THE TOP 5 REASONS WHY HYPERCONVERGED INFRASTRUCTURE IS THE RIGHT WAY FORWARD

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IT organizations have moved to the forefront of the enterprise charge toward digital transformation. IT's role is quickly moving from merely managing infrastructure to delivering the agile, flexible and responsive systems that enable success. To make this change, IT organizations must leverage new infrastructure that is more efficient and agile. During a server refresh, the underlying architecture can be upgraded to hyperconverged infrastructure (HCI) to meet a digital business's changing demands for new products and services.

Put simply, the world is changing. At the same time, it is impossible to completely leave the past behind. There is still a need to unify new investments in infrastructure with those that already exist to optimize organizational efficiency. The best strategic option for meeting an organization's demands for increased efficiency and agility while leveraging existing apps and data is HCI, a scale-out software-defined infrastructure that converges core data services on flash-accelerated, industry-standard servers, delivering flexible and powerful building blocks under unified management. VMware hyperconverged infrastructure consists of vSphere, the industry-leading virtualization platform; vSAN, the only vSphere-embedded storage for virtual machines and containers; and vCenter Server, a unified and extensible management solution. Best-in-class platforms such as VMware's HCI solution align with the key requirements of digital transformation, including streamlined IT infrastructure and the security, agility and efficiency necessary to succeed as a digital business. In addition, HCI delivers a path into the future. For example, this solution has Day Zero support for the latest storage technologies. With VMware as a partner, it is simple and straightforward to move to a completely software-defined data center (SDDC) by adding NSX network virtualization and vRealize for advanced management.

Five Compelling Reasons Why VMware Hyperconverged Infrastructure, powered by vSAN, Should Be Your Primary Data Center Architecture

1. **Increased responsiveness to business demands.** Digital businesses are fast moving and dynamic, and require IT infrastructure that can deliver at the speed of business. The "time lag" necessary to set up and deploy legacy infrastructure is no longer tolerable. Being responsive includes speed to deploy, application performance and resiliency. The business also wants to leverage the cloud in the broadest possible sense, and this means supporting a multicloud environment. IT

**VMWARE HCI HELPS BAYSTATE HEALTH
IMPROVE IT WHILE CUTTING EXPENSES**

Baystate Health, one of the leading healthcare providers in the nation, must evolve continuously to offer the highest quality care. To support this mission, Baystate embarked on an update of its entire IT infrastructure in 2014. Employing 12,000 people and serving more than 1 million patients a year, Baystate Health is among the largest healthcare systems in New England.

"We needed to change our approach to IT because our business is changing so rapidly," says Joel Vengco, CIO of Baystate Health. *"We have more demands by users, and we have operating and capital expenses that are skyrocketing. So we asked, 'What has to change in IT? How do we become the lean, mean IT shop we need to be?'"*

To meet this challenge, Baystate chose VMware vSphere and vSAN as the platform for its HCI, utilizing over 2 petabytes of data, while choosing VMware Horizon to deploy more than 10,000 virtual desktops across the system.

The business benefits were striking. Baystate saved $3.5 million in construction costs for its new data center, while eliminating the cost of supporting 12,000 computers in the field. Capital requirements were reduced by avoiding large, one-time purchases and growing the data center by simply adding nodes to its HCI environment. Resiliency and availability were greatly improved with an "always on," highly available multi-data center. For IT, the difference was like night and day. *"We've got a lot of smart folks here, and now, with the automation and orchestration in our new hyperconverged environment, we can free them up to do what smart people like to do rather than reset user IDs every day,"* Vengco says.

teams need an infrastructure option to support new or changed workloads and that allows them to focus on the delivery of the new digital system, not how it will be hosted.

VMware's HCI solution enables IT to respond more quickly by dramatically simplifying IT infrastructure to enable rapid changes to existing applications or quick deployment of new ones. The VMware solution allows IT to virtualize all compute and storage resources and thus deploy them at the click of a mouse. vSAN now includes Cluster Quick Start to speed up cluster configuration and deployment. The platform also improves application performance for employees and users. HCI powered by VMware vSAN and the new Intel® Optane™ SSDs delivers huge performance gains that ensure excellent application performance for even the most demanding workloads, ensuring application performance meets business demands for timely information. Further, as organizations become dependent on their "digital nervous system," downtime is not acceptable. A recent IDC study found that an HCI solution can reduce unplanned downtime by 98%.[1] Planned downtime is also cut significantly, since the platform minimizes the impact of maintenance, updates and patching activities.

2. **Enhanced security.** Cybersecurity and protection of data together are the No. 1 IT issue. With the implementation of the European Union's General Data Protection Regulation (GDPR) and arrival of other new compliance requirements, any security breach is now a huge and potentially costly problem—so much so that top executives and even the board want to know how good your cybersecurity protections are. In addition, most organizations have a patchwork of infrastructure from multiple vendors, adding significant maintenance complexity. Vulnerabilities are difficult to mitigate when it's cumbersome to consistently deploy security across siloed and very different infrastructure. VMware HCI makes it possible to step up your level of protection, starting with simplifying lifecycle management, which ensures your infrastructure is up to date. Users can automate lifecycle management for both compute and storage resources with vSphere Update Manager, or VUM, a tool most admins already use. In addition, health alerts now notify users when patches and updates are available, simplifying lifecycle management even further. For IT, it is possible to automate patching and updating, ensuring defenses are in place for known threats.

    Using VMware HCI, deployment of multilayer defenses for effective

1   "The Business Value of Modernizing Infrastructure with Hyperconverged Systems," IDC, October 2017

security across all IT infrastructure is simplified. Now a single management solution deploys consistent security across the infrastructure. vSphere Platinum provides AppDefense, a next-generation endpoint security tool designed to understand an application's intended state and monitor it. Any change is quickly identified, and AppDefense responds automatically. vSphere also provides strong encryption technology and role-based access security. Further, the ability to comprehensively patch or update systems as new vulnerabilities are discovered is simplified and can be done in hours instead of days or weeks. VMware HCI also meets the needs of compliance regimes by providing a documented security platform.

3. **Simplifying migration to SDDC.** As demands on IT increase, the pressure is on to run at peak operational efficiency, including optimizing storage. vSAN provides a bridge from legacy infrastructure to the future, including deployment of a Software-Defined Data Center (SDDC). All resources, from compute to networking to storage, can be controlled at the VM level with a similar tool set. For instance, vSAN virtualized storage is vSphere-native. More than half of new vSAN users, even those new to storage, report they are vSAN experts within 30 days of adoption. VMware's strategic approach to SDDC provides a much simpler road to a full SDDC environment.

   With the VMware solution, software-driven policy-based management can be extended to traditional storage, eliminating silos and bringing all storage under a single management plane. IT can now use existing tools and skill sets to manage both storage and compute. Virtualizing these resources with VMware HCI enhances IT's ability to start the SDDC migration. With the ability to support any workload on VMware HCI, IT can deploy a single, centrally managed environment, which is a critical first step toward an SDDC. VMware delivers a simplified path to a fully software-defined environment by allowing IT to seamlessly add network virtualization to VMware HCI with NSX. The comprehensive VMware solution also allows IT to continue to leverage the staff's existing skills and capabilities in a full SDDC environment, making the migration much simpler.

4. **Enhanced hybrid cloud.** The use of hybrid cloud is now a fundamental strategy that many IT organizations will employ. A recent IDG survey shows that 43% of organizations are already using hybrid cloud, with more following every day.[2] However, IT faces many issues with current cloud deployments that must be resolved. For many organizations, the use of cloud services has grown without a coherent strategy, resulting in inconsistent processes and tools that require specialized teams and skill sets. In essence, unmanaged cloud services create numerous new silos. To deploy a true hybrid cloud, IT needs a platform that has consistent infrastructure and processes, bringing order to the cloud.

2   "2018 Cloud Computing Survey," IDG, Aug. 14, 2018

VMware currently powers the largest HCI hybrid cloud ecosystem. This offering delivers two critical requirements: a strong private cloud (on-premises) ecosystem and a wide-scale public cloud ecosystem offering HCI as a service. There is a wide range of infrastructure support with a consistent management platform to eliminate cloud silos. VMware's leadership is recognized by Gartner, which identifies VMware HCI as the only solution that addresses all hybrid cloud use cases. In addition, VMware provides native integration with Amazon Web Services and IBM Cloud. Gartner has positioned VMware as a leader in its inaugural HCI Magic Quadrant report.[3] Its leadership is being enhanced by a constantly growing ecosystem of third-party complementary products and solutions that are integrated with VMware HCI.

5. **Lower TCO.** Nearly every organization is focused on reducing the operational and capital costs of IT. Lowering costs frees up resources for innovative projects that support digital transformation. VMware HCI delivers substantially improved TCO. IDC recently reported that VMware HCI has several substantial TCO benefits.[4] The study surveyed organizations currently using the platform and found that VMware HCI delivered a 59% reduction in cost of operations, and five-year ROI was an amazing 619%. Further, IT can gain same-year financial benefits, since the payback period was only six months in the IDC analysis.

    Looking specifically at vSAN, the platform reduces the time for storage-related tasks by 59%, and with HCI, there is no need for separate storage and server admins. Now, one person can manage both. Additional savings come from the ability to use a single set of policies across the SAN and NAS. A financial analysis prepared by the Evaluator Group shows how cost effective vSAN with solid-state drives in a Xeon Scalable processor deployment can be.[5] Compared with Xeon with an all-flash array, a configuration with Xeon, vSAN and SSD has a 63% lower three-year total cost in a configuration to support 800 VMs. And when the VMware solution is coupled with Intel® Optane™ technology, the cost benefits increase.

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3 "VMware Debuts as a Leader in Gartner Magic Quadrant for Hyperconverged Infrastructure (HCI)," VMware blog, Feb. 7, 2018

4 Ibid. footnote 1

5 See "Lab Insight: Latest Intel Technologies Power New Performance Levels on VMware vSAN – 2018 Update," Evaluator Group, Oct. 29, 2018. Tested using IOmark-VM. Performance results are based on testing as of Aug. 20, 2018, and may not reflect all publicly available security updates. See product configuration disclosure details. No product can be absolutely secure. Software and workloads used in performance tests may have been optimized for performance only on Intel microprocessors. Performance tests, such as SYSmark and MobileMark, are measured using specific computer systems, components, software, operations and functions. Other names and brands may be claimed as the property of others.

Moving Forward: Using Your Server Refresh to Move to Hyperconverged Infrastructure

Many IT organizations are refreshing their servers and updating their entire data center to meet the new demands for modern digital infrastructure. This presents an excellent opportunity to deploy HCI in conjunction with the upgrade. HCI delivers a platform that meets business needs while delivering a seamless upgrade path to SDDC. Making HCI your mainstream IT architecture is an optimal approach for moving from the past into the future.

VMware's HCI solution is currently the most popular option for IT organizations looking to modernize their data center with an HCI deployment. The platform makes it simple to seamlessly move legacy systems forward, into the future. And you won't be alone: There are already more than 17,000 running deployments of VMware HCI powered by vSAN and vSphere. If you are considering or already working on a server refresh and would like to learn more about VMware's industry-leading HCI solution, please go to: vmware.com/go/hitrefresh.