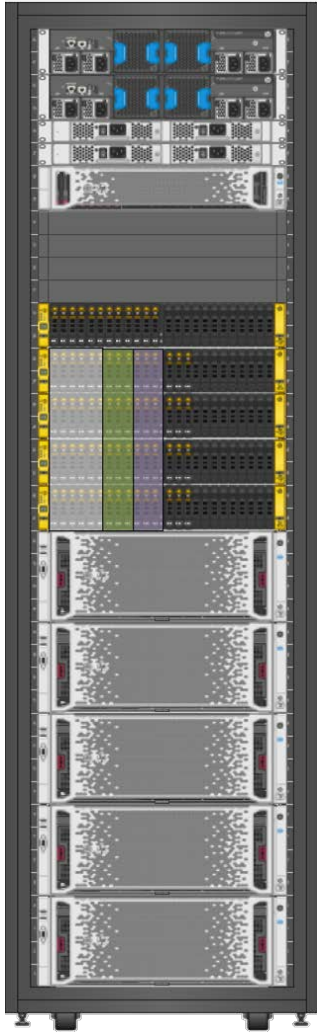
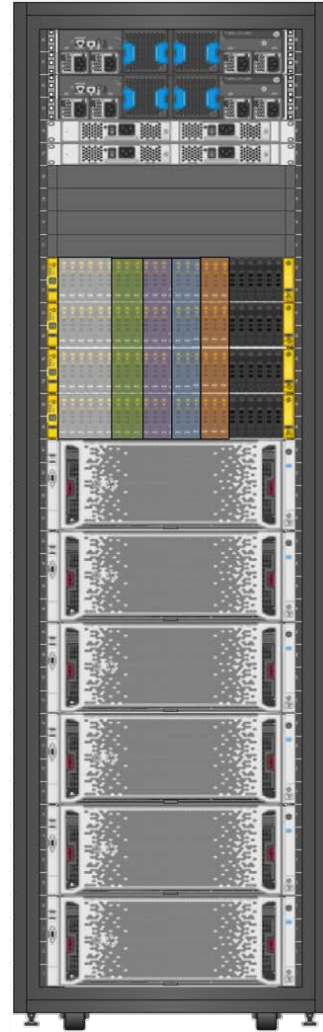


### Overview

### HPE ConvergedSystem 500 for SAP HANA Scale-out Configurations with the Intel® Xeon® E7 v3 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 v3 architecture allows you to 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

## Overview

- 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
  - The HPE ProLiant DL580 Gen9 Server provides up to 39%<sup>1</sup> processor performance and 20%<sup>2</sup> more cores with Intel Xeon E7-4800/8800 v3 processors than the previous generation.
  - HPE SmartMemory prevents data loss and downtime with enhanced error handling, with speeds up to 1866MHz with up to 16%<sup>3</sup> performance gain.
  - 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 HANA
- **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, 77,000+ joint SAP installations and 1500+ SAP HANA installations worldwide.
  - The HPE ProLiant DL580 Gen9 offers advanced error recovery, component quarantine, fault tolerance and event reporting features to enable class-leading availability and rock-solid reliability that businesses can depend on.

Take advantage of the expertise of thousands of HPE professionals supporting more than 1.7 million SAP users in over 50 countries and our own experience as one of SAP's 10 largest global customers. If you want a trusted advisor and expert implementer of SAP solutions, turn to HPE.

HPE ConvergedSystem 500 for SAP HANA Scale-out Configurations are based on the latest Intel® Xeon® E7 v3 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 7400c
- HPE Integrated Lights-Out
- A choice of SUSE SLES for SAP HANA Operating System 11 SP3 or Red Hat Enterprise Linux for SAP HANA Operating System version 6.6
- HPE Factory Integration through HPE Factory Express Deployment Services that provide hardware integration, validation, and on-site installation
- HPE Proactive Care provides a single source support for the complete HPE ConvergedSystem 500 for SAP HANA system, including the software
- HPE ConvergedSystem 500 for SAP HANA Deployment Accelerator Service to get you up and running on SAP HANA quickly

For more information about the HPE ConvergedSystem 500 for SAP HANA Scale-up Configurations, see:

<http://www.hp.com/go/sap/hana>

For information about HPE services, see: <http://www.hp.com/services/sap>

For more information about HPE ProLiant DL580 Gen9, see <http://www.hp.com/servers/dl580gen9>

For more information about HPE Integrated Lights Out, see <http://www.hp.com/go/ilo>

For more information about HPE Factory Express, see: <http://www.hpe.com/info/factoryexpress>

For more information about HPE support services, see: <http://www.hpe.com/info/services>

For more information about HPE support services for HPE ConvergedSystems, see: [www.hpe.com/services/convergedsystem](http://www.hpe.com/services/convergedsystem)

### NOTES:

<sup>1</sup>Up to 39% top-bin performance increase based on OLTP Warehouse Oracle 11gR2 database workload comparing 4x Intel

## **Overview**

Xeon processor E7-8890 v3 (18C, 2.5 GHz) with 2TB to similarly configured E7-4890 v2 (15C, 2.8 GHz) with 1TB

<sup>2</sup> 20% more cores comparing E7-8800/4800 (15 cores) v2 vs v3 (18 cores). Jan. 2015.

<sup>3</sup> Based on HPE internal calculations. Based on comparing the difference of DDR4 DIMMs of 1866 vs 1600 MHz on Gen to Gen HPE Servers, May 2015

## Standard Features

**Hardware and Software** HPE ConvergedSystem 500 for SAP HANA Scale-out Configurations with the Intel® Xeon® E7 v3 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.

<b>Compute Node</b>	
<b>Solution Component</b>	HPE SAP HANA Compute Node
<b>Processors</b>	A choice of three Intel® Xeon® E7 v3 processors is available: <ul style="list-style-type: none"> <li>• Intel® Xeon® E7-8890v3 (2.5GHz/18-core/45MB/165W) Processor</li> <li>• Intel® Xeon® E7-8880v3 (2.3GHz/18-core/45MB/150W) Processor</li> <li>• Intel® Xeon® E7-8880Lv3 (2.0GHz/18-core/45MB/115W) Processor</li> </ul>
<b>Amount of memory</b>	Three memory sizes are available: <ul style="list-style-type: none"> <li>• 1TB of memory per compute node</li> <li>• 1.5TB of memory per compute node</li> <li>• 2TB of memory per compute node</li> </ul> A total of thirty-four compute nodes can be added
<b>Base product</b>	<b>HPE ProLiant DL580 Gen9 Server:</b> The HPE ConvergedSystem 500 for SAP HANA Compute Node is based on the HPE ProLiant DL580 Gen9 Server with the Intel® Xeon® E7 v3 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
<b>Persistent Storage</b>	
<b>Solution Component</b>	HPE SAP HANA 3PAR StoreServ 7400c Block
<b>Purpose</b>	Used for SAP HANA log and data file storage (persistence layer), the scale-out configuration leverages the HPE 3PAR StoreServ 7400c and the SAP storage connector API, eliminating the need for a clustered file system, simplifying the persistent storage architecture, and improving overall performance.
<b>Base products</b>	<b>HPE 3PAR StoreServ 7400c:</b> The HPE 3PAR StoreServ 7400c manages the HANA data, letting you spend less time managing storage, without sacrificing performance or future scalability. With a built in service processor, the HPE 3PAR StoreServ 7400c manages the communication interface between the customers IP network and the HPE 3PAR StoreServ by managing all service related communications
<b>File and Management Servers</b>	
<b>Solution Components</b>	HPE SAP HANA 3PAR StoreServ 7200c Block HPE SAP HANA DL380 Gen9 CMC Block
<b>Purpose</b>	The File Persona on the HPE 3PAR StoreServ 7200c stores the SAP HANA application binaries, configuration files and trace files. The Central Management Console (CMC) block based on the HPE ProLiant DL380 Gen9 contains all of the management utilities for the HPE 3PAR StoreServ array, and other hardware components as well as provides the remote connection to the HPE response center

**Standard Features**

<b>Base products</b>	<p><b>HPE 3PAR StoreServ 7200c:</b> The HPE 3PAR File Persona feature of the 3PAR OS enables a rich set of file protocols and core file data services on a 3PAR StoreServ system. The File Persona inherits the industry leading architecture and Block Persona benefits of 3PAR StoreServ</p> <p><b>HPE ProLiant DL380 Gen9 Server:</b> 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</p>
<b>Networking Switches</b>	
<b>Solution Component</b>	<p>HPE SAP HANA SN6000B 16GB 48/24P SAN Block</p> <p>HPE SAP HANA FlexFabric 5930 LAN Block</p>
<b>Purpose</b>	<p>The HPE SAP HANA SN6000B 16GB 48/24P Storage Area Network (SAN) switch blocks provide the connectivity between the SAP HANA database servers and the shared storage.</p> <p>The HPE SAP HANA FlexFabric 5930 Local Area Network (LAN) switch blocks provide connectivity to the customer network. They are also used to interconnect racks of HANA equipment allowing expansion of the HANA internal network to support up to thirty-four HANA nodes.</p>
<b>Base products</b>	<p><b>HPE SN6000B 16Gb 48-port/24-port Active Fibre Channel Switch:</b> 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.</p> <p><b>HPE 5900 Switch Series:</b> 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.</p>
<b>Base and Expansion Racks</b>	
<b>HPE Products</b>	<ul style="list-style-type: none"> <li>• HPE 1200mm Shock Intelligent Rack</li> </ul>
<b>Purpose</b>	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.
<b>Base products</b>	<b>The HPE Intelligent Series Rack</b> 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.
<b>Included Software and Operating System</b>	
<b>Base products</b>	<ul style="list-style-type: none"> <li>• <b>HPE Integrated Lights-Out:</b> 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.</li> <li>• <b>HPE Insight Remote Support:</b> 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.</li> <li>• <b>HPE Systems Insight Manager:</b> With HPE Systems Insight</li> </ul>

## Standard Features

	<p>Manager you can manage your support contracts and warranties, and automate remote support via HPE Insight Remote Support</p> <ul style="list-style-type: none"><li>• A choice of either the SUSE Linux Enterprise Server for SAP Applications Operating System 11 SP3 or the Red Hat Enterprise Linux for SAP HANA Operating System version 6.6</li><li>• SAP HANA (customers must obtain license to use from SAP)</li></ul>
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## HPE Services

### Factory Integration and On-site Installation and Startup

With HPE Factory Express Deployment Services, the majority of the integration is performed in the HPE factory so that deployment time is reduced with hardware built to customers' exact specifications, then shipped as a turn-key solution from the HPE factory and on-site implementation services install hardware on-site. 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 integration engineer will work with your technical contact to capture the specific design parameters and prepare a detailed integration package to address your needs
- Custom 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.)
- Configuration of HPE 3PAR StoreServ storage and storage area network (SAN) setup
- In addition to integration, configuration, and deployment activities, all solutions receive comprehensive testing and backup/recovery media (on request), as well as a complete documentation package that details the configuration and settings of the delivered solution
- 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 to engage an HPE Engagement Project Manager (EPM) who will manage the CID process.**

### HPE SAP Deployment Accelerator Service

HPE SAP HANA Deployment Accelerator Services simplify the process of implementing and configuring HPE ConvergedSystem for SAP HANA by providing quick, easy implementation, expert configuration support, and knowledge sharing.

The Deployment Accelerator Service includes the following:

- Prior to solution delivery, a simplified site readiness assessment will be performed to ensure that the customer has enough power, cooling, floor space to accommodate the requirements of the system.
- Integrate HANA server into customers environment, power, network cabling
- Configure and verify the network connections into the customer environment
- Conduct basic appliance level functionality testing
- Familiarize the customer with the equipment and with basic processes

## **Standard Features**

- Perform knowledge sharing, including instruct you on how to place support calls

### **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 Configurations

- System Replication solution configured according to your requirements and in line with Hewlett Packard Enterprise's and SAP's recommendations
- A Service Guard 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 security, 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 HP 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.

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## **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.

## Standard Features

**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 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://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>.

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### Parts and Materials

Hewlett Packard Enterprise will provide HPE-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements.

Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product QuickSpecs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services. The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by HPE due to malfunction.

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### 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.

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## How to Order

Certified up to 68 TB, The HPE ConvergedSystem 500 for SAP HANA Scale-out Configurations with the Intel® Xeon® E7 v3 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 HPE and third party software
- **HPE Factory Express:** For system integration, customer-specific customization, and comprehensive system quality assurance. Included as part of the ordering process.
- **HPE Deployment Accelerator Service:** 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 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

#### Add the Rack

Add the 42U 1200mm Shock Intelligent Rack

HPE 1200mm Shock Intelligent Rack

MOR95A

#### 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 24A NA/JP Core Only Intelligent Modular Power Distribution Unit	AF520A
HPE 40A NA/JP Core Only Intelligent Modular Power Distribution Unit	AF521A
HPE 4.9kVA 24A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF520A
HPE 8.6kVA 24A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF522A
HPE 14.4kVA 40A Three Phase NA/JP Intelligent Modular Power Distribution Unit	AF533A
HPE 17.3kVA 48A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF523A
HPE 7.3kVA 32A Single Phase INTL Core Intelligent Modular Power Distribution Unit	AF525A
HPE 22kVA 32A Three Phase INTL Core Intelligent Modular Power Distribution Unit	AF527A

#### Select the Power Distribution Units Extension Bar

## How to Order

HPE 5xC13 Intelligent PDU Extension Bar G2 Kit AF547A

**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.**

HPE 5xC13 Outlets Power and UID LEDs Pair Standard Extension Bar AF528A

**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**

### 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 or Quad Rank 32GB DDR4 Memory is available. For the 2TB size, only the 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

HPE 32GB (1x32GB) Quad Rank x4 DDR4-2133 CAS-15-15-15 Load Reduced Memory Kit 726722-B21

### Select the Processor

A choice of three eighteen core processors based on the Intel® Xeon® E7 v3 architecture is available for the compute node.

HPE DL580 Gen9 Intel® Xeon® E7-8890v3 (2.5GHz/18-core/45MB/165W) Processor Kit 788317-B21

HPE DL580 Gen9 Intel® Xeon® E7-8880v3 (2.3GHz/18-core/45MB/150W) Processor Kit 788319-B21

HPE DL580 Gen9 Intel® Xeon® E7-8880Lv3 (2.0GHz/18-core/45MB/115W) Processor Kit 788337-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 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

## How to Order

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:

HPE 3PAR StoreServ 7200 Data at Rest Encryption LTU BC983A

HPE 3PAR StoreServ 7400 Data at Rest Encryption LTU BC984A

**NOTE: Selecting the encryption option requires the substitution of non-encrypted drives with compatible drives on the HPE SAP HANA 3PAR StoreServ 7400c Block and the HPE SAP HANA 3PAR StoreServ 7200c 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 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 10TB or 20TB of storage is available that can be optionally added to every HPE SAP HANA 3PAR StoreServ 7400c Block (HPE Part Number MOS12A) in the scale-out cluster. Additional storage is particularly useful if you want to have run multiple instances on the same system, or use the extra storage for backups or snapshots

**NOTE: Additional 10TB of storage is required for every HPE SAP HANA 3PAR StoreServ 7400c Block (HPE Part Number MOS12A) in the scale-out cluster when ordering a configuration with 2TB of memory per compute node.**

### 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 SAP HANA Scale-out Dual Purpose Configuration MOS21A

### Select the Operating System

A choice of either the SUSE Linux Enterprise Server for SAP Applications Operating System 11 SP3 or the Red Hat Enterprise Linux for SAP HANA Operating System version 6.6 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

## Step 2: Add optional Serviceguard Software and Hardware

## How to Order

**Hardware and Software** 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.

Key new features of the HPE Serviceguard for SAP HANA software include:

- Automation of failure detections, secondary takeovers and role reversals
- SafeSync HANA System Replication Mode to ensure secondary is synchronized with primary & ready for takeover
- Scale-out DR with site-switch based on a Smart Quorum for HANA Primary Systems
- Decision logic for instance restarts vs takeover
- Self-tuning HANA operation timeout monitoring

For Scale-out configurations, up to 16 productive nodes are supported per scale-out system for automated high availability and disaster tolerance with Serviceguard. That means, a maximum of 16 productive nodes on the primary scale-out cluster, and a maximum of 16 productive nodes on the secondary scale-out cluster are supported for automated high availability and disaster tolerance with Serviceguard.

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.
- HPE ConvergedSystem 500 for SAP HANA Switch Block: Based on the HPE 2920 Switch series, which offers static and RIP routing, robust security and management, enterprise-class features, and is a cost-effective, scalable solution for building high-performance networks

## How to Order

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

- **Four** Serviceguard Licenses (Part Number P9B46A) for every HPE ConvergedSystem 500 for SAP HANA Scale-out compute node.
- Optional - **Two** HPE ConvergedSystem 500 for SAP HANA Switch Block (HPE Part Number H6X98A). These switches are optional, and other compatible Hewlett Packard Enterprise switches may be used
- Optional - **One** HPE ConvergedSystem Quorum Server (Hewlett Packard Enterprise Part Number M0S30A). 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 3: Choose Support and Services

## **How to Order**

HPE ConvergedSystem 500 for SAP HANA Scale-out orders will include Factory Express Deployment Services, HANA Deployment Accelerator Services and a choice of support services to meet your needs.

### **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 SAP Deployment Accelerator Service**

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 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 Service Guard Integration with SAP HANA.
- HPE SAP HANA Disaster Tolerance Service (SAP HANA Replication) – Provides SAP HANA Replication 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 HPE 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. In addition, customers may choose HPE Critical Service.

**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

## **How to Order**

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, optimization, performance, and security-help customers address their skills and staffing requirements with flexibility. These credits may also be used for assistance in implementing HPE HANA appliance updates.

### **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.

<b>HPE ConvergedSystem 500 for SAP HANA Compute Node based on the HPE ProLiant DL580 Gen9 Server</b>	<b>Dimensions</b> (H x W x D) (with bezel)	6.88" x 17.48" x 29" (17.5cm x 44.4cm x 73.6cm)								
	<b>Weight</b> (approximate)	<table border="0"> <tr> <td>Maximum</td> <td>116.56.0 lb (52.87 kg)</td> </tr> <tr> <td colspan="2">(all hard drives, power supplies, DIMMs and processors installed)</td> </tr> <tr> <td>Minimum</td> <td>70.94 lb (32.18 kg)</td> </tr> <tr> <td colspan="2">(One hard drive, two power supplies, four DIMMs, and two processors installed)</td> </tr> </table>	Maximum	116.56.0 lb (52.87 kg)	(all hard drives, power supplies, DIMMs and processors installed)		Minimum	70.94 lb (32.18 kg)	(One hard drive, two power supplies, four DIMMs, and two processors installed)	
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(One hard drive, two power supplies, four DIMMs, and two processors installed)										
	<b>Input Requirements</b> (per power supply)	<table border="0"> <tr> <td>Rated Line Voltage</td> <td>100 - 120 VAC (1200W PS only) 200 - 240 VAC (1200W &amp; 1500W PS)</td> </tr> <tr> <td>Rated Input Current</td> <td>9.2A (100 VAC), 6.6A (200 VAC) - 1200W PS8.3A (200 VAC) - 1500W PS</td> </tr> <tr> <td>Rated Input Frequency</td> <td>50 to 60 Hz</td> </tr> <tr> <td>Rated Input Power</td> <td>1000 W (120 VAC), 1320 W (230VAC) - 1200W PS 1652 W (at 230 VAC) - 1500W PS</td> </tr> </table>	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
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	<b>Power Specifications</b>	<p><b>NOTE:</b> To review typical system power ratings use the HPE Power Advisor which is available online located at url: <a href="http://www.hp.com/go/proliant-energy-efficient">http://www.hp.com/go/proliant-energy-efficient</a> or <a href="http://www.hp.com/go/hppoweradvisor">http://www.hp.com/go/hppoweradvisor</a></p> <p>- Click on the system of interest. Example: DL580 Gen9</p> <p>- Follow the instructions of the next screens.</p>								
	<b>Power Supply Output</b> (per power supply)	<table border="0"> <tr> <td>Rated Steady-State Power and Maximum Peak Power</td> <td>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</td> </tr> </table>	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						
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	<b>System Inlet Temperature</b>	<table border="0"> <tr> <td>Operating</td> <td>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)..</td> </tr> <tr> <td>Non-operating</td> <td>-40° to 70°C (-40° to 158°F). Maximum rate of change is 20°C/hr (36°F/hr).</td> </tr> </table>	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).				
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	<b>Relative Humidity</b>	<table border="0"> <tr> <td>Operating</td> <td>10% to 90% relative humidity (Rh), 28°C</td> </tr> </table>	Operating	10% to 90% relative humidity (Rh), 28°C						
Operating	10% to 90% relative humidity (Rh), 28°C									

**Technical Specifications**

(non-condensing)		(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.
<b>Altitude</b>	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).
<b>Acoustic Noise</b>	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	
		<ul style="list-style-type: none"> <li>• LWAd – 6.8 B</li> <li>• LpAm – 51.2</li> </ul>
	Operating	
		<ul style="list-style-type: none"> <li>• LWAd – 6.9 B</li> <li>• LpAm – 51.2</li> </ul>
	Performance Configuration (Four Intel® Xeon® E7-4890 v3 processors, 16x16 GB DIMMs, Ten HDDs, Eight fans, Four power supplies)	
	Idle	
		<ul style="list-style-type: none"> <li>• LWAd – 6.7 B</li> <li>• LpAm – 50.7</li> </ul>
	Operating	
		<ul style="list-style-type: none"> <li>• LWAd – 6.9 B</li> <li>• LpAm – 51.3</li> </ul>
<b>Emissions Classification</b> (EMC)	<b>FCC Rating</b>	Class A
	<b>Normative Standards</b>	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN



**Technical Specifications**

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.

**HPE SAP HANA  
3PAR StoreServ  
7200c/7400c  
Block**

**Product Dimensions, and Weight**

<b>Physical Dimensions</b>	<b>Height in/mm/U</b>	<b>Width in/mm</b>	<b>Depth in/mm</b>	<b>Max Weight lb/kg</b>
HPE 3PAR StoreServ 7200c 2N Storage Base (with two host adapters, no drives)	3.46/87.95/2	19/483	26.6/676.1*	48.7/22.1
HPE 3PAR StoreServ 7400c 4N Storage Base (with four host adapters, no drives)	6.925/175.9/4	19/483	26.6/676.1*	99.8/45.3
HPE M6710 2.5 inch 2U SAS Drive Enclosures (without drives)	3.46/87.95/2	19/483	24.8/630.7	33.5/15.2

\* includes length of ejector handles

**Power Requirements**

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

Component	Idle (watts / BTU/hr)	Transactional (watts / BTU/hr)
Node Pair (7200c or 7400c), 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
HPE M6710 2.5 inch 2U SAS Drive Enclosure, no drives	150 / 512 (average)	150 / 512 (average)
900GB 10K Small Form Factor HDD	4.8 / 16.4	6.2 / 21.1
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

**Technical Specifications**

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 M6710 Drive Enclosure - 105 CFM M6720 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 AS/NZS CIPSR 22: 2009 Class A CNS 13438:2006 Class A 47 CFR Part 15 Subpart b Class A ICES-003 Issue 4 Class A V-3/2012.04 Class A RRA Notice No. 2011-24 (2011.12.23) Class A RRA Notice No. 2011-25 (2011.12.23)						
Acoustics	Fan Speed (RPM)	7200c/7400c	7400c 4N Storage Base	7440c 2N Storage Base	7440c 4N Storage Base	M6710 2.5" 2U SAS Drive Enclosure	M6720 3.5" 4U SAS Drive Enclosure
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	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) EN 60950-1:2006 +A11:2009 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 IC Class A VCCI Class A BSMI Class A KCC GOST-R C-Tick WEEE China RoHS EU RoHS						

**NOTE: Specifications are subject to change without notice.**

**Technical Specifications**

<b>HPE SAP HANA FlexFabric 5930 LAN Block</b>	<b>I/O ports and slots</b>	4 module slots	
	<b>Additional ports and slots</b>	1 RJ-45 serial console port	
		1 RJ-45 out-of-band management port	
		1 USB 2.0	
	<b>Power supplies</b>	4 power supply slots 2 minimum power supplies required (ordered separately)	
	<b>Fan tray</b>	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 (0°C) to 113°F (45°C). Failure to comply with these operating requirements may void the product warranty.	
	<b>Physical characteristics</b>	<b>Dimensions</b>	17.32(w) x 25.98(d) x 3.47(h) in (44.00 x 66.0 x 8.81 cm) (2U height)
		<b>Weight</b>	66.14 lb (30 kg) shipping weight
<b>Full configuration weight</b>		59.52 lb (27 kg)	
<b>Memory and processor</b>	1 GB flash; Packet buffer size: 12.2 MB, 4 GB SDRAM		
<b>Performance</b>	<b>10 Gbps Latency</b>	< 1 μs (64-byte packets)	
	<b>Throughput</b>	up to 1429 Mpps	
	<b>Routing/Switching capacity</b>	2560 Gbps	
	<b>Routing table size</b>	120000 entries (IPv4), 60000 entries (IPv6)	
	<b>MAC address table size</b>	288000 entries	
	<b>Reliability</b>	<b>MTBF (years)</b>	35.8
<b>MTTR (hours)</b>		1	
<b>Environment</b>	<b>Operating temperature</b>	32°F to 113°F (0°C to 45°C)	
	<b>Operating relative humidity</b>	10% to 90%, noncondensing	
	<b>Acoustic</b>	Low-speed fan: 59.8 dB, High-speed fan: 74.4 dB	
<b>Electrical characteristics</b>	<b>Frequency</b>	50/60 Hz	
	<b>Maximum heat dissipation</b>	474/3030 BTU/hr (500.07/3196.65 kJ/hr)	
	<b>Voltage</b>	90 - 264 VAC, rated	
		-40 to -75 VDC, rated (depending on power supply chosen)	
	<b>Maximum power rating</b>	888 W	
	<b>Idle power</b>	139 W	
	<b>Notes</b>	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat	

**Technical Specifications**

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.

<b>Safety</b>	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
<b>Emissions</b>	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
<b>Immunity</b>	<p><b>Generic</b> ETSI EN 300 386 V1.3.3</p> <p><b>EN</b> EN 55024:1998+ A1:2001 + A2:2003</p> <p><b>ESD</b> EN 61000-4-2; IEC 61000-4-2</p> <p><b>Radiated</b> EN 61000-4-3; IEC 61000-4-3</p> <p><b>EFT/Burst</b> EN 61000-4-4; IEC 61000-4-4</p> <p><b>Surge</b> EN 61000-4-5; IEC 61000-4-5</p> <p><b>Conducted</b> EN 61000-4-6; IEC 61000-4-6</p> <p><b>Power frequency magnetic field</b> IEC 61000-4-8; EN 61000-4-8</p> <p><b>Voltage dips and interruptions</b> EN 61000-4-11; IEC 61000-4-11</p> <p><b>Harmonics</b> EN 61000-3-2, IEC 61000-3-2</p> <p><b>Flicker</b> EN 61000-3-3, IEC 61000-3-3</p>
<b>Management</b>	IMC - Intelligent Management Center; command-line interface; out-of-band management; SNMP Manager; Telnet; FTP
<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hp.com/networking/services">http://www.hp.com/networking/services</a> 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.

<b>HPE 1075mm Shock Intelligent Rack</b>	<b>Total Cabinet Area</b>	79.00 x 44.30 x 23.54 in (200.66 x 112.52 x 59.79 cm)
	<b>Shipping (with packaging materials)</b>	85.35 x 50.87 x 35.43 in (216.80 x 129.20 x 90 cm)
	<b>Static Load*</b>	3000 lb (1361 kg)
	<b>Dynamic Load**</b>	2500 lb (1134 kg)
<b>HPE 1200mm Shock Intelligent Rack</b>	<b>Total Cabinet Area</b>	79.00 x 51.19 x 23.54 in (200.66 x 130.02x 59.79 cm)
	<b>Shipping (with packaging materials)</b>	85.82 x 57.87 x 35.43 in (218.00 x 147.00 x 90 cm)
	<b>Static Load*</b>	3000 lb (1360.78 kg)
	<b>Dynamic Load**</b>	3000 lb (1360.78 kg)

## Technical Specifications

### 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

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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.

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## Summary of Changes

Date	Version History	Action	Description of Change
19-Feb-2016	From Version 2 to 3	Changed	Changes made throughout the document
22-Jan-2016	From Version 1 to 2	Changed	Changes made throughout the document
17-Aug-2015	Version 1	Created	QuickSpecs document created



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