TOP 3 USE CASES FOR AUTOMATION WITH NETWORK VIRTUALIZATION

Automation Supports Network Goals From Self-Service Provisioning to Faster Time-to-Market

So much of your networking team's time is consumed by manual tasks associated with the delivery of network services and applications to users. These often routine and repetitive tasks, while necessary, can add days to a network engineer's weekly workload. With automation, you can free up these hours of skilled labor for projects that have much higher value for your organization.

There are other penalties associated with manual processes:

• Human error can be the root cause of costly downtime.

• Protracted "wait time" for network services can lead to unnecessary friction between IT and users. In some companies, users will even take matters into their own hands and outsource the network services they need. This can lead to problems for which your group is ultimately responsible.

VMware NSX® is a network virtualization platform that gives you ease and flexibility in implementing automation. For example, you can use NSX with a wide variety of automation solutions, including: VMware vRealize® Automation™, VMware Integrated OpenStack and other OpenStack releases, and native and third-party APIs. You can mix and match automation software for different applications without creating siloes; NSX provides a single point of management and a unified environment for all of your automation tools.

The NSX platform makes automation easy to implement. With a virtualized network, you can configure, change, and manage automated processes and services independently of the physical network—which translates to ease of use, speed, choice, and lower cost.

Alternative offerings function more as hardware orchestration utilities, which means that automation is constrained by the physical network. By moving networking services into the data center virtualization layer with NSX, you can achieve the same automated operational model of a virtual machine (VM) for networking. Among other benefits, this means you don't have to keep automation tightly tied to hardware or topology. Because the physical network is abstracted, you can:

• Extend network automation throughout the data center

• Automate across traditional hardware boundaries and dependencies, such as VLANs and IP addresses

In addition, NSX creates a completely hardware-agnostic environment, so you can implement automation across a heterogeneous hardware environment.

For years, network automation lagged behind other data center functions. NSX enables you to employ automation and make leaps in speed and responsiveness, scalability, compliance, standardization and consistency, operational cost savings, reduced downtime due to manual configuration errors, and more.

KEY HIGHLIGHTS

• Automation of network services is an increasingly urgent priority

• Network virtualization eliminates the constraints of hardware-centric automation

• Extend network automation throughout the data center

• Improve business responsiveness, compliance, standardization, savings, and more

• The VMware NSX® platform delivers automation with a choice of software for different applications

• Make leaps in IT automating IT, developer cloud, and multi-tenant infrastructure initiatives

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You may have already identified high priority areas for automating network services. But perhaps you've been unable to make sufficient progress because these areas have proven too complex to automate in a hardware-driven world. There are three areas that VMware customers have identified as having the highest urgency and impact for automation. With all of these use cases, the NSX platform can eliminate the obstacles that have constrained your efforts in the past.

• IT automating IT
• Developer cloud
• Multi-tenant infrastructure

IT Automating IT

The consumption of network services is a never-ending demand. Network virtualization makes it easy to automate a wide range of provisioning and maintenance activities. IT automating IT is a productivity gain for both your team and all of your users:

• You can drastically cut the number of IT team hours currently dedicated to routine, repetitive tasks
• Users are more productive because they are no longer waiting days or weeks for services

Enabling self-service

Provisioning network services can involve a few or many tasks. Services can range from simple to complex. There's always a backlog of requests, so it's virtually impossible to be as responsive as users expect. Even trivial issues can escalate into high-visibility conflicts, simply because of user frustration over wait times.

You can easily transform provisioning into a positive experience for everyone by using automation to enable user self-service.

Self-service portal: Automation enabled by NSX enables you to create a self-service portal and self-service catalog that allow users to provision their own network services. The self-service catalog uses service blueprints and network profiles on the backend to automate the provisioning process.

Security: You can pre-configure applications and services with the appropriate security. Keeping security in lockstep with service delivery eliminates gaps associated with adding security measures after the services or applications are already in use.

Standardization and consistency: Automation promotes standardization, which makes both compliance and maintenance easier. Automation also supports greater consistency, which reduces the likelihood of human error that can lead to downtime.

Deprovisioning: Time-consuming manual processes can make deprovisioning a lower priority than delivering new services. This can lead to security vulnerabilities, as well as wasted resources. With an automated virtualized network, services can be deprovisioned automatically based on pre-defined criteria (such as an employee leaving the company). You can then reclaim and reallocate these resources.

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Scalability: Provisioning requests can be highly individualized. But sometimes the request involves provisioning an entire department—a new call center, branch office or field sales office. Network virtualization enables you to apply automated service provisioning on a large scale, across geographic and organizational boundaries. You can scale back just as easily as demand changes or shifts.

In a hardware-driven world, it is expensive to add hardware in order to scale to meet demand. Automation in a virtualized world gives you infinitely greater flexibility and agility in allocating resources.

Developer Cloud

For developers and testing teams, creating an infrastructure for development, testing, and staging is a labor- and equipment-intensive undertaking. Because time-to-market is so critical, DevOps teams are tremendously frustrated with this process. In addition, developers often use special tools and a high degree of customization to create the environments they need. This can end up creating an inconsistent infrastructure for new product development.

And because these networks take so long to create, developers are reluctant to tear them down. Which means that these resources remain inaccessible for indefinite periods of time.

After virtualizing your network with NSX, you can automate it to create a developer cloud for self-service, which enables developers to create a virtual infrastructure, including the desired security services, in a matter of hours, rather than days or weeks. Instead of using different proprietary tools, developers use a unified set of APIs (native NSX, OpenStack– including VMware Integrated OpenStack—or third-party APIs).

These virtual networks are more robust, because the environments are created using automation (for routine, repetitive tasks), which promotes standardization and consistency. While each network is separate, all of the tools are managed centrally. This means it's easier for IT to support the developer clouds.

Your DevOps teams can provision parallel development environments on the same physical infrastructure, and deprovision them just as quickly. Developers save a tremendous amount of time, and they have a high degree of confidence in the performance of the network for development, staging, and testing of new applications.

Multi-tenant Infrastructure

For service providers, creating and supporting a secure multi-tenant environment is extremely challenging with a hardware-centric model. You have to configure each network instance—with the appropriate resources, network services, and security—for each tenant. As a result, a multi-tenant infrastructure constrains your business in several ways:

• Difficult and costly to scale

• Requires intensive IT time

• Requires a higher infrastructure investment because of inefficient utilization of assets

• Complex to upgrade and secure

Like the developer cloud, a multi-tenant infrastructure automated on the NSX network virtualization platform can completely change this model. You can give your tenants a self-service portal to create and change their own networks using a point-and-click catalog. On the back end, all of these network instances are on one cloud. With this environment, you gain:

• The ability to host a multitude of tenants on a common cloud infrastructure
• The ability to scale services to support new customers and generate more revenue
• A zero touch service model that frees up valuable IT resources
• More efficient asset utilization for lower infrastructure costs and greater profitability
• Faster service for customers, with a high degree of confidence in performance and security

Conclusion

When you have goals to be more responsive, deliver services faster, and give users more control over their environments, automation is an imperative. There simply isn't any excess time or money to waste on performing manual tasks that can be automated. Long wait times for services and applications are frustrating for your engineers and users, and, quite simply, bad for business.

Automation built on the VMware NSX network virtualization platform gives IT organizations the speed and efficiency to meet their highest priorities use cases for service delivery:

• Provide IT automation for IT
• Enable developers to get secure on-demand networking for applications development
• Enable service providers to host multiple tenants on a common cloud infrastructure

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