



Deploying SQL Server on vSAN™

for
dummies[®]
A Wiley Brand

If you're like most, Microsoft SQL Server plays a vital role in your organization. SQL Server is your hub of data and it requires high performing, and flexible storage solutions that can scale as your data needs grow. However, this can be costly. Add to this, time spent on routine maintenance processes, complex management of three-tier infrastructure and you get a time consuming and expensive solution.



REMEMBER

Many organizations spend valuable time on routine manual tasks. Consolidating the infrastructure ensures that SQL Server runs successfully and cuts manual task time down. IDC research shows that up to 45% of a typical admin's time is spent on manual tasks

(Source: IDC November 2016 HCI Adoption Trends, Use Cases & Market Growth Report Series).

So, if you want to deploy SQL Server or upgrade your current SQL Server to the next version, it makes sense to also update your infrastructure. Doing so allows you to evaluate your business as a whole for today, tomorrow, and beyond. And your application capabilities play a large part of that.

A hyperconverged infrastructure (HCI) is ideal for powering all your business-critical applications, including Microsoft SQL Server. It's a long-term, scalable solution that puts you in a strong position for whatever technological and customer shifts lie ahead for your organization—including adoption of a Cloud Foundation platform, that makes adopting a hybrid cloud strategy seamless. From higher performance and lower costs, to relieving the burden of manual tasks on your IT team, it simply makes sense.

Why the Need for Hyper-converged Infrastructure?

Organizations are looking for ways to better align their infrastructure with their Microsoft SQL database initiatives and requirements, as it has become costlier every year to satisfy the real-time needs of any business with the traditional three-tier infrastructure.

Your team needs a solution that can easily scale to meet the constant growth of data, enable performance that aligns to end user expectations, provide always-on availability, integrate seamlessly with public cloud environments, reduce costs, and enable faster, more flexible deployments.



TIP

HCI makes it easier for you to deploy and scale highly available and performant enterprise database applications, such as SQL.

The HCI Solution: VMware vSAN™

The vSAN storage model offers a software-defined hyperconverged infrastructure approach that reduces the cost of acquiring and operating storage, as outlined in the table.

Costs	Benefits
Acquisition (CapEx)	<p>Avoid proprietary storage hardware lock-in and associated costs for dedicated storage adapters (Fibre Channel HBAs), as well as requirement for fabric hardware</p> <p>Manage your overall costs based on server-side economics — server components (hardware) competitively priced versus traditional external arrays (hardware + software)</p> <p>Lower upfront costs with granular scaling</p> <p>Leverage falling storage costs year-on-year</p> <p>Benefit from higher resource utilization through</p> <p>Simplify budgeting, forecasting, and capacity planning</p>
Operation (OpEx)	<p>Merge vSphere® and storage administrative roles and reduce operational costs</p> <p>Improve daily task efficiency through higher admin productivity and simple automation</p> <p>Simplify deployment and reduce footprint</p> <p>Simplify budgeting</p> <p>Lower the cost of specialized operational skillsets (labor costs)</p> <p>Streamline and simplify automation</p> <p>Reduce power and cooling costs</p>

Benefits of vSAN™ with SQL Server

When you consolidate your infrastructure with vSAN and SQL Server, you see

- **Lower total cost of ownership:** Reduced TCO by up to 50 percent by leveraging server-side HDDs and SSDs to create a converged and resilient shared storage solution within the hypervisor.
- **Lower capital expenditures:** Server-side enterprise storage economics lowers capital expenses over array-based solutions.
- **Lower operational expenses:** Automation, power and cooling, \$/TB, and labor costs. With vSphere integration, current vSphere and storage skillsets can be used to manage the technology.



TIP

Management that is more efficient also lowers operating expenses, which has the potential for significant overall operational expense savings.

- **Predictability:** No large upfront investments. vSAN allows you to scale granularly, and avoid overprovisioning and overpaying for future capacity and performance needs.

By deploying SQL on vSAN, customers gain performance due to vSAN's native vSphere architecture that provides optimal resource utilization for all your most critical applications. vSAN delivers higher flash performance, enabling more than 150K IOPS per host. Customers can also expect predictable and highly available SQL Server OLTP performance, and a simple design methodology, which also eliminates the operational and maintenance complexity of traditional SAN.



REMEMBER

With vSAN, you get unified management across all your deployments—from edge to cloud—with the same tools you use in the core data center, removing significant barriers to hybrid cloud adoption.

In addition, you can tailor your application demand by

- Adjusting with Storage Policy Based Management (SPBM)
- Improving resource utilization through workload consolidation, from both performance and capacity considerations
- Protecting your SQL deployment with rich vSAN data services and high availability configurations

There is also ease of management and deployment flexibility when you deploy SQL on vSAN.

The Value of the VMware Stack for SQL

When you want to modernize your existing SQL Server environment, you can leverage vSAN and take advantage of the full solution, by moving all intelligence and management into a single software stack, and allow a VM-and application-centric policy-based control and automation.

vCenter® allows you to manage your vSphere environment and your HCI environment. In-depth performance monitoring is provided via a Performance Monitoring tool: vRealize® Operations Native Management Pack, which provides operations management across physical, virtual and cloud environments. With VMware vMotion®, organizations can non-disruptively consolidate SQL Server databases to ease migrations, while StoragePolicy-BasedManagement (SPBM) allows for unified control plane across all storage services. VMware powered HCI allow simple evolution to full stack via broadest deployment options.

Conclusion

It's time to consolidate your infrastructure and implement a solution that allows you to meet your SQL Server needs so you can make fast and sound business decisions. HCI powered by VMware vSAN allows you to create a cloud foundation that will help futureproof your infrastructure.

As the industry-leading HCI solution, VMware vSAN is natively integrated with VMware vSphere. Combined, they provide a cohesive, seamless platform for the applications driving your business. The tightly coupled combination of VMware vSphere as the virtualization layer and VMware vSAN as the HCI platform has enabled organizations to easily and quickly deploy and/or migrate their virtualized SQL Server databases to a cost-effective infrastructure that meets the ongoing performance, scalability, and reliability requirements of a mission critical database.

To learn more, see [Hyperconverged Infrastructure For Dummies](#).