SAP HANA on VMware vSphere and vSAN 7.0 U1/U2 for Production Environments

SAP HANA in Production with the Simplicity and Speed of Cloud

AT A GLANCE

SAP supports scale-up and scale-out deployments of SAP HANA for production use on VMware vSphere™ and vSAN™7.0 U1/U2, both products part of the VMware Cloud Foundation™. By running SAP HANA virtualized on VMware solutions, SAP customers can leverage an industry standard data center platform, optimized for agility, high availability, cost savings, and easy provisioning. Customers can leverage all the components of VMware Cloud Foundation, including vSAN, as part of a certified SAP HCI solution or NSX, to build and run a VMware-based SAP private cloud.

KEY BENEFITS

Lower total cost of ownership

™Reduce capital expenditures (CapEx) by 70 percent and operating expenditures (OpEx) by 56 percent. [1]

™Unify and manage SAP HANA with the rest of the virtualized data center (no specialized staff required).

™Simplify operations management.

™Better utilize existing infrastructure.

Faster Time to Value

™Rapid and automated provisioning.

™Reduce deployment time to minutes vs. days. [2]

™Ensure consistency with template cloning.

™Easier lifecycle management by leveraging VMware's SAP LVM adapter for SAP HANA on vSphere or SAP HANA HCI solutions.

KEY BENEFITS CONTINUED

What is SAP HANA?

SAP HANA is an in-memory database platform that massively improves performance of existing SAP applications and enables business transformation via real-time analytics and transaction execution.

SAP HANA is deployable in the cloud, on-premises, and as so-called SAP certified HCI appliances installed and configured by partners, including Dell, Fujitsu, Hitachi, HPE, Lenovo and Supermicro. In addition, organizations can run SAP HANA on existing certified enterprise-class storage using the SAP HANA Tailored Data Center Integration model, with an even boarder range on partners like Atos SE, Cisco, IBM, Huawei and NEC.

What is VMware Cloud Foundation?

VMware Cloud Foundation (VCF) is an integrated software platform that automates the deployment and lifecycle management of a complete software-defined data center (SDDC) on a standardized hyperconverged architecture.

VCF delivers enterprise-ready services for both traditional and containerized applications including SAP HANA, which can get deployed as a workload domain in VCF, based on market-leading VMware technologies: VMware vSphere (compute), VMware vSAN™ (storage), VMware NSX (networking and security), and VMware vRealize™Suite (cloud management).

- VCF key features:
  - Enterprise-Grade Services.
  - Storage Elasticity and High Performance.
  - Built-in Intrinsic Security.
  - Self-Driving Operations.
  - Self-Service Automation.
  - Automated Lifecycle Management.

KEY BENEFITS CONTINUED

Higher Service Levels

™Live migrate SAP HANA databases across vSphere hosts in minutes with zero downtime, with VMware vSphere vMotion™.

™Out-of-the-box High Availability (HA) of 99.9 percent; combined with SAP HANA auto-restart service, even higher availability is possible. [3]

™Automatically restarts SAP HANA virtual machines to maximize uptime with VMware vSphere HA.

™Easily manage peak workloads with VMware vSphere Distributed Resource Scheduler™ (DRS).

™Ensures configuration consistency by leveraging VMware Host Profiles.

[1]Taneja Group Research 2014

[2]Infosys Customer Success Story

[3]EMC IT, EMC Perspective, H12853

SAP HANA Key Features & Benefits

During recent performance analyses conducted jointly by SAP and VMware, certain benchmarks on vSphere 7.0 showed that virtual SAP HANA can perform significantly below the defined 10% KPI performance degradation, compared to bare metal.

- Zero downtime migrations of SAP HANA leveraging vSphere vMotion.
- Over 99.9 percent[2] availability for SAP HANA environments with automated restart of virtual machines leveraging VMware vSphere HA and SAP HANA auto-restart service.
- Manage placement of HANA virtual machines at peak workloads with vSphere DRS.
- Ensure rapid and consistent deployments of SAP HANA with VMware virtual machine templates and cloning capabilities.
- Use VMware Host Profiles to prevent vSphere SAP HANA host configuration issues through automatic configuration consistency and compliance checks.
- Unified Disaster Recovery for SAP HANA environments with Automated DR leveraging VMware Site Recovery Manager and storage block level-based replication.
- Increase adoption of SAP HANA in the enterprise providing self- service provisioning of instances to the private/public cloud with vCloud Automation Center.
- Manage health, risk, and efficiency of SAP HANA virtual machines with the rest of the VMware virtualized private cloud environment with VMware vCenter Operations Manager.

Sizing

VMware can support SAP HANA databases up to the maximum size of a four-socked wide virtual machine on, 8-socket Intel standard architecture / non-glued server hosts, with the maximum size of 224 vCPUs and 6 TB of memory (DRAM or Intel Optane PMEM).

Each SAP HANA database is to be sized similar to SAP HANA deployed on bare metal by respecting the sizing guidelines published in the SAP HANA architecture and best practices guide and the SAP HANA on vSphere 6.5 and later - Configuration / Best Practices Parameter List.

Each SAP HANA instance is to be sized the same as SAP HANA deployed on bare metal minus the virtualization costs as outlined in SAP note 2937606.

Professional Services

SAP and VMware offer a full range of virtualization and cloud services, for each phase of your virtualization and cloud computing journey, which can help you transform your SAP solution landscape. Together, SAP and VMware provide the experience, expertise, and reliable, repeatable methodologies to help you reduce risk and downtime, accelerate your virtualization transformation, and prepare your team to effectively manage the environment.

Support

SAP generally supports use of vSphere 7 in production environments for SAP NetWeaver on Windows (SAP Note *1409608*) and Linux (SAP Note *1122387*) deployments.

SAP also supports single, multiple, scale-up and scale-out SAP HANA Systems on VMware vSphere configurations in production (SAP note *2652670*) as so-called SAP HANA Tailored Data Center Integration (*TDI*) solutions. Running on *SAP certified and supported SAP HANA* two-, four-, or eight-socket Intel-based server systems, starting with Broadwell and up to Cooper Lake processors.

VMware vMotion, DRS, and HA capabilities can be used to achieve high levels of operational performance and availability.

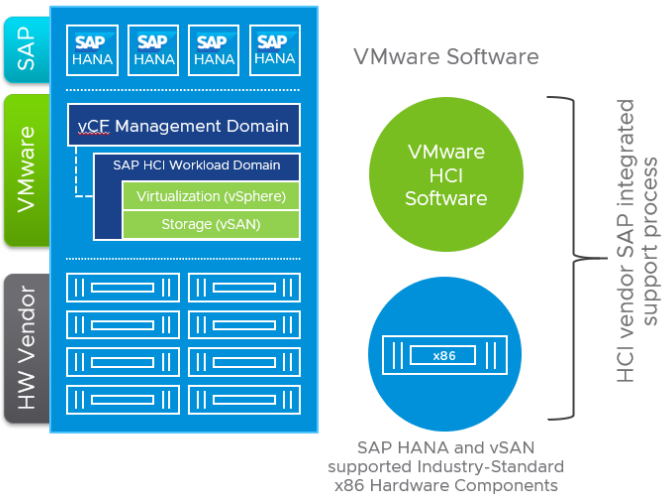
SAP HANA TDI and HCI Solutions

The SAP HANA Tailored Data Center Integration (*TDI*) option allows customers to use certain parts of their existing hardware and infrastructure components and is an alternative to the so called- SAP HANA appliance model, where all components are pre-defined and configured.

Since many VMware features require shared storage, leveraging SAP HANA TDI to deploy SAP HANA on shared storage in customer environments is the preferred deployment model to leverage features like vSphere HA, vMotion, DRS, and VMware vSphere Fault Tolerance.

As of SAP Note *2718982 - SAP HANA on VMware vSphere and vSAN*, vSAN is supported as part of a SAP HANA certified *Hyper-Converged Infrastructure Solutions* (HCI), which can run independent or as part of a VCF environment as a SAP HANA dedicated VCF workload domain managed by the VCF management domain.

VMware SAP HCI partners can design, build and certify uniquely tailored virtual SAP infrastructure solutions that fulfill the service level and performance requirements of several, in parallel running SAP HANA systems in production.



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Learn more

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