FUJITSU

VMware Virtual SAN 6.1

Server disks as central storage for VMware environments

Virtual SAN (VSAN) is hypervisor-converged storage and clusters server disks and flash to create radically simple, high performance, resilient shared storage designed for virtual machines.
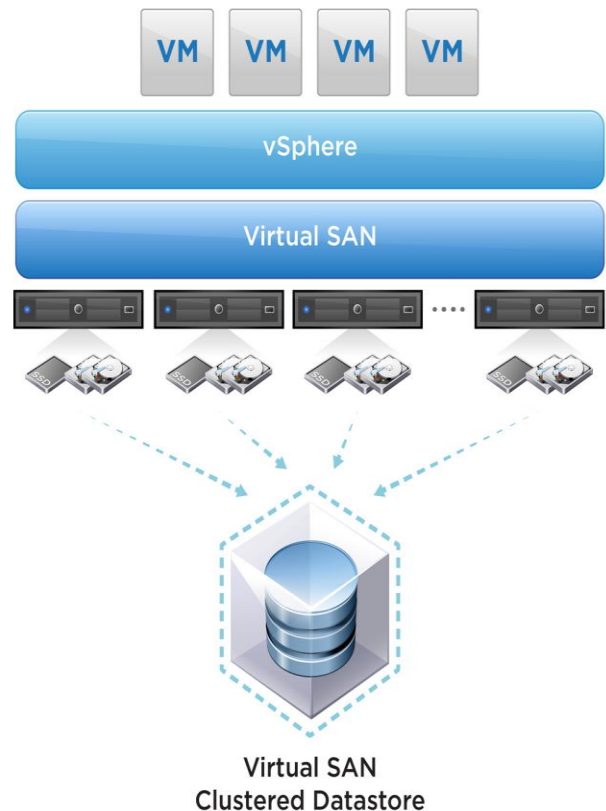
vmware®

At a Glance

VMware® Virtual SAN™ is VMware's software defined storage solution for Hyper-Converged Infrastructure (HCI).

Seamlessly embedded in the hypervisor, Virtual SAN delivers enterprise-ready, high-performance shared storage for VMware vSphere® Virtual Machines. It leverages commodity x86 components that easily scale to drastically lower TCO by up to 50%. Seamless integration with vSphere and the entire VMware stack makes it the simplest storage platform for virtual machines – whether running business-critical applications, virtual desktops or remote server room apps.

Key Benefits

■ Radically Simple – Deploy with 2-clicks through the standard vSphere Web Client and automate management using storage policies.
■ High Performance – Flash accelerated for high IO throughput and low latency. Deliver up to 7M IOPS with predictable sub-millisecond response time from a single, all-flash cluster.
■ Elastic Scalability – Elastically grow storage performance and capacity by adding new nodes or drives without disruption. Linearly scale capacity and performance from 2 to 64 hosts per cluster.
■ Lower TCO – Lower storage TCO by up to 50% by deploying standard x86 hardware components for low upfront investment and by reducing operational overhead.
■ Enterprise High Availability – Enable maximum levels of data protection and availability with asynchronous long distance replication and stretched clusters.
■ Advanced Management – Single pane of glass management from vSphere with advanced storage performance monitoring, troubleshooting and capacity planning capabilities.

Virtual SAN
Clustered Datastore

Topics

What is VMware Virtual SAN?

VMware Virtual SAN is VMware's software-defined storage solution for hyper-converged infrastructures, a software-driven architecture that delivers tightly integrated compute, networking and shared storage from a single, virtualized PRIMERGY server. Virtual SAN delivers high performance, highly resilient shared storage by clustering server-attached flash devices and/or hard disks (HDDs). Virtual SAN delivers enterprise-class storage services for virtualized production environments along with predictable scalability and all-flash performance — all at a fraction of the price of traditional, purpose-built storage arrays. Just like vSphere, Virtual SAN provides users the flexibility and control to choose from a wide range of hardware options and easily deploy and manage it for a variety of IT workloads and use cases. Virtual SAN can be configured as all-flash or hybrid storage.

Architecture and Performance: Uniquely embedded within the hypervisor kernel, Virtual SAN sits directly in the I/O data path. As a result, Virtual SAN is able to deliver the highest levels of performance without taxing the CPU with overhead or consuming high amounts of memory resources, as compared to other storage virtual appliances that run separately on top of the hypervisor. Virtual SAN can deliver up to 7M IOPS with an all-flash storage architecture or 2.5M IOPS with a hybrid storage architecture.

Scalability: Virtual SAN has a distributed architecture that allows for elastic, non-disruptive scaling from 2 to 64 hosts per cluster. Both capacity and performance can be scaled at the same time by adding a new host to the cluster (scale-out); or capacity and performance can be scaled independently by merely adding new drives to existing hosts (scale-up). This "Grow-as-you-Go" model provides linear and granular scaling with affordable investments spread out over time.

Management and Integration: Virtual SAN does not require any additional software to be installed—it can be enabled in a few, simple clicks. It is managed from the vSphere Web Client and integrates with the VMware stack including features like vMotion®, HA, Distributed Resource Scheduler™ (DRS) and Fault Tolerance (FT) as well as other VMware products such as VMware Site Recovery Manager™, VMware vRealize™ Automation™ and vRealize Operations™.

Automation: VM storage provisioning and storage service levels (e.g. capacity, performance, availability) are automated and controlled through VM-centric policies that can be set or modified on-the-fly. Virtual SAN dynamically self-tunes, adjusting to ongoing changes in workload conditions and load balancing storage resources, ensuring each VM adheres to the storage policies defined for it. This policy-driven approach automates manual storage tasks and makes storage management for virtual machines simpler.

Key Features and Capabilities

Kernel embedded – Virtual SAN is built into the vSphere kernel, optimizing the data I/O path to provide the highest levels of performance with minimal impact on CPU and memory resources.

All-Flash or hybrid architecture – Virtual SAN can be used in all-flash architecture for extremely high and consistent levels of performance or in a hybrid configuration to balance performance and cost.

Expanded enterprise-readiness – support for vSphere Fault Tolerance, asynchronously replicating VMs across sites based on configurable schedules of up to 5 minutes, continuous availability with stretched clusters and major clustering technologies including Oracle RAC and Microsoft MSCS.

Granular non-disruptive scale-up or scale-out – Non-disruptively expand the capacity of the Virtual SAN data-store by adding hosts to a cluster (scale-out) to expand capacity and performance or disks to a host (scale-up) to add capacity or performance.

Single pane of glass management with vSphere – Virtual SAN removes the need for training on specialized storage interfaces or the overhead of operating them. Provisioning is now as easy as two clicks.

VM-centric policy-based management – Virtual SAN uses storage policies, applied on a per-VM basis, to automate provisioning and balancing of storage resources to ensure that each virtual machine gets the specified storage resources and services.

Virtual SAN Stretched Cluster – Create a stretched cluster between two geographically separate sites, synchronously replicating data between sites and enabling enterprise-level availability where an entire site failure can be tolerated, with no data loss and near zero downtime.

Advanced management – Virtual SAN Management Pack for vRealize Operations delivers a comprehensive set of features to help manage Virtual SAN, including global visibility across multiple clusters, health monitoring with proactive notifications, performance monitoring and capacity monitoring and planning. The Health Check Plug-in complements the management pack for additional monitoring including HCL compatibility check and real-time diagnostics.

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

Built-in failure tolerance – Virtual SAN leverages distributed RAID and cache mirroring to ensure that data is never lost if a disk, host, network or rack fails.

Deployment Options

Certified Hardware: Control your hardware infrastructure by choosing from certified components on the hardware compatibility list, see http://www.vmware.com/resources/compatibility/search.php?deviceCategory=vsan

PRIMEFLEX for VMware VSAN: Select a pre-configured hardware solution that is certified to run Virtual SAN. More information under: http://www.fujitsu.com/global/products/computing/integrated-systems/vmware-vsan.html

VMware System Requirements

Virtual SAN certified:

- 1GB NIC; 10GB NIC recommended
- SATA/SAS HBA or RAID controller
- At least one flash caching device and one persistent storage disk (flash or HDD) for each capacity-contributing node

Cluster

Minimum cluster size: two hosts

Software

- One of the following: VMware vSphere 6.0 U1 (any edition), VMware vSphere with Operations Management™ 6.1 (any edition), or VMware vCloud Suite® 6.0 (any edition updated with vSphere 6.0 U1)
- VMware vCenter Server™ 6.0 U1

Additional hint

When the Fujitsu 2GB UFM Flash Device is used as a boot device for VMware ESXi (vSphere) an additional local HDD is mandatory to store trace files and core dumps generated by VSAN. Such small HDD has to be connected to the onboard SAS/SATA controller and is not part of the VSAN storage.

PRIMERGY

Following PRIMERGY Servers are released for VMware software: VMware Systems Compatibility HCL: http://vmware.com/go/hcl

Fujitsu Manageability with ServerView Suite

ServerView is able to manage PRIMERGY servers by means of the CIM provider that Fujitsu has integrated for VMware vSphere

- Management of the physical machine under the host operating system ESXi
- ServerView RAID for configuration and management of the RAID controllers in the physical machine
- Management of the virtual machines under the guest operating systems Windows and Linux
- Remote access via onboard Integrated Remote Management Controller (IRMC), Remote Management Controller (RMC), Baseboard Management Controller (BMC), or Remote Service Board (RSB)
- Even enables access to the hardware for diagnostic purposes in the event of a failure.

Support

Mandatory Support and Subscription (SNS)

SNS (Support and Subscription) is mandatory for at least 1 year for all VMware software products. Fujitsu offers its own support for VMware OEM software products. This support is available for different retention periods and different support levels. The Fujitsu support levels are: Platinum Support (7x24h) or Gold Support (5x9h). Both service levels can be ordered either for 1, 3 or 5 year support terms. Please choose the appropriate Support for your project.

Your support agreement is with Fujitsu and VMware exclusively through Fujitsu (not with VMware directly). SNS is only for Fujitsu servers like PRIMERGY and PRIMEQUEST. Of course, SNS for VMware (OEM) software products can be renewed at Fujitsu prior to the end of the SNS term. SNS for VMware (OEM) software products cannot be renewed at VMware directly.

Support Terms and Conditions

Fujitsu Terms and Conditions can be found under:

FUJITSU ServiceContract Software
FUJITSU Support Pack Software
Technical Appendix VMware Software

Fujitsu Professional Service

Installation, configuration or optimization services for VMware software are optional service offerings. Additionally operations services from Fujitsu are available. Any additional and optional service can be requested from Fujitsu Professional Services.

Product Activation Code Registration

Please register your activation code at http://www.vmware.com/code/fsc.
Registration will generate the license key. Help can be found at: http://www.vmware.com/support/licensing.html.
If you have any problems, you can send an email to vi-hotline@vmware.com.

Warranty

Class: C

Conditions

This software product is supplied to the customer under the VMware conditions as set forth in the EULA of the VMware software at http://www.vmware.com/download/eula/.

More information

Fujitsu offerings

In addition to VMware software, Fujitsu provides a range of platform solutions. They combine reliable Fujitsu products with the best in services, know-how and worldwide partnerships.

Fujitsu Portfolio

Built on industry standards, Fujitsu offers a full portfolio of IT hardware and software products, services, solutions and cloud offering, ranging from clients to datacenter solutions and includes the broad stack of Business Solutions, as well as the full stack of Cloud offerings. This allows customers to select from alternative sourcing and delivery models to increase their business agility and to improve their IT operation's reliability.

Computing Products

www.fujitsu.com/global/products/computing/

Software

www.fujitsu.com/software/

More information

To learn more about VMware vSphere please contact your Fujitsu sales representative, Fujitsu business partner, or visit our website. www.fujitsu.com/fts

Fujitsu green policy innovation

Fujitsu Green Policy Innovation is our worldwide project for reducing burdens on the environment.
Using our global know-how, we aim to contribute to the creation of a sustainable environment for future generations through IT.
Please find further information at http://www.fujitsu.com/global/about/environment

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2015-11-30 EN