SAP HANA ON VMWARE VSAN 6.7

SAP Certified Enterprise-class Platform that Offers High Performance, Scalability, and Operational Simplicity

SAP HANA on a vSAN Infrastructure

Delivering an Enterprise Platform for Your SAP HANA Environment.
VMware Hyperconverged Infrastructure (HCI), powered by VMware vSphere® and VMware vSAN™, is an SAP certified enterprise-class platform that offers high performance, scalability, operational simplicity, and a low TCO for SAP HANA production deployments.

The SAP HANA business data platform is unrivaled, combining a robust database with services for creating innovative applications. It enables real-time business by converging transactions and analytics on one in-memory platform. SAP HANA enables customers to run a business data platform to deliver data-driven insights throughout their business and predict real-time outcomes.
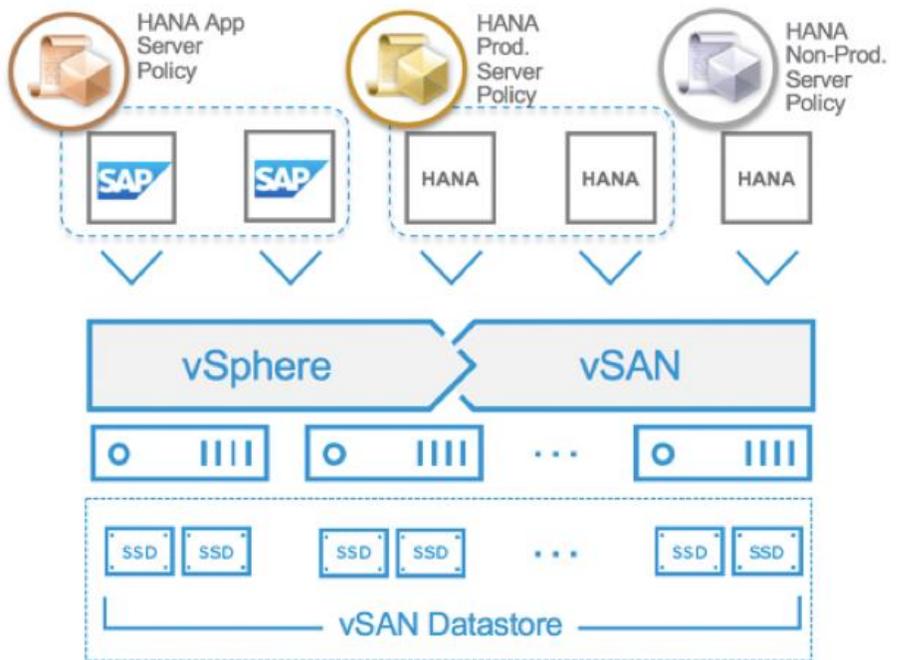
UNIQUE CAPABILITIES WITH VSAN

- Full access to CPU sockets. HANA VMs have access to all sockets. No need to reserve sockets for a Controller Storage VM.

- In combination with vSphere, the SAP HANA VMs have access up to 6TB of RAM. This is the highest support of all HCI platforms.

vmware®

ONE STOP SUPPORT EXPERIENCE

- VMware HCI is a certified platform for running SAP HANA. VMware is the primary contact for support and will work with the HW OEM to resolve any issues.

- With vSAN ReadyCare, customers have access to vSAN Support Insight and Cloud Analytics. Radically improve time to resolution for customers and their environments.

- VMware provides the one-stop support experience for the customers running SAP applications on vSAN.

Consistent Performance through Native Hypervisor Integration

SAP HANA based applications require dynamic, reliable, and high-performing server systems coupled with a predictable and reliable storage subsystem. The servers and storage must deliver the needed storage throughput and IOPS requirements of an application, the underlying platform must deliver performance consistently, under a variety of conditions. vSAN achieves this in part, through a distributed object storage system directly integrated into the hypervisor. Providing native storage services directly into the hypervisor avoids the inefficiencies of I/O and CPU amplification commonly found in other HCI solutions that use virtual appliances (also known as cloud virtual machine and virtual storage appliance) to provide storage services. Native integration allows hypervisor and cluster level activities such as snapshots, HA, and DRS to be fully aware and compatible with vSAN. Running SAP HANA on the vSAN platform enables administrators to run more VMs per host vs other non-vSAN solutions with more consistent performance, while maintaining all of their operational functionality found in other vSphere clusters.

Increased Agility through Storage Policy Based Management (SPBM)

Storage Policy Based Management (SPBM) allows for an administrator to manage their storage related settings on a per VM, or even per virtual disk basis, and therefore at an application level.

The storage subsystem is optimized to meet the SAP HANA KPIs for reliability, consistency, and performance. These KPIs are validated, tested and finally certified by SAP. Depending on the KPIs for the SAP HANA OS, log, and data volumes, a vSAN storage policy is selected and applied to the SAP HANA OS, log, and data disks. We can choose vSAN policy to meet the right protection level and costs for SAP HANA VMs in the environment. This level of control allows for an administrator to be prescriptive to the specific SAP HANA need, based on its role in the data center. Easily increase the level of failures to tolerate on one HANA server, while applying policies that focus on limiting I/O resources for another server running SAP HANA. This allows for a prescriptive level of control that is not possible with other approaches.

Resilience

vSAN protects beyond the disk to create resiliency at the node and cluster level.

You can easily choose levels of failure protection defined by a storage policy in vSAN, and simply apply it to VMs that run SAP HANA instances. vSAN is self-healing, in case of failures it attempts to re-establish the full compliance of the storage protection policies assigned to the affected VM. It performs resynchronization actions automatically, all while maintaining a fair balance of resynchronization and guest VM traffic to ensure that the SAP HANA servers are able to maintain sufficient levels of performance at all times.

VMware vSphere High Availability delivers a vSphere built-in high availability solution, which can be used to protect SAP HANA. VMware HA provides uniform, cost-effective failover protection against hardware and operating system outages and works with a vSAN data store just like it does with any other supported shared storage solution with VMFS. VMware HA protects SAP HANA scale-up and scale-out deployments without any dependencies on external components such as DNS servers, or solutions such as the SAP HANA Storage Connector API.

VMware has successfully tested a 4-socket 3-node vSAN based SAP HANA HCI configuration with an 8 SAP HANA VM configuration (4 SAP HANA VMs per one active node) and a 2-socket 4-node cluster with 2 SAP HANA VM per server configuration. These configurations represent one SAP HANA VM per socket, leaving the third or fourth node in the cluster used as an HA node. This leaves enough capacity available to support a full node failure at any time.

Management and Operational Simplicity

vSAN provides a built-in feature within vCenter, VMware vRealize® Operations™, which is easy to deploy and requires no additional licensing:

- vRealize Operations delivers continuous performance optimization based on intent, efficient capacity management, proactive planning and intelligent remediation for mixed workloads running on vSAN.
- vRealize Operations provides a unified management platform with application-to-storage visibility, especially for multiple workloads.
- Using the data collected in vRealize Operations, users can use the rich analytical tools inside to reveal the hidden issues, investigate complex technical problems, identify trends, and adjust resource allocation for different workloads respectively.
- vRealize Operations also frequently suggests corrective actions to help fix problems right away.

Takeaways

- Make use of all the CPUs for HANA VMs. No need to reserve a CPU for a storage VM. This results in better density and thus improved TCO.

- Integrated Management and Operations with VMware stack results in improved OPEX.

- Using the capabilities of SPBM platform.

vmware®