

## MODERNIZE DATA CENTERS

Build a Flexible, Scalable Foundation  
to Drive Growth and Innovation

### Serve Today's Digitally Empowered Customers

It's clear that digital transformation is disrupting the fundamentals of doing business. Companies in every industry are under more pressure than ever to actively engage their customers and delight them with more personalized experiences. At the same time, the pace of business is accelerating, and IT organizations are exploring better ways to bring new products and services to market quickly. They need a modern data center that can provide the agility, security, and scalability required to power growth and innovation.

### Business Agility and Flexibility Require an Integrated Approach

As IT organizations consider their existing data center environments, they're facing challenges on multiple fronts. Many are grappling with infrastructures built on complex architectures and processes. These legacy systems can't deliver the agility and flexibility businesses require to thrive. To simplify complexity and boost agility, IT teams need an integrated approach that enables them to quickly deploy, manage, and scale infrastructure and applications.

IT departments also face shrinking or static budgets that make it impossible to reliably meet business demands with traditional infrastructure models. Traditional infrastructure environments are expensive and difficult to scale, and require specialized skillsets that are hard to find and harder to replace.

In some cases, line-of-business organizations are deploying public and hybrid cloud services that can deliver agility and flexibility to solve issues that internal IT organizations cannot yet address. However, public cloud adoption can create operational cloud silos and compliance risks. IT needs to find ways to offer services seamlessly and securely across private and public clouds.

To keep pace with escalating business demands, organizations need an agile, service-oriented IT model for data centers that leverages both private and public clouds. Not long ago, highly dynamic, available, and programmatic compute, storage, network, and security services could give businesses an edge over competitors. Today, these capabilities are simply table stakes in a challenging landscape. Organizations understand that they need to move forward rapidly on their journey toward a software-defined environment—or risk being left behind.

### Challenges Slowing Data Center Evolution

To drive business innovation and growth, IT teams need to connect applications across clouds and devices with security, compliance, and availability and a consistent architecture—all under a constrained budget. That means building a data center that is virtualized, software defined, and automated, with a consistent operational model for infrastructure and application delivery.

### AN AGILE, SERVICE-ORIENTED DATA CENTER

65 percent of enterprises cited improved agility and flexibility as the top benefit of software-defined infrastructure.<sup>1</sup>

<sup>1</sup> 451 Research, Voice of Enterprise, Q4 2015 ([https://451research.com/images/Marketing/press\\_releases/03.10.15\\_Q4\\_VOTE\\_SDI\\_PR\\_FINAL.pdf](https://451research.com/images/Marketing/press_releases/03.10.15_Q4_VOTE_SDI_PR_FINAL.pdf))

The advantages of a modern data center are compelling. So what's stopping organizations from moving forward? Many are saddled with complex, heterogeneous infrastructures that are difficult to manage—especially when IT resources are limited. Legacy environments are often inefficient and lack automation, employing siloed IT groups that rely on manual processes for configuring and provisioning policies and infrastructure resources.

Modern application support is an issue as well, as most infrastructure platforms are not designed for both traditional and modern applications while working with existing hardware and software investments.

VMware helps organizations modernize their data centers for the digital era by focusing on three imperatives:

- **Modernize Infrastructure** – Employ a software-defined infrastructure built on hyper-converged architecture that extends across private and public clouds, minimizing IT risks and lowering costs.
- **Automate IT** – Virtualize and automate the delivery of IT services to boost business agility.
- **Run Modern Apps** – Enable businesses to deploy apps more frequently and quickly with security and control.

“We’ve got a lot of smart folks here and now, with the automation and orchestration in our new hyper-converged environment, we can free them up to do what smart people like to do, rather than reset user IDs every day.”

JOEL VENGCO  
CIO  
BAYSTATE HEALTH

### The Foundation for a Flexible, Scalable Data Center

VMware enables organizations to seize the momentum and modernize their data centers to meet escalating business demands. Acting as a partner, advisor, and guide, VMware helps IT steadily evolve toward a modernized Software-Defined Data Center (SDDC) to provide infrastructure, applications, data, and IT services rapidly and on demand.

VMware offers a rich set of offerings to modernize the data center, including solutions to modernize the infrastructure through best-in-class compute, storage, and network virtualization technologies; and automate IT operations with industry-leading cloud management. Organizations can choose from a variety of infrastructure options, from open APIs to native container apps—all on the infrastructure they trust. This innovative, open, software-defined approach enables IT to confidently and efficiently deliver and manage both new and legacy applications across physical, virtual, and cloud environments.

These proven, industry-leading solutions enable IT to employ an easy, cost-effective, evolutionary approach to modernizing the data center, utilizing their existing investments in tools, skills, software, and hardware. VMware solutions provide a consistent architecture across private and public clouds that is secure and scalable, and enable IT to meet the speed and agility needs of the business through faster, on-demand delivery of infrastructure and applications.

### Modernize Infrastructure

A modern data center starts with a modern infrastructure. However, traditional data centers have been constructed with siloed infrastructure layers, purpose-built hardware, and fragmented management, resulting in complex deployment and operations, and slower delivery of IT services and applications. Enterprises need a modern infrastructure that abstracts the traditional infrastructure silos into a cohesive platform that can respond to the dynamic needs of the business, support both legacy and new applications, and extend to the cloud.

VMware’s approach to a modern infrastructure is based on a software-defined hyper-converged architecture across compute, storage, network, and security, with common management across all. This architecture enables an enterprise-ready, high-performance infrastructure. It’s more flexible, because it’s hardware-independent; more agile because it’s highly programmable; and more cost effective because it’s scalable and based on commodity hardware.

VMware provides two paths for organizations to modernize their data center infrastructure. They can deploy VMware Cloud Foundation™, an integrated cloud infrastructure platform that combines compute, storage, and network virtualization. This option includes built-in lifecycle automation that automates

critical day 0 to day 2 operations including installation, configuration, and patching for the cloud infrastructure stack, leading to faster time to market, increased productivity, and reduced risk. This software-defined infrastructure platform resides below the most common application platforms, such as Platform-as-a-Service (PaaS) and container solutions, to enable operational consistency no matter where an application runs. It can be coupled with a cloud management platform for private cloud deployment, or run as a service from the public cloud, for operational simplicity and workload flexibility.

For organizations that prefer a do-it-yourself approach, VMware offers a flexible, self-paced path to modern infrastructure that can start with a shift to hyper-converged infrastructure (HCI). As organizations adopt or refresh their infrastructure, they can naturally move toward HCI by deploying VMware vSAN™, a natively integrated, software-defined storage solution, together with VMware vSphere®, the market-leading hypervisor. They can choose from a variety of options available through VMware's large, proven ecosystem that includes a broad variety of server vendors. This flexibility helps eliminate hardware lock-in, while enabling organizations to continue to use their existing software solutions. As their application SLA requirements become more demanding and the scale of their deployments grows, organizations can layer network virtualization with VMware NSX® to achieve network elasticity and enhanced security through micro-segmentation. With a modern infrastructure in place, they can prepare for the multi-cloud era with a consistent, common cloud architecture.

No matter which path they choose, organizations can confidently operationalize and scale this modernized infrastructure with an intelligent operations management solution from VMware, such as VMware vRealize® Suite. It accelerates decision making, improves uptime and maximizes utilization with deep operational and business insights, proactive performance monitoring and troubleshooting and capacity management and planning across infrastructure and applications for private and public cloud environments.

#### Automate IT

Deploying the infrastructure needed to support applications is often cumbersome, error-prone, and time-consuming. In the race to develop new apps, IT teams waste time with manual configuration, provisioning, and scripting. To improve productivity, they need to automate the way they roll out and manage infrastructure and applications. They need to streamline operations by eliminating manual tasks involved with security policies, networking, and infrastructure that's required for applications. And they need to do it without compromising security and compliance requirements.

VMware solutions provide sophisticated automation that lets businesses break down the bottlenecks that are stalling the delivery of IT services. VMware enables organizations to virtualize the network and support full automation.

These capabilities are delivered by VMware NSX and VMware vRealize® Suite. Together, the solutions let IT automate the delivery of networking and security to accelerate creation of complete application stacks and minimize provisioning bottlenecks. Part of the vRealize Suite, VMware vRealize Automation™ automates the delivery of personalized infrastructure, applications, and custom IT services. These solutions all work together to let IT embed automation and policies within blueprints, allowing IT to stand up production-ready infrastructure in minutes rather than weeks.

“By establishing a security policy via an automated provisioning blueprint at the front of an application's lifecycle, VMware NSX and vRealize Automation give us the ability to have that security posture follow that application throughout its entire life from cradle to grave.”

COBY HOLLOWAY  
VICE PRESIDENT AND DIRECTOR  
CLOUD COMPUTING, SAIC

Amadeus, a global IT service provider, looked to VMware to help build a next-gen shopping and reservation system. VMware delivered an OpenStack- and SDDC-based private cloud with IaaS as well as end-to-end automation for Continuous Integration and Continuous Delivery (CI/CD) to support Amadeus's need to develop cloud-native applications on their PaaS platform.

### Run Modern Apps

To speed time-to-market, businesses are seeking to roll out applications faster and more frequently, while maintaining security and control. But today's modern apps pose distinct challenges. The latest cloud-native apps often employ container technologies and micro-service based architectures. They change frequently, with release cycles measured not in days or months, but hours or even minutes. Other apps may require open APIs and run on "bare metal" platforms. And emerging IoT applications have their own unique provisioning and operational requirements.

VMware solutions enable IT to run modern apps that today's digital businesses need to power innovation and agility—backed by the security, reliability, and governance the enterprise demands. They help developers boost productivity by delivering open APIs, infrastructure, and application environments sooner, with greater agility. With VMware, organizations can take advantage of enterprise-grade networking, storage, and security across every application, whether traditional, cloud-native, or a hybrid solution. VMware vSphere provides a next-gen infrastructure for next-gen applications, while the VMware Photon™ Platform enables organizations to build and run container-based, cloud native apps without compromise.

### Advantage: VMware

Competition is fierce, and customer expectations are continuing to rise. In this dynamic environment, the organizations that thrive will be those that can accelerate innovation and agility. VMware, the industry leader in virtualization, cloud, and digital workspace technologies, is an ideal partner for businesses seeking to modernize their data centers to deliver IT infrastructure and application services rapidly, so they can support business innovation and growth.

Utilizing a software-defined HCI architecture of natively integrated compute, storage, and network virtualization technologies with automation and management, VMware solutions support any workload from traditional enterprise applications to modern cloud-native applications. This innovative, software-defined approach delivers cloud service provider agility and economics in the data center, and extends to an elastic hybrid cloud environment.

With a flexible, scalable data center environment in place, enabled by the industry's broadest ecosystem of hardware and software solutions, organizations can set the stage for continued success in the years to come.

#### LEARN MORE

Learn more about this strategic IT priority and its corresponding IT initiatives at [vmware.com/it-priorities/modernize-data-centers](http://vmware.com/it-priorities/modernize-data-centers).

