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Three Compelling Reasons to Consolidate on Hyperconverged Infrastructure

Learn why organizations across industries are consolidating on HCI

Traditional Infrastructure in a Modern World

IT teams are under constant pressure to evolve their operations because traditional infrastructure—typically comprised of sprawling, siloed, and complex storage solutions—often can't keep up with the pace of change that modern organizations demand.

IT must evolve to take advantage of technological advancements, such as hybrid cloud architectures and cloud-native applications, which offer more agility, resources and scale that result in faster time-to-market for digital products and services. If organizations fail to upgrade legacy infrastructures, they risk a costly, time-consuming evolution adoption of these technologies. In order to evolve the core infrastructure to a software model that supports whatever innovation lies ahead, IT requires a new approach.

Here's why:

Time-intensive – Wrestling with highly manual processes for provisioning storage, modifying service levels, and scaling capacity in complex sprawling architectures with shared storage solutions takes time—and focus—away from modernization initiatives. More often than not, each storage array requires its own unique processes, which increases the inherent complexity of data center management. In fact, a recent IDC study found that the average network administrator spends approximately 40 percent of their time on provisioning, monitoring, and troubleshooting the environment.[1] That's time NOT spent on modernization.

High cost – Organizations typically use storage arrays for 5 years or more. As arrays age, they become more expensive to maintain because vendors typically raise annual maintenance rates. Monies that could and should be applied to modernization are being used for maintenance.

Inflexible – Cloud operating models and the move from monolithic to containerized microservices-based application development is shining a light on the fact that traditional infrastructure can't meet the needs of modern development and operational needs.

The result? IT professionals across industries and geographies are spending far too much time and money provisioning, managing, and maintaining infrastructures that don't meet current—or future—needs.

With virtualization, multiple infrastructure silos are combined and managed as a single entity. By bringing these silos together into a holistic, software-defined and integrated system, organizations can realize a hyperconverged infrastructure (HCI) where compute, storage, and network components work with each other, and are operated through a single management interface.

1 IDC. "HCI Adoption Trends, Use Cases & Market Growth Report Series." November 2016.

Hyperconvergence solves the pains of complexity, cost, and risk by:

- Aligning policies to workloads rather than their individual hardware constructs
- Enabling faster delivery of services through automation
- Using a familiar, common, and extensible management solution for a reduced learning curve

Modernizing the data center with HCI also helps organizations stay competitive by delivering business value through accelerated time-to-market for new apps and services. It's a software-defined infrastructure model that can then be applied beyond the core data center to the public cloud and at the edge. Deploying HCI provides immediate cost savings and operational efficiencies, and is also the first step in future-proofing the infrastructure. By connecting disparate environments in a common way, IT teams can fully realize the benefit of hybrid cloud: A consistent infrastructure and consistent operations across environments that support running and migrating applications where it makes the most sense—now and in the future.

VMware HCI solutions

VMware HCI solutions give every customer the ability to extend proven models of virtualization and management to any environment, to support any application. VMware Cloud Foundation provides the only completely integrated software stack that enables organizations to:

- Leverage the platforms they have already invested in
- Manage risk while maximizing transformative benefits
- Future-proof environments for cloud-native applications and the hybrid cloud

Consolidating infrastructure on HCI is the smart way to streamline operations and start on the path toward digital transformation.

How HCI Works

Hyperconverged infrastructure combines compute, storage, storage networking, and management functions on industry-standard, x86 servers with internal storage devices (disk or flash). Using a scale-out architecture, HCI clusters pool physical resources and share them between virtual machines running on any node in the cluster.

With HCI:

- Three software components make up a *hyperconverged platform*: storage virtualization, compute virtualization, and management.
- The virtualization software abstracts and pools the underlying resources, then dynamically allocates them to applications running in VMs or containers.
- Instead of creating LUNs and assigning virtual machines to them, users simply describe in terms of policies what storage resources are needed for each virtual machine and the software enforces, monitors, and remediates the policies.
- Simplified, workflow-driven operations further reduce manual tasks and help automate entire operations.

HCI breaks down silos and streamlines operations

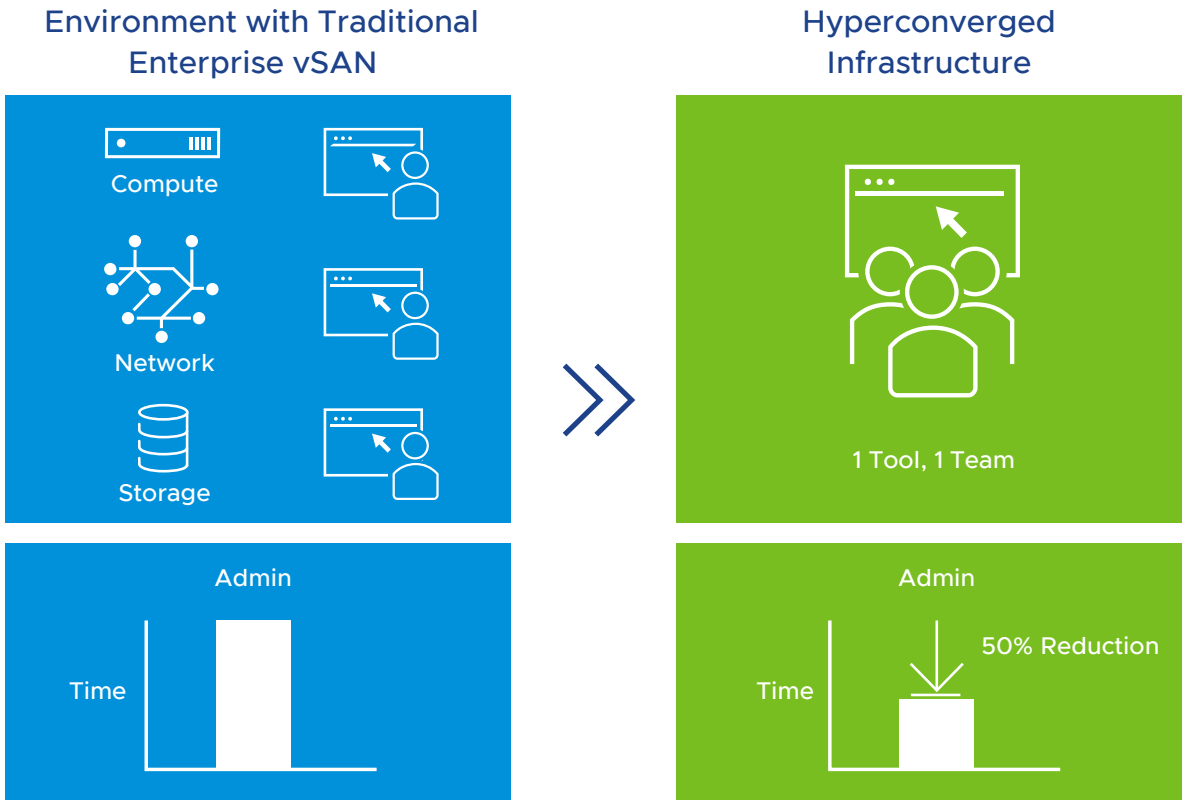

FIGURE 1: Infrastructure with a traditional three-tier architecture is expensive to build, complex to operate, and difficult to maintain.

Why Organizations Consolidate on HCI

For IT organizations, HCI's first compelling use case was virtual desktop infrastructure (VDI). VDI and HCI were a great fit for each other. VDI has a demanding I/O profile, scales linearly, and benefits from rich data services such as dedupe and compression. Because HCI offers high-performance storage and scales out in a similar way to VDI, it quickly became the standard. Customers soon found that the the low-cost, scalable, and simple-to-operate infrastructure could serve a wide variety of workloads, including complex, core business applications.

Today, enterprises across industries leverage HCI as a modern infrastructure solution for traditional, mission-critical, as well as cloud-native applications.

Three reasons why organizations consolidate on HCI

1. **Reduce complexity** – Simplify infrastructure in order to reduce the time to provision new systems or to maintain existing ones.
2. **Control costs** – Optimize budget for physical and professional resources in order to meet growing organizational demand and SLAs for IT services.
3. **Prepare for hybrid cloud** – Modernize the data center in an effort to protect current investments while embracing edge and public cloud use cases.

The HCI market is projected to reach almost $9B in 2019 and $16.2B by 2023.[2]

2 "IDC Converged Systems Tracker Forecast, Q42018." April 2019.

Reason #1: Reduce complexity

In addition to delivering better performance, HCI makes it easier to manage mixed workloads on a single cluster though simplified application lifecycle management. HCI greatly accelerates the provisioning of application resources and provides the flexibility needed to quickly adjust to changing requirements, monitor the quality of service, and rapidly react to issues.

The scale-out architecture of HCI systems also contributes to increased agility, allowing IT departments to quickly scale compute and storage resources by adding more nodes to existing clusters without taking the application offline.

The VMware solution

VMware vSAN™ provides the simplest path from server virtualization to HCI and a true hybrid cloud architecture.

With vSAN you can:

- Manage compute and storage with existing tools: VMware vSphere® and VMware vCenter®. Many users report they're experts within 30 days of adoption.
- Eliminate provisioning and modify storage levels on the fly. With policy-based management, administrators simply specify storage needs, and the software automatically implements, monitors, and remediates the policy.
- Complete typical storage tasks up to 59 percent faster than with traditional infrastructure.[3] Extending automated lifecycle management to storage via VMware vSphere® Update Manager™ reduces the time to upgrade, update, and patch compute and storage resources.

VMWARE @ WORK

"Provisioning a full virtual desktop image used to take hours with our old spinning-disk storage. Once we added all-flash vSAN to VMware Horizon®, desktop provisioning time came down to 15 seconds. It's like comparing a snail to a race car."

JOHN LEVAY, CTO,
NIAGARA COLLEGE

Read about how Niagra College modernized IT from the data center to the desktop.

3 IDC. "Reviewing the Current State of Hyperconvergence and Real-World Benefits of VMware Virtual SAN Deployments." Eric Sheppard, July 2016. (ID: US41580616)

Reason #2: Control costs

Hyperconverged infrastructure helps control both capital expenditures as well as recurring expenses. Here's how:

- **HCI uses industry-standard components**—such as commodity servers and 10Gb Ethernet—rather than purpose-built external storage arrays and fibre channel networking. Thus, cost efficiencies start at time of procurement.
- **HCI scales incrementally,** so users can buy just what they need and scale granularly as data grows, adding a single node at a time.
- **HCI leverages automation** to deliver significant operational efficiencies from day zero to day two. Software enables administrators to quickly deploy cloud infrastructure, eliminate manual, time-consuming tasks like provisioning storage, and automates complex processes such as patching, updating, and upgrading infrastructure with tools like vSphere Update Manger (VUM).

By consolidating infrastructure on HCI, organizations also benefit from perpetual licensing: Many traditional vendors tie the software license to the device, so when the array is replaced, new software licenses must be purchased. Traditional vendors also often raise prices in the later years of a product's lifecycle and with perpetual licensing, the license can be used through multiple infrastructure refreshes, and support remains fixed.

How to Lower OpEx and reduce CapEx

- Leverage x86 server economics from your vendor of choice
- Use the latest server platforms without waiting for lengthy hardware refresh cycles
- Buy just what you need, scale up or out with ease

HOW HCI ADOPTERS REDUCE STORAGE COSTS

- Fewer technology silos
- Minimal learning curve
- Rapid provisioning
- Efficient management

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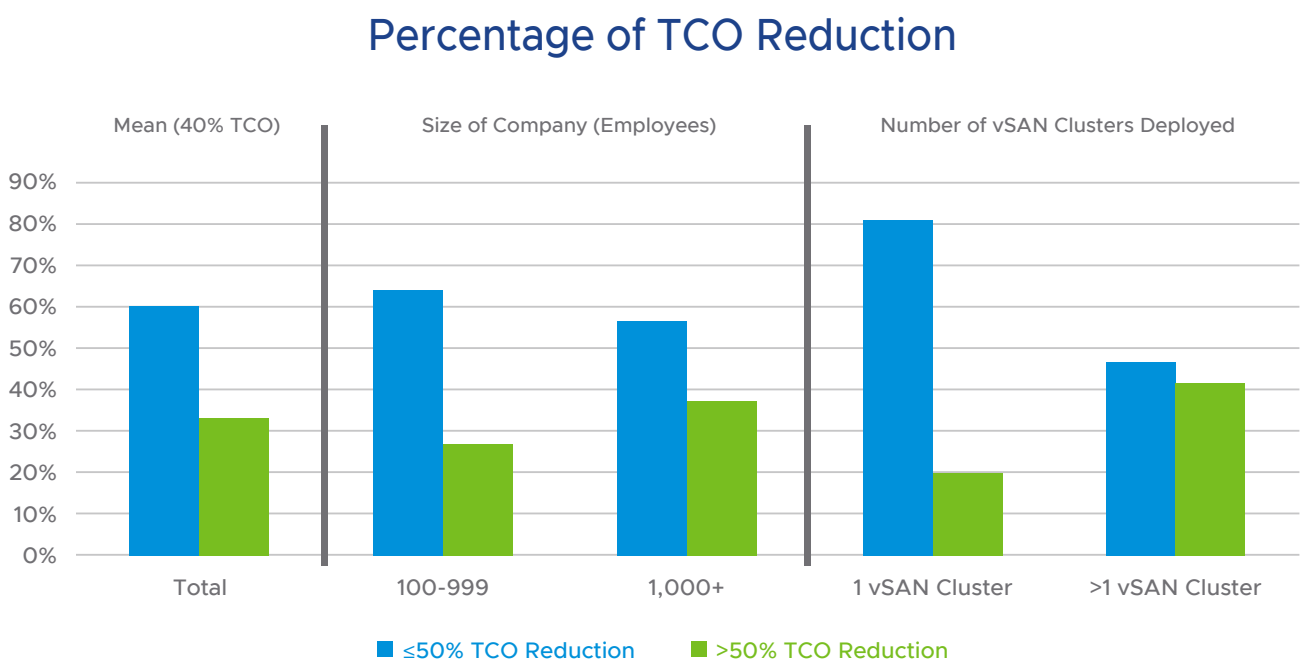
VMware customers who adopted HCI with vSAN

- Reduced TCO by 40 percent on average[4]
- Saved more with each HCI cluster deployed

4 IDC. "Learning from Companies That Use VMware vSAN to Address Today's Most Pressing Datacenter Challenges." Eric Sheppard, March 2018. (ID: US43584118).

Q: By what percentage has your TCO been reduced as a result of your VMware vSAN deployment?



Source: IDC. "Learning from Companies That Use VMware vSAN to Address Today's Most Pressing Datacenter Challenges." Eric Sheppard, March 2018. (ID: US43584118).

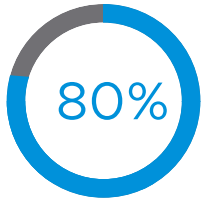
"Through using vSAN ROBO we were able to cut our anticipated costs of going hyperconverged to our branches from approximately $350,000 down to less than $120,000—a 66 percent savings."

MARK FOURNIER, SYSTEMS ARCHITECT, US SENATE FEDERAL CREDIT UNION

Learn more about how US Senate Federal Credit Union scaled their operations efficiently and prepared for the future.

Reason #3: Prepare for hybrid cloud

According to Rightscale's 2018 State of the Cloud report, more than 80 percent of organizations use a hybrid-cloud approach spanning public and private clouds. Hybrid cloud environments allow IT to run workloads on premises and in public clouds, while taking advantage of existing teams, skill sets, and tools. The good news is that hybrid cloud provides seamless integration and a common operating platform across on-premises infrastructure and the public cloud. IT organizations who are still working with outdated or aging infrastructure will encounter significant hurdles to cloud adoption.



Eighty percent of organizations use a hybrid-cloud approach, comprised of public and private clouds.

Risks of application deployment using legacy tools

- Traditional approaches to app migration require refactoring in order to migrate them from your on-premises data center to the cloud, which requires time, scarce skillsets, and expense.
- Migrating applications from private cloud to public cloud could present risks if workloads are not carefully re-platformed and rigorously re-tested.
- Once the application is in the cloud, heterogenous processes and tooling typically require a separate, cloud-focused team. Dual teams create operational inefficiencies that mitigate cost savings from moving to public cloud.

Why consolidating on HCI is the simplest path to creating a true hybrid cloud

The VMware approach to hybrid cloud is anchored on the tenet that a consistent infrastructure with consistent operations is integral to running and managing applications seamlessly between environments. Organizations benefit from the ability to deliver dynamic capacity, consolidate or migrate on-premises infrastructure, or develop and test new applications all on a single model for infrastructure and operations. This flexibility helps them gain the freedom to choose the best environment or destination for applications—on or off premises. A common approach to both private and public clouds is imperative for a successful hybrid cloud strategy, specifically one that is consistent and simple to operate, compatible across on and off-premises environments, and ready to deploy VMs, containers, and any next-generation applications.

Whether on premises, in the public cloud, or at the edge, organizations need environments that are aligned in compute, storage, networking, and management elements to enable this facility between them. VMware has been at the forefront of such innovation and continues to lead in delivering this essential cloud infrastructure—compute, storage, and networking defined in software, with integrated management—for organizations continuing to modernize the data center and establish a hybrid cloud computing model.

VMWARE @ WORK

"[We can] extend out to the public cloud in a very fast and efficient way. No resources were required to retrain our personnel;... few other investments... were needed."

MANISH PATEL,
TREND MICRO

Read the Trend Micro Case Study.

VMware HCI Solutions at a Glance

VMware vSAN is the leading software for HCI

Seamlessly evolve to a modern data center with VMware, the #1 choice for hyperconverged infrastructure. *VMware vSAN* is the only vSphere-native storage software for private and public cloud deployments. Ensure a consistent operating experience, deliver all-flash performance and unlock a key building block of a complete digital foundation.

LEARN MORE ABOUT vSAN

VMware Cloud Foundation: A simple, agile, and secure hybrid cloud platform

VMware Cloud Foundation™ is the industry-leading infrastructure platform for modernizing data centers and building hybrid clouds. VMware Cloud Foundation provides the simplest, most cost- and labor-efficient way to purchase, implement, operate, support, and maintain a robust software-defined hybrid-cloud infrastructure.

LEARN MORE ABOUT CLOUD FOUNDATION

Start your hybrid cloud journey with Core HCI, powered by VMware vSAN. Only VMware delivers compute, storage, and networking, defined in software with integrated management, forming a universal infrastructure platform that delivers consistent infrastructure and operations anywhere.

VMware and Intel deliver solutions that enable IT organizations to confidently integrate public clouds to scale and extend their businesses, with increased agility, capacity, transparency, visibility and resilience.

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