers/proliantstorage/racks/intelligentseries/index.html>

NOTE: For additional Rack Options please see the "Additional Options" section of this QuickSpecs.

NOTE: The CloudSystem built on ConvergedSystem 700x Starter Kit is recommended to be ordered with an HPE rack. When not ordering with a rack, it is necessary for the customer to rack any CloudSystem built on ConvergedSystem 700x enclosures in a rack prior to HPE arriving onsite to complete the HPE CloudSystem Solution Installation and Startup Service. You may purchase the HPE Install c7000 Platinum Enclosure and Server Build Service to assist with onsite racking and cabling of HPE CloudSystem built on ConvergedSystem 700x enclosures into a rack. See the "HPE Pointnext operational services" section later in this document for the part numbers.

HPE Rack Series	HPE Intelligent Series racks	
	HPE 42U 600mm x 1075mm Enterprise Shock Rack	BW904A
	HPE 42U 600mm x 1075mm Enterprise Pallet Rack	BW903A
	HPE 42U 600mm x 1200mm Enterprise Shock Rack	BW908A
	HPE 47U 600mm x 1075mm Enterprise Shock Rack	BW912A
	HPE 47U 600mm x 1200mm Enterprise Shock Rack	BW914A
	HPE 42U 600mm x 1200mm Enterprise Pallet Rack	BW907A
	HPE 47U 600mm x 1075mm Enterprise Pallet Rack	BW911A
	HPE 47U 600mm x 1200mm Enterprise Pallet Rack	BW913A

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

<https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04123237>
(Worldwide)

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

Step 2: Select Required Configurable HPE CloudSystem Starter Kit (Choose one of the following from each list unless otherwise noted)

Ordering CloudSystem

HPE Helion CloudSystem built on ConvergedSystem 700x Starter Kit

NOTE: Starter Kit default components means HPE ordering systems will default these selections when any unique HPE CloudSystem built on ConvergedSystem 700x part number is entered. The default selections can be changed to meet customer needs.

NOTE: The HPE Helion CloudSystem built on ConvergedSystem 700x Starter Kit does not include a central management server or CMS (see BladeSystem c-Class server blades section below for CMS server).

Hardware Components

HP CloudSystem Starter (CS700x) Kit

G6X21A

NOTE: The configurable starter kit can be defined as either Starter or Expansion Kit with applicable services applied appropriately when configured.

HPE Helion CloudSystem built on ConvergedSystem 700x Block (Hardware Components) includes:

- HPE BladeSystem c7000 Platinum enclosure and 10 fans
- HPE BladeSystem c7000 Onboard Administrator with KVM (keyboard, video, mouse) option, redundant pair

HPE Virtual Connect Option (required choice of one):

- HPE Virtual Connect FlexFabric 10Gb 24-port Module, redundant pair
- HPE Virtual Connect FlexFabric-20/40 F8 Module, redundant pair

c7000 Power Option (required choice of one):

- Single phase (QTY of 6)
- 3-Phase (QTY of 6)
- DC Power (QTY of 6)

HPE Helion CloudSystem software (required choice of one)

- HPE Helion CloudSystem 10 Foundation 8-server License, 3 year 24/7 support and updates - F9D68C
- HPE Helion CloudSystem 10 Foundation 16-server License, 3 year 24/7 support and updates - D4T97C
- HPE Helion CloudSystem 10 Enterprise 8-server License, 3 year 24/7 support and updates - F9D67C
- HPE Helion CloudSystem 10 Enterprise 16-server License, 3 year 24/7 support and updates - D4T98C

If the customers has ordered a HPE Helion CloudSystem built on ConvergedSystem 700x and wants to upgrade their software, they can order:

D4T99CAE	HPE CloudSystem 10 Enterprise 8-Server upgrade from Foundation E-LTU 3yr 24x7 Supp
D4U00CAE	HPE CloudSystem 10 Enterprise 16-Server upgrade from Foundation E-LTU 3yr 24x7 Supp

NOTE: Additional CloudSystem licenses may be purchased separately.

NOTE: See the HPE Helion CloudSystem QuickSpecs for additional information:

<http://www.hpe.com/info/cloudsystem/solution/docs>

Ordering CloudSystem

NOTE: Following are the VC FlexFabric transceiver/SFP options.

HP BladeSystem c-Class 10Gb SFP+ LR Transceiver	455886-B21
HP BladeSystem c-Class 10Gb SFP+ LRM Transceiver	455889-B21
HP BladeSystem c-Class Virtual Connect 1G SFP SX Transceiver	453151-B21
HPE 8Gb Shortwave B-series Fibre Channel 1 Pack SFP+ Transceiver	AJ716B
HPE 8Gb Long Wave B-series 10km Fibre Channel 1 Pack SFP+ Transceiver	AJ717A
HPE 8Gb Short Wave Fibre Channel SFP+ 1 Pack	AJ718A

Software Licenses

HPE Helion CloudSystem 10 Foundation 8-server 3yr Support LTU	F9D68C
HPE Helion CloudSystem 10 Foundation 16-server 3yr Support LTU	D4T97C
HPE Helion CloudSystem 10 Enterprise 8-server 3yr Support LTU	F9D67C
HPE Helion CloudSystem 10 Enterprise 16-server 3yr Support LTU	D4T98C

NOTE: One (1) entitlement order number is provided.

NOTE: HPE Helion CloudSystem Foundation software can be used to manage cloud services under per physical server licenses.

When purchased under a per physical server license, you may use the CloudSystem Foundation software to manage cloud services that run on the specified number of licensed physical servers. Your right to use CloudSystem Foundation Software may not be transferred from one licensed physical server to a new or replacement server.

NOTE: For each purchased license, a license entitlement certificate will be delivered. The license entitlement certificate contains information needed to register and redeem license activation key(s) online or via fax.

NOTE: HPE Helion CloudSystem Foundation software can be downloaded at:
<http://www.hp.com/go/cloudsystem/download>

NOTE: HPE Helion CloudSystem Enterprise software can be used to manage cloud services under a per server license.

When purchased under a per server license, you may use the CloudSystem Enterprise software to manage cloud services that run on the specified maximum number of licensed physical servers. The right to use HPE Helion CloudSystem Enterprise software may not be transferred to a new or replacement server.

NOTE: For each purchased license, a license entitlement certificate will be delivered. The license entitlement certificate contains information needed to register and redeem license activation key(s) online or via fax.

NOTE: HPE Helion CloudSystem Enterprise software can be downloaded at:
<http://www.hpe.com/info/cloudsystem/download>

Management Software Licenses and media

Ordering CloudSystem

HPE OneView Upgrade from Insight Management including 3yr 24x7 Support Flexible Quantity E-LTU	E5Y45AAE
HPE OneView including 3yr 24x7 without iLO Advanced Support Flexible Quantity E-LTU	P8B26AAE
HPE iLO Advanced including 3yr TS U E-LTU	E6U64ABE

NOTE: The right quantities of the OneView SKUs listed above are included by default in the HPE Helion CloudSystem built on ConvergedSystem 700x Ordering menu depending on the Helion CloudSystem software selection. The management software licenses come with or without iLO Advanced Software. If HPE CloudSystem Enterprise software is purchased, iLO Advanced Software is included and not needed with the HPE OneView package.

Implementation Service

HPE CloudSystem Solution Startup Service	H4W57E
HPE Helion CloudSystem Solution Installation and Startup Service, Flexible	HA115A1#5VC

NOTE: Includes the installation & configuration of any CloudSystem built on ConvergedSystem 700x Expansion Kit included in the order.

Management Server

HP CS700 2.0 Virtual Management Kit	L2G46A
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NOTE: This is the default part number for the HPE Helion CloudSystem built on ConvergedSystem 700x central management server (CMS), to host the management software. It may be substituted with another server configured per notes below and per CMS sizing, scalability, and redundancy preferences.

HPE ProLiant DL360 Gen9 CMS server (PN L2G46A) is configured as follows:

- 256 GB of memory (16 x 16GB 2Rx4 PC4-2133P-R)
- Two (2) Intel® Xeon® E5-2680v3
- One (1) HPE 2GB Flash Backed Write Cache for P-Series Smart Array
- Eight (8) HPE 600GB 6G SAS 10K 2.5in SC Enterprise Hard Drive
- One (1) HPE DL360 Gen9 SFF DVD-RW/USB Kit
- One (1) HPE FlexFabric 10Gb 2P 556FLR-SFP+ Adptr
- One (1) HPE DL360 Gen9 SFF P440ar/H240ar SAS Cbl
- One (1) HPE Smart Array P440ar/2G FIO Controller
- One (1) HPE 82Q 8Gb Dual Port PCI-e FC HBA

NOTE: Considerations for Central Management Server (CMS) - choice of rack-mount or blade server: Hewlett Packard Enterprise offers a choice of rack-mounted ProLiant server (DL) as central management server host for HPE Helion CloudSystem . Hewlett Packard Enterprise recommends the rack-mounted ProLiant DL360 Gen9 as the CMS host (see configuration above) for those customers who desire to use all available and licensed enclosure blade bays for managed target blades and workloads. When multiple management server hosts are required for scalability and high availability or hosting

Ordering CloudSystem

partner management software, multiple ProLiant DL servers or server blades (or even a combination of blade or rack-mounted servers) can be installed and configured to work together to manage the CloudSystem environment.

This Management Server will be devoted to running the CloudSystem software, HPE OneView; other management software such as VMware vCenter Server should be installed on a separate server.

NOTE: Larger environments may warrant having multiple Management servers for these reasons: scalability, high availability of the management server and data, and separation of database or management components for performance or security access reasons.

NOTE: If the recommended HPE ProLiant DL360 Gen9 configuration above is not purchased, the customer agrees to supply or purchase other HPE ProLiant rack-mount server(s) or HPE ProLiant server blade(s) that meet the requirements.

Target server blades

NOTE: It is highly recommended that at least four (4) additional HPE ProLiant c-Class blades be ordered with each Starter Kit, because the Onsite Implementation Service includes provisioning of up to four (4) HPE ProLiant blades, two of which are directly provisioned as physical servers and two of which are virtual machine hosts. See separate section on "HPE Helion CloudSystem Solution Installation and Startup Service" for details. All shipping HPE ProLiant c-Class blades are supported except the HPE ProLiant BL2x220c server blades and workstation blades.

NOTE: For server blade information, please visit: <http://www.hpe.com/info/qs>

NOTE: HPE ProLiant server blades should be configured to connect via the Virtual Connect modules included in the CloudSystem built on ConvergedSystem 700x kits. See the sections below on FlexibleLOM and Mezzanine options for further details.

KVM Managed Hosts

CloudSystem supports KVM managed hosts on servers that are generally supported by CloudSystem. Specifically, they can be within CloudSystem built on ConvergedSystem 700x enclosures or ProLiant DL or SL servers. ProLiant blades must be housed in either the HPE Helion CloudSystem built on ConvergedSystem 700x Starter or Expansion Kit. The KVM managed hosts may be contained in the same enclosure as other non-KVM hypervisor hosts, or a separate enclosure.

HPE Interconnect Options

NOTE: The Virtual Connect interconnect modules that are built in to the CloudSystem built on ConvergedSystem 700x Starter and Expansion kits are not removable. Interconnect bays 3 and 4 are available for additional Virtual Connect (VC) FlexFabric modules in HPE Helion CloudSystem built on ConvergedSystem 700x with FlexFabric Starter and Expansion kits. Additional supported interconnected options may be added to the remaining available interconnect bays (bays 5/6 and 7/8).

NOTE: Mixing of Virtual Connect FlexFabric and non-FlexFabric legacy Virtual Connect modules is not permitted.

NOTE: For HPE BladeSystem c-Class Interconnect and Mezzanine Components please visit:

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

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

Ordering CloudSystem

Step 3: Select HPE Helion CloudSystem Expansion Kits

HPE Helion CloudSystem built on ConvergedSystem 700x Expansion Kit

NOTE: Add additional Expansion Kits as your HPE Helion CloudSystem built on ConvergedSystem 700x environments requires or on an as-needed basis.

NOTE: Expansion Kits purchased must be co-located with the Starter Kit(s) to which they are connecting.

NOTE: Add HPE server blades and other recommended options to the Expansion Kit as desired. Depending on quantity of Expansion Kits purchased, additional racks, storage arrays, and other options may also be warranted.

NOTE: Refer to the HPE Helion CloudSystem compatibility chart at: <http://www.hpe.com/info/cloudsystem/solution/docs> for details on supported options, operating systems, etc.

Hardware plus software licenses

HP CloudSystem Expansion (CS700x) Kit

G6X22A

HPE ConvergedSystem 700x CloudSystem Expansion Block (Hardware Components) includes:

- HPE BladeSystem c7000 Platinum enclosure and 10 fans
- HPE BladeSystem c7000 Onboard Administrator with KVM option, redundant pair

HPE Virtual Connect Option (required):

- HPE Virtual Connect FlexFabric 10Gb 24-port Module, redundant pair
- HPE Virtual Connect FlexFabric-20/40 F8 Module, redundant pair

c7000 Power Option (required choice of one):

- Single phase (QTY of 6)
- 3-Phase (QTY of 6)
- DC Power (QTY of 6)

HPE Helion CloudSystem Software (required choice of one)

HPE Helion CloudSystem 10 Foundation 8-server 3yr Support LTU

F9D68C

HPE Helion CloudSystem 10 Foundation 16-server 3yr Support LTU

D4T97C

HPE Helion CloudSystem 10 Enterprise 8-server 3yr Support LTU

F9D67C

HPE Helion CloudSystem 10 Enterprise 16-server 3yr Support LTU

D4T98C

NOTE: HPE Helion CloudSystem Enterprise software can be used to manage cloud services under a per server license.

NOTE: Following are the VC FlexFabric transceiver/SFP options.

HPE BladeSystem c-Class 10Gb SFP+ SR Transceiver

455883-B21

HPE BladeSystem c-Class 10Gb SFP+ LR Transceiver

455886-B21

HPE BladeSystem c-Class 10Gb SFP+ LRM Transceiver

455889-B21

HPE BladeSystem c-Class Virtual Connect 1G SFP SX Transceiver

453151-B21

HPE BladeSystem c-Class Virtual Connect 1G SFP RJ-45 Transceiver

453154-B21

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HPE 8Gb Shortwave B-series Fibre Channel 1 Pack SFP+ Transceiver	AJ716B
HPE 8Gb Long Wave B-series 10km Fibre Channel 1 Pack SFP+ Transceiver	AJ717A
HPE 8Gb Short Wave Fibre Channel SFP+ 1 Pack	AJ718A
HPE 4Gb Short Wave B-series Fibre Channel 1 Pack SFP Transceiver	AJ715A
HP 4Gb Long Wave B-series 30km Fibre Channel SFP Transceiver 1 Pack	AN211A

Implementation Service

HPE CloudSystem Matrix Expansion Kit Implementation Service	UU959E
HPE Helion CloudSystem Expansion Kit - Implementation Service, Flexible	HA115A1-5P9

NOTE: The Expansion Kit Integration Implementation Service is required for any purchased Expansion Kit being added to an existing CloudSystem built on ConvergedSystem 700x environment. The Expansion Kit Integration Service supports the integration of up to four CloudSystem built on ConvergedSystem 700x Expansion Kits into the existing CloudSystem built on ConvergedSystem 700x environment.

NOTE: The Expansion Kit Integration Implementation Service is required for any purchased Expansion Kit being added to an existing CloudSystem built on ConvergedSystem 700x environment. The Expansion Kit Integration Service supports the integration of up to four CloudSystem built on ConvergedSystem 700x Expansion Kits into the existing CloudSystem built on ConvergedSystem 700x environment.

Step 4: Select Recommended options for HPE Helion CloudSystem built on ConvergedSystem 700x Kits

NOTE: Supported options may be added to the Starter or Expansion Kit as desired.

NOTE: For additional options, please refer to the "Additional Options" section below. For additional blade enclosures, interconnect options, and power subsystem options, please refer to the following QuickSpecs:

HPE BladeSystem c7000 Enclosure QuickSpecs:

http://h18000.www1.hp.com/products/QuickSpecs/12810_div/12810_div.html

and HPE BladeSystem c-Class Interconnect and Mezzanine Components:

<http://www.hpe.com/info/cloudsystem/solution/docs>

BladeSystem c-Class HPE ProLiant server blades

target server blades **NOTE:** All shipping HPE ProLiant c-Class blades are supported except the HPE ProLiant BL2x220c server blades and workstation blades. For server blade information, please visit: <http://www.hpe.com/info/qs>

NOTE: It is highly recommended that at least four (4) additional HPE ProLiant c-Class blades be ordered with each Starter Kit, because the Onsite Implementation Service includes provisioning of up to four (4) HPE ProLiant blades, two of which are directly provisioned as physical servers and two of which are virtual machine hosts. See separate section on "HPE CloudSystem Solution Installation and Startup Service" for details.

NOTE: HPE ProLiant server blades should be configured to connect via the Virtual Connect modules included in the CloudSystem built on ConvergedSystem 700x kits. See the section below on Mezzanine options for

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further details.

NOTE: The HPE BladeSystem c7000 Enclosure holds up to 16 half-height blades. Server blanks will be shipped in all empty bays.

Interconnect options **NOTE:** The Virtual Connect interconnect modules that are built in to the Starter and Expansion kits are not removable. Interconnect bays 3 and 4 are available for additional Virtual Connect (VC) FlexFabric modules in HPE CloudSystem with FlexFabric Starter and Expansion kits. Additional supported interconnected options may be added to the remaining available interconnect bays (bays 5/6 and 7/8).

NOTE: For supported CloudSystem built on ConvergedSystem 700x interconnect options, see the Compatibility Chart at:

<http://www.hpe.com/info/cloudsystem/solution/docs>.

NOTE: For HPE 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>

HPE Networking **NOTE:** For servers that require one FlexibleLOM to be installed in the FlexibleLOM connector. All FlexibleLOMs are dual port: One port is routed to interconnect module bay 1 and the other to bay 2. For supported CloudSystem FlexibleLOM options, see the Compatibility chart at:

<http://www.hpe.com/info/cloudsystem/solution/docs>.

FlexibleLOM Adapters

HPE FlexFabric 10Gb 2-port 536FLB FIO Adapter	766491-B21
HPE FlexFabric 10Gb 2-port 554FLB FIO Adapter	684212-B21
HPE FlexFabric 20Gb 2-port 630FLB FIO Adapter	700066-B21
HPE FlexFabric 20Gb 2-port 650FLB FIO Adapter	700764-B21

Mezzanine Options **NOTE:** For supported CloudSystem mezzanine options, see the Compatibility chart at <http://www.hpe.com/info/cloudsystem/solution/docs>

Converged Network Adapter Mezzanines

HP FlexFabric 10Gb 2-port 554M Adapter	647590-B21
HPE FlexFabric 20Gb 2-port 630M Adapter	700076-B21
HPE FlexFabric 20Gb 2-port 650M Adapter	700767-B21

NOTE: Required for each server blade connecting to a VC FlexFabric module in bays 3-4 (i.e. when a CloudSystem built on ConvergedSystem 700x with FlexFabric Starter or Expansion kit is purchased with additional FlexFabric modules).

Proactive Care options for CloudSystem built on ConvergedSystem 700x Starter and Expansion Kits

NOTE: HPE 3Yr Proactive Care is the base support included with a CloudSystem built on ConvergedSystem 700x For additional choices, select from one of the support offers below.

NOTE: 3yr, 4yr and 5yr Care Pack durations are available to match the software subscription durations of the licenses.

HPE Proactive Care - 3yr, 4yr or 5yr

HPE Proactive Care: Keep your systems stabilized and optimized to achieve a high level of appliance availability through a superior call experience with end-to-

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end case management, advanced technical expertise, and proactive service management. Customize your reactive support level by selecting either 6 hour call-to-repair or 24x7 with 4 hour onsite response.

HPE Proactive Care Advanced Support Option: To enhance your Proactive Care experience, add the Proactive Care Advanced option. With this option, an assigned account services manager (ASM) will provide you personalized support. Operational and technical advice helps you meet your IT objectives. The work is guided through an agreed support plan and reviewed twice a year to enable alignment and proper focus on current and emerging issues.

5yr HPE Proactive Care Advanced 6hr CTR	H1K94A5 + H8B37A5
5yr HPE Proactive Care 6hr CTR	H1K94A5
4yr HPE Proactive Care Advanced 6hr CTR	H1K94A4 + H8B37A4
4yr HPE Proactive Care 6hr CTR	H1K94A4
3yr HPE Proactive Care Advanced 6hr CTR	H1K94A3+ H8B37A3
3yr HPE Proactive Care 6hr CTR	H1K94A3
5yr HPE Proactive Care Advanced 6hr CTR w/DMR	H1K95A5 + H8B38A5
5yr HPE Proactive Care 6hr CTR w/DMR	H1K95A5
4yr HPE Proactive Care Advanced 6hr CTR w/DMR	H1K95A4 + H8B38A4
4yr HPE Proactive Care 6hr CTR w/DMR	H1K95A4
3yr HPE Proactive Care Advanced 6hr CTR w/DMR	H1K95A3 + H8B38A3
3yr HPE Proactive Care 6hr CTR w/DMR	H1K95A3
5yr HPE Proactive Care Advanced 24x7	H1K92A5 + H8B35A5
5yr HPE Proactive Care 24x7	H1K92A5
4yr HPE Proactive Care Advanced 24x7	H1K92A4 + H8B35A4
4yr HPE Proactive Care 24x7	H1K92A4
3yr HPE Proactive Care Advanced 24x7	H1K92A3 + H8B35A3
3yr HPE Proactive Care 24x7	H1K92A3
5yr HPE Proactive Care Advanced 24x7 w/DMR	H1K93A5 + H8B36A5
5yr HPE Proactive Care 24x7 w/DMR	H1K93A5
4yr HPE Proactive Care Advanced 24x7 w/DMR	H1K93A4 + H8B36A4
4yr HPE Proactive Care 24x7 w/DMR	H1K93A4
4yr HPE Proactive Care 24x7 w/DMR	H1K93A3 + H8B36A3
3yr HPE Proactive Care Advanced 24x7 w/DMR	H1K93A3
3yr HPE Proactive Care 24x7 w/DMR	H1K93A3

HPE Proactive Select - 3yr, 4yr or 5yr

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NOTE: Proactive Select can be added to other support offers to provide an assigned account support manager focused on technical and operational improvements specific to your business environment.

NOTE: With HPE Proactive Select, you purchase credits that can be applied to any proactive service from our extensive menu that spans the entire lifecycle of your IT environment. For example, help with implementing a new technology, or proactive notification of critical network service problems.

NOTE: Available in packages of service credits, redeem them as you go, choosing the proactive services you need to fit your environment and critical IT and business goals.

NOTE: Care Pack Services for different duration and credit sizes are listed below.

HPE 3Y Proactive Select 30 credits SVC	HK696A3
HPE 3Y Proactive Select 90 credits SVC	HG921A3
HPE 3Y Proactive Select 180 credits SVC	HG922A3
HPE 3Y Proactive Select 540 credits SVC	HG923A3
HPE 3Y Add 10 Proactive Select Credit SVC	HG924A3
HPE 4Y Proactive Select 50 credits SVC	HK696A4
HPE 4Y Proactive Select 150 credits SVC	HG921A4
HPE 4Y Proactive Select 300 credits SVC	HG922A4
HPE 4Y Proactive Select 900 credits SVC	HG923A4
HPE 4Y Add 10 Proactive Select Credit SVC	HG924A4
HPE 5Y Proactive Select 50 credits SVC	HK696A5
HPE 5Y Proactive Select 150 credits SVC	HG921A5
HPE 5Y Proactive Select 300 credits SVC	HG922A5
HPE 5Y Proactive Select 900 credits SVC	HG923A5
HPE 5Y Add 10 Proactive Select Credit SVC	HG924A5

Hypervisor Licensing

VMware vSphere Enterprise Plus licenses for CloudSystem

NOTE: Buy one per HPE Helion CloudSystem built on ConvergedSystem 700x Starter/Expansion kit (supports up to 32 processor sockets).

VMware vSphere Installation & Startup Enterprise Service, Flexible	HA124A1#5NS
HPE Startup Vmware Vsphere Enterprise Service	UK837E

VMware vCenter Server Standard for vSphere

VMware vCenter Standard for vSphere 1yr No Media License	571780-B21
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NOTE: vCenter is licensed per instance (one needed per management domain).

NOTE: This does not include VMware vCenter for vSphere implementation services, which may be purchased separately.

VMware vSphere Enterprise Plus individual licenses, per processor socket

VMware vSphere Enterprise Plus 1P 1yr 9x5 No Media License	571774-B21
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NOTE: Includes technical support and updates for 1 year. For more

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information, see:

<http://h18006.www1.hp.com/products/servers/software/vmware/index.html>

NOTE: One instance of VMware vCenter Server (see below) is required to enable vSphere features such as VMware VMotion, VMware Distributed Resource Scheduler, and more.

Microsoft Windows Server 2008 with Hyper-V licenses

	Windows Server 2008 Enterprise Edition OS Not Pre-Installed, FIO (includes 4 Hyper-V licenses)	468723-B21
Factory Express	HPE Rack Signal Cable Interconnect Service	HA865A1
	NOTE: Required selection when storage or switching is Factory integrated in the same rack.	

Step 5: Choose Additional Options for Factory Integration

Power Distribution

Units

Modular PDUs 1U/0U (Up to 28 outlets)

NOTE: 1U/0U mounting brackets shipped with the unit (optimized for 10000 G2 and 9000 series racks).

HPE Basic Modular 3Ph 17.3kVA/60309 60A 4-wire 48A/208V Outlets (6) C19/Horizontal NA/JP PDU	AF511A
HPE Basic Modular 3Ph 22kVA/60309 5-wire 32A/230V Outlets (6) C19/Horizontal INTL PDU	AF518A
HPE Basic Modular 3Ph 8.6kVA/L15-30P 24A/208V Outlets (6) C19/Horizontal NA/JP PDU	AF512A
HPE Basic Modular 3Ph 11kVA/60309 5-wire 16A/230V Outlets (6) C19/Horizontal INTL PDU	AF513A
HPE Basic Modular 8.3kVA/CS8265C 40A/208V Outlets (4) C19/Horizontal NA/JP PDU	252663-D75
HPE Basic Modular 9.2kVA/60309 63A 3-wire 40A/230V Outlets (4) C19/Horizontal INTL PDU	252663-B34
HPE Basic Modular 7.3kVA/60309 3-wire 32A/230V Outlets (4) C19/Horizontal INTL Core Only PDU	252663-B33
HPE Basic Modular 4.9kVA/L6-30P 24A/208V Outlets (4) C19/Horizontal NA/JP Core Only PDU	252663-D74
NOTE: The Core Only Modular Power Distribution Unit Kits excludes the extension bars as they are not required with the HPE BladeSystem.	
HPE Two C13 PDU Extension Bar	AF500A

NOTE: Each extension bar has a C19 input and 7 C13 receptacles. The option is ideal for model S348, and, model S332, which both have only C19 outlets (12) and for all Core Only Modular PDUs.

HPE PCI expansion blades

HPE BLc PCI Expansion Blade	448018-B21
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NOTE: Please see the QuickSpecs for Technical Specifications and additional information:

<https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04123380>
(Worldwide)

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

Signal Cables

Optical Cables

HPE LC to LC Multi-mode OM3 2-Fiber 0.5m 1-Pack Fiber Optic Cable AJ833A

HPE LC to LC Multi-mode OM3 2-Fiber 1.0m 1-Pack Fiber Optic Cable AJ834A

HPE LC to LC Multi-mode OM3 2-Fiber 2.0m 1-Pack Fiber Optic Cable AJ835A

HPE LC to LC Multi-mode OM3 2-Fiber 5.0m 1-Pack Fiber Optic Cable AJ836A

HPE LC to LC Multi-mode OM3 2-Fiber 15.0m 1-Pack Fiber Optic Cable AJ837A

HPE LC to LC Multi-mode OM3 2-Fiber 30.0m 1-Pack Fiber Optic Cable AJ838A

HPE LC to LC Multi-mode OM3 2-Fiber 50.0m 1-Pack Fiber Optic Cable AJ839A

NOTE: For VC Ethernet 10Gb uplinks

NOTE: For VC Fibre Channel uplinks

NOTE: For NC550SFP 10Gb dual port NIC uplinks in the CloudSystem CMS

NOTE: Optical transceivers/SFP+ must be purchased to connect these cables.

HPE 10Gb SFP+ cables

HPE BladeSystem c-Class 10GbE SFP+ to SFP+ 0.5m Direct Attach Copper Cable 487649-B21

HPE BladeSystem c-Class 10GbE SFP+ to SFP+ 1m Direct Attach Copper Cable 487652-B21

HPE BladeSystem c-Class 10GbE SFP+ to SFP+ 3m Direct Attach Copper Cable 487655-B21

HPE BladeSystem c-Class 10GbE SFP+ to SFP+ 5m Direct Attach Copper Cable 537963-B21

HPE BladeSystem c-Class 10GbE SFP+ to SFP+ 7m Direct Attach Copper Cable 487658-B21

HPE X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable J9281B

HPE ProLiant Inside/Datacenter Extra Large Logistic Service AC133A

HPE X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable J9285B

HPE X244 10G XFP to SFP+ 1m Direct Attach Copper Cable J9300A

HP 10G X244 XFP to SFP+ 3m Direct Attach Copper Cable J9301A

HP 10G X244 XFP to SFP+ 5m Direct Attach Copper Cable J9302A

HPE B-series SFP+ to SFP+ Active Copper 1.0m Direct Attach Cable AP818A

HPE B-series SFP+ to SFP+ Active Copper 3.0m Direct Attach Cable AP819A

HPE B-series SFP+ to SFP+ Active Copper 5.0m Direct Attach Cable AP820A

NOTE: For VC stacking between enclosures. 2 short links per Expansion kit, and 2 long links per CloudSystem rack (i.e. VC domain) is recommended.

NOTE: For VC Ethernet module uplinks (if Ethernet switch supports this uplink)

NOTE: For NC550SFP 10Gb dual port NIC uplinks in the CloudSystem CMS (if Ethernet switch supports this uplink)

1Gb Ethernet (CAT5e) cables

HPE 1.2m/4ft CAT5 RJ45 M/M Ethernet Cable C7533A

HPE RJ45 to RJ45 Cat5e Black M/M 7.6ft 1-pack Data Cable C7535A

HPE 4.3m/14ft CAT5 RJ45 M/M Ethernet Cable C7536A

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HPE 7.6m/25ft CAT5 RJ45 M/M Ethernet Cable C7537A

HPE 15.2m/50ft CAT5 RJ45 M/M Ethernet Cable C7542A

NOTE:NOTE: For OA/iLO port uplinks to Ethernet switch (2 for each BladeSystem c7000 Enclosure, 1 for each CloudSystem CMS SKU or HPE ProLiant DL server)

NOTE: For OA enclosure linking (1 short link per Expansion Kit recommended).

NOTE: For OA/iLO port uplinks to Ethernet switch (2 for each BladeSystem c7000 Enclosure, 1 for each CloudSystem CMS SKU or HPE ProLiant DL server).

NOTE: For 1Gb NIC uplinks to CloudSystem CMS SKU (optional, up to 4).

NOTE: For iSCSI device uplinks when present.

Power cords

HPE C19 - C20 Jumper Cords

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

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

HPE 2.0m 250V 16A C19-C20 WW 3PC Kit IPD Enabled Jumper Cord TK739A

HPE 2.5m 250V 16A C19-C20 WW Single IPD Enabled Jumper Cord TK740A

HPE 2.5m 250V 16A C19-C20 WW 3PC Kit IPD Enabled Jumper Cord TK741A

HPE 3.0m 250V 16A C19-C20 WW Single IPD Enabled Jumper Cord TK742A

HPE 3.0m 250V 16A C19-C20 WW 3PC Kit IPD Enabled Jumper Cord TK743A

HPE 1.37m 250V 16A C19-C20 WW Single IPD Enabled Jumper Cord TK744A

HPE 1.37m 250V 16A C19-C20 WW 3PC Kit IPD Enabled Jumper Cord TK745A

HPE HV Power Cords 200 - 240V AC

HPE C19 - Nema 5-15 US/CA 125V 15Amp 3.6m Power Cord 235603-001

HPE 12ft 20A 250V Nema 6-20P/IEC320-C19 Power Cord 235604-001

HPE C19 - C20 WW 250V 16Amp 2.5m Jumper Cord 295633-B22

HPE C19 - BS-1363/A UK/HK/SG 250V 13Amp 3.6m Power Cord 359615-031

HPE C19 - JIS C8303 JP 100V 12Amp 3.6m Power Cord 391222-291

HPE C19 -Nema L6-30P US/CA 250V 16Amp 4.5m Power Cord E7805A

HPE C19 - Nema L6-20P NA/JP 250V 20Amp High Voltage 3.6m Power Cord AF593A

HPE C19 - NBR-14136 BR 250V 16Amp 2.5m Power Cord AF592A

HPE C19 - CEE-VII EU 250V 16Amp 3.6m Power Cord AF576A

HPE C19 - AS3112-3 AU/NZ 250V 15Amp 3.6m Power Cord AF577A

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HPE C19 - SABS-164 ZA 250V 16Amp 3.6m Power Cord	AF579A
HPE C19 - CEI-23-50 IT/CL 250V 16Amp 3.6m Power Cord	AF580A
HPE C19 - IEC-309 DK/SE/AR 250V 16Amp 3.6m Power Cord	AF581A
HPE C19 - IS-1293 IN/PK/BD 250V 16Amp 2.5m Power Cord	AF582A
HPE C19 - ISI-32 IL 250V 16Amp 2.5m Power Cord	AF583A
HPE C19 - GB-1002 CN 250V 16Amp 2.5m Power Cord	AF584A
HPE C19 - CNS-690 TW 250V 16Amp 2.5m Power Cord	AF585A
HP C19 - Nema 5-15P TH-PH 125V 15Amp 3.6m Power Cord	AF586A
HPE C19 - NBR-14136 BR 250V 16Amp 2.5m Power Cord	AF592A
HPE C19 - Nema L6-20P NA/JP 250V 20Amp High Voltage 3.6m Power Cord	AF593A
HPE C19 - Nema 5-20P US/CA 125V 20Amp 4.5m Power Cord	E7802A
HPE C19 - C20 WW 250V 16Amp 4.5m Jumper Cord	E7804A
HPE 240 VAC 4.5M Unterminated End NA Power Cord HP C19 - CNS-690 TW 250V 16Amp 2.5m Power Cord	E7806AAAF585A
HPE Rack Mounted R5500 UPS (single-phase)	
HPE 240 VAC 4.5M Unterminated End NA Power Cord	E7806A
HPE Rack Mounted R8000 UPS (3-phase UPS)	
HPE R8000/3 8000kVA Three Phase NA 6U Rackmount Uninterruptible Power System	AF431A
HPE R8000/3 8000kVA Three Phase INTL 6U Rackmount Uninterruptible Power System	AF432A
HPE Rack Mounted R12000 UPS (3-phase UPS)	
HPE R12000/3 12000VA Three Phase NA 6U Rackmount Uninterruptible Power System	AF429A
HPE R12000/3 12000VA Three Phase INTL 6U Rackmount Uninterruptible Power System	AF430A

NOTE: For more information on the HPE 3-Phase UPS products please consult the QuickSpecs at:

<https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04123376>
(Worldwide)

Additional Options

HPE Rack Series

HPE Intelligent Series Rack

HPE 42U 600mm x 1075mm Enterprise Shock Rack	BW904A
HPE 42U 600mm x 1075mm Enterprise Pallet Rack	BW903A
HPE 42U 600mm x 1200mm Enterprise Shock Rack	BW908A
HPE 47U 600mm x 1075mm Enterprise Shock Rack	BW912A
HPE 47U 600mm x 1200mm Enterprise Shock Rack	BW914A
HPE 42U 600mm x 1200mm Enterprise Pallet Rack	BW907A
HPE 47U 600mm x 1075mm Enterprise Pallet Rack	BW911A
HPE 47U 600mm x 1200mm Enterprise Pallet Rack	BW913A

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

<https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04123237>
(Worldwide)

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

HPE Rack Options

HPE KVM Switch Options

HP BladeSystem c-Class KVM Interface Adapter	AF605A
HP KVM CAT5 1-pack PS/2 Interface Adapter	262588-B21

NOTE: Cat5e cables are required to connect Interface Adapters to Consoles Switches. Cat52 cables can be found at the following URL:

<http://www.hp.com/go/kvm>

HP 1x4 USB/PS2 KVM Console Switch	AF611A
HP 1x4 KVM Console 6ft PS2 Cable	AF612A
HP 1x4 KVM Console 6ft USB Cable	AF613A

NOTE: required for supporting USB peripherals.

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>

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

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

Additional Options

Rack options for HPE 10000 G2 Series racks

HP 10K G2 600W Heavy Duty Graphite Stabilizer Kit AF064A

Rack options for HPE Intelligent Series racks

HPE Rack Grounding Kit BW891A

HPE Rack Baying Kit BW902A

HP 42U 1075mm Side Panel Kit BW906A

HPE 600mm Rack Tie Down Kit BW926A

HPE 600mm Rack Stabilizer Kit BW932A

HPE 42U Front Door Kit BW934A

HPE Quarter Turn Hook and Loop 10 Pack Kit BW963A

HPE Quarter Turn Hook and Loop 100 Pack Kit BW964A

Rack options for HPE Intelligent Series racks

HPE Rack Grounding Kit BW891A

HPE Rack Baying Kit BW902A

HPE 600mm Rack Tie Down Kit BW926A

HPE 600mm Rack Stabilizer Kit BW932A

HPE 42U Front Door Kit BW934A

HPE Quarter Turn Hook and Loop 10 Pack Kit BW963A

HPE Quarter Turn Hook and Loop 100 Pack Kit BW964A

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

Infrastructure Software On-site Services

HPE Hardware Install c-Class Enclosure and Server Blade Service UE494E

NOTE: This is recommended to assist with onsite racking and cabling of CloudSystem enclosures into a rack, particularly when CloudSystem kits are purchased without a rack.

HPE Install c7000 Enclosure and Server Build Service, Flexible HA113A1#5FY

NOTE: This is recommended to assist with onsite racking and cabling of CloudSystem enclosures into a rack, particularly when CloudSystem kits are purchased without a rack.

HPE Additional Technical Assistance HA334A1

NOTE: This service provides the capability to customize tasks and activities including assistance with design, implementation, migration, and project

Additional Options

management.

HPE Education Services Training Credits

NOTE: Hewlett Packard Enterprise recommends the client purchase the optional 13 education credits (SKU# HF385E or HF385A1) found on every CloudSystem quote.

One unit of HF385E/HF385A1 HPE Education Training Credit will cover one day of training per student. Specific training recommendations for a given client will vary depending on the customer's existing knowledge and experience. Adjust the quantity of Education Training Credits –as needed.

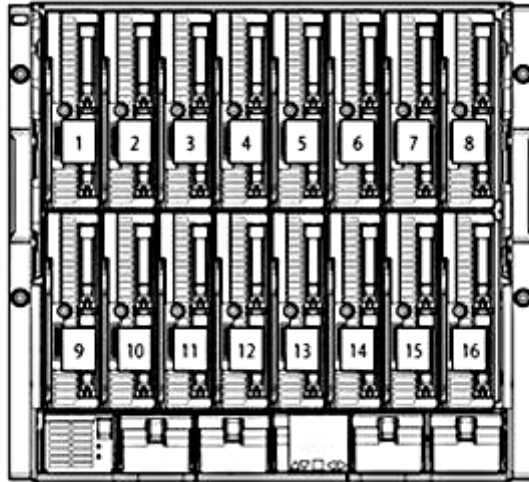
Select HPE Helion CloudSystem training from the list below:

HPE Helion CloudSystem Foundation	3 days	H4C05s
HPE Helion CloudSystem Enterprise	2 days	H4C08s
Cloud Service Automation 4.X Essentials (CSA120)	4 days	H4S74s
Operations Orchestration 10.x Flow Development (00220)	4 days	H4S75s
Fundamentals of OpenStack® Technology *	3days	H6C68s
HP Helion OpenStack® (HOS 2.0) - <i>optional</i>	3 days	H8Q14s

WW HPE Education Curriculum map at <http://h10076.www1.hp.com/education/curr-helion-cloudsystem.html>

Power Specifications

Half-height server blade bay numbering

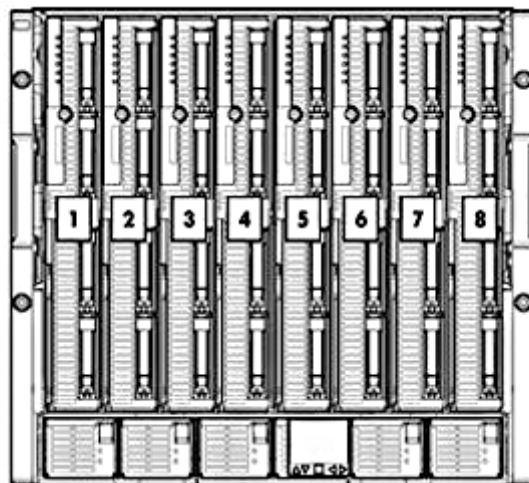


1. Device Bay 1
2. Device Bay 2
3. Device Bay 3
4. Device Bay 4
5. Device Bay 5
6. Device Bay 6
7. Device Bay 7
8. Device Bay 8

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

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

Full-height server blade bay numbering



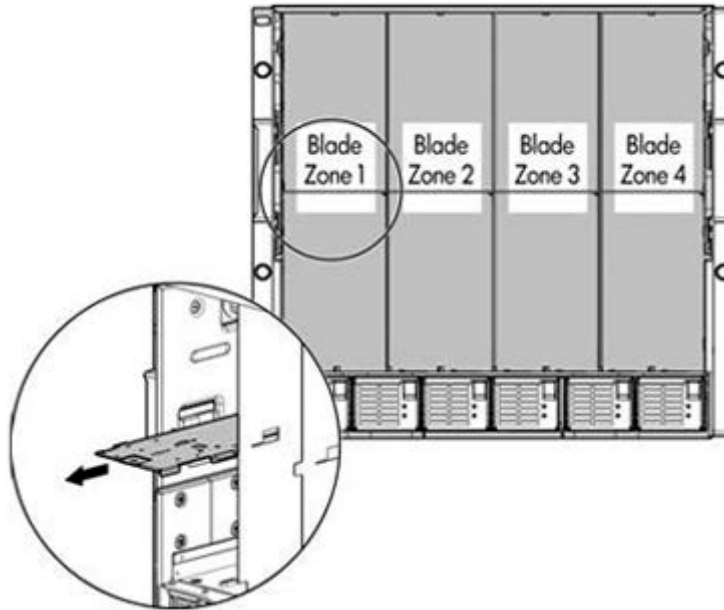
1. Device Bay 1
2. Device Bay 2
3. Device Bay 3
4. Device Bay 4

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

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

Power Specifications

Mixed Configuration - Full Height and Half-Height Population rules



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

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

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

HPE BladeSystem c7000 enclosure	Dimensions	Height	17.4 in (442 mm)
		Width	17.6 in (447.04 mm)
Depth		32 in (813 mm)	
Shipping dimensions	Height	29.88 in (759 mm)	
	Width	23.88 in (607 mm)	
	Depth	39.88 in (1013 mm)	
Single-phase enclosure weight	Unboxed	192 lb (87 kg)	
	Shipping	235 lb (106.6 kg)	
Three -phase enclosure NA/JPN weight	Unboxed	222 lb (100.7 kg)	
	Shipping	265 lb (120.2 kg)	
Three-phase enclosure international weight	Unboxed	222 lb (100.7 kg)	
	Shipping	265 lb (120.2 kg)	
DC input enclosure weight	Unboxed	151 lb (68.5 kg)	
	Shipping	194 lb (88 kg)	
Maximum enclosure weight (approximate)	Unboxed	450 lb (204 kg)	
	Shipping	493 lb (223.6 kg)	
Temperature range	Operating	50° to 95° F (10° to 35° C)	
	Non-Operating	-22° to 140° F (-30° to 60° C)	
Relative humidity	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non- condensing.	
	Non-Operating	5 to 95% relative humidity (Rh), 38.7°C	

Power Specifications

(101.7°F)maximum wet bulb temperature, non-condensing.

NOTE: Operating temperature has an altitude derating of 1.8° F (1° C) per 1,000 ft (304.8 m). No direct sunlight. Upper operating limit is 10,000 ft (3,048 m) or 70Kpa/10.1 psia. Upper non-operating limit is 30,000 ft (9,144 m) or 30.3 KPa/4.4 psia. Storage maximum humidity of 95% is based on a maximum temperature of 113° F (45° C). Altitude maximum for storage is 70 KPa.

Power	Input requirements - single-phase model	Rated input frequency	50 to 60 Hz	
		2250W PSU	Rated input voltage	100 to 120 VAC 200 to 240 VAC
			Rated input current per power supply	12.3A at 100 - 120 VAC 13.1 A at 200 VAC 12.6 A at 208 VAC 11.9 A at 220 VAC
		2400W PSU	Rated input power per power supply	2612 VA Max
	Power cords	Single-Phase	IEC-320 C19-C20 1.22m (6 ft)	
		3-Phase NA/JPN	2 x NEMA L15-30p 2.44m (10 ft)	
		3-Phase International	2 x IEC-309 200/346 V - 240/415 V, 5-Pin, 6h 16A 2.44m (10 ft)	
		-48V DC Power	Terminal lug: 45DG 4AWG 1/4 2H Two-hole lug 45 degree bend 0.25in. (6.4mm) stud hole size 0.63in. (16mm) hole spacing	
	Output specifications (per power supply)	HPE 2250W Hot-Plug Power Supply	200 - 240 VAC 2250 W 100 - 120 VAC 960 W	
		HPE 2400W High Efficiency Hot-Plug Power Supply	200 - 240 VAC 2400 W	
HPE 2250W -48V DC Hot-Plug Power Supply		2250W		
Acoustic noise	Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).			
	Idle			
	LWAd	7.5 Bels		
	LpAm	57 dB		
	Idle			

Power Specifications

LWAd	7.5 Bels
LpAm	57 dB

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The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard Enterprise web site at: <http://www.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.

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>

Summary of Changes

Date	Version History	Action	Description of Change
23-Oct-2017	From Version 9 to 10	Changed	Care Pack naming and Service and Support- Parts and Materials updated.
15-Aug-2016	From Version 8 to 9	Changed	Updated CloudSystem SW ordering numbers, updated descriptions
19-Feb-2016	From Version 7 to 8	Added	Added a title "HPE Education Services Training Credits" on the additional option section
29-Jan-2016	From Version 6 to 7	Changed	Changes made to the Additional Options Section
24-Sept-2015	From Version 5 to 6	Changed	Changes made throughout all QuickSpecs
24-Apr-2015	From Version 4 to 5	Changed	Changes made to the Ordering CloudSystem section
12-Dec-2014	From Version 3 to 4	Added	Add "Helion" to the naming to ensure latest branding guidelines.
		Changed	SKUs Descriptions were updated
		Removed	Obsolete SKUs were removed
21-Aug-2014	From Version 2 to 3	Changed	Changes made throughout all QuickSpecs. Removed Obsolete SKU 's
16-may-2014	From Version 1 to 2	Changed	Product descriptions were revised throughout Ordering CloudSystem Matrix.



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