

HyperConverged

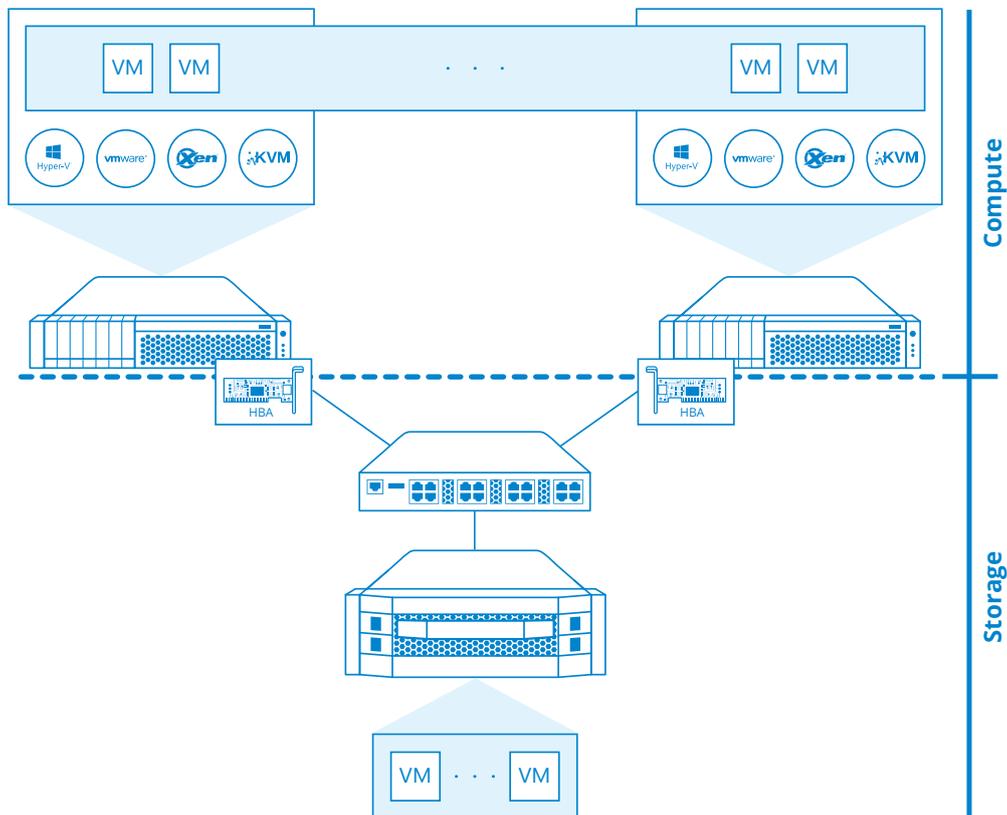
Introduction

With 75% of server workloads being virtualized, virtualization is just getting started. VDI and SMB clouds have just started to emerge and will grow rapidly in the next few years. As IT is moving forward at an ever increasing pace, datacenters are becoming hyperconverged.

Problem

Storage remains the least virtualized element of the datacenter today. Running a dedicated storage server in a converged datacenter introduces multiple drawbacks:

- **Dedicated storage hardware is very expensive** because it's a dedicated server or more often a proprietary piece of equipment. Its upgrade and scalability options are very limited. Hardware storage also introduces significant OpEx increase over time: with every new hardware release vendors increase the service contract prices for legacy hardware support and even cease support for some hardware and announce its EOL (End Of Life) forcing customers to buy brand new hardware, even if the old one still worked fine for them.
- Any dedicated storage solution adds fabric **latency to all I/O operations**. Even with high-performance 16/32 Gigabit Fiber Channel or 10/40 Gigabit Ethernet in place, every processed block makes a comparably big number of network hops until it reaches the actual disk.
- **Specially trained staff is required** to manage hardware storage solutions. This does not play well with SMBs where there are no storage teams and at times the whole IT infrastructure is managed by one person.

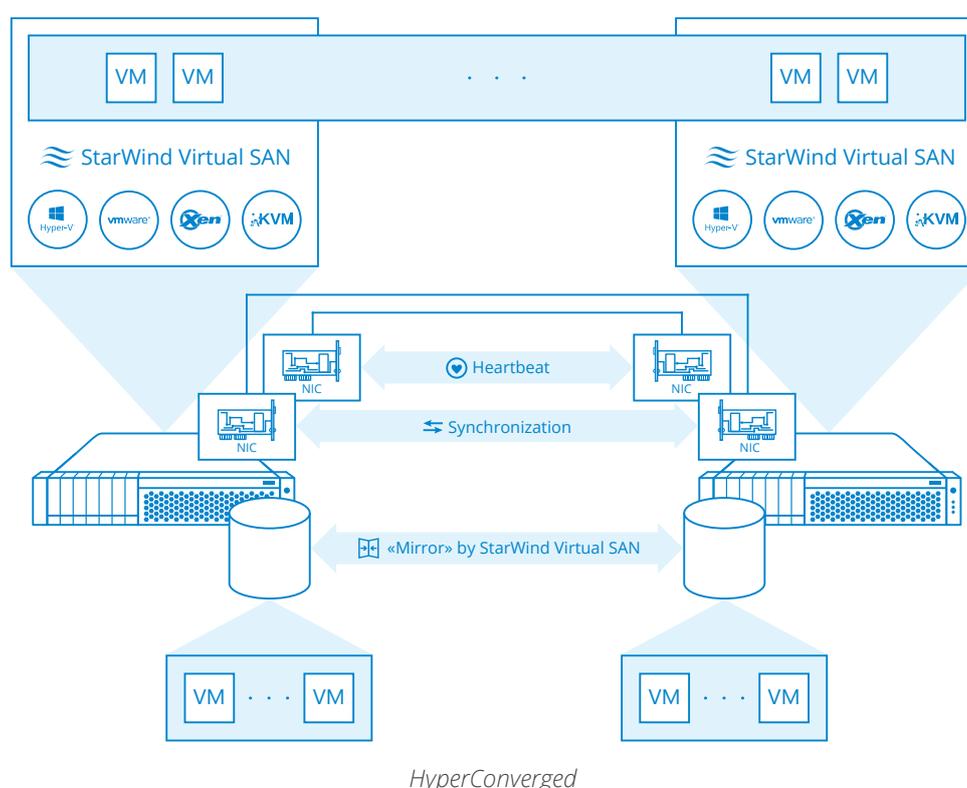


Compute and Storage Separated

Solution

StarWind Virtual SAN is a pure software defined storage platform which **eliminates the need for expensive dedicated storage hardware**. **StarWind Virtual SAN** achieves this by installing the software on the same hardware as the hypervisor, be it Hyper-V, vSphere, or XenServer. **Virtual SAN** leverages all benefits of the local storage like high performance and minimal latency. It is achieved by bonding all I/O to the local hypervisor node. This provides multiple benefits compared to a dedicated hardware solution:

- Hypervisor reads from local storage only. **High speed synchronization** network links are used to replicate writes to the partner hypervisor nodes cache.
- Cache is local, so the **performance gain is much better** compared to cache sitting behind slow network.
- Hypervisor nodes don't fight for LUN ownership, which **increases performance** and eliminates unnecessary iSCSI lock overhead.



Conclusion

Virtual SAN completes the hyperconverged datacenter puzzle:

No expensive dedicated hardware is necessary: Storage is now a part of each hypervisor.

Since **Virtual SAN** is hardware agnostic, customers can upgrade the hardware when they need it, not when they're forced to do so. The support price remains static, allowing for stable OpEx and lower CapEx.

Also **I/O is never bottlenecked on its way to the storage**. **Virtual SAN** bounds hypervisor I/O to local storage which gives outstanding performance and takes full advantage of **Virtual SAN's** high performance caching.

Additionally **any system administrator can work with Virtual SAN** since StarWind is an easy and intuitive application, customers can get their virtualized environment up and running within seconds.

In 2016, Gartner named StarWind "Cool Vendor for Compute Platforms".

Gartner does not endorse any vendor, product or service depicted in its research publications, and does not advise technology users to select only those vendors with the highest ratings or other designation. Gartner research publications consist of the opinions of Gartner's research organization and should not be construed as statements of fact. Gartner disclaims all warranties, expressed or implied, with respect to this research, including any warranties of merchantability or fitness for a particular purpose.