

White paper

VMware vSAN and
the **hyperconverged**
infrastructure: what it is and
why it matters



Introduction

In our current data-driven world, fast and reliable storage and infrastructure solutions are more important than ever before. A so-called hyperconverged infrastructure paves the path towards a modern and future-proof IT infrastructure. A hyperconverged infrastructure is a software-defined IT infrastructure that virtualises pretty much every element of a conventional, hardware-defined system.

One of the most popular and comprehensive hyperconverged platforms is VMware's vSAN. **According to VMware**, more than 20,000 organisations—large, small and pretty much everything in-between—already use VMware vSAN, whilst the hyperconverged infrastructure (HCI) software leads the market. In this paper, we are going to take a closer look at vSAN and its most important features. We will also explore how this technology can benefit IT managers in terms of immediate benefits and long-term gains. So read on to expand your vSAN knowledge.

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What is VMware vSAN?

VMware vSAN (formerly known as Virtual SAN) is a software-defined virtual storage solution. By using and abstracting the local server storage of ESXi hosts, the technology eliminates the need for additional storage containers. It applies the principle of shared storage by combining the servers' local storage into a single or multiple storage pool(s). This allows organisations to bring down the total cost of ownership (TCO) of data storage.

A vSAN datastore supports every type of vSphere feature, including vMotion, Storage vMotion, DRS and HA, but many others are also compatible with this advanced piece of VMware storage technology. vSAN is a unique kind of object-based storage system that makes effective use of VM storage policies to ensure the right placement of the virtual machine with the right configuration. As it is already integrated in hypervisor, there is no need for further installations of appliances.

Important features of vSAN

When you use vSAN, you get a broad and diverse set of features and functionalities at your disposal. Let's take a look at the most important ones:

- **Storage policy-based management (SPBM)** is vSAN's built-in storage automation feature. It allows administrators to create storage profiles that provide accurate control of the storage services for VMs. For example, administrators can generate storage requirements, such as availability and performance, and assign them to specific VMs. This makes the balancing of workloads a lot easier.
- **Stretched clusters** allow for better load-balancing and create extra opportunities for disaster recovery and the management of planned downtime.
- Starting from version 6.6, vSAN uses **kernel-based encryption** mechanisms to encrypt all of your data store objects. It also delivers plenty of support for multifactor authentication. VMware vSAN is hardware-agnostic and can therefore be used on any type of hardware solution.
- **Shared storage support** unifies local and other attached storage devices to create a single storage pool that all hosts in the vSAN cluster share. The shared storage supports virtually all VMware vSphere features, such as HA, DRS and vMotion.
- VMware vSAN runs on standard x86 servers, is part of VMware's ESXi kernel, and assembles storage capacity from throughout a vSphere cluster. It can enforce storage policy even with fluctuating demands on VM workloads, regardless of software and/or hardware failures.
- **Health and performance checks** allow admins to continuously monitor the health status and performance metrics of your vSAN cluster.
- VMware vSAN allows you to **consolidate mixed workloads** into a single cluster in the hyperconverged environment.

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What VMware vSAN can do for you

Now we know more about the features of and the technology behind vSAN, it's time to look at the actual benefits for businesses.

One major benefit is the increased IT flexibility and simplicity. VMware vSAN provides you with a HCI solution that is highly elastic and scalable. Do business and storage requirements expand? And do you want to reap the benefits of newly emerging technology without reshaping the infrastructure and storage environment? VMware vSAN makes it possible. By integrating vSAN with vSphere, you offer the flexibility needed to install and operate it. Furthermore, vSAN provides admins with a unified management environment for VM-based and container-based workloads.

vSAN relies on the largest HCI ecosystem that is currently available. VMware vSAN supports most traditional and next-generation storage systems and has more than 500 jointly certified servers and over 15 server OEMs. vSAN also has native services with six of the largest public cloud providers, whilst the cloud-native framework supports all key storage API subjects within Kubernetes. The technology is also a critical component of the broader and overarching VMware Cloud Foundation, an integrated infrastructure control plane that encompasses edge, data centres and the public cloud. vSAN is also multi-cloud ready.

VMware vSAN also contributes to a lower TCO for storage and infrastructure. Because the technology utilises common and industry-standard x86 servers, breaking the bank for the mandatory purchase of dedicated SAN and NAS hardware is a thing of the past. The user-friendliness and relative simplicity of vSAN also reduces the need for dedicated specialists. With little effort, general IT staff will be able to manage the solution and the day-to-day service delivery, further lowering the TCO of vSAN.

Learn how to plan and deploy VMware vSAN

Do you want to learn how to use VMware vSAN? The Global Knowledge course “**VMware vSAN: Plan and Deploy**” helps you explore the vSAN universe. This two-day, hands-on training course provides you with the knowledge, skills, and tools that you need to plan and deploy a VMware vSAN cluster.

After completing the course, vSAN will no longer be a mystery to you. You will gain extensive knowledge about topics such as the vSAN architecture, the planning and deployment of a vSAN cluster, vSAN storage policies, advanced vSAN configurations, and the difference between stretched and two-node clusters. This interactive training can be taken from any location and is delivered by a knowledgeable trainer.



More information

Would you like to know more about the basics and details of vSAN? Then [contact us](#) or book our exciting course “[VMware vSAN: Plan and Deploy](#)” to get started with one of the world’s best virtualisation platforms.

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