

Overview

HPE Solutions for SAP HANA Tailored Data Center Integration (TDI)

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

- **HPE ProLiant DL580 Gen9 Server with the Intel® Xeon® E7-8800v4 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. Also available for ordering are TDI Compute blocks based on the **HPE ProLiant DL580 Gen8 Server with the Intel® Xeon® E7-8800v3 architecture.**
- **HPE ProLiant DL380 Gen9 Server with the Intel® Xeon® E5-26XXv3 architecture:** The HPE ProLiant DL380 Gen9 Server delivers the best performance and expandability in the HPE 2P rack portfolio. Reliability, serviceability and near continuous availability, backed by a comprehensive warranty, make it ideal for any environment. Deploy the data center standard.
- **HPE ProLiant BL460c Gen9 Server Blade with the Intel® Xeon® E5-26XXv3 architecture:** Designed for a wide range of configuration and deployment options, the HPE ProLiant BL460c Gen9 Server Blade provides the flexibility to enhance your core IT applications with right-sized storage for the right workload—resulting in lower total cost of ownership (TCO).
- **HPE Superdome X for SAP HANA TDI Compute Block with BL920s Gen9 blades and Intel® Xeon® E7-88X0v3 architecture:** Consolidate and aggregate your applications, flex your IT tiers and workloads onto a single system, and scale to extreme sizes confidently without compromising performance. Also available for ordering are TDI Compute blocks based on the **HPE Superdome X with BL920s Gen8 blades and Intel® Xeon® E7-28X0v2 architecture.**

For more information:

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

Refer to the HPE ProLiant DL580 Gen9 QuickSpecs

here: <https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=c04601209>

Refer to the HPE ProLiant DL380 Gen9 QuickSpecs

here: <https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=c04346247>

Refer to the HPE ProLiant BL460c Gen9 QuickSpecs

here: <https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=c04347343>

Refer to the HPE Integrity Superdome X with BL920s Gen9 QuickSpecs

here: <http://h20195.www2.hp.com/v2/gethtml.aspx?docname=c04383189>

Refer to the HPE Integrity Superdome X with BL920s Gen8 QuickSpecs

here: <http://www8.hp.com/h20195/v2/GetDocument.aspx?docname=c04383189>

Standard Features

Standard Configurations

HPE ProLiant DL580 Intel E7 8800v4 Scale-up SAP HANA Tailored Datacenter Integration Compute Block

Server	<p>HPE ProLiant DL580 Gen9 Server</p> <p>4U Server Chassis with front-accessible processor and memory drawer Intel® 602J Chipset</p> <p>NOTE: For more information regarding Intel chipsets, please see the following URL: http://www.intel.com/products/server/chipsets/</p> <p>HPE 1500W Hot Plug Power Supply Kit</p> <p>NOTE: Quantity two required for 2 socket configurations, and quantity four required for 4 socket configurations</p>
Processors	<p>Choice of two processor options in a two socket (two CPU) or four socket (four CPU) configuration: Intel® Xeon® E7-8890v4 (2.1GHz/24-core/165W) Processor Intel® Xeon® E7-8880v4 (2.2GHz/22-core/150W) Processor</p>
Hard Drive	<p>Up to 10x HP 1.8TB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 512e 3yr Warranty Hard Drive</p>
Networking	<p>A choice of three networking adapters is available: HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter with HP QSFP/SFP+ Adaptor Kit HP Ethernet 10Gb 2-port 561T Adapter HP Ethernet 10Gb 2-port 560SFP+ Adapter with HP BLc 10G SFP+ SR Transceiver</p> <p>Detailed specifications are available at https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=c04950955 http://www8.hp.com/h20195/v2/getpdf.aspx/c04111372.pdf http://www8.hp.com/h20195/v2/GetPDF.aspx/c04111506.pdf</p>

HPE ProLiant DL580 Intel E7 8800v4 Scale-out SAP HANA Tailored Datacenter Integration Compute Block

Server	<p>HPE ProLiant DL580 Gen9 Server</p> <p>4U Server Chassis with front-accessible processor and memory drawer Intel® 602J Chipset</p> <p>NOTE: For more information regarding Intel chipsets, please see the following URL: http://www.intel.com/products/server/chipsets/</p> <p>HPE 1500W Hot Plug Power Supply Kit</p> <p>NOTE: Quantity four required</p>
Processors	<p>Choice of two processor options in a four socket (four CPU) configuration: Intel® Xeon® E7-8890v4 (2.1GHz/24-core/165W) Processor Intel® Xeon® E7-8880v4 (2.2GHz/22-core/150W) Processor</p>
Networking & Storage Controller	<p>(2) HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter (1) HPE Ethernet 1GbE 4P 331FLR FIO Adapter (1) HPE SN1000Q 16Gb 2P FC HBA</p>

HPE ProLiant DL580 Intel E7 8800v3 Scale-up SAP HANA Tailored Datacenter Integration Compute Block

Server	<p>HPE ProLiant DL580 Gen9 Server</p> <p>4U Server Chassis with front-accessible processor and memory drawer Intel® 602J Chipset</p> <p>NOTE: For more information regarding Intel chipsets, please see the following URL: http://www.intel.com/products/server/chipsets/</p> <p>HPE 1500W Hot Plug Power Supply Kit</p> <p>NOTE: Quantity two required for 2 socket configurations, and quantity four required for 4 socket configurations</p>
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Standard Features

Processors	Choice of three processor options in a two socket (two CPU) or four socket (four CPU) configuration: Intel® Xeon® E7-8890v3 (2.5GHz/18-core/45MB/165W) Processor Intel® Xeon® E7-8880v3 (2.3GHz/18-core/45MB/150W) Processor Intel® Xeon® E7-8880Lv3 (2.0GHz/18-core/45MB/115W) Processor
Hard Drive	Up to 10x HPE 1.2TB 6G SAS 10K rpm SFF (2.5-inch) SC Dual Port Enterprise 3yr Warranty Hard Drive
Networking & Storage Controller	HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter NOTE: Quantity one or two required for 2 socket configurations, and quantity 2, 3 or 4 required for 4 socket configurations HPE QSFP/SFP+ Adaptor Kit NOTE: Quantity two required for each HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter (1) HPE 4GB FBWC FIO Kit for P-series SA (1) HPE Ethernet 1GbE 4P 331FLR FIO Adapter (1) HPE Ethernet 1Gb 4-port 331T Adapter

HPE ProLiant DL580 Intel E7 8800v3 Scale-out SAP HANA Tailored Datacenter Integration Compute Block Server

HPE ProLiant DL580 Gen9 Server

4U Server Chassis with front-accessible processor and memory drawer
Intel® 602J Chipset

NOTE: For more information regarding Intel chipsets, please see the following URL:
<http://www.intel.com/products/server/chipsets/>

4x HPE 1500W Hot Plug Power Supply Kit

Processors	Choice of three processor options in a four socket (four CPU) configuration: Intel® Xeon® E7-8890v3 (2.5GHz/18-core/45MB/165W) Processor Intel® Xeon® E7-8880v3 (2.3GHz/18-core/45MB/150W) Processor Intel® Xeon® E7-8880Lv3 (2.0GHz/18-core/45MB/115W) Processor
Hard Drive	2x HPE 1.2TB 6G SAS 10K rpm SFF (2.5-inch) SC Dual Port Enterprise 3yr Warranty Hard Drive
Networking & Storage Controller	(2) HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter (1) HPE Ethernet 1GbE 4P 331FLR FIO Adapter (1) HPE SN1000Q 16Gb 2P FC HBA

HPE ProLiant DL380 2 Socket Intel E5-26XXv3 SAP HANA Tailored Datacenter Integration Compute Block Server

HPE ProLiant DL380 Gen9 Server

2U Form Factor
Intel® C610 Series Chipset
Intel® E5-2600v3 Processor Family

NOTE: For more information regarding Intel chipsets, please see the following URL:
<http://www.intel.com/products/server/chipsets/>

HPE Dynamic Smart Array B140i Storage Controller
3 PCIe slots, plus 3 additional slots available as upgrades
24 Slim Form Factor Hot Plug Drive Cage
HPE Embedded 1Gb Ethernet 4-port 331i Adapter
3 Slot GPU Ready Riser Kit
HPE 12Gb SAS Expander Card with Cables for DL380 Gen9
6 hot plug high performance fans, redundant
1 front, 2 internal, 2 rear USB ports
Included HPE Easy Install Rails

Processors	A choice of processors are available in two socket / two processor configurations: Intel® Xeon® E5-2699v3 (2.3GHz/18-core/45MB/145W) Intel® Xeon® E5-2698v3 (2.3GHz/16-core/40MB/135W) Intel® Xeon® E5-2667v3 (3.2GHz/8-core/20MB/135W) Intel® Xeon® E5-2650v3 (2.3GHz/10-core/25MB/105W)
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Standard Features

Hard Drive	Two HPE 600GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drives
Networking & Storage Controller	HPE Smart Array P840/4GB FBWC 12Gb 2-ports Int FIO SAS Controller NOTE: Includes the HPE Smart Storage Battery. HPE Ethernet 1Gb 4-port 331FLR LAN on Motherboard Adapter HPE Ethernet 10Gb 2-port 560SFP+ Adapter HPE Ethernet 1Gb 2-port 361T Adapter
Power Supply	Two HPE 800W Flex Slot Platinum Hot Plug Power Supply Kit NOTE: All power supplies must be of the same input voltage, output rating, and efficiency rating. If non-matching power supplies are installed, you may receive an error message and/or experience operational issues with your server.

HPE ProLiant BL460c 2 Socket Intel E5-2630v3 SAP HANA Tailored Datacenter Integration Compute Block

Server	HPE ProLiant BL460c Gen9 Server Blade Intel® C610 Series Chipset Intel® E5-2600v3 Processor Family NOTE: For more information regarding Intel chipsets, please see the following URL: http://www.intel.com/products/server/chipsets/ One (1) Flexible LOM connector Two (2) x16 PCIe I/O expansion slots (one Type A, one Type A/B) One (1) integrated USB connector and one (1) MicroSDHC connector One (1) TPM connector
Processors	A choice of processors are available in two socket / two processor configurations: Intel® Xeon® E5-2698v3 (2.3GHz/16-core/40MB/135W) Intel® Xeon® E5-2683v3 (2GHz/14-core/35MB/120W) Intel® Xeon® E5-2630v3 (2.4GHz/8-core/20MB/85W)
Hard Drive	Two HPE 600GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drives
Networking & Storage Controller	HPE FlexFabric 10Gb 2-port 536FLB FIO LAN on Motherboard Adapter HPE Smart Array P244br/1GB FBWC 12Gb 2-ports Int FIO SAS Controller Two HPE FlexFabric 10Gb 2-port 534M Ethernet Mezzanine cards

HPE Superdome X with BL920s Gen9 for SAP HANA TDI Compute Block using Intel E7-88X0v3 architecture for scale-up or scale-out configurations

Server	HPE Superdome X for SAP HANA TDI Compute Block <ul style="list-style-type: none"> • 18U enclosure / 42U HPE 1075mm Shock Intelligent Rack • 4-8 two socket server blades, each with 2x FlexLOMs slots, 3x mezzanine slots, and up to 48 DIMM slots • Choice to flex the number of DIMMs per blade (16 / 32 / or 48) to right-size your SAP HANA workload • For Scale Up, four to eight BL920s Gen9 8 blades that can be configured in 2/4/8/16- socket partitions, in a number of socket permutations that accommodate mixed workloads and multiple IT tiers. • For Scale Out, up to 48 four blade 8 socket partitions are supported for large in memory analytic workloads HPE nPartitions (nPars) technology offers electrically isolated hard partitions with 1, 2, 3, 4 or 8 nPars possible that can have mixed workloads, chipsets, and sizes
Processors	A choice of processors are available in 2/4/8/16-socket configurations: <ul style="list-style-type: none"> • Intel® Xeon® E7-8880 v3 Processor (2.3GHz/18-core/45MB/150W) • Intel® Xeon® E7-8890 v3 Processor (2.5GHz/18-core/45MB/165W) Up to 16 processors/288 cores possible
Memory	<ul style="list-style-type: none"> • Multiple flexible memory sizing • Scale Up RAM sizes: 8socket- 6/4/3/2 TB and 16socket- 12/8/4 offerings • Scale Out RAM sizes: 8socket- 3/2 TB offerings

Standard Features

- Networking**
 - Maximum memory: 12TB DDR4 (384 x 32GB DIMMs)
 - HPE 6125XLG Blade Switch with 880 Gb/s throughput (8x10Gb and 4x40Gb uplink ports), 16x10Gb downlink (server) ports and 4x10Gb/s cross-link ports
 - Brocade 16Gb/28c PP+ Embedded SAN Switch with 16 Gbps storage networking with aggregate bandwidth of 896 Gbps (28 ports x 2 for full duplex)
 - HPE FlexFabric 20Gb 2-port 630FLB Adapter
 - HPE QMH2672 16Gb dual channel Fiber Channel Mass Storage Adapter for BladeSystem c-Class
- I/O slots**
 - 2 Dual-port 10GbE NIC FlexLOM daughter cards per blade
 - 1 PCIe 8x Gen 3 Mezzanine (Type A) slot per blade
 - 2 PCIe 16x Gen 3 Mezzanine (Type B) slots per blade
- Power Supply** Multiple PDU options:
 - 32A 400V 3-phase 12-Outlet International
 - 32A 7.3 kVA 1-Phase International
 - 48A 208V 3-phase NA/JP
 - 32A 4.9kVA 1-phase NA/JP

HPE Superdome X with BL920s Gen8 for SAP HANA TDI Compute Block using Intel E7-28X0v2 architecture for scale-up or scale-out configurations

- Server** **HPE Superdome X for SAP HANA TDI Compute Block**
 - 18U enclosure / 42U HPE 1075mm Shock Intelligent Rack
 - 1-8 two socket server blades, each with 2x FlexLOMs slots, 3x mezzanine slots, and up to 48 DIMM slots
 - Choice to flex the number of 32GB DIMMs per blade (16 / 32 / or 48) to right-size your SAP HANA workload
 - Four or eight BL920s Gen 8 blades that can be configured in 4-socket, 8-socket, or 16-socket sizes that accommodate mixed workloads and multiple IT tiers
 - Support for HPE nPartitions (nPars), electrically isolated hard partitions with 1, 2, 3, or 4 nPars possible that can have mixed workloads, chipsets, and sizes
- Processors** A choice of processors are available in 4-socket, 8-socket, and 16-socket configurations:
 - Intel® Xeon® E7-2880 v2 Processor (2.5GHz/15-core/37.5MB/130W)
 - Intel® Xeon® E7-2890 v2 Processor (2.8GHz/15-core/37.5MB/155W)
- Up to 16 processors/240 cores possible
- Memory**
 - Up to 384 DIMM slots
 - Maximum memory: 12TB (384 x 32GB DIMMs)
 - Minimum memory: 1TB (32 x 32GB DIMMs)
 - 32GB PC3-14900 DDR3 ECC registered Load Reduced DIMMs for BL920s Gen 8
- Networking**
 - HPE 6125XLG Blade Switch with 880 Gb/s throughput (8x10Gb and 4x40Gb uplink ports), 16x10Gb downlink (server) ports and 4x10Gb/s cross-link ports
 - Brocade 16Gb/28c PP+ Embedded SAN Switch with 16 Gbps storage networking with aggregate bandwidth of 896 Gbps (28 ports x 2 for full duplex)
 - Ethernet 2-port 560 FLB Adapter
 - HPE QMH26y2 16Gb dual channel Fiber Channel Mass Storage Adapter for BladeSystem c-Class
- I/O slots**
 - 2 Dual-port 10GbE NIC FlexLOM daughter cards per blade
 - 1 PCIe 8x Gen 3 Mezzanine (Type A) slot per blade
 - 2 PCIe 16x Gen 3 Mezzanine (Type B) slots per blade
- Power Supply** Multiple PDU options:
 - 32A 400V 3-phase 12-Outlet International
 - 32A 7.3 kVA 1-Phase International
 - 48A 208V 3-phase NA/JP
 - 32A 4.9kVA 1-phase NA/JP

Standard Features

Factory Express Portfolio for Servers and Storage HPE Factory Express offers configuration, customization, integration and deployment services for Hewlett Packard Enterprise servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed. Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as OS image loading, asset tagging and custom packaging. For more information on Factory Express services for your specific server model please contact your sales representative or go to: <http://www.hp.com/go/factory-express>

Custom Deployment Services HPE Technology Services Consulting has been delivering SAP Infrastructure solutions to customers for over 20 years. Utilizing the HPE framework for deploying custom SAP HANA Solutions, HPE Technology Services help customers quickly realize return on investment and reduce total cost of ownership from a customized SAP HANA TDI landscape. These services are tailored to meet specific customer needs that reduce risks and empower IT organizations to own and manage their SAP HANA environments.

The HPE Technology Services Deployment Services framework is delivered uniformly globally, offering customers scale and uniformity of the same experience at any and all locations worldwide. The SAP HANA Tailored Data Center Integration model provides flexibility, but it also introduces new considerations and risks that must be mitigated. HPE Technology Services Consulting provides guidance to customers to tackle these risks proactively and helps customers optimize the benefits of adopting SAP HANA. The framework is comprised of 5 phases and each phase has activities and deliverables to ensure your technical and business requirements are met.

For more information, visit: www.hp.com/services/consulting

HPE Technology Services delivery framework for SAP HANA Tailored Data Center Integration deployments

Phase I - Analysis & Strategy: The first and the most critical phase that sets the business context and requirements for the entire effort

Key Activities:

- Strategy Services
- Project Roadmap
- Determine technical and business requirements

Key Deliverables:

- On-site workshop
- Database assessment, capacity analysis, and growth trends
- Migration strategy and roadmap
- Workshop findings report

Phase II - Architect and Validate: The phase brings all the components together and verifies the requirements are being met

Key Activities:

- High level design
- Technical migration assessment

Key Deliverables:

- Detailed inventory and SLA analysis
- Transition strategy
- High level design for target system hardware and software environment
- Verify and document effected systems and applications
- Validation that design meets requirements

Phase III - Detailed Design: The phase sets the stage for a successful implementation based on the best and most effective solution

Key Activities:

- In-depth design
- Implementation planning

Key Deliverables:

- Detailed technical and process design
- Hardware and software bill of materials
- Migration planning
- Implementation, test and acceptance plan

Standard Features

	<ul style="list-style-type: none"> • Deployment plans • Integration plan for use access, network backup and recovery
Phase IV – Implement: The phase provides for a rapid deployed mission critical infrastructure built and tested for SAP HANA	
Key Activities: <ul style="list-style-type: none"> • System deployment • Test and acceptance • Production cutover 	Key Deliverables: <ul style="list-style-type: none"> • System(s) installation and configuration for hardware and software • System test and acceptance and tuning • Optional data migration • Cutover from legacy system(s)
Phase V – Manage: The final phase of the framework that focuses on delivering operational excellence	
Key Activities: <ul style="list-style-type: none"> • Transition to on-going operations • Monitor results 	Key Deliverables: <ul style="list-style-type: none"> • Training and knowledge transfer • Transition to operations and support • Decommission of legacy systems and infrastructure • Monitor results and identify improvements

Service and Support

HPE Technology Services for Industry Standard Servers and BladeSystem

Capitalizing on HPE ProLiant server and HPE BladeSystem capabilities requires a service partner who understands your increasingly complex business technology environment. That's why it makes sense to team up with the people who know Hewlett Packard Enterprise infrastructure hardware and software best - the experienced professionals at HPE Services.

Get connected to HPE to improve your support experience

Connecting products to Hewlett Packard Enterprise will help prevent problems with 24x7 monitoring, pre-failure alerts, automatic call logging, and parts dispatch, plus current data will be available for the proactive reports that are part of Proactive Care Services. With Connected products, you can have a dashboard to manage your IT anywhere, anytime, from any device.

Protect your business beyond warranty with HPE Care Pack Services

HPE Care Pack services offer complete care and support expertise with committed response choices designed to meet your IT and business needs. The following Care Packs are available to provide standard support for the components in your SAP HANA TDI solution:

HPE Foundation Care services offer scalable reactive support-packages for Hewlett Packard Enterprise servers and software. You can choose the type and level of service that is most suitable for your IT and business needs. **HPE Proactive Care** delivers high levels of system availability through proactive service management and advanced technical response.

HPE Proactive Care Advanced builds and incorporates on Proactive Care and also gives customers personalized technical and operational advice from an assigned, local Account Support Manager for personalized technical collaboration, flexible access to specialist skills to help optimize business critical IT, and enhanced Critical Incident Management to help so the business is not affected if there is a system or device outage.

Enhance your support experience with HPE Datacenter Care for SAP HANA Tailored Data Center Integration

Hewlett Packard Enterprise is now offering an enhanced support service for TDI that provides specialized support for your TDI environment with access to HPE SAP HANA experts.

Standard Features

HPE Datacenter Care for SAP HANA Tailored Datacenter Integration (TDI) is designed for simplicity and reliability. It can help to improve SAP HANA system performance and reduce downtime on covered Hewlett Packard Enterprise hardware or software. Support cases are managed by engineers specialized in HPE SAP HANA infrastructure. You follow specific Datacenter Care onboarding processes to ensure success and accelerate time-to-value. An assigned account team provides personalized technical and operational advice, pre-and post-assessment activities.

HPE Datacenter Care for SAP HANA TDI service provides context aware remote support services for eligible HPE and SAP products included in your SAP HANA TDI infrastructure. With this service, you have access to HPE SAP HANA Center of Excellence that supports your IT teams with problem diagnosis and help towards resolution for incidents on covered Hewlett Packard Enterprise branded TDI compute blocks. Eligible Hewlett Packard Enterprise hardware products under this coverage receive assistance in troubleshooting problems and identifying potential configuration and hardware related issues.

Choose recommended services or contact your Hewlett Packard Enterprise sales representative or authorized HPE ServiceOne partner for additional HPE Care Pack services information.

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 Care Pack services or customized service agreements. Certain restrictions and exclusions apply.

NOTE: 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>.

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.

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.

How to Order

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

- HPE ProLiant DL580 Gen9 Server with the Intel® Xeon® E7-8800v4 architecture
- HPE ProLiant DL580 Gen8 Server with the Intel® Xeon® E7-8800v3 architecture
- HPE ProLiant DL380 Gen9 Server with the Intel® Xeon® E5-26XXv3 architecture
- HPE ProLiant BL460c Gen9 Server Blade with the Intel® Xeon® E5-26XXv3 architecture
- HPE Superdome X with BL920s Gen9 for SAP HANA TDI using the Intel® Xeon® E7-88X0v3 architecture
- HPE Superdome X with BL920s Gen8 for SAP HANA TDI using the Intel® Xeon® E7-28X0v2 architecture

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

Configuration	Memory Size									
	128 GB	256 GB	384 GB	512 GB	768 GB	1024 GB	1536 GB	2048 GB	3072 GB	4096 GB
HPE ProLiant DL580 Intel E7 8800v4 Scale-up SAP HANA Tailored Datacenter Integration Compute Block	X ¹	X ¹	X ¹	X ¹	X ¹	X ¹	X ¹	X ¹	X ¹	X ¹
HPE ProLiant DL580 Intel E7 8800v4 Scale-out SAP HANA Tailored Datacenter Integration Compute Block						X ³	X ³	X ³		
HPE ProLiant DL580 Intel E7 8800v3 Scale-up SAP HANA Tailored Datacenter Integration Compute Block	X ¹	X ¹	X ¹	X ¹	X ¹	X ¹	X ¹	X ¹	X ¹	
HPE ProLiant DL580 Intel E7 8800v3 Scale-out SAP HANA Tailored Datacenter Integration Compute Block						X ³	X ³	X ³		
HPE ProLiant DL380 2 Socket Intel E5-26XXv3 SAP HANA Tailored Datacenter Integration Compute Block	X ⁴	X ⁴	X ⁴	X ⁴	X ⁴					
HPE ProLiant BL460c 2 Socket Intel E5-26XXv3 SAP HANA Tailored Datacenter Integration Compute Block	X ⁵	X ⁵	X ⁵	X ⁵						

NOTES:

- ¹ 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
- ² For Non Production with internal disks only.
- ³ For Production or non-production use cases with SAP certified external TDI Storage.
- ⁴ For Production and Non Production use cases with Internal Disks. External storage is not required, but can be used in lieu of internal storage.
- ⁵ For Production and Non Production use cases. External storage is required as there is space only for 2 disks on the blade, both of which are already used as boot disks.

How to Order

HPE Superdome X for SAP HANA TDI Compute Block with BL920s Gen9 blades

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

SoH Configuration	.5TB	1TB	1.5TB	2TB	3TB	4TB	6TB	8TB	12TB
16s Scale Up						X		X	X
8s Scale Up				X		X	X		
4s Scale Up		X		X	X				
2s Scale Up	X	X	X						

Based on 32GB DIMMs

BWoH Configuration	256GB	512GB	768GB	1TB	1.5TB	2TB	3TB
8s Scale Up				X		X	X
4s Scale Up		X		X	X		
2s Scale Up	X	X	X				
8s Scale Out						X	X

Based on 16GB DIMMs

NOTES:

Minimum of 4 BL920s Gen9 blades to be populated per HPE Superdome X for SAP HANA TDI Compute Block. Increments of one blade is allowed above the minimum of 4 blades with a maximum of 8 blades per compute block.

This document covers the ordering process for SAP HANA TDI Compute blocks only. For additional components like racks, additional networking interface cards, or peripheral options, refer to the following QuickSpecs here:

HPE ProLiant DL580 Gen9 QuickSpecs: <https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=c04601209>

HPE ProLiant DL380 Gen9 QuickSpecs: <https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=c04346247>

HPE ProLiant BL460c Gen9 Gen9 QuickSpecs: <https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=c04347343>

HPE Integrity Superdome X with BL920s Gen9

QuickSpecs: <http://h20195.www2.hp.com/v2/gethtml.aspx?docname=c04383189>

HPE Integrity Superdome X with BL920s Gen8

QuickSpecs: <https://www.hpe.com/h20195/v2/gethtml.aspx?docname=c04383189>

Step 1: Choose your SAP HANA TDI Compute Block

Select SAP HANA TDI Compute Block

HP ProLiant DL580 Intel E7 8800v4 Scale-up SAP HANA Tailored Datacenter Integration Compute Block

M0S62A

A choice of two processors based on the Intel® Xeon® E7 v4 architecture is available. Scale-up TDI Compute blocks are available in two socket or two CPU, or four socket or four CPU configurations

HP DL580 Gen9 Intel® Xeon® E7-8890v4 (2.1GHz/24-core/165W) Processor Kit

816643-B21

HP DL580 Gen9 Intel® Xeon® E7-8880v4 (2.2GHz/22-core/150W) Processor Kit

816645-B21

How to Order

HP ProLiant DL580 Intel E7 8800v4 Scale-out SAP HANA Tailored Datacenter Integration Compute Block MOS63A

A choice of two processors based on the Intel® Xeon® E7 v4 architecture is available. Scale-out TDI Compute blocks are available in four socket or four CPU configurations

HP DL580 Gen9 Intel® Xeon® E7-8890v4 (2.1GHz/24-core/165W) Processor Kit 816643-B21

HP DL580 Gen9 Intel® Xeon® E7-8880v4 (2.2GHz/22-core/150W) Processor Kit 816645-B21

HP ProLiant DL580 Intel E7 8800v3 Scale-up SAP HANA Tailored Datacenter Integration Compute Block MOR99A

A choice of three eighteen core processors based on the Intel® Xeon® E7 v3 architecture is available. Scale-up TDI Compute blocks are available in two socket or two CPU, or four socket or four CPU configurations

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

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

HP DL580 Gen9 Intel® Xeon® E7-8880Lv3 (2.0GHz/18-core/45MB/115W) Processor Kit 788337-B21

HP ProLiant DL580 Intel E7 8800v3 Scale-out SAP HANA Tailored Datacenter Integration Compute Block MOS02A

A choice of three eighteen core processors based on the Intel® Xeon® E7 v3 architecture is available. Scale-out TDI Compute blocks are available in four socket or four CPU configurations

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

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

HP DL580 Gen9 Intel® Xeon® E7-8880Lv3 (2.0GHz/18-core/45MB/115W) Processor Kit 788337-B21

2 Socket Scale-up SAP HANA TDI Compute Blocks based on the HPE ProLiant DL380 Gen9 Server

HP ConvergedSystem Intel® E5-2699v3 DL380 SAP HANA Tailored Datacenter Integration Compute Block H6Y72A

HP ConvergedSystem Intel® E5-2698v3 DL380 SAP HANA Tailored Datacenter Integration Compute Block MOR77A

HP ConvergedSystem Intel® E5-2667v3 DL380 SAP HANA Tailored Datacenter Integration Compute Block MOR78A

HP ConvergedSystem Intel® E5-2650v3 DL380 SAP HANA Tailored Datacenter Integration Compute Block MOR79A

2 Socket Scale-up SAP HANA TDI Compute Blocks based on the HPE ProLiant BL460c Gen9 Server Blade

HP ConvergedSystem Intel® E5-2698v3 BL460c SAP HANA Tailored Datacenter Integration Compute Block H6Y69A

HP ConvergedSystem Intel® E5-2683v3 BL460c SAP HANA Tailored Datacenter Integration Compute Block H6Y70A

HP ConvergedSystem Intel® E5-2630v3 BL460c SAP HANA Tailored Datacenter Integration Compute Block H6Y71A

2-socket, 4-socket, 8-socket, and/or 16-socket Scale-up or Scale-out SAP HANA TDI Compute Blocks based on the HPE Integrity Superdome X with BL920s Gen 9 blades

HP CS SDX SAP HANA TDI Scale-up Solution MOS16A

HP CS SDX SAP HANA TDI Scale-out Solution MOS28A

HP ConvergedSystem BL920s Gen9 2.3GHz 36c Server Blade MOS17A

HP ConvergedSystem BL920s Gen9 2.5GHz 36c Server Blade MOS18A

How to Order

4-socket, 8-socket, and/or 16-socket Scale-up or Scale-out SAP HANA TDI Compute Blocks based on the HPE Integrity Superdome X with BL920s Gen 8 blades

HP CS Integrity Superdome X for SAP HANA TDI 2890V2 BL920s Gen8 30-core 2.8GHz x86 Blade	MOR86A
HP CS Integrity Superdome X for SAP HANA TDI 2880V2 BL920s Gen8 30-core 2.5GHz x86 Blade	MOR87A

NOTE: This document covers the HPE ProLiant BL460c Gen9 server blade and the HPE Superdome X for SAP HANA TDI only. For information on HPE BladeSystem c-Class Enclosures and HPE BladeSystem c-Class Interconnect and Mezzanine Components, please see the following QuickSpecs:

- HPE BladeSystem c3000 Enclosure QuickSpecs at <http://www8.hp.com/h20195/v2/GetDocument.aspx?docname=c04123379>
NOTE: The c3000 HPE c-Class enclosures have full backwards and forwards compatibility, existing server blades are supported in the new enclosures and any future server blades will be supported in the existing enclosures.
- HPE BladeSystem c7000 Enclosure QuickSpecs at <http://www8.hp.com/h20195/v2/GetDocument.aspx?docname=c04229580>
NOTE: The c7000 HPE c-Class enclosures have full backwards and forwards compatibility, existing server blades are supported in the new enclosures and any future server blades will be supported in the existing enclosures.
- HPE BladeSystem c-Class Interconnect and Mezzanine Components at <http://h18004.www1.hp.com/products/ blades/ components/ c-class- interconnects.html>
<http://h18004.www1.hp.com/products/ blades/ components/ c-class- adapters.html>

NOTE: For optimal cooling and system performance the BL460c Gen9 Server Blade requires the c7000 enclosure to be configured with 10 fans and the c3000 enclosure to be configured with 6 fans.

NOTE: For proper BladeSystem operation, the minimum required versions of HPE Onboard Administrator and HPE Virtual Connect are required and available via the HPE Service Pack for ProLiant, please see <http://www.hp.com/go/spp/download>.

Select Memory

For SAP HANA TDI Compute blocks based on the HPE ProLiant DL580 Gen9 Server based on the Intel Xeon E7 v4 architecture, the following memory options are available:

HP 16GB (1x16GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit	726719-B21
HP 32GB (1x32GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit	728629-B21
HP 32GB (1x32GB) Quad Rank x4 DDR4-2133 CAS-15-15-15 Load Reduced Memory Kit	726722-B21
HP 64GB (1x64GB) Quad Rank x4 DDR4-2133 CAS-15-15-15 Load Reduced Memory Kit	726724-B21

NOTE: 16GB DIMMs are not available for scale-up configurations. 64GB DIMMs are only available for scale-up configurations sizes greater than 1024GB.

For SAP HANA TDI Compute blocks based on the HPE ProLiant DL580 Gen9 Server based on the Intel Xeon E7 v3 architecture, the following memory options are available:

HP 16GB (1x16GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit	726719-B21
HP 32GB (1x32GB) Quad Rank x4 DDR4-2133 CAS-15-15-15 Load Reduced Memory Kit	726722-B21
HP 64GB (1x64GB) Quad Rank x4 DDR4-2133 CAS-15-15-15 Load Reduced Memory Kit	726724-B21

NOTE: 16GB DIMMs are not allowed on a two socket or two CPU system for the 1024GB or 1536GB sizes. 32GB DIMMs are not allowed on a four socket or four CPU system for the 128GB size. 64GB DIMMs are not allowed for 128GB, 256GB or 384GB sizes.

How to Order

For 128GB, 256GB, or 384GB sizes for the 2 Socket Scale-up SAP HANA TDI Compute Blocks based on the HPE ProLiant DL380 Gen9 Server, choose quantity 8, 16, or 24 respectively of the following Memory Option

HP 16GB (1x16GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Load Reduced Memory Kit MOR80A

For 512GB, or 768GB sizes for the 2 Socket Scale-up SAP HANA TDI Compute Blocks based on the HPE ProLiant DL380 Gen9 Server, choose quantity 16 or 24 respectively of the following Memory Option

HP 32GB (1x32GB) Quad Rank x4 DDR4-2133 CAS-15-15-15 Load Reduced Memory Kit MOR81A

For 128GB or 256GB sizes for the 2 Socket Scale-up SAP HANA TDI Compute Blocks based on the HPE ProLiant BL460c Gen9 Server Blade, choose quantity 8 or 16 respectively of the following Memory Option

HP 16GB (1x16GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Load Reduced Memory Kit MOR80A

For 384GB or 512GB sizes for the 2 Socket Scale-up SAP HANA TDI Compute Blocks based on the HPE ProLiant BL460c Gen9 Server Blade, choose quantity 12 or 16 respectively of the following Memory Option

HP 32GB (1x32GB) Quad Rank x4 DDR4-2133 CAS-15-15-15 Load Reduced Memory Kit MOR81A

²For 2TB, 4TB, or 6TB 8-socket sizes for the scale-up or scale-out HPE Superdome X for SAP HANA TDI Compute Block based on the HPE BL920s Gen 8 server blade, choose quantity 16, 32, or 48 DIMMs per blade

HP ConvergedSystem 900 DDR4 128GB (4x32GB) Memory Module MOS31A

²For 4TB, 8TB, or 12TB 16-socket sizes for the scale-up HPE Superdome X for SAP HANA TDI Compute Block based on the HPE BL920s Gen 8 server blade, choose quantity 16, 32, or 48 DIMMs per blade

HP CS Integrity Superdome X for SAP HANA TDI Memory Module MOR88A

NOTES:

1 Must be ordered in 4-socket pairs (minimum 4 blades, but can be mixed sizes and workloads)

2 The HPE Superdome X for SAP HANA TDI can be configured with 1, 2, 3 or 4 HPE nPartitions (nPars), which are electrically isolated from each other. Each partition can have 2 to 4 blades, in equal blade increments. This is not a part number, but a factory configuration

Select Optional Hard Drives (except for HPE Superdome X for SAP HANA TDI and HPE ProLiant DL580 Gen9 Scale-out TDI Compute Blocks) **For non-production use cases with the SAP HANA Scale-up TDI Compute blocks built with the HPE ProLiant DL580 Gen9 Server based on the Intel Xeon E7 v4 architecture, select up to 8 optional drives, in addition to the 2 required boot drives**

HP 1.8TB 12G SAS 10K 2.5in SC 512e HDD 791034-B21

For non-production use cases with the SAP HANA Scale-up TDI Compute blocks built with the HPE ProLiant DL580 Gen9 Server based on the Intel Xeon E7 v3 architecture, select up to 8 optional drives, in addition to the 2 required boot drives

HP 1.2TB 6G SAS 10K rpm SSF (2.5in) Hard Drive 718162-B21

For TDI Compute blocks based on the HPE ProLiant DL380 Gen9 Server based on the Intel Xeon E5 v3 architecture, select up to 22 optional drives

NOTES:

The use of Hard drives for Tailored Data Center compute blocks depends on the production or non-production use case. Refer to the How to Order section for restrictions.

The TDI 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.

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.

How to Order

NOTE: 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.

Select	SUSE Linux Enterprise Server SAP 2 Sockets or 1-2 VM 3yr Subscription 24x7 Support Flexible LTU	N0U73A
Optional	SUSE Linux Enterprise Server SAP 2 Sockets or 1-2 VM 5yr Subscription 24x7 Support Flexible LTU	N0U75A
Operating System	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: Choose Support and Services

HPE Technology Services delivers confidence, reduces risk and helps customers realize agility and stability. Connect to HPE to help prevent problems and solve issues faster. Our support technology lets you to tap into the knowledge of millions of devices and thousands of experts to stay informed and in control, anywhere, any time.

Protect your business beyond warranty with HPE Care Pack Services

HPE Care Pack Services enable you to order the right service level, length of coverage and response time as you purchase your new server, giving you full entitlement for the term you select.

NOTE: Support for the SAP HANA software requires a separate support agreement with SAP.

NOTE: Each of these support levels include hardware and software reactive support, as applicable, and are available with DMR (defective media retention). Care Packs are available in 3, 4 or 5 year durations.

HPE Foundation Care	Hardware and software support services provide easy connection to HPE to resolve support issues quickly. Includes collaborative call management for industry leading software; full software support may also be purchased, giving you one place to call for help. http://www.hp.com/services/foundationcare
HPE Proactive Care	This service helps prevent problems and stabilize IT by utilizing secure, real-time, predictive analytics and proactive consultations when your products are connected to HPE. There is a choice in reactive support level by selecting either 6-hour call-to-repair, 24x7 with 4-hour onsite response or next-business day onsite response. http://www.hp.com/services/proactivecare
HPE Proactive Care Advanced	Achieve a higher return on your product investment with the personal attention from a locally assigned Account Support Manager who delivers recommendations designed to improve availability and performance. Leverage your system's ability to connect to HPE for automated problem detection and rapid critical event management to increase stability and reduce unplanned downtime. There is a choice in reactive support level by selecting either 6-hour call-to-repair, 24x7 with 4-hour onsite response or next-business day onsite response. http://www.hp.com/services/proactivecare
HPE Datacenter Care for SAP HANA Tailored Data	Provides specialized support for your TDI environment with access to HPE SAP HANA experts. Please engage with your TS sales contact for assistance in providing a personalized and customized Datacenter Care solution. This Datacenter Care Support Service must be purchased for each HPE TDI compute block in the environment. This service is only applicable when the solution design includes non-virtualized HPE TDI compute blocks. Virtualized SAP HANA environments are not eligible for this support service. http://www.hp.com/services/datacentercare

How to Order

Center Integration Provides a flexible way to purchase HPE best-in-class consultancy and technical services. You can buy Proactive Select Service Credits when you purchase your hardware and then use the credits over the next 12 months.

<http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA2-3842ENN.pdf>

HPE Proactive Select Service Additional HPE Care Pack services can be found at: <http://www.hp.com/go/cpc>

Technical Specifications

HPE ProLiant DL580 Gen9 based SAP HANA TDI Compute Blocks	Dimensions (H x W x D) (with bezel)	6.88" x 17.48" x 29" (17.5cm x 44.4cm x 73.6cm)	
	Weight (approximate)	Maximum (all hard drives, power supplies, DIMMs and processors installed)	116.56.0 lb (52.87 kg)
		Minimum (one hard drive, two power supplies, four DIMMs, and two processors installed)	70.94 lb (32.18 kg)
Input Requirements (per power supply)	Rated Line Voltage	100 - 120 VAC (1200W PS only) 200 - 240 VAC (1200W & 1500W PS)	
	Rated Input Current	9.2A (100 VAC), 6.6A (200 VAC) - 1200W PS 8.3A (200 VAC) - 1500W PS	
	Rated Input Frequency	50 to 60 Hz	
	Rated Input Power	1000 W (120 VAC), 1320 W (230VAC) - 1200W PS 1652 W (at 230 VAC) - 1500W PS	
BTU Rating	Maximum	3408 BTU/hr (120 VAC), 4500 BTU/hr (at 230 VAC) - 1200W PS 5637 BTU/hr (230 VAC) - 1500W PS	
Power Specifications	NOTE: To review typical system power ratings use the HPE Power Advisor which is available online located at http://www.hp.com/go/hppoweradvisor - Click on the system of interest. Example: DL580 Gen9 - Follow the instructions of the next screens.		
Power Supply Output (per power supply)	Rated Steady-State Power and Maximum Peak Power	800 W (100 VAC low line), 900 W (120 VAC low line), 1200W (200 - 240 VAC) for 1200W PS 1500W (200 - 240V) for 1500W PS	
	System Inlet Temperature	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 304.8 m (1.8°F per every 1000 ft) above sea level to a maximum of 3048 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F)..
Non-operating		-40° to 70°C (-40° to 158°F). Maximum rate of change is 20°C/hr (36°F/hr).	
Relative Humidity (non-condensing)	Operating	10% to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.	
	Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.	

Technical Specifications

Altitude	Operating	3048 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
Acoustic Noise	Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 24°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109). The listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.	
	Typical configuration (Two Intel® Xeon® E7-4890 v3 processors, 8x16 GB DIMMs, five HDDs, Eight fans, Four power supplies)	
	Idle	
	<ul style="list-style-type: none"> • LWAd – 6.8 B • LpAm – 51.2 	
	Operating	
	<ul style="list-style-type: none"> • LWAd – 6.9 B • LpAm – 51.2 	
	Performance Configuration (Four Intel® Xeon® E7-4890 v3 processors, 16x16 GB DIMMs, Ten HDDs, Eight fans, Four power supplies)	
	Idle	
	<ul style="list-style-type: none"> • LWAd – 6.7 B • LpAm – 50.7 	
	Operating	
	<ul style="list-style-type: none"> • LWAd – 6.9 B • LpAm – 51.3 	
Emissions Classification (EMC)	FCC Rating	Class A
	Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1

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

Technical Specifications

HPE ProLiant DL380 Gen9 based SAP HANA TDI Compute Blocks	Dimensions	SFF Drives: 3.44 x 17.54 x 26.75 in (8.73 x 44.55 x 67.94 cm) LFF Drives: 3.44 x 17.54 x 28.75 in (8.73 x 44.55 x 73.02 cm) NOTE: Dimensions without Bezel.
	Weight (approximate)	Minimum: 32.6 lb (Minimum - 8SFF chassis with 1xSFF HDD and 7 HDD blanks, 1x processor, 1x power supply (plus blank), 1x Flexible Smart Array, 1x Riser installed) 14.759 kg Maximum: 51.5 lb (23.6 kg) (Maximum - 12 LFF hard drives (No rear drives), 2x processors, 2x power supplies, 1x Flexible Smart Array, 2x Risers installed)
	Input Requirements (per power supply)	Range Line Voltage 100 to 120 VAC 200 to 240 VAC
	BTU Rating	Maximum For 800W Power Supply: 3207 BTU/hr (at 100 VAC), 3071 BTU/hr (at 200 VAC), 3112 BTU/hr (at 240 VAC) for China Only For 500W Power Supply: 1979 BTU/hr (at 100 VAC), 1911 BTU/hr (at 200 VAC), 1965 BTU/hr (at 240 VAC) for China Only
	Power Supply Output (per power supply)	Rated Steady-State Power For 1400W Power Supply: 1400W (at 100 VAC), 1400W (at 240 VAC), 1400W (at 240 VAC) For 800W Power Supply: 800W (at 100 VAC), 800W (at 240 VAC), 800W (at 240 VAC) input for China only For 500W Power Supply: 500W (at 100 VAC), 500W (at 240 VAC), 500W (at 240 VAC) input for China only Maximum Peak Power For 1400W Power Supply: 1400W (at 100 to 127 VAC), 1400W (at 200 to 240 1VAC), 1400W (at 240 VAC) input for China only For 800W Power Supply: 800W (at 100 to 127 VAC), 800W (at 200 to 240 1VAC), 800W (at 240 VAC) input for China only For 500W Power Supply: 500W (at 100 to 127 VAC), 500W (at 200 to 240 VAC), 500W (at 240 VAC) input for China only
	System Inlet Temperature	Standard Operating Support 10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 20°C/hr (36°F/hr). The upper limit and rate of change may be limited by the type and number of options installed. System Performance during standard operating support may be reduced if operating with a fan fault or above 30°C (86°F) Extended Ambient Operating Support For approved hardware configurations, the supported system inlet range is extended to be: 35° to 40°C (41° to 104°F) at sea level with an altitude derating of 1.0°C per every 175 m (1.8°F per every 574 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft). The approved hardware configurations for this

Technical Specifications

system are listed at the

URL: <http://www.hp.com/servers/Ashrae>

For approved hardware configurations, the supported system inlet range is extended to be: 5° to 45°C (41° to 113°F) at sea level with an altitude derating of 1.0°C per every 125 m (1.8°F per every 410 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft). The approved hardware configurations for this system are listed at the

URL: <http://www.hp.com/servers/Ashrae>

	Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
Relative Humidity	Operating	Minimum to be the higher (more moisture) of -12°C (10.4°F) dew point or 8% relative humidity. Maximum to be the lower (less moisture) of 24°C (75.2°F) dew point or 90% relative humidity.
	(non-condensing) Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
Altitude	Operating	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
Acoustic Noise	Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).	
	Idle	
	L WAd	4.0 B Entry LFF 4.1 B Entry 4.2 B Base 5.7 B Base LFF 4.3 B Perf
	L pAm	23 dBA Entry LFF 24 dBA Entry 24 dBA Base 39 dBA Base LFF 25 dBA Perf
	Operating	
	L WAd	4.3 B Entry LFF 4.6 B Entry 4.8 B Base 5.9 B Base LFF 5.6 B Perf
	L pAm	25 dBA Entry LFF 29 dBA Entry 30 dBA Base

Technical Specifications

31 dBA Base LFF

39 dBA Perf

NOTE: The Listed sound levels apply to standard shipping configurations (Entry LFF, Entry, Base, Base LFF and Performance models) Additional options may result in increased sound levels. The Base LFF model leverages our High Efficiency Fans, other models are shipping with standard fan options.

Emissions Classification (EMC)	FCC Rating	Class A
	Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1

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

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

HPE ProLiant BL460c Gen9 based SAP HANA TDI Compute Blocks	Dimensions (H x W x D) (with bezel)	(H x 7.11 x 2.18 x 20.37 in (18.07 x 5.54 x 51.76 cm))	
	Weight (approximate)	Maximum: all processors, 16 DIMMs, hard drives, mezzanine cards, and two flash cache batteries installed)	14.00 lb (6.33 kg)
		Minimum: one processor and 2 DIMMs installed	10.50 lb (4.75 kg)
Power Specifications	For power specifications including input requirements, BTU rating, and power supply output, please see the:		
	<ul style="list-style-type: none"> HPE BladeSystem c3000 Enclosure QuickSpecs at https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=c04123379 HPE BladeSystem c7000 Enclosure QuickSpecs at https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04229580 		
	To review typical system power ratings use the HPE Power Advisor which is available via the online tool located at http://www.hp.com/go/hppoweradvisor .		
	NOTE: For optimal cooling and system performance the BL460c Gen9 Server Blade requires the c7000 enclosure to be configured with 10 fans and the c3000 enclosure to be configured with 6 fans.		
System Inlet Temperature	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1,000 ft) above sea level to a maximum of 3,050 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.	

Technical Specifications

		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).
	NOTE: Qualifications for extended ambient configurations are detailed at: https://www.hp.com/servers/ASHRAE	
Relative Humidity (non-condensing)	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
	Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
Altitude	Operating	3,050 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 (1,500 ft/min).
	Non-operating	9,144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1,500 ft/min).
Acoustic Noise	For acoustic noise specifications, please see the HPE BladeSystem c-Class Enclosures QuickSpecs located at: HPE BladeSystem c3000 Enclosure QuickSpecs: http://h18000.www1.hp.com/products/QuickSpecs/12790_div/12790_div.html HPE BladeSystem c7000 Enclosure QuickSpecs: http://h18000.www1.hp.com/products/QuickSpecs/12810_div/12810_div.html	

HPE Superdome X for SAP HANA Compute Block	Dimensions (H x W x D) (with bezel)	31.4" x 19.1" x 32.6" (79.8cm x 48.5cm x 82.8cm)	
	Weight (approximate)	Maximum – Fully Populated with optional storage (all power supplies, DIMMs and processors installed)	692 lb (314 kg)
		Typical – Half Populated with optional storage	559 lb (254 kg)
		Minimum (empty chassis with midplane assembly and rear chassis cage)	238 lb (108 kg)
	Input Requirements (per power supply)	Rated Line Voltage	200 - 240 VAC
Rated Input Current		8 A (at 200 VAC)	
Rated Input Frequency		50 to 60 Hz	
Rated Input Power		1598 W (at 240 VAC)	
BTU Rating	Maximum	5450 BTU/hr (at 200 VAC)	

Technical Specifications

Power Specifications	NOTE: To review typical system power ratings use the HPE Power Advisor which is available online located at http://www.hp.com/go/hppoweradvisor - Click on the system of interest. - Follow the instructions of the next screens.	
Power Supply Output (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)
System Inlet Temperature	Operating	5° to 40°C (41° to 104°F) at sea level with an altitude derating of 1.0°C per every 300 m (1.8°F per every 984 ft) above 900 m (2953 ft) to a maximum of 3048 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 20°C/hr (36°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 80°C (-40° to 176°F). Maximum rate of change is 20°C/hr (36°F/hr).
Relative Humidity (non-condensing)	Operating	8% at -12°C (10.4°F) to 85% at 24°C (75.2°F) relative humidity (Rh) maximum wet bulb temperature, non-condensing.
	Non-operating	8 to 90% relative humidity (Rh), 32°C (89.6°F) maximum wet bulb temperature, non-condensing.
Altitude	Operating	3048 m (10,000 ft)
	Non-operating	4572 m (15,000 ft)
Acoustic Noise	Sound Power	
	L WAd	< -8.6 Bels
Emissions Classification (EMC)	FCC Rating	Class A
	Normative Standards	CISPR 22; EN55022; KN 22; AS/NVS CISPR 22; CISPR 24; EN55024; KN 24; FCC CFR 47, Pt 15; VCCI V-3; TCVN 7189; ICES-003; CNS13438; 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.

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.

Technical Specifications

- 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).

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

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

Summary of Changes

Date	Version History	Action	Description of Change
10-Jun-2016	From Version 7 to 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	From Version 6 to 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	From Version 5 to 6	Changed	Changes made to the How to Order Section
28-Sept-2015	From Version 4 to 5	Changed	Changes made throughout the QuickSpecs.
17-Aug-2015	From Version 3 to 4	Changed	Added HPE ProLiant DL580 Gen9 TDI Compute Block
01-Jun-2015	From Version 2 to 3	Changed	Added HPE Superdome X for SAP HANA TDI Compute Block
03-Apr-2015	From Version 1 to 2	Changed	Name was changed, changes made to the entire document



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