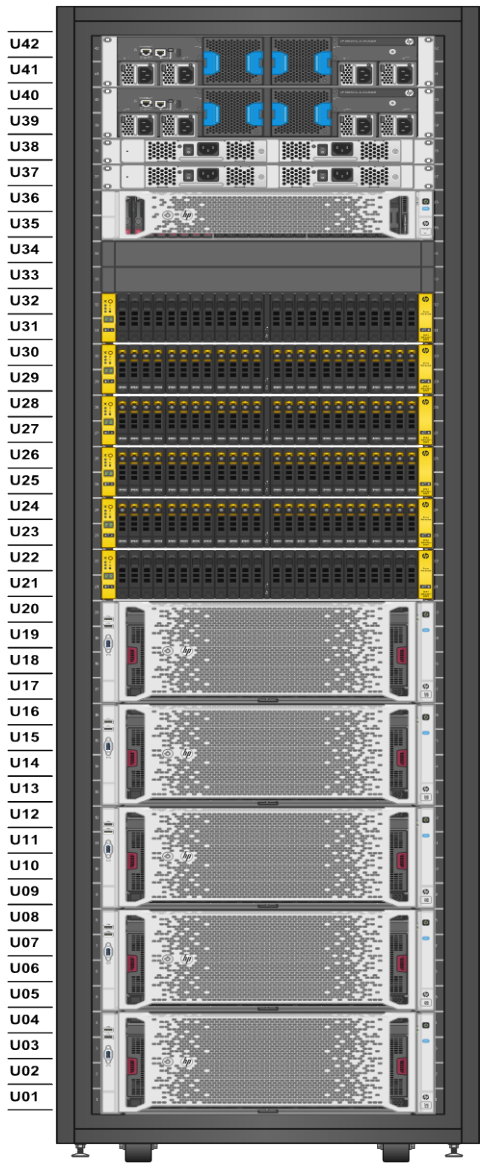
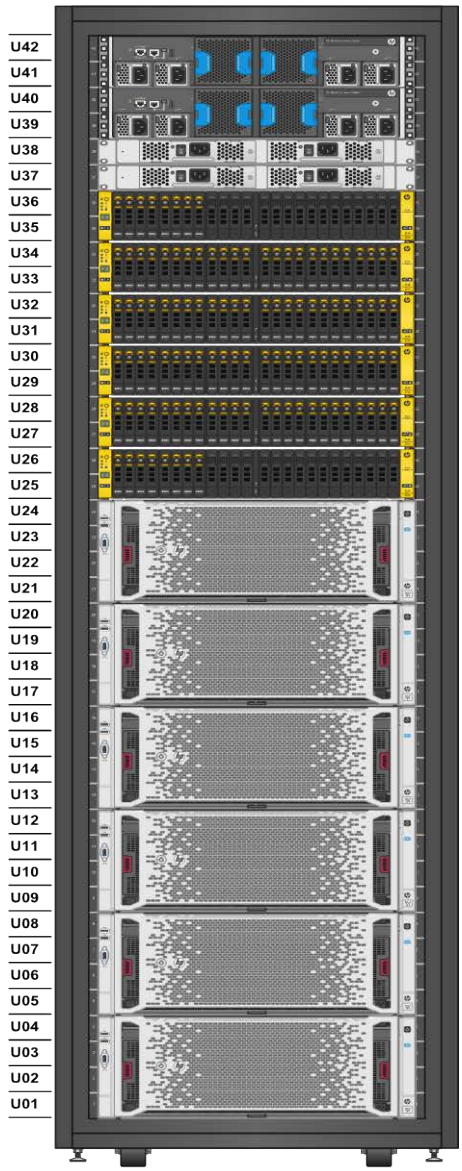
Overview

HPE ConvergedSystem 500 for SAP HANA Scale-out Configurations (v4) with the Intel® Xeon® E7 architecture



HPE ConvergedSystem 500 for SAP HANA Starter Rack



HPE ConvergedSystem 500 for SAP HANA Expansion Rack

At A Glance

HPE ConvergedSystem 500 for SAP HANA Scale-out Configurations with the Intel® Xeon® E7 v4 architecture allows you to

Overview

simplify IT with systems built on proven, trusted technology-not components. That means your staff has more time for innovation. With HPE and SAP you can:

- **Make better, faster decisions**: SAP HANA is a completely re-imagined platform for real-time business. It converges database and application capabilities in-memory to transform transactions and analytics so you can operate in real time.
- **Get real-time, faster**: Only HPE ConvergedSystem for SAP HANA dramatically simplifies IT through quick deployment, intuitive management, and system-level consulting and support. You can:
  - Order pre-configured solutions in minutes
  - Deploy quickly with seamless, turnkey, tested, and repeatable integration through HPE Factory Express
  - Lessen administrative complexity with system-level management
  - Prevent and resolve problems with system-level, integrated support, and single point of accountability for the complete solution
- **Amplify performance**: Robust HPE ConvergedSystems are purpose-built and optimized for SAP HANA with high availability and data protection available only from HPE
  - Prevent data loss and recover from outages in seconds with optional Hewlett Packard Enterprise Serviceguard software for SAP HANA, that offers unattended, automated failover and disaster tolerance solution for SAP
- **Minimize risk**: HPE remains committed to industry-standard x86 computing and a long-term SAP HANA roadmap.
  - Buy with confidence from HPE, the only player with the architecture, expertise, and roadmap to meet your SAP HANA needs today and in the future
  - Leverage expertise built over 25+ years of SAP partnership, and 7000+ SAP HANA systems shipped worldwide.

HPE ConvergedSystem 500 for SAP HANA Scale-out Configurations are based on the latest Intel® Xeon® E7 v4 architecture, and are optimized for SAP HANA systems that are factory-integrated to give you the fastest time to value. The HPE ConvergedSystem 500 for SAP HANA Scale-up Configurations are based on the following HPE technologies and services:

- HPE ProLiant DL580 Gen9 Server (Compute Node)
- Persistent Storage based on the HPE 3PAR StoreServ 8400
- HPE Integrated Lights-Out
- A choice of SUSE SLES for SAP Operating System 12 SP1 or Red Hat Enterprise Linux for SAP HANA Operating System version 7.2
- Optional Hewlett Packard Enterprise Serviceguard for SAP HANA software, for automated, unattended High Availability and Disaster Tolerance
- HPE Factory Integration through HPE Factory Express Deployment Services that provide hardware integration, validation, and on-site installation
- HPE Deployment Accelerator Service for SAP HANA to get you up and running on SAP HANA quickly
- HPE Proactive Care provides a single source support for the complete HPE ConvergedSystem 500 for SAP HANA system, including the software

For more information about the HPE ConvergedSystem 500 for SAP HANA Scale-out Configurations, see:
http://www.hpe.com/info/sap/hana
For more information about HPE ProLiant Dl580 Gen9, see **http://www.hpe.com/servers/dl580gen9**
For more information about HPE Integrated Lights Out, see **http://www.hpe.com/info/ilo**
For more information about HPE Serviceguard Software, see **http://www.hpe.com/servers/sglx**
For more information about HPE services for HPE ConvergedSystems, see: **http://www.hpe.com/services/convergedsystem**
For information about HPE services, see: **http://www.hpe.com/services/sap**

Standard Features

Hardware and Software

HPE ConvergedSystem 500 for SAP HANA Scale-out Configurations with the Intel® Xeon® E7 v4 architecture are certified by SAP up to thirty-four nodes. With compute nodes available in 1TB, 1.5TB, or 2TB sizes, the total system size can be 34TB using 1TB nodes, 51TB using 1.5TB nodes, or 68TB using 2TB nodes.

Compute Node

Solution Component HPE for SAP HANA Compute Node

Processors A choice of two Intel® Xeon® E7 v4 processors is available:

- Intel® Xeon® E7-8890v4 (2.2GHz/24-core/165W) Processor
- Intel® Xeon® E7-8880v4 (2.2GHz/22-core/150W) Processor

Amount of memory Three memory sizes are available:

- 1TB of memory per compute node
- 1.5TB of memory per compute node
- 2TB of memory per compute node

A total of thirty-four compute nodes can be added

Base product **HPE ProLiant DL580 Gen9 Server**: The HPE ConvergedSystem 500 for SAP HANA Compute Node is based on the HPE ProLiant DL580 Gen9 Server with the Intel® Xeon® E7 v4 architecture. The HPE ProLiant DL580 Gen9 Server is an enterprise-grade x86 server offering breakthrough performance, rock-solid reliability, and compelling consolidation and manageability efficiencies. HPE ProLiant DL580 Gen9 has security and data protection features for system resiliency that your business can depend on. All, making it ideal for mission-critical enterprise, business intelligence, and database applications

Persistent Storage

Solution Component HPE for SAP HANA 3PAR StoreServ 8400 4-node Storage Block

Purpose Used for SAP HANA log and data file storage (persistence layer), the scale-out configuration leverages the HPE 3PAR StoreServ 8400 and the SAP storage connector API, eliminating the need for a clustered file system, simplifying the persistent storage architecture, and improving overall performance.

Base products **HPE 3PAR StoreServ 8400**: The HPE 3PAR StoreServ 8400 Storage manages your HANA data, letting you spend less time managing storage, without sacrificing performance or future scalability. The new HPE 3PAR Gen5 Thin Express ASIC provides silicon-based hardware acceleration of thin technologies, including inline deduplication, offering increased versatility, performance, and a true convergence of block and file protocols. The File Persona on the HPE 3PAR StoreServ 8400 stores the SAP HANA application binaries, configuration files, and trace files.

Management Server

Solution Components HPE for SAP HANA ProLiant DL380 Gen9 Central Management Console Block

Purpose The Central Management Server is based on the HPE ProLiant DL380 Gen9, and it contains binaries for SAP HANA Studio, all of the management utilities for the HPE 3PAR StoreServ array, and other software including HPE Insight Remote Support and HPE Integrated Lights Out.

Base products **HPE ProLiant DL380 Gen9 Server**: With enhanced configuration flexibility, unmatched performance, and leading energy efficient design the DL380 Gen9 offers the perfect solution for the dynamic compute requirements of today's demanding datacenters

Networking Switches

Standard Features

Solution Component	HPE for SAP HANA SN6000B 16Gb 48-port/24-port Active Fibre Channel Switch Block HPE for SAP HANA FlexFabric 5930 4-slot Switch Block
Purpose	Two Top of Rack HPE FlexFabric 5930 (4 Slot modular Switch 24x 1Gb; 18x 40Gb) provide connectivity to the customer network. These switches are also used to interconnect racks, allowing the expansion of the HANA internal network to support up to 34 scale-out nodes Two Top of Rack SAN Switch HP SN6000B 16GB 48-port/24-port Active FC switches provide the connectivity between the SAP HANA database servers and the shared storage
Base products	**HPE SN6000B 16Gb 48-port/24-port Active Fibre Channel Switch**: The HPE SN6000B Fibre Channel Switch offers market leading 16GB Fibre Channel technology and capabilities, while enabling maximum flexibility and investment protection, with a simplified deployment process and a point and click user interface. **HPE 5900 Switch Series**: The HPE 5900 Switch Series is a family of high-density, ultra-low-latency, top-of-rack (ToR) switches that is part of the HPE FlexNetwork architecture's HPE FlexFabric solution. It is designed for higher-performance server connectivity, convergence of Ethernet and storage traffic, and ultra-low latency all in a single device.
Base and Expansion Racks	
HPE Products	HPE 1200mm Shock Intelligent Rack
Purpose	Houses the HANA server nodes, the storage and switches. An additional rack can be added in a dual purpose configuration for uses cases that require high availability and disaster tolerance tiers.
Base products	**The HPE Intelligent Series Rack** family is the next generation of enterprise-class racks designed to meet the current and future requirements of demanding datacenters. It offers innovative intelligence capabilities for asset management, unparalleled structural integrity, cooling and cable management advances, and a wide choice of power and switching options.
Included Software and Operating System	
Base products	• **HPE Integrated Lights-Out:** A suite of embedded management technologies that supports the complete lifecycle of all HPE ProLiant Gen9 servers, from initial deployment to ongoing management and service alerting. • **HPE Insight Remote Support:** 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 Systems Insight Manager:** With HPE Systems Insight Manager you can manage your support contracts and warranties, and automate remote support via HPE Insight Remote Support • A choice of either the **SUSE Linux Enterprise Server for SAP Applications Operating System 12 SP1** or the **Red Hat Enterprise Linux for SAP HANA Operating System version 7.2** • **SAP HANA** (customers must obtain license to use from SAP)

HPE Services

Portfolio of HPE Services for SAP HANA

HPE provides a continuum of HPE services for the HPE ConvergedSystem for SAP HANA. These services address your needs at every step in your SAP HANA solution journey. The HPE Factory Express Deployment Service and the HPE Deployment Accelerator Service are a required part of the HPE Converged System for SAP HANA solution experience. For Dual Purpose configurations, the HPE Disaster Tolerance Service will also be included.

Standard Features

HPE also offers an optional set of services designed to ensure your critical business operations are not impacted, including:

- HPE Rapid Advisory Service for SAP HANA
- HPE Platform Protection and Compliance Service
- HPE ConvergedSystem for SAP HANA Appliance Healthcheck Service
- HPE ConvergedSystem for SAP HANA Update Release (CSUR) Installation Service
- HPE ConvergedSystem for SAP HANA OS Security Patching Service

HPE Rapid Advisory Service for SAP HANA

The HPE Advisory Service for SAP HANA is a collaborative workshop which provides guidance for the customer leveraging Hewlett Packard Enterprise's industry leading consulting expertise. With the benefit of the advisory service, customers can identify potential risks and opportunities prior to hardware deployment and thereby de-risk any subsequent purchases and deployments resulting in faster time to value.

The service is delivered as a two-day workshop led by an expert facilitator and engages the customer's key stakeholders. The HPE Advisory Service for SAP HANA is designed to break through common business and technology issues that slow the new technology adoption cycle. The customer may select from multiple technology topics for this service:

- SAP HANA deployment models
- System Replication for SAP HANA
- Automated high availability
- SAP HANA virtualization
- Partition strategy
- Migrating to SAP HANA
- Network best practices
- Upgrade strategy

Factory Integration and On-site Installation and Startup

With HPE Factory Express Deployment Services for SAP HANA, the majority of the integration is performed in the HPE factory. Factory integration and on-site installation services translate to faster return on your investment and reduced datacenter disruption.
This includes:

- An engagement project manager and an integration engineer who are assigned to manage the solution from start to finish
- The project manager will serve as the single point of contact in the factory for integration status, and will coordinate delivery and on-site installation of the solution
- The factory will build your solution to your specific design parameters as captured in the Customer Intent Document (CID)
- Racking, point-to-point cabling, OS and application software load and configuration
- Configuration of HPE ConvergedSystem for SAP HANA with customer network information (IP addresses, virtual local area networks (vLANs), etc.) as captured in the CID.
- Configuration of HPE 3PAR StoreServ storage and storage area network (SAN) setup
- On-site installation and startup

NOTE: The factory integration services included in this solution require a Customer Intent Document (CID) to assist with the configuration and successful installation and implementation of the solution. The CID Reference ID# is required to be in place prior to sale. Before issuing a purchase order against this solution, please contact your Hewlett Packard Enterprise sales representative.

HPE Deployment Accelerator Service for SAP HANA

Standard Features

The HPE Deployment Accelerator Service for SAP HANA has been designed to help simplify the process of implementing and configuring the HPE ConvergedSystem for SAP HANA, with the goal of accelerating time to value. The service provides knowledge-sharing as part of the integration of SAP HANA into your environment. The HPE consultant acts as your single point of contact to help ensure SAP's specifications are met. The service includes:

- Review the completed Customer Intent Document (CID) to identify potential refinements in order to expedite deployment of the HPE ConvergedSystem for SAP HANA.
- Knowledge-sharing during delivery of the service which includes system documentation. This activity assists with the development of skills and expertise for your IT resources enabling them to better support their SAP HANA appliance. Our goal is to help the customer quickly realize benefits from the HPE ConvergedSystem for SAP HANA.
- A single point of contact during deployment to ensure the HPE ConvergedSystem is configured according to the customer's requirements and aligned with HPE and SAP's recommendations.

HPE Platform Protection and Compliance Service

The Platform Protection and Compliance Service is a combination of processes and tools developed by HPE leveraging different security standards (CIS, NIST, ISO, and DISA) to assess and lock down the security-related settings of different platforms—including operating systems, application and cloud platforms—to comply with regulations (such as PCI, SOX, and HIPAA) and to strengthen the security posture of an organization's IT infrastructure.

It disables services or features that are unnecessary to the platform's main business function and enables dormant platform security features based on the customer's specific security policy and compliance requirements. The service builds on the functionality provided by HPE Software IT Operations Compliance (ITOC) tool and on the experience and expertise of TS Consulting IT Assurance and Security experts to customize the default ITOC policies.

HPE Disaster Tolerance Service for SAP HANA

The HPE Disaster Tolerance Service for SAP HANA has been designed to help simplify the process of implementing and configuring SAP HANA System Replication for the HPE ConvergedSystem for SAP HANA, with the goal to accelerate time to value. The service approach is one of knowledge-sharing and providing flexibility in the application of the service to help increase business continuity. The HPE consultant acts as your single point of contact to help ensure the system replication solution is configured according to your requirements and aligns with Hewlett Packard Enterprise and SAP recommendations and best practices.

- The HPE consultant collects the necessary technical information to configure the HPE ConvergedSystem for SAP HANA System Replication with the goal to deliver a system in a "ready-to-use" state.
- Our approach emphasizes knowledge-sharing—with a focus on applying the service intended to help you increase business continuity.
- Our goal is to help you more quickly realize benefits from your HPE ConvergedSystem for SAP HANA in terms of return on investment and total cost of ownership.

HPE SAP HANA High Availability and Disaster Tolerance Services

For Serviceguard for SAP HANA High Availability Scenarios and Serviceguard for SAP HANA Disaster Tolerance Scenarios, additional services will be included to ease the effort of Serviceguard and system replication implementation for SAP HANA. These services will accelerate your time to value and thus positively impact ROI and TCO.

The Hewlett Packard Enterprise consultant will collect the necessary technical information and configure the HPE ConvergedSystem for SAP HANA in a HA or HA/DT environment. Key core deliverables that set Hewlett Packard Enterprise apart include:

- Hewlett Packard Enterprise consultant acts as the Single Point of contact during the HA or HA/DT implementation of the HPE ConvergedSystem 500 for SAP HANA Scale-out

Standard Features

Configurations

- System Replication solution configured according to your requirements and in line with Hewlett Packard Enterprise's and SAP's recommendations
- A Serviceguard HA or HA/DT solution configured according to customer's requirements, and in line with Hewlett Packard Enterprise's and SAP's recommendations
- Correctly configured Highly Available SAP HANA appliance
- Customer knowledge sharing

HPE ConvergedSystem for SAP HANA Appliance Healthcheck Service
The HPE Converged System for SAP HANA Appliance Healthcheck Service provides a remote technical assessment of your HPE ConvergedSystem 500 for SAP HANA. This service is designed to identify system performance, configuration, and availability problems of your designated system, highlighting areas of potential risk before they might affect your critical operations. The customer will receive via email a single (one-time) report including an executive summary prepared by an HPE consultant.

HPE ConvergedSystem for SAP HANA Update Release (CSUR) Installation Service
The HPE Converged System for SAP HANA Converged System Update Release (CSUR) Installation Service is a technical service that provides remote updates to drivers, firmware and select management software for HPE server, storage, and solution components in the HPE ConvergedSystem 500 for SAP HANA. This service takes into account the relevant revision dependencies within your IT environment. This service is designed to keep your HPE ConvergedSystem 500 for SAP HANA running at peak performance and reduce unplanned disruption to your IT environment.

HPE ConvergedSystem for SAP HANA OS Security Patching Service
The HPE Converged System for SAP HANA OS Patching Service is a technical service that includes the remote installation of OS security patch bundles based on quarterly HPE Converged System for SAP HANA Appliance SUSE OS image updates. Operating systems covered by this service include the SUSE Linux Enterprise Server for SAP running on HPE ConvergedSystem 500 for SAP HANA. HPE specialized technical resources will perform these updates remotely, working with you to determine scheduling and implementation with the goal of reducing disruption to your IT environment.

HPE Support

HPE Proactive Care or HPE Proactive Care Advanced provide a single point of contact for the support of all components including SAP software and operating systems. HPE Proactive Care in SAP environments helps customers identify and address IT issues before they cause performance problems. Hewlett Packard Enterprise offers enhanced call experience with advanced technical expertise, and end-to-end case ownership, which improves availability and helps optimize IT infrastructure. Customers can customize their reactive support level by selecting either 6-hour call-to-repair, 24x7 with 4-hour onsite response or next-business day onsite response.

NOTE: While support for the SAP HANA software requires a separate support agreement with SAP, HPE and SAP collaborate to resolve issues around SAP HANA, leveraging specially aligned collaborative processes between HPE and SAP.
NOTE: Additional support options are available. See Step 2 of How to Order below.

Warranty Services

The HPE ConvergedSystem 500 for SAP HANA is covered by a global limited warranty and supported by HPE Services. Beyond the warranty, HPE Proactive Care is the minimum support with a choice of reactive response of 24x7 4hr onsite response or 6 hour call-to-repair. See Step 2 in "How to Order" section.

NOTE: Warranty varies by component. Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy

Standard Features

	replacement but may involve added complexity. Customers may choose to have HPE replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at: **http://h17007.www1.hpe.com/us/en/enterprise/servers/warranty/** .
Parts and Materials	Hewlett Packard Enterprise will provide HPE-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements. Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product QuickSpecs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services. The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by Hewlett Packard Enterprise due to malfunction.
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.

How to Order

Certified up to 68 TB, The HPE ConvergedSystem 500 for SAP HANA Scale-out Configurations with the Intel® Xeon® E7 v4 architecture comprise of the following HPE technologies and services that are included as part of the ordering process:

- **Hardware and software**: Includes all hardware components for the compute nodes, persistent storage, file and management servers, networking switches, base and expansion racks, and Hewlett Packard Enterprise and third party software
- **HPE Factory Express Deployment Service for SAP HANA**: For system integration, customer-specific customization, and comprehensive system quality assurance. Included as part of the ordering process.
- **HPE Deployment Accelerator Service for SAP HANA**: For on-site installation and deployment. Included as part of the ordering process.
- **HPE Support Services**: Proactive Care Support is the minimum recommended support level.

Step 1: Configure your scale-out system

HPE ConvergedSystem 500 for SAP HANA

To order the HPE ConvergedSystem 500 for SAP HANA Scale-out system, refer to the summary of configuration choices in the ordering process below:

1. Add a Rack
2. Select the Power Distribution Units and Expansion Bars
3. Select the size of each compute node
4. Select the processor
5. Select the number of compute nodes
6. Choose if you need encryption
7. Choose additional storage if required
8. Choose if you require Dual Purpose Storage
9. Select the Operating System
10. Add Optional HPE Serviceguard Software for High Availability or Disaster Tolerance

Add the Rack

Add the 42U 1200mm Shock Intelligent Rack

HPE 1200mm Shock Intelligent Rack	M0S68A

Select the Power Distribution Units for the Rack

HPE Modular PDUs have a unique modular architecture designed specifically for data center customers who want to maximize power distribution and space efficiencies in the rack. Modular PDUs consist of two building blocks - the Control Unit (core) and the optional Extension Bar(s) (sticks). The Control Unit is 1U/0U, and the optional Extension Bars mount directly to the frame of the rack in multiple locations. Available models range from 24A to 48A current ratings, with output connections ranging from four to six C-IEC C20 outlets.

HPE Intelligent Modular 4.9kVA/L6-30P 24A/208V Outlets (6) C19/Horizontal NA/JP PDU	AF520A
HPE Intelligent Modular 8.3kVA/CS8265C 40A/208V Outlets (6) C19/Horizontal NA/JP PDU	AF521A
HPE Intelligent Modular 3Ph 8.6kVA/L15-30P 24A/208V Outlets (6) C19/Horizontal NA/JP PDU	AF522A
HPE Intelligent Modular 3Ph 14.4kVA/CS8365C 40A/208V Outlets (6) C19/Horizontal NA/JP PDU	AF533A
HPE Intelligent Modular 3Ph 17.3kVA/60309 60A 4-wire 48A/208V (6) C19/Horizontal NA/JP PDU	AF523A

How to Order

HPE Intelligent Modular 7.3kVA/60309 3-wire 32A/230V Outlets (6) C19/Horizontal INTL PDU	AF525A
HPE Intelligent Modular 3Ph 22kVA/60309 5-wire 32A/230V Outlets (6) C19/Horizontal INTL PDU	AF527A

Select the Power Distribution Units Extension Bar

HPE 5xC13 Intelligent PDU Extension Bar G2 Kit **NOTE:** Contains 2 Intelligent PDU Extension Bars. **NOTE:** Intelligent Extensions Bars have individually monitored outlets that are also individually switchable for power cycling attached equipment. Each individual C13 outlet has Power Line Communications to support Intelligent Power Discovery when connected to PLC enabled common slot power supplies.	AF547A
HPE 5xC13 Outlets Power and UID LEDs Pair Standard Extension Bar **NOTE:** Standard (non-intelligent) Extension Bars are monitored as a single load segment and do not support Intelligent Power Discovery. **NOTE:** Extension Bars can be mixed on a PDU core to create custom configurations. Up to 6 extension bars may be added to each Intelligent PDU Core unit	AF528A

Select the size of the Compute Node

Choose a compute node with either 1TB of memory, 1.5TB of memory, or 2TB of memory.
For the 1TB or 1.5TB memory sizes, a choice of Dual Rank 16GB, Dual Rank 32GB, or Quad Rank 32GB DDR4 Memory is available.
For the 2TB size, a choice of 32GB Dual Rank or 32GB Quad Rank 32GB DDR4 Memory is available
NOTE: All compute nodes in a scale-out system must be of the same size.
NOTE: Mixing of memory DIMM types in a server is not allowed

HPE 16GB (1x16GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit	726719-B21
HP 32GB (1x32GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit	728629-B21
HPE 32GB (1x32GB) Quad Rank x4 DDR4-2133 CAS-15-15-15 Load Reduced Memory Kit	726722-B21

Select the Processor

A choice of two processors based on the Intel® Xeon® E7 v4 architecture is available for the compute node.

HPE DL580 Gen9 Intel® Xeon® E7-8890v4 (2.2GHz/24-core/165W) Processor Kit	816643-B21
HPE DL580 Gen9 Intel® Xeon® E7-8880v4 (2.2GHz/22-core/150W) Processor Kit	816645-B21

Select the number of Compute Nodes

Each scale-out system can have a maximum of thirty-four nodes. Select the total number of compute nodes required.
NOTE: The Starter Rack can have up to four active compute nodes, and a fifth node can be added as a standby. The Expansion Rack can have up to six compute nodes each.
NOTE: A fully populated thirty-four Node configuration will require six racks total, with the first rack being a starter rack with four or five nodes, and five expansion racks with six nodes each.
NOTE: If you require a standby node, you can choose to add it to the Starter

How to Order

Rack

Select Optional Encryption License

Data at Rest Encryption enables the encryption for all the data that is stored on the internal drives of the 3PAR StoreServ Storage. The 3PAR StoreServ Data Encryption solution encrypts and decrypts all data written to and read from the media automatically. The 3PAR StoreServ Data Encryption solution encrypts the data so that data cannot be read off a drive that is removed from the 3PAR Storage. In the event of a failure of the drive or the theft of a drive, the proper authentication key is required to be entered to gain access to the data stored within the drive. This method of encryption allows the user the comfort knowing all data contained on the drive is protected against internal and external risks.

If you require encryption, add the following licenses:

HP 3PAR 8400 Data Encryption LTU	L7B91A
HP 3PAR 8400 OS Suite Drive LTU	L7B70A

NOTE: Selecting the encryption option requires the substitution of non-encrypted drives with compatible drives on the HPE for SAP HANA 3PAR StoreServ 8400 4-node Storage Block.

NOTE: All drives within a 3PAR StoreServ encrypted array must be self-encrypted devices. There cannot be a mixture of encrypted drives and non-encrypted drives within the same encrypted array.
NOTE: Customers have the option to turn on encryption, non-disruptively, at any time; even after data has been written to the system.
NOTE: A data encryption license (LTU) is required to enable encryption on the array. One encryption license is required for each encrypted array.

Select Additional Storage if required

Additional 16x, 32x or 48x 1.2TB SAS 10K drives can be optionally added to every HPE for SAP HANA 3PAR StoreServ 8400 4-node Storage Block in the scale-out cluster. Additional storage is useful if you want to have run multiple instances on the same system, or use the extra storage for backups or snapshots

Select Optional Dual Purpose Storage

Additional storage can be added to the scale-out system in a dual purpose configuration in high availability and disaster tolerance scenarios, allowing for dual role of a secondary scale-out instance as both a failover target, or as a secondary test or development instance.

HPE for SAP HANA Scale-out Dual Purpose Configuration	M0S65A

Select the Operating System

A choice of either the SUSE Linux Enterprise Server for SAP Applications Operating System 12 SP1 or the Red Hat Enterprise Linux for SAP HANA Operating System version 7.2 is available, both with either a 3 year or a 5 year subscription.

SUSE Linux Enterprise Server SAP 2 Sockets or 1-2 VM 3yr Subscription 24x7 Support Flexible LTU	N0U73A
SUSE Linux Enterprise Server SAP 2 Sockets or 1-2 VM 5yr Subscription 24x7 Support Flexible LTU	N0U75A
Red Hat Enterprise Linux for SAP 1-2 Sockets Physical 3yr Subscription 24x7 Support Flexible LTU	L5P71A
Red Hat Enterprise Linux for SAP 1-2 Sockets Physical 5yr Subscription 24x7 Support Flexible LTU	L5P72A

Add Optional HPE Serviceguard Software for High Availability or Disaster

How to Order

Tolerance
HPE Serviceguard for SAP HANA offers protection against unplanned downtime and automated, unattended failover for SAP HANA scale-up configurations. HPE Serviceguard can be configured to provide business continuity for either local high availability scenarios, or for disaster tolerance scenarios.

The Serviceguard solution for SAP HANA is comprised of the following Hewlett Packard Enterprise technologies:

- HPE Serviceguard for SAP HANA software
- HPE ConvergedSystem Quorum Server: Based on the ProLiant DL360 Gen9 Server that enables powerful quad-core processor computing performance with larger memory and storage capacity, all in a small package.

For both the High Availability, and Disaster Tolerance scenarios, add the following components to the order:

- Four Serviceguard Licenses (Part Number P9B46A) for every compute node in the Scale-out configuration
- Optional - One HPE ConvergedSystem Quorum Server (Hewlett Packard Enterprise Part Number P9H81A). The Quorum server is optional, and a compatible Hewlett Packard Enterprise server that servers as the quorum can be used in its place. If ordering the quorum server, add one HPE iLO Advanced 1 Server with 3yr 24x7 Technical Support and Updates License (Part Number BD505A). Additionally, if ordering the Quorum Server, also add one operating system license, choosing from the following options:
  - SUSE Linux Enterprise Server SAP OS - 3yr Subscription (Part Number N0U73A)
  - SUSE Linux Enterprise Server SAP OS - 5yr Subscription (Part Number N0U75A)
  - Red Hat Enterprise Linux for SAP HANA OS - 3yr Subscription (Part Number L5P71A)
  - Red Hat Enterprise Linux for SAP HANA OS - 5yr Subscription (Part Number L5P72A)

Step 2: Choose Support and Services

HPE ConvergedSystem 500 for SAP HANA orders will include Factory Express Deployment Services, HANA Deployment Accelerator Services and a choice of support services to meet your needs. Additional services are also available and may require consultation.

HPE Factory Express Deployment Services	HPE ConvergedSystem 500 for SAP HANA Scale-out order will include FE Deployment Services covering the factory integration and onsite installation and startup services
HPE Deployment Accelerator Service for SAP HANA	HPE ConvergedSystem 500 for SAP HANA Scale-out order will include the HPE SAP Deployment Accelerator Service providing quick, easy implementation, expert configuration support, and knowledge sharing.
HPE Disaster Tolerance Service	HPE ConvergedSystem 500 for SAP HANA Scale-up orders with a Dual Purpose configurations will include the HPE Disaster Tolerance Service.
HPE SAP HANA High Availability and Disaster Tolerance Services	For Serviceguard for SAP HANA High Availability Scenarios and Serviceguard for SAP HANA High Availability/Disaster Tolerance Scenarios, the following additional services to perform the Serviceguard and system replication implementation for SAP HANA will both be included: • HPE SAP HANA High Availability Services- Provides Serviceguard Integration with SAP

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HANA.

- HPE SAP HANA Disaster Tolerance Service (SAP HANA Replication) – Provides SAP HANA Replication service

HPE Rapid Advisory Service for SAP HANA

The HPE Rapid Advisory Service for SAP HANA is recommended for customers who are new to SAP HANA technology or who are new to HPE ConvergedSystem technology. It is also recommended for customers who want to ensure they are maximizing their benefit from the HPE ConvergedSystem for SAP HANA. It helps the customer understand how to leverage benefits of the HPE ConvergedSytem for SAP HANA and helps the customer understand technology options available to effectively implement and deploy SAP HANA. Contact your TS Consulting representative to engage this service.

HPE Platform Protection and Compliance Service

The HPE The Platform Protection and Compliance Service is recommended for customers who require specific security standards to assess and lock down the security-related settings of their ConvergedSystem. Contact your TS Consulting representative to engage this service.

HPE Support Services

HPE and SAP collaborate to resolve issues around SAP HANA. Customers get a dedicated, single point of contact for the whole solution-ConvergedSystem 500 for SAP HANA, Operating System, and SAP HANA. Hewlett Packard Enterprise offers enhanced call experience with advanced technical expertise, and end-to-end case ownership, which improves availability and helps optimize their infrastructure. Support for the ConvergedSystem 500 for SAP HANA requires both support from Hewlett Packard Enterprise from the choices outlined below and a separate software support agreement with SAP. The recommended HPE support level is HPE Proactive Care Advanced. The minimum required support level is HPE Proactive Care.

NOTE: While support for the SAP HANA software requires a separate support agreement with SAP, HPE and SAP collaborate to resolve issues around SAP HANA, leveraging specially aligned collaborative processes between HPE and SAP.
NOTE: Each of these support levels include hardware and software reactive support and are available with DMR (defective media retention). Support for the SAP software has to be purchased separately from SAP.

HPE Proactive Care Advanced – 3 or 5 year
HPE Proactive Care Advanced is the recommended support for CS SAP HANA environments. It 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 -3 or 5 Year
HPE Proactive Care in Converged Systems for SAP HANA environments begins with providing all of the benefits of proactive monitoring and reporting along with access to the HPE Center of Excellence (CoE) for SAP HANA for a complete solution level support experience to put in place the fundamentals needed for stability and availability of the SAP environment. Proactive Care helps in problem prevention, with predictive analytics, personalized analysis with recommendations and advice paired with rapid access to technical experts to help rapidly resolve any problem. You receive an enhanced call experience and a single point of contact for the support of all components You also benefit from the specially aligned, collaborative reactive processes between HPE and SAP. Customers can customize their reactive support level by selecting either 6-hour call-to-repair or 24x7 with 4-hour onsite response. Only for non-production systems, Proactive Care with next-business day onsite response may be selected.

HPE Proactive Select -3 or 5 Year
Addresses on-going operational and staffing needs of SAP HANA 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,

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optimization, performance, and security-help customers address their skills and staffing requirements with flexibility. SAP HANA specific services include:

- HPE ConvergedSystem for SAP HANA Appliance Healthcheck Service
- HPE ConvergedSystem for SAP HANA Update Release (CSUR) Installation Service
- HPE ConvergedSystem for SAP HANA OS Security Patching Service

HPE Datacenter Care
For large, complex environments where a more personalized, customized approach to support is needed. This is a contractual sale and provides one contract for all a customer's reactive and proactive needs.

HPE Flexible Capacity
Delivers a pay-as-you-grow solution that enables you to scale up your capacity instantly to handle growth needs without the usual long procurement process. Without tying up capital, your capacity doesn't run out.

Technical Specifications

Technical specifications for the major components for the HPE ConvergedSystem 500 for SAP HANA Scale-out Configurations are provided below.

HPE ConvergedSystem 500 for SAP HANA Compute Node based on the HPE ProLiant DL580 Gen9 Server	**Dimensions** (H x W x D) (with bezel)	6.88" x 17.48" x 29" (17.5cm x 44.4cm x 73.6cm)	
	Weight (approximate)	Maximum (all hard drives, power supplies, DIMMs and processors installed)	116.56.0 lb (52.87 kg)
		Minimum (one hard drive, two power supplies, four DIMMs, and two processors installed)	70.94 lb (32.18 kg)
	Input Requirements (per power supply)	Rated Line Voltage	100 - 120 VAC (1200W PS only) 200 - 240 VAC (1200W & 1500W PS)
		Rated Input Current	9.2A (100 VAC), 6.6A (200 VAC) - 1200W PS8.3A (200 VAC) - 1500W PS
		Rated Input Frequency	50 to 60 Hz
		Rated Input Power	1000 W (120 VAC), 1320 W (230VAC) - 1200W PS 1652 W (at 230 VAC) - 1500W PS
	BTU Rating	Maximum	3408 BTU/hr (120 VAC), 4500 BTU/hr (at 230 VAC) - 1200W PS5637 BTU/hr (230 VAC) - 1500W PS
	Power Specifications	**NOTE:** To review typical system power ratings use the HPE Power Advisor which is available online located at url: **https://www.hpe.com/us/en/integrated-systems/rack-power-cooling.html** - Click on the system of interest. Example: DL580 Gen9 - Follow the instructions of the next screens.	
	Power Supply Output (per power supply)	Rated Steady-State Power and Maximum Peak Power	800 W (100 VAC low line),900 W (120 VAC low line), 1200W (200 - 240 VAC) for 1200W PS 1500W (200 - 240V) for 1500W PS
	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 to a maximum of 3048 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F)..
		Non-operating	-40° to 70°C (-40° to 158°F). Maximum rate of change is 20°C/hr (36°F/hr).
	Relative Humidity (non-condensing)	Operating	10% to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
		Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.

Technical Specifications

Altitude	Operating	3048 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).

Acoustic Noise

Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 24°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109). The listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.

Typical configuration (Two Intel® Xeon® E7-4890 v3 processors, 8x16 GB DIMMs, five HDDs, Eight fans, Four power supplies)

Idle

- LWAd – 6.8 B
- LpAm – 51.2

Operating

- LWAd – 6.9 B
- LpAm – 51.2

Performance Configuration (Four Intel® Xeon® E7-4890 v3 processors, 16x16 GB DIMMs, Ten HDDs, Eight fans, Four power supplies)

Idle

- LWAd – 6.7 B
- LpAm – 50.7

Operating

- LWAd – 6.9 B
- LpAm – 51.3

Emissions Classification (EMC)	**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

NOTE: Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.

Technical Specifications

HPE for SAP HANA 3PAR StoreServ 8400 4-node Storage Block

Product Dimensions, and Weight

Physical Dimensions	Height in/mm/U	Width in/mm	Depth in/mm	Max Weight lb/kg
HPE 3PAR StoreServ 8400 4N Storage Base (no host adapters, no drives)	19/483	26.6/676.1*	6.925/175.9/4	97.8/44.4
HPE 3PAR StoreServ 8400 4N Storage Base (with four host adapters, no drives)	19/483	26.6/676.1*	6.925/175.9/4	99.8/45.3
HPE 3PAR StoreServ 8000 SFF(2.5in) SAS Drive Enclosure (without drives)	19/483	24.8/630.7	3.46/87.95/2	33.5/15.2

Power Requirements

Input Voltage (VAC)	100 - 240 VAC
Frequency (Hz)	50 - 60

Component	Idle (watts / BTU/hr)	Transactional (watts / BTU/hr)
Node Pair (8200 or 8400), no drives, no add-on host adapters	236 / 803	398 / 1357
2-port 10Gb/s Ethernet Adapter	5.69 / 19.4	5.71 / 19.5
8000 SFF(2.5in) SAS Drive Enclosure, no drives	150 / 512 (average)	150 / 512 (average)
1.2TB 10K Small Form Factor HDD	6.2 / 21.1	8.2 / 27.9

Environmental Specifications

Operating Temperature	41° to 104° F (5° to 40° C) - Reduce rating by 1° F for each 1000 ft altitude (1.8° C/1,000 m)
Shipping Temperature	32° to 140° F (0° to 60° C)
Altitude (ft/m) max.	10,000 ft / 3,048 m
Shipping Altitude (ft/m) max.	40,000ft/ 12,192 m
Humidity	10% to 90% non condensing
Shipping Humidity	10% to 90% non condensing
Operating Vibration	0.25 G, Sine, 5-500 Hz, 0.1 Grms, Random 10-100Hz
Non-operating Vibration	0.5 G, 5 - 500 Hz, Sine
Operating Shock	2 G, 11ms, half-sine
Non-operating Shock	10 G, 11ms, half-sine
Maximum Air Flow	Storage Base and Upgrade Node Pair - 109 CFM per enclosure 8000 SFF(2.5in) SAS Drive Enclosure - 105 CFM 8000 SFF(2.5in) SAS Drive Enclosure - 109 CFM
Electromagnetic Compatibility	CISPR 22:2008/ EN55022:2010 Class A CISPR 24:2010/ EN 55024:2010 IEC 61000-3-2:2005/ EN 61000-3-2:2006 +A1:2009 +A2:2009 IEC/ EN 61000-3-3:2008

Technical Specifications

		AS/NZS CIPSR 22: 2009 Class A CNS 13438:2006 Class A 47 CFR Part 15 Subpart b Class A ICES-003 Issue 5 Class A V-3/2014.04 RRA Notice No. 2014-8 (2014.06.23) & 2014-37 (204.06.23) Class A RRA Notice No. 2014-9 (2014.06.23) & 2014-38 (2014.06.23)					
Acoustics Sound pressure level measured per ISO 7779 specifications during normal operating fan conditions, from a minimum of 3,000 RPM to a maximum of 10,000 RPM	Fan Speed (RPM)	8200/8400 2N Storage Base	8400 4N Storage Base	8440 2N Storage Base	8440 4N Storage Base	8000 2U SAS Drive Enclosure	8000 4U SAS Drive Enclosure
	Minimum	63.8	67.2	72	74	62.6	61.3
	Maximum	93.4	96.5	93	97	85.4	88
Safety		IEC 60950-1:2005 (2nd Edition); Am 1:2009 EN 60950-1:2006 +A11:2009+A12 EN 62479:2010 CNS 14336-1 2nd Edition UL 60950-1 2nd Ed. CAN/CSA C22.2 No. 60950-1					
Certifications / Markings		cTUVus Mark TUV T-mark (EN 60950) CE Mark FCC Class A KCC GOST-R C-Tick WEEE China RoHS IC Class A VCCI Class A BSMI Class A EU RoHS					

NOTE: Specifications are subject to change without notice.

HPE SAP HANA FlexFabric 5930 LAN Block	**I/O ports and slots**	4 module slots
	Additional ports and slots	1 RJ-45 serial console port 1 RJ-45 out-of-band management port 1 USB 2.0
	Power supplies	4 power supply slots 2 minimum power supplies required (ordered separately)
	Fan tray	2 fan tray slots The customer must order fan trays, as fan trays are not included with the switch. This system requires two same-direction airflow fan trays to function properly. The system should not be operated with only one fan tray for more than 24 hours. The system should not be operated without a fan tray for more than two minutes. The system should not be operated outside of the temperature range of 32°F

Technical Specifications

	(0°C) to 113°F (45°C). Failure to comply with these operating requirements may void the product warranty.	
Physical characteristics	**Dimensions**	17.32(w) x 25.98(d) x 3.47(h) in (44.00 x 66.0 x 8.81 cm) (2U height)
	Weight	66.14 lb (30 kg) shipping weight
	Full configuration weight	59.52 lb (27 kg)
Memory and processor	1 GB flash; Packet buffer size: 12.2 MB, 4 GB SDRAM	
Performance	**10 Gbps Latency**	< 1 µs (64-byte packets)
	Throughput	up to 1429 Mpps
	Routing/Switching capacity	2560 Gbps
	Routing table size	120000 entries (IPv4), 60000 entries (IPv6)
	MAC address table size	288000 entries
Reliability	**MTBF (years)**	35.8
	MTTR (hours)	1
Environment	**Operating temperature**	32°F to 113°F (0°C to 45°C)
	Operating relative humidity	10% to 90%, noncondensing
	Acoustic	Low-speed fan: 59.8 dB, High-speed fan: 74.4 dB
Electrical characteristics	**Frequency**	50/60 Hz
	Maximum heat dissipation	474/3030 BTU/hr (500.07/3196.65 kJ/hr)
	Voltage	90 - 264 VAC, rated -40 to -75 VDC, rated (depending on power supply chosen)
	Maximum power rating	888 W
	Idle power	139 W
	Notes	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.
Safety	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1; Anatel; ULAR; GOST; EN 60950-1/A11; FDA 21 CFR Subchapter J; NOM; ROHS Compliance	
Emissions	VCCI Class A; EN 55022 Class A; ICES-003 Class A; ANSI C63.4 2003; AS/NZS CISPR 22 Class A; EN 61000-3-2:2006; EN 61000-3-3:1995 +A1:2001+A2:2005; EMC Directive 2004/108/EC; FCC (CFR 47, Part 15) Class A	
Immunity	**Generic**	ETSI EN 300 386 V1.3.3
	EN	EN 55024:1998+ A1:2001 + A2:2003
	ESD	EN 61000-4-2; IEC 61000-4-2
	Radiated	EN 61000-4-3; IEC 61000-4-3
	EFT/Burst	EN 61000-4-4; IEC 61000-4-4
	Surge	EN 61000-4-5; IEC 61000-4-5
	Conducted	EN 61000-4-6; IEC 61000-4-6

Technical Specifications

	Power frequency magnetic field	IEC 61000-4-8; EN 61000-4-8
	Voltage dips and interruptions	EN 61000-4-11; IEC 61000-4-11
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3
Management		IMC - Intelligent Management Center; command-line interface; out-of-band management; SNMP Manager; Telnet; FTP
Services		Refer to the Hewlett Packard Enterprise website at **https://www.hpe.com/us/en/services.html** for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.

HPE 1200mm Shock Intelligent Rack	**Total Cabinet Area**	79.00 x 51.19 x 23.54 in (200.66 x 130.02x 59.79 cm)
	Shipping (with packaging materials)	85.82 x 57.87 x 35.43 in (218.00 x 147.00 x 90 cm
	Static Load*	3000 lb (1360.78 kg)
	Dynamic Load**	3000 lb (1360.78 kg)

Rack Airflow Requirements

(RACK) series cabinets

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

- 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).

NOTE:

* Static weight capacity is the total weight capacity of all equipment installed the rack once placed in a datacenter and the leveling feet have been extended.

** Dynamic weight capacity is the total weight capacity of all equipment installed in the rack that can be rolled into place in a datacenter

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
11-Jul-2017	From Version 3 to 4	Changed	Change name to reflect it as it is in PMaster
27-Mar-2017	From version 2 to 3	Changed	Minor updates made to QuickSpecs document
18-Nov-2016	From Version 1 to 2	Changed	Updated with information on how to order Service guard software
6-Jun-2016	Version 1	Created	QuickSpecs document created

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