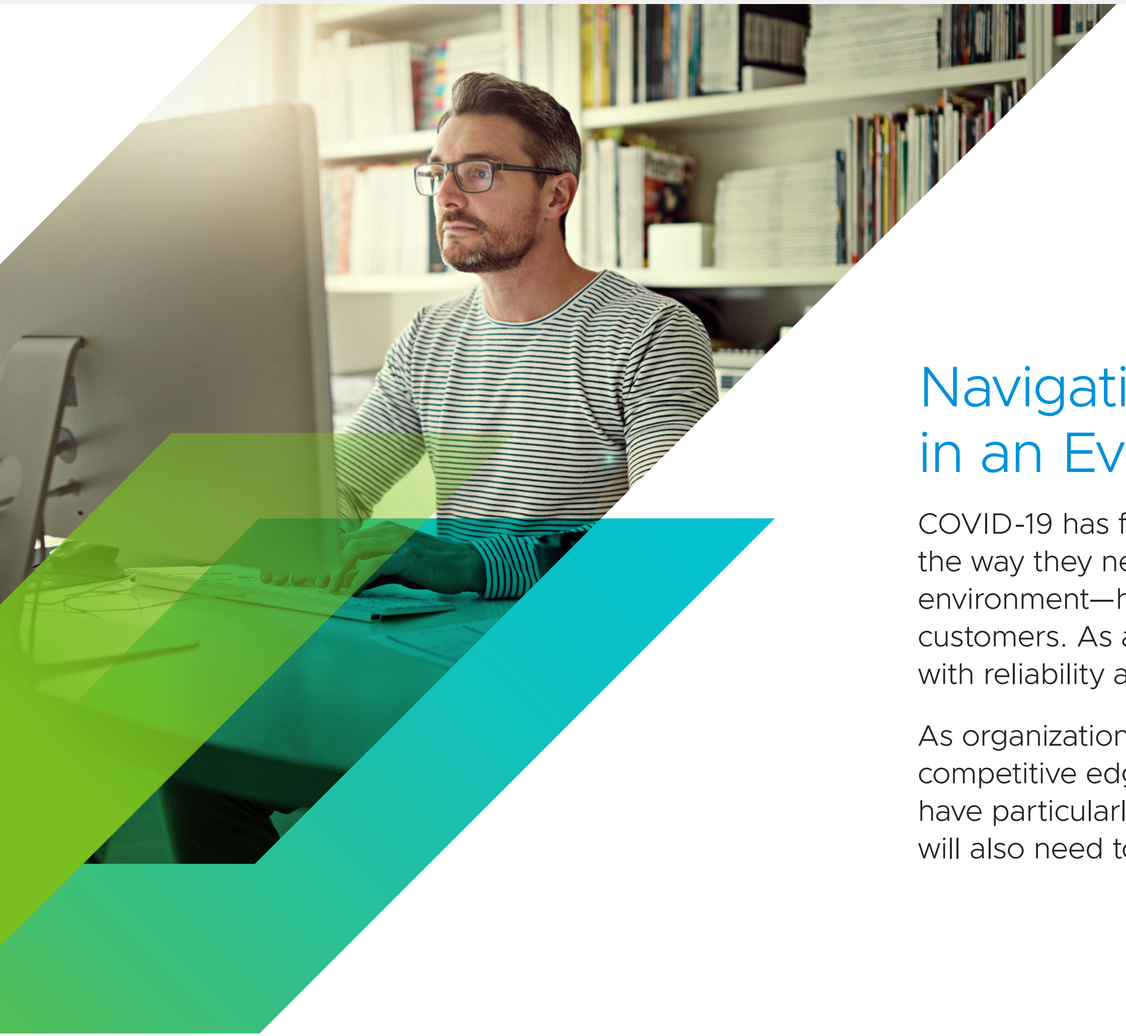
vmware®

GET STARTED

Five Strategic Automation Use Cases for Your Business

Adopting modern infrastructure automation to gain a competitive advantage



Navigating Digital Transformation in an Ever-Changing Marketplace

COVID-19 has forced organizations and individuals in both private and public sectors globally to rethink the way they need to operate. Changes in the way companies operate—such as moving to a remote work environment—have prompted organizations and individuals to use even more digital services to engage with customers. As a result, organizations will need to deliver new and compelling digital services more frequently with reliability and security.

As organizations rethink their business strategies and prioritize investments accordingly to keep their competitive edge or take advantage of new opportunities with new revenue streams, IT teams, which have particularly been hit the hardest on the back end with increased demand for digital resources, will also need to reshape their IT strategies to help support and drive innovation.

This creates an opportunity, especially for IT infrastructure and operations teams that support the demands and needs of developers, DevOps engineers, and site reliability engineers (SREs) to modernize their IT delivery process by adopting modern automation practices. Because existing internal IT infrastructure processes typically have been too rigid, too tightly coupled, and too functionally structured to support modern application development practices and frameworks, developers have adopted public clouds and open source tools without a lot of IT oversight.

Public clouds offer high degrees of infrastructure automation and lead market innovation through advanced services, such as machine learning or serverless execution services. Open source technology vendors have introduced free programmatic tools with APIs that support a declarative approach to building, modifying and versioning infrastructure that can integrate with continuous integration/continuous delivery (CI/CD) processes, enabling developers to become self-sufficient to a certain degree.

With such competition and the need to ensure uninterrupted services and connectivity critical to business operations further stretching limited IT staff to a point that is no longer sustainable, modernizing IT processes with automation holds the key to enabling IT to drive innovation collaboratively with developers in a secure, compliant, agile and scalable manner.

> “Much has been written about how the recent Covid-19 pandemic has driven new requirements. Arguably more significant for the longer-term, however, is the way in which it has underlined the need to transform IT delivery in ways that were already known, e.g., through Agile development, DevOps and other moves to break down traditional barriers.”
>
> FREEFORM DYNAMICS[1]

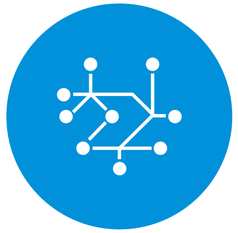
Read the Research Report

1. Freeform Dynamics. “Self-Service IT Delivery.” 2020.

Adopting Modern Infrastructure Automation Practices

A modern infrastructure automation solution can help reduce overall application development cost, complexity, and time to market, and optimize operations across a multi-cloud environment for IT efficiency, security and agility that supports business revenue growth. The VMware vRealize® Automation™ 8 solution can help transform existing manual workstreams associated with the application lifecycle and inconsistent policy and tooling across different applications and environments. It can also help mitigate the risk of inconsistent security and compliance that could compromise the overall security of the data center.

VMware customers are taking advantage of vRealize Automation 8 to address five strategic automation use cases for their businesses to help gain a competitive advantage:



Network automation

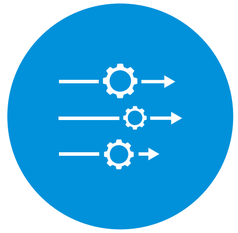
Application rollout with network and security

Security operations (SecOps)

System compliance and vulnerability remediation

Self-service cloud

Self-service private and hybrid clouds with centralized governance



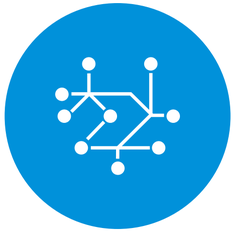
DevOps for infrastructure

Iterative development with enterprise-ready infrastructure as code and infrastructure pipelining

Kubernetes automation

Kubernetes infrastructure self-service and governance and Kubernetes application deployment

Network Automation



Challenge

Deploying modern containerized and microservice architecture-based applications or traditional multitier applications into virtualized or cloud environments with manual management of network configurations and security policies is increasingly expensive, unsustainable and error-prone, and introduces significant security and operational risks. Organizations must modernize and automate their ongoing network operations to support the rapid rollout of applications and maintain business continuity in the new normal.

Solution

Automate VMware NSX® with vRealize Automation. It combines the vRealize Automation modern infrastructure automation platform with NSX network virtualization to enable rapid application rollout with networking and security services. By applying DevOps principles to network infrastructure delivery, the solution ensures network policies are managed with workloads to eliminate operational bottlenecks in the application lifecycle.

Outcome

Faster deployment and complete lifecycle automation of traditional virtual machine (VM) and modern container-based applications with consistent networking and security services across private, hybrid and multi-cloud environments.

Benefits

Help gain business agility, supporting faster delivery of applications to support the business rollout of new products/services and move into new markets, while reducing CapEx and OpEx. It helps to establish consistent infrastructure and operations. IT can quickly configure consistent networking and security across applications, environments and clouds, speeding application provisioning from weeks to minutes, while ensuring standardized environments and avoiding configuration drift.

Real-world use cases

Global Company Ensures Fast Delivery with IT Automation, Integrated Cloud, and Security Solutions

IHS moved from a public cloud to a private cloud to cut costs and meet governance and security requirements using vRealize Automation and NSX.

Watch the Video

Nebraska Medicine Drives Better Patient Outcomes and $30 Million ROI with Strategic Vision for Cloud, Security and Mobility

Read the Customer Story

SAIC Helps Modernize Government IT with Secure Hybrid Cloud Management

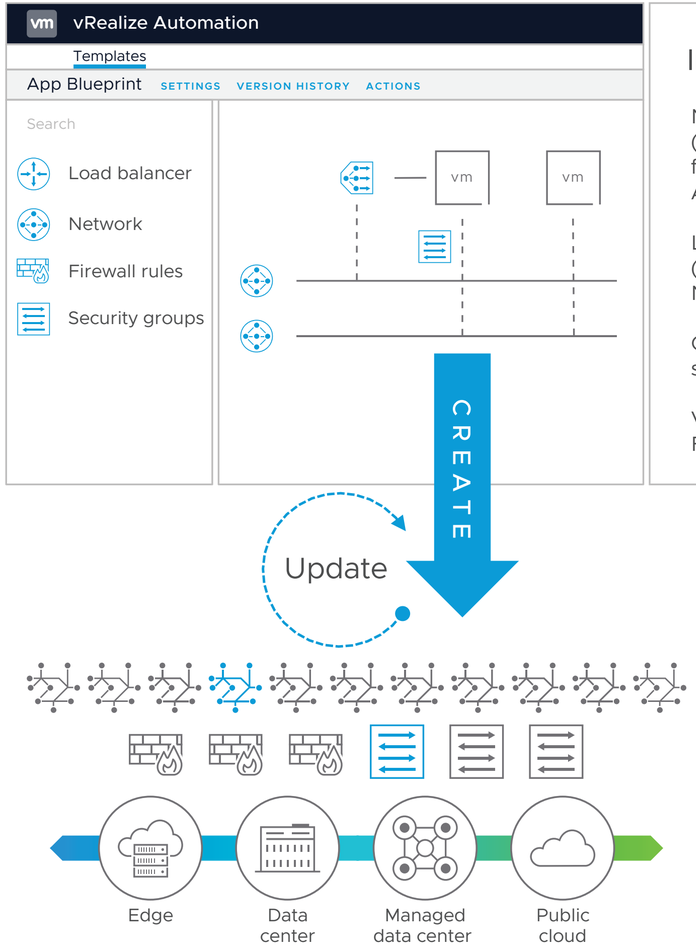
SAIC deployed VMware NSX Data Center for network virtualization and micro-segmentation, which are key capabilities needed to defend the U.S. from cybersecurity threats. The combination of vRealize Automation and NSX Data Center allows for the automated deployment of network-based security policies to counter rapidly changing security threats. While vRealize Automation and NSX Data Center are both powerful solutions when used on their own, together they allow SAIC to build more secure cloud environments with just a few clicks.

Read the Customer Story

Learn more about VMware network automation solutions

- IDC White Paper – *Network Automation: The Missing Piece in DX Strategies*
- Webinar – *Network Automation: The Missing Piece in DX Strategies*
- E-book – *Network Automation for Dummies Guide*
- E-book – *Enterprise Framework for Network Automation*

> “It used to take us two weeks to get a virtual machine approved, assigned an IP address, and stood up. Now we click a button and it’s provisioned in minutes.”
>
> NICK AGUILAR
> LEAD SYSTEMS ENGINEER
> NEBRASKA MEDICINE



Infrastructure as code

Network
(VMware NSX® Data Center for vSphere®, VMware NSX-T™, AWS, Azure)

Load balancer
(NSX Data Center for vSphere, NSX-T, Azure)

On-demand and existing security groups

VMware NSX® Service-defined Firewall™

Security Operations

Challenge

Security vulnerabilities and compliance requirements are constantly evolving as IT systems continue to grow in size and complexity. As a result, SecOps teams are forced to juggle between chasing security and compliance issues at the expense of innovation or maintaining bare-minimum security standards that leave them exposed to attacks and regulatory fines. Furthermore, existing security tools are designed to just find issues, not fix them, requiring SecOps teams to spend precious time and resources on manual triage and mitigation activities that often don't actually remediate the core issue. As a result, the large majority of vulnerabilities exploited continue to be known to security and IT teams at the time of the incident, and often result in lost revenue, fines, customer attrition, and severe damage to brand perception.

Solution

Provide both proactive and reactive security and compliance enforcement. Define security policies with standards, such as CIS, and use event-driven automation and orchestration capabilities to detect and automatically remediate security holes and compliance policy violations in the data center.

Outcome

Enable security and IT operations teams to collaborate and define security and compliance policies, scan all systems against them, detect issues and actively remediate them—all from a single platform.

Benefits

Significantly reduce exposure and increase system hardening. Reduce CapEx and OpEx through consolidation of redundant legacy tools and performance improvements. Facilitate process improvements and allow security operations to be more business-aligned and quantifiable in their results. Complete problem scoping, mitigation, auditing and remediation in hours, rather than weeks, across the environment.

Real-world use cases

Customer spotlight

"SaltStack forms the basis of a comprehensive audit, remote execution, configuration management, patch, and baseline enforcement suite for cloud networks. This has replaced several disparate legacy tools with a single command and control layer that allows us to automatically roll out new security policies and quickly react to any new security threats. Problem scoping, mitigation, and audit is done in hours rather than weeks across our network."

CLOUD NETWORK EXECUTIVE

Learn more

Define

Build custom policies with industry-standard compliance profiles, such as CIS and Defense Information Systems Agency (DISA) Security Technical Implementation Guides (STIGs), then apply them automatically across your digital footprint.

Detect

Run continuous, item-level checks to locate vulnerabilities and noncompliant systems or applications anywhere in your environment.

Enforce

Use autonomous policy enforcement to fix violations automatically. Or kick off a remediation workflow so your teams can flag and prioritize issue resolution.

"When you combine infrastructure, DevOps, and security into a single platform, you create a security culture because you're working together on a single system."

IT OPERATIONS DIRECTOR AND CISO OF A LEADING INTEGRATED SAAS SOLUTIONS PROVIDER

Self-Service Cloud

Challenge

As organizations selectively embrace the public cloud for a portion of their business needs, they increasingly realize the advantages of cloud and now require a public cloud–like self-service experience for on-premises environments. The increase in demand for digital resources has also created a skills shortage in teams tasked with automating the IT resources in their existing virtualized data centers and public cloud environments, creating a need for a consistent cloud infrastructure that is easy to learn and can be leveraged with existing skillsets.

Solution

Automate VMware Cloud Foundation™ to implement an on-premises self-service private cloud, or VMware Cloud™ (e.g., VMware Cloud on AWS) to implement a self-service public cloud. vRealize Automation offers a single VMware Cloud API for infrastructure as a service (IaaS) along with cloud organization constructs that uniquely delineate the IT operator, along with consumer roles and responsibilities for VMware infrastructure.

Outcome

Enable rapid implementation of multi-cloud environments with a unified self-service provisioning layer with seamless workload portability across private and public cloud infrastructure. Gain the ability to apply the same self-service catalog, content and policies, providing centralized and streamlined operations with unified visibility and management across multi-cloud environments. Provide developers with a single, consistent digital foundation to interact with programmatically.

Benefits

Make self-service cloud easy with a consistent operating, governance and consumption model across clouds and workload types. Provide quick time to value by enabling consumption of the software-defined data center (SDDC) in private and public clouds with existing skillsets. Both VMware Cloud Foundation and VMware Cloud use VMware vSphere®, VMware NSX and VMware vSAN™ as the underlying SDDC infrastructure, and vRealize Automation automates these constructs with a single click of a button.

Real-world use cases

Automation Delivers Cloud Infrastructure in Minutes

ADP built a private cloud to rapidly deliver new services while still ensuring the protection and reliability of critical systems and data.

Watch the Video

Verint Automated Its DevOps and QA Environments, Saving 20 Percent of Development Costs

Verint was looking for an auto-deployment solution for its DevOps and QA environments. Up until then, the deployment process was carried out manually by the developers, required long work hours, and triggered many configuration failures. Verint used VMware technology to build a private cloud with a dedicated self-service portal, where developers can auto-deploy their own development environments with one push of a button. In the past, it took developers from half a day to a full day to auto-deploy a working environment while today, using the new portal, it takes only up to 40 minutes. The VMware solution saved Verint 20 percent of development costs and has helped the company avoid installation and configuration failures.

Read the Customer Story

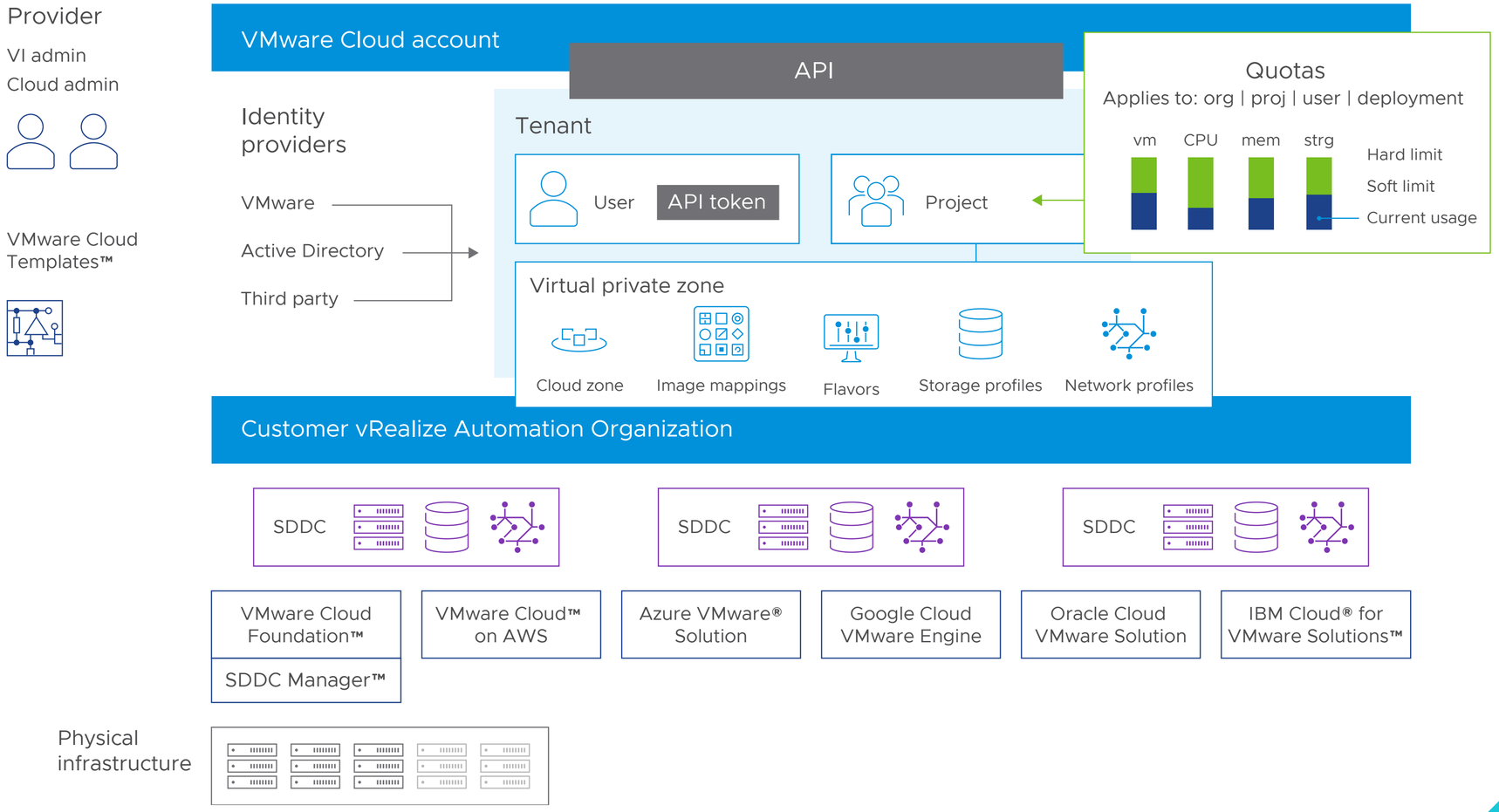
With VMware Cloud on AWS and vRealize Automation Cloud, IHS Markit can dynamically scale its environment, leveraging consistent multi-cloud automation and governance capabilities.

Read the Customer Story

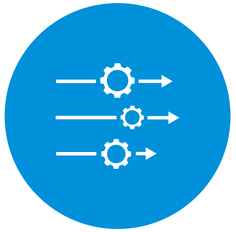
> “Self-service is clearly not a new concept, so why pay attention to it now? The reason is because two thirds of study participants say they are on a journey to transform their traditional virtualized environments to make them more cloud-like. Failing to consider self-service as you do this could represent a missed opportunity.”
>
> FREEFORM DYNAMICS[2]

Read the Research Report

2. Freeform Dynamics. “Self-Service IT Delivery: From Opportunity to Strategic Imperative?” 2020.


Provider
VI admin
Cloud admin
VMware Cloud Templates™
VMware Cloud account
API
Identity providers
VMware
Active Directory
Third party
Tenant
User
API token
Project
Quotas
Applies to: org | proj | user | deployment
vm
CPU
mem
strg
Hard limit
Soft limit
Current usage
Virtual private zone
Cloud zone
Image mappings
Flavors
Storage profiles
Network profiles
Customer vRealize Automation Organization
SDDC
SDDC
SDDC
VMware Cloud Foundation™
SDDC Manager™
VMware Cloud™ on AWS
Azure VMware® Solution
Google Cloud VMware Engine
Oracle Cloud VMware Solution
IBM Cloud® for VMware Solutions™
Physical infrastructure

DevOps for Infrastructure



Challenge

The adoption of public clouds, agile development methodologies, and DevOps practices by development teams has forced IT teams to innovate and compete with public cloud services to appeal to developers. Infrastructure and operations (I&O) teams must offer a range of sandbox choices depending on developer skillsets and application types, and support the CI/CD process while enforcing governance and control without being too intrusive.

Solution

Empower I&O teams with the ability to support GitOps-based iterative development with enterprise-ready infrastructure as code and infrastructure pipelining capabilities. Harden open source technologies (e.g., Terraform, Ansible) for enterprise requirements around governance and collaboration. Offer a low-code, API-first interface to provide options across teams with different skillsets and development requirements.

Outcome

Enable I&O teams to transition to DevOps-ready IT, and offer developer-friendly infrastructure. Be able to promote consistent changes and rollbacks across environments and remediate configuration drift toward desired state configurations. Establish a common collaboration platform between I&O and developers that they can both understand and operate by seamlessly embedding operations in the app release cycles through pipelines; establishing a commonly understood, low-code language; and using a Git-based source of truth across infrastructure and applications.

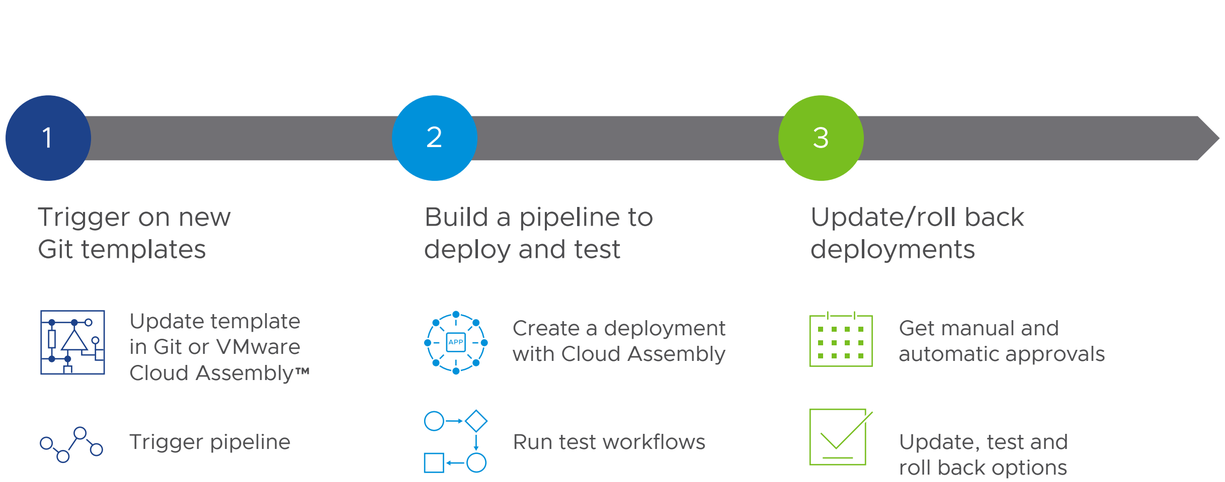
Benefits

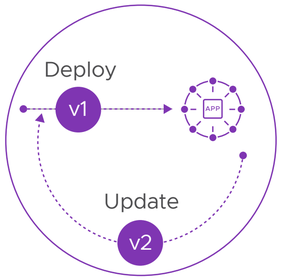
Achieve a positive ROI via efficiency, higher productivity and faster time to value—delivering infrastructure via faster, smaller, more frequent release cycles that allow scalability and reliability. Enable I&O teams to satisfy developer, SRE and DevOps engineer iterative development needs with frictionless governance for better software quality and/or customer satisfaction.

Real-world use cases

DevOps for Infrastructure with vRealize Automation Cloud™

Watch the Video





Infrastructure as code

Wizard-driven pipeline creation

VMware IT's Journey with Boomi CI/CD for Deployment of Heterogeneous Applications

Overall, the VMware IT team has deployed more than 13,000 CI, nearly 4,000 CD, and more than 900 production applications. As the number of applications and the development team grew, the platform team was overwhelmed with the effort required to support developers on a day-to-day basis—and had little time to focus on strategic activities. Automation helped to significantly reduce these manual efforts and made all our deployments no-touch in nature.

In addition, we have two platform accounts with a combined 21 different environments. A team member creates the configuration file with encrypted passwords for different connectors and applications per environment. These, in turn, are decrypted by vRealize Automation Code Stream™ at runtime and applied on the environment extensions. This process ensures applications requiring Sarbanes-Oxley (SOX) compliance can be seamlessly onboarded as quickly as their non-SOX equivalents.

Read the Blog Post

In a recent study by Freeform Dynamics, 24 percent of respondents said they have increased focus on DevOps and/or continuous delivery, and 21 percent on agile software development since the pandemic.[3]

> "Despite the ongoing trend towards convergence and hyper-convergence at a systems level, silos have stubbornly persisted within IT teams and across disciplines that impair responsiveness and flexibility. An increased focus on more integrated, automated and collaborative approaches to delivery is therefore to be welcomed."
>
> FREEFORM DYNAMICS[3]

Read the Research Report

3. Freeform Dynamics. "Self-Service IT Delivery." 2020.

Learn more about DevOps for infrastructure solutions from VMware

White paper – *DevOps Trends in Enterprise IT – A Forrester Opportunity Snapshot*

Webinars:

- *Evolve your IT Operating Model with DevOps*, featuring James Governor from RedMonk
- *Introducing Terraform in vRealize Automation*
- *DevOps for Infrastructure - Part 1: From VI Admin to DevOps Champion with vRealize Automation*
- *DevOps for Infrastructure - Part 2: Demystifying Infrastructure as Code*
- *DevOps for Infrastructure - Part 3: Iterative Development with GitOps*
- *DevOps for Infrastructure - Part 4: Infrastructure Pipelines with Code Stream*

Kubernetes Automation

Challenge

IT organizations increasingly need to support new cloud native applications, as well as existing legacy applications that have been refactored or replaced by modern applications based on container-based architecture. IT must also support new complex workloads, such as distributed Kubernetes-based applications that may have a dependency on VM-based applications, distributed databases, and Function as a Service (FaaS) frameworks, ensuring the availability, security, quality of service, and cost controls. As such, IT needs to now manage a vast range of workload types involving both virtualized and Kubernetes infrastructures.

Solution

Enable Kubernetes cluster management, self-service, and application deployment in a mixed virtualized and Kubernetes infrastructure through a central management plane with a unified operating/governance and consumption model. Provide the ability to manage and govern Kubernetes clusters and namespaces, as well as discover and import clusters. Empower developers to request Kubernetes clusters and namespace self-service from a catalog. Enable Kubernetes application deployment on clusters from pipelines.

Outcome

Extend a consistent operating model across VMs and Kubernetes environments that makes it easier to ensure reliability and compliance with operating standards. Enable frictionless development of modern applications on Kubernetes-enabled vSphere with confidence.

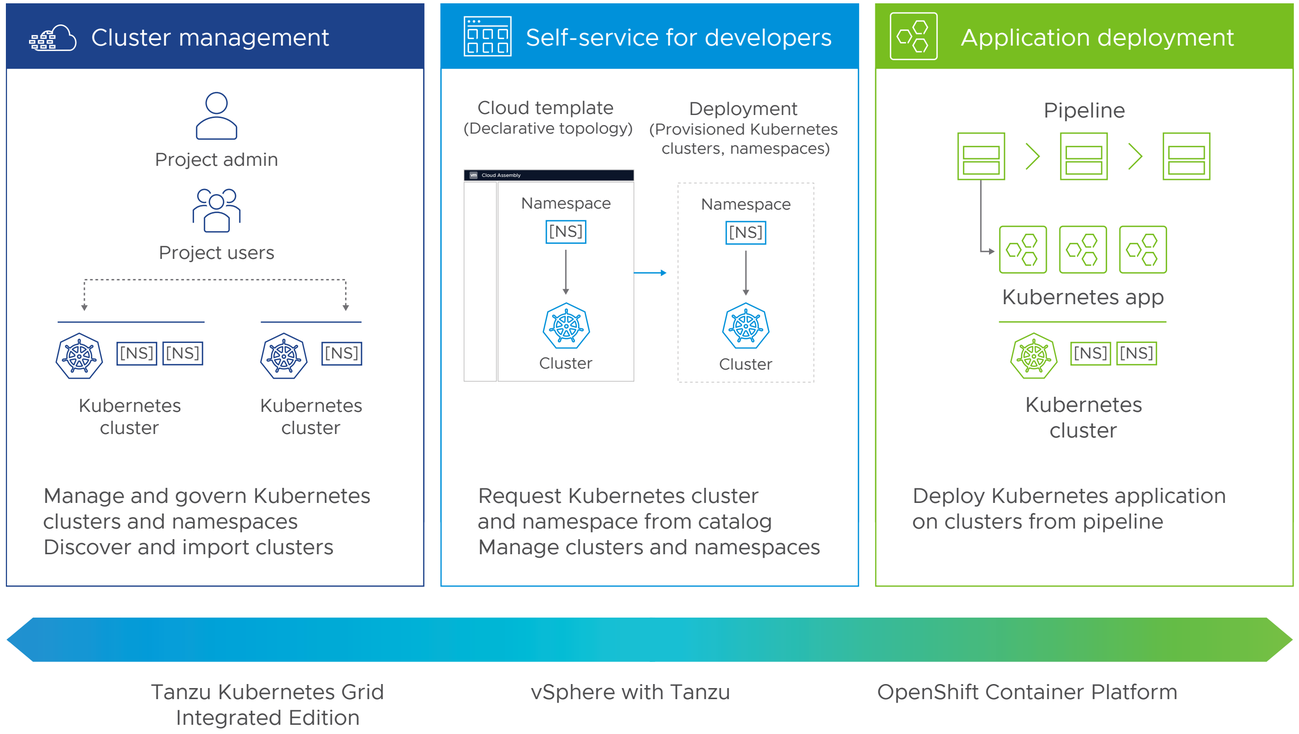
Benefits

Streamline development and agile operations, and accelerate innovation for modern cloud native applications. Continue to take advantage of existing investments in VMware technology and skillsets, and gain flexibility with extensible integrations with VMware Tanzu™ Kubernetes Grid™ Integrated Edition, VMware vSphere with Tanzu, and Red Hat OpenShift Container Platform. Simplify Kubernetes management for operators, and ensure consistency in the application of your operational requirements.

Real-world use cases

Watch the video: Using Code Stream to Deploy Kubernetes Clusters into Supervisor Namespaces

Watch the video: Tanzu Kubernetes Grid Clusters as a Service



Read these blog posts to learn more about Kubernetes automation solutions

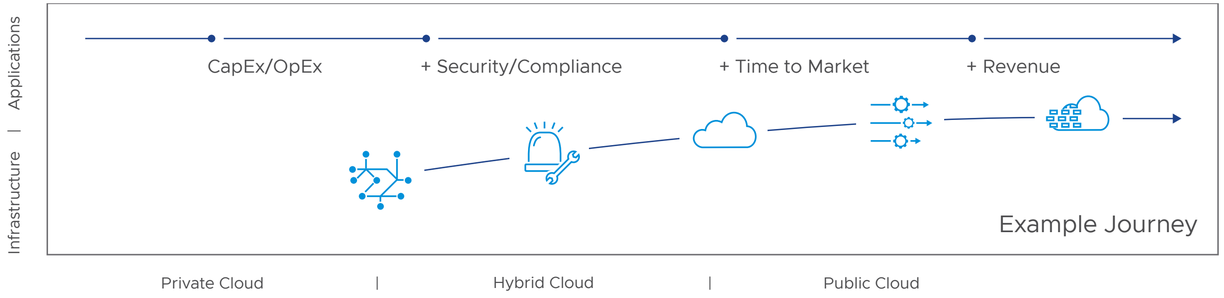
- *Kubernetes Across vRealize Automation*
- *Deploying Tanzu Kubernetes Grid with vRealize Automation*
- *vSphere with Kubernetes, vRealize Automation, and Tanzu…A Perfect Match!*
- *vRealize Automation provides self-service Supervisor Namespaces*

What Does Your Automation Journey Look Like?

While many organizations struggle to adapt to the ever-changing business challenges, there are those that thrive. Why? They have been able to take advantage of new environments, delivering digital experiences that provide compelling value for their customers. How? The key lies in speeding innovation with automation.

Embracing modern automation will enable your IT teams to deliver secure and compliant infrastructure resources quickly, and empower developers with self-service and support for open source tools, and the cloud and development methods of their choice that make them productive. Simplifying the IT delivery process will help developers create new digital services that provide a competitive advantage for the organization.

Let's say you already have a highly virtualized data center and gained tremendous CapEx and OpEx savings. What's next? VMware vRealize Automation can help facilitate your automation journey as you increase the number and type of clouds, as well as the volume and type of workloads, by making it easier to adopt modern infrastructure automation practices with five use cases: network automation, SecOps, self-service cloud, DevOps for infrastructure, and Kubernetes automation. You can start with one or several in parallel in the order that best aligns with your business goals, enhancing security and compliance, improving time to market, or driving top-line growth. What path will you take?

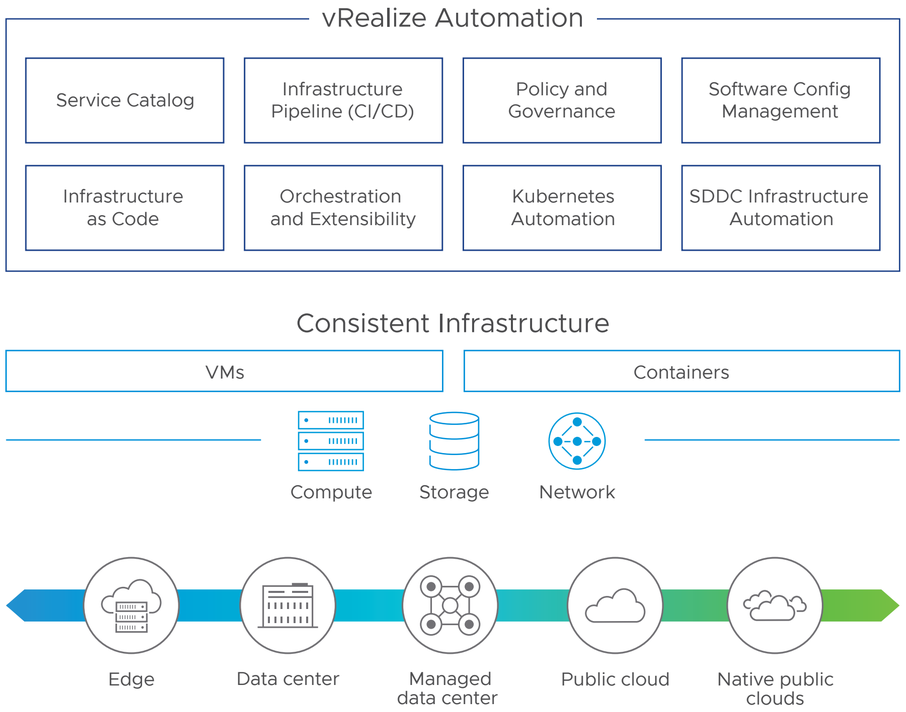


Discover VMware vRealize Automation 8

VMware vRealize Automation 8 is an infrastructure automation platform that enables private and multi-cloud environments on VMware Cloud infrastructure. It delivers network automation, security operations, self-service cloud, DevOps for infrastructure, and Kubernetes automation capabilities that help you adopt modern automation practices to increase business and IT agility, productivity, efficiency, security and compliance. Automate manual tasks to save time and budget, freeing up IT resources already stretched thin due to other critical business challenges to tackle the more strategic projects that will drive business value. Integrate, streamline and modernize traditional, cloud native, and multi-cloud infrastructures with vRealize Automation, and simplify IT while preparing for the future of your business.

vRealize Automation 8 is available as a standalone application, and is included in VMware vRealize Suite, VMware vCloud Suite®, VMware vRealize Cloud Universal™, vCloud Suite Subscription, and VMware Cloud Foundation.

Learn More


vRealize Automation
Service Catalog
Infrastructure Pipeline (CI/CD)
Policy and Governance
Software Config Management
Infrastructure as Code
Orchestration and Extensibility
Kubernetes Automation
SDDC Infrastructure Automation
Consistent Infrastructure
VMs
Containers
Compute
Storage
Network
Edge
Data center
Managed data center
Public cloud
Native public clouds

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