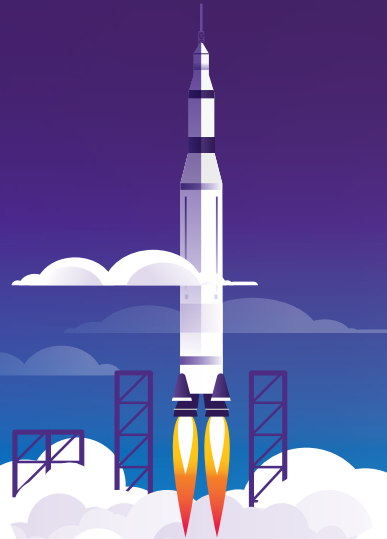


11th Annual

State of the Network Study





Executive Summary

In the 11th Annual State of the Network Global Study over 600 IT professionals reveal their biggest challenges, key initiatives, and top reasons for moving to the cloud.

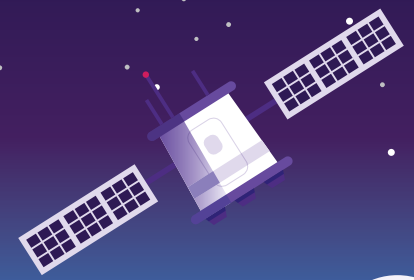
In this year's study we see hybrid IT investments driven primarily by a greater need for agility and flexibility, rather than the expected fiscal concerns. Applications are increasingly moving to the cloud and more users are logging on remotely. All while the responsibility to monitor service availability and performance of resources still overwhelmingly falls to network teams.

With data projected through 2020, the study shows IT enterprise organizations supporting a combination of internal and external cloud resources orchestrated and managed as a unified hybrid infrastructure. As visibility into cloud resources remains a challenge, teams will struggle to deliver on the promise of anytime, anywhere connectivity.

2018 State of the Network Key Highlights:

- IT teams responsible for resolving cloud issues: Sixty-five percent of respondents said network teams were responsible for troubleshooting cloud issues. While network teams may not be involved in the initial migration to cloud, two-thirds are responsible for ensuring the ongoing performance of these resources.
- Employees accessing resources remotely: Over 90 percent of enterprises have some portion of their workforce accessing network or application services from a remote site, with 54 percent saying a quarter of their employees are doing so.
- Application performance monitoring challenges: Fifty-two percent of respondents said their top challenge was determining whether problems are caused by the network, application, or system – this was also cited as a top challenge in 2017.
- Bandwidth demand surges: One driver of emerging technology adoption is bandwidth demand, with enterprises forecasting a continued growth over the next two years. Between 2018 and 2020, 42 percent expect demand to increase 51-100 percent.

Emerging Technologies

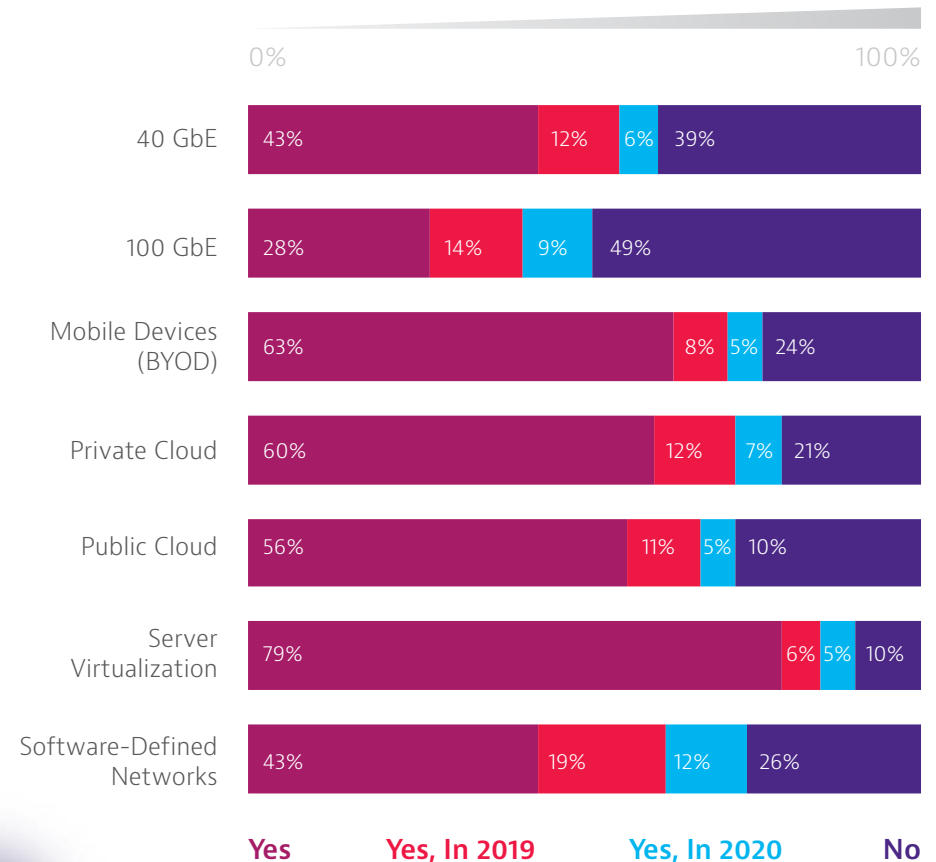


When it comes to capacity, bigger is better – as over 40 percent have moved to 40 GbE. That number will increase to nearly two-thirds by 2020.

Not surprisingly, 100 GbE is also on the rise with nearly one-third already adopting the standard and over half predicting its adoption by decade end. Though perhaps a more modest growth trajectory than predicted just a few years ago, the inevitability of bigger pipes will help deliver on the increasing demand for video and bandwidth-intensive applications.

Beyond capacity, public and private cloud are deployed in the majority of enterprise organizations and are forecasted to experience steady growth. Likewise, implementation of software-defined networks is projected by respondents to cross the threshold into mainstream technology by 2019 with more than 50 percent adoption. This is likely driven by desires to automate portions of the network and decrease the spin-up time of new network resources. Network managers will need to understand how managing traffic in cloud and software-defined networks will impact monitoring and personnel strategy. Expanding visibility and understanding automation implications of these technologies will likely require added technology support and new programming skills from engineers.

Emerging Technology Deployments



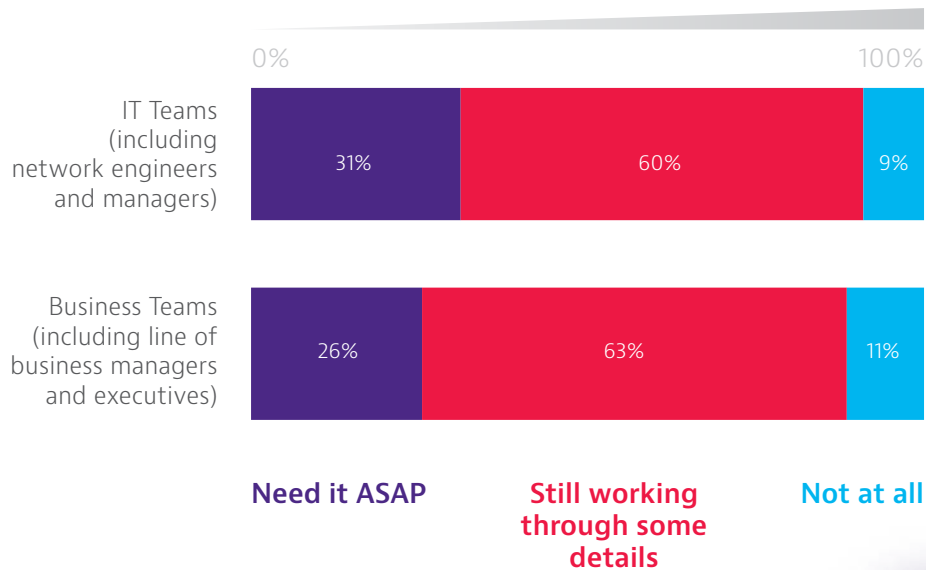
Cloud & Hybrid IT Adoption



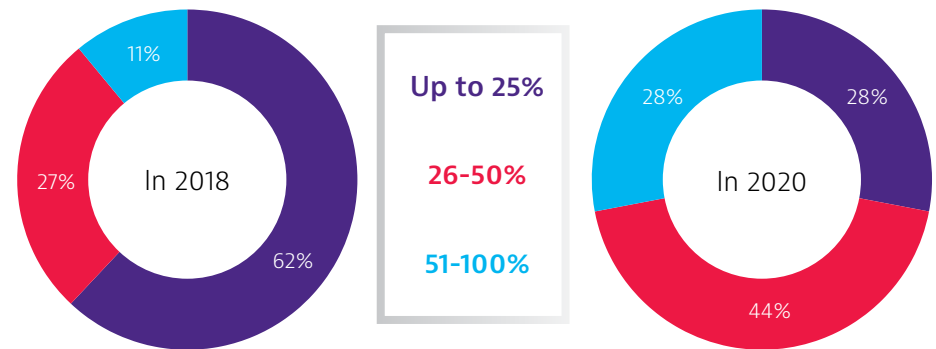
The need for cloud is felt more keenly by network teams than those on the business end with nearly a third of network engineers and managers saying they “need it ASAP.” Those closer to the crunch are dealing with problems on a daily basis and no doubt would like to see some of these issues alleviated.

The majority of enterprises have made the leap to cloud, and of those, two-thirds indicated that one in every four applications is running in the cloud. The other third indicated more than a quarter of applications are currently running in the cloud.

By 2020, how important will cloud deployment be to your organization’s IT and business teams?



Percentage of applications in the cloud

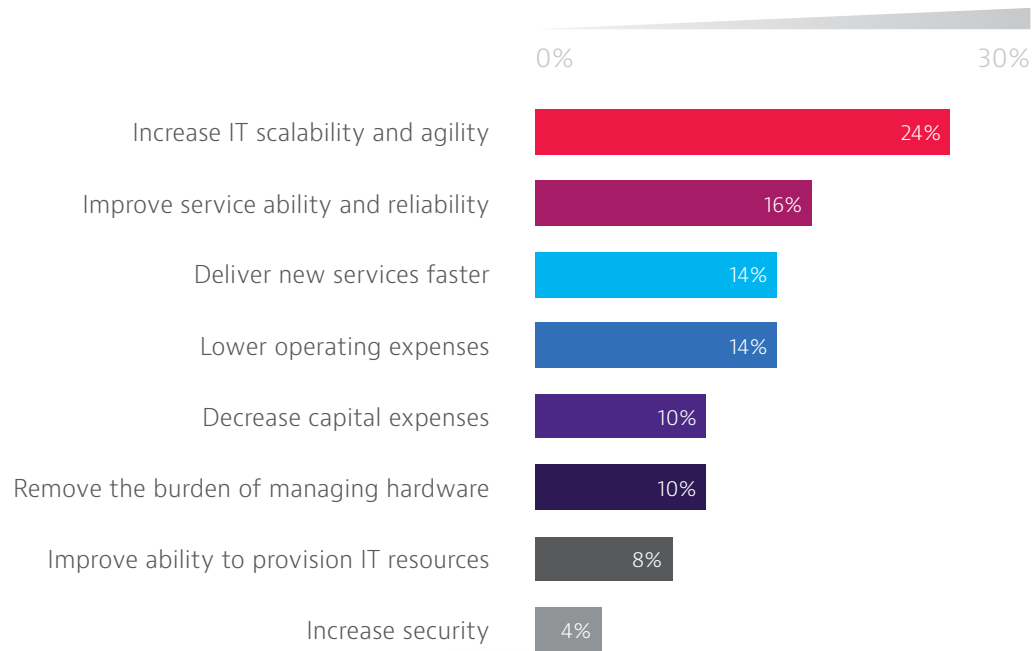


By 2020, respondents anticipated a dramatic shift in the percentage of applications operating in the cloud. Most organizations will be running between one-quarter to half of their IT workload off-premises. Around one-third will run the majority of their applications in the cloud. The increased traffic flowing outside the traditional data center is another driver fueling demand for larger network capacities and the dynamic monitoring environment network teams face.



Top Reasons for Moving to Cloud

Despite the perceived importance of cost reduction, the top reason enterprises are moving to the cloud is to more quickly adapt to changes in business demands through increased IT scalability and agility. Also important is the improvement of service availability and reliability, with lowering costs coming in third place, tied with the need to deliver new services faster..

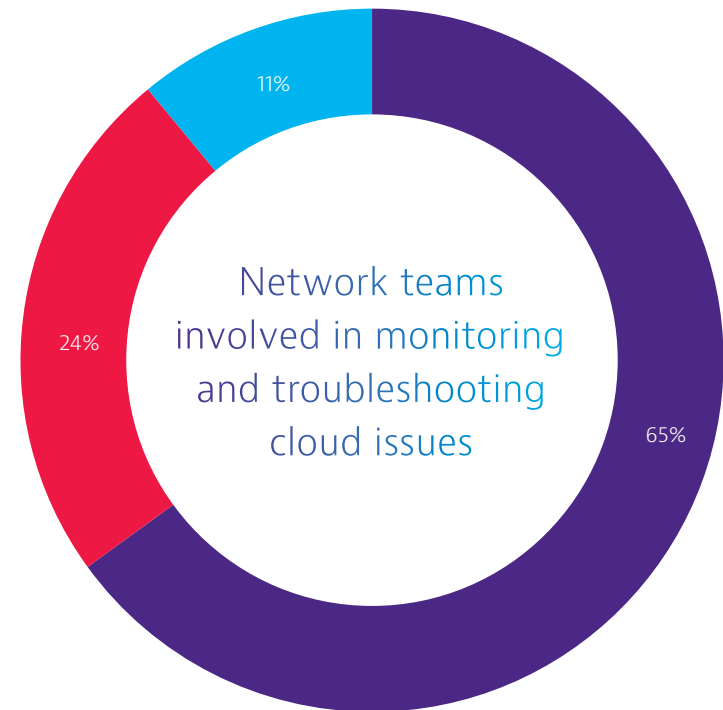


Ensuring Visibility

As more applications are virtualized and migrated to the cloud, this introduces new visibility challenges and sources that can impact performance and delay. These challenges are expected to remain constant into the future as both engineers and tools adapt, to provide greater support for these new environments.

With cloud deployment becoming ubiquitous, it is someone's job to monitor it. However, not all enterprises have clear processes in place to define that individual or team. More than 65 percent of network teams are involved with the monitoring and troubleshooting of cloud performance issues. This contrasted with nearly twenty-five percent indicating that they weren't involved in problem solving cloud issues, and approximately ten percent who have no idea.

It is an opportunity for IT teams to erase some of that ambiguity with policies and roles for managing cloud networks.





Cloud Challenges

When asked to identify the greatest challenges of cloud computing from an engineer perspective, network and server team respondents indicated the shortcomings existed primarily with loss of visibility, determining user experience, and assessing complexities of the migration. The two chief concerns for IT teams to address in the short-term are the lack of visibility into performance along with better anticipation of challenges upon migrating services to the cloud.

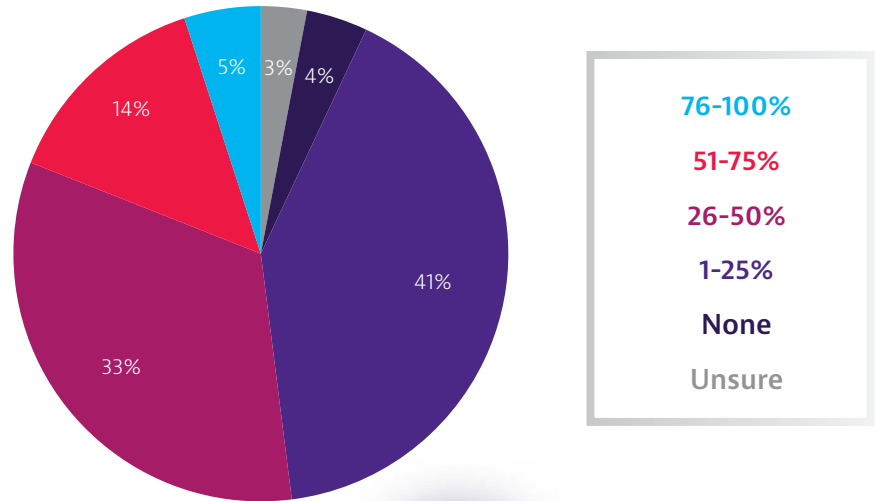




Remote Users

A large percent of the workforce is now accessing resources remotely. Over ninety percent of enterprises have some portion of their workforce doing so. Whether you're at the coffee shop, a hotel, or in the air, it is important to be able to do business, and it is just as important for IT to be able to effectively ensure performance of those resources, no matter the point of access.

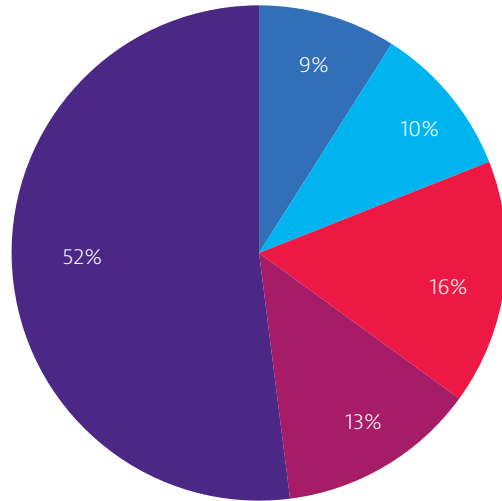
What percentage of your workforce is accessing network or application services from a remote site like a home office, airport, or hotel?





Application Performance Monitoring Challenges

Effectively monitoring applications is still tough for many organizations. The top challenge by a wide margin is isolating the issue to the server, client, or application. Over half of respondents are challenged in this way, leaving room for smarter and more efficient tools to solve this problem.

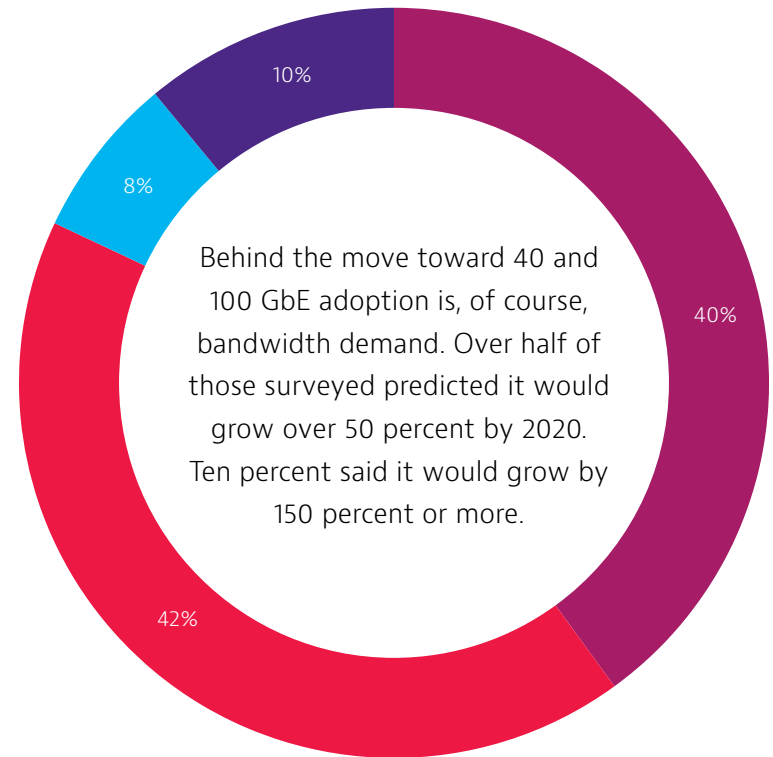
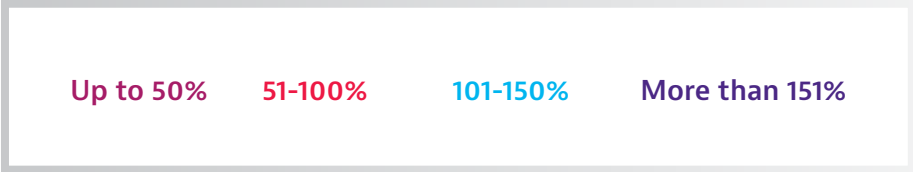


- Determining whether problems are caused by the network, application, or system
- Measuring latency and delay issues
- Managing application bugs and patches
- Understanding user experience
- Monitoring bandwidth consumption



Bandwidth Demand

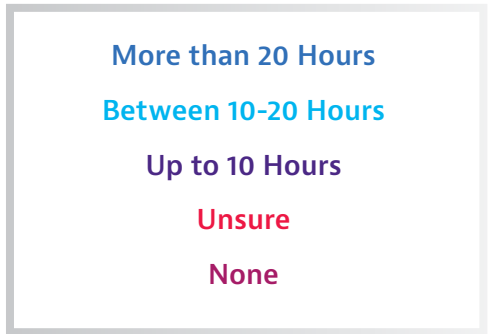
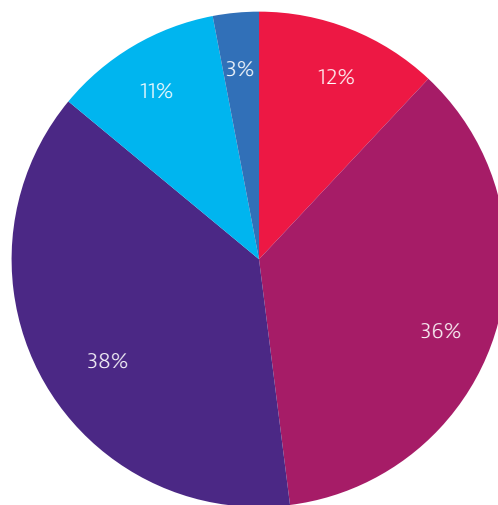
How much do you expect bandwidth demand for your organization's network to grow between now and 2020?



Behind the move toward 40 and 100 GbE adoption is, of course, bandwidth demand. Over half of those surveyed predicted it would grow over 50 percent by 2020. Ten percent said it would grow by 150 percent or more.

Unified Communications

Voice over IP (VoIP) remains the top UC technology with most enterprises currently using it. Some of the challenges remain consistent year over year. However, most teams don't spend that much time troubleshooting VoIP, which indicates they have either found the right toolset to manage it, or they don't know there is anything wrong. More insight into user experience could shed some light on that subject and provide either assurance that everything is good, or uncover issues left undetected.



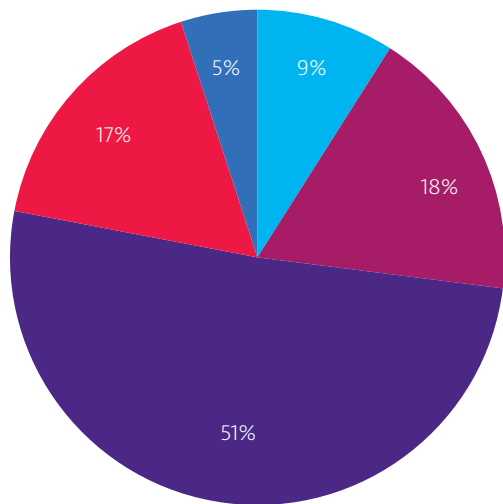
Security Issues



Of course, a network is only as good as its security. With network teams often the first responders for security issues, they are spending more and more time working out the source of breaches.

Two-thirds of respondents are involved in troubleshooting security issues. More than 20 percent are spending more than a quarter of their time at work simply troubleshooting potential security problems, and for the majority, this is increasing.

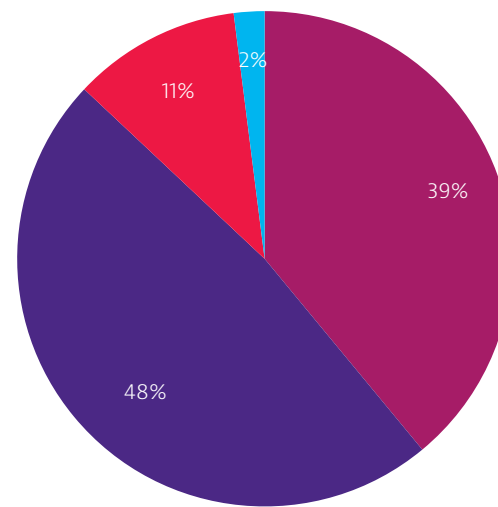
How many hours of a 40-hour work week do you spend troubleshooting security issues?



More than 20 Hours
 Between 10-20 Hours
 Up to 10 Hours
 Unsure
 None

When asked whether the amount of time spent in security investigations has increased, more than 60 percent of network professional indicated that it was. With IT teams overwhelmed by breaches and malware, network teams are increasingly seeing security as a part of their job.

Has the time that you spend troubleshooting security increased over the past 12 months?



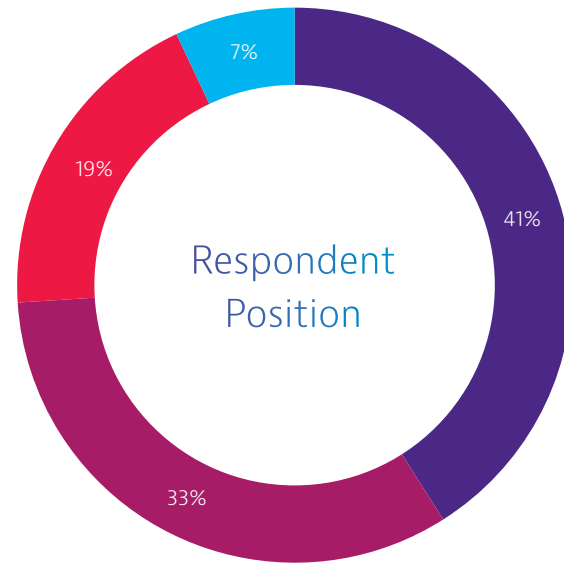
Yes, by more than 50%
 Yes, by up to 25-50%
 Yes, by up to 25%
 No



Research and Methodology

Study questions were designed based upon a survey of network professionals. Results were compiled from the insights of over 600 respondents, including network engineers, IT directors, and CIOs from around the world.

In addition to geographic diversity, the study population was evenly distributed among networks and business verticals of different sizes. Responses were collected in March of 2018 via online surveys.



For more information about the study's methodology or the results, contact Stephen Brown at steve.brown@viavisolutions.com

Network Engineer **IT Director** **System Engineer** **CIO**



stateofthenetwork.com



Contact Us **+1 844 GO VIAVI**
(+1 844 468 4284)

To reach the Viavi office nearest you,
visit viavisolutions.com/contacts

© 2018 VIAVI Solutions, Inc.
Product specifications and descriptions in this
document are subject to change without notice.
sotnreport18-wp-ec-ae
30187307 900 0718

viavisolutions.com