

### Overview

#### HPE Solutions for SAP HANA

Hewlett Packard Enterprise offers a portfolio of infrastructure solutions for SAP HANA based on HPE ProLiant servers built with the latest generation of Intel® Xeon® architectures. For more information about HPE Solutions for SAP HANA, see: <http://www.hpe.com/info/sap/hana>. For information about HPE Pointnext services, see: <http://www.hpe.com/services/sap>.

**Notes:** For more information regarding Intel Xeon processors, please see the following <http://www.intel.com/xeon>.

#### HPE Predefined Configurations for SAP HANA

##### **HPE ProLiant DL560 Gen10 for SAP HANA Scale-up Predefined Configuration built with the Intel® Xeon® Scalable family processors**

The HPE ProLiant DL560 Gen10 Scale-up Predefined Configuration, with either an SAP HANA Appliance or TDI certification, offers an industry-leading performance, scalability, reliability, and cost-efficiency solution to support the demands of SAP S/4HANA®. Design, deployment, migration, and remote services from HPE Pointnext will help you to fully modernize your SAP application environment and transition smoothly to SAP HANA. The HPE ProLiant DL560 Gen10 Scale-up Predefined Configuration offers a complete solution for SAP HANA including the COE Experience for SAP HANA.

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## Standard Features

### HPE Building Blocks for SAP HANA

HPE Compute Blocks for SAP HANA are available for the following Intel® Xeon® architectures and platforms:

- **HPE ProLiant DL360 Gen10 Server with the Intel® Xeon® Scalable family processors**  
The HPE ProLiant DL360 Gen10 Server delivers security, agility and flexibility without compromise, the HPE ProLiant DL360 Gen10 means business. Deploy this 2P secure platform for diverse workloads in space constrained environments.
- **HPE ProLiant DL380 Gen10 Server with the Intel® Xeon® Scalable family processors**  
The HPE ProLiant DL380 Gen10 Server is securely designed to reduce costs and complexity. The HPE ProLiant DL380 Gen10, offers unprecedented levels of performance for databases and analytic workloads. Run everything from the most basic to mission critical applications and deploy with confidence.
- **HPE ProLiant DL360 Gen10 Servers with the Intel® Xeon® Scalable family processors for SAP Business One**  
For Small and Medium Businesses (SMB), Building Blocks / TDI solutions based on HPE ProLiant DL360 Gen 10 provide the most suitable infrastructure solutions for SAP Business One. Price sensitive SMB customers can take advantage of the internal storage (disks local to the Server) on HPE ProLiant DL360 Building Blocks/TDI, in their SAP Business One production / test & dev environment.
- **HPE ProLiant DL560 Gen10 Server with the Intel® Xeon® Scalable family processors**  
The HPE ProLiant DL560 Gen10 Server is a high-density, four-socket (4S) server with high performance, scalability and reliability, all in a 2U chassis. Supporting the latest 2<sup>nd</sup> generation Intel® Xeon® Scalable processors, the HPE ProLiant DL560 Gen10 Server offers greater processing power, support HPE DDR4 SmartMemory HPE Persistent Memory featuring Intel® Optane™ DC, IO of up to eight PCIe 3.0 slots, plus the intelligence and simplicity of automated management with HPE OneView and HPE iLO 5.
- **HPE Superdome Flex Server with the Intel® Xeon® Scalable family processors**  
HPE Superdome Flex Solutions for SAP HANA offer industry-leading performance and modular scalability, mission-critical reliability, and optimum cost-efficiency. Designed with memory-driven computing principles to uniquely handle the scale, performance and reliability demand of SAP S/4HANA®, enabling enterprises of any size to analyze and process massive amounts of data at the digital core in real time. Design, deployment, migration, and remote services from HPE Pointnext will help you to fully modernize your SAP application environment and transition smoothly to SAP HANA.

For more information on SAP HANA solutions based on the HPE Superdome Flex Server, refer to the:

**[HPE Superdome Flex Solutions for SAP HANA QuickSpecs.](#)**

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### HPE Storage Blocks for SAP HANA

HPE Storage Blocks for SAP HANA are available in the following storage expansion modules:

- **HPE D3710 Storage Enclosure**  
Manage your small and midrange business growing storage needs by deploying the next generation 12Gb SAS low cost, flexible tiered external storage system. Ideal for small application environments in SMBs, remote offices and departmental locations as well as tier 2 or 3 storage for enterprise customers. The D3000 enclosures support direct attach storage to ProLiant Gen10 Servers



## Standard Features

### For more information

Learn more about the HPE Solutions for SAP HANA portfolio, pre-integrated, and optimized SAP certified appliances for SAP HANA here: <http://www.hpe.com/info/sap/hana>

- Refer to the HPE ProLiant DL360 Gen10 QuickSpecs here:  
<https://h20195.www2.hpe.com/v2/Getdocument.aspx?docname=a00008159enw>
- Refer to the HPE ProLiant DL380 Gen10 QuickSpecs here:  
[http://h20195.www2.hpe.com/v2/redirect.aspx?/products/quickspecs/15930\\_div/15930\\_div.HTML](http://h20195.www2.hpe.com/v2/redirect.aspx?/products/quickspecs/15930_div/15930_div.HTML)
- Refer to the HPE ProLiant DL560 Gen10 QuickSpecs here:  
<https://www.hpe.com/h20195/V2/Getdocument.aspx?docname=a00008181enw>
- Refer to the HPE D3000 Enclosures QuickSpecs here:  
[http://h20195.www2.hpe.com/v2/redirect.aspx?/products/quickspecs/14866\\_div/14866\\_div.HTML](http://h20195.www2.hpe.com/v2/redirect.aspx?/products/quickspecs/14866_div/14866_div.HTML)

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## HPE Predefined Configurations for SAP HANA

### HPE ProLiant DL560 Gen10 for SAP HANA Scale-up Predefined Configuration with the Intel® Xeon® Scalable family processors

The HPE ProLiant DL560 Gen10 Scale-up Predefined Configuration, either an SAP HANA Appliance or TDI certification, offers an industry-leading performance, scalability, reliability, and cost-efficiency solution to support the demands of SAP S/4HANA®. Design, deployment, migration, and remote services from HPE Pointnext will help you to fully modernize your SAP application environment and transition smoothly to SAP HANA. The HPE ProLiant DL560 Gen10 Scale-up Predefined Configuration offers a complete solution for SAP HANA including the HPE COE Experience for SAP HANA.

#### Standard Features

HPE **ProLiant DL560 Gen10 for SAP HANA Scale-up Predefined Configuration** with the Intel® Xeon® Scalable Processor architecture are available in configurations ranging up to 6144GB (Pure DDR4), and HPE persistent memory featuring Intel® Optane™ DC persistent memory

#### Compute Node

The HPE **ProLiant DL560 Gen10 for SAP HANA Scale-up Predefined Configuration** are based on the HPE ProLiant DL560 Gen10 Server with the Intel® Xeon® Scalable Processor architecture. The HPE ProLiant DL560 Gen10 Server is a high-density, four-socket (4S) server with high performance, scalability and reliability, all in a 2U chassis. Supporting the 2<sup>nd</sup> Gen of Intel® Xeon® Scalable processor (Cascade lake), the HPE ProLiant DL560 Gen10 Server offers greater processing power, support of HPE DDR4 SmartMemory and HPE Persistent Memory featuring Intel® Optane DC, IO of up to eight PCIe 3.0 slots, plus the intelligence and simplicity of automated management with HPE OneView and HPE iLO 5. Included Software and Operating System for SAP HANA.

#### Operating System

A choice SAP HANA certified Operating System with either a 3-year or a 5-year subscription.

HPE Integrated Lights-Out Advanced: A suite of embedded management technologies that supports the complete lifecycle of all HPE ProLiant Gen10 Servers, from initial deployment to ongoing management and service alerting.

### HPE Serviceguard for automated High Availability (HA) and Disaster Tolerance (DT)

HPE Serviceguard is available as an option for the **HPE ProLiant DL560 Gen10 for SAP HANA Scale-up Predefined**

#### Configuration

Offering automated and unattended high availability (HA) and disaster tolerance (DT) solutions for your mission critical SAP HANA workloads. With availability improvements for HANA databases, graceful planned takeover, and simplified configuration and administration, the **ProLiant DL560 Gen10 for SAP HANA Scale-up Predefined Configuration** with Serviceguard software offers robust business continuity features for your mission critical workloads.



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## Standard Features

### SAP HANA Certified Appliance Configuration Details

- Scale-up configurations with All Flash Storage: For the most demanding and highly scalable scale-up use cases, with up to 4 CPUs and 6TB of memory in a single system.
- By the SAP regulations, configurations with HPE Persistent Memory featuring Optane DC are associated with the [SAP TDI certification only](#).

### Rack

HPE **ProLiant DL560 Gen10 for SAP HANA Scale-up Predefined Configuration** are available with a choice of 1200mm or 1075mm Shock Intelligent Racks. You can also choose to rack the **ProLiant DL560 Gen10 for SAP HANA Scale-up Predefined Configuration** onsite in a compatible rack.

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### HPE Serviceguard for automated High Availability (HA) and Disaster Tolerance (DT)

HPE Serviceguard is available as an option for the HPE HANA Solutions portfolio, offering automated and unattended high availability (HA) and disaster tolerance (DT) solutions for your mission critical SAP HANA workloads. With availability improvements for HANA databases, graceful planned takeover, and simplified configuration and administration, the HPE HANA Solutions portfolio with Serviceguard software offers robust business continuity features for your mission critical workloads.

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## HPE Solution Building Blocks

### Compute Building Blocks

- HPE ProLiant DL360 Gen10 Server with the Intel® Xeon® Scalable family processors
- HPE ProLiant DL380 Gen10 Server with the Intel® Xeon® Scalable family processors
- HPE ProLiant DL560 Gen10 Server with the Intel® Xeon® Scalable family processors

### Storage Building Blocks

- HPE Solutions for SAP HANA with D3710 Storage Block
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## Service and Support

### HPE Pointnext - Service and Support

**Get the most from your HPE Products.** Get the expertise you need at every step of your IT journey with **HPE Pointnext Services**. We help you lower your risks and overall costs using automation and methodologies that have been tested and refined by HPE experts through thousands of deployments globally. HPE Pointnext **Advisory Services** focus on your business outcomes and goals, partnering with you to design your transformation and build a roadmap tuned to your unique challenges. Our **Professional** and **Operational Services** can be leveraged to speed up time-to-production, boost performance and accelerate your business. HPE Pointnext specializes in flawless and on-time implementation, on-budget execution, and creative configurations that get the most out of software and hardware alike.

### Consume IT on your terms

**HPE GreenLake** brings the cloud experience directly to your apps and data wherever they are—the edge, colocations, or your data center. It delivers cloud services for on-premises IT infrastructure specifically tailored to your most demanding workloads. With a pay-per-use, scalable, point-and-click self-service experience that is managed for you, HPE GreenLake accelerates digital transformation in a distributed, edge-to-cloud world.

- Get faster time to market
- Save on TCO, align costs to business
- Scale quickly, meet unpredictable demand
- Simplify IT operations across your data centers and clouds

### Managed services to run your IT operations

**HPE GreenLake Management Services** provides services that monitor, operate, and optimize your infrastructure and applications, delivered consistently and globally to give you unified control and let you focus on innovation.

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## Installation, Integration and Deployment Services for SAP HANA

Hewlett Packard Enterprise provides a continuum of HPE services for the HPE Solutions for SAP HANA from basic hardware installation to a full turnkey deployment experience. These services address your needs at every step in your SAP HANA solution journey.

- **HPE Installation Service and HPE Installation and Startup Service:** Choose HPE Installation Service for onsite installation of your new system or HPE Installation and Startup Service for the installation of your new server and operating system. This service will assist in bringing your new HPE server and operating system into operation in a timely and professional manner. This service provides a trained Hewlett Packard Enterprise service specialist to perform an installation that meets HPE quality standards. The service highlights include: planning, deployment on site, installation verification tests, and customer orientation session. For more information visit: <http://www.hpe.com/services>
- **HPE Factory Express Integration Service for SAP HANA.** HPE Factory Express Integration Service for SAP HANA reduces disruption to your data center and implementation time and cost with factory build and integration services for your HPE solution for SAP HANA to your specifications. An HPE project manager assists in coordination of HPE Installation Services, oversee end-to-end planning, building, testing, cabling, and installation of all software, as well as validation of all FW/SW versions. HPE Installation Service is required with this service. For more information, visit: <http://www.hpe.com/info/factoryexpress>
- **HPE Rapid Deployment Services for SAP HANA.** HPE Rapid Deployment Services for SAP HANA simplify the process of implementing and configuring your HPE Infrastructure for SAP HANA and accelerates time to value for your HANA environment. Hewlett Packard Enterprise consultants use proven processes to integrate the HPE Infrastructure for SAP HANA into your environment. These services are also available for integration of SAP HANA system replication and HPE Serviceguard. These services encompass planning and review, deployment, and testing activities. HPE Factory Express Integration Service for SAP HANA and HPE Installation Service are required with this service. For more information, visit: <http://www.hpe.com/services/consulting>



## Service and Support

### HPE Pointnext Operational Services for SAP HANA

Hewlett Packard Enterprise offers a range of operational services to meet your business needs. For a complete solution experience, enhance your standard HPE Operational Service selection with the HPE COE Service for SAP HANA. The HPE COE Service for SAP HANA is available on select HPE Solutions for SAP HANA as documented in the HPE Data Sheet.

- **HPE COE Service for SAP HANA.** The HPE COE Service for SAP HANA provides a proven approach to simplify maintenance and operations of your SAP HANA environment. This innovative end-to-end lifecycle management approach includes access to HPE's SAP HANA Center of Excellence (COE), Solution Lifecycle Planning Services and the Lifecycle Services Suite. To address the complexities of versioning and infrastructure interoperability, the periodic Solution Lifecycle Planning Service evaluates your unique operational and business needs and provides a plan of recommended updates and actions for specific lifecycle services. The Lifecycle Services Suite allows you to choose from an expanding catalog of lifecycle versioning services that are specifically designed and tested to minimize downtime and disruptions. Select either HPE Tech Care or HPE Complete Care for SAP HANA to complement the HPE COE Service for SAP HANA. HPE COE Service is available for specified configurations of the HPE DL560 Scale-up Predefined Configuration for SAP HANA, HPE DL380 Gen10 Plus Building Block for SAP HANA and HPE DL360 Gen10 Plus Building Block for SAP HANA.
- **HPE Pointnext Tech Care.** HPE Pointnext Tech Care is the new operational service experience for HPE products. Tech Care goes beyond traditional support by providing access to product specific experts, an AI driven digital experience, and general technical guidance to not only reduce risk but constantly search for ways to do things better. HPE Pointnext Tech Care has been reimagined from the ground up to support a customer-centric, AI driven, and digitally enabled customer experience to move your business forward. HPE Pointnext Tech Care is available in three response levels. Basic, which provides 9x5 business hour availability and a 2 hour response time. Essential which provides a 15 minute response time 24x7 for most enterprise level customers, and Critical which includes a 6 hour repair commitment where available and outage management response for severity 1 incidents.

<https://www.hpe.com/services/techcare>

- **HPE Pointnext Complete Care.** HPE Pointnext Complete Care is a modular, edge-to-cloud IT environment service that provides a holistic approach to optimizing your entire IT environment and achieving agreed upon IT outcomes and business goals through a personalized and customer-centric experience. All delivered by an assigned team of HPE Pointnext Services experts. HPE Pointnext Complete Care provides:
  - A complete coverage approach -- edge to cloud
  - An assigned HPE team
  - Modular and fully personalized engagement
  - Enhanced Incident Management experience with priority access
  - Digitally enabled and AI driven customer experience

<https://www.hpe.com/services/complecare>

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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.hpe.com/hpefinancialservices> for links to HPE Financial Services around the world.

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## Service and Support

### HPE Serviceguard for Linux

HPE Serviceguard for Linux x86 is high availability clustering software designed to protect applications and services from planned and unplanned downtime.

Serviceguard for Linux (SGLX) ensures 24x7 application availability by packaging an application or service with its associated resources, and moving that package to other servers as needed. Packages can be moved automatically when Serviceguard detects a failure in a resource, or manually in order to perform system maintenance or upgrades. By monitoring the health of each server (node) within a cluster.

Serviceguard for Linux quickly responds to failures such as those that affect processes, memory, LAN media and adapters, disk, operating environments, and more.

Serviceguard for Linux also includes many out-of-the-box features that ensure scalability and allow intricate control over cluster configuration, and optimizes in-house expertise for businesses already running Serviceguard for HP-UX. Application Integration Toolkits are also available, and serve to quickly integrate complex applications into a Serviceguard for Linux cluster. The Application Integration Toolkit portfolio includes the Serviceguard Toolkit for NFS and the Serviceguard Contributed Toolkit Suite which are available at no charge. In addition to high availability within a data center, the Serviceguard for Linux offers a powerful and comprehensive suite of disaster recovery solutions.

**Notes:** For more information on HPE Serviceguard for Linux (SGLX) refer the **SGLX QuickSpecs**.

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### Warranty Services

This product is covered by a global limited warranty and supported by HPE Services and a worldwide network of Hewlett Packard Enterprise Authorized Channel Partners. Enhancements to warranty services are available through HPE Support Services or customized service agreements. Certain restrictions and exclusions apply.

**Notes:** 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://h17007.www1.hpe.com/us/en/enterprise/servers/warranty/>

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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 Hewlett Packard Enterprise due to malfunction.

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## Configuration Information

### How to Order

Hewlett Packard Enterprise offers both HPE Predefined Configurations and Compute Building Blocks for SAP HANA for the Intel® Xeon® architectures including:

- **HPE ProLiant DL560 Gen10 for SAP HANA Scale-up Predefined Configuration:**
  - HPE ProLiant DL560 Gen10 Server with the Intel® Xeon® Scalable Processor architecture
- **HPE Compute Building Blocks for SAP HANA are available for the following Intel® Xeon® architectures and platforms:**
  - HPE ProLiant DL360 Gen10 Server with the Intel® Xeon® Scalable family processors
  - HPE ProLiant DL380 Gen10 Server with the Intel® Xeon® Scalable family processors
  - HPE ProLiant DL560 Gen10 Server with the Intel® Xeon® Scalable Processor architecture
- **HPE Storage Blocks for SAP HANA:**
  - HPE Solutions for SAP HANA with D3710 Storage Block

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### Step 1: Select your HPE Predefined Configuration for SAP HANA

#### Predefined Configurations for SAP HANA

##### Select SAP HANA Predefined configuration

##### Processor

A choice of processors based on the Intel® Xeon® Scalable Family – 2<sup>nd</sup> Generation are available. For SAP HANA solution minimum of 2 identical CPUs or maximum of 4 CPUs are required per compute node

**Notes:** When 2<sup>nd</sup> Generation Intel Xeon Scalable Processor is selected, then only DDR4-2933 Memory Kit can be selected.

HPE ProLiant DL560 Gen10 for SAP HANA Scale-up Compute Block

R1R43A

##### Memory

Select the quantity of memory required, based on SAP certified sizes for the Scale-up system. SAP Certified configurations are available up to 6144GB of memory for DRAM, and up to 15TB using HPE Persistent Memory. Memory configuration can be selected on quantities of 12, 24, or 48 for DRAM and 0, 12, and 24 when Persistent Memory is selected

For the memory size selected, choose from the following HPE SmartMemory options:

HPE 8GB (1x8GB) Single Rank x8 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00918-H21
HPE 32GB (1x32GB) Dual Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00924-H21
HPE 16GB (1x16GB) Dual Rank x8 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00922-H21
HPE 16GB (1x16GB) Single Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00920-H21
HPE 64GB (1x64GB) Dual Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00930-H21
HPE 64GB (1x64GB) Quad Rank x4 DDR4-2933 CAS-21-21-21 Load Reduced Smart Memory Kit	P00926-H21
HPE 128GB (1x128GB) Octal Rank x4 DDR4-2933 CAS-24-21-21 Load Reduced 3DS Smart Memory Kit	P00928-H21
HPE 128GB (1x128GB) Quad Rank x4 DDR4-2933 CAS-21-21-21 Load Reduced Smart Memory Kit	P11040-H21

##### HPE Persistent Memory

Intel Optane 128GB persistent memory 100 Series for HPE	835804-B21
Intel Optane 256GB persistent memory 100 Series for HPE	835807-B21
Intel Optane 512GB persistent memory 100 Series for HPE	835810-B21



## Configuration Information

### Persistent Storage

For the persistent storage for SAP HANA a number of drives (Min 3, Max 16). All Flash configurations are supported, quantities for which depend on the total system memory size.

**Dual Purpose Storage:** Additional storage based on the HPE D3710 Storage Array can be added 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.

**Select Operating System:** 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 is available, both with either a 3 year or a 5 year subscription.

**Notes:** The quantity of Operating System Licenses depends on the number of CPUs or sockets on the Compute Node being ordered. For 2 CPU or 2 socket systems, select quantity 1 of the Operating System licenses. For 4 CPU or 4 socket systems, select quantity 2 of the Operating System licenses.

SUSE Linux Enterprise Server SAP 2 Sockets or 1-2 VM 3yr Subscription 24x7 Support Flexible LTU	NOU73A
SUSE Linux Enterprise Server SAP 2 Sockets or 1-2 VM 5yr Subscription 24x7 Support Flexible LTU	NOU75A

### Select the Rack

Choose from either a 1075mm or 1200mm Shock Intelligent Rack. For installing the system in a different, compatible rack, select HPE Virtual Rack.

HPE 42U 600mm x 1075mm Shock Intelligent Rack	MOS67B
HPE 42U 600mm x 1200mm Shock Intelligent Rack	MOS68B
HPE Virtual Rack	MOS66A

### Select the Power Distribution Units for the Rack

Hewlett Packard Enterprise 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.

#### Notes:

- While the HPE 1075mm Shock Intelligent Rack or the HPE 1200mm Shock Intelligent Rack is the recommended rack, you may choose to rack the compute node (2U form factor) and optionally the external dual purpose storage unit (2U form factor) in a compatible rack. In this case, select the Virtual Rack and optionally, select the Power Distribution Units.
- If you choose not to order the HPE DL560 predefined configuration for SAP HANA Rack, your rack must be compatible with the HPE ProLiant DL560 Gen10 Server, and if you require dual purpose storage, should also be compatible with the HPE 3710 External Storage. Refer to the Hewlett Packard Enterprise Infrastructure products page for more information on Hewlett Packard Enterprise racks and rack options:  
<https://www.hpe.com/us/en/integrated-systems/rack-power-cooling.html>



## Configuration Information

SAP Certified memory sizes for Predefined Configurations										
DRAM:	192 GB	384 GB	576 GB	768 GB	1152 GB	1536 GB	2304 GB	3072 GB	4608 GB	6144 GB
HPE Predefined DL560 Gen10 Scale-Up for SAP HANA Compute	X	X	2S only <sup>1</sup>	X	X1	X	X1	X	4S only <sup>2</sup>	4S only

### Notes:

- <sup>1</sup>Mixed regular DDR4 memory DIMMs
- <sup>2</sup>Mixed regular DDR4 memory DIMMs 128 GB DDP

DRAM + Persistent Memory:	1920 GB	2304 GB	3072 GB	3840 GB	4608 GB	6144 GB	7680 GB	9216 GB	15340 GB
HPE Predefined DL560 Gen10 Scale-Up for SAP HANA Compute	2S only	2S only	2S only	X	X	4S only	X	4S only	4S only

## Step 2: Add optional Serviceguard Software and Hardware – HPE Predefined Configurations

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

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

### Hardware and Software

#### HPE Serviceguard for SAP HANA software licenses

##### Quorum Server

Based on the HPE ProLiant DL360 Gen10 Server featuring security, agility and expandability in a dense 1U rack design. For more information on the HPE ProLiant DL360 Gen10 Servers, see:

<https://www.hpe.com/h20195/V2/Getdocument.aspx?docname=a00008159enw>

##### How to Order

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

Two Serviceguard Licenses (Part Number P9B46A) for every HPE DL560 Predefined configuration for SAP HANA compute node with two processors on the order, or Four Serviceguard Licenses (Part Number P9B46A) for every HPE DL560 Predefined configuration for SAP HANA compute node with four processors on the order.

### Optional

One HPE DL360 Gen10 SAP HANA App Server to act as the Quorum Server (HPE Part Number R2G31A). 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). 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)

## Configuration Information

### Step 3: Choose HPE Pointnext Services – HPE Predefined Configurations

Hewlett Packard Enterprise offers various services from basic installation to turnkey deployment for HPE Solutions for SAP HANA

#### HPE Installation or HPE Installation and Startup Services

Are available via the standard ordering process to add these services to the product order.

#### HPE Factory Express Integration Services for SAP HANA

Are available for specific HPE solutions for SAP HANA as documented in the HPE Factory Express Integration Services for SAP HANA Data Sheet. HPE Installation Service is mandatory with this service. Factory Express services require customer engagement to provide input on specific customer configuration details via a Customer Intent Document.

#### HPE Rapid Deployment Services for SAP HANA

Are available for specific HPE solutions for SAP HANA as documented in the HPE Rapid Deployment Services for SAP HANA Data Sheet. HPE Factory Express Integration Service and Installation Service are mandatory with this service.

#### HPE COE Service for SAP HANA

Is available on select HPE Predefined Configurations for SAP HANA as documented in the HPE COE Service for SAP HANA Data Sheet. HPE Rapid Deployment Service, HPE Factory Express Integration Service and Installation Service are mandatory with this service and provide a complete turnkey deployment experience.

#### HPE Operational Services

- A range of choices of operational support levels are available to meet your needs. Select either HPE Tech Care or HPE Complete Care and select the desired duration and reactive support level.

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### Step 1: Choose your SAP HANA Compute Block

#### Building Blocks for SAP HANA

##### Select SAP HANA Compute Block (Intel Xeon 2nd Generation - Cascade Lake)

HPE ProLiant DL360 Gen10 for SAP HANA Compute Block	R2G31A
HPE ProLiant DL360 Gen10 NC for SAP HANA Block	R2G31B
HPE ProLiant DL380 Gen10 for SAP HANA Compute Block	R1R46A
HPE ProLiant DL380 Gen10 NC for SAP HANA Compute Block	R1R46B
HPE ProLiant DL560 Gen10 for SAP HANA Compute Block	R1R37A

##### Select SAP HANA Compute Block (Intel Xeon 3<sup>rd</sup> Generation – Ice Lake)

HPE ProLiant DL360 Gen10 Plus for SAP HANA Compute Block	R8D86A
HPE ProLiant DL380 Gen10 Plus for SAP HANA Compute Block	R8D85A

**Notes:** A minimum of two (2) or four (4) identical processors of eight (8) cores or more must be selected for a Compute block for SAP HANA. By definition, SAP TDI supports Intel® Xeon SP Platinum/Gold/Silver (Cascade Lake) (minimum of 2-socket systems), for more information refer <https://www.sap.com/dmc/exp/2014-09-02-hana-hardware/enEN/index.html>

Refer to the HPE ProLiant QuickSpecs, for a list of processors based on the Intel® Xeon® Scalable for the 1<sup>st</sup> and 2<sup>nd</sup> Generation. When 2<sup>nd</sup> Generation Intel Xeon Scalable Processor is selected, then only DDR4-2933 Memory Kit can be selected.



## Configuration Information

### Select Memory for the Compute Block

Refer to the configuration table below for a summary of the SAP size optimized configurations available.

### SAP certified memory size configuration – Intel Xeon 2nd Generation - Cascade Lake

DRAM + Persistent Memory									
Configuration	1920GB	2304GB	3072GB	3840GB	4608GB	6144GB	7680GB	9216GB	15340GB
HPE ProLiant DL360 Gen10 Intel® Xeon® Scalable Processor for SAP HANA Compute Block	X	X	X	X	X		X		
HPE ProLiant DL380 Gen10 Intel® Xeon® Scalable Processor for SAP HANA Compute Block	X	X	X	X	X		X		
HPE ProLiant DL560 Gen10 Intel® Xeon® Scalable Processor for SAP HANA Compute Block	2S only	2S only	2S only	X	X	4S only	X	4S only	4S only

DRAM										
Configuration	192GB	384GB	576GB	768GB	1152 GB	1536 GB	2304 GB	3072 GB	4608 GB	6144 GB
HPE ProLiant DL360 Gen10 Intel® Xeon® Scalable Processor for SAP HANA Compute Block	X	X	X <sup>1</sup>	X	X <sup>1</sup>	X	X <sup>2</sup>	X		
HPE ProLiant DL380 Gen10 Intel® Xeon® Scalable Processor for SAP HANA Compute Block	X	X	X <sup>1</sup>	X	X <sup>1</sup>	X	X <sup>2</sup>	X		
HPE ProLiant DL560 Gen10 Intel® Xeon® Scalable Processor for SAP HANA Compute Block	X	X	2S only <sup>1</sup>	X	X <sup>1</sup>	X	X <sup>1</sup>	X	4S only <sup>2</sup>	4S only

#### Notes:

- <sup>1</sup>Mixed regular DDR4 memory DIMMs
- <sup>2</sup>Mixed regular DDR4 memory DIMMs 128 GB DDP (SKU:P11040-H21)
- Refer to the HPE ProLiant QuickSpecs, for a list of Memory Registered DIMMs (RDIMMs) and Load Reduced DIMMs (LRDIMMs) for the 2nd Generation Intel Xeon Scalable models
- For HPE ProLiant DL360 Gen10 Server Compute Block and HPE ProLiant DL380 Gen10 Server Compute Block, choose quantity 12 or 24 respectively of the Memory Registered DIMMs (RDIMMs) and Load Reduced DIMMs (LRDIMMs) for the 2nd Generation Intel Xeon Scalable models
- For HPE ProLiant DL560 Gen10 SAP HANA Compute block, choose quantity 12, 24 or 48 respectively of Memory Registered DIMMs (RDIMMs) and Load Reduced DIMMs (LRDIMMs) for the 2nd Generation Intel Xeon Scalable models

### SAP certified memory size configuration - DRAM and PMEM with Intel Xeon 3<sup>rd</sup> Generation – Ice Lake

**Notes:** Ice Lake Servers will be supported for all memory configurations as supported by SAP for HANA solutions under TDI Phase VI



## Configuration Information

### Optional Dual Purpose Storage

If a dual storage is required use the following storage expansion modules.

HPE Solutions with D3710 Storage

R2G32A

#### Notes:

- The use of Hard drives for SAP HANA Compute blocks depends on the production or non-production use case. The Compute blocks will ship standard with the required memory and any optional hard disks preinstalled. Any factory integration need can be ordered on a custom basis.
  - For Production and Non Production use cases with Internal Disks. External storage is not required, but can be used in lieu of internal storage.
  - For Production use cases with SAP certified external TDI Storage. For non-production use cases, SAP certified external TDI Storage is not required, and internal disks can be used instead
- For Production or non-production use cases with SAP certified external TDI Storage.  
For more information about SAP HANA Storage Requirements refer to the SAP HANA Tailored Datacenter Integration (TDI) storage requirements:

<https://www.sap.com/documents/2015/03/74cdb554-5a7c-0010-82c7-eda71af511fa.html>

### Select Optional Operating System

SUSE Linux Enterprise Server SAP 2 Sockets or 1-2 VM 3yr Subscription 24x7 Support Flexible LTU

NOU73A

SUSE Linux Enterprise Server SAP 2 Sockets or 1-2 VM 5yr Subscription 24x7 Support Flexible LTU

NOU75A

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 is available, both with either a 3-year or a 5-year subscription.

**Notes:** The quantity of Operating System Licenses depends on the number of CPUs or sockets on the Compute Node being ordered. For 2 CPU or 2 socket systems, select quantity 1 of the Operating System licenses. For 4 CPU or 4 socket systems, select quantity 2 of the Operating System licenses.

### TDI configuration for SAP Business One

Configuration: HPE ProLiant DL360 Gen10 Intel® Xeon® Scalable Processor for SAP HANA Compute Block.

DRAM and internal storage (minimum 3 SSD) for SAP Business One on HANA, on Production environments:

Only one storage type is allowed. Mixing of 800 GB, 1.6TB SSDs is not allowed in a configuration.

Memory (SAP B1 Users)	Minimum storage needed for TDI (GB)	Minimum number of 800 GB SSD	Minimum number of 1.6 TB SSD
96 GB (35 Users)	566	3 - RAID 5	3 - RAID 5
192 GB (75 users)	921	3 - RAID 5	3 - RAID 5
384 GB (150 users)	1535	4 - RAID 5	3 - RAID 5
768 GB (250 users)	2508	5 - RAID 5	3 - RAID 5
1.5 TB (350 users)	3686	7 - RAID 5	4 - RAID 5
3.0 TB (500 users)	5529	9 - RAID 5	5 - RAID 5

DRAM and internal storage (minimum 6 HDD) for SAP Business One on HANA, on Production environments:

Only one storage type is allowed. Mixing of 600 GB, 1.2TB HDDs is not allowed in a configuration.

Memory (SAP B1 Users)	Minimum storage needed for TDI (GB)	Minimum number of 600 GB HDD	Minimum number of 1.2 TB HDD
96 GB (35 Users)	566	6 - RAID 5	6 - RAID 5
192 GB (75 users)	921	6 - RAID 5	6 - RAID 5
384 GB (150 users)	1535	6 - RAID 5	6 - RAID 5
768 GB (250 users)	2508	6 - RAID 5	6 - RAID 5
1.5 TB (350 users)	3686	8 - RAID 5	6 - RAID 5
3.0 TB (500 users)	5529	-	6 - RAID 5



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## Configuration Information

### Step 2: Choose Services and Support – HPE Solution Building Blocks for SAP HANA

#### Select Services

HPE offers various services from basic installation to turnkey deployment for HPE Solutions for SAP HANA

#### HPE Installation or HPE Installation and Startup Services

Are available via the standard ordering process to add these services to the product order.

#### HPE Factory Express Integration Services for SAP HANA

Are available for specific HPE solutions for SAP HANA as documented in the HPE Factory Express Integration Services for SAP HANA Data Sheet. HPE Installation Service is mandatory with this service. Factory Express services require customer engagement to provide input on specific customer configuration details via a Customer Intent Document.

#### HPE Rapid Deployment Services for SAP HANA

Are available for specific HPE solutions for SAP HANA as documented in the HPE Rapid Deployment Services for SAP HANA Data Sheet. HPE Factory Express Integration Service and Installation Service are mandatory with this service.

#### HPE COE Service for SAP HANA

Is available on select configurations of the HPE DL380 Gen10 Plus Building Block for SAP HANA and the HPE DL360 Gen10 Plus Building Block for SAP HANA, as documented in the HPE COE Service for SAP HANA Data Sheet, HPE Factory Express Integration Service and Installation Service are mandatory with this service.

#### Select HPE Operational Services

A range of choices of operational support levels are available to meet your needs. Select either HPE Tech Care or HPE Complete Care and select the desired duration and reactive support level.

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## Technical Specifications

For detailed technical specifications, including power consumption, dimensions, weights, etc., refer to the QuickSpecs below:

- Refer to the HPE ProLiant DL360 Gen10 QuickSpecs here: <https://h20195.www2.hpe.com/v2/Getdocument.aspx?docname=a00008159enw>
- Refer to the HPE ProLiant DL380 Gen10 QuickSpecs here: <https://h20195.www2.hpe.com/v2/GetDocument.aspx?docname=a00008180enus>
- Refer to the HPE ProLiant DL560 Gen10 QuickSpecs here: <https://www.hpe.com/h20195/V2/Getdocument.aspx?docname=a00008181enw>
- Refer to the HPE D3710 Storage Module QuickSpecs here: [http://h20195.www2.hpe.com/v2/redirect.aspx?/products/quickspecs/14866\\_div/14866\\_div.HTML](http://h20195.www2.hpe.com/v2/redirect.aspx?/products/quickspecs/14866_div/14866_div.HTML)

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### End-of-life management and recycling

Hewlett Packard Enterprise offers end-of-life **product return, trade-in, and recycling programs** in many geographic areas, for our products. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE Directive (2012/19/EU) 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**.

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
15-Sep-2021	Version 18	Changed	Configuration Information section was updated Service and Support Pointnext Tech Care and Complete Care information added.
04-May-2021	Version 17	Changed	Overview, Standard Features, Service and Support, Configuration Information, and Technical Specifications sections were updated.
07-Dec-2020	Version 16	Changed	Overview, Standard Features, Service and Support, Configuration Information, and Technical Specifications sections were updated.
02-Mar-2020	Version 15	Changed	Overview, Standard Features, Service and Support, Configuration Information, and Technical Specifications sections were updated.
02-Dec-2019	Version 14	Changed	Overview, Standard Features and Configuration Information sections were updated.
03-Jun-2019	Version 13	Changed	QuickSpecs was updated.
05-Mar-2018	Version 12	Changed	QuickSpecs was updated.
		Removed	SKUs deleted: 781518-B21, 759212-B21, 832414-B21, 804665-B21, 869384-B21, 869384-B21, 870763-B21, 872359-B21, 869378-B21
16-Oct-2017	Version 11	Changed	Changes made throughout the QuickSpecs
11-Nov-2016	Version 10	Changed	Changes made throughout the QuickSpecs
26-Sept-2016	Version 9	Changed	Updated DL380 to Intelv4 processors and related updates to memory & disk options
10-Jun-2016	Version 8	Changed	Added information on HPE SAP HANA TDI Compute blocks based on the HPE ProLiant DL580 Gen9 Server based on the Intel Xeon E7 v4 architecture
08-Apr-2016	Version 7	Changed	Added 64GB DIMMs to the How to Order Section for SAP HANA TDI Compute blocks based on the HPE ProLiant DL580 Gen9 Server
11-Mar-2016	Version 6	Changed	Changes made to the How to Order Section
28-Sept-2015	Version 5	Changed	Changes made throughout the QuickSpecs.
17-Aug-2015	Version 4	Changed	Added HPE ProLiant DL580 Gen9 TDI Compute Block
01-Jun-2015	Version 3	Changed	Added HPE Superdome X for SAP HANA TDI Compute Block
03-Apr-2015	Version 2	Changed	Name was changed, changes made to the entire document
30-Mar-2015	Version 1	New	New QuickSpecs



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