

VMware Virtual SAN

Radically Simple Shared Storage Designed for Virtual Machines

AT A GLANCE

VMware Virtual SAN™ is a new software-defined storage tier that extends the VMware vSphere® Hypervisor to pool both compute and direct-attached storage. Virtual SAN is built in to the vSphere kernel. By clustering server disks and flash, it creates radically simple, high-performance, resilient shared storage designed for virtual machines.

KEY BENEFITS

- Simple storage designed for virtual machines
- Significantly lower TCO than systems with comparable performance
- Granular, linear scaling of performance, capacity and cost, enabling you to start small with a low upfront investment and grow as you go
- Rapid storage provisioning and automated, self-tuning ongoing management
- Support from VMware and all major server OEMs
- “Single pane of glass” management with VMware vSphere Web Client

What Is Virtual SAN?

VMware Virtual SAN is a new software-defined storage tier that extends the vSphere Hypervisor to pool both compute and direct-attached storage. By clustering server direct-attached hard disk and solid state drives (HDDs and SSDs), Virtual SAN creates a distributed shared datastore designed and optimized for virtual machines.

Virtual SAN is built in to the vSphere kernel and implements a distributed architecture that leverages SSDs for high-performance read/write caching and HDDs for cost-effective data persistence. The technology is based on a highly available architecture with no single point of failure. It can withstand failures at the disk, server and network level with no data loss, thanks to built-in redundancy mechanisms that transparently store multiple copies of the data across disks and hosts.

Virtual SAN implements a policy-based approach to storage management. You can specify storage attributes—such as capacity, performance and availability—in the form of simple policies associated with individual virtual machines or virtual disks. Storage is instantly provisioned and automatically configured according to the assigned policies. Each virtual machine maintains its unique policy regardless of its physical location in the cluster. As workload conditions change, Virtual SAN dynamically self-tunes and load-balances to meet the policies of each virtual machine.

Key Features and Capabilities

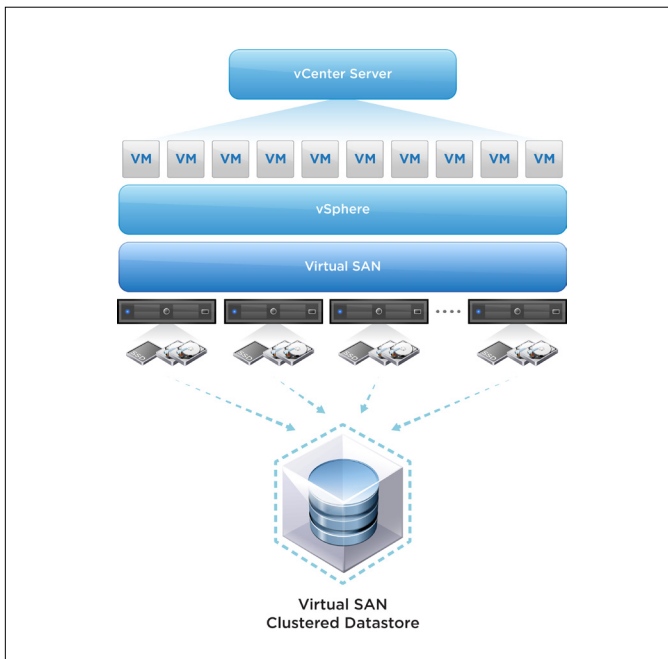
Built in to the vSphere kernel – Virtual SAN is implemented inside the vSphere kernel. This seamless integration with vSphere is unique to Virtual SAN and helps optimize performance and scalability.

Read/write I/O caching – Virtual SAN minimizes storage latency by accelerating read/write disk I/O traffic with built-in caching on server-side flash.

Built-in protection from failures – The technology leverages distributed RAID and cache mirroring to ensure that data is never lost if a disk, host or network fails.

Nondisruptive capacity scalability – You can easily and nondisruptively expand the capacity of the Virtual SAN datastore by adding hosts to a cluster or disks to a host.

Virtual-machine-centric, policy-based management – The solution associates storage requirements with individual virtual machines or virtual disks in the form of policy statements that are automatically translated into system configurations. This approach enables IT to instantly provision storage to meet precise service-level agreements (SLAs).



Self-tuning storage and dynamic storage load balancing –

Virtual SAN automatically and nondisruptively maintains the specified storage capacity, performance and availability levels for each virtual machine. The technology interoperates with VMware vSphere Distributed Resource Scheduler™ for end-to-end compute and storage balancing.

Integration with vSphere data services – The solution leverages vSphere snapshots, vSphere clones, VMware vSphere Data Protection™ and vSphere replication for data protection, backup, rapid cloning and data transfer across clusters or sites for disaster recovery.

Integration with vSphere Web Client – Virtual SAN is managed from vSphere Web Client for “single pane of glass” management with vSphere.

Broad hardware compatibility – Virtual SAN is a hardware-agnostic solution that can be deployed on hardware from all server OEMs.

Interoperability with VMware Horizon View™ and VMware vCenter™ Site Recovery Manager™ – The solution can be deployed with Horizon View in virtual desktop infrastructure (VDI) environments and vCenter Site Recovery Manager in disaster-recovery environments.

For more information go to www.vmware.com/go/virtual-san.

Benefits**Radically simple storage designed for virtual machines** –

Virtual SAN greatly simplifies the provisioning and management of storage for virtual machines. It is designed to enable rapid provisioning of storage directly from vSphere Web Client with a few simple clicks. As a self-tuning system, Virtual SAN optimizes itself to deliver the right SLAs based on the requirements of each virtual machine.

Significantly lower TCO for comparable performance – Virtual SAN drastically reduces storage capital and operational expenses by leveraging inexpensive server disks and flash, employing standard vSphere networking, reducing power and cooling costs, and boosting operational efficiency through automation.

Low upfront investment with “grow as you go” capability –

Unlike traditional storage arrays, Virtual SAN does not require large initial investments. You can create a Virtual SAN datastore with as few as three servers. In addition, Virtual SAN enables you to expand storage performance and capacity more granularly and predictably, in line with compute resources.

VMware and broad ecosystem support – Virtual SAN is a software-only, hardware-agnostic solution that works with server hardware from all major server OEMs and does not rely on proprietary hardware.

System Requirements**Hardware****Host**

- 1GB NIC; 10GB NIC recommended
- SATA/SAS HBA or RAID controller (with pass-through or HBA mode)
- At least one SSD and one HDD for each capacity-contributing node

Cluster

- Minimum cluster size: three hosts
- Recommended SSD capacity: 10 percent of HDD capacity

Software

- One of the following: vSphere 5.5 (VMware vSphere Standard Edition™ or above), VMware vSphere with Operations Management™ 5.5 (any edition) or VMware vCloud® Suite 5.5 (any edition)
- VMware vCenter Server™ 5.5

Getting Started

Virtual SAN will be available as a free public beta starting from September 2013. To sign up for the public beta and receive access to the Virtual SAN download, go to www.vsanbeta.com.

Learn More

For more information or to purchase VMware products, call 877- 4 -VMWARE (outside North America, +1-650-427-5000), visit <http://www.vmware.com/products> or search online for an authorized reseller. For detailed product specifications and system requirements, refer to the vSphere documentation.

