FEDSCOOP REPORT

Achieving a Seamless and Secure Multi-cloud Operating Environment

How a modern application platform gives federal agency IT the boost it needs to manage applications on-prem and in the cloud more efficiently.

Federal agencies are confronting a growing challenge—how to achieve a cloud-enabled environment when their IT infrastructure and applications increasingly exists in two worlds, pre- and post-cloud.

Just as virtualization made it easier to replicate and manage controlled environments on servers—initially within a data center, and then across networks—it's now feasible to lay a modern and secure application platform across agency networks to better manage digital resources no matter where they reside.

A modern application platform also helps agencies take fuller advantage of the benefits cloud environments have to offer—lower investment costs, faster deployment times and a better end-user experience. But achieving those benefits requires the ability to distribute and manage applications across different cloud-hosted and on-prem environments.

An integrated application platform that uses virtual machine workloads gives agencies greater agility to adapt legacy solutions to work within cloud environments through one operating platform, experts say. That helps alleviate concerns about getting locked into a single cloud vendor.

"We don't believe that government agencies will just use one cloud. They are going to use different SaaS services, data centers, managed services, public clouds, etc.," says Ranil Dassanayaka, Vice President, Architecture and Solution Engineering for Government, Education and Health at VMware.

One agency's success story

Recently, a large federal agency, with offices nationwide, capitalized on a modern application platform to scale-up operations in order to meet a short-term spike in network and data center demands. The fresh approach to using cloud services is enabling the agency to improve how it delivers on the mission.

The agency pushed to use virtualization architecture that captures and stores the data it collects on the back end. And the application platform supported how

the IT team rolled out and configured devices on the front end to meet a seasonal surge of new workers across the nation.

Using VMware Cloud Foundation solutions, the agency is able to manage the operation of its applications, and the flow of customer data from its data centers, into the cloud, and out to mobile devices, for instance. Federal employees can readily update that and send it back along the return route, all relatively seamlessly, according to Imran Abbas, Director, Solution Engineering, Federal Civilian and Healthcare at VMware.

"When their field workers across the nation receive their mobile devices, they are able to self-provision it in five minutes with all of the native security features pushed down from [agency headquarters]. The application platform provides a single place for the management of these devices from a central IT perspective. If there is a situation where that device gets lost, it can be remote-wiped very quickly and the threat is remediated in real-time," he explains.

Taking a step towards multi-cloud architecture

Choosing to integrate IT operations and cloud management through a modern application platform gives agencies a powerful opportunity to simplify infrastructure that has been built out over decades, while adhering to the White House Administration's Cloud Smart strategy.

IT leaders are already working to consolidate legacy, siloed technology resources together into a holistic, software-defined and integrated system as part of ongoing efforts to shrink their physical IT footprint, optimize IT resources and ensure consistent security policies are enforced across their infrastructure.

The evolution of VMware's longstanding work in virtualizing computing environments has given the technology pioneer a significant head start in developing a new generation of solutions for the cloud, Dassanayaka says. The VMware Cloud Foundation platform integrates VMware's hyperconverged infrastructure with virtualization technology to connect servers, storage and networking into a modern and secure platform to lay across an enterprise's infrastructure.

"Agencies with older or current applications may not be architected to the constructs of a modern, microservices-based architecture. But the thing is, they can be if they want to have that scalability," Dassanayaka says.

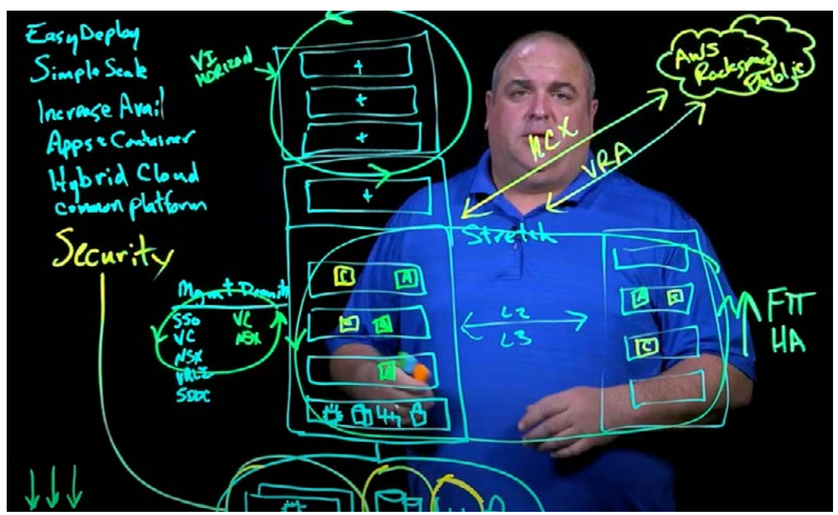
The virtualization technology behind the platform allows agencies to integrate application management across multiple cloud-service providers, like AWS GovCloud or Microsoft Azure, all while using the same familiar architecture both on-premises and in the cloud. Once agencies have that ability to transition to any cloud provider they choose, they will be able to leverage best-of-breed capabilities from any of those environments.

"Multi-cloud gives agencies the ability to build technology solutions faster. That means that agencies can accelerate government service delivery with next-generation applications," explains Dassanayaka.

Integrating security and compliance controls

Another significant advantage for moving to an enterprise application platform is the ability to reduce the workloads associated with configuring disparate systems, applications and computing environments to mitigate security risks.

"From a compliance perspective, typically on-premise scenarios require common criteria and federal compliance standards," says Rob Riegle, Senior Director, Solution Engineering, Department of Defense at VMware. "Therefore, agencies need the on-prem operating model in a private cloud, and then extend that into different cloud platforms."

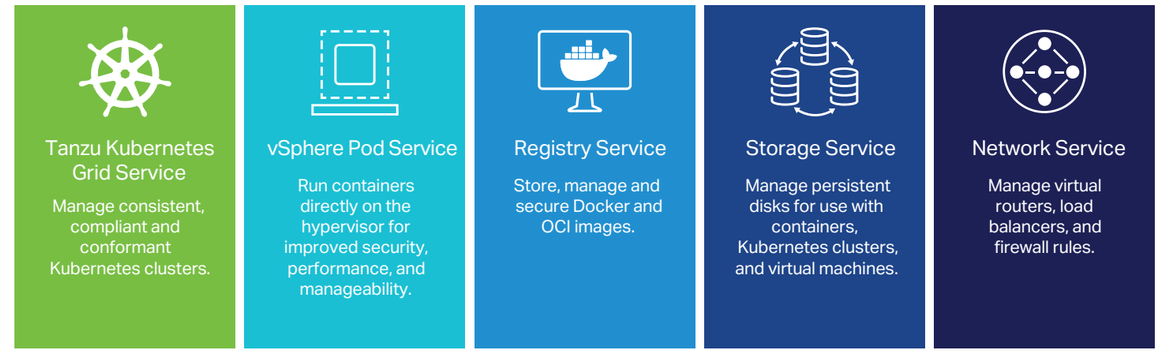


Ben Sier, Group Manager, ISBU Technical Marketing gives a Lightboard image overview of VMware Cloud Foundation | *Source: VMware Cloud Foundation*

VMware Cloud Foundation Services consists of two families of services: Tanzu Runtime Services and Hybrid Infrastructure Services.

Tanzu Runtime Services deliver core Kubernetes development services, including an up-to-date distribution of Tanzu Kubernetes Grid.

Hybrid Infrastructure Services include full Kubernetes and RESTful API access that spans creating and manipulating virtual machines, containers, storage, networking, and other core capabilities.



Source: VMware

An integrated application platform streamlines the ability for agency IT departments to move applications from one environment to another, without having to undertake a lot of added time and resources to refactor applications with every migration. That also makes it easier and faster to deploy incremental application upgrades across multiple environments.

A flexible, hybrid approach enables agencies to move applications and take advantage of cloud efficiencies as they arise, while seamlessly maintaining on-premises infrastructure where necessary.

Leveraging a single platform solution

Another advantage of using VMware Cloud Foundation as an application platform that offers consistent operating control wherever workloads are deployed is how it can help address IT manpower and skill shortages. Because it lays on top of the enterprise network, IT teams can use the same tools, skills, policies and standards they currently use in the data center.

"The work can be done in a shorter time than refactoring, but it doesn't require any new skillsets that agencies don't already have in-house today," explains Jim Hull, Director, Solutions Architecture for Government, Education and Health at VMware.

Agencies that need improved scale-on-demand capabilities for periodic spikes in access will have access to a unified pool of on-demand virtualized data center resources for intense compute requirements, such as during tax season, open enrollment or disaster recovery operations.

"In the defense-intelligence space … the deployment model has been reduced from years, to months, and now a week. You see mission tempo, mission success and the sense of urgency to modernize really pick up tremendously" as a result, says Riegle. The cloud is at its best when siloes are eliminated. Because VMware Cloud Foundation enables converged performance inside the software-defined data center—while also bringing storage, compute and network together in a building block modularity—agency services are easier to build, run, extend and secure.

Learn more about how VMware's Cloud Foundation can help your agency manage your applications more efficiently on-prem and in the cloud.

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