



ATS Automation Accelerates VDI Performance by 7x with VMware Virtual SAN at One-Fifth the Cost of Competing Solution

ATS Automation wanted to expand their virtual desktop infrastructure (VDI) but found that doing so with their existing SAN would be cost prohibitive. By implementing VMware Virtual SAN™ to support their VMware Horizon® virtual desktop infrastructure, ATS was able to improve VDI performance by 7x, enabling remote workers to use demanding 3D CAD programs for the first time. Moreover, the cost for the solution was only one-fifth the cost of competitor offerings.

ATS Automation makes the equipment that makes just about everything, serving the world's leading manufacturers in industries including life sciences, energy, transportation, consumer products, computers, and electronics. The company provides advanced factory automation solutions for new product launches, capacity expansions, and productivity improvement initiatives. ATS has 70 sites, 30 data centers and more than 4,500 IT users globally.

The Challenge

Expand and improve VDI cost-effectively to better support remote workforce

ATS Automation has an extended workforce of remote employees and contractors. They were using VMware Horizon VDI to securely connect these remote workers to the company's IT systems, using a traditional SAN for storage. ATS was looking to expand and improve its VDI, and also wanted to reduce overall VDI costs. The expense for expanding the traditional SAN would have been costly, according to Drew Kemp, Senior Systems Administrator at ATS Automation, who manages a team of eight that's responsible for global IT projects and infrastructure design. So Drew sought out a next-generation technology solution that would reduce storage costs.

Deliver workstation-level performance for 3D CAD programs

The company's remote workforce includes engineers working with advanced 3D computer-aided design (CAD) software, predominantly Solidworks and AutoCAD. These engineers are designing full line assemblies for everything from a car part, like a transmission, to pharmaceuticals. With most of the CAD data housed at ATS's primary data center, the existing servers didn't provide the GPU performance necessary to support these demanding applications with the VDI. "It wasn't capable of delivering the kind of 3D CAD design workloads we wanted to deliver," says Drew, and that put a drag on productivity and collaboration. The company wanted to improve their VDI to provide workstation-level performance.

INDUSTRY

Manufacturing

LOCATION

Cambridge, Ontario, Canada

KEY CHALLENGES

- Expand and improve VDI cost-effectively to better support remote workforce
- Deliver workstation-level performance for graphics-intensive programs
- Avoid high costs of SAN upgrades and all-flash arrays

SOLUTION

ATS Automation chose VMware Virtual SAN and VMware Horizon to build out their virtual desktop environment. Deployed on Dell R730 servers, the solution provides over 90 active desktop users with workstation-level performance for engineering and graphics applications.

BUSINESS BENEFITS

- Cost-effective HCI solution at one-fifth the cost of competing solutions like Nutanix
- 7x the performance of existing traditional SAN storage
- Quick and easy deployment and provisioning frees up IT team for strategic initiatives

“We had a greenfield environment, set up everything new, and it was really quite simple. Literally, just a few clicks. Provisioning storage is now easy, like provisioning servers.”

- Drew Kemp,
Senior Systems Administrator,
ATS Automation

VMWARE FOOTPRINT

- VMware Virtual SAN 6.0
- VMware Horizon Advanced 6.1.1
- VMware vSphere 6.0

APPLICATIONS VIRTUALIZED

- Desktop Virtualization (VDI)
- ERP applications
- SolidWorks
- AutoCAD

PLATFORM

Single Virtual SAN cluster with four Dell R730 servers, each with two NVIDIA GRID™ K2 GPUs, two Seagate SSDs and six Seagate 10K RPM SAS drives

PARTNER

- Dell
- Scalar Decisions Inc.

Integrate remote sites with nonstandard hardware and systems

ATS also suffered from a lack of IT centralization. With 30 data centers around the world—some quite small and many gained by acquisition—it was complex to work with different hardware and systems. “At most of these sites, it’s a challenge to get them to use standardized hardware,” Drew explains. He was looking for technologies that would help integrate and standardize these remote site systems.

The Solution

Drew and his team started looking into new technology options that could dramatically reduce VDI-related storage costs and improve VDI performance. This led them to consider hyper-converged infrastructure (HCI).

ATS has used VMware virtualization software for nearly a decade, which led Drew to look into VMware’s hyper-converged solution – Virtual SAN. After they considered Nutanix and NetApp flash arrays, the team agreed that the costs were prohibitively high. Drew noted he was impressed with VMware’s unique software-defined approach to HCI, which leverages the hypervisor to deliver compute, storage and networking in an integrated software stack. He discovered that the VMware technology had all the capabilities he was looking for at a fraction of the cost of a comparable Nutanix solution, while offering flexibility from a hardware point of view. The Virtual SAN solution Drew put together uses VMware Virtual SAN 6 to support VMware Horizon 6.1.1 for their virtual desktop environment.

Drew and team found Virtual SAN easy to understand and deploy. They used the [Virtual SAN TCO and Sizing Calculator](#) tool available on the VMware website and then purchased four Dell R730 servers for their new Virtual SAN cluster. Each server has two NVIDIA GRID™ K2 GPUs in a hybrid Virtual SAN cluster using two Seagate SSD flash drives for caching and six Seagate 10K RPM SAS magnetic drives for capacity storage. As part of the project, they upgraded to vSphere 6.0 and Horizon View 6.1.1.

The Virtual SAN was put into production in May 2015. The initial rollout supports approximately 90 desktops, with an average of at least 50 active users at any given time. When Drew’s team tested the new infrastructure, they found that Virtual SAN improved IOPS by 7x (delivering 26,396 average IOPS) and reduced latency by almost 5x (to an average of 1.34ms).

Drew says getting everything to work was a breeze. “We had a greenfield environment, set up everything new, and it was really quite simple. Literally, just a few clicks.” Drew plans to double capacity soon to support 100 active users by adding two more servers to the initial four.

Business Benefits

Cost-effective storage makes expanded and improved VDI possible

The VMware Virtual SAN solution cost just one-fifth of a comparable Nutanix offering. Other options like all-flash arrays still made expansion and improvement of the VDI system cost prohibitive, without offering the advantages of a hyper-converged architecture. “If we hadn’t moved to VMware Virtual SAN, we’d have to decommission our VDI,” explained Drew.

Workstation-level VDI performance empowers remote workers

Drew says the system is performing great. “From no one wanting to use VDI, we’ve evolved to now everyone wants it, and they are happy. It enabled our remote workers to do something they couldn’t reliably do before. It really improved their ability to work with performance-hungry apps” Now remote workers can effectively use their demanding 3D CAD design programs on the VDI, improving remote worker productivity and collaboration.

Easy deployment and management frees up IT team for strategic initiatives

Regarding Virtual SAN's ease of deployment and use, Drew says: "If you are familiar with vSphere, setup is easy. We didn't need any training. We didn't need a specialized storage expert, and we didn't need any professional services." As for day-to-day usage, he goes on, "Provisioning storage is now easy, like provisioning servers," enabling his relatively small team to focus on more strategic work.

Looking Ahead

Drew is planning to upgrade to Horizon 7, Virtual SAN 6.2 and VMware vSphere® 6.2 in the near future. He is also looking into VMware Site Recovery Manager™ to standardize disaster recovery at remote sites, bringing them into the fold of standardized operations. His team is also building a proof of concept for VMware AirWatch® Enterprise Mobility Management and taking a look at VMware vRealize® Automation™, so there's plenty of VMware in ATS Automation's future.

