Harness Next-Generation Performance

VMware vSAN Express Storage Architecture on Dell VxRail and Dell vSAN Ready Nodes

VMware vSAN Express Storage Architecture
The industry's first single-tier HCI storage solution delivers optimized performance, high efficiency and resilience, and agile operations on next-generation devices.

## Breakthrough performance paired with hyperefficiency

To support modern, mission-critical applications, IT needs the ability to optimize performance without compromising space efficiency or breaking the budget. High-performing devices, such as NVMe™ storage, enable IT to meet intense performance demands at a price and efficiency level that is pushing this next-generation technology to the top of the market.

Dell Technologies and VMware are working together to help you take advantage of the storage performance and space efficiency of NVMe and other next-generation technologies for VMware® vSAN® environments.

VMware vSAN is a future-proof hyperconverged infrastructure (HCI) solution that runs on a variety of storage devices, from spinning disks to the latest NVMe devices, with a traditional two-tier architecture that has separate cache and capacity tiers. The latest vSAN release features a new, alternative vSAN Architecture with VMware vSAN Express Storage Architecture™, designed to help you take advantage of next-generation hardware performance using a single-tier architecture that enhances storage efficiency.

vSAN Express Storage Architecture is the industry's first single-tier HCI storage solution, designed to use NVMe-based triple-layer cell (TLC) devices optimally to reach high-performance targets. As the industry's sole hypervisor-native HCI solution, it also minimizes resource overhead, supporting business-critical and cloud-native apps while offering the simplicity of single-stack management.

Together, vSAN Express Storage Architecture on certified Dell VxRail and vSAN Ready Nodes enhances the performance, storage efficiency, data protection and management of VMware vSAN for greenfield deployments.[1]
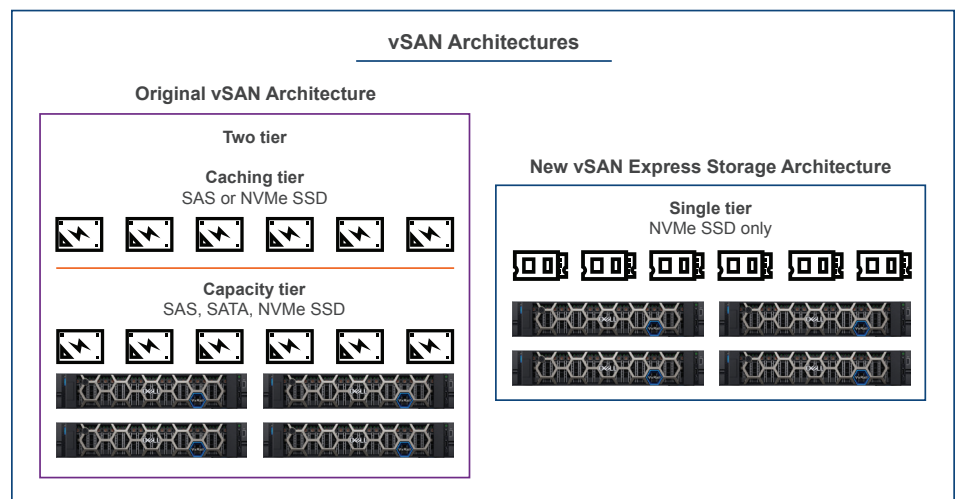
[1] Express Storage Architecture in vSAN is not a replacement architecture, but an alternative architecture for high performance hardware. vSAN Express Storage Architecture must be deployed on its own cluster. Mixed NVMe/non-NVMe clusters are not supported for the initial release.

vSAN Architectures

Original vSAN Architecture

Two tier

Caching tier
SAS or NVMe SSD

Capacity tier
SAS, SATA, NVMe SSD

New vSAN Express Storage Architecture

Single tier
NVMe SSD only

Optimize performance, efficiency, resiliency and agility

Performance without tradeoff	Supreme resource and space efficiency	Ready-for-anything resilience	Intuitive, agile operations
• Up to 4X higher performance and lowered latency[1] • Performance at RAID1 with the space efficiency of RAID5/6	• Reduced total cost of ownership (TCO) with up to 4X better compression[2] • Storage pool architecture frees capacity for increased consolidation	• Native efficient snapshots taken instantly without compromising application performance • Improved backup experience through consistent workflows • Reduced fault domains improve availability	• Per-virtual machine (VM) policies increase management flexibility • Consistent management across vSAN architectures • Proactive insight into compatibility gaps prevents potential issues

Accelerate your business breakthroughs with Dell Technologies and VMware

Together, Dell Technologies and VMware jointly engineer, develop and test our hardware to ensure rapid adoption of new, innovative technologies designed to modernize IT, simplify operations and help you realize your multicloud vision. Accelerating breakthroughs starts with accelerating the adoption of technology designed to improve business outcomes. Dell Technologies and VMware work together to help you anticipate and adapt to business challenges with solutions that help IT take advantage of opportunities and address challenges before they arise. With a history of innovation and a commitment to ongoing development, Dell Technologies and VMware enable you to rapidly and seamlessly adopt new technology and modernize IT infrastructure while simplifying IT operations.

[2] VMware internal testing, September 2022. Outcomes are based on ideal configurations that may achieve up to 4X performance.
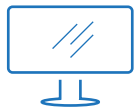
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