CASE STUDIES

How Hyper-Converged Infrastructure Helps Businesses Meet the Challenges of Tomorrow

More than 10,000 customers are using VMware vSAN to quickly adopt hyper-converged infrastructure to accelerate their IT modernization initiatives, reduce their total cost of ownership, and increase their businesses agility in preparation of future needs. Read some of their stories and see how hyper-converged infrastructure powered by vSAN can ease the burden of infrastructure management and create new possibilities for your business.

How well do you understand the challenges your business will face tomorrow? How about next year, or the year after? Even organizations that pride themselves on their ability to predict where markets and customers are heading can be surprised by the direction their industry takes.

In a technology-driven global economy like we have today, new business challenges can develop seemingly overnight. Your ability to respond to these challenges will depend, in part, on the IT infrastructure that helps run your business. Is your infrastructure agile enough to respond quickly to the demand for new products, services or applications? Does your current infrastructure help your business develop the insights it needs to form deep relationships with its customers?

For most organizations built on traditional, siloed IT architectures, the answer to these questions is "No." As a result, the search for a simpler, more agile, more cost-efficient architecture leads organizations to explore hyper-converged infrastructure (HCI) solutions.

Many organizations begin their HCI journey by targeting specific use cases and applications. It's common to see HCI being used to support virtual desktop infrastructure (VDI), disaster recovery (DR), and remote office-branch office (ROBO) environments where physical space and on-site IT support may be limited. But HCI continues to evolve beyond these use cases. Today's HCI is a robust platform, designed and built to handle a breadth of mission-critical applications and mixed workloads throughout the business.

Workloads aren't the only place where HCI is evolving. Early HCI deployments were hardware-centric and focused on appliances that bundled together the compute, network, and storage components needed for the assigned workload. Today, HCI revolves around software, which allows organizations to deploy hyper-converged infrastructure that fosters innovation and delivers the flexibility needed to meet the business challenges of tomorrow.

Why HCI Makes Sense

Hyper-converged infrastructure powered by advanced software delivers a number of advantages for IT organizations, including:

- **Quick Adoption:** When your business faces complex or sudden changes, it needs to move quickly to protect its market share and competitive advantage. HCI allows the IT organization to quickly adopt new hardware technology and enables the rapid delivery of new, innovative software applications.

- **Reduced TCO:** HCI is built on existing server platforms; therefore, it eliminates the complex silos of hardware that still exist in many organizations. Using existing tools and hardware means simpler management, and industry-standard servers and components deliver the benefits of cost-efficient server economics.

- **Improved Scalability:** Businesses that deploy HCI are creating an app-centric infrastructure with the ability to scale and change with workloads. Whether it's a traditional

workload the business has run for years, or a next-generation app built to meet customer demand, HCI offers flexibility to scale to meet demand.
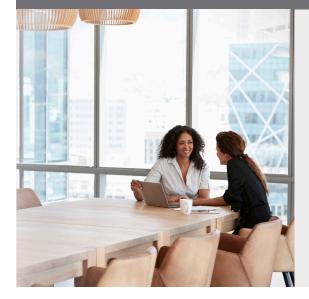
- **Flexible Architecture:** As IT organizations increasingly look for ways to extend their infrastructures to hybrid cloud environments, they are looking for a common software stack to offer a consistent operational control plane that spans from the edge to the core to the cloud. HCI's flexible architecture opens the door to the cloud by delivering hardware-independent, virtualized compute, storage and networking in a tightly integrated common stack.

VMware vSAN: The Simplest Path to Hyper-Converged Infrastructure

With more than 10,000 customers, VMware vSAN is the No. 1 HCI software on the market today**. As the only HCI solution native to VMware vSphere – the market's No. 1 hypervisor – vSAN provides users with the simplest path to HCI by naturally and seamlessly extending their compute virtualization to their storage. vSAN also offers the broadest set of deployment options, giving users the freedom to choose the best option for their use case:

- **vSAN ReadyNodes:** These x86 servers are pre-configured, tested and certified by vSAN ReadyLabs as a custom-built approach to HCI with VMware vSAN. Available from many of the leading server vendors, often with value-added management and backup solutions, each ReadyNode is optimally configured for vSAN with the required amount of CPU, memory, network, I/O controllers and storage devices – including solid-state drives, hard disks or flash devices.

- **Jointly Engineered Systems:** vSAN users can take advantage of the TCO benefits and fully integrated support services, life cycle management and one click upgrades or automated orchestration of jointly engineered systems like the VxRail powered by Dell EMC. These systems are pre-configured, tested HCI appliances powered by vSAN that are faster to deploy than a do-it-yourself approach.

- **HCI-as-a-Service through VMware Cloud on AWS:** This on-demand service integrates vSphere, vSAN, NSX and vCenter, optimized to run on dedicated, elastic, bare metal Amazon Web Services (AWS) infrastructure. This on-demand service allows users to run applications across vSphere-based cloud environments with access to the broad range of services offered by AWS. Hundreds of additional VMware Cloud Provider Program partners offer services built on vSAN as well, delivering broad choice for customers building out a hybrid cloud.

vSAN users have the option to buy ready-to-run, integrated systems for rapid time to value, or to run on top of existing hardware platforms, thereby saving the costs of a rip-and-replace upgrade and the associated training and support expenses. Whether deployed on existing hardware or the very latest and greatest in server technology, vSAN users are benefitting from an industry-leading platform for HCI built on a flexible architecture, without being dependent on proprietary technologies that foster vendor lock-in.

IT organizations using vSAN are embracing a path to the complete Software-Defined Data Center, which is available today and offers advanced management capabilities, network virtualization, and a consistent environment that spans from on-premises to their choice of public cloud.

How Are Businesses Putting VMware vSAN to Work?

Read the stories behind some of the 10,000 customers that are using VMware vSAN to transform their business and meet the challenges of today and tomorrow.

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HolidayCheck

Faster Recovery for Demanding Web Applications

Switzerland-based HolidayCheck runs the most visited travel portal in Germany, helping consumers choose the flights, hotels, vacation rentals and cars they need to plan the perfect vacation. The HolidayCheck website handles approximately 20 to 30 million monthly visits, and storage infrastructure issues that slowed the database behind the site's functionality were impacting the user experience.

HolidayCheck's existing physical storage systems were made up of local solid-state disks (SSDs) in servers and isolated solutions. A single server failure would result in virtual machines running critical databases to be taken out of operation. Preventing this from happening was a top priority and a new disaster recovery, high-performance solution built on VMware vSAN, vSphere and vCenter Enterprise was the solution.

For HolidayCheck, the benefits reach beyond an improved customer experience to include:

- A cost-effective storage system that works reliably and quickly

- Self-service management to reduce demands on the IT team

- 35 percent estimated savings compared to previous investment in storage support

"The stability of the system is particularly important to our company during the peak travel season in summer. With VMware vSAN, we increased the reliability and functionality of our storage system. If we lose a host, other servers can take over quickly – something that would have been inconceivable with the old system."

— *Maximilian Schöfmann, Head of Operations, HolidayCheck*

Read the full HolidayCheck case study.

87% of vSAN customers say vSAN performances are about the same or more compared with their existing SAN array*

Improving Support for Business-Critical Applications

The Ventura County Community College District (VCCCD) in California offers a wide range of public education programs to a diverse student body. Technology plays an important role at the VCCCD, not only in helping to operate the district's three colleges and its administrative center, but also in the classrooms themselves. As part of a 21st-century Strategic Technology Plan, the VCCCD aimed to improve availability and performance for mission-critical applications, grow its storage infrastructure without requiring specialization from its staff, and deliver scalability while minimizing CapEx spending.

VCCCD replaced its legacy Fibre Channel SAN with VMware vSAN, deploying hybrid storage clusters with a focus on modernizing all four of the district's data centers. Benefits of the vSAN deployment include:

- Uninterrupted learning, improved business continuity, and reduced risk

- Noticeably faster application response times for end users

- Reduction of overall storage TCO by 50 percent

"We saw a noticeable improvement in performance as we moved workloads over to vSAN. People were asking us 'What did you do?' From database-driven reporting to file servers, most of our virtualized workloads are benefitting from faster I/O."

—Aaron Kay, IT Support Specialist III, Ventura County Community College District

Read the full VCCCD case study.

53% of vSAN customers say it took about a month to become vSAN experts*

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Cost-Effectively Expanding and Improving VDI

ATS Automation makes the equipment that makes just about everything, serving the world's leading manufacturers across a number of industries. The company uses VMware Horizon VDI to securely connect a substantial number of remote employees and contractors with the applications and data they need to do their jobs. To better support these remote workers, ATS Automation launched an effort to cost-effectively expand and improve the VDI experience. The goal was to deliver workstation-level performance, even for the graphics-intensive programs used by many remote workers and to avoid the high costs of SAN upgrades and all-flash arrays.

ATS Automation used VMware Horizon and vSAN to build out its VDI environment, which now provides more than 90 active desktop users with the workstation-level performance ATS envisioned. Among the benefits:

- ATS Automation deployed a cost-effective HCI solution at one-fifth the cost of competing solutions

- The company experiences 7x the performance of existing traditional SAN storage

- Quick and easy deployment and provisioning frees up IT team for strategic initiatives

65% of vSAN customers are using vSAN for business-critical applications*

"If we hadn't moved to VMware vSAN, we would have had to decommission our VDI… 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."

—*Drew Kemp, Senior Systems Administrator, ATS Automation*

Read the full ATS case study.

Improving Storage Management in a VDI Environment

South Carolina's Clover School District, which serves more than 7,000 students in six elementary schools, two middle schools, and one high school, had all but abandoned its computer labs in favor of personal iPads and MacBook Air laptops for every student. Then the state of South Carolina announced new, mandatory Windows-based standards for online testing.

Faced with the need to make a massive capital investment in new desktop PCs, the district instead opted for a virtual desktop environment based on the VMware Horizon 6 platform, and a new hosting platform powered by VMware vSAN hyper-converged infrastructure. The new solution centralizes computer lab PC processing and storage, and repurposes existing desktops as thin clients. Among the benefits for Clover's IT department:

- A 75 percent reduction in storage capital costs

- Increased system resilience and elimination of the need to continuously monitor storage

- Improved performance, with applications and backups running in seconds instead of minutes

"Clover School District deployed a new VDI platform powered by VMware vSAN and Horizon to enable us to administer standardized tests to students online. By choosing vSAN, we cut our storage costs by 75 percent and saved our staff from having to babysit the storage anymore. We anticipate that the new automation and intelligent operations built into vSAN 6.6 will help us further reduce management time and ensure optimal performance."

—*Matt Hoffman, Executive Director, Technology, Clover School District*

Read the full Clover School District case study.

Smithfield®

Integrating Remote Environments to Improve Uptime and Spark Innovation

Smithfield Foods is the largest pork producer in the world, and the company behind well-known brands like Smithfield Bacon and Nathan's Hot Dogs. One of the biggest challenges facing Smithfield is that the company's operations are dispersed. Smithfield operates 48 plants around the United States and runs a complicated supply chain that involves perishable products, making uptime a top priority for the company.

Smithfield Foods uses a hyper-converged stack with VMware vSAN ROBO, which the company can drop into remote plants or offices to quickly integrate those locations with the core environment. vSAN ROBO deliver the resiliency Smithfield needs and empowers innovation at the plant level.

Top three reasons users selected VMware vSAN*

79% Native integration with vSphere and vCenter

55% Simpler management and operational cost savings

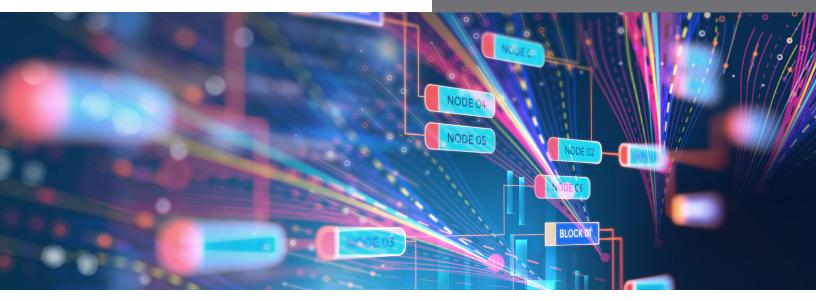**42%** Initial investment cost savings

"The time savings from going to this platform is phenomenal. We've leveraged vSAN ROBO to change our environment to ensure that we have the resiliency necessary. VMware and vSAN ROBO has given us a really strong platform that I can then innovate on at that plant level."

—*Jeffrey Thomas, CTO, Smithfield Foods*

Watch the Smithfield Foods case study.

How Does HCI with vSAN Help Solve Tomorrow's IT Challenges?

As you've noticed, we're in an era of IT dominated by software-based models. IT organizations are seeing their infrastructure value, and indeed their innovations themselves, coming from their investments in software while leveraging existing hardware. At organizations like the ones mentioned above, innovation is fueled by HCI's ability to deliver significantly faster development cycles and reduce costs. IT organizations that use HCI built on VMware vSAN can deliver new features almost on demand, while traditional storage systems may need to wait for the 18-month refresh cycle for storage system software and/or the 36-month cycle for a hardware refresh in order to support innovations.

Solving the most difficult business and IT challenges in the coming years will require strong partnerships with industry leaders. Moving forward in a software-defined world, IT organizations can expect the ecosystems they invest in will be critical. Partnering with vendors like VMware and Intel® will provide organizations access to the latest technologies and platforms to help them quickly solve their business challenges.

To further simplify the path to HCI, VMware and Intel® now offer Intel® Select Solutions for VMware vSAN, which are available by a variety of solution providers. This complete HCI solution is ReadyNode-certified and tightly specified by Intel and VMware for out-of-the-box, optimal performance — from the hardware, up through the firmware stack, to the VMware vSAN software.

Businesses that have their resources tied up in "keeping the lights on" have a difficult time meeting the challenges that face them today, let alone identifying the challenges yet to come. Because HCI is easier to manage, its deployment allows organizations to consolidate their IT teams, not to save money and cut positions, but to focus the energy of their IT talent on identifying and solving problems that will negatively impact the business.

Unlike previous iterations of HCI, software-led HCI with vSAN does not create another silo for IT to manage. VMware recognizes that IT organizations that want to be well positioned to solve tomorrow's challenges need to deploy a consistent operating environment that is easier to manage and requires less specialization. This environment should be everywhere – from the edge, to the data center, and in the cloud – and have the ability to expand and contract as needed without introducing additional challenges like re-architecting applications or adopting new tools.

To learn more, visit: https://www.vmware.com/campaigns/hit-refresh.html

Sources

* TechValidate survey of 300+ users of VMware vSAN, 2017

** www.idc.com/getdoc.jsp?containerId=prUS43714418