

## Solution Showcase

# Leveraging Network Automation for Greater IT Agility and Operational Efficiency

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**Abstract:** Today's changing IT landscape is becoming increasingly complex to manage, and organizations need to look at agile systems encompassing a variety of automation technologies integrated across various teams and IT domains. While other components of the IT infrastructure have become automated, networking has not kept up.

To maintain a competitive edge, organizations must focus on automating the network, beginning with traditionally manual tasks, to save time and resources, reduce human error, and increase business and IT agility in concert with integrating automation solutions with other IT tools and processes throughout the organization.

### Overview

In today's dynamic business environment, with the trends toward cloud computing and bring your own device (BYOD) initiatives, networks are becoming increasingly complex to manage. Organizations across the board expect their networks to be more agile, secure, and collaborative. To keep the workforce productive and the business competitive, IT must be flexible, provisioning applications and services at a moment's notice to ensure the right people have the right access to the right data at the right time. But it isn't all that easy for IT personnel, who face a number of challenges—one of which is manual network configuration. This technique is anything but efficient. Performed in isolation rather than across systems throughout an organization, this method of configuration only focuses on particular hardware or software rather than looking at its role holistically across the entire IT infrastructure stack. And what about those legacy platforms that also stand alone in their own separate silos? With a network that lacks integration, eschews collaboration, and is unable to scale to an organization's growing needs, how can IT meet the agility demands on business?

While other parts of the IT infrastructure, such as compute and storage, have benefited from automation, the network hasn't. Virtualized infrastructure has automated storage and servers with virtual disks and virtual machines with programmatic access, but the network has not been automated to the same extent. What this means is that no matter how automated compute and storage are, if the network isn't automated and integrated with the rest of IT, the operation of the entire IT infrastructure will be inhibited from working at optimum levels. Automation is better than manual operation, but is still not good enough to achieve real levels of IT and business agility if the automation is isolated in silos. Once silos are bridged, cross-functional execution can happen quickly.

For example, each team in network operations uses a separate tool for managing the network—the help desk uses a ticketing system, a network analyst uses a troubleshooting tool to find a potential solution, and the network administrator uses another tool to implement that solution. Simultaneously, a storage administrator may be diagnosing a performance problem with a network-attached storage system. Wouldn't it be more efficient if those tools worked in concert?

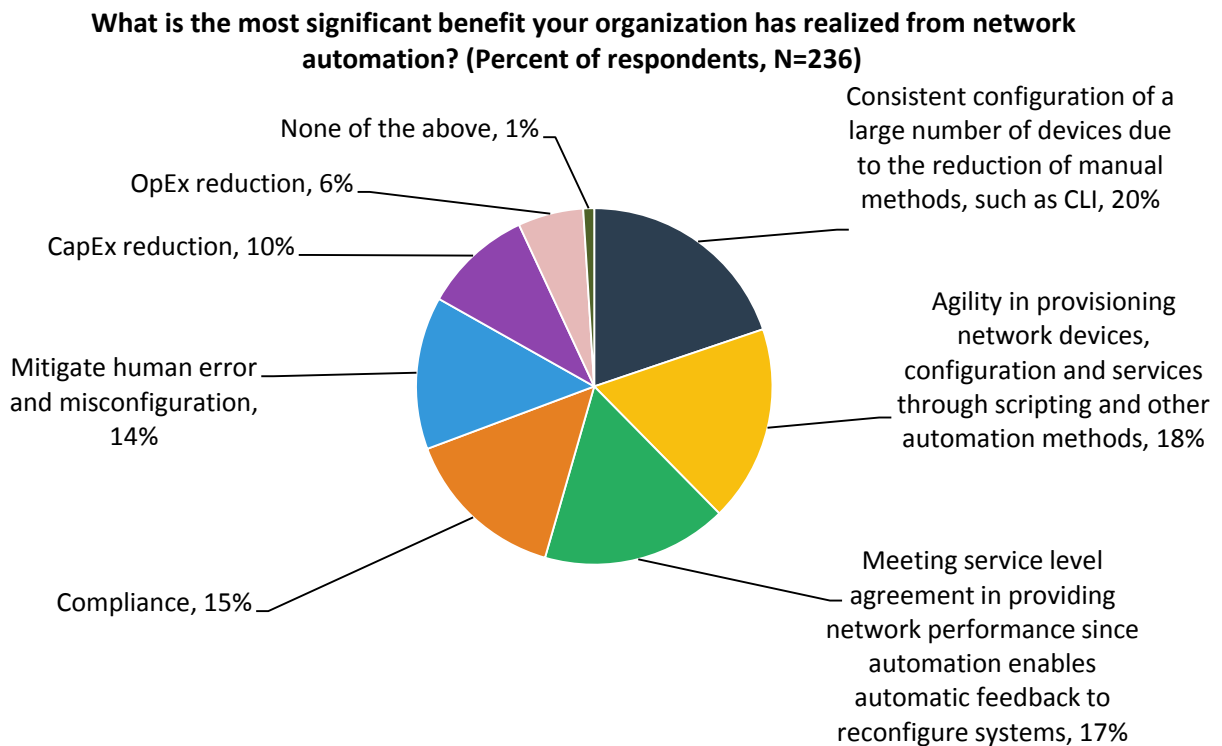
In fact, based on ESG research, 29% of IT professionals surveyed cited the integration between network operations and other IT domains as one of the biggest challenges facing their organizations' networking teams.<sup>1</sup>

While the challenges to IT may indeed appear somewhat overwhelming, help is on the way. Enter network automation.

### Network Automation: Greater IT Agility and Operational Efficiency

Network automation comprises tools and solutions that assist in reducing manual network management tasks, such as planning, configuration, compliance auditing, monitoring, validation, troubleshooting, and remediation. The benefits of network automation can be considerable. According to ESG research, 20% of IT professionals surveyed indicated that consistent configuration due to the reduction of manual methods was the most significant benefit realized from network automation, while 18% indicated agility in provisioning network devices, configuration, and services through scripting and other automation methods. Additionally, meeting service level agreements was cited as the most significant benefit by 17% of respondents, while 14% cited mitigating human error and misconfiguration.<sup>2</sup>

**Figure 1. Most Significant Benefits Realized from Network Automation**



Source: Enterprise Strategy Group, 2016

Overall, network automation can yield positive results throughout the organization, which include:

- **Greater operational efficiency.** With consistent configuration aiding IT agility, organizations can save time and resources, as well as reduce risk of human error that may have previously occurred due to manual configuration, such as through command line interfaces. Inserting network automation into the service delivery chain will reduce overall errors.

<sup>1</sup> Source: ESG Research Report, [Trends in Data Center Networking](#), February 2016.

<sup>2</sup> Source: ESG Research Report, [Network Automation: Enabler of IT Process Goals](#), to be published.

- **Improved SLAs.** Organizations can enjoy improved service levels due to frequent fine-tuning to meet changing service requirements, ultimately providing faster, more efficient configuration of the network and related IT infrastructure elements. The IT knowledge captured during software-driven network automation processes provides quicker responses and consistent actions, and enables repeatability and scaling to large environments.
- **Better collaboration and simplified delegation of tasks.** Automation can simplify and, to some degree, facilitate, collaboration across IT silos. Automation can codify and centralize operational knowledge. Tasks can now be easily delegated to IT teams throughout an organization, making the job of network configuration easier, while reducing provisioning time—freeing up IT resources to focus on more valuable, revenue-generating initiatives.

### **Better, Faster, Smarter: Integrating Network Automation with Other Constituencies**

While automating the network offers a number of organizational benefits, being able to actually integrate network automation with other constituencies appears to be poised to have the greatest impact on business agility in the not-so-distant future. It follows that a lack of integration with other networking, security, and IT management tools can pose a hard-to-crack barrier when it comes to the overall adoption of network automation. On the other hand, cross-domain collaboration is an important component that can propel overall efficiency and productivity throughout an organization.

In fact, based on ESG research, 24% of IT professionals surveyed cited that integrating network automation and other networking, security, and IT management tools is an area that will require the most work as their organization moves forward with network automation initiatives, while 23% indicated that collaboration between networking groups and others would require the most work.<sup>3</sup>

What would be a practical application of how automation can help streamline common IT processes, cultivating and supporting a better, faster, smarter organization? Think of the *help desk* as a use case that can benefit.

### **The Competitive Advantage: Making Help Desks More Efficient**

With business being transacted anytime and from anywhere, successful organizations understand that IT agility is key to staying ahead of the competition—while also ensuring customer and partner satisfaction, and providing the workforce with an enhanced user experience. And one of the key areas where automation provides a competitive advantage is *help desk ticketing* because it is the focus of problem resolution across different IT domains.

The help desk is a universal fixture in companies across industries, and often one of the busiest places in an organization. Many businesses have small IT departments where a majority of time is spent on routine maintenance and manual, labor-intensive tasks. It's no wonder that organizations resolving help desk tickets are constantly fraught with a number of challenges, including the following:

- **Inefficient, labor-intensive process.** Processing a help desk ticket and troubleshooting the network to find a root cause can often consume a great deal of IT's valuable time. Since the process requires multiple handoffs, the sheer number of groups involved can make the process cumbersome and error-prone, as well as time- and labor-intensive.
- **Miscommunication among teams.** With various teams across the organization investigating and remediating a problem, miscommunication is not unusual, especially as the number of people involved in the process increases. Misunderstanding can exacerbate existing problems, making them that much more difficult to solve.
- **Incorrect or inconsistent results.** During the process, if the choice of a corrective action is made in an ad hoc manner, or deployed manually by different groups, the outcome may yield either incorrect or inconsistent results.

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<sup>3</sup> *ibid.*

## The Benefits of Automating Manual Help Desk Tasks

As one might expect, organizations using automation to resolve help desk tickets are able to enjoy a smoother, more effective, and consistent process. Benefits include:

- **Reduction of mean time to resolution.** Automated methods can assist in troubleshooting the network. Predetermined automation workflows can then be used to restore the correct state, eliminating time and resources needed for groups across domains to validate and confirm the solution to the problem initially reported to the help desk.
- **Streamlined, more efficient process.** Automated network configurations are created collaboratively between IT groups, ensuring everyone is in agreement, with no questioning or second-guessing of solutions. Invoking solutions via automated corrective action, and capturing lessons from deploying the solutions, enable the use of consistently captured knowledge.

## The Bigger Truth

Today's changing IT landscape is becoming increasingly complex to manage. Organizations across industries need to support agile systems encompassing a variety of solutions that must be integrated across different teams and IT domains. While other components of the IT infrastructure, such as compute and storage, have become automated, networking has not kept up.

Coordination of tasks and sharing of knowledge between those who design networks, respond to service requests, troubleshoot, approve changes, and perform remediation is often performed manually. Thus, inefficiencies and errors will accumulate, depriving these teams of the opportunity to perform activities that provide higher value to the organization.

To maintain a competitive edge, and keep customers as well as the workforce satisfied, organizations must focus on automating the network, beginning with traditionally manual tasks, to save time and resources, reduce human error, speed time to resolution, and increase business and IT agility—while increasing customer and employee satisfaction. While network automation will offer IT organizations the time and opportunity to focus on more valuable, revenue-generating initiatives, the integration of solutions and collaboration across groups and domains will only augment the benefits of automation.

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