



Data sheet

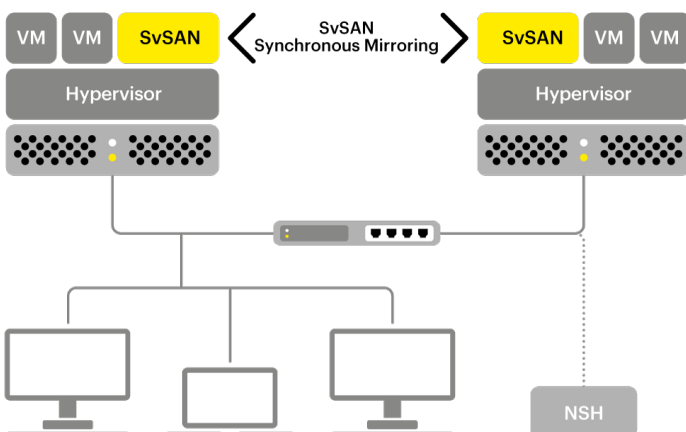
A virtual SAN for distributed multi-site environments

What is StorMagic SvSAN?

StorMagic SvSAN is a software storage solution that enables enterprises to eliminate downtime of business critical applications at the edge, where this disruption directly equates to a loss in service and revenue. SvSAN ensures high availability through a virtualized shared storage platform, so that these business critical edge applications remain operational. This is achieved by leveraging the direct attached or internal, cost effective server storage including solid-state disk and presenting it as a virtual SAN.

SvSAN supports the industry leading hypervisors, VMware vSphere and Microsoft Hyper-V. It is installed as a Virtual Storage Appliance (VSA) requiring minimal server resources to provide the shared storage necessary to enable advanced hypervisor features such as High Availability/Failover Cluster, vMotion/Live Migration and Distributed Resource Scheduler (DRS)/Dynamic Optimization.

SvSAN can be deployed as a simple 2-node cluster, however the flexibility of the architecture enables the virtual infrastructure performance and/or capacity to be scaled to meet the changing business needs, without impacting service availability. This is achieved by adding additional capacity to existing servers or by growing the SvSAN cluster. A typical 2-node SvSAN configuration is shown below:



SvSAN features overview

Virtual SAN

Software solution turning commodity servers and direct attached internal disks into highly available shared storage

Key benefits

- Enables advanced hypervisor features to be used without the need for an external SAN or shared JBOD array
- Using internal server storage improves application performance, as the data is kept as close as possible to the application processing
- SvSAN simplifies and minimizes the IT footprint required to provide shared storage, reducing the total cost of ownership (TCO) for the virtual server environment
- Through the use of commodity x86 servers, storage and industry standard hypervisors, SvSAN provides total solution flexibility, while avoiding lock-in to any specific technology

Synchronous mirroring

Protecting data in real-time

Key Benefits

- SvSAN synchronous mirroring ensures data is written to two SvSAN VSA nodes to protect against hardware failures and to ensure service uptime
- Write operations only complete once acknowledged on both SvSAN VSAs
- Both copies of the data are "active" and available for I/O operations

High availability (HA)

Guaranteeing service uptime and eliminating single points of failure.



“ Branch offices are the core of most businesses. It’s where companies of all sizes meet their customers
John Katsaros, co-founder | IRG ”

Key benefits

- SvSAN clustering delivers the availability required by critical applications through monitoring the health of the SvSAN infrastructure and failing over the service to other available resources in the event of a hardware failure
- “Split-brain” scenarios are eliminated using a quorum service called the Neutral Storage Host (NSH), which acts as a tiebreaker and assists in deciding cluster leadership
- SvSAN provides a number of supported NSH configurations to suit different customer requirements, including, local quorum, remote shared quorum and no quorum¹
- The NSH employs a lightweight communication protocol, making efficient use of the available network connectivity allowing it to tolerate low bandwidth, high latency WAN links
- A remote NSH can be shared between multiple remote sites and mirrored targets
- The NSH can be deployed onto VMware vCenter Server, Linux Server, Linux VM, Windows Server or Windows VM

SvSAN stretched clusters

Increasing service resiliency with geographically distributed SvSAN VSA nodes

Key benefits

- SvSAN Stretched Clusters provide additional levels of resiliency
- SvSAN VSAs can be geographically separated enabling copies of data to be stored in two separate locations
- Stretched clusters stop the datacenter/site from being the single point of failure

iSCSI target

Providing multi-ported, active-active, block-based storage

Key benefits

- The SvSAN iSCSI target presents direct attached internal server disks as block based storage over a TCP/IP network to servers or virtual machines
- Multiple resilient paths to the storage exist, protecting against hardware failure, all of which are “active” and available to serve both read and write I/O requests
- Uses industry standard protocols (SCSI, ALUA) and is fully compliant with iSCSI standard - RFC 3720
- Scalable - up to 1024 targets (simple or mirrored) can be created per appliance

- Secure - supports both one-way and mutual CHAP authentication
- SvSAN iSCSI targets support native multi-pathing software found in server operating systems
- Mirror target traffic can be load-balanced over multiple network interfaces to improve performance and resiliency

Caching (SvSAN 5.2 +)

Accelerating disk performance

Key benefits

- Solid-state disk (SSD) acts as a “staging” area, providing lower latency and faster response times for random I/O workloads. Data is de-staged from the cache to the final storage location at a later time
- Intelligent write-back caching algorithms ensure cache is optimally utilized
- Per target caching enables users to select only the targets that need to benefit from I/O acceleration, ensuring that only important data is accelerated
- Works with both simple and mirror targets

Storage pooling

Improving storage utilization & categorization by aggregating available storage into groups

Key benefits

- Storage pooling allows disks to be aggregated into virtual pools based on type, performance, capacity, protection, cost, etc.
- Targets are created from the pool, limited only by the available capacity and licensing
- Disk pools can be dynamically expanded
- Pools can be categorized with user defined labels

VSA restore (SvSAN 5.1 +)

Rapid recovery of SvSAN VSA following a hardware failure

Key benefits

- SvSAN VSA Restore simplifies and automates the recovery process of an SvSAN VSA node following a server failure or replacement
- Speeds up the recovery process and reduces the time to return storage to its peak state
- All SvSAN VSA configuration changes are automatically tracked and stored on another SvSAN VSA in the same cluster

¹Will not protect against “split-brain” scenarios and requires best practice guidelines to be followed to avoid service disruption



- Mirror targets are automatically rebuilt and resynchronized, enabling highly available shared storage to be quickly returned to optimal service
- Simple targets can be automatically recreated, ready for data recovery from backup

Target migration (SvSAN 5.2 +)

Transparent movement of targets between available SvSAN resources

Key benefits

- SvSAN Target Migration transparently and non-disruptively migrates SvSAN targets from one storage location to another
- Targets can be migrated between storage pools on the same SvSAN VSA node or to another SvSAN VSA node entirely
- Simple and mirror targets can be migrated
- Users can ensure that storage targets are optimally distributed and load balanced over all the available SvSAN resources
- SvSAN Target Migration can be used for storage tiering, server and storage refreshes, application segregation/isolation and workload rebalancing

Centralized monitoring & management

Simplifying storage administration

Key benefits

- Monitor & manage SvSAN VSAs remotely from a single location
- Multiple management options including WebGUI to perform individual VSA point management
- PowerShell CLI for automated scripted VSA deployments, configuration and management
- SvSAN plug-in provides seamless Integration with the VMware vCenter Web Client enabling alerts to be forwarded and captured on a single pane of glass
- Email Alert Notification using SMTP
- SNMP Integration with support for v2 & v3

I/O performance statistics (SvSAN 5.2 +)

Identify and analyze performance hot spots or I/O access trends

Key benefits

- Provide granular, historical I/O transaction & throughput statistics for each target
 - Enables administrators to easily troubleshoot I/O performance issues, or identify I/O trends or patterns
- Simple, intuitive graphical presentation
- Per iSCSI target statistics
- Displays minimum, maximum and average values for daily, monthly, yearly time periods
- Data can be exported to CSV for further analysis

VMware vSphere storage APIs – array integration (VAAI) support

Accelerating VMware I/O operations by offloading them to SvSAN

Key benefits

- Offload VMware storage tasks to SvSAN
- SvSAN supports the Write Same and Atomic Test & Set (ATS) primitives

Atomic test and set (SvSAN 5.1 +)

An enhanced locking mechanism designed to replace the use of SCSI reservations on VMFS volumes

- Granular locking of disk sectors rather than the whole disk, reducing disk contention issues
- Enables VMFS volumes to scale to much larger sizes

Write same (SvSAN 5.0 +)

One of the most common virtual disk operations and is used to zero portions of the disk for:

- Cloning operations for “eagerzeroedthick” virtual disks
- Allocating new file blocks for thin provisioned virtual disks
- Initializing previous unwritten file blocks for “zerothick” virtual disks

SvSAN system requirements

Hardware requirements

SvSAN has the following minimum hardware requirements:

CPU	1 x virtual CPU core • Ideally 2GHz or higher reserved
Memory	1GB RAM ²
Disk	2 x virtual storage devices used by VSA • 1 x 512MB Boot device • 1 x 20GB Journal Disk
Network	1 x 1Gb Ethernet • Multiple interfaces required for resiliency • 10Gb Ethernet is supported • Jumbo frames supported

SvSAN works with any x86 server that exists on the VMware vSphere ESXi or Microsoft Hyper V Hardware Compatibility List (HCL). SvSAN will work with any supported internal server disk storage or JBOD array.

²Additional RAM maybe required if large cache volumes are utilized – Contact **StorMagic** Technical Support on support@stormagic.com



Hypervisor support

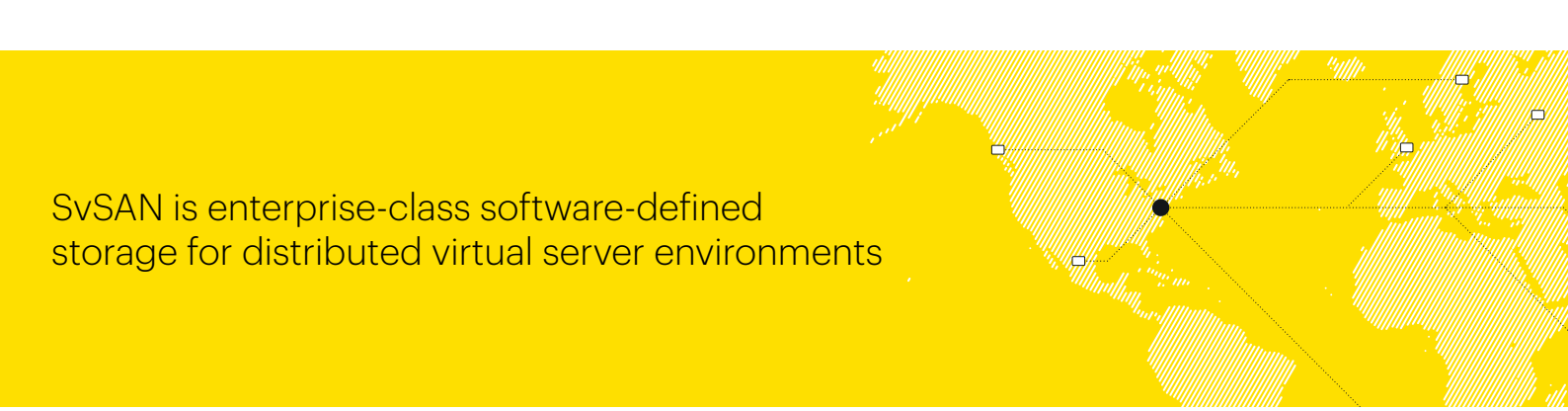
SvSAN works with industry standard hypervisors and is supported on the following versions of VMware vSphere ESXi and Microsoft Windows Server/Hyper-V Server:

Hypervisor		StorMagic SvSAN		
		5.0	5.1	5.2
VMware	VMware vSphere 5.0 & updates	✓		
	VMware vSphere 5.1 & updates	✓	✓	✓
	VMware vSphere 5.5 & updates		✓	✓
	VMware vSphere 6.0			✓
Microsoft	Microsoft Windows Server 2012 Microsoft Hyper-V Server 2012		✓	
	Microsoft Windows Server 2012 R2 Microsoft Hyper-V Server 2012 R2		✓	✓

VMware vCenter support

VMware vCenter version	StorMagic SvSAN		
	5.0	5.1	5.2
VMware vCenter Server 5.0 & updates	✓		
VMware vCenter Server 5.1 & updates	✓	✓	✓
VMware vCenter 5.5 & updates		✓	✓
VMware vCenter 6.0			✓





SvSAN is enterprise-class software-defined storage for distributed virtual server environments

NSH operating system requirements

The SvSAN NSH can be installed onto a physical server or virtual machine with the following operating systems:

- Microsoft Windows 7 (64-bit)
- Microsoft Windows 8 (64-bit)
- Microsoft Windows Server 2008 (64-bit)
- Microsoft Windows Server 2008 R2 (64-bit)
- Microsoft Windows Server 2012 (64-bit)
- Microsoft Windows server 2012 R2 (64-bit)
- Microsoft Hyper-V Server 2012 R2 (64-bit)
- Debian Linux x86 Linux distributions (32-bit & 64-bit)
- Debian Linux ARM distributions (32-bit)

In addition to the above operating systems, for VMware environments, the NSH can be installed on to the VMware vCenter Server Appliance (vCSA).

NOTE: The NSH should be installed onto a server separate from the SvSAN VSA

SvSAN licensing

StorMagic SvSAN is licensed based on usable VSA storage capacity.

SvSAN licenses are:

Available for 2TB, 4TB, 8TB, 16TB & Unlimited usable storage capacities.

1 license per server.

Pricing based on 2 node license bundle (single licenses available)

For SvSAN license pricing please contact sales@stormagic.com.

Evaluation licenses

A free, fully functional 60 day evaluation of SvSAN is available to download, enabling organizations to trial and experience the features and benefits of SvSAN, before purchasing.

For more information and to download an evaluation copy, visit the **StorMagic** website at: www.stormagic.com/trial.

During the trial period, evaluators will receive Gold level support and assistance with the first installation and a product demonstration.





“ In minutes we were able to present datastores to our environment. Working with the technical support, which was nothing short of awesome ”

SvSAN SupportSuite

SvSAN SupportSuite provides organizations with access to **StorMagic** support resources, including product updates, knowledgebase access, live-chat and email support with our technical support staff.

Two levels of SupportSuite are available. A summary of each is shown in the table below:

	Gold Support	Platinum Support
Hours of Operation	9 hours a day Monday – Friday	24 hours a day 7 days a week
Access Method	Email Web Chat	Email Web Chat Telephone
Remote Support / Webex	Yes	Yes
Target Response Times		
– Critical	4 business hours	1 business hour
– Medium	8 business hours	4 business hours
– Low	12 business hours	8 business hours
Duration	1, 3 or 5 years	1, 3 or 5 years
Product Updates	Yes	Yes
Access to Documentation	Yes	Yes
Access to Knowledgebase	Yes	Yes
Performance Tuning	No	Yes
Upgrade Assistance	No	Yes
Number of Administrators	2	4

More information on SupportSuite can be found at www.stormagic.com/supportsuite

About StorMagic

Established in 2006, **StorMagic** is a leading provider of enterprise-class software-defined storage for virtual server environments. It delivers this storage through SvSAN, a software solution which enables enterprises to eliminate downtime and ensure high availability of business critical applications at the edge where disruptions directly equate to losses in revenue and service.

