

# VMware Network Automation

## Automate VMware NSX with VMware vRealize Automation

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

COBY HOLLOWAY  
VP AND DIRECTOR, CLOUD COMPUTING  
SAIC

### SOLUTION OVERVIEW

VMware network automation enables faster deployment and complete lifecycle automation of traditional and modern applications with networking and security services consistently across clouds, helping organizations enjoy faster time to market, operational savings, productivity gains, and business resiliency.

### Delivering digital innovation in the new normal

In response to COVID-19, organizations in both private and public sectors have had to rethink the way they operate. With physical distancing, organizations and individuals need to rely on digital services more than ever. Organizations will need to release new and updated applications and services more frequently with reliability and security to support this demand.

Infrastructure and operations teams were already pressured from developers to accelerate the entire IT service lifecycle to support shorter and more frequent release cycles to deliver new and updated applications into production. This has been further exacerbated with increased demand for digital resources faster and reliably to support the remote workforce. Ensuring uninterrupted connectivity critical to business operations is further stretching IT teams, especially network engineering teams, thin to a point that is no longer sustainable.

IT also must be prepared to continuously monitor ongoing operations to ensure quality of service and compliance. Beyond the initial provision and deployment of applications, ongoing operations throughout the application lifecycle remain a primarily manual set of tasks. When application policies need to be updated, when applications need to be moved around, and when they need to be retired, the manual steps involved inhibit the ability of the business to be agile in responding to customer demands, compliance requirements, and more. Manually changing network and security policies for an application negates the advantages gained from automating the initial provisioning and deployment process, and manual retirement often leaves behind a sprawl of stale firewall rules that can compromise the overall security of the environment.

### Accelerate application rollout with networking and security

Deploying modern containerized and microservice architecture-based or traditional multitier applications into multi-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.

Network automation 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 network automation 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.

**KEY BENEFITS**

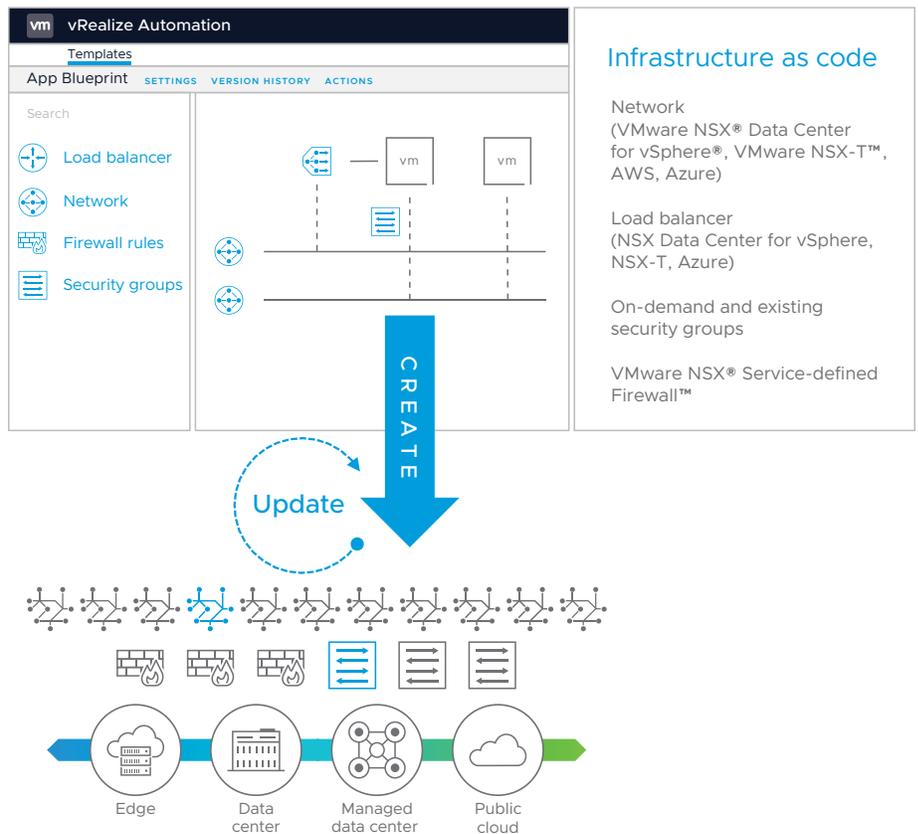
- Business agility – Support faster delivery of applications to support the business rollout of new products/ services and move into new markets, while reducing CapEx and OpEx.
- Consistent infrastructure – Quickly establish consistent networking and security across applications, environments and clouds. Speed infrastructure and application provisioning from weeks to minutes, while ensuring standardized environments and avoiding configuration drift.
- Consistent operations – Automate network changes and accelerate network provisioning. Extend network and security policies automatically to private, public and multi-cloud environments, easing management of the environment for IT teams and preventing inconsistency across environments.

**Key challenges**

- Pressure from the lines of business to respond faster to business requirements; slow, manual processes slowing down business
- Complex physical networking and inconsistent tooling, which disrupts and slows down the development process
- Network failures and downtime due to human error
- Inconsistent security of applications as they are developed and rolled out
- Need to support increased demand for digital resources faster and reliably to support the remote workforce
- Need for unattended and remote data center operations, including enhanced disaster recovery
- Pressure to reduce capital and operational expenditures around IT infrastructure and operations

**Solution description**

VMware network automation automates VMware NSX® with VMware vRealize® Automation™. It enables rapid application delivery with enhanced networking and security, faster time to market, greater operational savings, and productivity gains. 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, this solution ensures network policies are managed with workloads to eliminate operational bottlenecks in the application lifecycle. This solution enables fast, consistent networking and security for VM- and container-based workloads, across private, hybrid and multi-cloud environments.



## RESOURCES

- For more information on network automation, visit the [VMware network automation solution](#) page or contact your VMware representative.
- Visit the [vRealize Automation](#) product page.
- Visit the [NSX Data Center](#) product page.
- Connect with a VMware expert for a tailored network automation demo for you and your team.
- Test drive via a [Hands-on Lab](#).
- Visit the VMware Cloud Management blog to [read more about vRealize Automation](#).
- Visit the VMware Network and Security Virtualization blog to [read more about NSX](#).
- Follow us on Twitter [@vRealizeAuto](#) and [@vmwarensx](#).

## Key capabilities

VMware Cloud Templates™ – Native integrations between software-defined data center (SDDC) elements can help organizations adopting SDDC architecture to avoid having to build integrations, enabling faster time to value and lower TCO. VMware network automation provides the ability to automate the entire application lifecycle, from provisioning to retirement, and apply consistent policy and management across all application types and environments. It allows entire network configurations to be spun up, topologically mapped, and managed using simple, human-readable RESTful API calls. vRealize Automation and NSX are aligned to the VMware SDDC strategy and provide a single point of contact for support, helping save time and cost. The integration enables vRealize Automation to embed VMware NSX-T™ constructs directly into the infrastructure and application-level VMware Cloud Templates, eliminating the need for networking to be provisioned outside of vRealize Automation.

Security automation – vRealize Automation can create and manage NSX security groups using Policy APIs, enabling security automation without impacting the business. Including security doesn't have to be complicated—there's no need to ensure security at the expense of innovation. Issues can be quickly remediated with VMware vRealize Automation SaltStack® Config.

Extensible framework and fine-grained governance – vRealize Automation and NSX provide an extensible framework with standardized APIs and plug-in models to easily integrate with third-party solutions. vRealize Automation helps provide flexible guardrails, including role-based policies to maintain proper security and compliance for network automation. It also provides the ability for automation to support the creation of an entire intent in a single transaction without having to manually identify dependencies and invoke services in the right order with multiple API calls.

DevOps for infrastructure and application lifecycle – The DevOps for infrastructure capabilities within vRealize Automation, such as infrastructure as code and infrastructure pipelining, can be applied to network automation with NSX to ensure network configurations and security policies follow workloads—they automatically move between different environments, change or are retired in lockstep. Security policies also get retired with the workloads/applications to which they apply, ensuring there isn't firewall rule sprawl and that stale firewall rules don't pose security risks.

NSX Data Center for vSphere to NSX-T migration – vRealize Automation enables VMware NSX Data Center for vSphere® customers to transition to NSX-T faster and adopt network automation. vRealize Automation 8.3 helps automate this migration process.

## Discover network automation from VMware

Take advantage of the VMware network automation solution to increase business agility, consistent infrastructure, and consistent operations. Gain the ability to enable faster delivery of applications to support the business rollout new products/services and move into new markets, while reducing CapEx and OpEx.

By automating NSX with vRealize Automation, gain the ability to accelerate network provisioning; establish consistent networking and security across applications, environments and clouds, helping speed infrastructure and application provisioning from weeks to minutes, while ensuring standardized environments and avoiding configuration drift; and predictably and repeatably make changes to product networks to deliver a more reliable and scalable network. Without needing to manually configure network and security services, your engineers can focus on more strategic initiatives, such as projects that enable new revenue models.

