

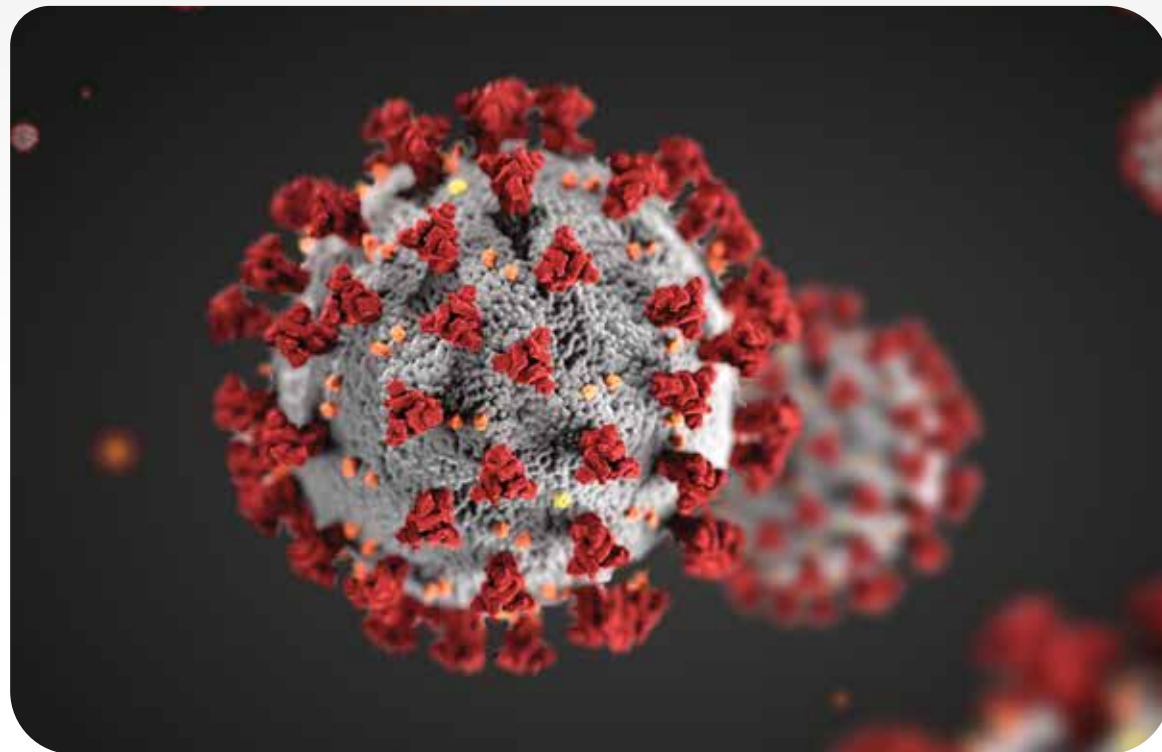
Digital Workspace Deployment & Performance Monitoring in the New Normal

**SURVEY
REPORT**
2020-21

| What is a Digital Workspace?

A digital workspace is an integrated technology framework designed to deliver and manage app, data, and desktop delivery. It allows employees (end users) to access their apps and data in real time – on any device, from any location regardless of whether the information is stored through cloud services or in the data center.

Key digital workspace technologies include Citrix Virtual Apps and Desktops, Citrix Cloud service, Microsoft Remote Desktop (RDS), VMware Horizon, VMware Horizon Cloud Service, Microsoft Windows Virtual Desktops, AWS WorkSpaces, etc.



| 2020/21: A Pivotal Period for Digital Workspace Deployments

The pandemic forced most people to work from home. Some organizations had to deploy digital workspaces from scratch. Others had to scale their deployments to unexpected levels.

Executives focused more on digital workspaces like never before as employee productivity was paramount. Scalability, performance, troubleshooting of digital workspaces came into focus.

| About this Survey

eG Innovations and xenappblog conducted this survey between December 2020 and February 2021 to shed light on various topics:

- Understand the state of digital workspace deployments today
- Highlight the challenges and changes that organizations had to make due to the pandemic
- Determine what technology choices organizations made
- Establish where organizations are in terms of managing the performance of digital workspace deployments
- Reveal the key areas where digital workspace professionals need help

| About this Report



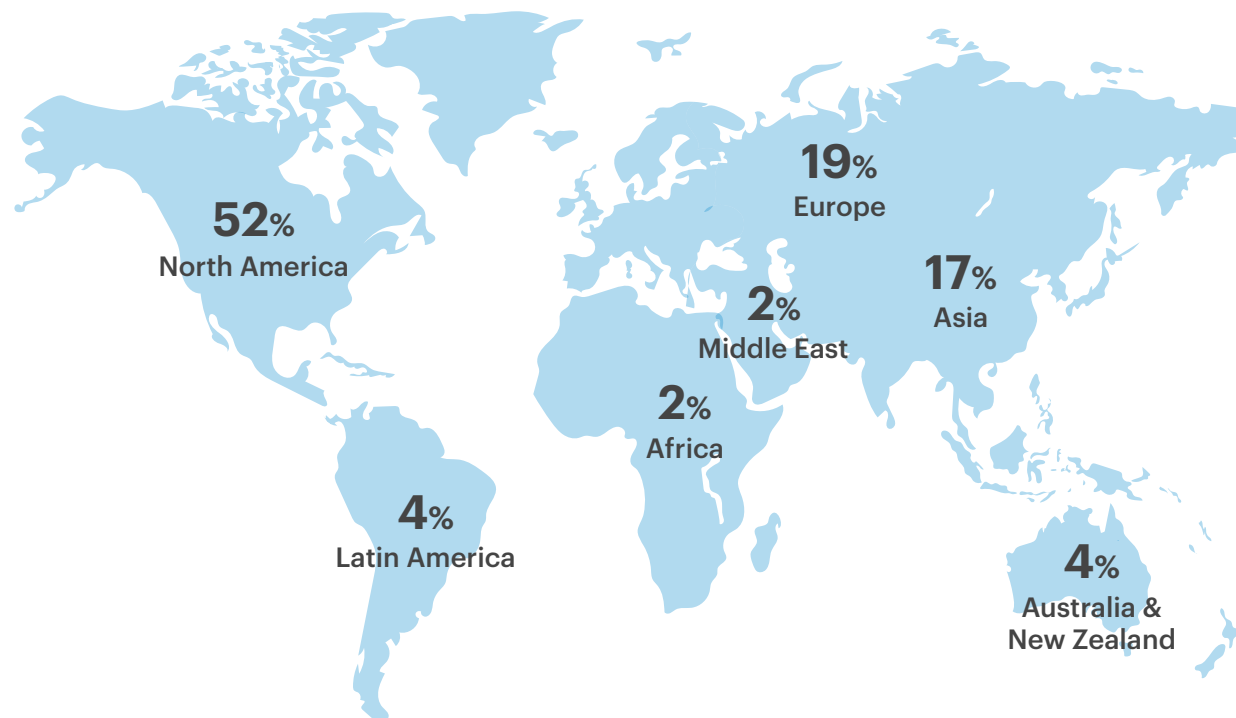
This report is a compilation of the responses of 1050 digital workspace professionals from across the world and includes learnings, analysis and trends. This is intended to be useful for any IT professional working with digital workspace technologies.

Our thanks to everyone who participated in our survey.

How the Survey was Conducted

- The survey was conducted online. IT professionals were contacted over email, Twitter, LinkedIn, etc.
- **1050+ respondents make this one of the largest surveys of digital workspace deployments conducted in recent years.**
- Respondents spanned all the key geographies.
- Professionals performing several different roles participated in the survey.

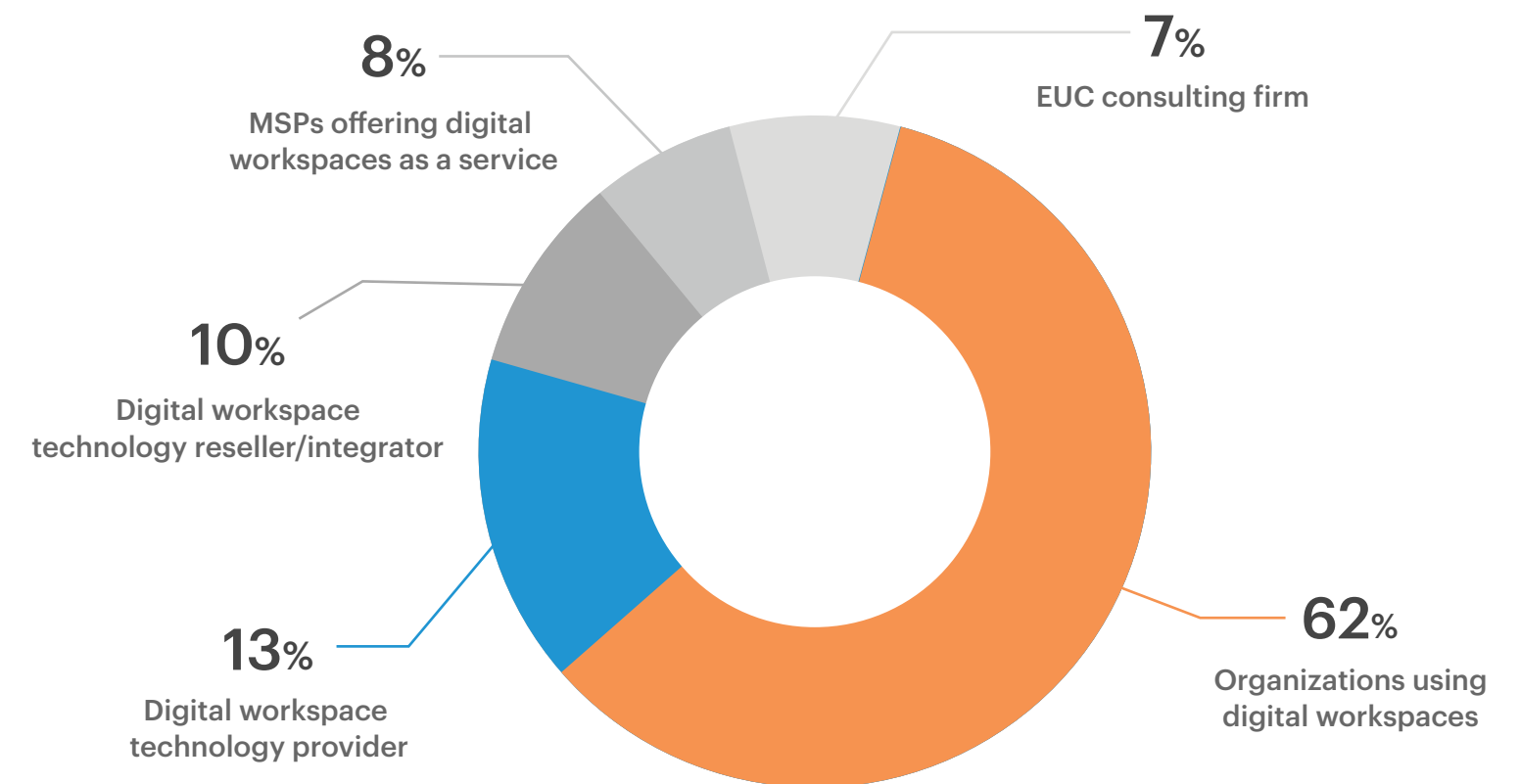
Geographical distribution of survey respondents



A team of professionals with expertise in digital workspace technologies analyzed all the data collected to provide meaningful insights.

All the responses have been analyzed for consistency. Incomplete responses and suspected fraudulent responses were not considered when compiling the results.

Breakdown of respondents' organizations based on their connection/relationship with digital workspaces



| Focus Areas of the Survey



ABOUT DIGITAL WORKSPACE DEPLOYMENTS



HOW THE PANDEMIC INFLUENCED DIGITAL WORKSPACE DEPLOYMENTS



PERFORMANCE MONITORING FOR DIGITAL WORKSPACES

About Digital Workspace Deployments

- Centralized management is the primary reason why organizations are adopting digital workspaces.
- Citrix remains the dominant player in the digital workspace landscape. VMware has significant market-share.
- Adoption of digital workspaces in the cloud is still in an early stage.
- Cost and security concerns are two of the major reasons why organizations are not actively moving digital desktops to the cloud.

How the Pandemic Influenced Digital Workspace Deployments

- 16% of respondents deployed digital workspaces for the first time due to the pandemic.
- 82% of respondents had changes in their digital workspaces due to the pandemic.
- 41% of respondents felt that digital workspace technologies have now become more important for their organizations.
- Network connectivity and bandwidth limitation at the user end was the topmost challenge of organizations supporting remote workers.

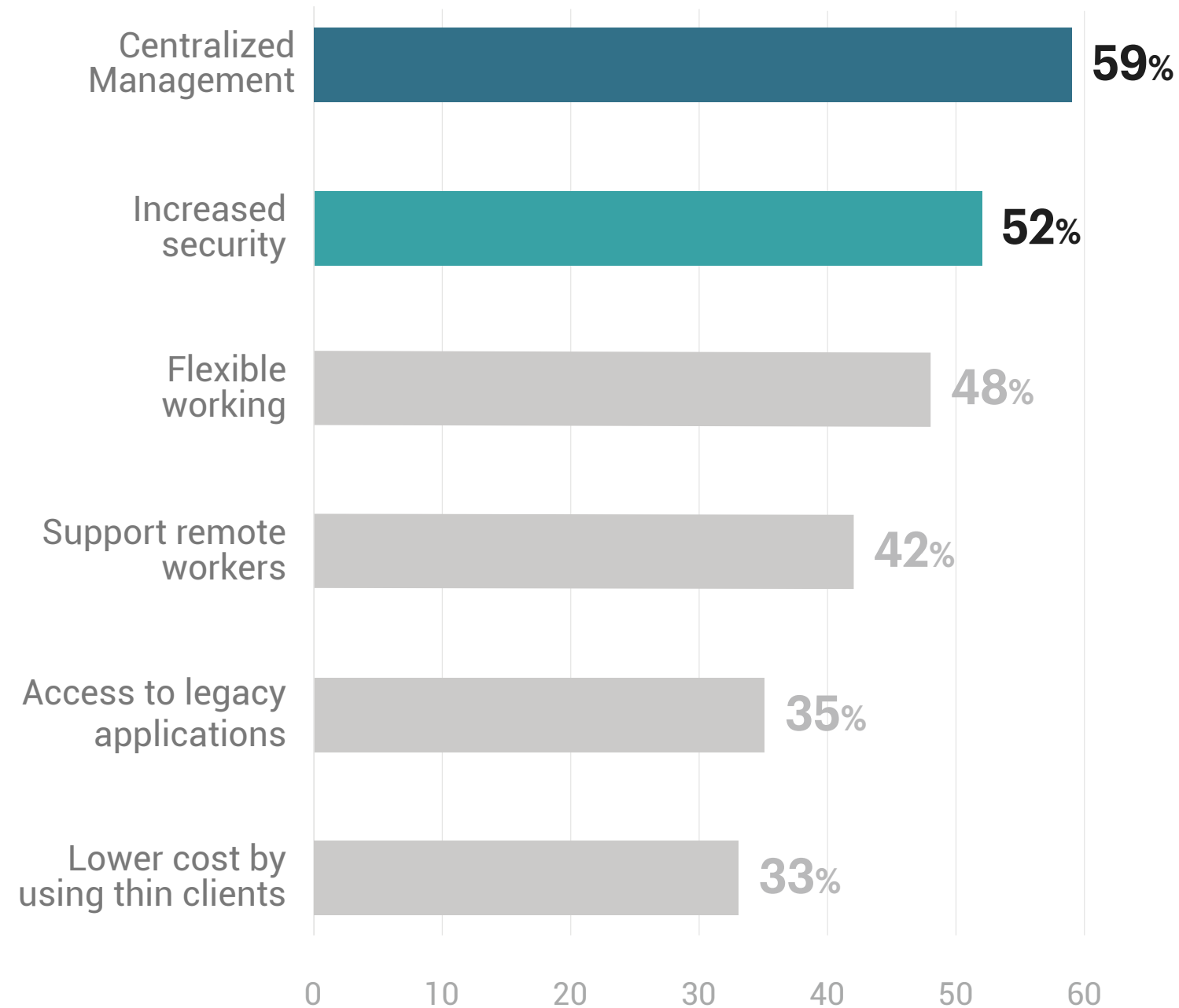
Performance Monitoring for Digital Workspaces

- Digital workspace professionals are looking for monitoring tools that focus on user experience monitoring.
- A single unified console to monitor, diagnose and report on all digital workspace technologies is a significant need.
- More than 50% of digital workspace professionals are spending over a quarter of their work week troubleshooting issues.
- Application launch issues and bandwidth issues at the user end are the most common user complaints encountered.

About Digital Workspace Deployments



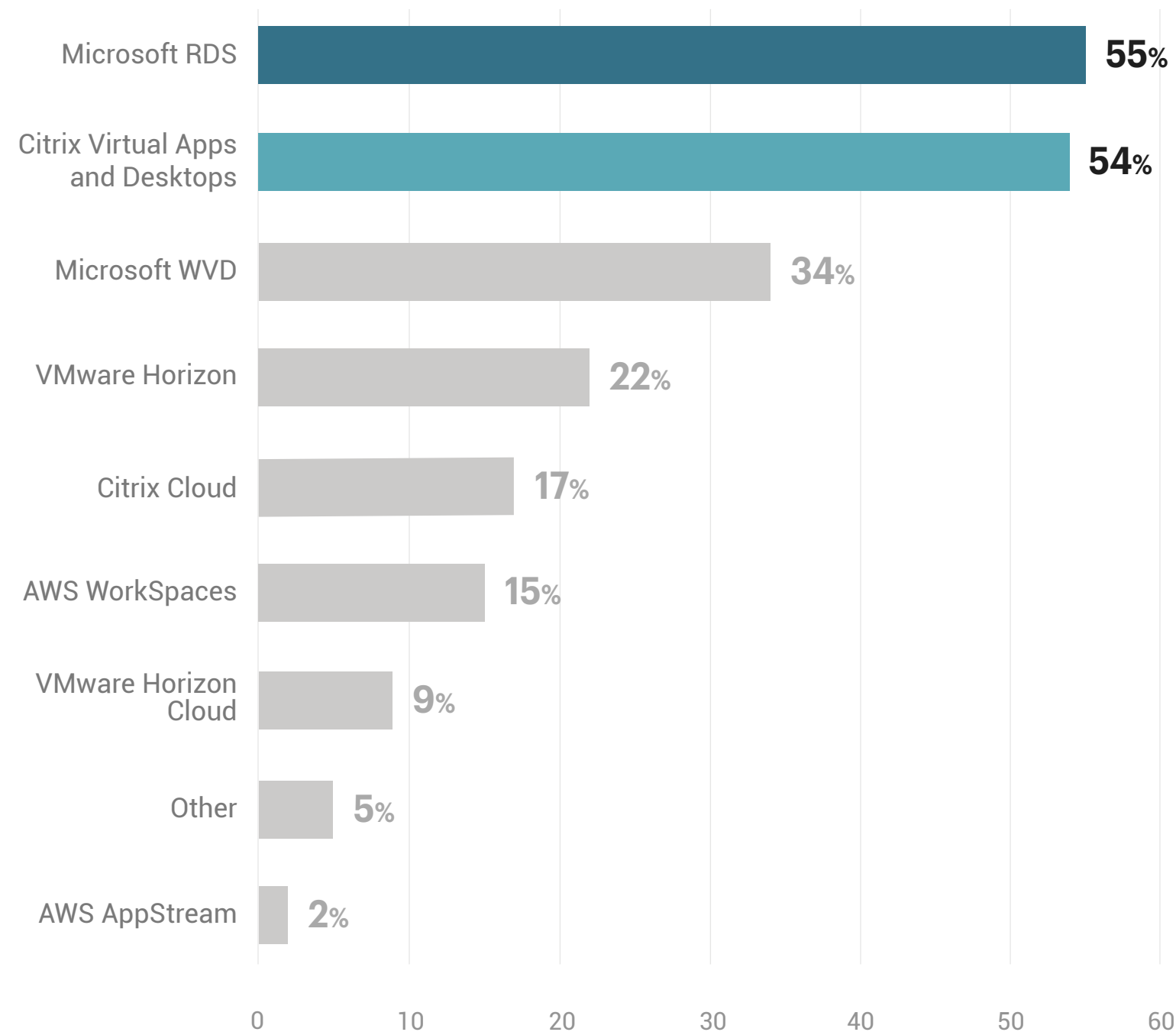
What are the use cases for digital workspaces in your organization?



59% of respondents rated **centralized management** as the main reason to deploy digital workspaces. Centralized management includes ensuring consistent configuration, pushing patches out, removing older versions, etc.

52% of respondents chose digital workspaces for **increased security**. Whether your employees are working from home, or you have offshore contractors, digital workspaces offer greater security.

Which digital workspace technologies/services are you currently using in your organization?



Microsoft RDS is the most used technology. Not surprising as it is the base technology for remote access.

54% of respondents have Citrix virtual apps and desktops deployed on-premises.

In comparison, VMware Horizon is deployed by 22% of respondents.

On-premises digital workspace deployments today are **3 times more popular** than cloud-based deployments.

Citrix Cloud service is used by 17%, while VMware Horizon Cloud is used by 9% of respondents

Which digital workspace technologies/services are you currently using in your organization?

More insights into On-premises and Cloud deployments

citrix

25%

of Citrix on-premises deployments are also using Citrix Cloud.

ONLY

4%

of the respondents are using Citrix Cloud alone.

vmware

12%

of respondents have both Citrix and VMware Horizon technologies deployed on-premises.

21%

of respondents who have VMware Horizon deployed on-premises are also using the cloud service.

 **Microsoft**
Windows Virtual Desktop

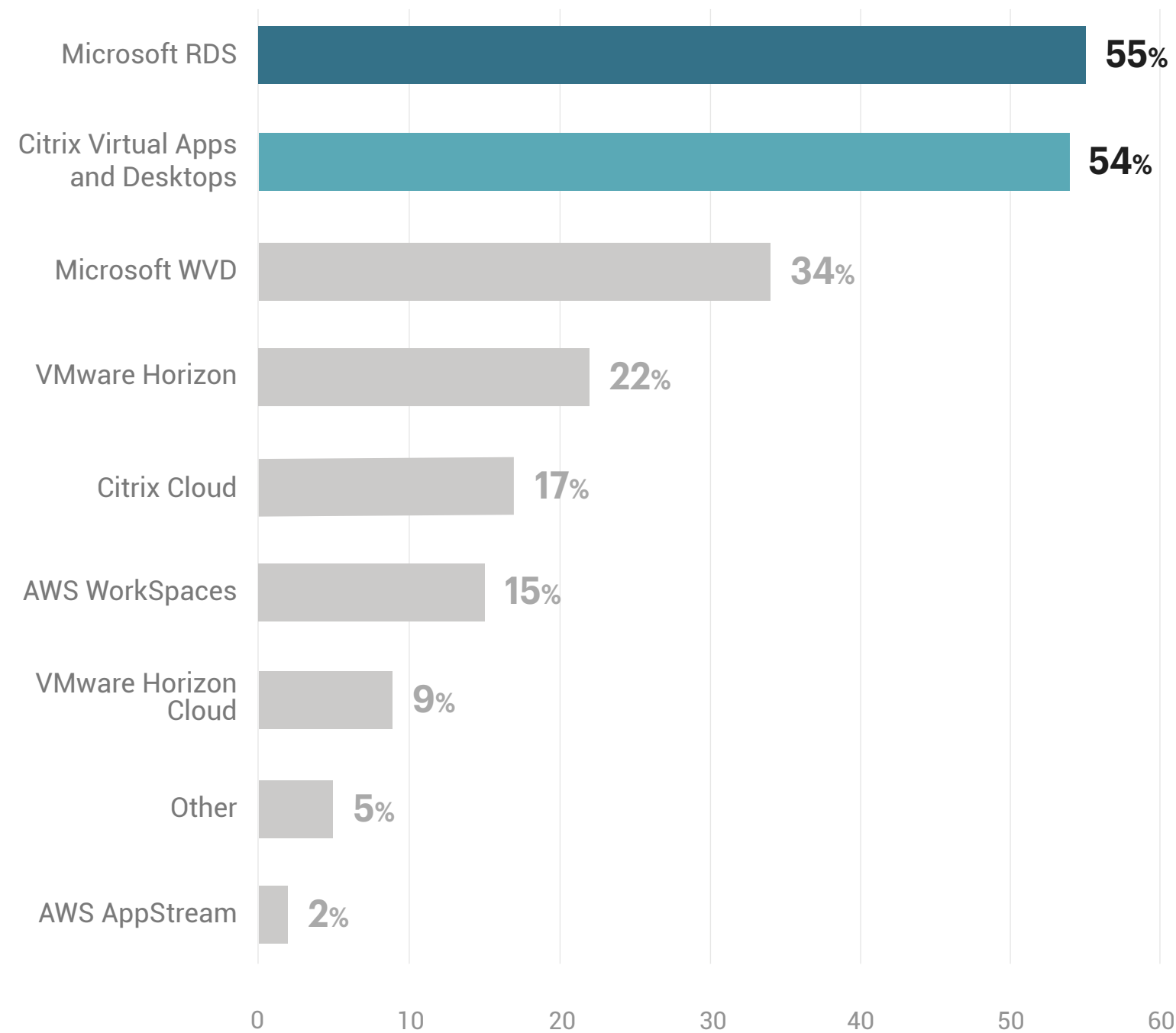
11%

of respondents are using Microsoft WVD but not Citrix or VMware.

66%

of respondents using Microsoft WVD are using it as an add-on to their Citrix/VMware deployments.

Which digital workspace technologies/services are you currently using in your organization?



Digital workspaces in the cloud are still in a nascent stage.

Microsoft WVD is gaining traction fast. **34%** of respondents are using WVD.

In comparison, AWS WorkSpaces and AppStream are being used by **17%**.

8% of respondents are using WVD only.

5% of respondents are using AWS services only.

Which digital workspace technologies/services are you currently using in your organization?

Comparing organizations deploying different technologies

citrix

Median size of organization had 1000-4999 users.

33% had 5000 users or more.

vmware

Median size of organization had 1000-4999 users.

42% had 5000 users or more.

 Microsoft
Windows Virtual Desktop

53% of organizations deploying WVD only had 1-249 users.

82% of organizations had less than 1000 users.

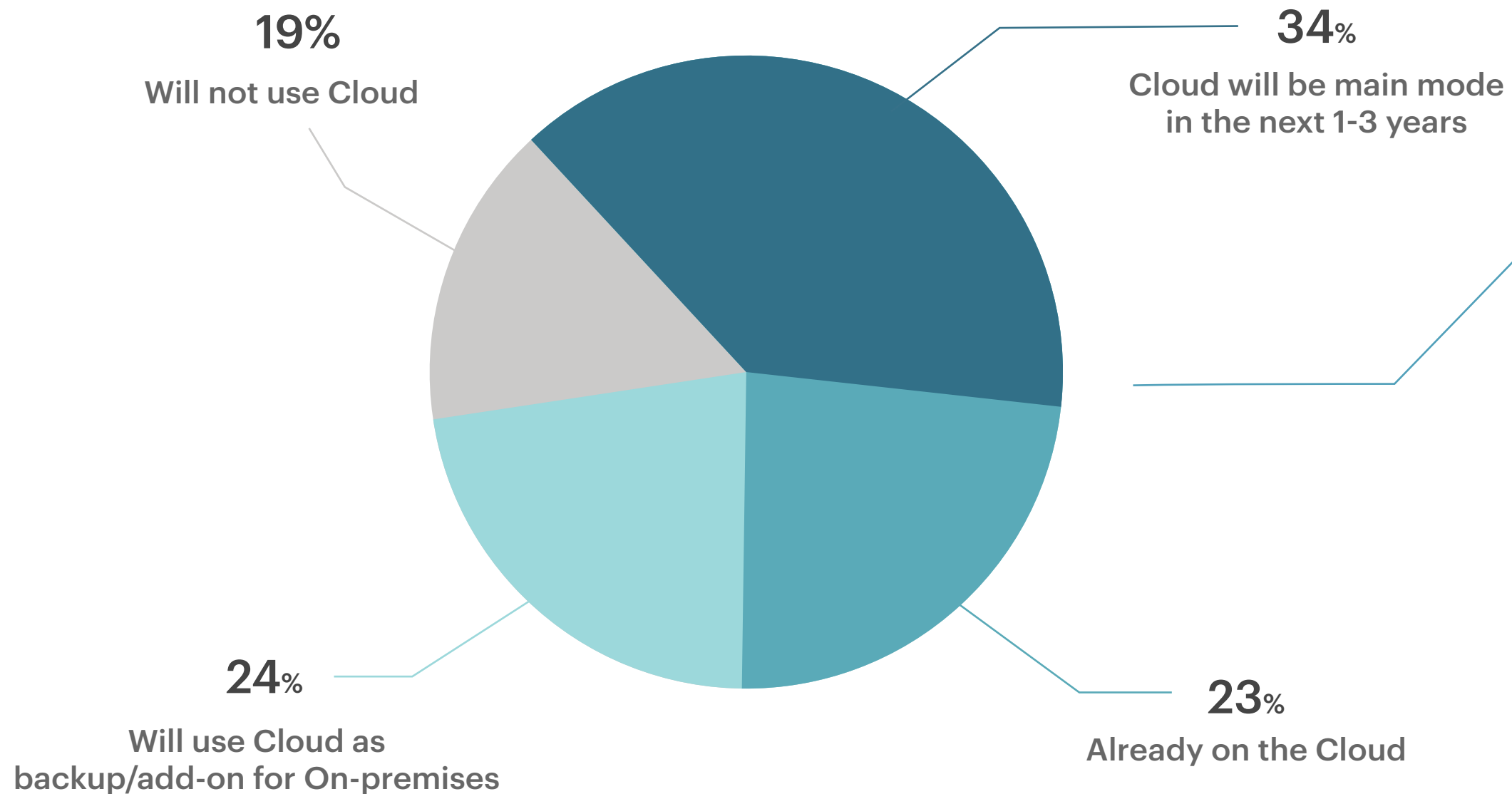
aws

41% of organizations deploying AWS technologies only had 1-249 users.

88% of organizations had less than 1000 users.

Larger enterprise (5,000 users+) are using Citrix or VMware Horizon, while smaller organizations prefer Microsoft WVD and AWS offerings.

How likely and by when will your organization look at adopting digital workspaces in the cloud?

**81%**

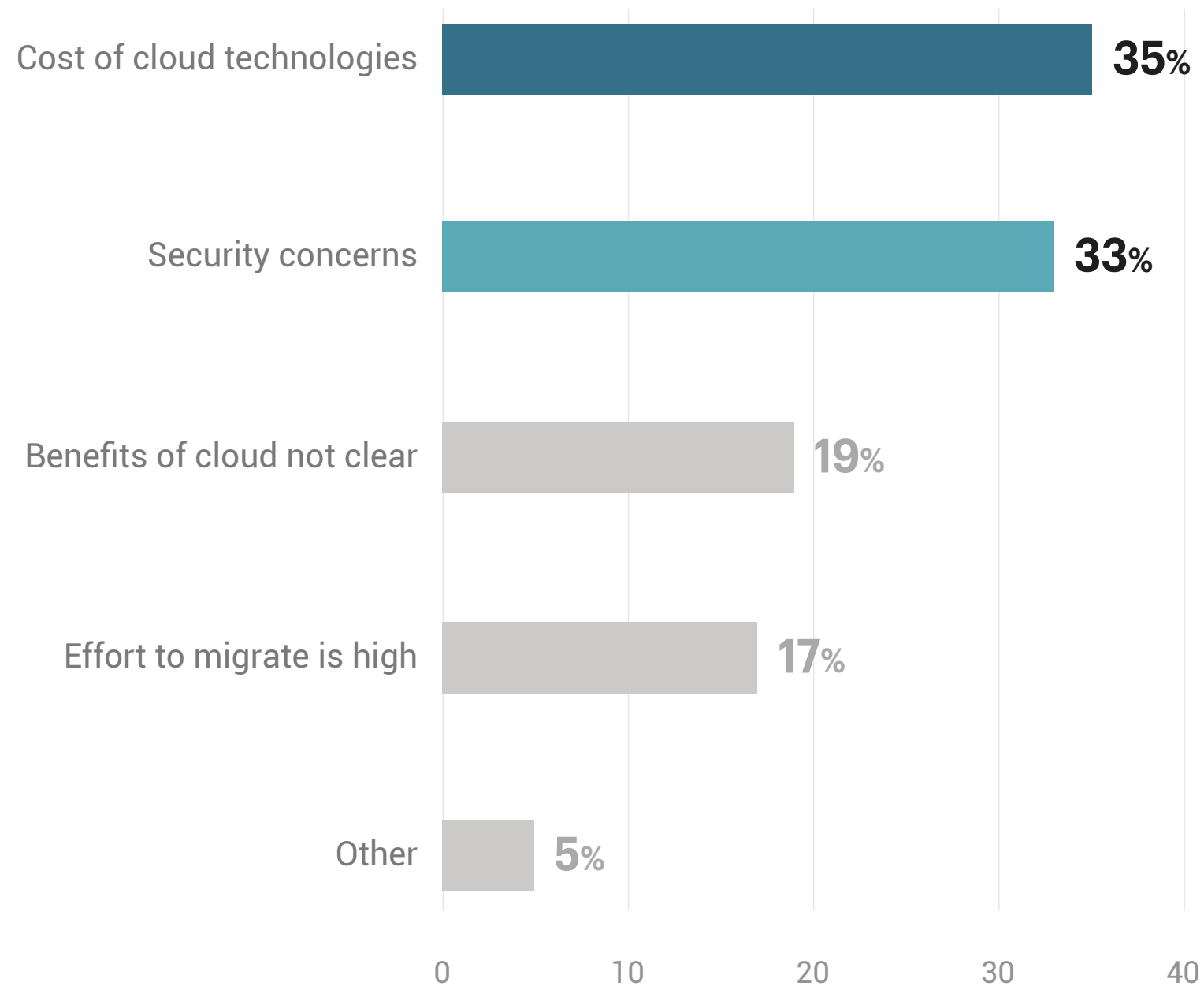
of organizations will use cloud-based digital workspaces in the next 1-3 years.

57%

of organizations will use cloud as the main mode for digital workspaces.

FOR**24%**

cloud is a backup option only.

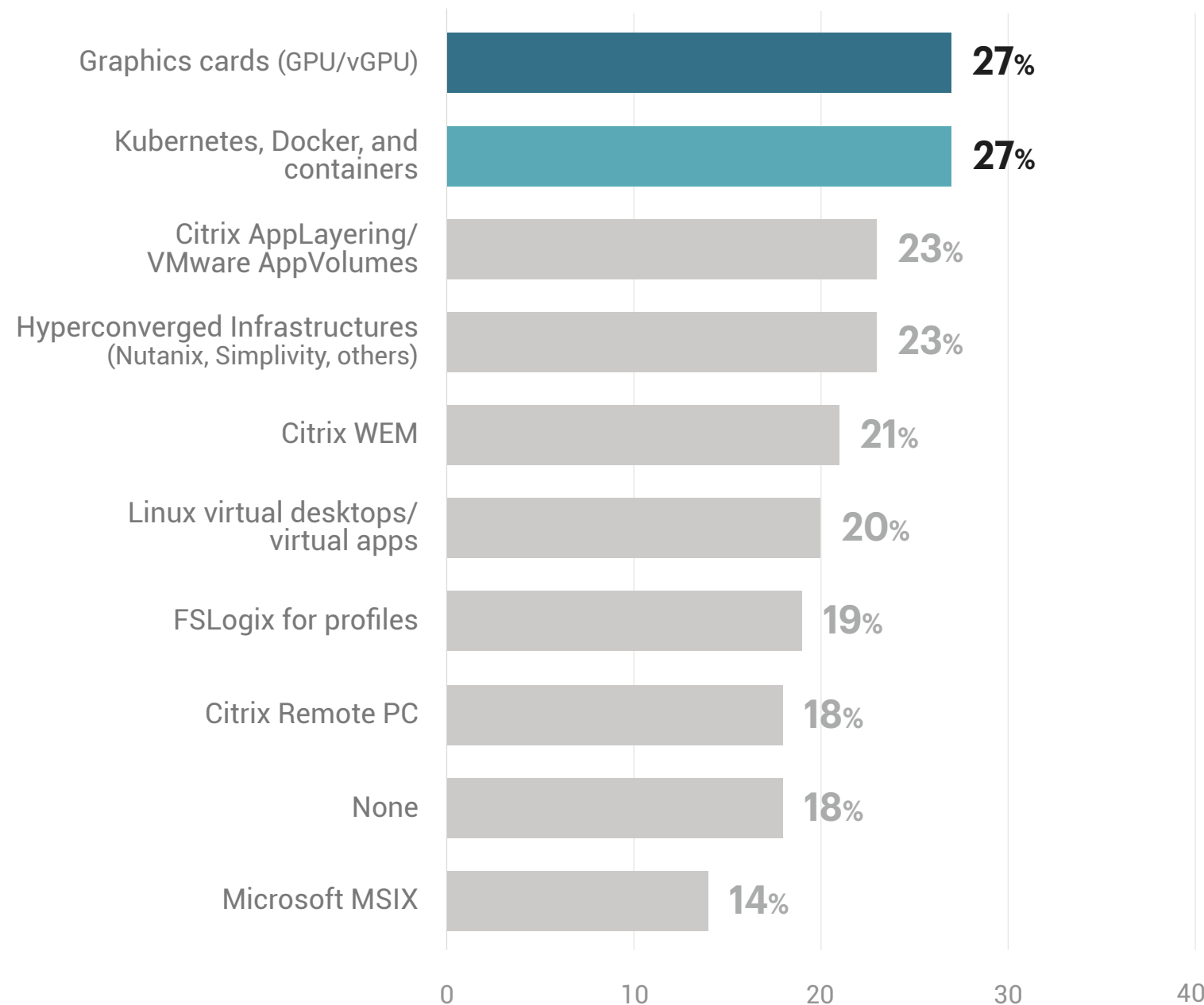


Cost of cloud technologies and security concerns are the biggest reasons why some organizations are hesitant to move to the cloud.

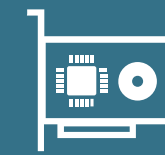
Other considerations mentioned:

- Regulations prohibiting use of public cloud infrastructure
- Performance concerns – will cloud be as good as a local deployment?
- Connectivity issues to the cloud
- Lack of skill: don't have personnel with cloud expertise
- Loss of control: With on-premises deployment, the IT team controls everything (With cloud workspaces, the QoS is dependent on the cloud provider)

Which of these technologies have you recently or will you be adding to your environment?



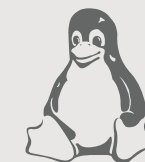
82% of respondents are using at least one of the newer technologies.



Graphics cards – vGPU technology (e.g., NVIDIA) is the highest ranked add-on technology. 27% of respondents are using this.



Container technologies (K8S, Docker, etc.) was a surprising joint 1st. Organizations are analyzing the benefits of these technologies for digital workspaces.



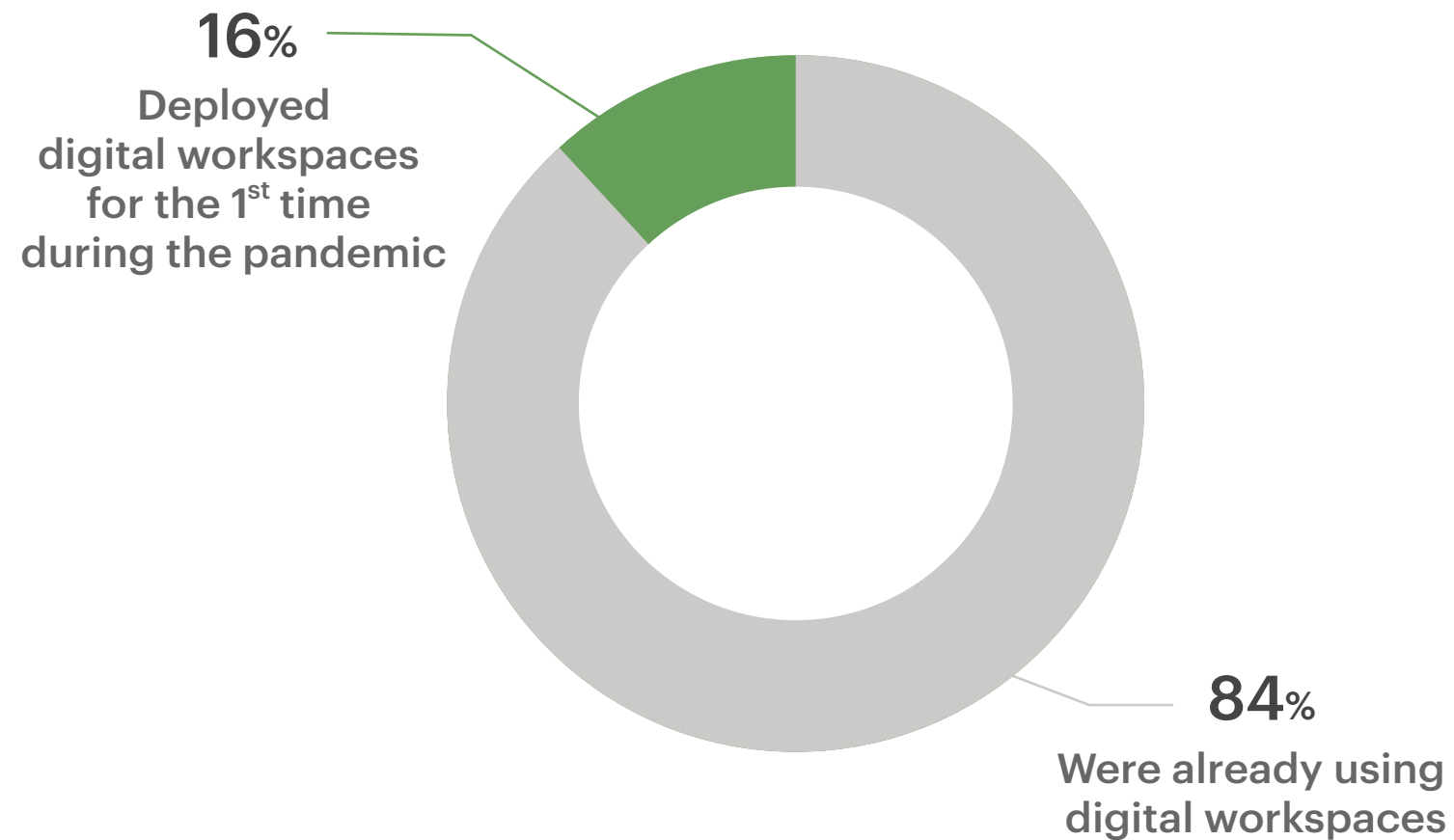
20% of respondents using Linux desktops is higher than expected (though this does not mean 20% of desktops used are running Linux).

We expected to see a higher adoption of new Citrix/VMware technologies, FSLogix profiles and hyperconvergence.

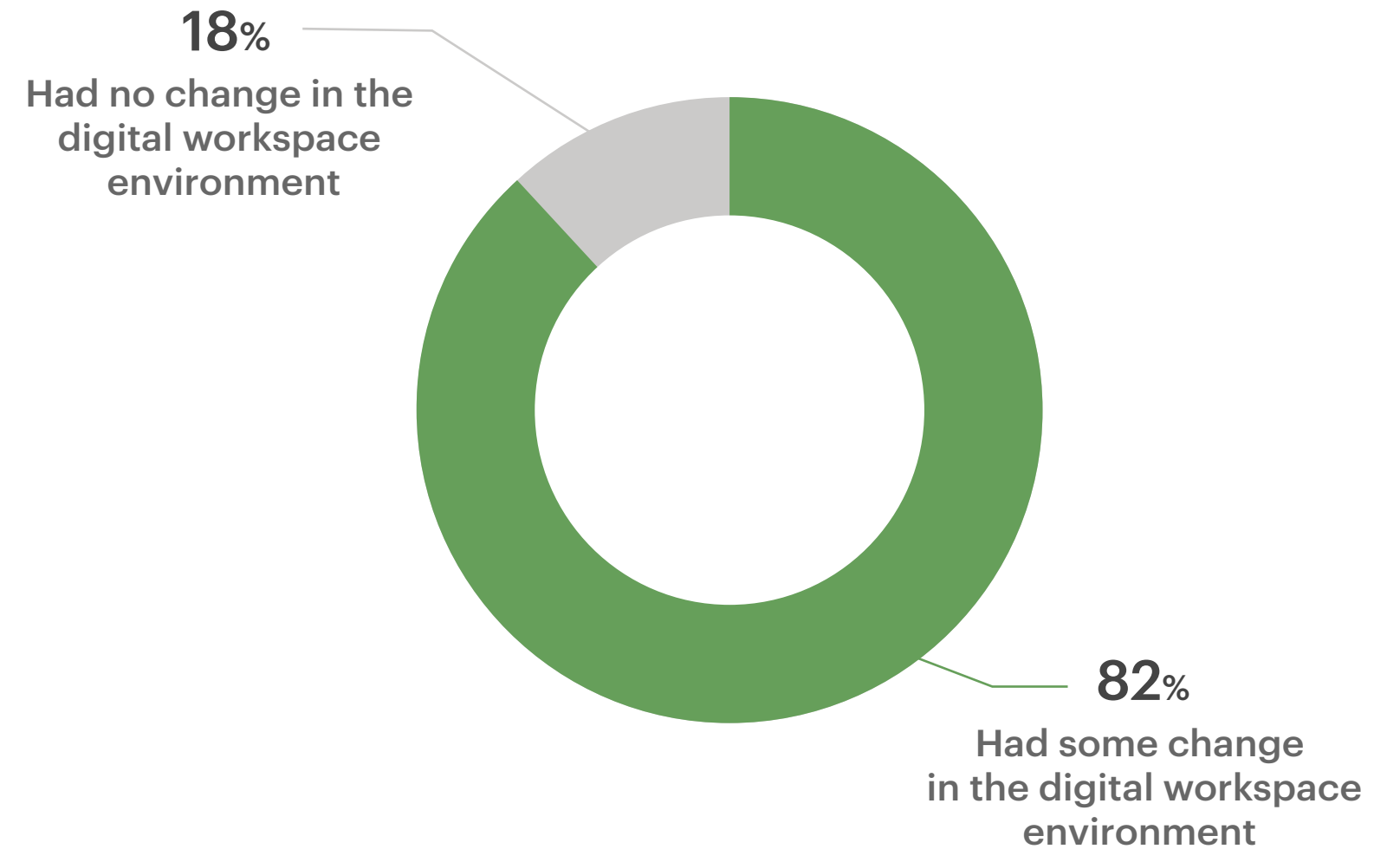
How the Pandemic Influenced Digital Workspace Deployments



How did the pandemic change the adoption of digital workspaces in your organization?



16% of respondents deployed digital workspaces for the first time during the pandemic.



82% of respondents had changes in the digital workspace environments during the pandemic.

How did the pandemic change the adoption of digital workspaces in your organization?



41%

Felt that digital workspace technologies have become more important in 2020-21 than in the last year.



18%

Performance of digital workspaces became more important for management.



41%

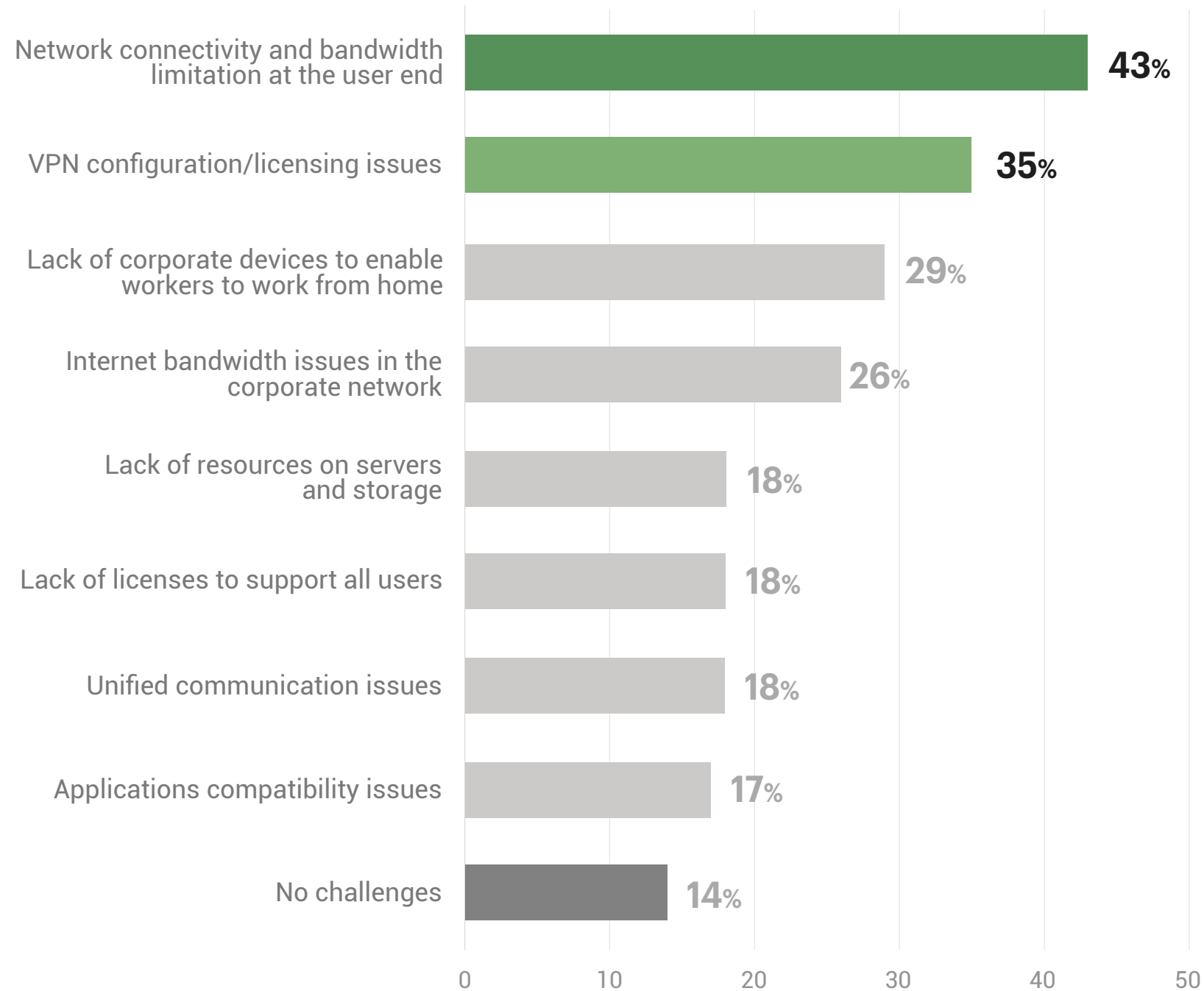
Grew the number of seats in their digital workspace deployment during the pandemic.



16%

Grew the number of seats in their digital workspace deployment even though digital workspaces had not become more important in their organization.

What are the top challenges your organization faced to support remote workers during this period?



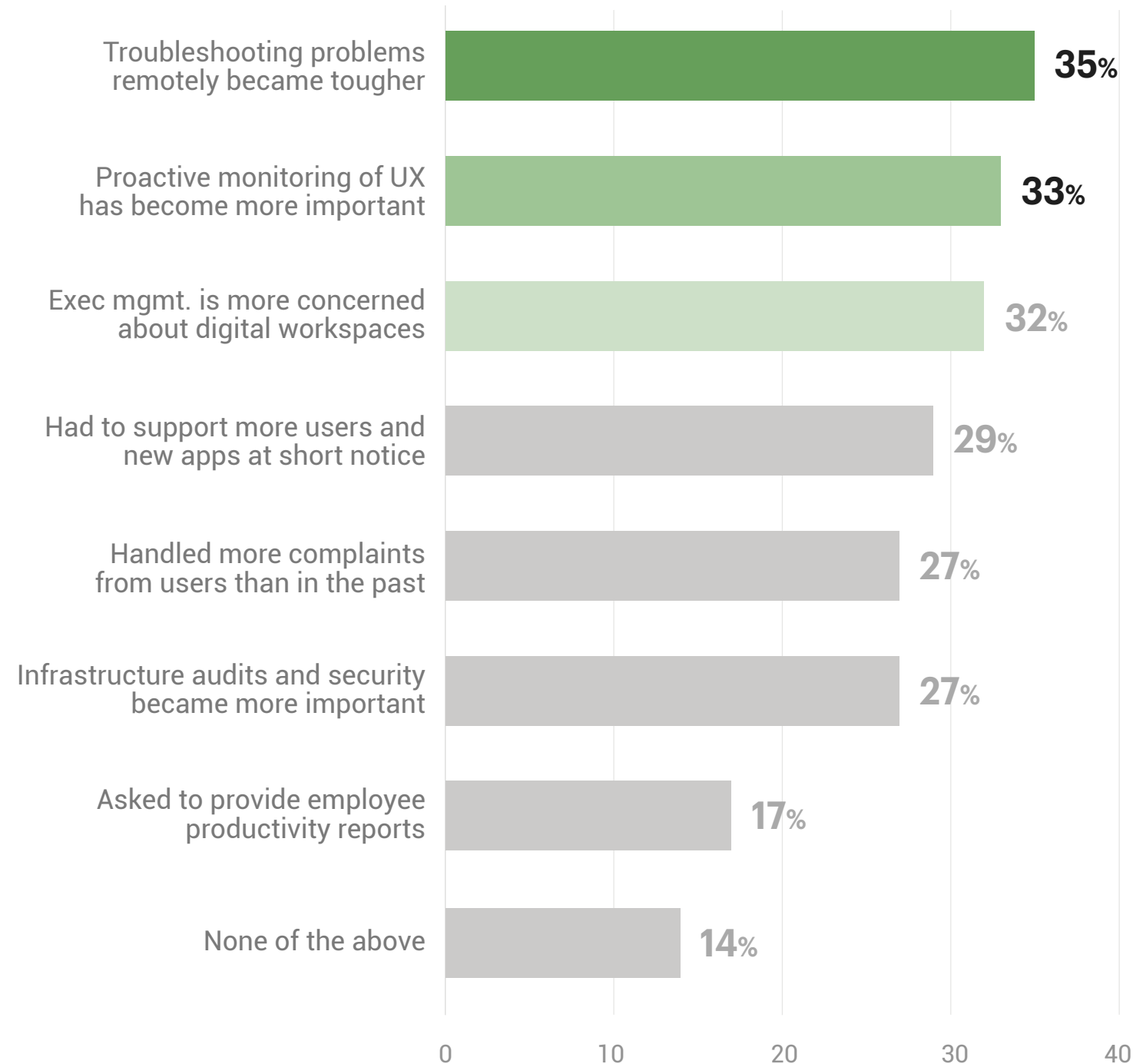
Not surprisingly, Network connectivity and bandwidth limitation at the user end was the topmost challenge.



VPN issues and insufficient licenses were the second biggest challenge.

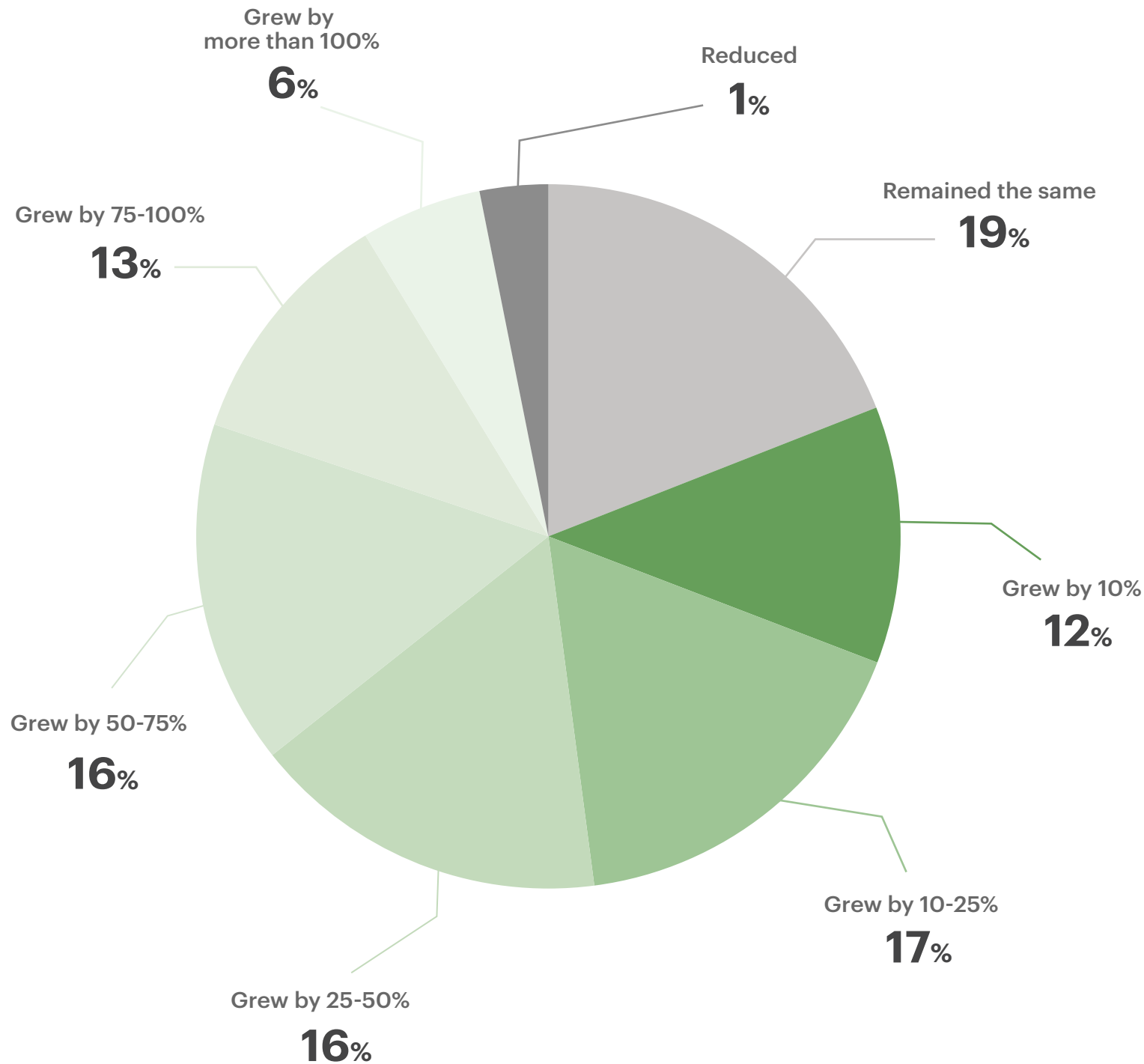
86% of organizations faced one or more challenges in supporting employees WFH or from remote locations.

In the last year, have you observed any of the following changes in your organization?



- **Top 3 changes relate to quality of service.**
- Troubleshooting which affects mean time to repair (MTTR) has been in focus. With administrators and employees being remote, this has meant more challenges for ensuring digital workspace availability and performance.
- Executive management has been more concerned about digital workspaces. In turn, this has turned attention to proactive monitoring.

During the pandemic, how did the number of users of digital workspaces in your organization change?



80% of organizations grew their digital workspaces.

35% respondents' organizations grew digital workspace deployments by > 50%.

6% more than doubled their digital workspace deployments.

ONLY 1% saw a reduction in their deployments.

Performance Monitoring for Digital Workspaces

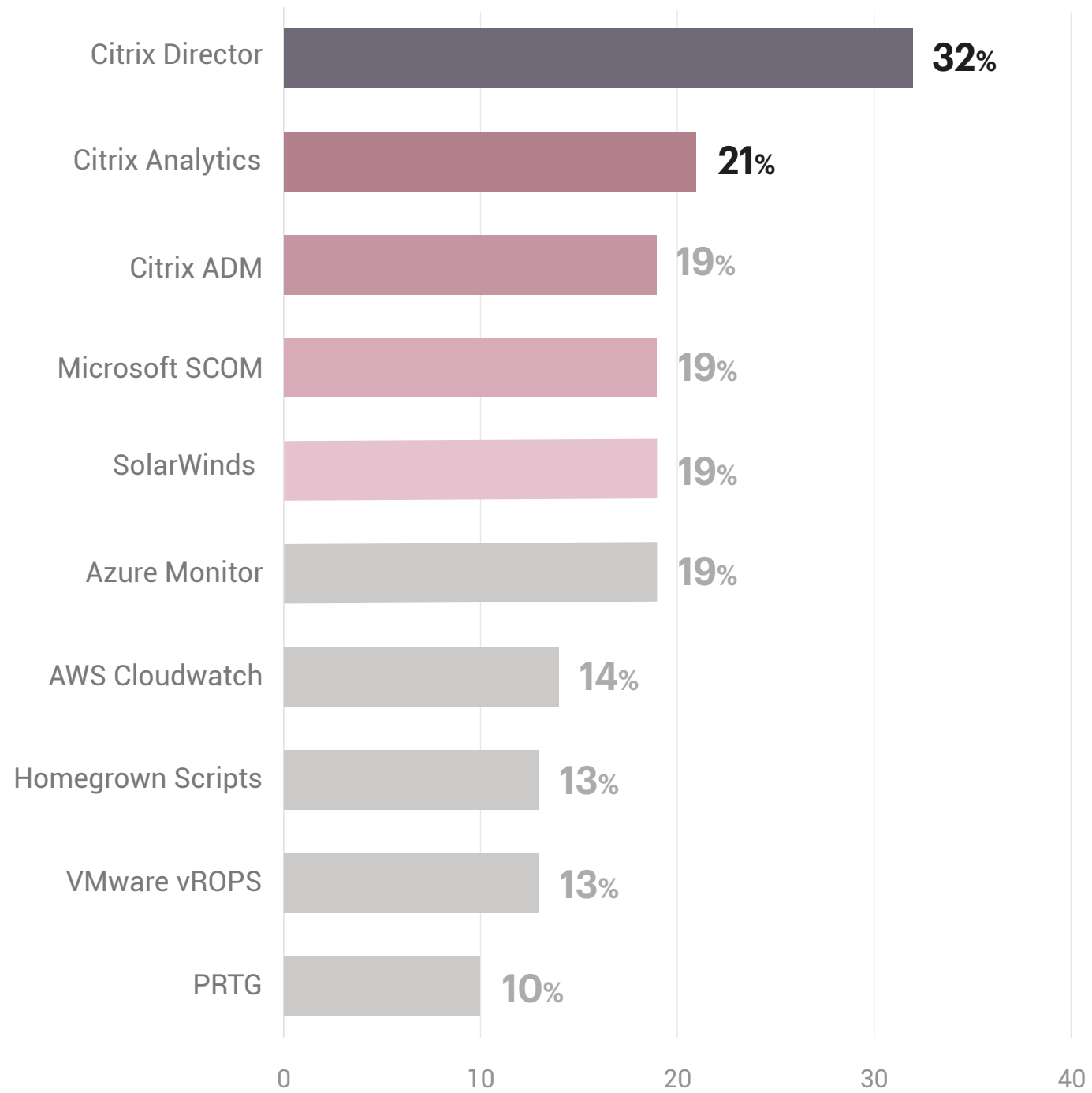


What tools are you using to monitor your digital workspaces?

At least 25 different monitoring tools were cited by the respondents



What tools are you using to monitor your digital workspaces?

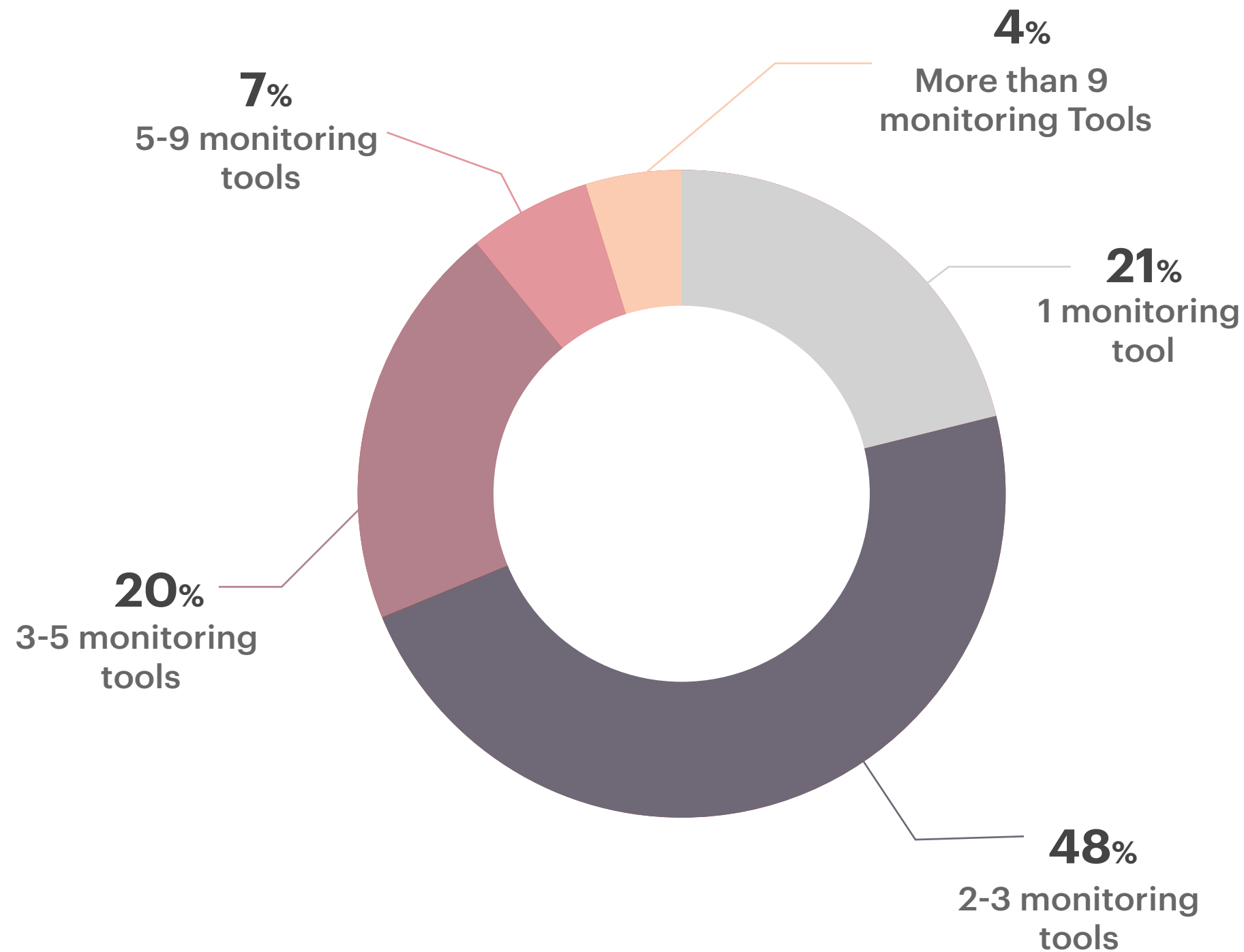


It's no surprise that Citrix built-in monitoring tools, such as Citrix Director, Citrix Analytics and ADM are widely used.

The real surprises were Microsoft SCOM and SolarWinds each with 19% usage, even though they don't have any significant built-in digital workspace capabilities.

Vendor built-in tools dominate this list. Note that these tools don't work for other digital workspace technologies. So if you have a multi-vendor deployment, multiple monitoring tools are a must.

To get an end-to-end view of your digital workspaces, how many monitoring tools do you have to use today?

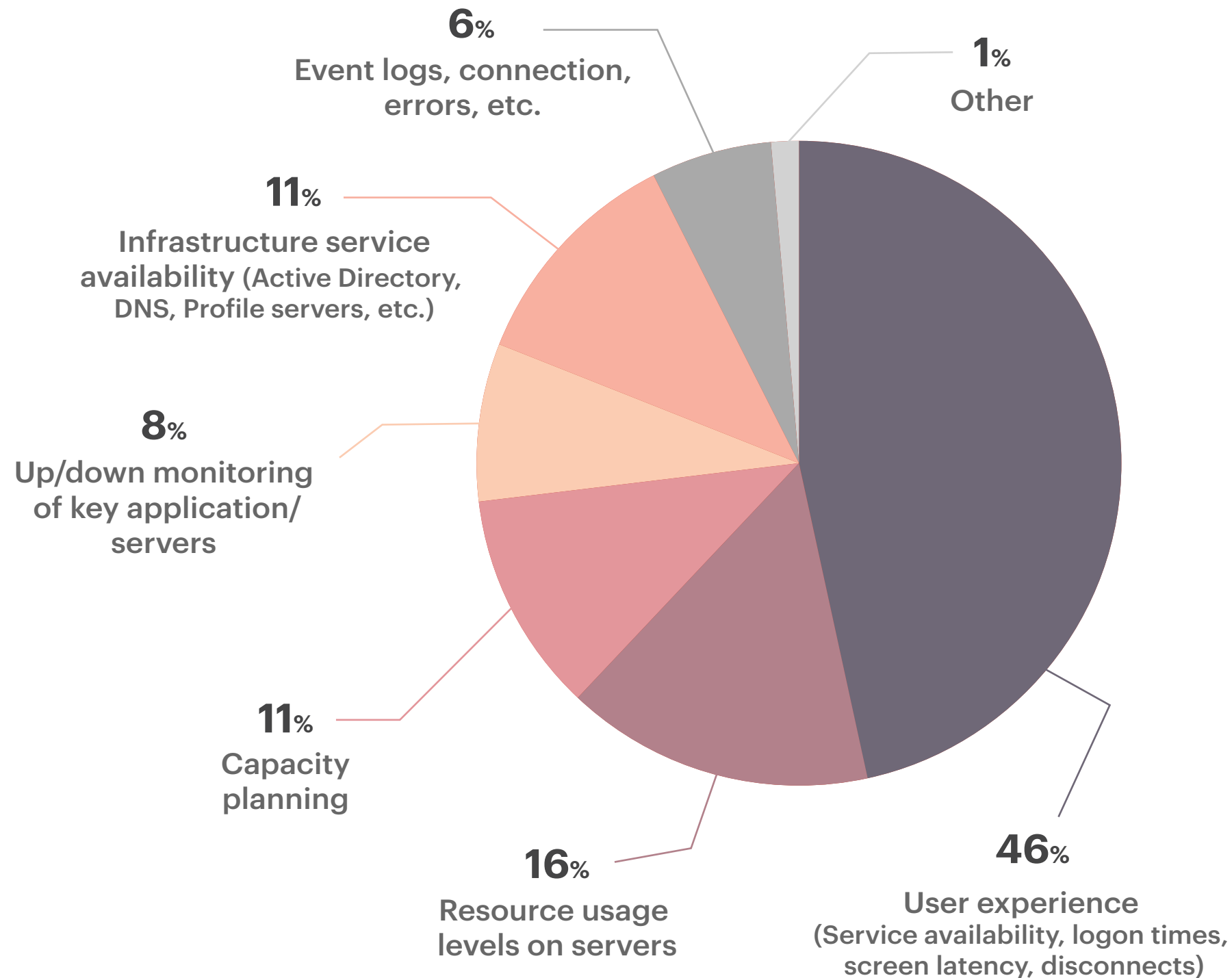


79% of the respondents are using more than 1 monitoring tool.

68% of the respondents required between 2 and 5 monitoring tools.

11% of respondents are using more than 5 tools to monitor digital workspaces.

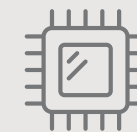
When you monitor your digital workspaces, what are you primarily focused on?



User experience is the key focus of 46% of the respondents!

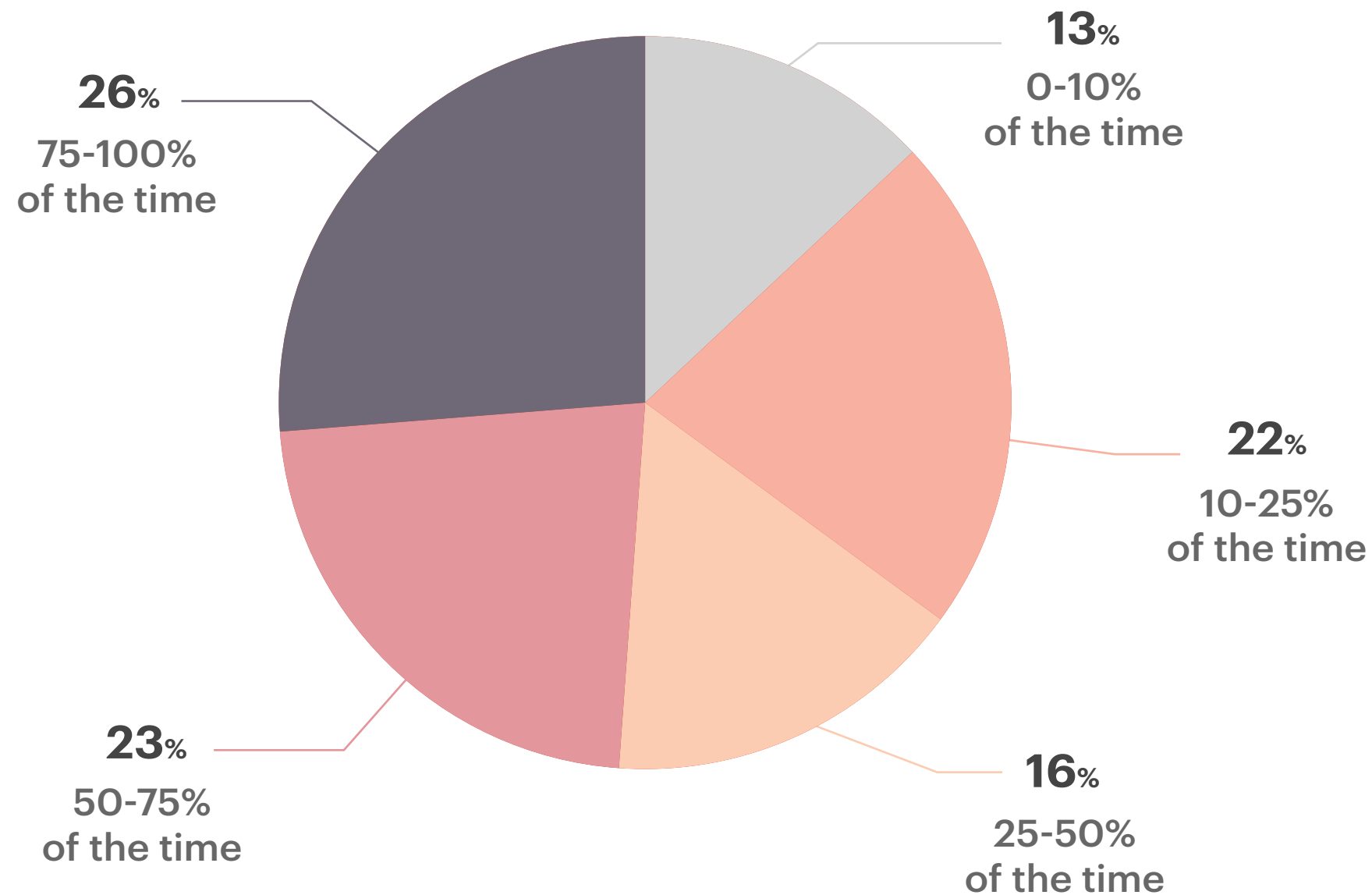


Despite the heavy interest in UX, most are still using resource monitoring tools like SolarWinds and Microsoft SCOM. There seems to be a disconnect between what digital workspace professionals want and what they are given access to by management.



35% are still focused on resources, up/down status and infra services only.

How often is your helpdesk able to resolve digital workspace-related complaints or direct the problem to the right domain expert?



When helpdesk staff triage problems well, it cuts down MTTR and saves the organization time and money.

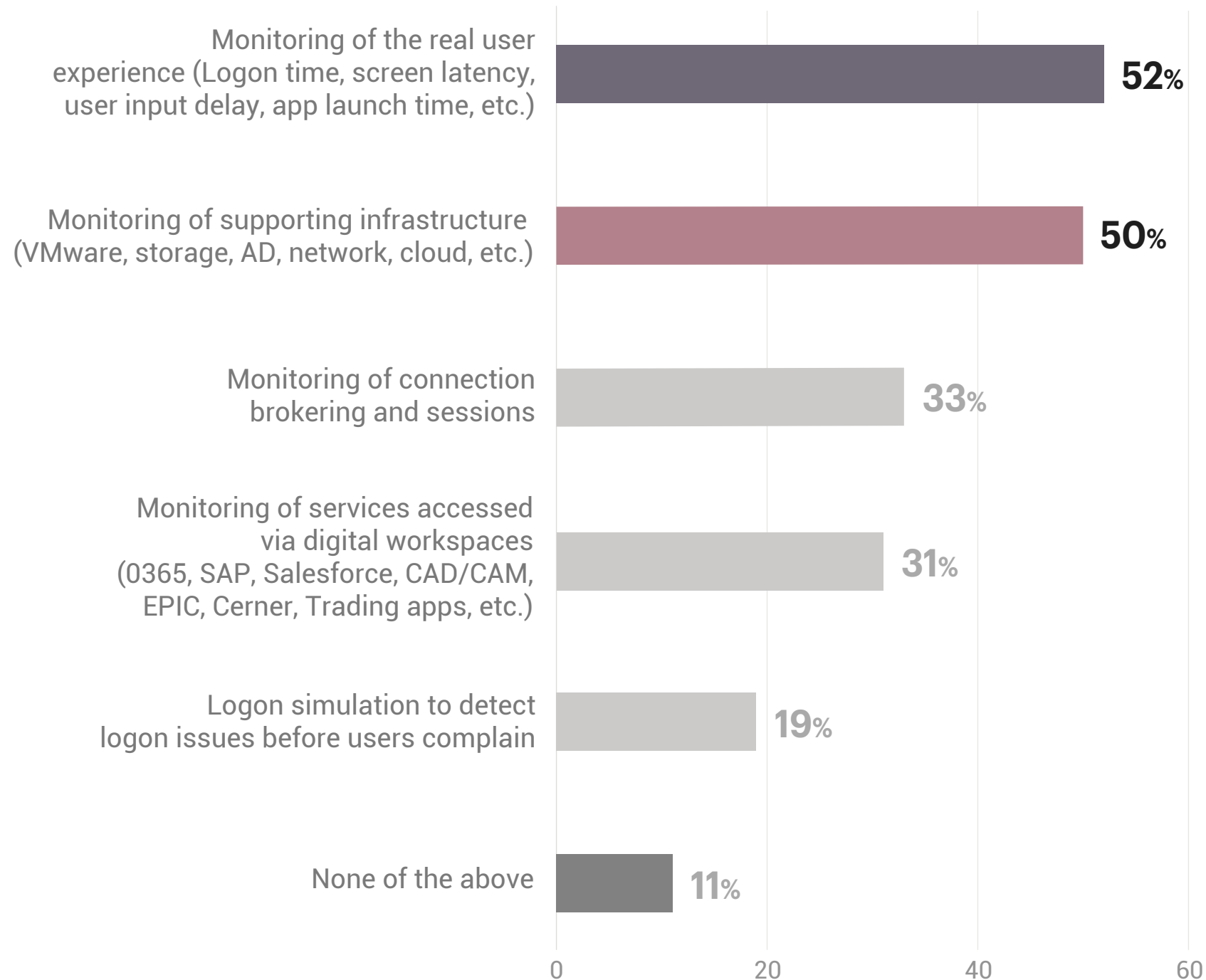
51%

of respondents believe that helpdesk staff are not able to help at least 50% of the time.

35%

are having to handle at least 3/4th of all user complaints themselves.

Which of these capabilities of digital workspace monitoring tools are you using today?



● **Very surprising that 11% are not using any of these capabilities**

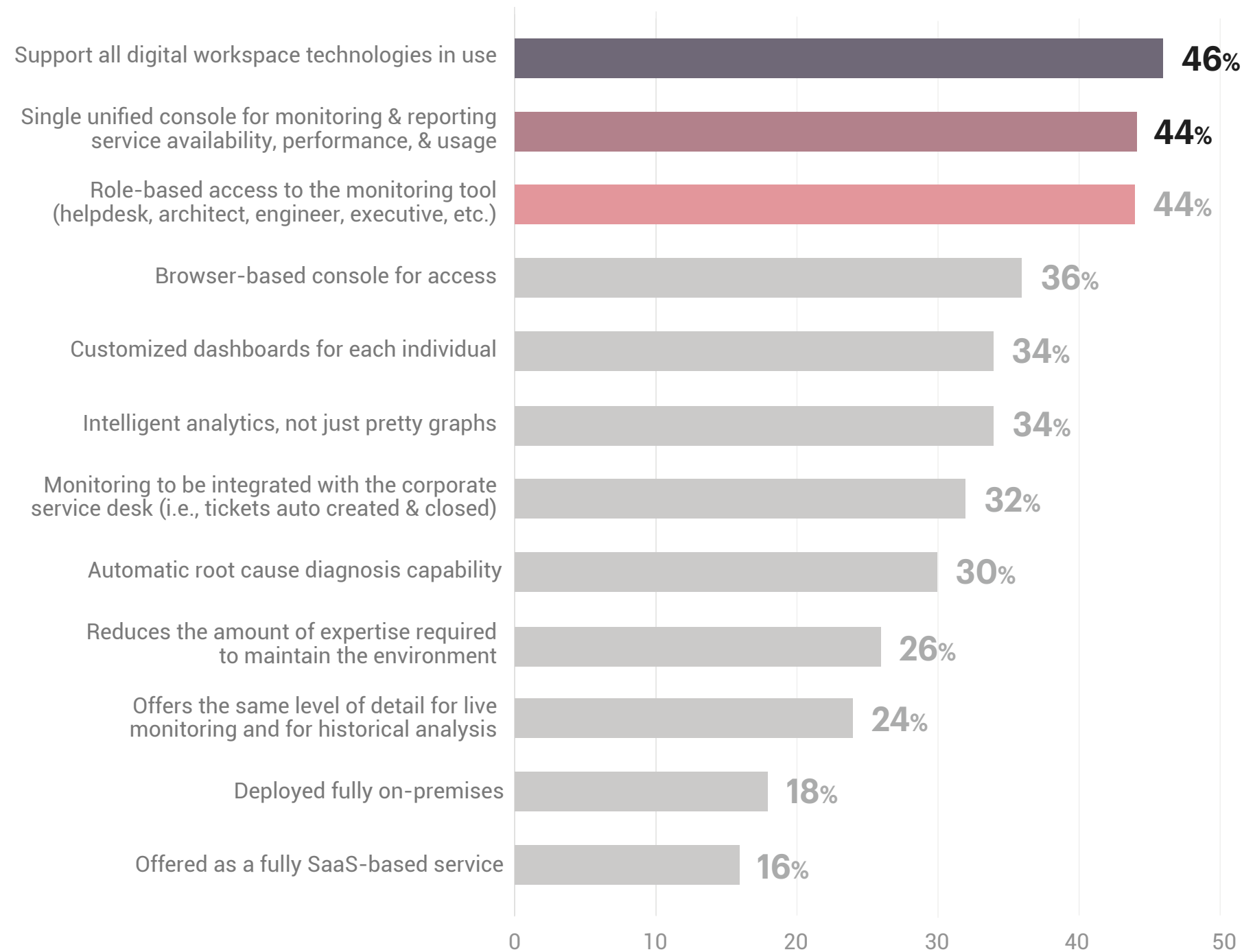
● User experience monitoring is the capability most used/valued by respondents

● Interestingly, the responses indicate that a holistic approach to monitoring is being adopted by organizations:

● Monitoring of supporting infrastructure was 2nd on the list. Historically, digital workspace professionals have tended to look at the tiers they have responsibility for.

● 30% of respondents have also started to look at the performance of services being accessed from the digital workspace.

Which of the following criteria are important to you while considering monitoring tools for your digital workspaces?



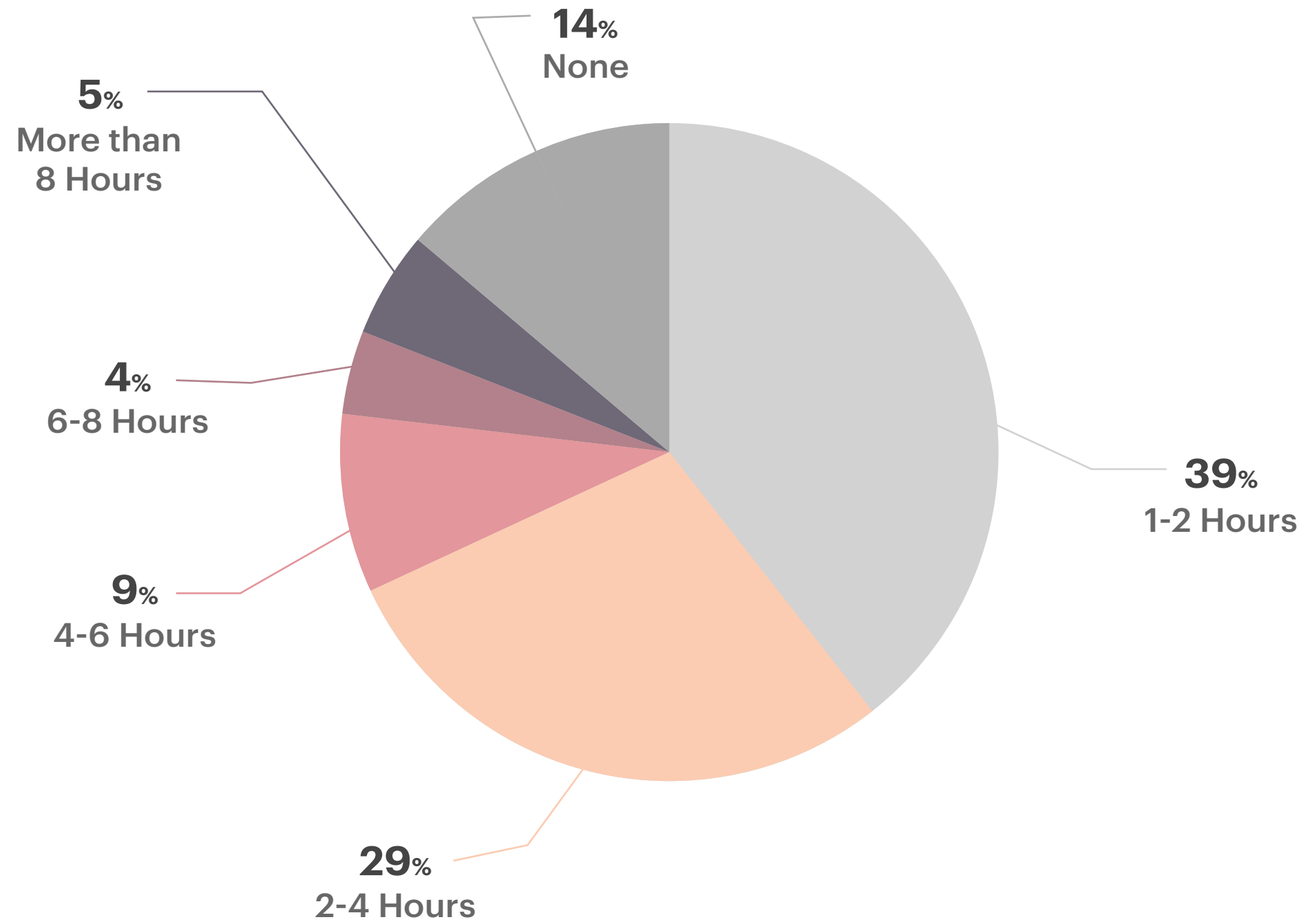
One clear winner: Single unified console

More than 45% of the respondents are looking for a single monitoring tool that supports all digital workspace technologies.

44% want the same console to offer monitoring, diagnosis and reporting capabilities.

Role-based access to different stakeholders (helpdesk, architect, engineer, executive, etc.) is another important criteria.

How many hours a day do you spend troubleshooting problems in your digital workspace environment?



Troubleshooting is not only gaining in importance, but is also taking up time for digital workspace professionals.

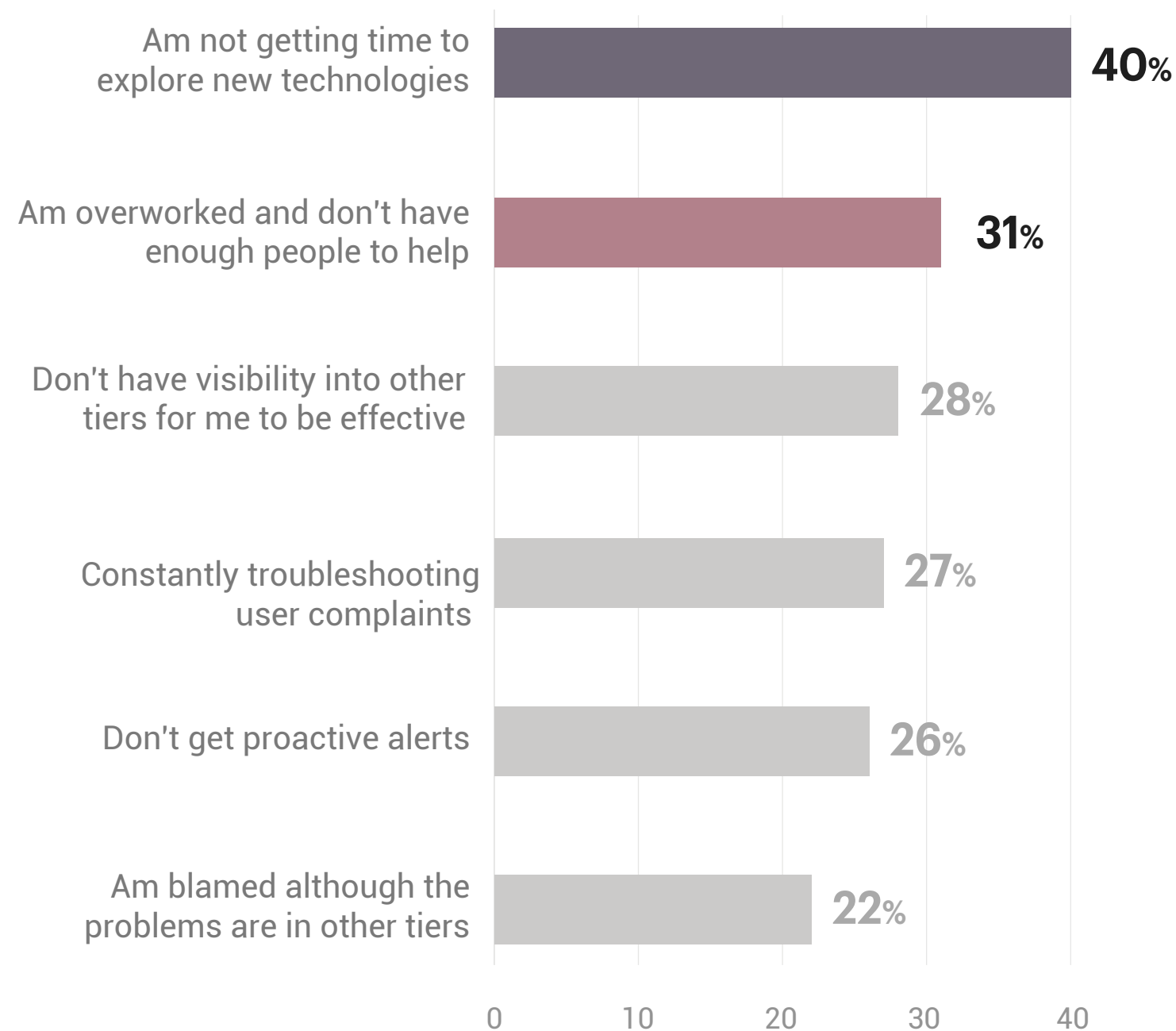
47%

of respondents spend more than 25% of their work day (2 hours per day) troubleshooting.



18% spend more than 50% of their work week fire-fighting issues.

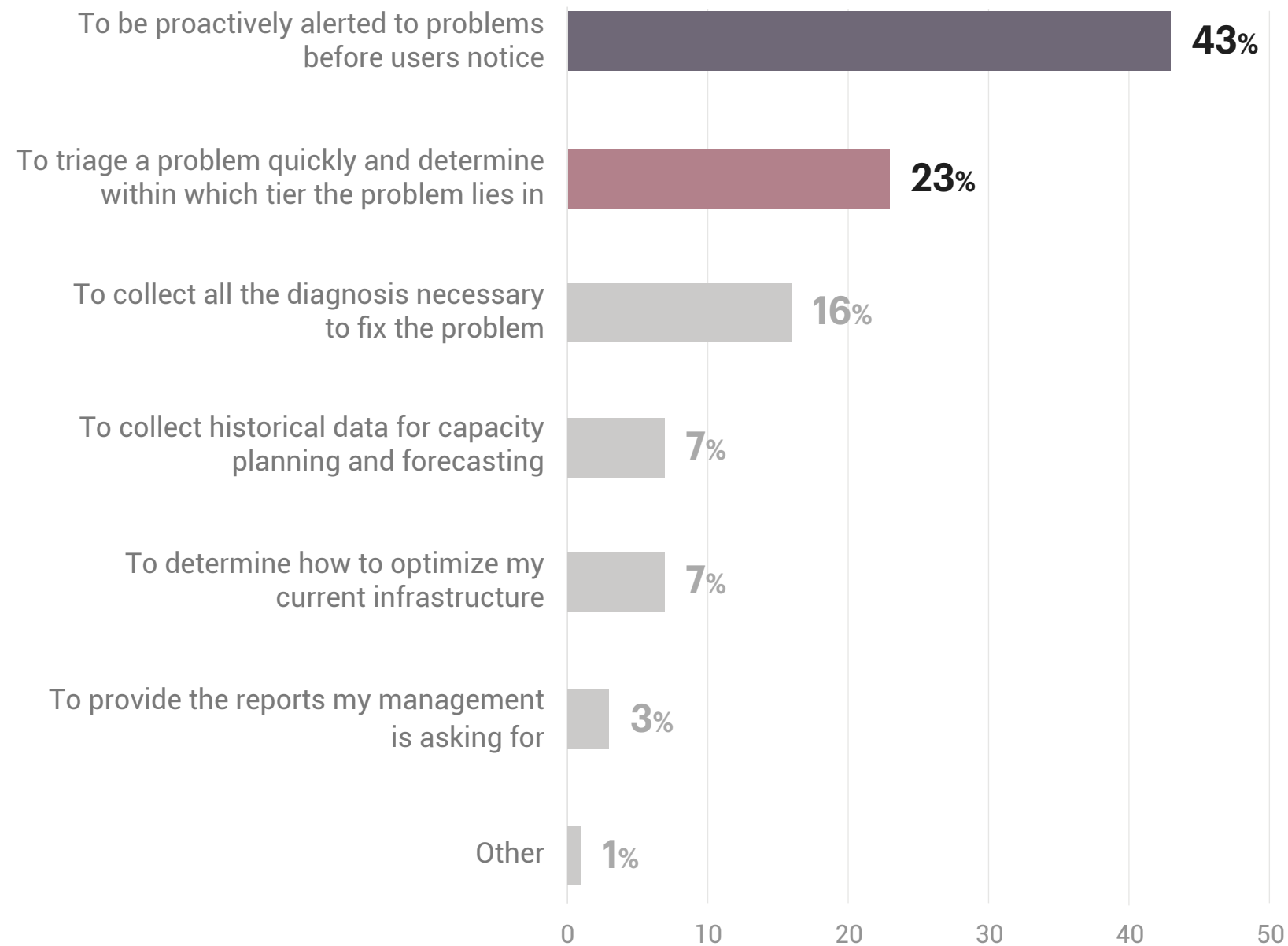
What are your main challenges in your current job?



Digital workspace professionals are facing many challenges:

- Not getting the time to **keep up with technology** evolution – 40% see this as the main challenge.
- 31% feel they are **overworked** and don't have required support.
- 27% complain about **spending most of their time troubleshooting**.

What is your main use of monitoring tools for your digital workspace deployment?



43%

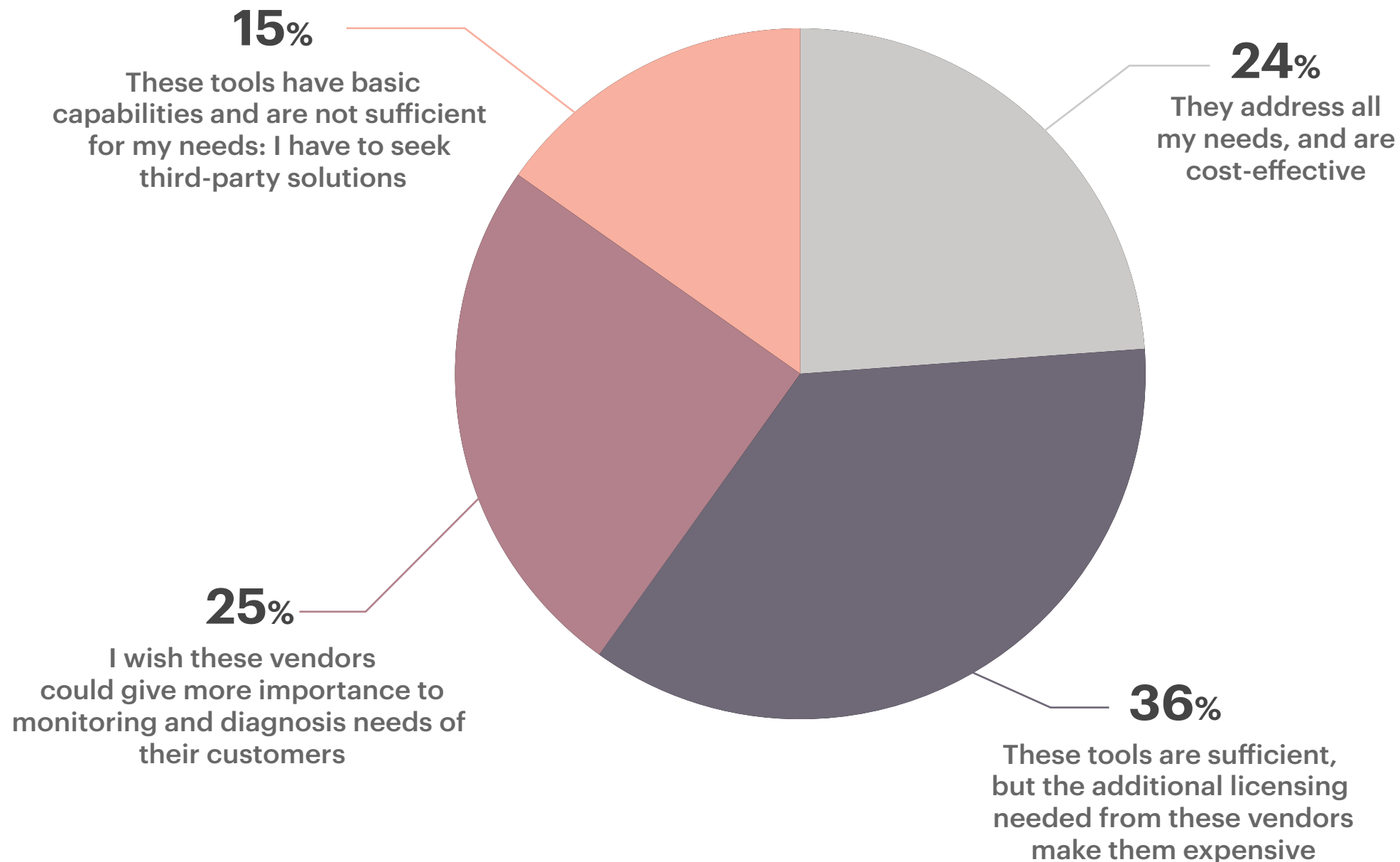
of respondents see monitoring tools as being useful to get proactively alerted to problems, before users complain.



23%

are using monitoring tools to triage problems quickly so they can determine which tier is responsible for the issue.

How happy are you with monitoring tools built-into the digital workspace stack? (Citrix Director, Citrix ADM, VMware vROps, AWS Cloudwatch, etc.)



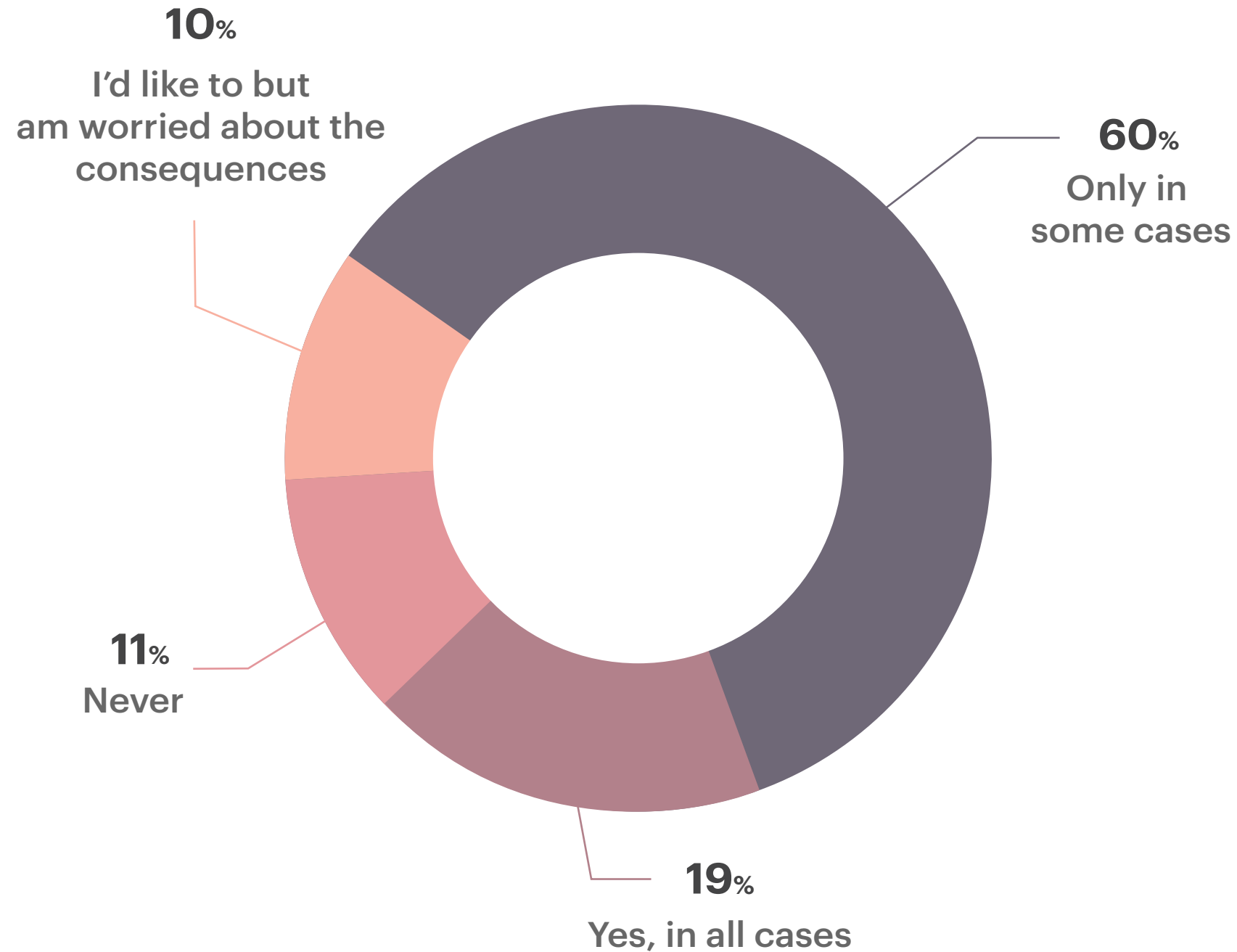
Only 24% of respondents are happy with the monitoring tools built into the digital workspace stacks.

36% are concerned about the additional cost of built-in monitoring tools.

40% are seeking 3rd party solutions because built-in monitoring tools do not have sufficient functionality.

As organizations deploy workspaces using multiple technology vendor stacks, the need for solutions that can provide unified monitoring across these stacks will become more important.

Will you trust your monitoring tool to automatically take corrective actions to fix a problem in your production environment?

**81%**

of respondents have concerns about taking corrective actions automatically on production systems.

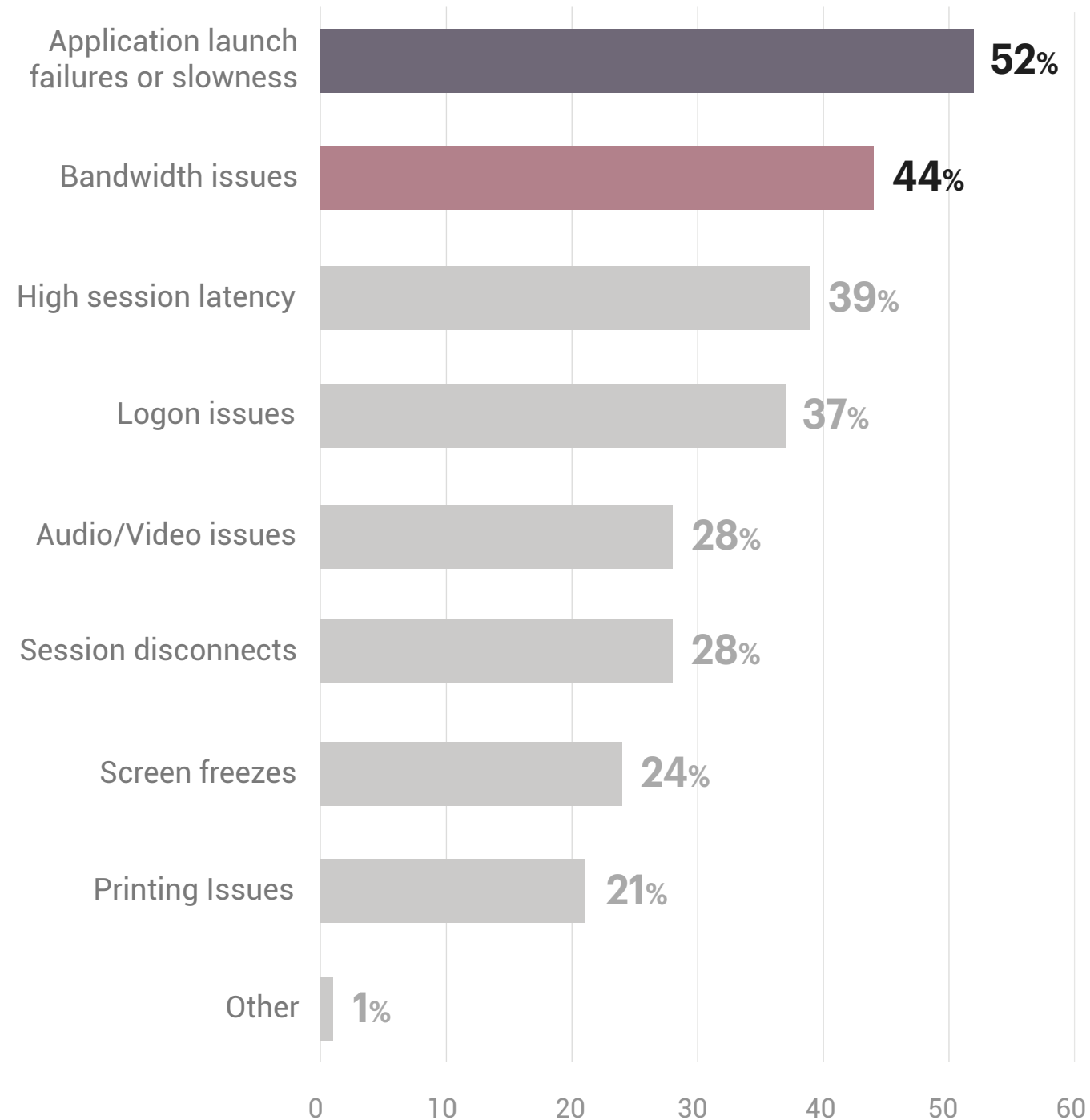
60%

will try corrective actions for some pre-defined cases.

11%

will never try auto-correction on production systems.

Which of these user complaints do you encounter the most?

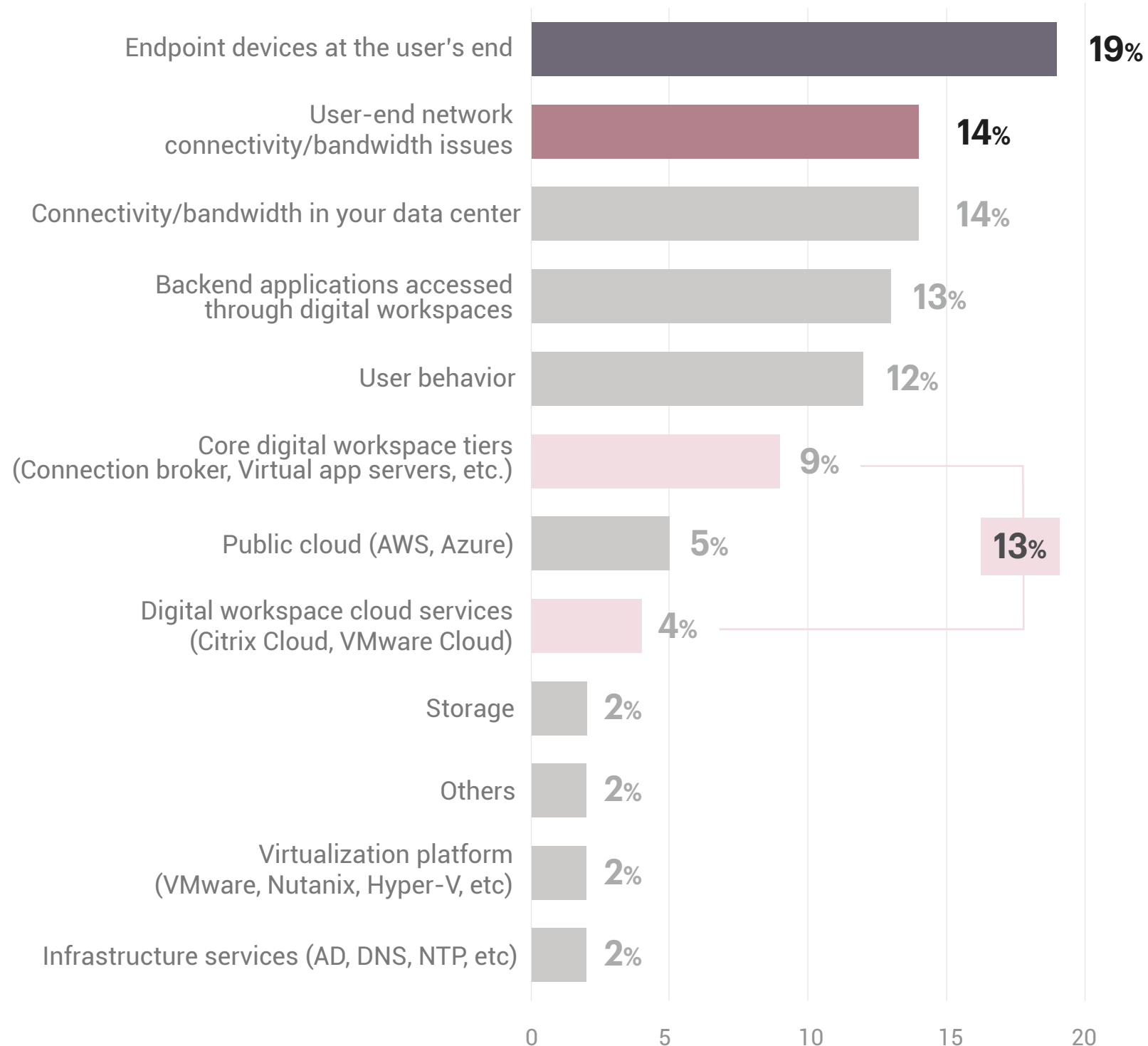


Logon issues were always in the top 3 in the past, but not any more. This is a sign of technology maturity - better capabilities, well-known best practices and better monitoring.



App launch issues and user end issues, such as bandwidth and latency are the main challenges now. With most users working remotely, this is not surprising.

When you are called to troubleshoot a problem, what is most often the issue?

**87%**

of the time respondents believe that the problem is not in the digital workspace stack.

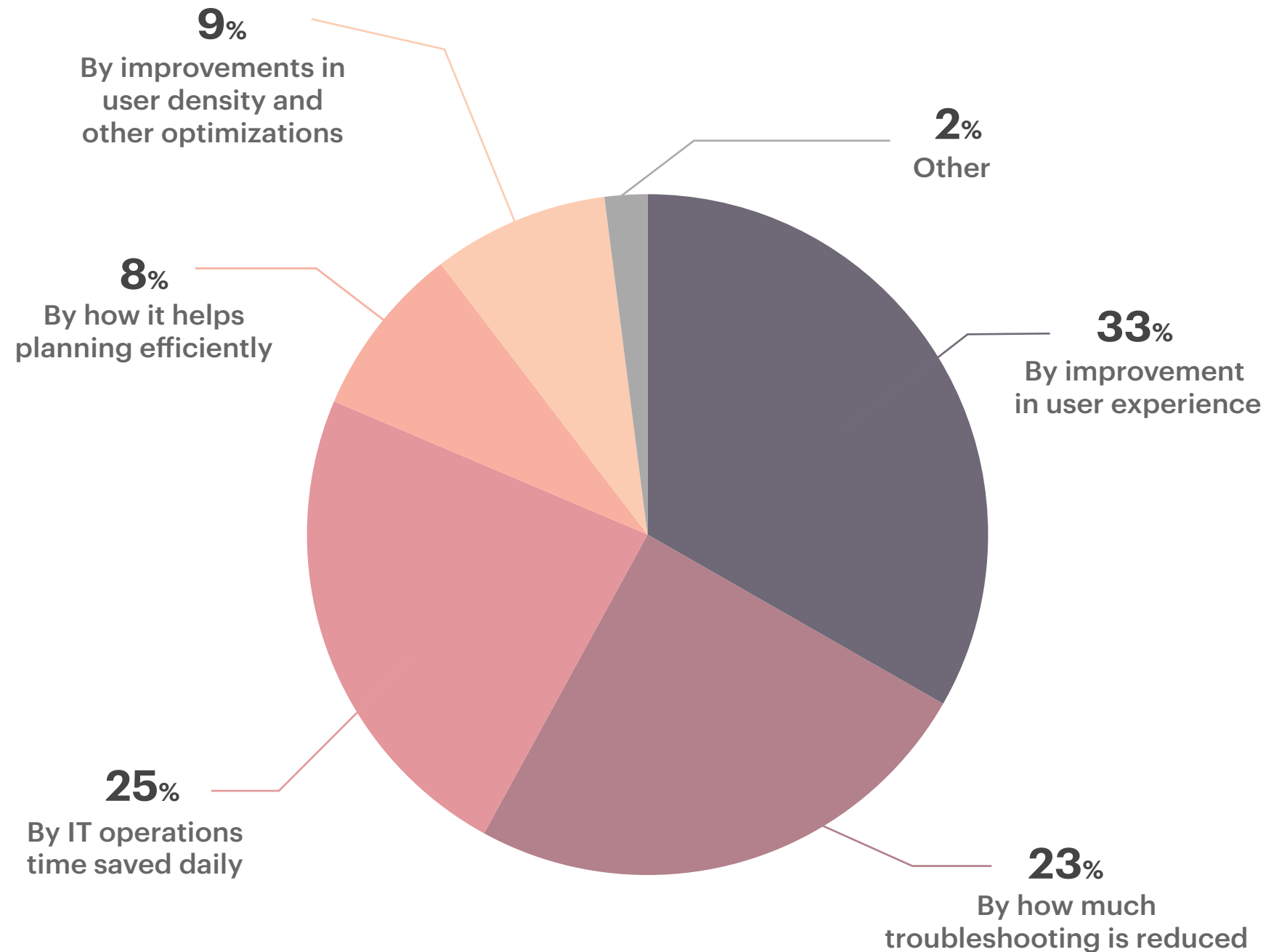
ONLY**13%**

of the time, problems are in the core workspace tiers or cloud services.

End user issues are dominant – 45% of the time, it's got to do with the end user.

- 19% it's the end user device
- 14% user's network connectivity
- 12% user behavior

How would you measure the ROI of a monitoring tool for your digital workspace deployment?

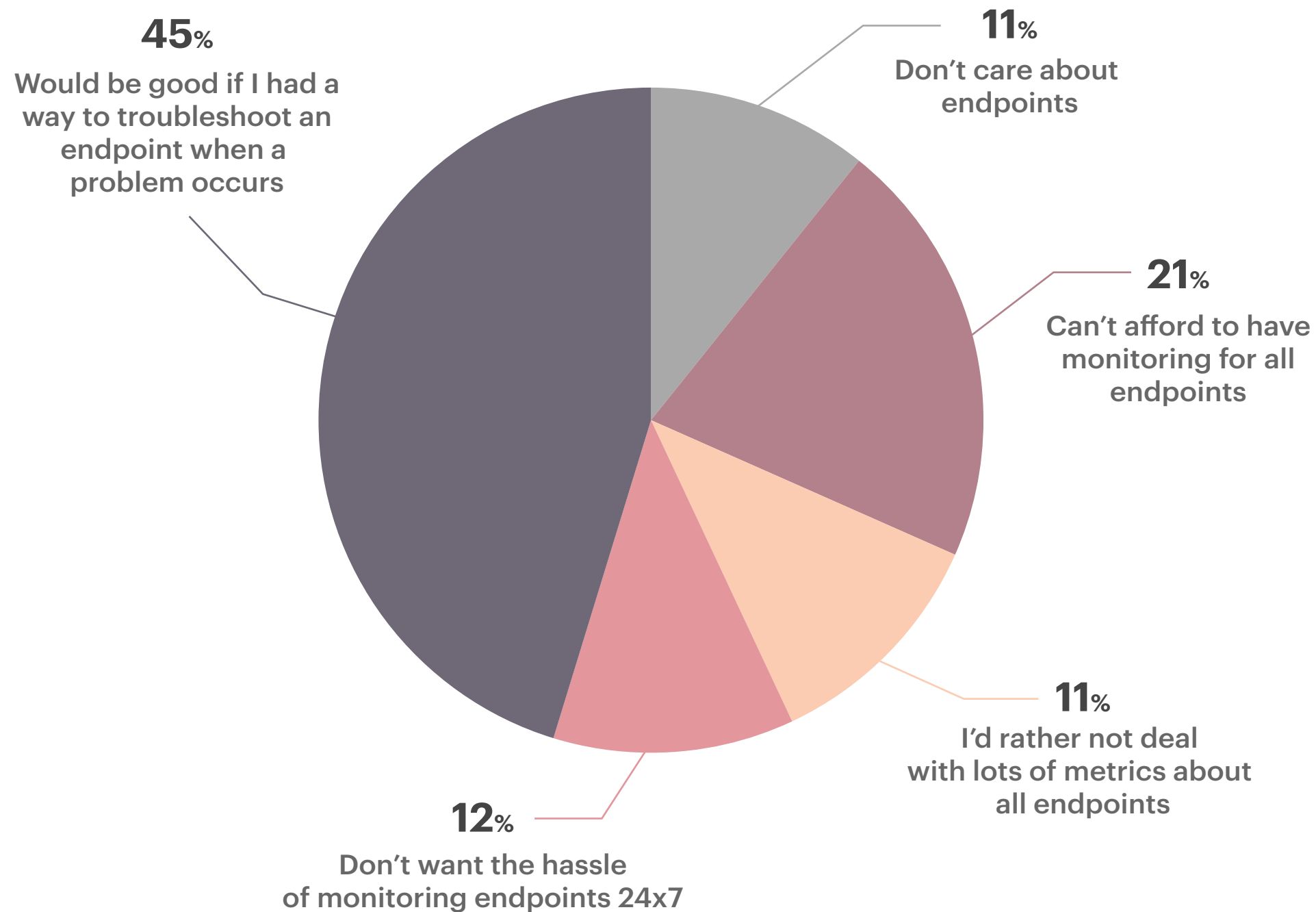


Improvement in user experience is the most important way of measuring ROI of a monitoring tool.



Number of hours of IT time saved is the second most important way of measuring monitoring tool ROI.

How important is it for you to monitor all endpoint devices used to support digital workspaces?



45% of respondents want to troubleshoot endpoints on-demand, when a problem occurs.

21% are interested in endpoint monitoring but are concerned about the cost.

23% do not want to be burdened with additional metrics to track or alerts to work on.

If you had one area in which the monitoring system(s) you are using for digital workspaces could help you, let us know what that would that be?

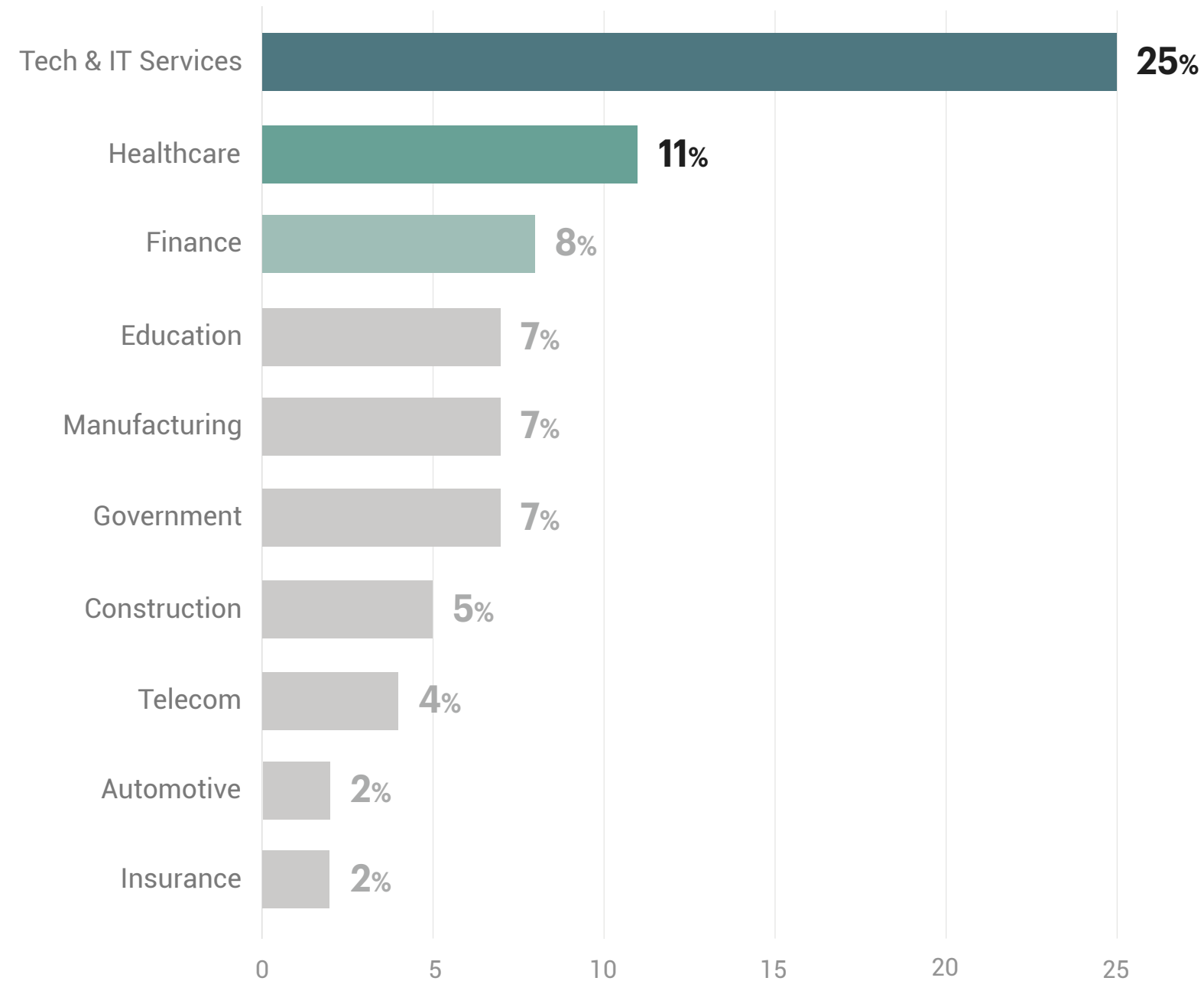


Demographics of Survey Respondents



Which vertical are you employed in or service/support the most?

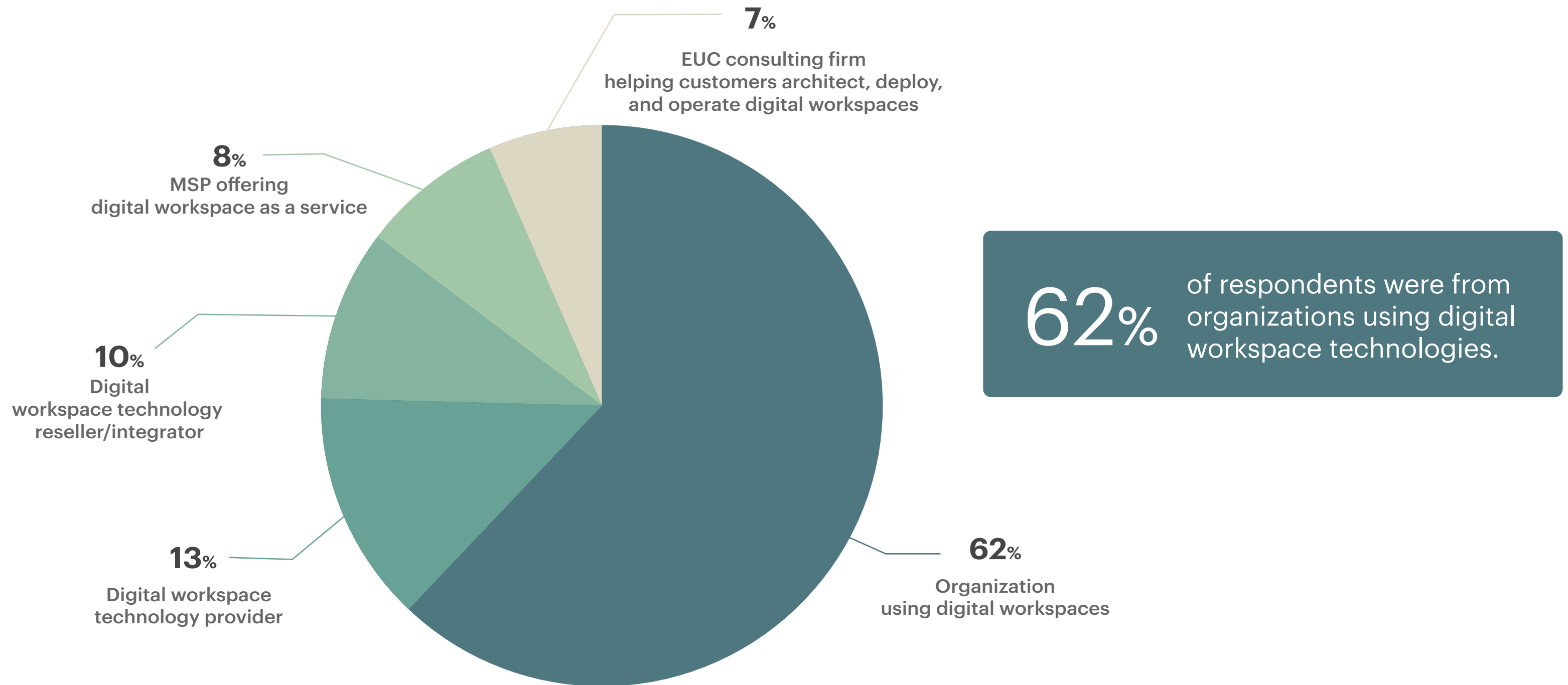
Top 10 Verticals



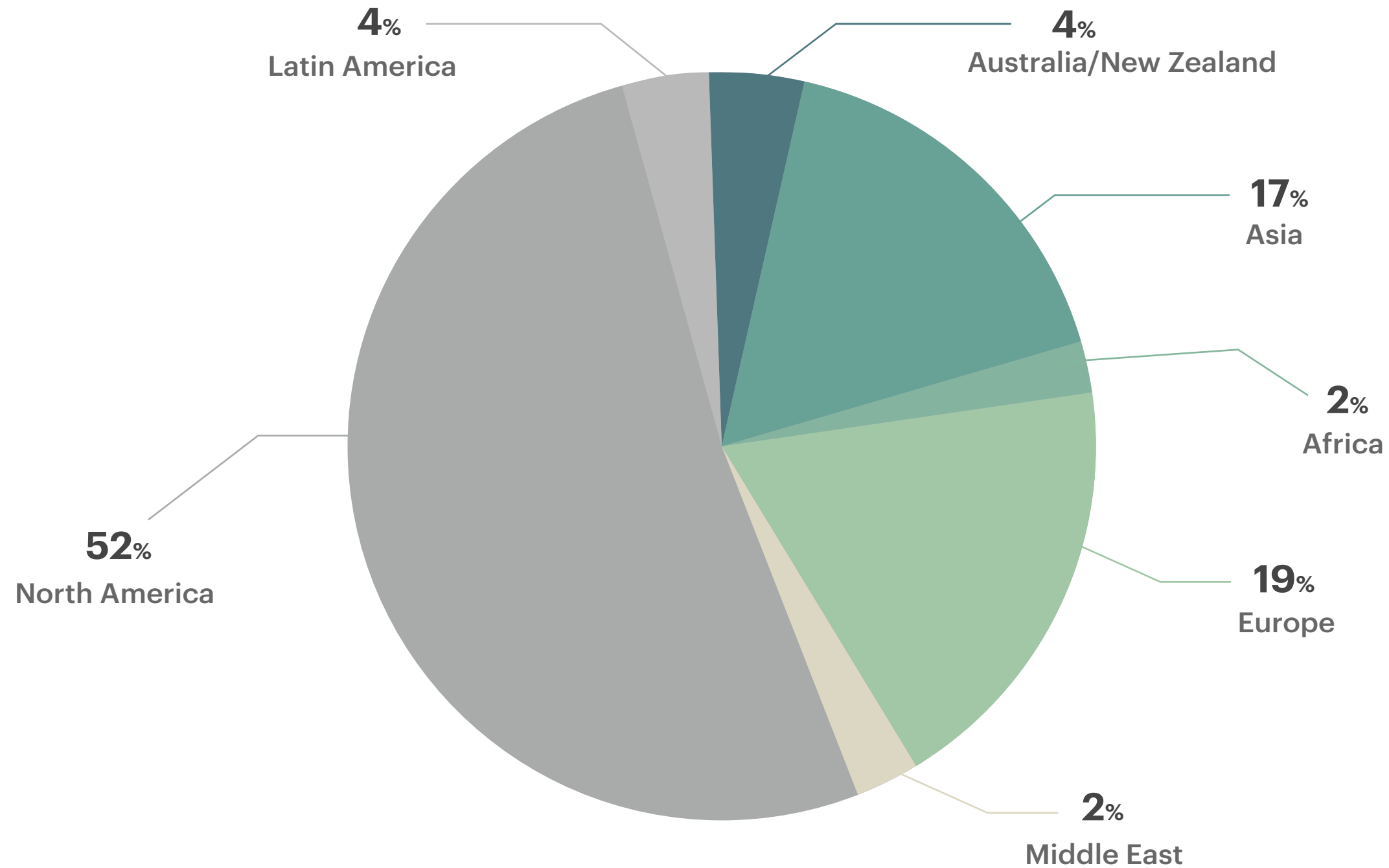
25% of respondents are in the technology and IT services sector.

Healthcare and finance were the other sectors where we got most responses from.

Which of these statements best describes your organization's connection with digital workspaces?



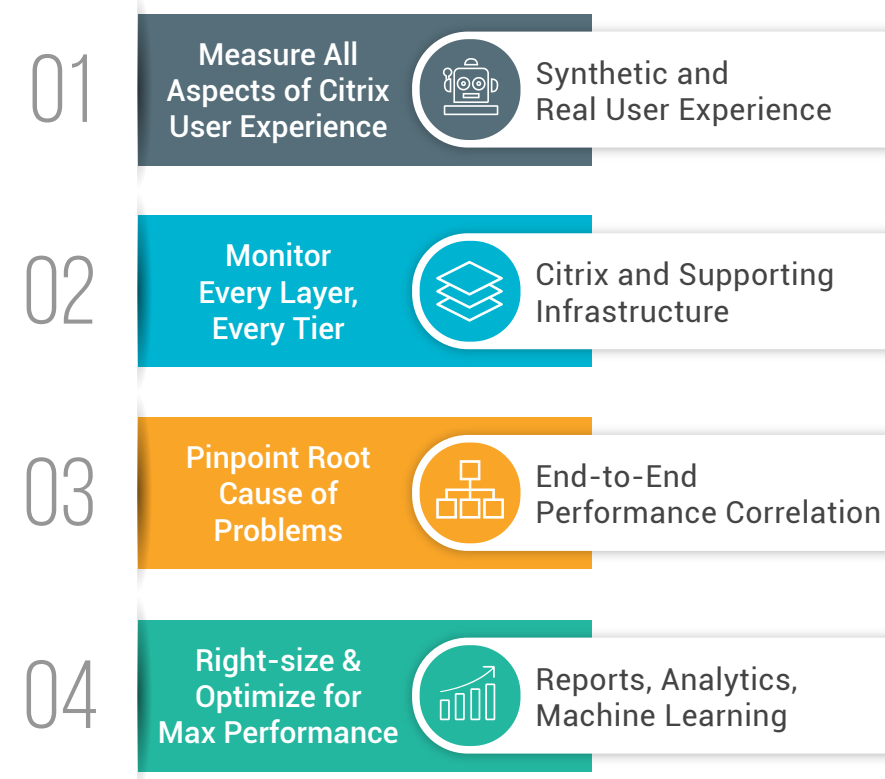
Which region are you based out of?



About eG Innovations

eG Innovations' **digital workspace monitoring** solutions help ensure high-performing applications and desktops and stellar user experience across physical, virtual, and cloud infrastructures.

eG Enterprise makes user experience a center piece of its monitoring strategy. A combination of real user and synthetic monitoring provides 360° visibility into digital user experience.



With eG Enterprise, you can monitor any digital workspace from one console:

NUTANIX

vmware

 **Microsoft**

IGEL

citrix

aws

www.eginnovations.com

About xenappblog.com

xenappblog.com is rated as one of the top 10 important Citrix and digital workspace related blogs. Hosted by Trond Eirik Haavarstein aka Eric, a highly respected author, blogger and speaker on digital workspace technologies, xenappblog.com has articles on various topics related to virtualization and applications. Eric has been working with Citrix and Microsoft products since 1999 and shares his real-world experience with these technologies on xenappblog.com.

Eric has been awarded Citrix Technology Professional (CTP), Microsoft Most Valuable Professional (MVP 2017-2019), Nutanix Technical Champion (NTC), VMware EUC Champion and Very Important Parallels Professional (VIPPP). He's also a Citrix Certified Instructor (CCI) and Microsoft Certified Trainer (MCT).

xenappblog.com

Thank you!

A big thanks to all the 1050+ IT pros who responded to our survey!

Your input has helped us compile this informative report for the industry.



For more information on Digital Workspaces Monitoring:

Visit: www.eginnovations.com | **Contact:** info@eginnovations.com