≋ StarWind

DEPARTMENT OF ANALYTICS

STARWIND VIRTUAL SAN: DIFFERENTIATION [FROM COMPETITORS]

BRIEF:

In compliance with your request, the Department has compiled this systematic list. It contains the major points of differentiation for StarWind in comparison with similar solutions. The remaining information is distributed to authorized personnel on Need-To-Know basis.

Our analysts have concluded, that StarWind Virtual SAN has a range of unique differences from widely-used concepts. The solution seems unconventional, but it is proven to be effective and what's even more important — budget-friendly. In case you require a more comprehensive analysis for your superiors, contact us again.

From: ██████████████
To: ██████████████

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Key Competitors

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SUBJECT OF STUDY: VMWARE VIRTUAL SAN

SUMMARY:

In comparison with VMware Virtual SAN, StarWind Virtual SAN offers: **lower hardware footprint**, more **flexible licensing**, no **vendor lock-in** and **years of experience**.

IN-DEPTH PROFILE:

Do Not Underestimate Low Hardware Footprint!

1. Lower Hardware Footprint. StarWind Virtual SAN needs just 2 nodes for HA configuration, while VMware Virtual SAN requires at least 3. Besides, StarWind does not require any flash, switches or 10+ GbE. Unlike VMware Virtual SAN, it will work on less hardware and will accept inexpensive commodity components. Basically, this means same results for less money.

2. More Flexible Licensing. StarWind Virtual SAN is per-server/per-datacenter licensed, as opposed to per-client licensing of VMware Virtual SAN. Basing 10-node cluster storage on 3 physical nodes, one pays for 3 nodes with StarWind or 10 nodes with VMware. Additionally, VMware Virtual SAN also needs a vSphere licensed host to run, adding another figure to the bill.

3. No Vendor Lock-in. StarWind Virtual SAN uses industry-standard NFS, iSCSI and SMB3, while VMware Virtual SAN has a private uplink protocol, which is not usable outside VMware cluster. Besides, StarWind supports heterogeneous environments, including bare metal, while VMware Virtual SAN is VMware-only. Basically, StarWind doesn't lock you on its products and services, unlike VMware.

4. Years of Experience. StarWind Virtual SAN has been around for 10+ years, going through improvements, testing and honing. It's a proven tool, as opposed to VMware Virtual SAN, which is only a little more than 1 year old.

SUBJECT OF STUDY:
MICROSOFT STORAGE SPACES DIRECT (S2D)

SUMMARY:

In comparison with Microsoft Storage Spaces Direct, StarWind Virtual SAN offers: **lower hardware footprint**, more **flexible licensing, no software addiction** whatsoever and **years of experience.**

IN-DEPTH PROFILE:

1. StarWind Virtual SAN needs just 2 nodes for HA configuration, while Microsoft S2D requires at least 4. Besides, StarWind does not require any switches or 10+ GbE. Unlike Microsoft S2D, it will work on less hardware and will accept inexpensive commodity components. Basically, this means same results for less money. ✔

2. StarWind Virtual SAN is per-server licensed where it actually runs, as opposed to Microsoft S2D, which literally wastes additional Windows license and host. Actually, while StarWind Virtual SAN has a clear price tag, S2D has high implementation cost with "hidden payments". It requires 4 Windows Server licenses to spend on SOFS, 4 servers and 10+ GbE — all lengthening the bill. *"Hidden Costs" May Be Higher Than The Actual Solution Price!*

3. StarWind Virtual SAN uses industry-standard NFS, iSCSI and SMB3, while Microsoft Storage Spaces Direct is block protocol for Hyper-V or Windows. StarWind runs bare metal or with any hypervisor and works with Windows Server 2008 R2, 2012 R2, etc., while S2D only works with Windows Server 2016. Basically, StarWind doesn't lock you on itself, unlike Microsoft. ✔

4. StarWind Virtual SAN has been around for 10+ years, going through improvements, testing and honing. It's a proven tool, as opposed to Microsoft Storage Spaces Direct, which is a new feature of Windows Server 2016. Actually, S2D upgrade path is not clear yet, so there's no telling what it is going to require in the future and how it will work. ✔

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SUBJECT OF STUDY: MICROSOFT STORAGE REPLICA

ATTENTION REQUIRED!

The specialists' conclusion on this comparison is this: Microsoft Storage Replica is not a competitor for StarWind Virtual SAN, because the products are designed for different tasks. Read further if you wish to see argumentation, or go directly to the next page.

Hammer for Nails, Screwdriver for Screws – Not Vice Versa.

SUMMARY:

In general, StarWind Virtual SAN is a proper tool for the proper job. ✓

IN-DEPTH PROFILE:

1. Microsoft Storage Replica is positioned as Disaster Recovery tool, not Business Continuity. For the latter job, Microsoft offers Storage Spaces Direct, already analyzed on the previous page.

2. StarWind Virtual SAN has its own asynchronous and synchronous replication, so it's "superset" of Storage Replica functionality, having much more features to offer.

3. StarWind Virtual SAN can build a cluster with DAS, which is incompatible with clustering requirements. Microsoft Storage Replica needs proper cluster-aware storage for "stretched clusters".

4. StarWind Virtual SAN is active-active, meaning it's more reliable, as opposed to active-passive Storage Replica.

SUBJECT OF STUDY:

MICROSOFT CLUSTERED STORAGE SPACES

SUMMARY:

In comparison with Microsoft Clustered Storage Spaces, StarWind Virtual SAN offers: **no hardware lock-in, unlimited scenarios, excellent scalability** and **one point of support.**

IN-DEPTH PROFILE:

1. StarWind Virtual SAN uses commodity hardware, while Microsoft Clustered Storage Spaces requires "special" expensive stuff, like SAS JBOD (3 of them for enclosure redundancy), SAS HDD, SAS flash, SAS HBA. Basically, Clustered Storage Spaces is not a 100% Software Defined Storage, because it relies on SAS locking for LUNs. It also won't accept high-capacity SATA and fast PCIe/NVMe flash, only working with SAS.

SAS Hardware Will Multiply Solution Cost Tenfold

2. StarWind Virtual SAN uses industry-standard NFS, iSCSI and SMB3, while Clustered Storage Spaces scenarios are limited. Some of them even need extra components, like "gateways" with iSCSI, NFS, etc.

3. StarWind Virtual SAN can scale-out to literal infinity, while expandability of Clustered Storage Spaces is quite complex. It will take chains of SAS switches, which are expensive and bring in hardware lock-in. Besides, for many consumers it has to be compiled with file gateways, such as SOFS layer, which is very expensive. SAS cables also have distance limitations, which make geo-clustering impossible.

4. StarWind is the "one throat to choke" in terms of support, while Microsoft supports only the software part of Clustered Storage Spaces. All the required hardware needs additional support from the associated vendor.

SUBJECT OF STUDY:

MICROSOFT SCALE-OUT FILE SERVERS

SUMMARY:

In comparison with Microsoft Scale-Out File Servers, StarWind Virtual SAN offers: **lower implementation cost**, a **solid specialized solution, unlimited deployment scenarios** and **one point of support.**

IN-DEPTH PROFILE:

Deploy What You Need, Not What You're Offered!

1. StarWind Virtual SAN has a clear price tag and doesn't incorporate any "hidden costs", while Microsoft SOFS requires at least two additional physical servers and two Windows licenses. These are simply "wasted" on configuration and won't show in the price tag, making it difficult to calculate the real implementation cost.

2. StarWind Virtual SAN is a solid solution that doesn't rely on block storage, while SOFS is basically a NAS gateway on top of the same block storage. Such a deployment not only wastes servers, but also doesn't allow hyper-convergence.

3. StarWind Virtual SAN provides unlimited deployment scenarios – hyper-converged, non-Hyper-V and SQL Server consumers, etc. Essentially, SOFS is one of the supported scenarios. Scale-Out File Servers does Continuous Availability SMB3 only, working with Hyper-V and SQL Server, while other consumers are out of game. The best workaround is spawning iSCSI, NFS and generic SMB3 VMs on Hyper-V. However, it's complicated and results in lower performance compared to bare-metal setups. Besides, CA SMB3 shares are non-cached (Clustered Shared Volumes read-only cache), which is another impact on performance. StarWind Virtual SAN wins again with write-back DRAM cache and log-structuring.

4. StarWind is the "one throat to choke" in terms of support, while Microsoft supports only the software part of SOFS. All the required hardware needs additional support from the associated vendor.

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SUBJECT OF STUDY:
HP (LEFTHAND) VSA (INCLUDING FREE VERSION)

SUMMARY:

In comparison with HP VSA, StarWind Virtual SAN offers: **lower hardware footprint, better performance** and **space-efficiency, more flexible licensing, unlimited scenarios** and **direct support.**

IN-DEPTH PROFILE:

1. StarWind Virtual SAN needs just 2 nodes for HA configuration, while HP VSA requires the third node — voting service for quorum. Besides, StarWind does not require any switches, overall taking away at least two positions from the bill.

2. StarWind Virtual SAN achieves better performance being native and offering specialized features to boost IOPS, such as log-structuring and multilevel DRAM/flash caches. It also used in-line and offline deduplication to conserve space. HP VSA, on the other hand, only uses flash cache and no space reduction whatsoever. In addition, HP VSA is VM-based, which is itself a reason for lower performance.

3. StarWind Virtual SAN licensing is SMB- and ROBO-friendly, especially taking into account the free version with unlimited capacity and allowed production use. HP VSA is expensive, while the free version is limited to 1 TB and does not support production use.

4. StarWind Virtual SAN has better coverage for usage scenarios, namely: iSCSI, NFS, SMB3. It can run bare-metal, can do Clustered Shared Volumes for SOFS, while HP VSA is only iSCSI and requires VMs, so it cannot support this scenario. StarWind Virtual SAN is also much more Hyper-V friendly, being a native Windows application.

5. StarWind Virtual SAN is completely in-house developed and has direct support path with a skilled team. HP VSA has solution from Lefthand and open-source Linux VSA.

Linux-based software is rarely well-supported

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SUBJECT OF STUDY:
DATACORE SANSYMPHONY (INCLUDING FREE VERSION)

SUMMARY:

In comparison with DataCore SANsymphony, StarWind Virtual SAN offers: **unlimited scenarios, overall superior design** and **more flexible licensing.**

IN-DEPTH PROFILE:

1. StarWind Virtual SAN offers unlimited scenarios. It's better usable for hyper-converged setups and can do more protocols. DataCore is "oldschool" designed for "compute and storage separated" architecture. Also, StarWind Virtual SAN can do NFS, SMB3, iSCSI, while DataCore is only iSCSI and FC (block). ✓

2. StarWind Virtual SAN is very lightweight and was designed from scratch to co-exist with hypervisor (loopback, DMA on the same node). ✓ It can have DRAM and flash caches, full log-structured file system, in-line deduplication, etc. StarWind can also do heartbeat and voting nodes, the better ways to protect from "split-brain" issue. To start with, DataCore is VM-based, so it takes way more resources. It uses Windows deduplication and incoming-only log. As for "split-brain", DataCore can only offer heartbeat, being less effective in dealing with the issue.

   "Enterprise-class" usually means you're being charged for air

3. StarWind Virtual SAN is SMB/ROBO-oriented not only by design, but also with its licensing and support. It has a real free version, an option for trial and release including special discounted OEM licenses. DataCore targets Enterprise, so it's generally overpriced and its free version is basically useless. It runs on Windows and needs the client to have one his own license. Being per-node/per-datacenter licensed makes StarWind Virtual SAN a much less costly solution in most cases, as opposed to per-TB charged DataCore. In addition, StarWind offers MSP-like support policy for datacenters.

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SUBJECT OF STUDY: EMC vVNX (VIRTUAL VNX) (FREE)

SUMMARY:

In comparison with EMC vVNX, StarWind Virtual SAN offers:
a **full-fledged production platform, more supported scenarios
for end user** and **better performance.**

IN-DEPTH PROFILE:

*Production Platform Is better
than Evaluation Platform*

1. **Full-fledged production platform.** StarWind Virtual SAN is a
   production platform, this is true even for the free version. EMC
   Virtual VNX is a non-HA evaluation platform for potential VNX
   buyers. It may be ok for home labs, test and development, but
   production use is prohibited. Also, upgrades of Virtual VNX force
   reboot the system, taking everything offline for some time.

2. **More supported scenarios.** StarWind Virtual SAN does SMB3, NFS,
   iSCSI and more, while EMC vVNX is limited to NFS, SMB, iSCSI.

3. **Better performance.** StarWind Virtual SAN is a native Windows
   application with no VM overhead, a fact that combined with
   DRAM/flash caches and log-structuring shoots its performance
   sky-high. EMC vVNX has only read cache and claims only "Base
   interoperability" with Windows Server 2012 R2.

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SUBJECT OF STUDY: MAXTA

SUMMARY:

In comparison with Maxta, StarWind Virtual SAN offers: **lower hardware footprint, flexible licensing, unlimited deployment scenarios** and **better performance and reliability.**

IN-DEPTH PROFILE:

1. **Lower Hardware Footprint.** StarWind Virtual SAN needs just 2 nodes for HA configuration, while Maxta requires at least 3. It will work on less hardware and will accept inexpensive commodity components. Basically, this means same results for less money. ✓

2. **Flexible Licensing.** StarWind Virtual SAN offers different license types, aimed at different business sizes.

3. **Unlimited Deployment Scenarios.** StarWind Virtual SAN is a native Windows application and provides unlimited deployment ✓ scenarios — hyper-converged, non-Hyper-V and SQL Server consumers, etc. Essentially, SOFS is one of the supported scenarios. StarWind VSAN supports SMB3, NFS and iSCSI, while Maxta only does NFS.

4. **Better Performance and Reliability.** StarWind Virtual SAN uses write-back DRAM cache and log-structuring for unmatched performance ✓ in virtualization environment. Maxta caching is non-reliable, while the code is basically some Linux fork-out on ZFS. StarWind Virtual SAN has its own in-house developed code and is certified for Windows support.

THERE'S A DIFFERENCE BETWEEN "SPECIALIZED" AND "LIMITED"!

SUBJECT OF STUDY: PERNIXDATA

SUMMARY:

In comparison with PernixData products, StarWind Virtual SAN offers:
a **solid specialized solution, minimalistic hardware footprint,
better support** and **unlimited scenarios.**

IN-DEPTH PROFILE:

A Single Independent Solution Is Always Better Than Half-Measures

1. **Solid Specialized Solution.** StarWind Virtual SAN is originally a
fault-tolerant and high-performance Software Defined Storage,
optimized especially for virtualization workload. It has gone through
years of honing to be the right tool for the right job. StarWind VSAN ✓
doesn't rely on any other solutions — storages, accelerators, etc.
PernixData started as a flash cache vendor and tried to tap into
Software Defined Storage market. Their solutions merely enhance the
functionality of others, while StarWind has all the improvements
already built-in.

2. **Minimalistic hardware footprint.** StarWind Virtual SAN needs just
2 nodes for Highly-Available configuration and uses sophisticated ✓
algorithms to get the maximum performance out of minimum hardware.
It does in-line and offline deduplication for space reduction and
multi-tiered flash/RAM caching for acceleration. PernixData only does
flash and some RAM cache because of their initial specialty.

3. **Better support.** StarWind Virtual SAN is adaptive, running inside ✓
VM in VMware environment and on top of Hyper-V in Hyper-V
environment, basically following the "vendor-suggested" ways. It is
also eligible for Microsoft and VMware support, so it's easy to run
StarWind VSAN in existing VMware or Microsoft virtualized
infrastructure. PernixData runs inside hypervisor kernel on ESXi and
is self-supported.

4. **Unlimited scenarios.** StarWind Virtual SAN uses industry-standard
NFS, iSCSI (soon — vVols on top of iSCSI) and SMB3, while PernixData ✓
has a private uplink protocol, not usable otherwise.