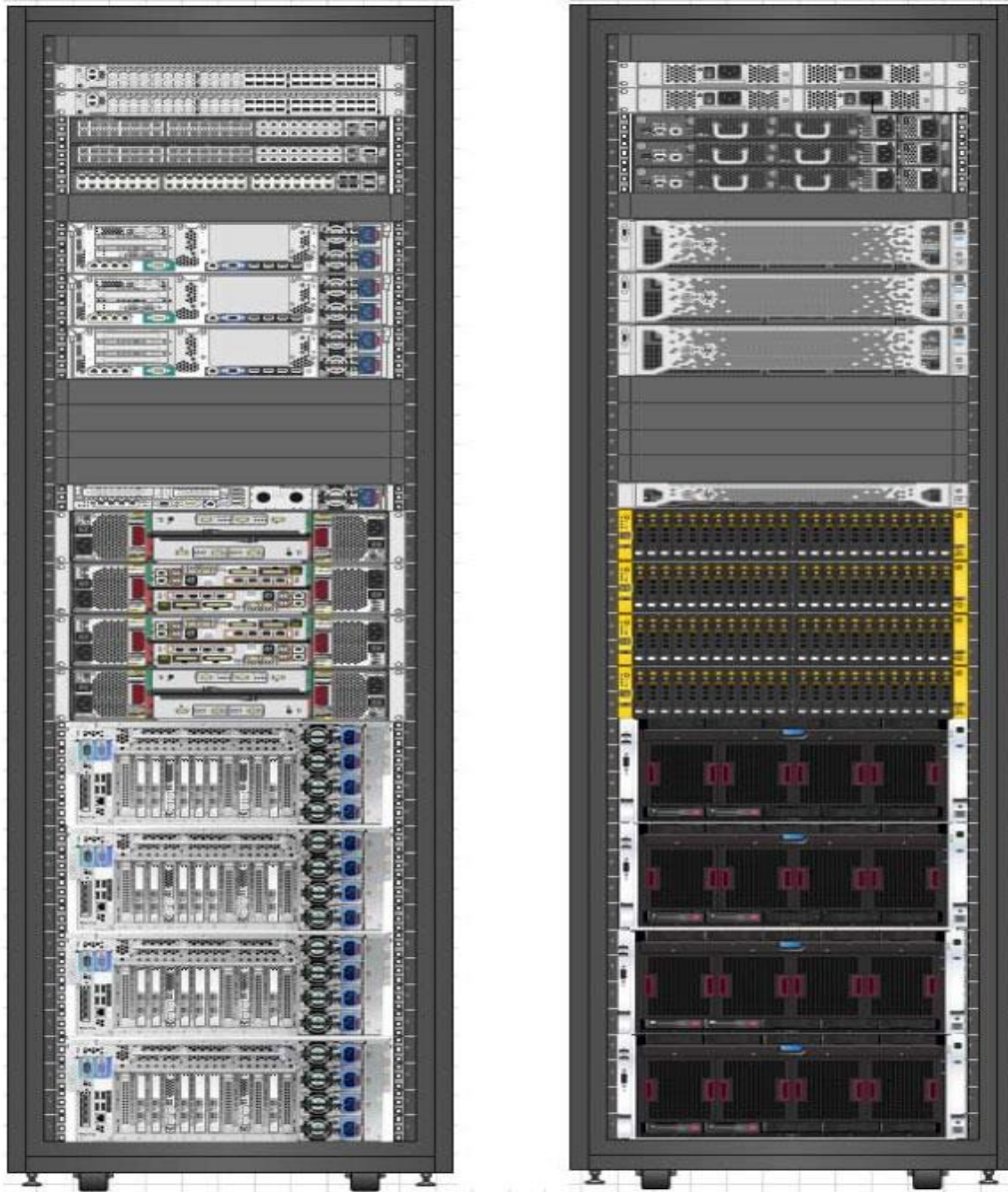


## Overview

**HP ConvergedSystem 500 for SAP HANA Scale-out Configurations with the Intel® Xeon® E7 v2 architecture (RETIRED)**

1. HP CS 500 for SAP HANA SAN Block (2x)
2. HP CS 500 for SAP HANA LAN Block (2x)
3. HP CS 500 for SAP HANA Mgmt Switch Block (1x)
4. HP CS 500 for SAP HANA NFS Block (2x)
5. HP CS 500 for SAP HANA CMC Block (1x)
6. HP CS 500 for SAP HANA 3PAR SP Block (1x)
7. HP CS 500 for SAP HANA 3PAR Base Block (1x)
8. HP CS 500 for SAP HANA Scale Out Node (4x)

**At A Glance**

HP ConvergedSystem 500 for SAP HANA Scale-out Configurations with the Intel® Xeon® E7 v2 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 HP and SAP you can:

## Overview

- **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 HP 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 HP 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 HP ConvergedSystems are purpose-built and optimized for SAP HANA with high availability and data protection available only from HP
  - Get proven performance with #1 SAP Netweaver BW-EML standard application benchmark results for HP scale-up and scale-out configurations (Certifications 2013020 and 2013037)
- **Protect your data, and reduce downtime:** Prevent data loss and recover from outages in seconds with optional HP Serviceguard for SAP HANA, the industry's only unattended, automated failover and disaster tolerance solution for SAP HANA
  - Optional Serviceguard software offers automated, unattended high availability and disaster tolerance capabilities, that ensure that your mission critical data stays protected, in the event of a disaster
  - Optimized for the ConvergedSystem 500 for SAP HANA scale-up and scale-out offerings, HP Serviceguard for SAP HANA is easy to administer and reduces the need for manual intervention, delivering a robust business continuity solution for your mission critical data
  - Available dual purpose configurations with HP Serviceguard maximize flexibility, and reduce your cost of ownership, by allowing you to use the secondary cluster as a test or development instance
- **Scale easily:** Grow as your data grows and add scale to different SAP HANA workloads --analytics, data warehouse and business applications --to protect investments and expand as needed
  - Scale up and out with modular, standards-based architecture available in scale-up configurations from 256 GB - 2 TB, and scale-out systems that grow from 4 to 16 TB.
  - Handle multiple SAP HANA workloads on the same system with HP StoreServ 3PAR storage thin provisioning (for scale-out configurations)
- **Minimize risk:** HP remains committed to industry-standard x86 computing and a long-term SAP HANA roadmap.
  - Buy with confidence from HP, 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 800 SAP HANA installations worldwide.

Take advantage of the expertise of thousands of HP 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 HP.

HP ConvergedSystem 500 for SAP HANA Scale-out Configurations are based on the latest Intel® Xeon® E7-4880v2 architecture, and are optimized for SAP HANA systems that are factory-integrated to give you the fastest time to value. Certified up to 16 TB, The HP ConvergedSystem 500 for SAP HANA Scale-out Configurations are based on the following HP technologies and services:

- HP ProLiant DL580 Gen8 Server (Compute Node)
- HP 3PAR StoreServ 7400 (Persistent Storage)
- HP 3PAR 7000 Service Processor (Persistent Storage)
- HP ProLiant DL380p Gen8 Server (File and Management Servers)
- HP SN6000B Series Fibre Channel Switch (Networking Switches)

### Overview

- HP 5900 Switch Series (Networking Switches)
- HP Integrated Lights-Out
- HP Serviceguard NFS
- HP Insight Remote Support
- HP Systems Insight Manager
- HP Factory Integration through HP Factory Express Deployment Services that provide hardware integration, validation, and on-site installation
- HP Proactive Care provides a single source support for the complete HP ConvergedSystem 500 for SAP HANA system, including the software
- HP ConvergedSystem 500 for SAP HANA Deployment Accelerator Service to get you up and running on SAP HANA quickly

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

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

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

For more information about HP ProLiant DL580 Gen8, see <http://www.hp.com/servers/dl580-gen8>

For more information about HP 3PAR StoreServ Storage, see: <http://www.hp.com/go/3par>

For more information about HP Insight Remote Support, see <http://www.hp.com/go/insightremotesupport>

For more information about HP Serviceguard Software, see <http://www.hp.com/info/sglx>

For more information about HP Systems Insight Manager, see <http://www.hp.com/go/hpsim>

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

For more information about HP Factory Express, see: <http://www.hp.com/go/factoryexpress>

For more information about HP support services, see: <http://www.hp.com/go/supportservices>

### Standard Features

**Hardware and Software** HP ConvergedSystem 500 for SAP HANA Scale-out Configurations with the Intel® Xeon® E7 v2 architecture are certified by SAP up to 16 TB.

<b>Compute Node</b>	
<b>HP Part Number</b>	H6X93A - HP ConvergedSystem 500 for SAP HANA Scale Out Node
<b>Processors</b>	Intel® Xeon® E7-4880v2 (2.5GHz/15-core/37.5MB/130W) Processor
<b>Amount of memory</b>	1 TB per node (scalable to 16 nodes)
<b>Base product</b>	<b>HP ProLiant DL580 Gen8 Server:</b> The HP ProLiant DL580 Gen8 Server is an enterprise-grade four socket x86 server offering breakthrough performance, rock-solid reliability, and compelling consolidation and manageability efficiencies. It is ideal for mission-critical enterprise, business intelligence, and database applications.
<b>Persistent Storage</b>	
<b>HP Part Numbers</b>	H6X99A- HP ConvergedSystem 500 for SAP HANA 3PAR Service Processor Block H6Y61A- HP ConvergedSystem 500 for SAP HANA Version B 3PAR Base Block H6Y62A- HP ConvergedSystem 500 for SAP HANA Version B Drive Enclosure
<b>Purpose</b>	For SAP HANA log and data file storage (persistence layer). The scale-out configuration leverages the HP 3PAR StoreServ 7400 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>HP 3PAR StoreServ 7400:</b> With the HP 3PAR StoreServ 7400 Storage, spend less time managing storage, get more features for less money, and do it all without sacrificing performance or future scalability. With hardware assisted thin storage it is the only platform that guarantees a 50% reduction in capacity requirements <b>HP 3PAR 7000 Service Processor:</b> The HP 3PAR Service Processor monitors the HP 3PAR StoreServ 7400 and enables remote monitoring and remote servicing of the array. The Service Processor functions as the communication interface between a customer's IP network and HP 3PAR Central by managing all service-related communications.
<b>File and Management Servers</b>	
<b>HP Part Numbers</b>	H6X97A - HP ConvergedSystem 500 for SAP HANA Network File Server Block H6X96A - HP ConvergedSystem 500 for SAP HANA Central Management Console Block
<b>Purpose</b>	The Network File Server (NFS) block stores the SAP HANA application binaries, configuration files and trace files. The Central Management Console (CMC) block contains all of the management utilities for the HP 3PAR StoreServ array, the File Controllers and other hardware components as well as provides the remote connection to the HP response center.
<b>Base products</b>	<b>HP ProLiant DL380p Gen8 Server:</b> With enhanced configuration flexibility, unmatched performance, and leading energy efficient design the DL380p Gen8 offers the perfect solution for the dynamic compute requirements of

### Standard Features

	today's demanding datacenters.
<b>Networking Switches</b>	
<b>HP Part Numbers</b>	H6X94A HP ConvergedSystem 500 for SAP HANA Storage Area Network Switch Block H6X95A - HP ConvergedSystem 500 for SAP HANA Local Area Network Switch Block H6Y04A - HP ConvergedSystem 500 for SAP HANA Management Switch Block
<b>Purpose</b>	The Storage Area Network (SAN) switch block provides the connectivity between the SAP HANA database servers and the shared storage. The Local Area Network (LAN) switch block provides connectivity to the customer network. It is also used to interconnect racks of HANA equipment allowing expansion of the HANA internal network to support up to sixteen HANA nodes. The Management switch block connects the management ports for the SAN switches to the centralized management network
<b>Base products</b>	<b>HP SN6000B 16Gb 48-port/24-port Active Fibre Channel Switch:</b> The HP 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. <b>HP 5900 Switch Series:</b> The HP 5900 Switch Series is a family of high-density, ultra-low-latency, top-of-rack (ToR) switches that is part of the HP FlexNetwork architecture's HP 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. The HP 5900 AF-48XG-4QSFP+ Switch is used for the HANA LAN and the HP 5900AF-48G-4XG-2QSFP+ Switch is used for Management
<b>Base and Expansion Racks</b>	
<b>HP Part Number</b>	H6X91B - HP ConvergedSystem 500 for SAP HANA Base Rack H6X92B - HP ConvergedSystem 500 for SAP HANA Expansion Rack H6Y43A - HP CS 500 for SAP HANA Dual Purpose Rack
<b>Purpose</b>	Houses the HANA server nodes, the storage and switches. The base rack also houses the CMC (management) server and the clustered NFS servers. The dual purpose rack is an option for when dual purpose use is desired in high availability and disaster tolerance tiers.
<b>Base products</b>	<b>HP 642 1200mm Shock Intelligent Rack:</b> The HP 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.
<b>Included Software and Operating System</b>	
<b>Base products</b>	HP Integrated Lights-Out: A suite of embedded management technologies that supports the complete lifecycle of all HP ProLiant Gen8 servers, from initial deployment to ongoing management and service alerting. HP Serviceguard NFS: HP Serviceguard for Linux is high availability clustering software designed to protect applications and services from planned and unplanned downtime. The HP Serviceguard Toolkit for NFS on



## Standard Features

	<p>Linux allows you to start, stop, and monitor a Network File System in a Serviceguard cluster environment</p> <p>HP Insight Remote Support: Continuously monitoring your environment, HP Insight Remote Support alerts you and provides up to 66% faster problem resolution and up to 95% first time fix rate.</p> <p>HP Systems Insight Manager: With HP Systems Insight Manager you can manage your support contracts and warranties, and automate remote support via HP Insight Remote Support</p> <p>A choice of either the SUSE Linux Enterprise Server for SAP Applications Operating System or the Red Hat Enterprise Linux for SAP HANA Operating System</p> <p>SAP HANA (customer must obtain license to use from SAP)</p>
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## HP Services

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

With HP Factory Express Deployment Services, the majority of the integration is performed in the HP factory so that deployment time is reduced with hardware built to customers' exact specifications, then shipped as a turn-key solution from the HP 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 HP ConvergedSystem for SAP HANA with customer network information (IP addresses, virtual local area networks (vLANs), etc.)
- Configuration of HP 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 HP sales representative to engage an HP Engagement Project Manager (EPM) who will manage the CID process.

### HP SAP Deployment Accelerator Service

HP SAP HANA Deployment Accelerator Services simplify the process of implementing and configuring HP 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

## Standard Features

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

### **HP SAP HANA High Availability and Disaster Tolerance Services**

For Serviceguard for SAP HANA High Availability (HA) Scenarios and Serviceguard for SAP HANA High Availability/Disaster Tolerance (HA/DT) 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 HP consultant will collect the necessary technical information and configure the HP ConvergedSystem for SAP HANA in a HA or HA/DT environment. Key core deliverables that set HP apart include:

- HP consultant acts as the Single Point of contact during the HA or HA/DT implementation of the HP ConvergedSystem 500 for SAP HANA
- System Replication solution configured according to your requirements and in line with HP's and SAP's recommendations
- A Service Guard HA or HA/DT solution configured according to customer's requirements and in line with HP's and SAP's recommendations
- Correctly configured Highly Available SAP HANA appliance
- Customer knowledge sharing

**NOTE:** For HA or HA/DT configurations with dual purposing, additional services will be required. Please contact your sales representative for more information.

### **HP Support**

**HP Proactive Care** - Required minimum support for the system, providing a single point of contact for the support of all components including SAP software and operating systems. HP Proactive Care in SAP environments helps customers identify and address IT issues before they cause performance problems. HP 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, HP and SAP collaborate to resolve issues around SAP HANA, leveraging specially aligned collaborative processes between HP and SAP.

**NOTE:** Additional support options are available. See Step 2 of How to Order below.

## Warranty Services

The HP ConvergedSystem 500 for SAP HANA is covered by a global limited warranty and supported by HP Services. Beyond the warranty, HP 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.

### Standard Features

**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 HP 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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### HP Financial Services

To support customers' transition, HP 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 HP Financial Services Representative. In the United States, call 1-888-277-5942. In Canada, dial 1-800-HP-LEASE. For more information please visit: <http://www.hp.com/hpfinancialservices> for links to HP Financial Services around the world.

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### End-of-life management and recycling

Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: <http://www.hp.com/go/green>. To recycle your product, please go to: <http://www.hp.com/go/green> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: <http://www.hp.com/go/green>. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.



## How to Order

Certified up to 16 TB, The HP ConvergedSystem 500 for SAP HANA Scale-out Configurations with the Intel® Xeon® E7 v2 architecture comprise of the following HP 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 HP and third party software
- **HP Factory Express:** For system integration, customer-specific customization, and comprehensive system quality assurance. Included as part of the ordering process.
- **HP Deployment Accelerator Service:** For on-site installation and deployment. Included as part of the ordering process.
- **HP Support Services:** Proactive Care Support is the minimum support level.

## Step 1: Choose your scale-out size

**HP ConvergedSystem 500 for SAP HANA** Scale-out configurations are available in steps of one, 1 TB increments starting at 2 TB.

Refer to the configuration chart below to select the quantity of the hardware and software required:

	HP Part	Description	4TB Quantity	8TB Quantity	12TB Quantity	16TB Quantity
<b>Compute Node</b>						
	H6X93A	HP CS 500 for SAP HANA Scale Out Node	4	8	12	16
<b>Persistent Storage</b>						
	H6X99A	HP CS 500 for SAP HANA 3PAR SP Block	1	2	3	4
	H6Y61A	HP CS 500 for SAP HANA Ver B 3PAR Block	1	2	3	4
	H6Y62A	HP CS 500 for SAP HANA Ver B Drive Encl	2	4	6	8
<b>File and Management Servers</b>						
	H6X96A	HP CS 500 for SAP HANA CMC Block	1	1	1	1
	H6X97A	HP CS 500 for SAP HANA NFS Block	2	2	2	2
<b>Networking Switches</b>						
	H6X94A	HP CS 500 for SAP HANA SAN Block	2	4	6	8
	H6X95A	HP CS 500 for SAP HANA LAN Block	2	4	6	8
	H6Y04A	HP CS 500 for SAP HANA Mgmt Switch Block	1	1	1	1
<b>Base &amp; Expansion Rack</b>						
	H6X91B	HP CS 500 for SAP HANA Base Rack	1	1	1	1
	H6X92B	HP CS 500 for SAP HANA Expansion Rack	0	1	2	3
<b>Software</b>						
	G6F49A	HP iLO Adv incl 3yr TS U 1-Svr Lic	7	11	15	19
	G7U12A	HP SG - SAP HANA NFS Flx SW	4	4	4	4
<b>Operating System</b>						
A choice of either the SUSE Linux Enterprise Server for SAP Applications Operating System or the Red						

### How to Order

Hat Enterprise Linux for SAP HANA Operating System is available, both with either a 3 year or a 5 year subscription.

3 Year	G6F47A	SLES SAP 1-2 Sckt Phscl 3yr 24x7 LTU	2	2	2	2
3 Year	G6F48A	SLES SAP 4 Sckt Phscl 3yr 24x7 LTU	4	8	12	16
5 Year	J4H68A	SLES SAP 1-2 Sckt Phscl 5yr 24x7 LTU	2	2	2	2
5 Year	J4H69A	SLES SAP 4 Sckt Phscl 5yr 24x7 LTU	4	8	12	16
3 Year	L5P71A	RHEL SAP HANA 2 Skt Phy 3yr 24x7 Flx LTU	2	2	2	2
3 Year	L5P73A	RHEL SAP HANA 4 Skt Phy 3yr 24x7 Flx LTU	4	8	12	16
5 Year	L5P72A	RHEL SAP HANA 2 Skt Phy 5yr 24x7 Flx LTU	2	2	2	2
5 Year	L5P74A	RHEL SAP HANA 4 Skt Phy 5yr 24x7 Flx LTU	4	8	12	16

**NOTE:** For upgrade scenarios, or if this scale-out system is being added as an additional test, development or production instance, to an already existing HP ConvergedSystem 500 for SAP HANA scale-out environment, then ensure that the persistent storage across all HP ConvergedSystem 500 for SAP HANA scale-out systems in your environment is the same. Consult with your HP sales representative for special ordering instructions.

Choose the HP Power Distribution Unit(s) for the HP CS 500 for SAP HANA Base Rack (HP Part Number H6X91B):

H6X91B#001 HP Intelligent Modular 24A North America/Japan Core PDU

H6X91B#002 HP Intelligent 40A North America/Japan Core PDU

H6X91B#003 HP Intelligent Modular 32A International Core PDU

H6X91B#004 HP Intelligent Modular 3PH 40A North America/Japan PDU

H6X91B#005 HP Intelligent Modular 3PH 24A North America/Japan Core PDU

H6X91B#006 HP Intelligent Modular 3PH 32A International Core PDU

H6X91B#007 HP Intelligent Modular 3PH 48A North America/Japan Core PDU

Choose the HP Power Distribution Unit(s) for every HP CS 500 for SAP HANA Expansion Rack (HP Part Number H6X92B):

H6X92B#001 HP Intelligent Modular 24A North America/Japan Core PDU

H6X92B#002 HP Intelligent 40A North America/Japan Core PDU

H6X92B#003 HP Intelligent Modular 32A International Core PDU

H6X92B#004 HP Intelligent Modular 3PH 40A North America/Japan PDU

H6X92B#005 HP Intelligent Modular 3PH 24A North America/Japan Core PDU

H6X92B#006 HP Intelligent Modular 3PH 32A International Core PDU

H6X92B#007 HP Intelligent Modular 3PH 48A North America/Japan Core PDU

## Step 2: Select optional configurations

**HP Serviceguard for SAP** HP Serviceguard for SAP HANA offers protection against unplanned downtime and automated,

## How to Order

## HANA

unattended failover for SAP HANA scale-up and scale-out configurations. With HP Serviceguard for SAP HANA, you can rest assured that your data is safe, with the industry's only automated failover and disaster tolerant solution for SAP HANA.

**NOTE:** At this time, Serviceguard for automated and unattended High Availability and Disaster Tolerance for SAP HANA is only available with the SUSE Linux Enterprise Server for SAP Applications Operating System installed on the HP ConvergedSystem 500 for SAP HANA Scale-out configurations.

HP Serviceguard for SAP HANA is offered in two variants, depending on your needs:

- Local High Availability Scenarios
- Disaster Tolerance Scenarios across data-centers

The Serviceguard solution for SAP HANA is comprised of the following HP technologies:

- **HP Serviceguard for SAP HANA software**
- **HP ConvergedSystem Quorum Server:** Based on the ProLiant DL320e Gen8 Server that enables powerful quad-core processor computing performance with larger memory and storage capacity, all in a small package. A single HP ConvergedSystem Quorum server (HP Part Number H6X90A) can be used for multiple Serviceguard Scale-up or Scale-out clusters
- **HP ConvergedSystem 500 for SAP HANA Switch Block:** Based on the HP 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. The switch blocks are required in local high availability scenarios

Additionally, the HP ConvergedSystem Quorum Server comes preinstalled with SUSE Linux Enterprise Server for SAP Applications operating system, and HP Integrated Lights-Out Advanced software.

#### Serviceguard for SAP HANA High Availability Scenarios

- For each scale-out cluster, order **four** licenses of HP Serviceguard for ConvergedSystem for SAP HANA Scale-out HA Flex Software (HP Part Number: G2H73A) for every scale-out node in the cluster
- **One** HP ConvergedSystem Quorum Server (HP Part Number H6X90A)
- **Two** HP ConvergedSystem 500 for SAP HANA Switch Block (HP Part Number H6X98A)
- **One** SUSE Linux Enterprise Server SAP 1-2 Sockets Physical 3 Year Subscription 24x7 Support License (HP Part Number G6F47A)
- **One** HP iLO Advanced 1 Server with 3yr 24x7 Technical Support and Updates License (HP Part Number G6F49A)

#### Serviceguard for SAP HANA High Availability/Disaster Tolerance Scenarios

- For each scale-out cluster, order **four** licenses of HP Serviceguard for ConvergedSystem for SAP HANA Scale-out HA/DT Flex Software (HP Part Number: G2H74A) for every scale-out node in the cluster
- **One** HP ConvergedSystem Quorum Server (HP Part Number H6X90A)
- **One** SUSE Linux Enterprise Server SAP 1-2 Sockets Physical 3 Year Subscription 24x7 Support License (HP Part Number G6F47A)
- **One** HP iLO Advanced 1 Server with 3yr 24x7 Technical Support and Updates License (HP Part

## How to Order

Number G6F49A)

**Dual Purpose Storage**

For either the Serviceguard for SAP HANA High Availability, or the Serviceguard for SAP HANA High Availability/Disaster Tolerance scenarios, if a dual role configuration is desired, then the following additional components need to be ordered for the dual purpose storage:

- **One** HP ConvergedSystem 500 for SAP HANA Dual Purpose Rack (HP Part Number: H6Y43A)
- Power Distribution Unit(s) for the rack, which can be chosen from the following options:
  - H6Y43A#001 HP Intelligent Modular 24A North America/Japan Core PDU
  - H6Y43A#002 HP Intelligent 40A North America/Japan Core PDU
  - H6Y43A#003 HP Intelligent Modular 32A International Core PDU
  - H6Y43A#004 HP Intelligent Modular 3PH 40A North America/Japan PDU
  - H6Y43A#005 HP Intelligent Modular 3PH 24A North America/Japan Core PDU
  - H6Y43A#006 HP Intelligent Modular 3PH 32A International Core PDU
  - H6Y43A#007 HP Intelligent Modular 3PH 48A North America/Japan Core PDU
- **One** HP ConvergedSystem 500 for SAP HANA 3PAR Service Processor Block (HP Part Number: H6X99A)
- **One** HP SAP HANA 3PAR 1.2 Base Block (HP Part Number: A2E93A)
- Add the following additional components, depending on the **total** number of the base and expansion racks (HP Part Numbers H6X91B or H6X92B) in the secondary site / secondary cluster:
- **Two** HP ConvergedSystem 500 for SAP HANA Drive Enclosure (HP Part Number: H6Y05A) **and** **Forty Eight** HP ConvergedSystem 3PAR 7400 Operating System Suite Drive License To Use (HP Part Number: D4U46A), if there are a **total of two racks** in the secondary site / secondary cluster
- **Four** HP ConvergedSystem 500 for SAP HANA Drive Enclosure (HP Part Number: H6Y05A) **and** **Ninety Six** HP ConvergedSystem 3PAR 7400 Operating System Suite Drive License To Use (HP Part Number: D4U46A), if there are a **total of three racks** in the secondary site / secondary cluster
- **Six** HP ConvergedSystem 500 for SAP HANA Drive Enclosure (HP Part Number: H6Y05A) **and** **One Hundred Twenty** HP ConvergedSystem 3PAR 7400 Operating System Suite Drive License To Use (HP Part Number: D4U46A), if there are a **total of four racks** in the secondary site / secondary cluster

**NOTE:** For HA or HA/DT configurations with dual purposing, additional services will be required. Please contact your sales representative for more information

**NOTE:** At this time, Dual Purpose Storage is only available with the SUSE Linux Enterprise Server for SAP Applications Operating System installed on the HP ConvergedSystem 500 for SAP HANA Scale-out configurations

**NOTE:** When ordering Serviceguard or the Dual Purpose storage, rack upgrades kits may need to be added to the order. Consult with your HP sales representative for special ordering instructions

**Step 3: Choose Support and Services**

HP 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.

**HP Factory Express**

HP ConvergedSystem 500 for SAP HANA Scale-out order will include FE Deployment Services covering

## How to Order

<b>Deployment Services</b>	the factory integration and onsite installation and startup services
<b>HP SAP Deployment Accelerator Service</b>	HP ConvergedSystem 500 for SAP HANA Scale-out order will include the HP SAP Deployment Accelerator Service providing quick, easy implementation, expert configuration support, and knowledge sharing.
<b>HP Care Pack Support</b>	HP 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. HP 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 HP from the choices outlined below and a separate software support agreement with SAP. The recommended HP support level is HP Proactive Care Advanced or HP Proactive Care plus the HP Personalized Support Option. The minimum required support level is HP Proactive Care. In addition, customers may choose HP Critical Service.

**NOTE:** While support for the SAP HANA software requires a separate support agreement with SAP, HP and SAP collaborate to resolve issues around SAP HANA, leveraging specially aligned collaborative processes between HP 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.

### HP Proactive Care Advanced – 3 or 5 year

HP Proactive Care Advanced is the recommended support for CS SAP HANA environments. It builds on HP 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.

### HP Proactive Care -3 or 5 Year

HP Proactive Care in SAP environments begins with providing all of the benefits of proactive monitoring and reporting along with rapid reactive care to put in place the fundamentals needed for stability and availability of the SAP environment. Customers also receive enhanced reactive support for HP SAP issues, through access to HP's Center of Expertise and specially aligned, collaborative reactive processes between HP 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.

### HP Proactive Select -3 or 5 Year

Addresses on-going operational and staffing needs of SAP HANA environments. The customers can buy HP 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 HP HANA appliance

### How to Order

updates.

#### **HP Critical Service with the SAP option -3 or 5 Year**

Provides direct access to HP's mission-critical call center and fast reactive and proactive deliverables  
For customers running mission-critical IT applications. Call-to-repair reactive support gives access to the HP Global Mission Critical Solution Center for quick resolution.

#### **HP 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.



## Technical Specifications

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

<b>HP ProLiant DL580 Gen8 Compute Node</b>	<b>Dimensions</b> (H x W x D) (with bezel)	6.94" x 19.0" x 27.55" (17.6cm x 48.3cm x 70.0cm)	
	<b>Weight</b> (approximate)	Maximum (all hard drives, power supplies, DIMMs and processors installed)	100.0 lb (45.4 kg)
		Minimum (one hard drive, two power supplies, four DIMMs, and two processors installed)	66.0 lb (30.0 kg)
<b>Input Requirements</b> (per power supply)	<b>Input Requirements</b> (per power supply)	Rated Line Voltage	100 - 127 VAC, 200 - 240 VAC
		Rated Input Current	12 A (at 100 VAC), 8 A (at 200 VAC)
		Rated Input Frequency	50 to 60 Hz
		Rated Input Power	1161 W (at 100 VAC), 1598 W (at 240 VAC)
<b>BTU Rating</b>	Maximum	3960 BTU/hr (at 100 VAC), 5450 BTU/hr (at 200 VAC)	
<b>Power Specifications</b>	<b>NOTE:</b> To review typical system power ratings use the HP 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> - Click on the system of interest. Example: DL580 Gen8 - Follow the instructions of the next screens.		
<b>Power Supply Output</b> (per power supply)	Rated Steady-State Power	910 W (low line), 1300 W (high line)	
	Maximum Peak Power	910 W (low line), 1300 W (high line)	
<b>System Inlet Temperature</b>	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	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).	
<b>Relative Humidity</b>	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F)	

# QuickSpecs

## HP ConvergedSystem 500 for SAP HANA Scale-out Configurations with the Intel® Xeon® E7 v2 architecture

### Technical Specifications

	(non-condensing)	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 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).	
	<b>Idle</b>	
	L WAd	6.4 B (with PCI-E)
	L pAm	NA dBA
	<b>Operating</b>	
	L WAd	6.8 B (with PCI-E)
	L pAm	NA dBA
<b>Emissions Classification (EMC)</b>	<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 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.

<b>3PAR StoreServ File Controller</b>	<b>Dimensions</b> (H x W x D) (with bezel)	SFF Drives: 3.44 x 17.54 x 27.50 in (8.73 x 44.55 x 69.85 cm)	
	<b>Weight</b> (approximate)	Maximum (all hard drives, power supply, and processor installed)	61.00 lb (27.66 kg)
		Minimum (one hard drive, power supply, and processor installed)	41.0 lb (18.59 kg)
<b>Input Requirements</b> (per power supply)	Rated Line Voltage	100 to 120 VAC 200 to 240 VAC	

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**Technical Specifications**

	Rated Input Current	For 1200 W Power Supply: 10 A (at 100 VAC), 4.9 A (at 200 VAC) For 750 W Power Supply: 8.9 A (at 100 VAC), 4.3 A (at 200 VAC) For 460 W Power Supply: 5.5 A (at 100 VAC), 2.6 A (at 200 VAC)
	Rated Input Frequency	50 to 60 Hz
	Rated Input Power	For 1200 W Power Supply: 930 W (at 100 VAC), 1348 W (at 200 VAC) For 750 W Power Supply: 857 W (at 100 VAC), 824 W (at 200 VAC) For 460 W Power Supply: 526 W (at 100 VAC), 505 W (at 200 VAC)
<b>BTU Rating</b>	Maximum	For 1200 W Power Supply: 3530 BTU/hr (at 100 VAC), 4600 BTU/hr (at 200 VAC) For 750 W Power Supply: 2925 BTU/hr (at 100 VAC), 2812 BTU/hr (at 200 VAC) For 460 W Power Supply: 1794 BTU/hr (at 100 VAC), 1725 BTU/hr (at 200 VAC)
<b>Power Supply Output</b> (per power supply)	Rated Steady-State Power	For 1200 W Power Supply: 800 W (at 100 VAC), 900 W (at 120 VAC), 1200 W (at 200 to 240 VAC) For 750 W Power Supply: 750 W (at 100 to 120 VAC), 750 W (at 200 to 240 VAC) For 460 W Power Supply: 460 W (at 100 to 120 VAC), 460 W (at 200 to 240 VAC)
	Maximum Peak Power	For 1200 W Power Supply: 800 W (at 100 VAC), 900 W (at 120 VAC), 1200 W (at 200 to 240 VAC) For 750 W Power Supply: 750 W (at 100 to 120 VAC), 750 W (at 200 to 240 VAC) For 460 W Power Supply: 460 W (at 100 to 120 VAC), 460 W (at 200 to 240 VAC)

## Technical Specifications

<b>System Inlet Temperature</b>	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	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
<b>Relative Humidity (non-condensing)</b>	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.
<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 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109). <b>NOTE:</b> The Listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.	
	<b>Idle</b>	
	L WAd	4.1 B
	L pAm	25 dBA
	<b>Operating</b>	
	L WAd	4.3 B
	L pAm	27 dBA
<b>Emissions Classification (EMC)</b>	<b>FCC Rating</b>	Class A
	<b>Normative Standards</b>	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS14336-1; CNS13438; GB4943; GB9254; 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

## Technical Specifications

products is eligible to bear the appropriate compliance logos and statements.

**NOTE:** The Listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.

### Rack space requirements for all regions

#### Floor plan and dimensions

There is a Rack delivered with your HANA server(s). The following graphic shows requirements in regards to floor space and dimensions of a single 42U rack with extension. If multiple racks are used for the HANA system (i.e. more than eight server nodes), each additional rack is configured identically.

### Environment-friendly Products and Approach

### End-of-life management and recycling

Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: <http://www.hp.com/go/green>. To recycle your product, please go to: <http://www.hp.com/go/green> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: <http://www.hp.com/go/green>. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

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**Summary of Changes**

Date	Version History	Action	Description of Change:
17-Jun-2016	From Version 6 to 7	Retire	Document Retired
01-Jun-2015	From Version 5 to 6	Changed	Changed the name to HP ConvergedSystem 500 for SAP HANA Scale-out Configurations with the Intel® Xeon® E7 v2 architecture.
30-Mar-2015	From Version 4 to 5	Changed	Changes made to the Standard Features and How to Order Sections.
09-Feb-2015	From Version 3 to 4	Changed	Changes made to the Standard Features and How to Order Sections.
01-Dec-2014	From Version 2 to 3	Changed	Changes made to the Overview, Standard Features and How to Order Sections.
21-May-2014	From version 1 to 2	Changed	Text in How to Order section was updated

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