



SAP HANA Tailored Data Center Integration Frequently Asked Questions

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INTRODUCTORY INFORMATION

1. What is SAP HANA tailored data center integration and how does it differ from the appliance delivery model?

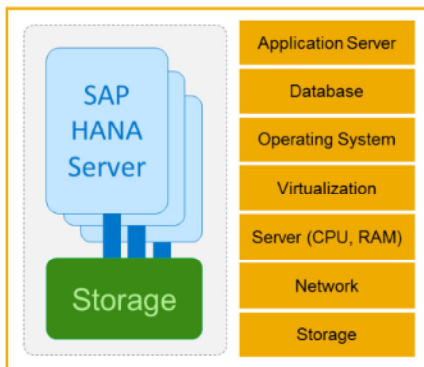
SAP started delivering SAP HANA in the form of standardized and highly optimized appliances, offering companies the possibility to choose between several SAP HANA hardware partners. Those SAP HANA appliances are built based on a well-defined hardware specification designed for the performance requirements of a solution which leverages in-memory technology.

If you prefer the delivery of a preconfigured hardware setup with preinstalled software packages that can be quickly implemented by your SAP HANA hardware partner of choice, then an appliance is the right delivery model for you. It is fully supported by both the hardware partner and SAP.

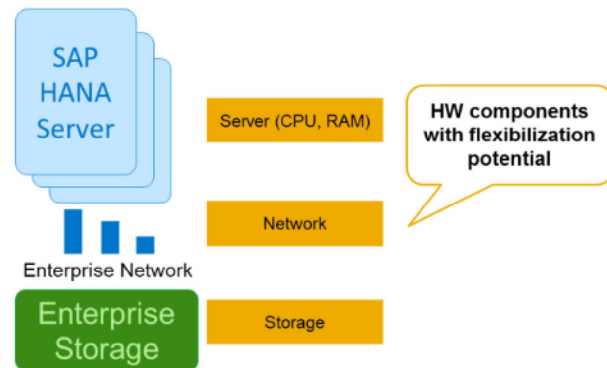
While the appliance delivery is easy and comfortable, it might introduce some limitations regarding hardware flexibility and it may require changes to your established IT operation processes. Therefore, SAP offers **an additional delivery approach for SAP HANA - SAP HANA tailored data center integration**.

Compared to the appliance delivery, in order to optimally integrate SAP HANA in your data center, **SAP HANA tailored data center integration** provides you with more flexibility regarding the hardware components required to run SAP HANA, as depicted below:

Appliance building blocks: All in one box



SAP HANA TDI: Use your own preferred HW



2. What is the motivation to introduce SAP HANA tailored data center integration?

SAP HANA tailored data center integration provides you with flexibility regarding the hardware components required to run SAP HANA.

Leveraging this approach you will:

- Reduce hardware and operational costs by reusing existing hardware components and operation processes
- Mitigate risks and optimize time-to-value by enabling existing IT management processes for SAP HANA implementations
- Have more flexibility in hardware vendor selection by leveraging the existing ecosystem

In short, SAP HANA TDI helps you to stay within your IT budget, shortens implementation cycles, and allows better consumption of hardware innovations to drive the adoption of SAP HANA.

3. Since when has SAP HANA tailored data center integration been available?

The general availability of SAP HANA tailored data center integration was announced in several phases. Phase 1 - the general availability of **SAP HANA tailored data center integration with enterprise storage** was announced in November 2013. Before that, the approach had been verified in a 9-month pilot program with more than 70 customers involved.

Phase 2 - the general availability of **SAP HANA tailored data center integration with enterprise network** was announced in November 2014.

Phase 3 – the introduction of **support for Intel Xeon E5 processors for entry-level SAP HANA systems** was also announced in November 2014.

Phase 4 – the general availability of **SAP HANA on IBM Power Systems** was announced when SAP HANA SPS11 was released in November 2015, following a ramp-up phase that had started in early 2015.

4. What are the major differences between the SAP HANA appliance delivery and SAP HANA tailored data center integration?

Besides being aware of the benefits of SAP HANA tailored data center integration, also keep in mind that the approach requires several tasks and prerequisites.

| | Appliance Delivery Model | SAP HANA TDI Approach |
|---|--|--|
| Hardware Selection | <ul style="list-style-type: none"> Little flexibility only <ul style="list-style-type: none"> Customer can choose between different appliance vendors No possibility to replace certain components by HW already used in customers' DC | <ul style="list-style-type: none"> Save IT budget and existing investments <ul style="list-style-type: none"> Use preferred storage Use preferred network components A choice of compute server processor (E5, E7) (New in SP09) |
| Implementation Effort | <ul style="list-style-type: none"> Low for customer <ul style="list-style-type: none"> Preconfigured HW plus preinstalled SW | <ul style="list-style-type: none"> Only HW is delivered <ul style="list-style-type: none"> Installation to be done by customer (incl OS) Extensive docu (guides, SAP notes) available |
| Safeguarding / Solution Validation | <ul style="list-style-type: none"> Done together by SAP and HW Partner | <ul style="list-style-type: none"> SAP HANA Going-Live check offered by SAP AGS Self-managed infrastructure tests possible <ul style="list-style-type: none"> SAP HANA HW Configuration Check Tool |
| Support | <ul style="list-style-type: none"> Fully provided by SAP | <ul style="list-style-type: none"> Individual support agreement(s) with HW partner(s) required |
| OS Service Contract | <ul style="list-style-type: none"> Appliance vendor is reseller of OS provider's service contract | <ul style="list-style-type: none"> Customer to care for getting the OS provider's service contract |

5. Is SAP HANA tailored data center integration limited to specific scenarios?

Compared to the scenarios supported for SAP HANA appliances, there is only one difference with SAP HANA tailored data center integration: The maximum number of worker nodes for SAP HANA scale-out solutions is limited to 16 hosts in SAP HANA TDI environments. This also applies if the hardware for the SAP HANA compute servers has been certified for scale-out solutions with more than 16 worker nodes. Customers who wish to set up SAP HANA scale-out solutions with more than 16 worker hosts using the SAP HANA TDI approach must contact their SAP account executive beforehand.

6. Can I get a certificate or a similar kind of formal approval for my SAP HANA TDI infrastructure from SAP?

SAP does not offer any formal certification of a given SAP HANA TDI infrastructure. Instead, SAP certifies the following hardware components with SAP HANA hardware partners and requires that customers only use these certified configurations for SAP HANA TDI deployments (for details, see next chapter):

- Server hardware for SAP HANA computing nodes
- Storage products

Furthermore, SAP requires that the installation of the SAP HANA software is done by persons who passed SAP's certification for SAP HANA installation administrators (for details, see next chapter).

Every SAP HANA TDI infrastructure that fulfills these prerequisites is supported by SAP and does not need any additional approval.

Before going productive with a SAP HANA system deployed on a SAP HANA TDI infrastructure, SAP recommends conducting a HANA Go-Live Check as offered by SAP Digital Business Services.

7. Can I use compute server hardware from different vendors for setting up a SAP HANA scale-out solution using the SAP HANA tailored data center integration approach?

No, with SAP HANA tailored data center integration you are only allowed to use homogeneous compute server hardware from one SAP HANA hardware partner. A mix of compute server hardware from different vendors is not supported.

SAP HANA TAILORED DATA CENTER INTEGRATION WITH ENTERPRISE STORAGE

1. What are the prerequisites of using SAP HANA tailored data center integration with enterprise storage?

Compute server

You can only use compute servers with the exact same bill of material as the compute servers of certified SAP HANA appliances but without storage. Only compute servers listed in [the official SAP HANA Hardware Directory](#) are supported. Note the following information:

- For the compute server, you do not need to order any local disks or flash cards which may be part of the bill of material of a given appliance
- It is allowed to use additional Fibre Channel adapters for booting from a storage area network
- The compute server can only be used for exact the same SAP HANA scenarios that the appliance has been certified for, e.g. if a given appliance has been certified for single-node usage only, then the compute server of that appliance cannot be used for scale-out SAP HANA systems.
- For scale-out SAP HANA solutions, the maximum number of nodes the compute server can be used for is limited to the number specified in the certificate of the appliance; however, in general, the maximum number of worker nodes is limited to 16 hosts in SAP HANA TDI environments. Customers who wish to set up SAP HANA scale-out solutions with more than 16 worker hosts using the SAP HANA TDI approach must contact their SAP account executive beforehand.
- It also depends on the appliance certificate which OS can be installed on the compute server: If the certificate includes SUSE Linux Enterprise Server (SLES) only, no other OS (e.g. Red Hat Enterprise Linux (RHEL) or IBM Power) can be installed on that server.

Storage system

You can only use storage systems certified and listed in [the official SAP HANA Hardware Directory](#). For more information, see [SAP HANA Hardware Certification - Enterprise Storage](#) or contact HWC@sap.com.

SAP HANA installation

The installation of SAP HANA needs to be done by a person who successfully passed the exam “[SAP Certified Technology Specialist – SAP HANA Installation](#)” (C_HANATEC). SAP HANA hardware partners and their employees do not need this certificate. However, companies, or their employees, who are sub-contractors of SAP HANA hardware partners must be certified to perform HANA software installations.

2. Which storage systems can I use?

You can only use certified storages listed in [the official SAP HANA Hardware Directory](#). SAP does not support production SAP HANA systems running on SAP HANA TDI infrastructures with uncertified storage. SAP Support checks if the storage system used in a given SAP HANA TDI infrastructure appears in the SAP HANA Hardware Directory.

3. What does SAP's Enterprise Storage certification comprise?

SAP's Enterprise Storage certification comprises:

- Testing the fulfillment of SAP's KPIs for data throughput and latency between an SAP HANA compute server and the storage system
- Testing whether the storage system supports SAP HANA's Host Auto Failover functionality:
 - For SAN storage, this basically means that the storage needs to support SCSI3 Persistent Reservations to guarantee error-free interaction with the SAP HANA Storage Connector
 - For NAS storage, the vendor must provide an appropriate implementation of the SAP HANA Storage Connector API for the given file system (e.g. NFSv3 or NFSv4)

4. Why are there different KPIs for SAP HANA appliances and for SAP HANA TDI with Enterprise Storage?

SAP considers appliances as the hardware offering providing highest quality and highest performance for SAP HANA systems. In SAP HANA appliances, the hardware components are solely used for the SAP HANA systems running on it; it is not allowed to share the hardware with other systems. Therefore, SAP's requirements for SAP HANA appliances are higher than for SAP HANA TDI infrastructures.

5. What if I want to use a storage product which has not been certified yet?

SAP's Enterprise Storage certification is open for all vendors. To initiate the certification process, storage vendors must contact SAP ICC - see [SAP ICC's information page](#) for more details.

SAP does not support production SAP HANA systems running on SAP HANA TDI infrastructures with uncertified storage.

6. Where can I find information about storage sizing for SAP HANA TDI environments?

All information about storage sizing for SAP HANA is compiled in the "Storage Sizing" section of the [Storage Requirements whitepaper](#).

7. How do I configure a certified storage system to optimally run with SAP HANA?

All storage vendors must compile a document which describes how to configure the storage system for optimal collaboration with SAP HANA. Since SAP, for legal restrictions, is not allowed to hand over those documents, customers must contact the storage vendor for a copy of it. SAP recommends following the directions and guidelines in that document.

8. For SAP HANA systems, do I have to use exactly the same storage configuration the vendor used for the certification?

No, customers do not have to use exactly the same configuration, deviations are allowed.

Prerequisite for getting SAP's support for a given SAP HANA TDI infrastructure is that the storage passed SAP's Enterprise Storage certification. As mentioned above, SAP recommends following the directions and guidelines of the storage vendor for setup and configuration of the storage system.

9. How can I connect enterprise storage systems to SAP HANA compute servers?

You can connect enterprise storage systems to SAP HANA compute servers either as block devices in a storage area network (SAN) or as network-attached storage (NAS) using shared file systems (e.g. NFS).

For more details, see SAP's [Storage Requirements whitepaper](#).

10. Where can I find information about the configuration of SAP's Storage Connector?

SAP offers the "Fibre Channel Storage Connector" as a ready-to-use implementation of the SAP HANA Storage Connector API. The Fibre Channel Storage Connector is leveraged during the Host Auto Failover process in SAP HANA scale-out systems which use the Fibre Channel protocol to connect to block storage in a SAN.

For more details, see our Storage Connector Admin Guide attached as PDF to [SAP Note 1900823](#).

11. Is there any certification of file systems for SAP HANA?

No, SAP only supports those file systems that have been validated as part of an SAP HANA appliance certification. There are no plans to introduce a separate certification process for file systems for SAP HANA.

12. If I want to use the Storage Replication approach for disaster-tolerant setups, am I bound to certified solutions mentioned in SAP Note 1755396?

No, you are not. SAP Note [1755396](#) refers to SAP HANA appliances only. For SAP HANA appliances, SAP is responsible for supporting the overall SAP HANA solution including the disaster tolerance configuration. In SAP HANA TDI environments, the responsibility for supporting the certified storage including all its functionality being used by SAP HANA lies with the storage vendor. Therefore, from SAP's point of view, every [certified storage system](#) which offers storage replication functionality can be used in SAP HANA TDI setups.

13. Can SAP HANA systems based on Intel Xeon E7 use local disks in TDI deployment model?

Yes, SAP HANA systems based on Intel Xeon E7 can use local disks in the TDI deployment model. Please note that SAP does not provide any guidance or support for the configuration of local disks (e.g. mount options, RAID levels, etc.). SAP expects the vendors of Intel-Xeon-E7-based servers to provide customers with guidance to make sure that configurations with local disks meet SAP's KPIs for data throughput and latency.

14. Can I check myself if my SAP HANA TDI infrastructure fulfills SAP's KPIs for data throughput and latency?

Yes, this is possible. SAP delivers a support tool named "SAP HANA Hardware Configuration Check Tool (HWCCT)". Customers can use it to measure data throughput and latency times between their SAP HANA computing nodes and their Enterprise Storage system.

Find the latest version of the tool in the "[Support Packages and Patches](#)" area in the SAP Support Portal:

- For SAP HANA compute servers based on Intel x86 processors:
 - o A - Z Index -> H -> SAP HANA Platform Edition -> SAP HANA PLATFORM EDIT. 1.0 -> Entry by Component -> HANA config check -> SAP HANA HW CONFIG CHECK 1.0 -> Linux on x86_64 64bit -> select SAR file for download
- For SAP HANA compute servers based on IBM Power processors:
 - o A - Z Index -> H -> SAP HANA ON POWER -> SAP HANA ON POWER 1.0 -> Linux on Power 64 bit -> select SAR file for download

15. Where can I find documentation and configuration templates for HWCCT?

The official tool documentation is available as a PDF document attached to [SAP Note 1943937](#). The documentation contains the latest KPIs for data throughput and latency.

Moreover, the SAP Note contains templates of configuration files for different test scenarios offered by HWCCT.

16. Is it mandatory to run HWCCT tests after setting up and configuring an SAP HANA TDI infrastructure with Enterprise Storage?

No, this is not mandatory. For production SAP HANA systems, you are bound to using certified hardware only which has already proven that it fulfills SAP's KPIs.

Before going productive with a SAP HANA system deployed on a SAP HANA TDI infrastructure, SAP recommends conducting a HANA Go-Live Check as offered by SAP Digital Business Services. The HANA Go-Live Check contains - among other tests – a data throughput and latency test using HWCCT.

17. If I want to conduct HWCCT tests of my SAP HANA TDI infrastructure, which version must I use?

Since the release of SAP HANA TDI in November 2013 several versions of the HWCCT have been published. If you want to check whether the hardware configuration of your SAP HANA TDI infrastructure meets SAP's KPIs it is crucial that for your tests you use the same version of the HWCCT which had been used during the certification of the hardware (compute servers and storage system) by the hardware vendor. See SAP Note [1943937](#) for directions how to determine the right version of the HWCCT to be used for your tests.

18. Where can I find additional information about HWCCT troubleshooting?

If you face issues with HWCCT – i.e. if HWCCT does not work as expected based on its documentation contained in SAP Note [1943937](#) – you may want to check the following SAP Notes for support:

- SAP Note [2212741](#) - HWCCT Troubleshooting Guide
- SAP Note [2161344](#) - HWCCT Patch Note

19. How can I interpret the HWCCT test results?

You must compare the HWCCT test results with SAP's KPIs for minimal data throughput rates and maximum latency times. Those KPIs are listed in the tool documentation.

20. What if my HWCCT tests reveal that some of SAP's KPIs are not fulfilled?

You should check if you followed the vendor's guidelines for SAP-HANA-optimized setup and configuration of the storage system and adopt your configuration if required. If this does not help, contact the storage vendor to check the configuration.

SAP recommends conducting the above mentioned SAP HANA Go-Live Check offered by SAP Digital Business Services. Apart from that, SAP Support cannot help with questions about or issues with the storage configuration since this is the domain of expertise of SAP's hardware partners.

Note that, in general, SAP's KPIs must be fulfilled for production SAP HANA systems only but not for non-production systems.

SAP HANA TAILORED DATA CENTER INTEGRATION WITH ENTERPRISE NETWORK

1. What is the motivation to introduce SAP HANA tailored data center integration with enterprise network?

Reusing existing hardware components is the basic idea behind SAP HANA tailored data center integration. SAP HANA tailored data center integration with enterprise network is introduced to allow customers to use their preferred hardware components to set up networks. This approach allows the setup of homogenous network landscapes using the network components of a single vendor only.

2. Which combinations of network interface cards and switches are supported?

Not all combinations of network interface cards and switches work as expected. Therefore, before making the decision for a certain combination, customers must contact the server vendor and inquire which switches are supported for the network interface cards of the given server.

3. How do I set up and configure my network components for SAP HANA?

SAP's recommendations about the setup of the networks inside and around an SAP HANA system can be found in the [Network Requirements whitepaper](#). For more details on specific network components, please contact the vendor.

4. Does SAP introduce any certification of network components?

No, SAP does not introduce any certification of network components.

5. Does SAP introduce network-related KPIs?

SAP published recommendations for the bandwidth of the network components comprising the intra-node network of SAP HANA scale-out solutions. They are listed in the official documentation of the SAP HANA Hardware Configuration Check Tool (see previous chapter). In addition, more recommendations about the setup of the networks inside and around an SAP HANA system can be found in the [Network Requirements whitepaper](#).

6. How can I check if my network fulfills SAP's recommendations for bandwidth?

Customers can conduct self-managed tests using the network test of the SAP HANA Hardware Configuration Check Tool in order to make sure that the intra-node network of their SAP HANA scale-out solution fulfills the recommended minimum bandwidth requirements. See the previous chapter for more details on where to get HWCCT and its documentation.

SAP HANA TAILORED DATA CENTER INTEGRATION WITH INTEL XEON E5 PROCESSORS

1. What is the motivation to introduce SAP HANA tailored data center integration with Intel Xeon E5 processors?

The basic idea is to leverage Intel's E5 technology for cost-optimized SAP HANA entry-level systems. SAP supports servers ranging from 128 GB to 1.5 TB in size with 2-socket E5 26xx v2/v3 CPUs with minimum 8 cores. This addresses the requests of providing the power of SAP HANA on commodity hardware at the price of ~\$10K per server.

2. Is the usage of Intel Xeon E5 supported for SAP HANA scale-out systems, too?

No, the usage of Intel Xeon E5 is restricted to single-node SAP HANA systems (scale-up). The memory range offered by E5-based entry-level systems can be covered using the scale-up approach. In general, SAP recommends preferring scale-up over scale-out whenever possible – see tip #3 in [this blog about cost-optimizing SAP HANA infrastructures](#).

3. Are 4-socket Intel Xeon E5 servers supported for SAP HANA, too?

No, the usage of Intel Xeon E5 is restricted to 2-socket servers.

4. Is the usage of Intel Xeon E5 servers supported for non-production SAP HANA systems, too?

Yes, 2-socket Intel Xeon E5 servers can be used for non-production SAP HANA systems, too.

5. Can SAP HANA systems based on Intel Xeon E5 use external storage in TDI deployment model?

SAP HANA E5 systems can either include built-in storage or they can be used with an external storage from a certified storage vendor in TDI deployment model, scale-up scenario.

6. Can SAP HANA systems based on Intel Xeon E5 use local disks in TDI deployment model?

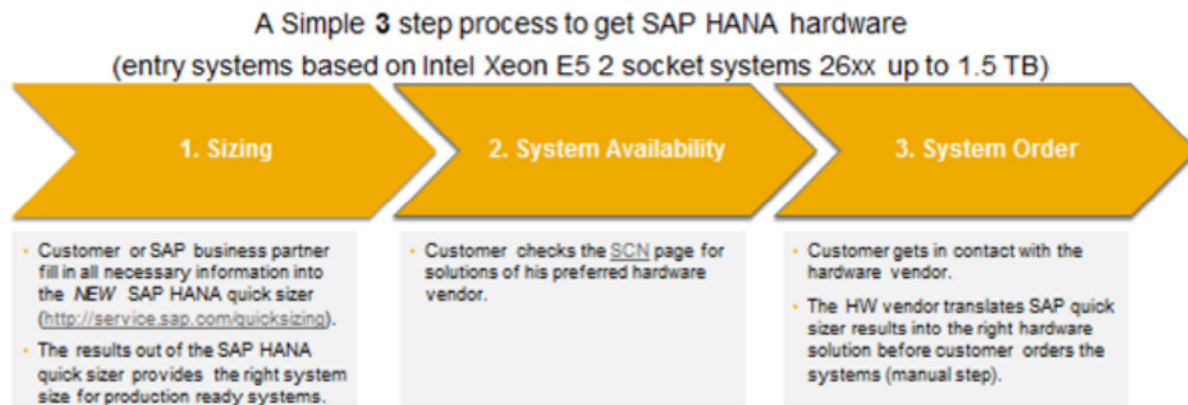
Yes, SAP HANA systems based on Intel Xeon E5 can use local disks in the TDI deployment model. Please note that SAP does not provide any guidance or support for the configuration of local disks (e.g. mount options, RAID levels, etc.). SAP expects the vendors of Intel-Xeon-E7-based servers to provide customers with guidance to make sure that configurations with local disks meet SAP's KPIs for data throughput and latency.

7. How can customers provision SAP HANA systems based on Intel Xeon E5 hardware?

SAP HANA systems based on Intel Xeon E5 do not follow the same certification process that's used for SAP HANA systems based on Intel Xeon E7. Customers can follow a new, simplified, 3-step process to provision supported Intel Xeon E5 hardware as described below:

SAP HANA – TDI Phase III Introduction of Intel Xeon E5

Streamlined customer procurement process for SAP HANA entry level systems



Additional big advantage of this new option:

- Customers and the whole SAP ecosystem are very familiar with SAP quick sizer tools!

For a complete, up-to-date list of supported SAP HANA E5 entry-level systems, see <https://www.sap.com/dmc/exp/2014-09-02-hana-hardware/enEN/intel-systems.html>

8. Does my E5-based system have to fulfill SAP's KPIs for data throughput and latency?

Yes, as with E7-based production systems, production E5-based systems must fulfill SAP's KPIs for data throughput and latency, regardless if such systems use internal or external storage.

9. Which system sizes are covered by SAP HANA tailored data center integration with E5?

The smallest size for production E5-based systems is 128 GB; the maximum size is 1.5 TB.

10. Which DIMM setup does SAP support for an E5-based system with 2 sockets?

SAP requires a homogenous symmetric assembly of DIMMs and a maximum utilization of all DDR memory channels per processor.

SAP HANA TAILORED DATA CENTER INTEGRATION WITH WORKLOAD-DRIVEN SIZING

1. What is Tailored Data Center Integration (TDI) phase 5?

Tailored Data Center Integration (TDI) phase 5 means tailored customer sizing. The system memory and processor sizing are fine-tuned for the specific customer workload. SAP HANA hardware partner translates the sizing results (SAPS, RAM, CPU, and disk I/O) into customer-tailored system configurations using a wide range of CPUs (including lower-end CPUs and not only top-bin CPUs)

Please be aware that TDI storage KPI's still need to be met but the I/O sizing takes a higher precedence: If the workload requires more I/O than the system has, then the configuration has to be adjusted to meet the higher I/O requirements coming from the sizing

2. What are the benefits of Tailored Data Center Integration (TDI) phase 5?

With Tailored Data Center Integration (TDI) phase 5:

- Permits flexible HW sizing for Intel Skylake (platinum, gold, and silver) and Intel Broadwell E7 processors, and IBM Power 8 systems.
- Permits flexible cost optimized sizing for different OLTP and OLAP workloads
- Permits usage of computing nodes with less number of cores per processor instead of traditional core-2-memory ratio per CPU generation

3. What is the recommended approach to take advantage of TDI phase 5 with the existing TDI implementations?

Customers can analyze their current workload requirements with the help of latest sizing tools and then work with respective HW or Cloud IaaS vendors to determine the optimal server or virtual instance configuration required by their specific workload. usage of CPU, me

4. Are there any limitations to use case scenarios supported in TDI phase 5?

All OLTP and OLAP use cases are supported in TDI phase 5.

5. Are the TDI phase 5 Intel based system supported for SAP HANA in scale-out?

The strong recommendation for SAP HANA is always to scale-up first (bigger single node system with more CPU and main memory) before you go into a SAP HANA scale-out approach (cluster of SAP HANA nodes) as the complexity of managing a cluster and the related TCO are much higher.

If the maximum supported single node sizes are not able to serve for the expected workload a SAP HANA scale out approach for TDI phase 5 with the following

- 4, 8, 16 socket systems for OLAP workload with Intel Skylake Platinum top-bin CPU
- 8, 16 socket for OLTP workload with Intel Skylake Platinum top-bin CPU

6. Is it possible to alter CPU, RAM, and Disk configurations of an existing pre-built appliance to take advantage of TDI phase 5?

No – Appliance customers cannot take advantage of TDI Phase 5 - -since they already purchased pre-built and pre-configured systems under the HANA Appliance delivery approach.

So far, the only request that we received from some customers with existing Appliance deployments is to connect their servers to shared enterprise storage (i.e. convert from Appliance to HANA TDI Phase 1 – Enterprise Storage).

Also, the customer makes the decision about HANA Appliance vs HANA TDI approach before starting the sizing and determining the hardware required for their project.

7. How can a customer take advantage of TDI phase 5 in public cloud IaaS deployments?

Customers can size their workload requirements with the help of latest sizing tools to determine SAPS (including CPU, RAM, and I/O) requirements for their specific workloads. Then work with IaaS cloud vendors to determine best instance configuration.

8. What does SAP HANA phase 5 mean for SAP HANA virtualized?

The host system for virtualized SAP HANA are systems listed in the HANA Hardware Directory. Tailored Host system can be sized according to customer workload. The configuration for virtual machines are handled as described in SAP Notes for a specific partner solution.

9. What are the minimum and maximum supported Intel configurations for SAP HANA TDI Phase 5?

Even if the sizing generates output with very small or large memory configuration there are specific boundaries given by the hardware vendor and/or system capabilities.

An Intel configuration has a minimum and maximum core count & RAM size as described below:

- CPU minimum 2 sockets with 8 or more cores per CPU
- Minimum memory configuration: 128GB
- Maximum CPU configuration up to 20 CPU's for Broadwell CPU's
- Maximum CPU configuration up to 16 CPU's for Skylake CPU's
- Maximum memory configuration: 24 TB

10. Can non-standard Intel hardware designs e.g. node controller, partition technology, etc. used for SAP HANA TDI Phase 5?

Yes, if the system was successfully validated by the SAP HANA DEV and listed on the SAP HANA hardware directory under Intel based system. Please check corresponding SAP notes as well.

IBM Power FAQ

1. Does customer need to adhere to the core to memory rules?

Customer can use individual sizing of the customer workload and is allowed to use less or more memory per core.

2. What are the maximum LPAR configurations for SAP HANA?

Even if sizing generates output with very small or large memory configuration there are specific boundaries given by the hardware vendor and/or the SAP Note 2188482 for IBM power models.

A LPAR has a minimum and maximum core count & RAM size as described in that SAP Note:

- Cores per LPAR : 4 - 144 cores
- Minimum memory configuration: 128GB
- Maximum memory configuration: 6000GB for OLAP / 16TB for OLTP

3. Can customer use configurations based on core to memory ratio?

The core to memory model remains as best practice configurations. As before TDI Phase 5 Size information and derived SAPS information obtained via the SAP HANA Quicksizer should be considered.

4. How does a customer get a IBM Power LPAR configuration after sizing for a specific workload was done?

IBM provides a process to support mapping of the SAP sizing to a hardware and/or partition. Sized number of processor cores must be distributed equally among NUMA nodes of the underlying physical server. RAM must be equally Distributed among the NUMA node DIMMs of the underlying physical server.

5. Some Entry Power8 models are restricted because of core to memory rules. Can a customer use larger memory configurations?

As long as SAPS value from SAP Sizing for a system are sufficient other memory configuration than used in reference configuration are possible. See also overall Maximum Size for LPAR configuration.

