Hyperconverged Infrastructure Simplified with StarWind Virtual SAN

Enterprise-Class High Availability in Just 2 Nodes For Edge, ROBO, and SMB Environments

Key Benefits

- **Replace expensive physical SAN** with software-defined virtual SAN, purpose-built for edge and ROBO
- **Deploy in minutes on existing hardware** without complex setup or specialized skills
- **Eliminate downtime** by keeping critical workloads running through failures and disruptions
- **Lower infrastructure costs** with minimal hardware footprint
- **Maintain complete hypervisor freedom:** VMware, Hyper-V, Proxmox VE, XCP-ng
- **Reduce IT workload with proactive support** and simplified operations
- **Start with just 2 nodes and scale seamlessly** as your business grows

Product Overview

StarWind Virtual SAN is a software-defined storage solution that turns local server disks and flash into highly available shared storage pools. This allows organizations to build resilient hyperconverged infrastructure (HCI) using standard hardware, reducing footprint, and eliminating the cost and complexity associated with traditional SAN systems.

Designed and optimized for ROBO, edge, and SMB environments, StarWind Virtual SAN delivers enterprise-grade availability in a minimal hardware footprint. With synchronous replication and automatic transparent failover between nodes, it enables continuous uptime and near-zero RPO and RTO for mission-critical applications.

Supported on standard x86 servers, StarWind Virtual SAN requires no specialized expertise, and integrates seamlessly with popular hypervisors (VMware vSphere, Microsoft Hyper-V, Proxmox VE, XCP-ng), allowing organizations to modernize infrastructure without disruption or vendor lock-in. Its lightweight architecture ensures minimal CPU and memory overhead, maximizing performance from existing hardware.

Combined with ProActive Premium Support, which continuously monitors system health and prevents issues before they become real problems, StarWind Virtual SAN provides a predictable, low-maintenance path to highly available infrastructure.

What Users Can Expect

Always-On Data & Resilient IT

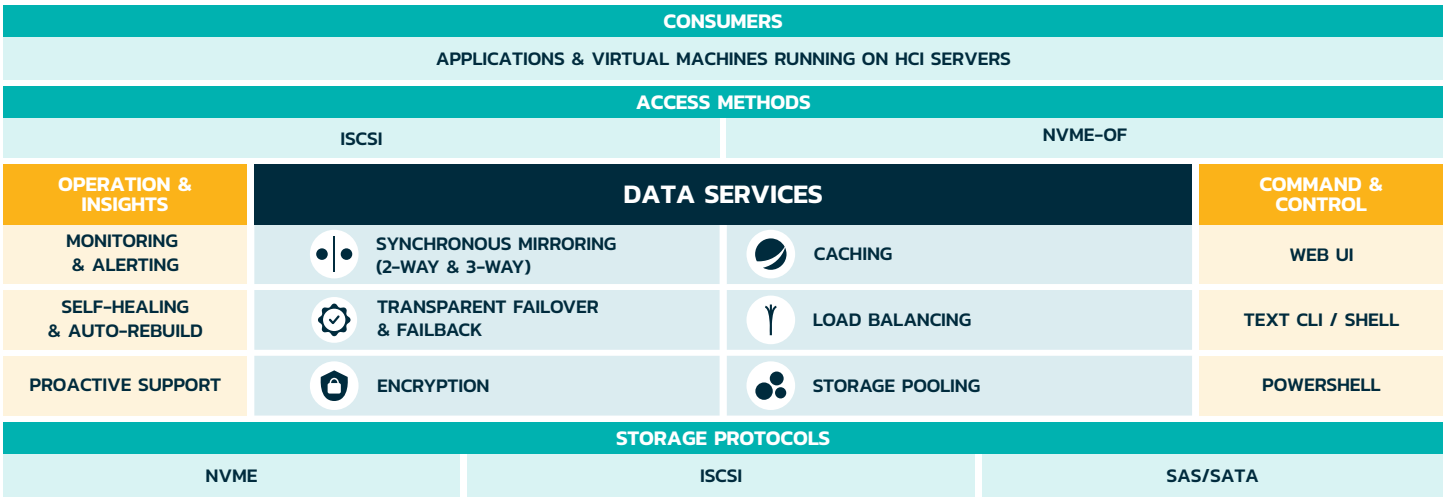
Infrastructure Simplicity

Massive Cost Savings

High Performance with NVMe-oF

Hypervisor Freedom

StarWind Virtual SAN: Key Features



Supported Hypervisors: VMware vSphere, Microsoft Hyper-V, Proxmox VE, XCP-ng

CONSUMERS

Applications and VMs running on VMware vSphere, Microsoft Hyper-V, Proxmox VE, or XCP-ng, which consume storage capacity enabled by StarWind Virtual SAN nodes.

ACCESS METHODS

Block-storage protocols (iSCSI and NVMe-oF) used by applications to access shared storage.

STORAGE PROTOCOLS

High-performance storage interfaces used to connect and manage local disks within the nodes, including NVMe, SATA, and SAS.

DATA SERVICES

Synchronous Mirroring (2-Way & 3-Way): Replicates write operations synchronously between nodes, ensuring continuous data availability. No witness or quorum required.

Transparent Failover & Failback: Automatically redirects data access to a healthy replica if a node fails and seamlessly restores normal operation once the node returns.

Encryption: Protects data at rest using disk-level encryption (AES-256), securing stored data on HCI nodes.

Caching: Improves I/O performance by caching frequently accessed data in RAM and reducing latency.

Load Balancing: Distributes storage traffic and I/O requests across nodes to maintain consistent performance.

Storage Pooling: Virtualizes and aggregates local storage into shared storage pools, leveraging hardware and software RAID for disk-level protection.

OPERATION & INSIGHTS

Monitoring & Alerting: Continuously tracks cluster health, performance, and component status, generating alerts for hardware, storage, and service events.

Self-Healing & Auto-Rebuild: Automatically restores redundancy by rebuilding mirrored storage after disk or node failures. When used with ZFS, automatically detects and repairs corrupted data blocks.

Proactive Support: Telemetry and call-home diagnostics provide continuous system insights and enable early detection and resolution of potential issues.

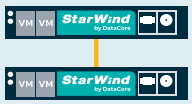
COMMAND / CONTROL

Administrative interfaces used to configure and manage the platform through the Web UI, command-line shell (CLI), or PowerShell automation.

Deployment Options

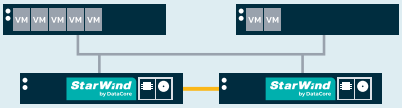
Hyperconverged (HCI)

Compute and storage run on the same nodes, eliminating the need for dedicated storage arrays. Reduces infrastructure footprint while maintaining high availability.



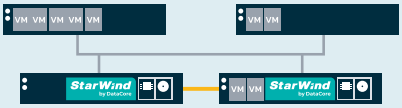
Converged (CI)

Dedicated storage nodes pool built-in and direct-attached storage resources into highly dense, economical shared storage accessible via iSCSI or NVMe-oF.



Hybrid (HCI + Converged)

Enables a mix of HCI and dedicated storage nodes, with synchronous mirroring between them for high availability.



For organizations seeking a turnkey, full-stack approach, DataCore also offers: **StarWind HCI Appliance**, a fully integrated platform combining compute, storage, and virtualization for a simplified, out-of-the-box HCI experience, and **StarWind Virtual HCI Appliance**, a pre-packaged software stack delivering the full hyperconverged experience on hardware of choice.

Minimum System Requirements

Component	Requirement
Processor	4x 2.0 GHz vCPU
Memory	8 GB RAM (16 GB recommended)
Disk	20 GB available local HDD/SSD space for installation
Network	1 Gb/s (or faster) Ethernet port; 10 GbE+ recommended for production
Storage Interface	2 Ethernet NICs (iSCSI, up to 100 Gbit/s) or NVMe-oF (TCP & RDMA)
Operating System	Linux-based (for Virtual SAN for vSphere / Proxmox VE deployments), Windows Server 2016–2025 (Standard, Datacenter, or Essentials)

Hardware requirements vary by system configuration and workload. See **documentation for details.*

Licensing

StarWind Virtual SAN uses a transparent, capacity-based licensing model where customers pay only for the storage that is synchronously mirrored for high availability, not total raw capacity. Licensing is based on protected storage capacity across nodes and scales easily as requirements grow.

Support

Backed by flexible support options to match different operational needs. Standard Support provides business-hours assistance, while Premium Support delivers 24/7 coverage with faster response times. ProActive Premium Support proactively handles monitoring, troubleshooting, and maintenance to reduce IT workload and keep infrastructure running reliably.

0526

DATACORE
Your Data, Our Priority

DataCore empowers organizations to gain intelligent, secure, and flexible control of their data no matter where it lives. We simplify the way block, file, and object data is stored, protected, and managed across core, edge, and cloud environments. By streamlining operations and reducing infrastructure costs, we empower IT leaders with the agility and freedom to meet evolving business demands. **www.datacore.com**