EXCLUSIVE RESEARCH FROM

IDG

# EXECUTIVE SUMMARY

## 2018

# State of the Network Survey

NETWORKWORLD
FROM IDG

# 2018 State of the Network Survey

**The enterprise network grew a lot more complicated in 2017. IoT projects, the demands of a growing mobile workforce, an explosion of apps in the cloud and other developments prompted network professionals to step up their game, and their network infrastructure, just to keep up.**

Today, the role of the network professional has never been more challenging. As the network's tentacles reach farther and wider than ever before, networking professionals are now being asked to help shape IT strategy, which requires them to become more strategic and business oriented. They're also communicating with the CIO and lines of business more often today than in years past.

They've also taken on a bigger security role as cybersecurity issues seem to grow in tandem with any new digital strategy. But they're collaborating with network teams and other groups within IT, such as server, application and virtualization, to successfully drive innovation.

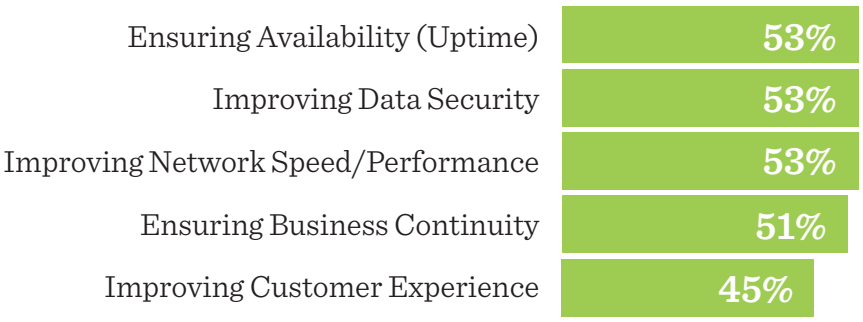
How do we know all this? We surveyed 268 professionals, responsible for networking in their organizations. More than half (59%) work at U.S. companies, and the remainder (41%) are from non-U.S. firms. They shared with us the current state of their own enterprise network, their accomplishments, concerns and to-do lists for the next 12 months and beyond.

## Security, Uptime Among Biggest Challenges

Organizations face an extensive list of network and data center-related challenges even as they begin their modernization projects. The most common challenges include maintaining network security while assuring network connectivity (42%), protecting against data breaches and leaks (36%), ensuring availability and business continuity (both 35%), and reducing operational expenses (34%), to name a few.

These challenges form the basis for network spending over the next 12 months. More than half of IT professionals say their primary drivers for network investments are to ensure availability and uptime, improve data security, increase network speed and performance, and provide business continuity.

### ENSURING AVAILABILITY & UPTIME IS #1 DRIVER FUELING NETWORK INVESTMENTS

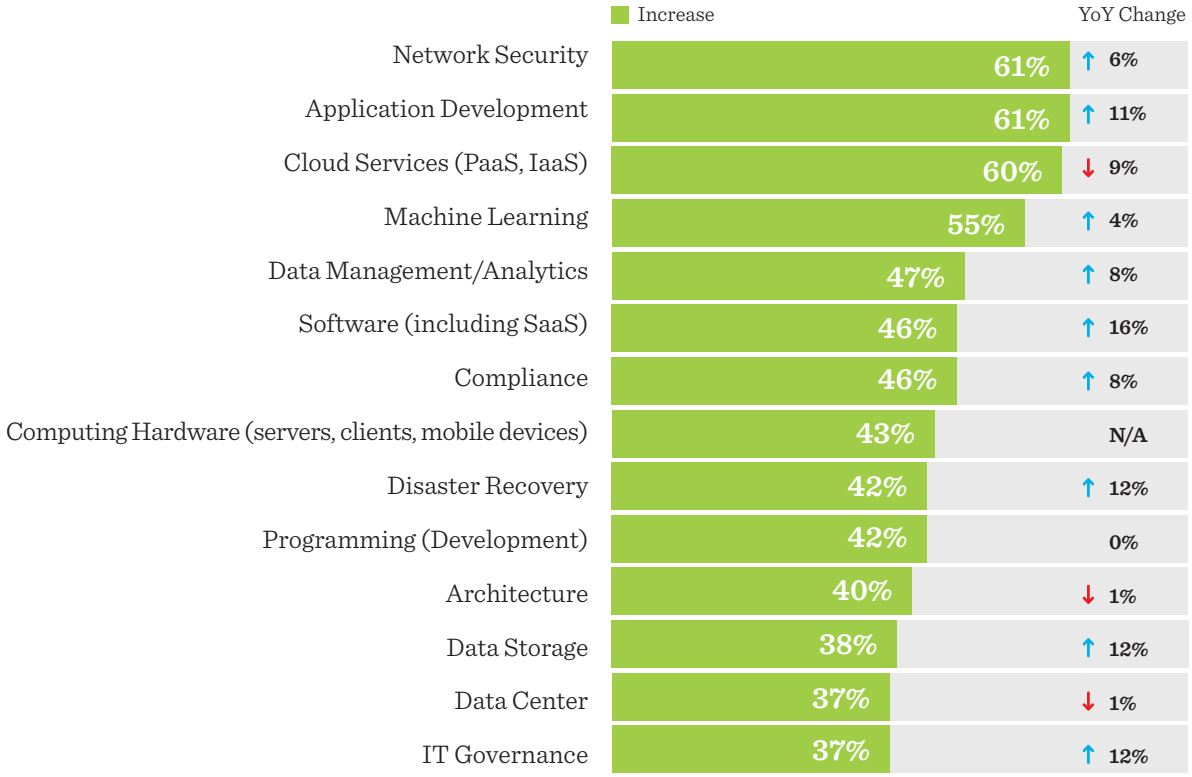



## Modernization = Budgets Increases

Some 43% of organizations expect their total IT budget to increase over the next 12 months by an average of 21%, and most of it will go towards security and cloud services. Seven percent of organizations are expecting their IT budget to decrease and half of the organizations surveyed anticipate their IT budget to remain the same.

Organization leaders say they'll most likely increase spending on network security, application development (both 61%) and cloud services (60%). Meanwhile, half of organizations plan to hold budgets steady, particularly on

## SECURITY, APP DEV & CLOUD SERVICES BUDGETS EXPECT TO INCREASE




network and systems management (59% say spending will remain the same) and architecture (53%).

### A Marathon, Not a Sprint

**Half of IT professionals surveyed (52%) say they prefer a gradual transformation, such as replacing one component or application at a time.**

Most organizations plan a slow and steady modernization of their enterprise architecture, similar to last year's survey. Half of IT professionals surveyed (52%) say they prefer a gradual transformation, such as replacing one component or application at a time. Others plan to modernize only underlying infrastructure and will redesign legacy systems (24%).

These modernization projects come with their share of challenges. Half of IT professionals who plan to or are undergoing infrastructure or application modernization expect to face integration issues and the possibility that applications won't function properly in tandem with other apps. They also expect resistance to change from end users (37%). Data privacy and security concerns inevitably surface

with any technology change, and one-third of respondents expect to address those types of issues, as well.

## Top of the To-Do List

So where are most organizations today along their journey to network modernization? Nearly half of organizations have already deployed network security monitoring tools, and another 42% are in the planning stages this year for later implementation. Some 48% of organizations have also completed the implementation of server consolidation, with another 35% in the planning phases.

With those technologies and tools becoming more established, IT professionals now have several hot networking projects on their to-do list over the next 12 months. Among those gaining the most momentum:

### Data management/Analytics

Data has been accumulating in the enterprise for years. Now, companies need to shift from being data-generating to data-powered organizations. Nearly half of organizations (49%) have data management or analytics projects on their radar/actively researching or piloting today, and 32% already have these solutions in place.

### Tools to gauge application performance

Gauging application performance is critical to making improvements to the network, so it's understandable that 47% of organizations are planning to add new application performance tools.  A quarter of organizations already have these tools in place.

### Desktop virtualization

Desktop virtualization is a valuable tool for handling increases in mobile workers by providing secure, mobile access to applications. It also simplifies desktop security and relieves the IT staff of maintenance burdens – a trifecta of benefits for the 42% of organizations that are planning desktop virtualization

projects, with 29% already reaping those benefits by having desktop virtualization in place.

### Software-defined networking (SDN)

Software-defined networking allows the network to direct traffic without relying on the hardware to make the decision, which positions organizations for new technologies, including IoT devices, cloud-based applications and big data apps. More than half of organizations we surveyed (52%) plan to add software-defined networking to their modernization strategy, and 15% already have SDN in place.

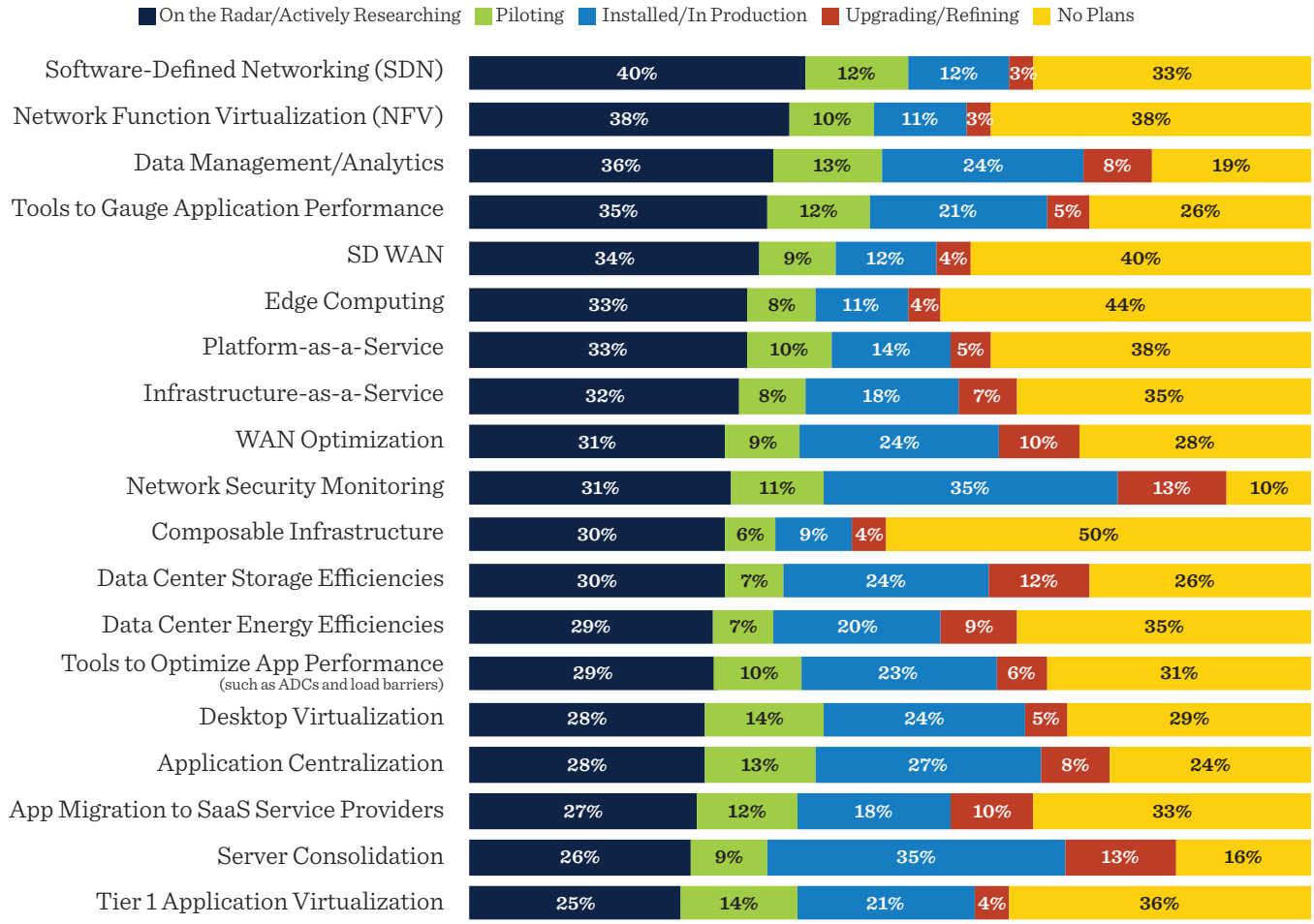
### Network function virtualization

Network function virtualization is the concept of replacing dedicated network appliances, such as routers and firewalls, with software running on shared servers to automate the orchestration and management of network, storage and compute resources. NFV and software-defined networking are two closely related technologies that often exist together, so it makes sense that 48% of organizations are planning to add network function virtualization to their arsenal and 14% already have NFV in place.

### Platform as a Service (PaaS)

Platform as a Service lets the service provider manage your infrastructure up to the virtualization layer, including management of all OS, middleware and runtime functionality, while the IT team maintains the ability to completely control applications and all data they create. It can lower costs of ownership and minimize management and maintenance. These are three good reasons why 19% of IT decision-makers we surveyed said their organization already has their platform in the cloud (PaaS) and another 43% are planning to move their platform to the cloud within the next two years.

## INCREASED FOCUS ON SOFTWARE-DEFINED NETWORKING



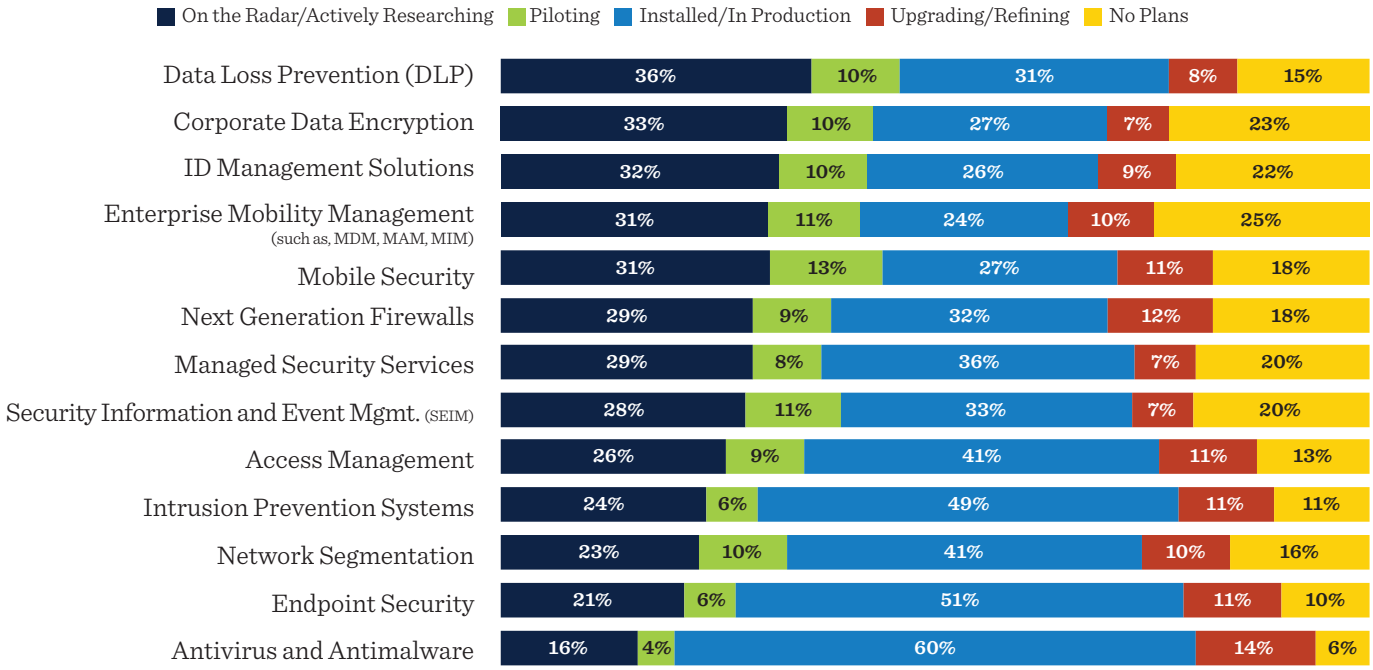

### Network Security is Never Done

Network security continues to be a top priority among all organizations. Most organizations have already deployed antivirus (74%), endpoint security (62%), intrusion prevention tools (60%), access management solutions (52%), and network segmentation (51%).

**Nearly half of organizations are researching/piloting or have data loss prevention initiatives on their radar.**

But there's plenty of room for improvement. Nearly half of organizations (46%) are planning to add data loss prevention tools, followed by mobile security (44%) and corporate data encryption (43%). Some 42% of IT professionals also plan to implement enterprise mobility management solutions, such as mobile device management, application management, and information management.

## NETWORKING EXECUTIVES FOCUSING ON DATA PROTECTION




### Not Quite on the Radar

Several new networking technologies and strategies are showing promise but remain on the back burner for many organizations. Composable infrastructure, for instance, virtualizes the entire IT infrastructure. It treats physical, compute storage and network devices as services, and manages all of IT via a single application. This eliminates the need to configure hardware to support specific applications and allows the infrastructure to be managed by software command. As promising as that sounds, it has received a lukewarm reception so far, with 50% of organizations having no plans to pursue the technology in the next 12 months, and just 18% having it on their radar.

**18% have composable infrastructure plans on their radar**

Blockchain technology, which can aid in cybersecurity and application development, is also a no-go by the majority (69%) of organizations right now. Blockchain provides a way of auditing and verifying the integrity of data in a way that is secure, transparent, highly resistant to outages, and efficient. While organizations are not rushing to implement blockchain technology right now, IDC predicts worldwide spending on blockchain solutions to reach $2.1 billion

in 2018, and climb to $9.7 billion in 2021. Right now, the financial services sector has shown the most interest in blockchain, but many other industries are starting to use the technology for internal tasks, such as auditing and verifying data integrity. Skeptics, however, say that the blockchain industry is heavy on potential and light on proof. The technology is now moving beyond proof of concepts to production pilots with business cases being built to identify just how beneficial the technology can be.

**More than half of IT professionals that we surveyed are familiar with intent-based networking**

A new form of networking software has been emerging onto the networking landscape and while the buzz is just beginning, intent-based networking could be the next big thing. More than half of IT professionals that we surveyed are familiar with intent-based networking (54%), and one-third of them work at companies with IT budgets of more than $1 billion.

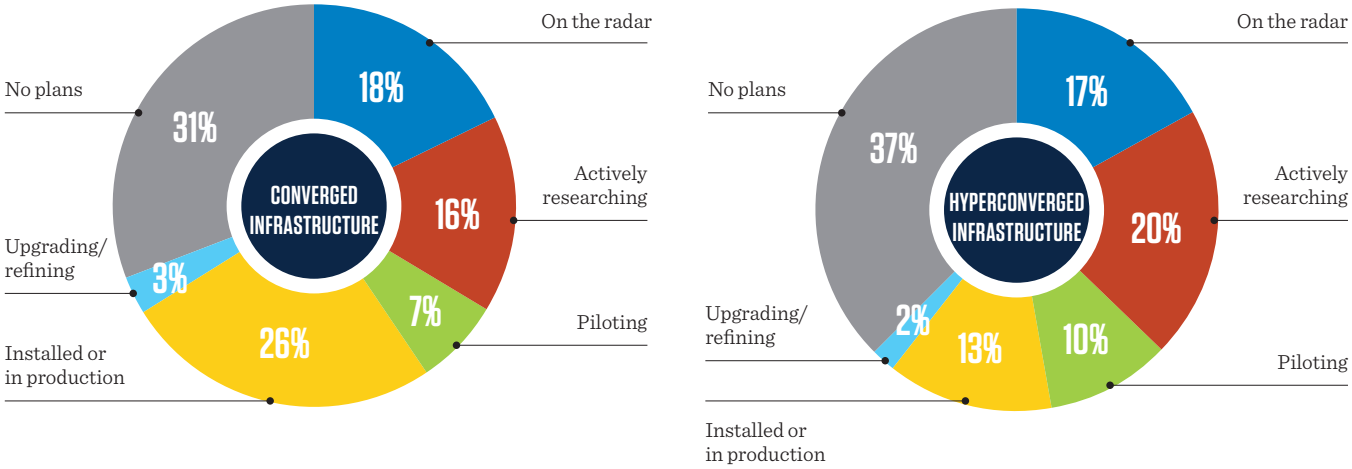
IDC describes intent-based networking as a strategy that leverages machine learning, advanced security and deep analytics capabilities to provide greater levels of automation, security integration and centralized manageability. Researchers say that intent-based networking won't be in the mainstream for several years, but solutions are already emerging. It's not surprising then that only 3% report adoption of an intent-based network and 8% are beginning to execute and intent-base networking strategy, including investing in SDN, virtualization, machine learning, model-based APIs and security tools. A larger pool (38%) have not yet considered this strategy but plan to begin research in the next 12 months.

## Hyped up on Converged and Hyper-Converged Systems

On the bright side, a few nascent networking strategies are starting to gather

interest. Hyper-converged infrastructure is still an emerging data center technology, but nearly half of organizations (47%) that we surveyed plan to implement converged and or hyper-converged systems in the next 12 months, and 15% of IT decision-makers reported that their organization already has converged or hyper-converged systems in place.

## CONVERGED & HYPERCONVERGED INFRASTRUCTURE IMPLEMENTATION




Converged infrastructure is an approach to data center management that aims to minimize compatibility issues between storage systems, servers and network devices. It combines storage and compute into a single physical appliance, which can reduce costs of deployment, simplify management and reduce maintenance and support costs.

A hyper-converged infrastructure is software-centric architecture that integrates compute, storage, virtualization and management on commodity hardware that's supported by a single vendor. HCI makes it easier to launch new cloud services and to easily package and migrate new workloads.

## DATA ANALYTICS IS TOP IOT BENEFIT TODAY AND BIGGEST FUTURE INVESTMENT

| | Today | Next 12 Months |
|---|---|---|
| IoT Connectivity | 30% | 43% |
| Connectivity Management | 27% | 39% |
| IoT Security | 27% | 45% |
| Data Analytics | 26% | 47% |
| IoT Management | 22% | 45% |
| Application Enablement | 21% | 42% |
| Embedded Networks | 19% | 38% |

### Preparing for IoT

IoT devices and technologies are moving to the mainstream in enterprises across all industries. For many organizations, IoT initiatives are expected to support decision-making through data, optimize assets, automate maintenance work, improve the coordination of projects and track the success of programs and projects.

While just 22% of organizations currently have IoT efforts underway, 46% expect to start IoT projects sometime in the next 12 months to three years.

Organizations with IoT projects underway today are focusing on IoT connectivity (30%), connectivity management and IoT security (27% each). A year from now, many of those same organizations plan to invest in IoT analytics projects (47%).

## Looking to the Future

Networking professionals will continue to take a central role in shaping IT strategy as the network becomes central to driving new lines of business, saving money and securing the enterprise. Look for network modernization to continue its slow and steady pace, with increased spending on network security, application development and cloud services, while organizations will hold back on new investments in systems management and architecture. IT decision-makers are intrigued by leading edge technologies and networking strategies, but will continue to research their benefits, costs and ROI before proceeding.

## About Our Survey

We surveyed 268 professionals with exposure to network IT at their place of employment for the 2018 State of the Network survey. All of our respondents (100%) said they were on the team that is primarily responsible for networking at their organization. Respondents are closely balanced between enterprise organizations (41%) with more than 1,000 employees and small and mid-sized firms (55%) with fewer than 1,000 employees. There is a variance in respondents' IT budget as well – 36% said they worked for companies with IT budgets less than $100 million, and 25% of respondents said they worked for companies with IT budgets ranging from $100 million-$999 million. Some 21% of respondents had IT budgets over $1 billion annually. The average IT budget was $137 million annually.

## Methodology

Network World's 2018 State of the Network survey was conducted online among members of the IDG audience via email and social promotions between February 13, 2018 and April 10, 2018. The goal of the study was to help tech marketers inform their product development, marketing and messaging strategies, specifically relating to emerging technologies that impact the network.