AGILE INFRASTRUCTURE FOR AN APP-DRIVEN WORLD

Creating a software-defined IT foundation for the development and delivery of applications and services
# Table of Contents

The Rise of the App Economy .................................................. 3
IT Modernization: The Path to Business Agility and Innovation .... 3
Evolving to a Software-Defined Infrastructure .......................... 4
  Two Paths to the Future .................................................... 4
  The Power of Native Integrations ....................................... 5
Key Takeaways ........................................................................ 6
Let’s Get Started ................................................................... 7
The Rise of the App Economy

Business drivers are rapidly changing in the digital economy, putting new requirements on IT. Our economy increasingly revolves around apps, which now represent a company's innovation and competitive advantage. This new ground rule for the digital business requires a radical shift in software development and deployment strategies, as well as radically different underlying infrastructure to support the rapid development of high-quality software.

Many IT teams still rely on hardware-centric approaches to IT infrastructure. These legacy approaches are not only expensive to operate and time-consuming to manage and maintain, but they don’t provide the flexibility and agility that today’s users demand. The provisioning of storage, networking, and security services, for example, is often too slow and too dependent on manual processes to meet the needs of users. And across the data center, rigid IT architectures impede developers and DevOps processes, and ultimately prevent the speedy delivery of modern apps.

In this white paper, we discuss a strategy for overcoming these challenges and putting your organization on a path to success in an app-driven world. This path to the future is paved with tightly integrated technologies and products that come together to form an agile infrastructure foundation for the development and delivery of applications and services.

IT Modernization: The Path to Business Agility and Innovation

In today’s app economy, business agility and innovation are keys to competitive advantage. This agility and innovation begin with a modern IT infrastructure that leverages the power and efficiency of virtualization across the data center. In a modern data center, compute, storage, and networking resources are fully virtualized and tied together with unified management and a consistent operational model.

A modern IT infrastructure breaks down the technology silos that are pervasive in traditional data centers. A software-defined approach to the data center supports faster innovation and rapidly changing systems at scale by supporting cloud-native apps, containers, and micro-services based architectures. A software-defined data center (SDDC) makes it easy to move apps from on-premises systems into the cloud and vice-versa, while maintaining security, management policies, and compliance.

Ultimately, a modern IT infrastructure provides an agile foundation for a modern data center that supports the rapid deployment of IT services.
simplified management of resources, and on-demand scalability. These capabilities help you to speed the development and delivery of the applications and services that keep your business competitive.

Evolving to a Software-Defined Infrastructure
VMware’s approach to modern infrastructure is based on an architecture powered by software-defined compute, storage, and networking. These virtualized components come together with powerful, industry-standard servers to deliver an enterprise-ready, high-performance infrastructure that is flexible, agile, and cost-effective.

Two Paths to the Future
VMware provides two paths to a modernized infrastructure: an integrated cloud infrastructure platform and a build-your-own solution. Both of these approaches leverage the native integrations and complementary features in the VMware portfolio of products and technologies for a modern IT infrastructure.

Integrated Cloud Infrastructure Platform
With this path to a modern infrastructure, VMware Cloud Foundation™ delivers a united software-defined infrastructure platform for the hybrid cloud. VMware Cloud Foundation provides a natively integrated stack of compute, storage, and networking that consists of VMware vSphere® for compute virtualization, VMware vSAN™ for storage virtualization, and VMware NSX® for network virtualization.

This integrated cloud infrastructure platform offers built-in lifecycle management capabilities that simplify Day 0 to Day 2 operations of the infrastructure stack—from installation and configuration to provisioning and patching—while helping you ensure the highest levels of consistency, agility, and security across your hybrid cloud data center.

Use Your Own Building-Block Solution
The build-your-own path to a modernized infrastructure gives you the flexibility to deploy individual components and move to a software-defined data center at your own pace. This approach builds on your foundation of server virtualization through vSphere to virtualize additional layers of your infrastructure stack while also gaining the benefits of the latest innovations that vSphere offers today. With VMware vSphere’s native storage solution, VMware vSAN, you can seamlessly extend virtualization to storage and enjoy the benefits of software-defined, shared storage. You can then extend virtualization to your network environment with VMware NSX to achieve network agility and enhanced security through micro-segmentation.

Better still, in conjunction with a tightly integrated software stack from compute to networking, VMware delivers a proven ecosystem of software solutions, and supports all leading server vendors, eliminating the risk of hardware lock-in. This means you can take advantage of your preferred server platforms without the risk and challenges of implementing a new hardware solution.
“Based on the requirements of up-time, integration of all the different siloes, and essentially the seamlessness of the architecture, VMware is, as far as we’re concerned, the proper choice—pretty much the most solid approach to hyperconvergence.”

MIKE FELD
FORMER INTERIM CTO
BAYSTATE HEALTH

“A CASE STUDY: BAYSTATE HEALTH
To support its mission to provide the highest-quality care, Baystate Health embarked on an update of its entire IT infrastructure, using VMware technology to design and build a new virtualized data center. With VMware hyper-converged infrastructure, based on VMware vSphere and VMware vSAN, Baystate plans to consolidate 2PB of data across three data centers into around 40 storage blades, which will reduce data center real estate by a factor of 10 to 1. Among other benefits, the virtualized, hyper-converged infrastructure is helping Baystate reduce the time needed for service provisioning from days and weeks to a matter of hours while improving resiliency with an always-on, highly available multi-data center.

Read the case study.

The Power of Native Integrations
With either path to infrastructure modernization, the true power of the VMware portfolio emerges in the combination of natively integrated products and technologies. Here are some examples of how these products and technologies work together to help you create a robust modern IT infrastructure.

Compute Virtualization
VMware vSphere 6.5 is the next-gen infrastructure for next-gen apps. It provides a powerful, flexible, and secure foundation for business agility that accelerates the digital transformation to cloud computing and success in the digital economy. vSphere 6.5 supports both existing and next-gen apps through its simplified customer experience for automation and management at scale; comprehensive built-in security for protecting data, infrastructure, and access; universal app platform for running any app, anywhere; and proactive data center management to ensure application performance and availability. With vSphere 6.5, customers can now run, manage, connect, and secure their applications in a common operating environment, across clouds and devices.

“A CASE STUDY: ACI SPECIALTY BENEFITS
To sustain its global growth strategy, ACI Specialty Benefits worked with VMware to build a private cloud in a software-defined data center environment. With a software-defined approach, ACI Specialty Benefits can quickly onboard acquired companies’ systems and data, provide end users with superior services and uptime, and easily meet compliance requirements in diverse geographies. It can also more securely manage a deluge of data from wearable medical devices. Altogether, the VMware solutions have reduced ACI Specialty Benefits’ data center total cost of ownership by 60 percent, reducing capital expenditures for servers, storage, and the physical networking equipment that was previously required to provide 99.999 percent availability. As a result, the company was able to avoid raising prices for its customers, even as more data pours in from wearable medical devices.

Read the case study.

“With vSphere 6.5, we no longer have to monitor whether encryption is running in a VM or worry about whether the guest operating system is Linux or Windows. More important, we have peace of mind that data managed in our environment is compliant—even when it’s being moved between data centers.”

RYAN FAY
GLOBAL CHIEF INFORMATION OFFICER
ACI SPECIALTY BENEFITS
**KEY COMPONENTS OF A MODERN INFRASTRUCTURE**

**VMware vSphere** allows you to run, manage, connect, and secure applications in a common operating environment, across clouds and devices.

**VMware vSAN** pools together server-attached storage to provide a highly resilient, shared datastore suitable for any virtualized workload.

**VMware NSX** enables the entire set of networking and security functions to be deployed in software directly in the hypervisor.

**VMware vRealize Suite** provides an enterprise-ready platform for managing a heterogeneous, hybrid cloud environment, including capabilities for intelligent operations management.

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**Storage Virtualization**

VMware vSAN enables storage virtualization with the only vSphere-native software-defined storage platform. Because vSAN is embedded inside the vSphere kernel, vSAN can deliver the highest levels of performance without taxing the CPU with additional overhead. In addition, the native architecture simplifies management and eliminates the risks associated with extra components and points of integration. There’s no need for dedicated storage hardware, such as a storage array, or for complex storage networking, such as a Fiber Channel switch.

**Storage Management**

The integration of vSAN and VMware vRealize® Suite gives you unmatched visibility into the capacity and performance of your vSAN clusters. This integration enables you to monitor, manage, and optimize the health of your vSAN clusters. Among other capabilities, vRealize Suite gives you the insights you need to validate and optimize the performance of your clusters, find and remediate issues, and perform advanced capacity planning.

**Network Virtualization**

The integration of vSphere with VMware NSX allows you to create entire networks in software and embed them in the hypervisor layer, abstracted from the underlying physical hardware. Because NSX builds networks in software, you can achieve levels of agility, security, and economics that were previously unreachable with physical networks. This allows networking and security to benefit from the same agile, on-demand model of virtual machines.

**Network and Security Services**

The native integration of vRealize Automation (a component of vRealize Suite) and NSX allows you to provision, update, and decommission network and security services in lockstep with your virtualized applications. Network and security services are deployed as part of the automated delivery of the application, consistent with its connectivity, security, availability, and performance requirements.

**Cloud Management**

No matter which path you take to infrastructure modernization, you can maximize your return on investment with a cloud management solution like vRealize Suite. Native integrations with vSphere, vSAN, and NSX, as well as its extensibility to a wide range of third-party solutions, make vRealize Suite the best platform for managing modern infrastructure.

vRealize Suite automates infrastructure and application delivery, and provides intelligent operations management capabilities. It delivers proactive performance monitoring and troubleshooting, insight into costs, and workload placement, capacity management, and planning across infrastructure and applications for private and public cloud environments.
Key Takeaways

When you’re on the path to infrastructure modernization, it helps to have a technology partner with a portfolio of tightly integrated products and technologies and a track record for success in building software-defined data centers. That’s VMware.

With VMware, you have access to a single software stack with compute, storage, network, and unified management. Better still, VMware gives you choices about how to move forward. You can modernize your infrastructure rapidly with a complete, unified SDDC platform through VMware Cloud Foundation or control the pace of modernization with an evolutionary approach that leverages solutions powered by vSphere 6.5, vSAN, and by NSX network virtualization.

With support for multicloud capabilities, VMware can help you future-proof your infrastructure. VMware is the only vendor that delivers a common compute, storage, and networking architecture across public and private clouds, enabling application mobility and a consistent management experience. You can also look to VMware for a modern application development platform that supports DevOps processes and allows you to build, run, and manage cloud-native apps that leverage container technologies and micro-services-based architectures.

A CASE STUDY: CALIFORNIA NATURAL RESOURCES

The California Natural Resources Agency followed a software-defined path to become a service provider to its 33 agencies. With the goal of becoming a business enabler, it put a private cloud infrastructure to work to quickly, efficiently, and securely increase technology capabilities by more than 300 percent, reduce CapEx and OpEx by 30 percent, and deliver technology capacity and capabilities to its customers that enabled faster time to market. VMware was on this journey from day one.

Watch the video.

Let’s Get Started

To compete successfully in the new app economy, your business needs a modern, software-defined infrastructure that provides a foundation for agile development and delivery of apps and services. With a natively integrated stack for software-defined compute, storage, and networking, tied together with unified management, VMware has what it takes to get you there on your terms.

“If you ask our business people what the biggest benefit is to them, it would be time to market.”

TIM GARZA
IT DIRECTOR
CALIFORNIA NATURAL RESOURCES AGENCY

PREPARE FOR THE FUTURE WITH VMWARE

Learn more about modernizing your infrastructure >
Take a test drive in a Hands-on Lab today >

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WHITE PAPER | 7