

Don't let your storage hold you back. What is software-defined storage and how you can benefit from it?

In a world of constantly growing data volumes, IT services face new challenges, not just in terms of storage capacity, but also concerning its performance. By 2025, the amount of data produced globally will reach 175 zettabytes¹ (trillions of gigabytes). That's five times more data to pore over, analyse, and process than what we are dealing with today.

Each year, enterprises are moving further into the world of digitalisation. They leverage data to improve processes and customer experiences, open new markets, and create new sources of competitive advantage. Some companies turn information into a sustainable source of growth, making storage one of the most critical functions of the datacentre.

To keep up with these rising demands, IT departments need to deliver agile, dynamic and optimised resources. In other words, they need an automated, software-controlled, applicationcentric environment – a software-defined infrastructure.

Software-defined everything

Software-defined technology transforms the way IT services are delivered. All infrastructure elements are now abstracted from their hardware layers and controlled by software. This includes storage services, which – freed from the constraints of a traditional, hardware-centric approach – can satisfy the evolving demands of a modern enterprise.

The time has come for vSAN – a highly resilient, shared datastore. vSAN is in-kernel object storage that combines disks from multiple x86 servers (called also the 'node') into one distributed storage system. vSAN's software-defined architecture allows for grow-as-you-go scaling up from two to 64 hosts per cluster, with both capacity and performance enhanced at the same time.

Here is how vSAN can empower your enterprise to achieve faster time-to-value for new IT projects...

¹ IDC White paper: Data Age 2025 <https://www.seagate.com/files/www-content/our-story/trends/files/idc-seagate-dataage-whitepaper.pdf>

Simplicity and productivity

As an IT manager, you must consider every bit of new technology in your datacentre with great caution. Will it be easy to deploy, operate, and use? Does it require IT staff to acquire new skills? Will it seamlessly integrate with an existing, vSphere-powered environment? Will it require another management platform? These are key questions that must be answered before you add another block to your infrastructure.

Fortunately, vSAN is a tightly-integrated part of the VMware stack, and doesn't require new interfaces to install or learn. It is managed via the vSphere Web Client, which means all your favourite vSphere features – like High Availability (HA), Fault Tolerance (FT), and vMotion® – are there for you.

Deploying storage will never take weeks again, as vSAN can be enabled in a few simple clicks. With policy-driven controls and vCenter Server to monitor capacity and performance, you can automate routine tasks and give your teams more time to innovate.

Faster application development and increased innovation

A significant advantage of vSAN is its ability to deliver storage services on a per-VM level.

Let's imagine your core business is based on VMs that require RAID 5 protection. Your IT team creates a datastore that is backed by RAID 5, just as required. Now, imagine that you need to deploy a new critical application. RAID 5 no longer provides a sufficient level of protection. Where would you put it? You need to set up and configure new storage, protected by RAID 6. And that can take time.

That's where vSAN comes in. Thanks to Storage Policy-Based Management (SPBM), you can speed up the consumption of storage services by assigning policies directly to VMs. With SPBM, you can tailor RAID protection on a per-VM basis and dynamically respond to changing requirements, providing enhanced performance, capacity, and protection as the business grows.



Improved performance

To stand a chance in the digital race, performance is just as important as agile deployment. If your cloud-savvy end-users are complaining about both performance and speed, give them all-flash vSAN. In the past, storage in the datacentre environment had been a performance bottleneck for many applications. The introduction of solid state drives and the practice of combining them with NVMe protocol has helped to bridge the gap between the compute and storage. Now, these technologies provide a foundation for the all-flash vSAN, combining high-speed solidstate drives with an in-built cache on top, to minimise storage latency. vSAN also has much to offer also in terms of IOPS. The latest version 6.6 can deliver 100K IOPS per node.

Optimised capacity

We are living in a world with zettabytes of data. We produce data, process it, and want to keep it safe forever. With each new level of protection and replication, the storage capacity is growing. For many companies, storage has a substantial share in the IT budget. As volumes grow, those companies seek more efficiency in allocating storage services.

Overprovisioning is one reason so much storage is being wasted. In a traditional, hardwarecentric approach, applications' needs aren't aligned with what storage services offer. That leaves IT teams with no other choice but to overprovision storage capacity and services, to meet applications' SLAs.

Intelligent storage solution like vSAN can prevent such waste. With VM-centric policies, each application gets exactly what it needs, at the exact time. The efficiency features available with vSAN – including deduplication, compression, and erasure coding – will enable better storage utilisation, with lower storage capacity and costs.

Enhanced security

With vSAN, you can enjoy enterprise-level availability for your VMs with storage redundancy. The SPBM feature allows you to manage Failures to Tolerate (FTT) policies on a per-VM basis. Even in the event of a physical failure (either of a capacity disk, a cache disk, a host or a failure domain), the VM maintains its access to the data, thanks to multiple copies of it being available (according to the configured FTT policy).

For those who need to encode their data at rest, VMware offers a native to vSAN Encryption. It's applied at a cluster level and offers simple key management. Also, implementing cryptography doesn't have a negative impact on space utilisation, as vSAN Encryption supports all storage efficiency features, like deduplication and compression.

A hosted private cloud

Having learned the benefits of vSAN, you're now asking yourself how you can integrate all this with your on-premises vSphere infrastructure. VMware and OVHcloud have already worked that out for you: the OVHcloud Software-Defined Datacentre (SDDC).

The OVHcloud SDDC is a single-tenant, dedicated, enterprise-level infrastructure. The environment is hosted and managed by OVHcloud in their network of datacentres all over the world. In the OVHcloud SDDC, the whole infrastructure is virtualised. That includes not only compute and storage but also networking. Without that third element, the software-defined architecture would lack agility and efficiency. What good is it if you can deploy VM a in two minutes, but you need to wait a week for a VLAN?

Also, the SDDC brings a new level of automation into the game. With the unified cloud management platform, IT teams can easily orchestrate provisioning, management, and monitoring across the infrastructure and workloads.

Many paths lead into the cloud. You can externalise resources for all of your workloads, or certain specific ones. You can set up a disaster recovery site in a hosted cloud, or just consolidate your environments and manage them as one hybrid cloud. It's all possible with the OVHcloud SDDC.



OVHcloud is a global player and the leading European cloud provider operating 400,000 servers within over 33 data centres across 4 continents. For 20 years, the Group has been leveraging an integrated model that provides full control of our value chain, from designing our servers to managing our data centres through to orchestrating our fibre-optic network. This unique approach enables OVHcloud to cover, independently, the full spectrum of use cases for our 1.6 million customers across 140 countries. OVHcloud now offers customers latest-generation solutions that combine high performance, predictable pricing and full data sovereignty to support their unfettered growth.