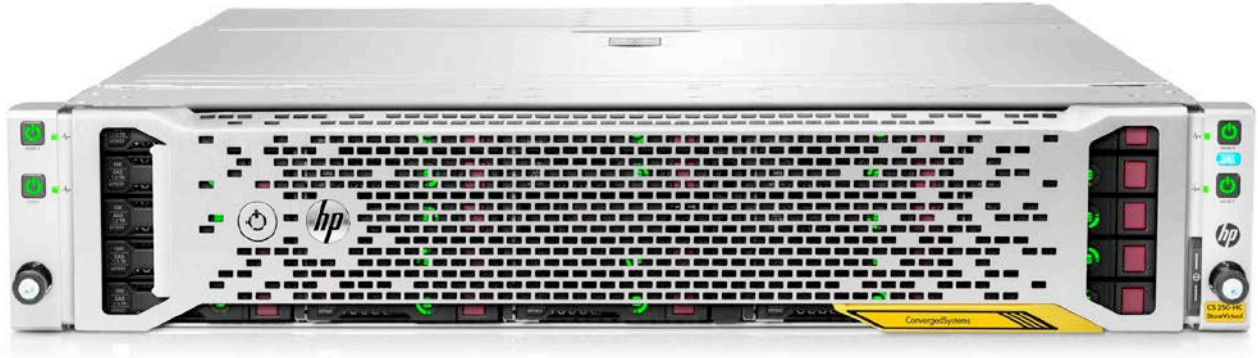# QuickSpecs

Overview

HPE Hyper Converged 250 System

For customers who are looking for a simple, agile and highly available virtualization system, the new Hyper Converged 250 family eliminates complex solution stacks. It combines a powerful Apollo server platform and mature StoreVirtual data services from Hewlett Packard Enterprise into one building block to simplify the delivery of virtualized servers and desktops. The Hyper Converged 250 family now supports VMware and Microsoft virtualization technologies, and continues to provide a turn-key virtualization solution for medium-sized businesses, enterprises, and IaaS providers.

Designed from the ground up for the software-defined data center, the HC 250 enables a standardized, appliance approach to virtual server deployment, regardless of whether it is used as a primary virtualization platform in medium-sized businesses or as a dedicated resource pool for specific applications in the enterprise. Unlike other hyper-converged systems on the market, the HC 250 can be customized and ready for virtualized workloads in a few simple clicks.

All hardware and software components are pre-installed and pre-integrated by Hewlett Packard Enterprise and quick customization using the OneView InstantOn software enables faster time to value that is unique to the HC 250 family. After the initial installation, IT administrators manage their virtualized environment within VMware vCenter Server and OneView for vCenter, or with Microsoft System Center user interfaces and HPE OneView for System Center management integrations.

StoreVirtual technology that is built into the HC 250 matches the high-availability features of the hypervisor (VMware Fault Tolerance, VMware High Availability, or Windows Failover Cluster) from a storage perspective to provide enterprise-level availability for virtualized applications and services. HC 250 provides superior high-availability beyond a single system, rack and even data center. As the storage components are vSphere Metro Storage Cluster (vMSC) certified, the HC 250 is the a great fit for stretched VMware vSphere clusters.

What's New

- More economical starting points and increments for the HC 250 for VMware vSphere:
  Two-node configurations and 1GbE as primary networking connectivity option for smaller installations, like remote and branch offices. Affordabily expand existing installations with two-nodes configurations and single nodes.
- HC 250 for Microsoft Cloud Platform System (CPS) Standard with integration to Windows Azure services .

Overview

At a glance - HPE Hyper Converged 250

- HPE Hyper Converged 250 System comprises two products that support VMware or Microsoft virtualization technologies Hyper Converged 250 for VMware vSphere and Hyper Converged 250 for Microsoft Cloud Platform System Standard
- Compact form factor: Hyper-converged computing solutions in 2U form-factor with up to 4 nodes in a system chassis
- Grow by adding single nodes to a chassis with empty slots on the HC 250 for VMware vSphere
- Easy to install and use for medium-sized businesses and in the enterprise
  - Simple guided setup with HPE OneView InstantOn
  - Day to day management
    - HC 250 for VMware vSphere:
      VMware vCenter Server with HPE OneView for vCenter Server plug-ins
    - HC 250 for Microsoft Cloud Platform System Standard:
      Microsoft System Center with HPE OneView for Microsoft System Center plug-ins
- Pre-integrated virtualization platform powered by industry-leading virtualization software with data services from HPE StoreVirtual
  - Built with VMware vSphere 5.5 or 6.0
    - Pre-integrated components: VMware vSphere, VMware vCenter
    - Valid VMware vSphere Enterprise or higher and vCenter Standard licenses are required; see notes below
  - Built with Microsoft Cloud System Platform Standard
    - Pre-integrated components: Microsoft Windows Server 2012 R2 Datacenter, Hyper-V, System Center, System Center Operations Manager, System Center Virtual Machine Manager
    - Valid Microsoft Windows Server 2012 R2 Datacenter and System Center 2012 R2 licenses are required and available separately
- Intel® Xeon® E5-2600v3 family processors for fast and efficient operation
- Superior high-availability and disaster recovery capabilities, powered by HPE StoreVirtual technology on top of the Microsoft virtualization platform; built-in features:
  - Adaptive Optimization for workload acceleration (only with Hybrid Storage option)
  - Network RAID 0, 5, 6, 10, 10+1, and 10+2[1]
  - Integrated Thin Provisioning
  - Virtual machine- and application-consistent snapshots
  - Multi-Site HA[2] (Synchronous Replication across several locations)
  - Remote Copy (Snapshot-based, asynchronous Replication with Bandwidth Throttling)
  - Storage federation with Hewlett Packard Enterprise Storage products
- Hardware Availability features
  - Hot-pluggable HDD and SSD (SSD in Hybrid Storage Configurations only)
  - Redundant power supplies
  - Integrated storage controller with battery-backed cache
  - Hyper-redundant clustered storage
- HPE ProLiant Integrated Lights-Out 4 Remote Management
- HPE Insight Remote Support delivers 24x7 secure remote support[3]
- Product is customer-installable and partner-serviceable;
  Hewlett Packard Enterprise recommends Proactive Care 24x7 for best support experience.

NOTES:[1] Network RAID 10 requires two or more HC 250 nodes, Network RAID 5, 10, 10+1 require three or more nodes.
[2] Multi-site or stretched cluster configuration requires additional setup in the StoreVirtual management software and may require additional planning and configuration for the VMware or Microsoft virtualization software.
[3] Configured for embedded Remote Support only (iLO 4) in Insight Remote Support; requires an external server for monitoring.

	HPE Hyper Converged 250

Overview

Virtualization Platform	for VMware vSphere	for Microsoft Cloud Platform System Standard
	VMware vSphere	Microsoft Hyper-V
Scalability	1-8 systems per resource pool[1] 2- or 4-node systems	1 system per resource pool 3- or 4-node systems
Rack Footprint	2U per system chassis	
Number of nodes	2, 3 or 4 identical nodes per system	3 or 4 identical nodes per system
Number of drives	6 drives per node (12 drives in a 2 node configuration, 18 drives for 3 node configuration, 24 drives for 4 node configuration)	6 drives per node (18 drives for 3 node configuration, 24 drives for 4 node configuration)
Raw Capacity	9.6 TB All-Flash Storage, or 6.4 TB Hybrid Storage per node[2], or 5.6 TB Hybrid Storage per node[2], or 7.2 TB Capacity Storage per node[2]	7.2 TB Capacity Storage per node[2]; or 5.6 TB Hybrid Storage per node[2]
CPUs	(2) Intel Xeon E5-2680v3 processors per node, or (1) Intel Xeon E5-2660v3 processor per node, or (2) Intel Xeon E5-2640v3 processors per node	(2) Intel Xeon E5-2680v3 processors per node, or (2) Intel Xeon E5-2640v3 processors per node
Memory	128 GB, 256 GB or 512 GB dual-rank x4 DDR4-2133 per node	
Storage Controller Cache	4 GB battery-backed write cache per node (one shared battery per system)	
Primary Network Connectivity	(2) 10GbE SFP+ ports[3] per node, or (4) 1GbE RJ45 ports per node	(2) 10GbE SFP+ ports[3] per node
Secondary Network Ports (Admin Only)	2x 1 GbE RJ-45 (1000BASE-T)[4] per node	
iLO ports	1 GbE RJ-45 (100BASE-T) per node	
Language	English (US)	
Power supplies	2x 1400W Platinum Plus Power Supplies (High-line AC only, 200-240V) in system	
Hardware Warranty, 9x5 NBD	1 year warranty covering parts[5], labor and on-site (1/1/1)	
Software Support, 9x5	1 year software support for HC 250 Software for VMware vSphere	1 year software support for HC 250 Software for Microsoft CPS
	VMware Software Support is included with valid VMware license purchase	Microsoft software support is included with valid Microsoft license purchase

NOTE: [1] HPE OneView InstantOn automates the setup of four systems (16 nodes) in one management zone. Adding additional four systems (total of 32 nodes in the same management zone) is a manual operation and not recommended in standard installations.

[2] Hewlett Packard Enterprise recommends Network RAID 10 protected volumes for production workloads. 4-node HC 250 for VMware vSphere systems with 5.6TB Hybrid Storage Configuration yields about 7.5TB usable Network RAID 10 protected capacity, or 11.5TB in a 4-node HC 250 for VMware vSphere with 7.2TB Capacity Storage Configuration; up to 500GB of storage pool capacity is pre-allocated for system management.

[3] SFP+ transceivers or DAC options not included for flexibility; can be purchased separately on the same order.

[4] One 1GbE port will be required for initial installation of the system.Customers are advised against changing the configuration of the pre-configured virtual switches. Secondary network connectivity cannot be used instead of primary network ports.

[5] Warranty for SSDs is subject to maximum usage limitations. Maximum usage limit: This is the maximum amount of data that

Overview

can be written to the drive. Drives that have reached this limit will not be eligible for warranty coverage.

NOTE: HPE recommends 10GbE connectivity for the HC 250 models and IPv6 capable network switching infrastructure. In an advanced configuration, customers can use configure secondary network ports for additional virtual machine networks; these ports are not intended and configured in a standard installation. Customers are advised against changing the configuration of the virtual switches. Hewlett Packard Enterprise recommends HPE Networking 5700 and 5900CP series switches for best results.

Features and Benefits

Unmatched ease of use for server virtualization

- **Storage Clustering simplifies scalability**
  Storage Clustering allows a customer to consolidate multiple storage nodes into pools of storage. All available capacity and performance is aggregated and available to every volume in the cluster. As storage needs increase the HC 250 can scale performance and capacity on-line.
- **Network RAID delivers new levels of data availability**
  Network RAID stripes and protects multiple copies of data across a cluster of storage nodes, eliminating any single point of failure in the HC 250. Applications have continuous data availability in the event of a disk, controller, storage node, power, network, or site failure. Choose the right Network RAID level for each data store containing virtualized workloads in the resource pool based on capacity and performance needs.
- **Thin Provisioning reduces costs by increasing storage efficiency**
  Thin Provisioning allocates space only as data is actually written without requiring pre-allocation of storage. This raises the overall utilization and efficiency of the HC 250, reduces costs and ultimately increases the ROI.
- **Application Integrated Snapshots**
  Snapshots create thinly provisioned, instant point-in-time copies of data on a per-volume basis. Administrators access snapshots to recover individual files from the volume, or rollback an entire volume. Built-in application integration provides automated quiescing for virtual machines on Microsoft Hyper-V or VMware vSphere: using the Application Aware Snapshot Manager, consistency can be extended from VM-consistent to application-consistent snapshots for VMs with Microsoft Windows.
- **Remote Copy reduces costs for disaster recovery**
  Remote Copy replicates snapshots between HC 250 and StoreVirtual-based devices arrays at primary and remote locations. Copies are thinly provisioned with no space reservation required. Remote Copy enables centralized backup and disaster recovery on a per-volume basis and leverages application integrated snapshots for faster recovery. Remote Copy makes the HC 250 the perfect fit for regional data centers. With additional StoreVirtual VSA licenses, turn any server with a hypervisor in a central site into a replication target for the HC 250 for enhanced business continuity. Using StoreVirtual VSA as replication target, allows for custom disaster recovery sits and failover can also be integrated with VMware Site Recovery Manager.
- **Adaptive Optimization provides SSD performance without SSD cost (available with Hybrid Storage only)**
  Auto-tiering technology for hybrid storage configurations on the HC 250 helps optimize cost and performance of clusters. By utilizing Adaptive Optimization technology to migrate data between storage tiers within individual storage systems, the HC 250 provides a unique method for balancing performance versus capacity within a storage pool and lowering overall cost.
- **Adding more storage resources on demand**
  Any StoreVirtual device (StoreVirtual VSA, StoreVirtual 4000) can be added to the same environment as HC 250. This allows for more flexibility when additional storage capacity, or storage with different performance characteristics is needed. Adding another storage pool is easy with the StoreVirtual's Centralized Management Console and HPE OneView integration into hypervisor management: External storage resources are provisioned the same way as resources internal to the HC 250 platform. Hewlett Packard Enterprise recommends StoreVirtual VSA Software or StoreVirtual 4335 Storage for additional storage.

Superior disaster recovery and flexibility

- **Integrated replication for disaster recovery**
  The Hyper Converged 250 includes integrated replication at no additional cost that simplifies management with simple failover and failback between primary production and a standby disaster recovery site. Additionally, the HC 250 for VMware vSphere includes the Site Recovery Adapter that integrates Remote Copy with VMware Site Recovery Manager.
- **Change configurations without incurring downtime**

Features and Benefits

Administrators can add capacity, increase performance, grow and migrate volumes between HC 250 clusters on the fly with no application downtime.

Scalable Performance

- **Purchase only what you need today**
  Avoid up-front cost and potential performance constraints. Purchase only what's needed today, then grow the performance, capacity, and redundancy of your HC 250 online as your requirements evolve. Simplify planning and budgeting processes by purchasing what you need, when you need it.
- **Scale performance and capacity simultaneously**
  Each time new nodes or systems are added to an HC 250 environment, the capacity, performance, and redundancy of the entire storage solution increases.
- **Avoid disruptive upgrades**
  Add resources to the HC 250 cluster non-disruptively as capacity and performance requirements increase. Applications remain online during maintenance events (adding nodes, updating software or firmware) for best in class availability.

Easy to manage virtualized environment

- **On-premise Azure cloud environments installed in record time**
  Customize the HC 250 for Microsoft CPS Standard to make it fit your environment with just a few mouse clicks. Using HPE OneView InstantOn software, you can set up host names, IP addresses, networking configuration, and Microsoft Azure Services.
- **Easy installation of entire vSphere environment within 15 minutes**
  Customize the HC 250 for VMware vSphere to make it fit your environment with just a few mouse clicks: Setup host names, IP address and networking configuration using the easy-to-use HPE OneView InstantOn software.
- **Easy day-to-day management with HPE OneView for System Center**
  With HPE OneView for System Center, virtualization administrators stay within the familiar hypervisor management interface. Provision new virtual machines, clone virtual machines and storage resources in the same interface that you use every day.
- **Centralized Management Console to manage the full range of StoreVirtual features**
  Multiple data centers and sites can be managed from an all-inclusive "single pane-of-glass." All of the HC 250 advanced data services are managed from the Centralized Management Console (CMC) for simple, easy-to-manage storage components in the HC 250.
- **Business continuity with integrated HA and DR**
  Every HC 250 includes integrated synchronous and asynchronous replication at no additional cost. This reduces costs and simplifies management of high availability/fault tolerant and disaster recovery storage solutions.

Family Information

Configuration overview

HPE Hyper Converged 250

Chassis, front view with 24 drives

Chassis, back view with 4 nodes

HPE Hyper Converged 250 System

System Hardware:

- Base chassis:
  (1) HPE Hyper Converged 250 System
  with (2) 1400W power supplies, power cables, redundant fans, rack rail kit and backup battery for storage controllers
  NOTE: For more detail, see configuration section for "HC 250 System for Microsoft Cloud Platform System Standard" for Microsoft virtualization, or "HC 250 for VMware vSphere" for environments with VMware vSphere.
  and up to (4) identically configured compute/storage nodes:
  Each node includes a SmartArray P440 Controller with 4GB cache and Advanced Pack, management ports with Integrated Lights-Out 4 with Advanced Management Pack, and 2x 1GbE ports. Each node requires (1) HPE Hyper Converged 250 Software LTU for Microsoft Cloud Platform System.
- Processor options per node:
  - (2) Intel Xeon E5-2680v3 CPUs
  - (2) Intel Xeon E5-2640v3 CPUs
  - (1) Intel Xeon E5-2660v3 CPUs

Family Information

- (HC 250 for VMware vSphere only)
- Memory options per node:
  - 128 GB dual-rank x4 DDR4-2133 (4 x 32 GB)
  - 256 GB dual-rank x4 DDR4-2133 (8 x 32 GB)
  - 512 GB dual-rank x4 DDR4-2133 (16 x 32 GB)
- Networking per node:
  - (2) 10GbE 2P SFP+ Network Adapter
  NOTE:10GbE networking is recommended (required for HC 250 for Microsoft CPS) and must be IPv6 capable. Cables and/or transceivers not included.
  - (1) 1GbE 4P RJ45 Network Adapter (HC 250 for VMware vSphere only)
- Storage options per node:
  - All Flash Storage: (6) 1.92 TB SSD SFF
  (HC 250 for VMware vSphere only)
  - Capacity Storage: (6) 1.2 TB 10K SAS SFF
  - Hybrid Storage:
    - (4) 1.2 TB 10K SAS SFF + (2) 480 GB SSD SFF, or
    - (4) 1.2 TB 10K SAS SFF + (2) 960 GB SSD SFF
    (HC 250 for VMware vSphere only)
  - Total of 12 disks in a two-node (HC 250 for VMware vSphere only),
  18 disks in a three-node, or 24 disks in a four-node configuration

What's in the Box:
(1) HPE Hyper Converged 250 System with pre-integrated components (see above),
Included accessories with system: Rail kit, HPE HC 250 Software licenses, EULA and supporting documentation.

NOTE: HPE Hyper Converged 250 for VMware vSphere requires valid VMware vSphere Enterprise or higher, and vCenter Standard licenses. VMware licenses can only be removed from the order if it is confirmed that the end-customer has a valid licenses in place (Enterprise License Agreement (ELA), vCloud Air Partner or unused Enterprise Purchasing Program tokens). Hewlett Packard Enterprise supports vSphere Enterprise, vSphere Enterprise Plus or Horizon on the HPE Hyper Converged 250. When quoting VMware Horizon for Hyper Converged 250 for VMware vSphere, only the vSphere hypervisor components are pre-integrated. Ordering systems automatically add 8x BD715A (vSphere Enterprise Plus 1P 3yr Service and Subscription) and 1x BD723A (VMware vCenter) to an HC 250.

NOTE: HPE Hyper Converged 250 System for Microsoft Cloud System Platform System Standard requires valid Microsoft Windows Server 2012 R2 Datacenter and Microsoft System Center licenses.

HPE Hyper Converged 250 System Product Information

Overview	• Available for Microsoft Cloud Platform System Standard or VMware vSphere • Hyper-Converged virtualization platform in compact 2U/4-node form-factor • Pre-tuned blend of HPE Server, Microsoft Cloud Platform System Standard or VMware vSphere, and HPE StoreVirtual technology • Configuration and ready for VM provisioning after quick and easy installation
Interconnects	• Primary Networking Connectivity (2) 10GbE SFP+ ports per node (cables and/or transceivers sold separately) or (4) 1GbE RJ45 ports per node (HC 250 for VMware vSphere only)

Family Information

	10GbE networking is the recommended primary connectivity on the Hyper Converged 250 platform. The network switches used must be IPv6 capable. • (2) 1GbE ports per node (optional network connectivity), one 1GbE port required during installation. With the exception of one 1GbE port (used during the initial customization of the first system in an environment), all 1GbE ports covered by plugs for simpler installation and are not intended for use. Customers are advised against changing the configuration of the pre-configured virtual switches. These ports cannot be used instead of primary networking connectivity.	
Pre-integrated software	**VMware vSphere** • (1) VMware vSphere ESXi 5.5 or 6.0 per node • (1) StoreVirtual software per node • (1) VMware vCenter 5.5 or 6.0 (on HC 250, or use a licensed, existing instance) • (1) OneView for vCenter instance per vCenter (on HC 250, or connected to an existing instance) • (1) OneView InstantOn per installation of up to four chassis	**Microsoft Cloud Platform System Standard** • (1) Microsoft System Center 2012 R2 per cluster • (1) Windows Server 2012 R2 Datacenter Edition per physical node • (1) HPE OneView for Microsoft System Center instance per cluster • (1) StoreVirtual VSA instance per physical node • (1) OneView InstantOn per installation of up to four chassis
Licenses	**Valid licenses for the following VMware software components are required:** • 2 VMware vSphere licenses per node • 1 VMware vCenter license (when using the pre-integrated vCenter instance on the HC 250) Licenses for Windows Server 2012 on the management VM are included with the product. **NOTE:** HPE Hyper Converged 250 for VMware vSphere requires valid VMware vSphere Enterprise or higher, and vCenter Standard licenses. VMware licenses can only be removed from the order if it is confirmed that the end-customer has a valid licenses in place (Enterprise License Agreement (ELA), vCloud Air Partner or unused Enterprise Purchasing Program tokens). Hewlett Packard Enterprise supports vSphere Enterprise, vSphere Enterprise Plus or Horizon on the HPE Hyper Converged 250. When quoting VMware Horizon for Hyper Converged 250 for VMware vSphere, only the vSphere hypervisor components are pre-	**Valid licenses for the following Microsoft software components are required:** • 1 Microsoft System Center 2012 R2 per cluster • 1 Windows Server 2012 R2 Datacenter Edition per physical server • 1 Microsoft Azure subscription, if optional Azure services are required Licenses may be obtained through a valid Microsoft License Agreement, from an authorized reseller, or from Hewlett Packard Enterprise . Please contact your account team or authorized reseller for details.

Family Information

	integrated. (For more information on Hewlett Packard Enterprise offerings around VMware licenses, please visit **http://www8.hp.com/h20195/v2/getDocument.aspx?docname=c04155395)** Purchasing VMware licenses from Hewlett Packard Enterprise allows Hewlett Packard Enterprise to be the single point of contact for the entire solution inclusive of the virtualization software and is recommended.	
Management	• HPE OneView InstantOn for initial installation and customization of the system • HPE ProLiant Integrated Lights-Out 4 Remote Management (Advanced License included) • Baseboard Management Controller IPMI	
	• VMware vCenter for day-to-day management HPE OneView for VMware vCenter Server plug-in	• Microsoft System Center 2012 R2 for day-to-day management • HPE OneView for Microsoft System Center plug-in

Software

Backup Options

HPE StoreOnce Backup System

Backup for hyper-converged environments

When combining HPE Hyper Converged 250 with HPE StoreOnce Backup systems users can create an affordable end-to-end solution from virtualization platform to data protection, from remote office to data center, that is both easy to implement and easy to maintain. From entry-level solutions for a remote or branch office, to enterprise solutions that scale across multiple sites and data centers, HPE StoreOnce provides disk-based backup with a single, unified deduplication engine for the optimal balance of affordability, manageability, scalability, and reliability to handle the data protection needs of your virtualized infrastructure.

HPE StoreOnce Backup

The HPE StoreOnce Backup family with StoreOnce deduplication provides consolidated, automated backup and DR operations that span enterprise data centers, regional, and remote or branch offices. With StoreOnce Backup you can:

- Meet shrinking backup windows - with a broad range of price/performance points spanning from 1TB/hour to 100 TB/hour. Optimize dedupe performance with HPE StoreOnce Catalyst, enabling Federated Deduplication across the StoreOnce Backup range.
- Simplify data protection for even the most complex environments - with our single StoreOnce deduplication technology managing the movement of data between remote offices and enterprise data centers has never been easier.
- Enhance the manageability of DR and Remote Office backup operations - automate backup and DR processes and use a single pane of glass to manage the data movement between HPE StoreOnce appliances in remote offices and enterprise data centers using your current backup application.
- Be confident in your data protection - HPE StoreOnce Backup systems have been specifically designed with backup in mind.

For more information on HPE StoreOnce Backup Systems, please go to:
http://www.hp.com/go/storeonce

Microsoft Data Protection Manager

For Microsoft Cloud Platform System Standard

Microsoft System Center 2012 – Data Protection Manager (DPM) is an enterprise backup system included with System Center. If original data is unavailable because of planned or unexpected issues, data may be restored from a secondary location. Using DPM, back up application data from Microsoft servers and workloads, and file data from servers and client computers. Full backups, incremental backups, differential backups, and bare-metal backups may be used to completely restore a system.

Service and Support, HPE Care Pack, and Warranty Information

Service and Support   **Technology Services for increased uptime, productivity and ROI**

Trust Hewlett Packard Enterprise technology experts for every level of service and support. Our integrated portfolio of services for help customers reduce costs, optimize data, streamline management, and improve backup and recovery. Capitalizing on HPE Hyper Converged 250 capabilities requires a service partner who understands to simplify increasingly complex environments. Team with the people who know Hewlett Packard Enterprise infrastructure hardware and software best-the experienced professionals at HPE Services.

Hewlett Packard Enterprise support recommendations are designed to help you enhance technology operations and lower risk-and make it easier for you to seek the right balance between affordability and service-level commitments. Depending on your individual support needs, choose from the choices outlined below.

NOTE: Each of these support levels include hardware and software reactive support and are available with DMR (defective media retention).

NOTE: HPE Insight Remote Support is required for Proactive Care. Continuously monitoring your environment, HPE Insight Remote Support alerts you and provides up to 66% faster problem resolution and up to 95% first time fix rate.

HPE Proactive Care Advanced

HPE Proactive Care Advanced builds on HPE Proactive Care, providing additional benefits such as the assignment of a dedicated, local account support manager (ASM) for collaboration and best practices and critical event management that provides 24x7 fast response and IT service restoration with incident follow-up to prevent a repeat. All of this is designed to give you an incredibly personalized, high-touch support experience that keeps your system fully available and running at peak performance.

HPE Proactive Care

HPE Proactive Care begins with providing all of the benefits of proactive monitoring and reporting along with rapid reactive care to put in place the fundamentals needed for stability and availability of the environment. Customers can customize their reactive support level by selecting either 6-hour call-to-repair or 24x7 with 4-hour onsite response.

HPE Proactive Care Personalized Support Option

Adding the Hewlett Packard Enterprise Personalized Support Option for Hewlett Packard Enterprise Proactive Care is highly recommended. The Hewlett Packard Enterprise Personalized Support option builds on the benefits of Hewlett Packard Enterprise Proactive Care service by providing an assigned Account Support Manager who knows the environment and delivers support planning, regular reviews, and technical and operational advice specific to each environment. A one-time purchase covers the entire HPE Proactive Care environment, and additional Personalized Support Days can be added to provide the appropriate service experience for the system or across the entire environment.

HPE Foundation Care Call-to-Repair Service—Offers 24x7 service, including on Hewlett Packard Enterprise holidays, with a six-hour call-to-repair time, where our commitment is to have the hardware operational within six hours after your call is opened. Software support is 24x7 with a 2-hour response time.

Service and Support, HPE Care Pack, and Warranty Information

HPE Foundation Care 24x7 Service—Offers 24x7 service, including on Hewlett Packard Enterprise holidays, with a four-hour on-site response time for hardware and a two-hour response time for software.

HPE Foundation Care Next Business Day Service—Offers a next-business-day on-site response with coverage available nine hours per day between 8:00 a.m. and 5:00 p.m. local time, on business days Monday through Friday, excluding on Hewlett Packard Enterprise holidays. Software support is provided with a two-hour response time.

HPE Proactive Select

Addresses on-going operational and staffing needs of Converged Systems environments. The customers can buy HPE Proactive Select credits upfront, and choose from around 100 services to consume the required level of expertise and resources throughout a year. A vast array of services-health checks, optimization, performance, and security-help customers address their skills and staffing requirements with flexibility.

For more information   **http://www.hp.com/services**

To learn more on HPE Services, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner. HPE Care Pack Services are sold by Hewlett Packard Enterprise and Hewlett Packard Enterprise Authorized Service Partners:

- Services for customers purchasing from Hewlett Packard Enterprise or an enterprise reseller are quoted using Hewlett Packard Enterprise order configuration tools.
- Customers purchasing from a commercial reseller can find HPE Care Pack Services at **http://www.hp.com/go/lookuptool**

HPE Services Awards   HPE Services continues to be recognized for service and support excellence by customers, partners, industry organizations and publications around the world. Recent honors and award reflect our services team's dedications, technical expertise, professionalism and uncompromising commitment to customer satisfaction. For a list of all our awards, please visit: **http://h20219.www2.hp.com/services/cache/433028-0-0-225-121.htm**

Additional Services Information   For more information about HPE Care Pack Services, please visit: **http://www.hp.com/hps/storage**

If you have specific questions, contact your local Hewlett Packard Enterprise representative. Contact information for a representative in your area can be found at "Contact HPE" **http://www.hp.com**
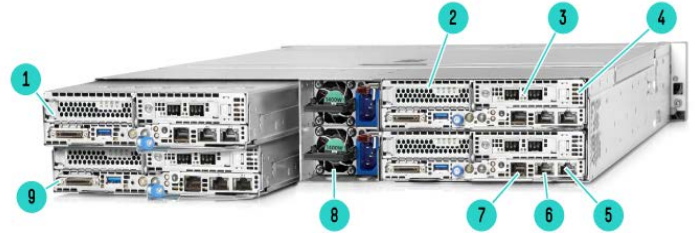
Configuration Information

HPE Hyper Converged 250 System

Front View:

1. Left ear with power buttons for nodes 1 and 2
3. 24 SFF drives (middle bay in middle column not used)
2. Right ear with power buttons for nodes 3 and 4

Rear View with 4 compute/storage nodes:

1. Node 4
2. SmartArray RAID controller
3. Primary network option on node 2 (10GbE SFP+ option shown)
4. Node 2
5. Node 1
6. Secondary network ports (Admin/Installation only)
7. Dedicated iLO port on node 1
8. Redundant power supplies
9. Node 3

HPE Hyper Converged 250 for VMware vSphere

Base System	Part Number
HPE Hyper Converged 250 for VMware vSphere System	M0T03B

Base chassis for (2) to (4) HPE Hyper Converged 250 Nodes,
includes (2) 1400W power supplies, power cables, redundant fans, rack rail kit and
backup battery for storage controllers

HPE Hyper Converged 250 Nodes	M0T04B

Includes (1) HPE Hyper Converged 250 Node; can be ordered a single node.
Requires (1) HPE Hyper Converged 250 Software LTU for VMware vSphere as well as a valid processor, memory,
networking and storage option from the menu below.

Software package

HPE Hyper Converged 250 Software LTU for VMware vSphere 5.5	P9B50A

Required per (1) HPE Hyper Converged 250 Node, included LTU for StoreVirtual Software and other HPE
software components. Pre-integrates VMware vSphere 5.5 on HC 250 node; valid VMware vSphere and vCenter
licenses are required; see note below.

HPE Hyper Converged 250 Software LTU for VMware vSphere 6.0	P9B51A

Required per (1) HPE Hyper Converged 250 Node, included LTU for StoreVirtual Software and other HPE
software components. Pre-integrates VMware vSphere 6.0 on HC 250 node; valid VMware vSphere and vCenter
licenses are required; see note below.

Configuration Information

Processor options

(2) HP XL1x0r Gen9 Intel® Xeon® E5-2640v3 (2.6GHz/8-core/20MB/90W) Processors	793020-L21
for (1) HPE HC 250 Node	+793020-B21
(2) HP XL1x0r Gen9 Intel® Xeon® E5-2680v3 (2.5GHz/12-core/30MB/120W) Processors	793028-L21
for (1) HPE HC 250 Node	+793028-B21
(1) HP XL1x0r Gen9 Intel® Xeon® E5-2660v3 (2.6GHz/10-core/25MB/105W) Processors	793024-L21
for (1) HPE HC 250 Node	+793024-B21

Memory options

(4, 8, or 16) HP 32GB (1x32GB) Dual Rank x4 DDR4-2133CAS-15-15-15 Registered Memory Kit	728629-B21
Quantity (4) for128GB memory, quantity (8) for 256GB memory or quantity (16) for 512GB memory per node	

Network options

HP Ethernet 10Gb 2P 560FLR-SFP+ Adapter	665243-B21
Contains one network card with (2) SFP+ connectors for (1) HPE HC 250 Node, cables and/or transceivers not included.	
HP 1Gb Ethernet 4P 331FLR Adapter	629135-B22
Contains one network card with (4) RJ 45 connectors for (1) HPE HC 250 Node, cables not included.	

Storage options

All Flash Storage: (6) HPE 1.92TB 6G SATA MU-3 SFF SC SSD	(6) 817011-B21
Contains one storage tier of (6) 1.6TB SSDs for 9.6TB raw capacity for (1) HPE HC 250 Node.	
Hybrid Storage:	(4) 781518-B21
(4) HP 1.2TB 12G SAS 10K 2.5in SC ENT HDD and (2) HPE 960GB 6G SATA MU-3 SFF SC SSD	+ (2) 816995-B21
contains two storage tiers of (4) 1.2TB SAS 10K RPM drives and (2) 800GB SSD[1] for (1) HPE HC 250 Node.	
Hybrid Storage:	(4) 781518-B21
(4) HP 1.2TB 12G SAS 10K 2.5in SC ENT HDD and (2) HPE 480GB 6G SATA MU-3 SFF SC SSD	+ (2) 816985-B21
contains two storage tiers of (4) 1.2TB SAS 10K RPM drives and (2) 400GB SSD[1] for (1) HPE HC 250 Node.	
Capacity Storage: (6) HP 1.2TB 12G SAS 10K 2.5in SC ENT HDD	(6) 781518-B21
contains one storage tier of (6) 1.2TB SAS 10K RPM drives for 7.2TB raw capacity for (1) HPE HC 250 Node.	

NOTE: [1] Additional capacity reservation (over-provisioing) to meet performance and wear life targets. Warranty for the SDD is subject to the maximum usage limitation. Maximum usage limitation of the SSD is three (3) drive writes per day for 5 years (JEDS219 workload).

NOTE: HPE Hyper Converged 250 for VMware vSphere requires valid VMware vSphere Enterprise or higher, and vCenter Standard licenses. VMware licenses can only be removed from the order if it is confirmed that the end-customer has a valid licenses in place (Enterprise License Agreement (ELA), vCloud Air Partner or unused Enterprise Purchasing Program tokens). Hewlett Packard Enterprise supports vSphere Enterprise, vSphere Enterprise Plus or Horizon on the HPE Hyper Converged 250. When quoting VMware Horizon for Hyper Converged 250 for VMware vSphere, only the vSphere hypervisor components are pre-integrated. Ordering systems automatically add 8x BD715A (vSphere Enterprise Plus 1P 3yr Service and Subscription) and 1x BD723A (VMware vCenter) to an HC 250.

NOTE: IPv6-capable networking infrastructure is required and 10GbE networking is recommended for HC 250 for VMware vSphere. Network cables must be purchased separately for fiber and copper environments. Please refer to the Related Options for the 10GbE SFP+ network option in
http://www8.hp.com/h20195/v2/GetDocument.aspx?docname=c04111435

Configuration Information

HPE Hyper Converged 250 for Microsoft Cloud Platform System Standard

Base System	Part Number
HPE Hyper Converged 250 for Microsoft Cloud Platform System Standard Base chassis for 3- or 4-node configurations. includes 1400W power supplies power cables, redundant fans, rack rail kit and backup battery for storage controllers	N9X97A
HPE Hyper Converged 250 Node Includes (1) HPE Hyper Converged 250 Node, requires (1) HPE Hyper Converged 250 Software LTU	M0T04B

Software package

HPE Hyper Converged 250 Software for Microsoft Cloud Platform System Standard LTU Required per (1) HPE Hyper Converged 250 Node. Includes node software image.	P8Z24A

Processor options

(2) HP XL1x0r Gen9 Intel® Xeon® E5-2640v3 (2.6GHz/8-core/20MB/90W) Processors contains (2) 8-core Intel Xeon E5-2640v3 Processors (30M cache, 2.60GHz) for (1) HPE HC 250 Node	793020-L21 +793020-B21
(2) HP XL1x0r Gen9 Intel® Xeon® E5-2680v3 (2.5GHz/12-core/30MB/120W) Processors contains (2) 12-core Intel Xeon E5-2680v3 Processors (30M cache, 2.50GHz) for (1) HPE HC 250 Node	793028-L21 +793028-B21

Memory options

(4, 8, or 16) HP 32GB (1x32GB) Dual Rank x4 DDR4-2133CAS-15-15-15 Registered Memory Kit Quantity (4) for128GB memory, quantity (8) for 256GB memory or quantity (16) for 512GB memory per node	728629-B21

Network options

HP Ethernet 10Gb 2P 560FLR-SFP+ Adapter Contains one network card with SFP+ connectors for (1) HPE HC 250 Node, cables and/or transceivers not included.	665243-B21

Storage options

Capacity option: (6) HP 1.2TB 12G SAS 10K 2.5in SC ENT HDD contains one storage tier of (6) 1.2TB SAS 10K RPM drives for 7.2TB raw capacity for (1) HPE HC 250 Node.	(6) 781518-B21
Hybrid Storage: **(4) HP 1.2TB 12G SAS 10K 2.5in SC ENT HDD and (2) HPE 480GB 6G SATA MU-3 SFF SC SSD** contains two storage tiers of (4) 1.2TB SAS 10K RPM drives and (2) 400GB SSD[1] for (1) HPE HC 250 Node.	(4) 781518-B21 + (2) 816985-B21

NOTE: [1] 480GB SSD device is used to deliver 400GB capacity. Maximum usage limitation of the SSD is 2200TB or three (3) drive writes per day for 5 years (JEDS219 workload). Warranty for the SDD is subject to the maximum usage limitation.

NOTE: HPE Hyper Converged 250 for Microsoft Cloud System Platform Standard requires Microsoft Windows Server 2012 R2 Datacenter licenses and System Center 2012 R2 licenses. Contact your Hewlett Packard Enterprise account team or authorized reseller for details.

NOTE: IPv6-capable 10GbE networking infrastructure is required for HC 250 for Microsoft Cloud Platform System. Network cables must be purchased separately for fiber and copper environments.
Please refer to the Related Options for the 10GbE SFP+ network option in
http://www8.hp.com/h20195/v2/GetDocument.aspx?docname=c04111435

Configuration Information

Power Options

Description

Two 6' Highline (IEC-IEC) power cords ship standard. The system requires two high-line AC (200-240V) power sources.

NOTE: HPE Hyper Converged 250 System is primarily connected to PDU's in data center racks so they ship standard with only a PDU power cord (416151-B21).

Please see the UPS and PDU cable matrix's on the Power Protection page under Power Cords that lists cable descriptions, requirements, and specifications for UPS and PDU units at the new HPE Power Cord Link @ HPE.com. Use the following new link:
http://www.hp.com/products/powercords

Technical Specifications

	HPE Hyper Converged 250 System (4-node configuration)		
Dimensions (with bezel)	2U		
	8.73 x 44.81 x 82.27 cm (H x W x D; 3.44 x 17.64 x 32.4 in)		
Weight	35.52kg (78.31 lbs)		
Power/Cooling	Redundant Hot-Plug Common Slot Power Supplies, Redundant Fans		
	High-line AC only; 200-240 Volts, 50-60Hz		
200-240V/50Hz	2300 BTU/hr		
	Per power supply @ 240V: 1554A, 1570VAC, 6.5A rms (30A peak; 10ms duration)		
Environmental	**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 304.8 m (1.8°F per every 1000 ft) above sea level, no direct sunlight. Maximum rate of change is 20°C/hr (36°F/hr). 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), no direct sunlight. 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** 3048 m (10,000 ft) 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).	
Regulatory	FCC Rating: Class A Normative Standards: CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1		

Technical Specifications

Additional information online

HC 250   **http://www.hp.com/go/hyperconverged**
Webpage   **http://www.hp.com/go/sds**
                                              http://www.hp.com/go/storevirtual

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

Summary of Changes

Date	Version History	Action	Description of Change
16-Feb-2016	From Version 4 to 5	Changed	Added new HPE Hyper Converged 250 for VMware vSphere
01-Dec-2015	From Version 3 to 4	Changed	Changes made throughout the entire Document, name changes to HPE Hyper Converged 250 System.
28-Sept-2015	From Version 2 to 3	Changed	Changes made to the Overview Features and Benefits, Family Info and Configuration information Sections.
21-Aug-2015	From Version 1 to 2	Changed	Corrected statements about SSD capacity, clarified warranty coverage for SSD
17-Aug-2015	Version 1	New	Initial version

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