# APPLICATION AGILITY THROUGH NETWORK AUTOMATION

VMware NSX Data Center for Automation

## A New Speed of Business Comes with New Challenges

The speed of business is increasing as businesses and industries embark on digital transformation. As new technologies are adopted, business practices are changing, as are customer experiences and expectations. These shifting priorities and expectations require a rethink of operational models used by organizations today. For a business, this means bringing new apps to market faster, innovating for competitive advantage, and having the agility to respond quickly to changing customer demands. To help businesses achieve these broad goals, IT organizations and developer communities must overcome slow, manual, error-prone process difficult application deployments, a lack of visibility into their environments, lack of consistent policy across sites and clouds, and a lack of security down to the container level.

To overcome these challenges—and ultimately enable the business to excel in the market—IT and developers must be able to deploy applications faster, automate the complete lifecycle of the apps, and be able to apply consistent networking and security policy across any app, site, and cloud.

## Automating Yesterday, Today, and Every Day with VMware

While many organizations have realized the benefits of compute and storage automation, significantly speeding up provisioning times for those resources, networking and security provisioning is still a bottlenecked, manual process, adding days or weeks to a process that can and should take minutes.

Achieving the speed and agility that modern business demands requires IT and development teams to automate the provisioning and management of networking and security for traditional applications built on established platforms and with conventional architectures. Beyond that, these teams need to work cohesively to enable developers to automatically and seamlessly insert networking and security into their normal workflows as they develop applications based on new and emerging frameworks like containers and microservice architectures. To complete the agility equation, they must automate their ongoing network operations, leveraging deep visibility and simplified troubleshooting to do so.

### Yesterday: IT Automation

VMware NSX® Data Center runs all network and security services required to support traditional enterprise applications entirely in software, enabling the automation of what were previously manual and error-prone provisioning tasks. When NSX Data Center couples with a cloud management platform like VMware vRealize® Automation™, IT organizations can create templates or blueprints of entire applications architectures, including all of the networking and security components required to support them. These blueprints can be exposed through a self-service portal to provide lines of business with a cloud-like experience in the way they consume private data center infrastructure. Additionally, NSX Data Center and vRealize Automation also simplify change management and bring consistency to updates to applications. When policies and configuration changes are made to a blueprint, they can be automatically pushed out to the application

> "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

**vm**ware®

"We can quickly and confidently scale our NSX deployment and accelerate our adoption of SDDC. vRealize Suite provides solid visibility and troubleshooting capabilities to our networking and operations teams."

BRIAN LANCASTER
VICE PRESIDENT OF IT
NEBRASKA MEDICINE

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built from those blueprints. When applications are decommissioned, the networking and security policies associated with them are de-provisioned, preventing the sprawl of stale policies that would otherwise degrade manageability, security, connectivity, and compliance.

### Today: Cloud-Native Automation

Workloads that support today's applications based on new architectures and frameworks leveraging containers and microservices are being deployed at a significantly faster rate and have dramatically shorter lifespans than traditional VM-based workloads. NSX Data Center enables the automation of native networking and security services for containers and microservices to help organizations deliver the speed and agility that new apps require. It also directly integrates with cloud-native platforms like Pivotal Application Service (formerly PCF), Pivotal Container Service (PKS), Kubernetes (K8s), and Red Hat OpenShift. This integration enables developers to consume networking and security as code, using their preferred tools and workflows. By using NSX Data Center to provide networking and security for cloud-native applications, IT gets the visibility and control they need to ensure compliance, without slowing down developers or changing their development workflows. Also, networking and security policy is consistently applied to both traditional and cloud-native applications with a unified set of controls and policies.

### Every Day: Streamline Operations

Everyday network operations like capacity planning, micro-segmentation security policy planning, and network troubleshooting have traditionally been manual and time-consuming tasks. VMware vRealize Network Insight™provides deep visibility and insight into both the physical and virtual networking and security infrastructure to streamline network operations. The process of capacity and micro-segmentation planning becomes automated, increasing resource utilization and ensuring the accuracy and effectiveness of granularly applied security policies. Troubleshooting is also streamlined, with vRealize Network Insight automating the detection of problems and enabling administrators to quickly pinpoint issues, without the manual effort of sifting through error logs or logging in to individual switches and routers.

### Summary

VMware NSX Data Center virtualizes all networking and security functions to enable faster deployment through automation by reducing manual, error-prone tasks. Complete lifecycle automation of applications ensures that policy is provisioned, managed, and retired in lock step with workloads, eliminating operational bottlenecks in the application lifecycle. This automated process allows for fast, consistent networking and security across both traditional and new applications, regardless of where they reside in the data center, and with NSX Cloud, regardless of their location in public clouds. Automating traditional IT tasks, new cloud-native architectures and platforms, and ongoing operations empower IT organizations and developers to move at the increasing speed of business.

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