

MODERNIZE FEDERAL DATA CENTERS

Accelerate Consolidation Initiatives, Achieve Cost Savings, and Improve Security Posture of the IT Environment

Modernize the Foundation of Federal IT Operations

Federal agencies are under more pressure than ever to improve service delivery and mission outcomes at lower cost. Federal IT is critical to operations, yet the technologies underpinning federal workflows monopolize the budget, threaten data security, and challenge innovation. In today's reality of doing more with less, federal agencies must strategically update technology to meet mission and program goals, or risk compounding Operations and Maintenance (O&M) costs, threats to data security, and stagnated service delivery models.

From Data Center Consolidation to Data Center Modernization

Over the past decade, the Federal Government has taken a keen interest in modernizing data centers for the explicit purpose of saving money, reducing wasteful spending, and streamlining operations. The Federal Data Center Consolidation Initiative (FDCCI) introduced in 2010 required agencies to consolidate and decommission inefficient and duplicative hardware to reduce the Federal Government's physical footprint and save on energy costs and capital expenses. From fiscal years 2011 to 2015, agencies reported more than \$2.8 Billion in cost savings and avoidances due to this effort. The Data Center Optimization Initiative (DCOI) superseded the FDCCI in 2016, recommending the use of cloud services and automation tools to advance consolidation efforts and meet targets.

VMware Solutions for Federal Data Center Modernization

Although server virtualization has been the cornerstone of federal data center modernization efforts, agencies are still battling the effects of decades of chronic underinvestment in IT infrastructure—continuing to rely on traditional storage and networking constructs, purpose-built legacy systems, and perimeter-centric security protocols. In an effort to modernize federal data center infrastructure, operations, and management, agencies can apply the same software-defined approach to storage and networking as they did to compute. Abstracting compute, storage, and networking from the hardware enables agencies to manage all three through software—effectively building a Software-Defined Data Center (SDDC) while reducing IT complexity, improving performance, and strengthening cybersecurity. Acting as a partner, advisor, and guide, VMware helps federal IT securely evolve toward the SDDC to accelerate digital transformation and achieve mission success while reducing capital and operating costs.

Modernize IT 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. Government organizations need a modern infrastructure that merges traditional infrastructure silos into a cohesive platform that responds to the dynamic needs of the mission, supports both legacy and new applications, and seamlessly extends to the cloud.

AT A GLANCE

Digital advances in IT infrastructure transform mission and program outcomes. At the core of digital transformation is the rebuilding of the foundation of federal IT operations—the data center. VMware's software-defined infrastructure solutions enable federal agencies to extend server virtualization to storage and networking to build fully software-defined data centers with a common operational model across clouds. As a result, federal agencies improve IT performance, availability, and scalability while protecting against threats, supporting modern workflows, and reducing capital and operating costs.

“We needed to change from a physical, client-server, manual-touch business model to a totally virtualized, cloud-delivered infrastructure-as-a-service model. That would give us a platform on which we could efficiently automate development operations. It’s much easier to manage than separate compute and storage platforms, with all the connection issues that can entail. Having everything visible on one pane of glass is a huge improvement.”

IT DIRECTOR
U.S. FEDERAL AGENCY

KEY HIGHLIGHTS

- Meet the speed and agility needs of the mission with faster, on-demand delivery of IT resources
- Automate IT service delivery in hours or minutes, not days or weeks
- Reduce data center footprint with virtualization across compute, storage, and networking
- Reduce CapEx and OpEx with less hardware, maintenance, and manual configurations
- Support DevOps initiatives and application modernization projects
- Reduce IT complexity while strengthening cybersecurity
- Ensure Continuity of Operations (COOP) with highly available, high performing compute resources
- Enable system interoperability and shared services across departments and organizations

VMware can help federal agencies achieve this vision by extending virtualization across compute, storage, and network layers, independently or through a hyper-converged infrastructure. Foundational components of the modern federal data center include VMware vSphere®, leading virtual storage solution, VMware vSAN™, and groundbreaking virtual network solution, VMware NSX®—all of which can be run on premises or as a service from an extensive ecosystem of vSphere-based government cloud service providers, such as IBM Cloud or AWS GovCloud. Meanwhile, VMware’s cross-cloud architecture enables agencies to manage apps and workloads anywhere using a common operating model and the same set of tools—reducing management silos and optimizing administrative resources across clouds.

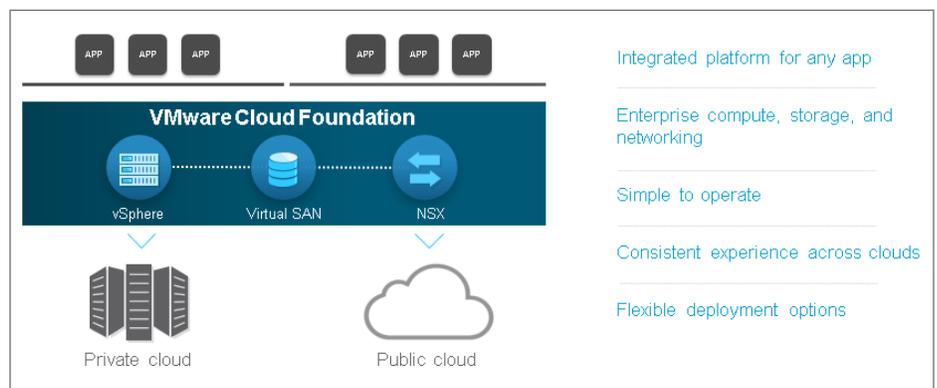


Figure 1. Overview of VMware Cloud Foundation™

Automate IT

The DCOI calls for agencies to automate data center monitoring to improve performance and efficiency. With VMware, federal agencies can transform the IT services lifecycle with a suite of IT automation solutions that improve performance, eliminate time-consuming manual processes, and strengthen cybersecurity. The VMware vRealize® Suite of cross-cloud automation solutions enable agencies to embed policies into the infrastructure and application components to rapidly configure, provision, deploy, test, update, and decommission infrastructure and applications for more consistent delivery and management of IT resources. Agencies can also leverage vRealize solutions to automate infrastructure monitoring and optimize performance, improve workload placement decisions, and intelligently manage the health, usage metering, capacity, and cost of virtualized infrastructure.

As application requirements become more demanding and the scale of deployments grow, agencies can reproduce the physical network into software, and attach network and security services to policy-driven workloads via VMware NSX. NSX automates networking operations—eliminating bottlenecks associated with hardware-based networks—while enabling a fundamentally more secure, compliant, and highly available infrastructure. By embedding security functions right into the hypervisor, NSX delivers the operational model of a VM for the network. Like VMs for compute, virtual networks are programmatically provisioned and managed independent of the underlying network hardware. Security policies

“iGov took a hyper-converged infrastructure approach [to its tactical network platform] using VMware Virtual SAN with server-side storage, subsequently reducing storage weight by 75 percent, improving performance by 10x, and extending battery run time by 7x. With the success of this redesigned tactical network product line, iGov is now responding to additional customer requests to replace legacy, conventional storage with hyper-converged infrastructure.”

MIKE TYRRELL
PRESIDENT AND CHIEF OPERATING OFFICER,
IGOV

SUPPORTING PRODUCTS

MODERNIZE FEDERAL DATA CENTERS

- VMware Cloud Foundation™
- VMware vSphere
- VMware vSAN
- VMware NSX

AUTOMATE IT

- VMware vRealize Suite
- VMware vRealize Automation™

DEPLOY MODERN APPS

- VMware Photon Platform
- VMware Integrated OpenStack
- VMware vSphere Integrated Containers™

travel with the workloads, enabling micro-segmentation across data centers and clouds. Once micro-segmentation is deployed, vRealize continuously monitors and audits compliance postures of the NSX distributed firewalls. Together, vRealize and NSX enable IT to gain unprecedented efficiencies in mission-critical network infrastructure through converged visibility and analytics spanning physical and virtual networks.

Run Modern Apps

To improve end-to-end digital services among citizens and employees, government organizations are interested in deploying both traditional and cloud-native apps. However, today's cloud-native apps pose distinct challenges to federal agencies, often employing container technologies and micro-service based architectures; changing frequently with release cycles in hours or even minutes; requiring open APIs; or running on “bare metal” platforms. VMware solutions for cloud-native applications enable developers to use container technologies, vendor-neutral APIs, and microservice-based architectures for faster and more frequent development—while backed by the security, reliability, and governance that federal agencies require.

With the VMware Photon™ Platform, IT can deliver on-demand tools and services developers need to build and run container-based, cloud-native applications while retaining security, control, and performance of the data center. Agencies can deploy and manage production-grade OpenStack quickly and easily on top of existing VMware infrastructure with VMware Integrated OpenStack, or run both traditional and containerized applications side-by-side on existing VMware infrastructure with VMware vSphere® Integrated Containers™. With VMware's cloud-native application solutions, agencies can innovate faster while allowing IT to retain tight control over data and security.

Learn More about VMware Solutions for Federal Government

Through a transformational approach to IT infrastructure that provides a ubiquitous software layer across compute, storage, and networking, VMware enables federal agencies to modernize data centers while meeting consolidation requirements, strengthening security, and innovating IT for greater impact. With VMware, agencies can securely deploy a digital-first vision to achieve mission success.

Realize the possibilities with VMware.

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