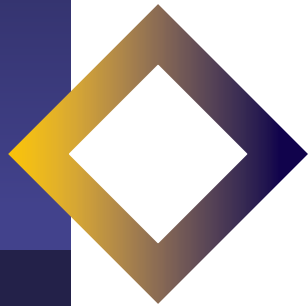# Techstrong Research

DEVOPS AND THE PUBLIC CLOUD:

The Move to the Distributed Cloud

Q3 • 2022

COMMISSIONED BY **linode**
Akamai Cloud Computing

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General Manager,
Techstrong Research

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Executive Summary

IN THE Q3 DevOps and the Public Cloud survey, the focus is on the eventual move to the distributed cloud as both a means to support a global and scalable public cloud platform as well as a developer-friendly environment that enables faster and more affordable application deployment. Techstrong Research surveyed over 700 development professionals, managers and senior leaders across 20 industries.

As a backdrop, some 15 years after the first public cloud platforms emerged, the public cloud is neither novel nor controversial. Enterprises are increasingly embracing multicloud environments to decrease their reliance on a single provider. Our research and analysis found that the key criteria for selecting cloud providers have remained consistent:

1 **DIY with control:** Respondents want an easy-to-use, less complex environment that is secure and has the international security and compliance certifications to prove it. Security features accessible within applications remain the most important for organizations looking to switch cloud providers. For their part, the providers offer many security services (WAF, DDoS, bot protection, etc.) and very granular identity and access management capabilities to adequately isolate cloud-based resources.

2 **Global scale with large outbound network capacity:** As businesses have globalized, the expectation is that cloud platforms will offer connectivity regardless of geographic location and at sufficient scale to meet application needs. Replatforming applications requires a significant investment to refactor the environment. Organizations are increasingly selecting their cloud providers based on their ability to provide the scale needed at some point in the future.

3 **Developer-centric:** As developers (and DevOps professionals) increasingly weigh in on platforming decisions, key capabilities like open infrastructure, programmable APIs and self-service capabilities via CLI or a web interface are becoming key requirements.

4 **Ability to distribute workloads to the edge:** An emerging requirement, for sure, but we believe bringing compute and data much closer to the ultimate consumer of applications will become increasingly important in a more remote and distributed world.

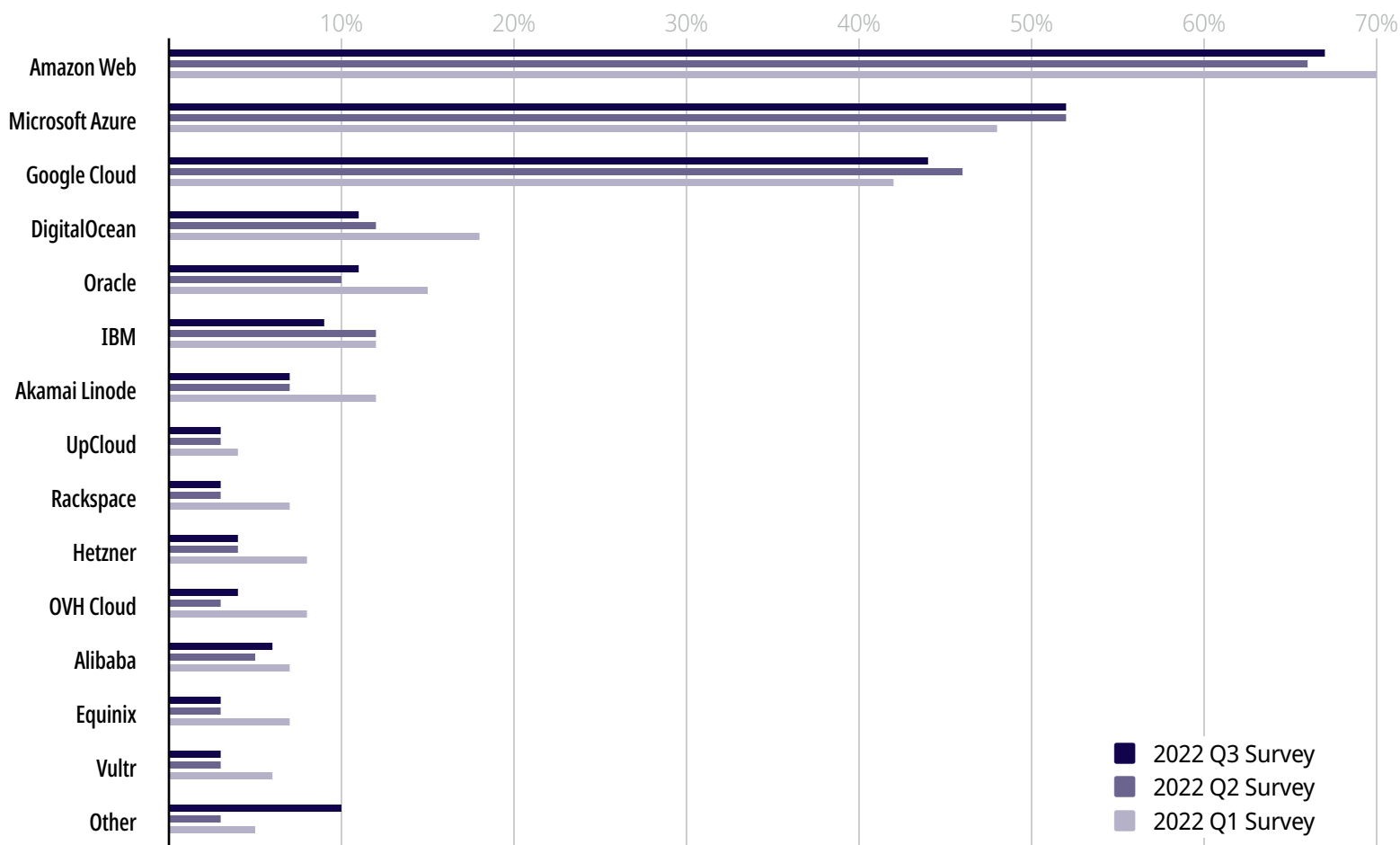# Cloud Usage Expectations Remain Constant

DevOps professionals continue to expect upwards of 75% of IT infrastructure will be cloud-based in a year. This has been consistent (between 66% and 75%) for the past year, indicating that the expectation is most modern workloads (cloud-native, containers, etc.) will run on a cloud platform. Of course, this assessment (from DevOps professionals) is largely forward-looking and underestimates the on-premises resources still in use, which are not going away any time soon. But we believe it's a pretty good predictor of where things are going.

What percentage of your IT infrastructure will be cloud-based one year from now?

80%	
60%	
40%	
20%	

- 2021 Survey
- 2022 Q1 Survey
- 2022 Q2 Survey
- 2022 Q3 Survey
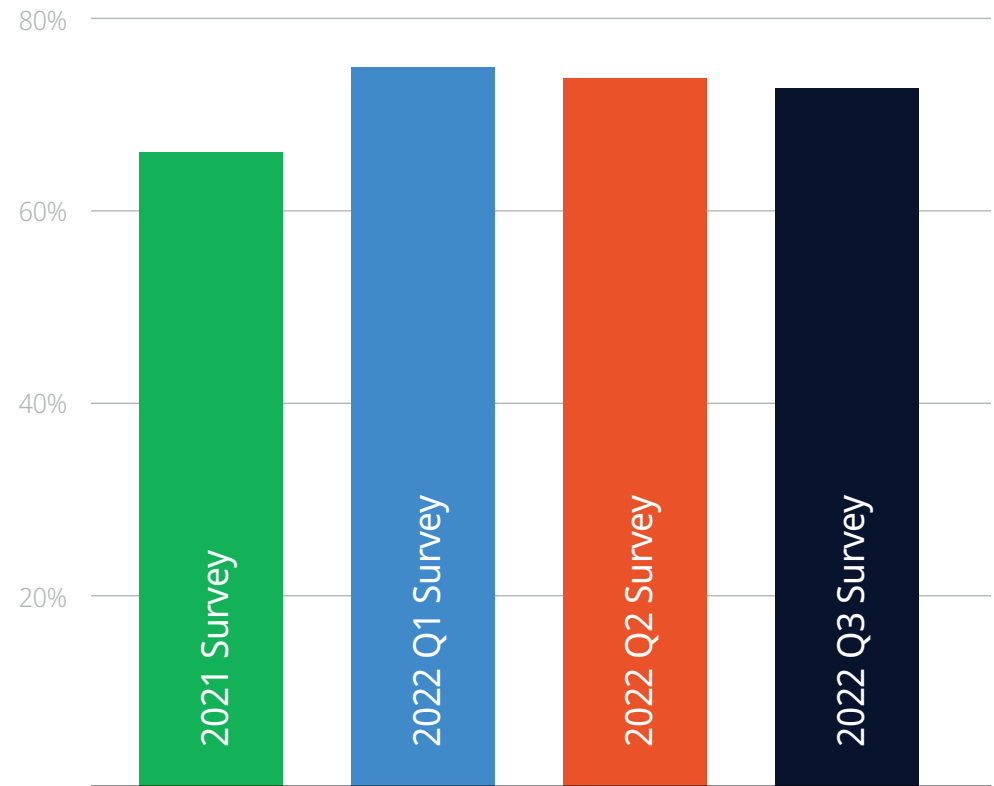
Hyperscalers Continue to Dominate

The cloud providers in use remain remarkably consistent with the Q2 survey. AWS, Azure and GCP remain the top three providers, shifting only a percentage point or two. Akamai + Linode, Oracle, IBM and Digital Ocean remain the most prevalent below the big 3.

Bar chart comparing cloud provider usage across Amazon Web, Microsoft Azure, Google Cloud, DigitalOcean, Oracle, IBM, Akamai Linode, UpCloud, Rackspace, Hetzner, OVH Cloud, Alibaba, Equinix, Vultr, and Other for 2022 Q3 Survey, 2022 Q2 Survey, and 2022 Q1 Survey.

Catalysts for Changing the Cloud (Provider)

Despite the continued market share dominance of the top three cloud providers, most respondents are either actively considering or aren't sure whether they are considering adding a cloud provider. The clear "no" answer remains constant at 27% over the past two surveys. In the most recent survey, the reasons respondents are considering adding providers boil down to reducing their reliance on a single cloud provider (53% of respondents) and driving down costs (40%). Interestingly, finding certified DevOps professionals (8%) on a cloud provider's platform is not really a catalyst for change despite all of the chatter around the DevOps skills gap. Respondents don't want to put their eggs in one (cloud) basket, and they'd also get the benefit of being able to have cloud providers compete for their business, driving down costs.
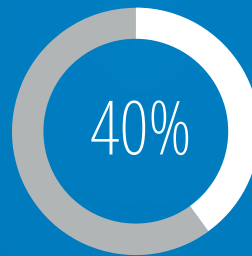
**Are you considering adding one or more cloud infrastructure providers over the next 12 months?**

■ 2021 Survey; ■ 2022 Q1 Survey; ■ 2022 Q2 Survey; ■ 2022 Q3 Survey
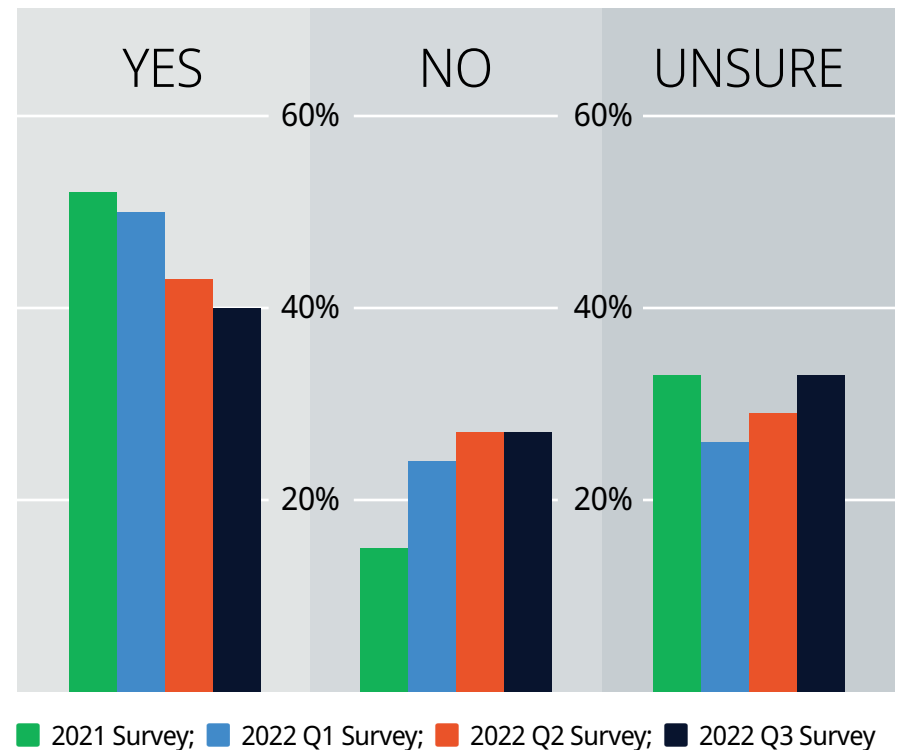
Top reasons why respondents are considering adding one or more cloud providers

53%
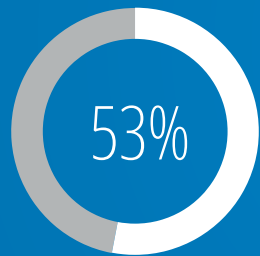
We need to be less reliant on one or two cloud providers (we need a multi-cloud strategy)

40%

Costs have become too expensive/too complex

26%
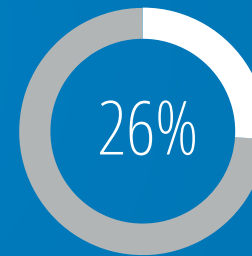
Recent cloud service provider outages

21%
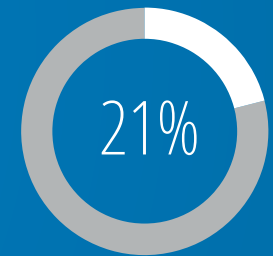
Our cloud provider(s) is becoming or has become a competitor

16%
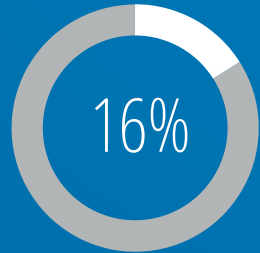
My cloud provider may partner with governmental organizations that are against our corporate standards, morals or ethics

11%
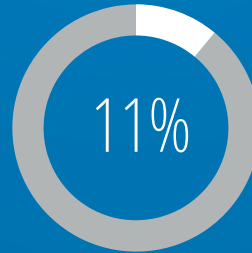
Our cloud provider's customers have morals/ business models I disagree with

8%

We can't find or afford certified DevOps professionals for our current cloud providers

7%
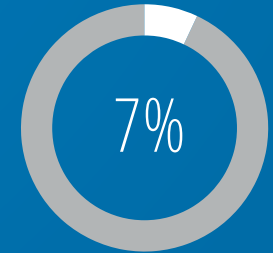
Other

On the move...

For those organizations considering moving their workloads, better price/performance ranks as the most popular (6.7 out of 10), with more open infrastructure (5.6), less complexity (5.3) and better support (4.8) ranking highly as well. DevOps professionals have a pragmatic perspective on cloud providers; focusing on the issues provides a better experience for developers interested in automated DevOps pipelines, programmable infrastructure and deploying applications more rapidly and more frequently.
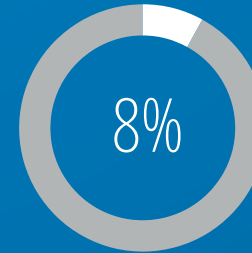
What factors would you consider before moving all or part of your workload to a new cloud infrastructure provider?

Factor	Score
Better price/performance	6.7
More open infrastructure	5.6
Less complexity	5.3
Better support	4.8
Address security or disaster recovery needs	4.0
Comply with local/regional laws	3.4
Not a direct competitor	3.2
Diversify budget	3.2
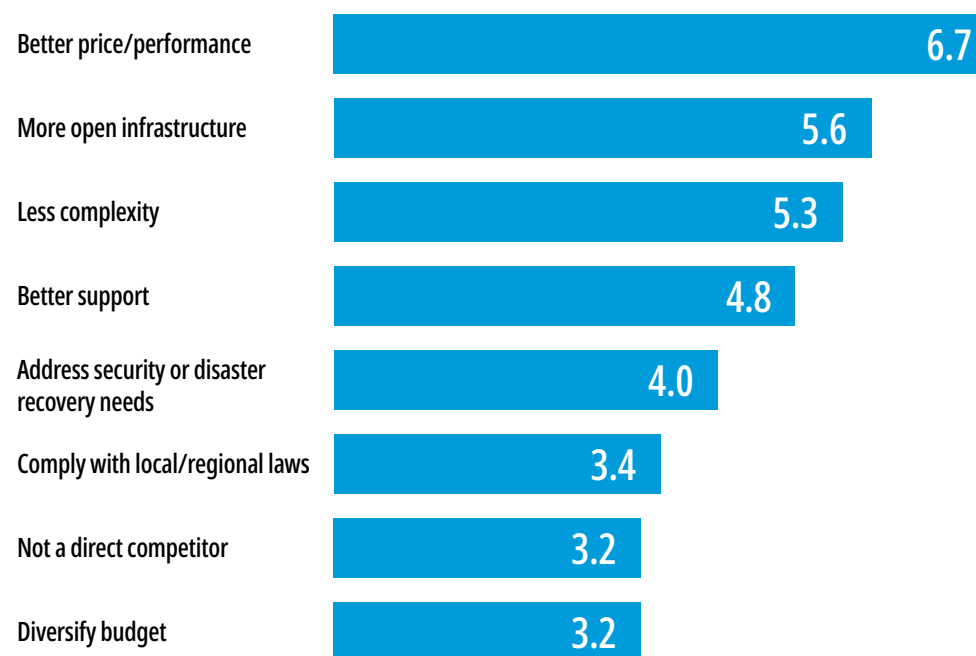
Competition is seen as a threat

The 2022 Q3 quarterly survey shows that competitive fears in cloud provider selection remain an issue, as we had seen in previous surveys. In the most recent survey,16% of respondents worry about their cloud provider becoming a competitor and a constant 25% indicate they already compete with their cloud provider. That's 41% that are looking over their shoulder at competition (expected or real) from the provider of their cloud infrstructure. It remains to be seen whether this fear is enough to force a change in provider, but it's something to consider for new workloads.

Are you afraid that your cloud services provider will become a competitor?

■ 2022 Q1 Survey; ■ 2022 Q2 Survey; ■ 2022 Q3 Survey
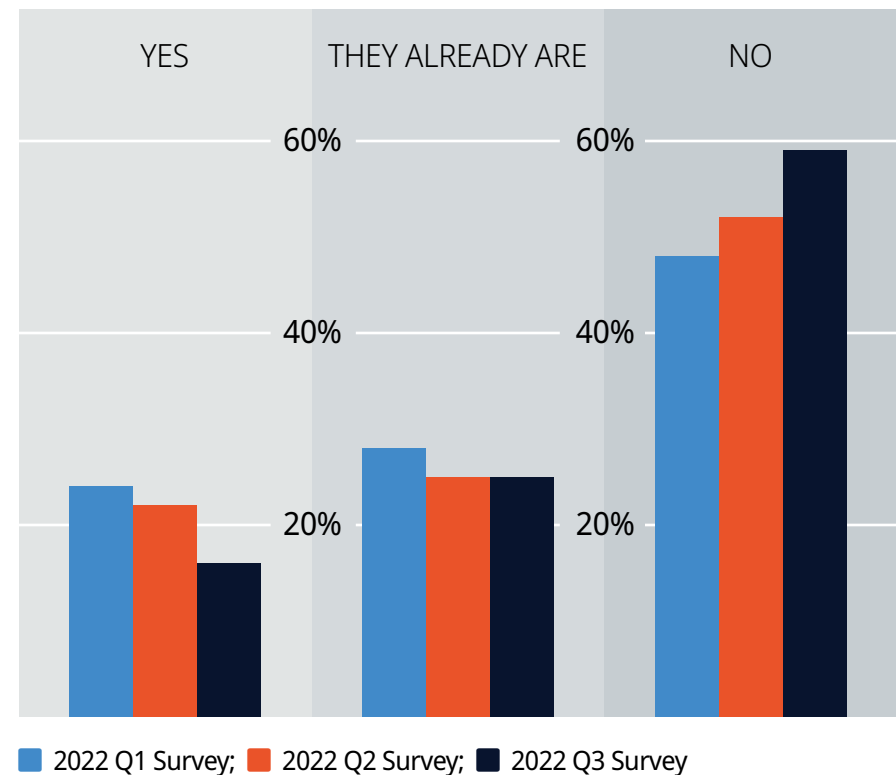
DevOps Demands High Availability, Less Complexity and Better Support from the Cloud

As the cloud evolves to become a strategic platform for DevOps initiatives, we wanted to understand which characteristics impact cloud provider choice. Not surprisingly, 99.99% availability (67%), flexibility in developer support (full-featured API, CLI) (56%), and 24/7/365 support (55%) were the top-rated criteria. The desire for international security and compliance certifications (57%) was somewhat surprising. We suspect the DevOps respondents know all too well that their applications will have compliance requirements and are looking for cloud platforms and solutions to ease this burden.

67%
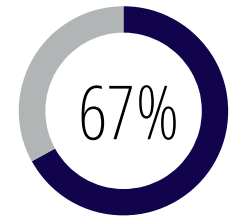
Minimum 99.99% availability

57%
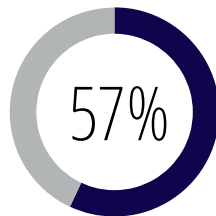
Certified on Internation Security and Compliance Standards

56%
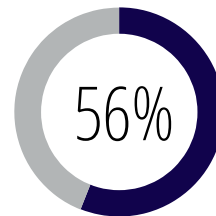
Full-featured API, CLI and intuitive cloud manager interface

55%
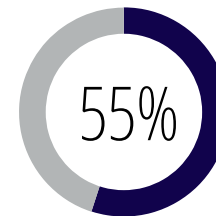
24/7/365 non-tier worldwide support

46%
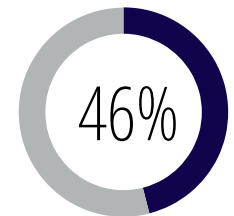
Global Cloud Network (Data Centers worldwide)

46%
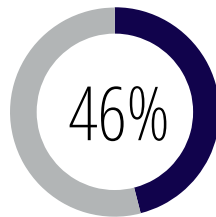
Core Infrastructure Primitives (to accomplish 90% of my most common workloads)

46%
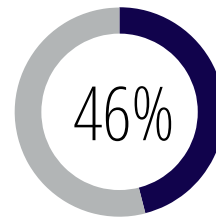
Extensive technical documentation

32%
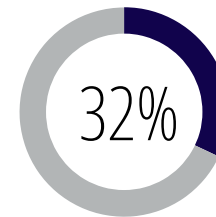
Industry-comparitive hardware resources

27%
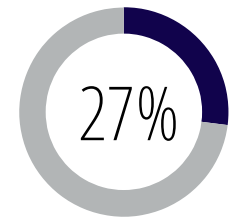
One-click marketplace of third-party apps

If we look at how respondents ranked the key features, we see a common theme: DevOps practitioners want to see developer-centric features as a key set of services. Three of the top five most wanted features are focused on developers (APIs, self-service via web and support) while the other two are operations-focused capabilities such as observability, monitoring and backup/restore.

What factors would you consider before moving all or part of your workload to a new cloud infrastructure provider?

Factor	Score
API-Programmatic Access/Automation	7.2
Self-Service via Web and CLI	7.1
Operations-Monitoring	7.0
Backup and Restore	6.2
Support (Competency and Response Time)	6.1
Adheres to uptime guarantees	5.7
Supports core primitives and managed services	4.5
Supports open source and third-party tools	4.3
Multi-cloud support	3.8
Portable and cloud-agnostic	3.2
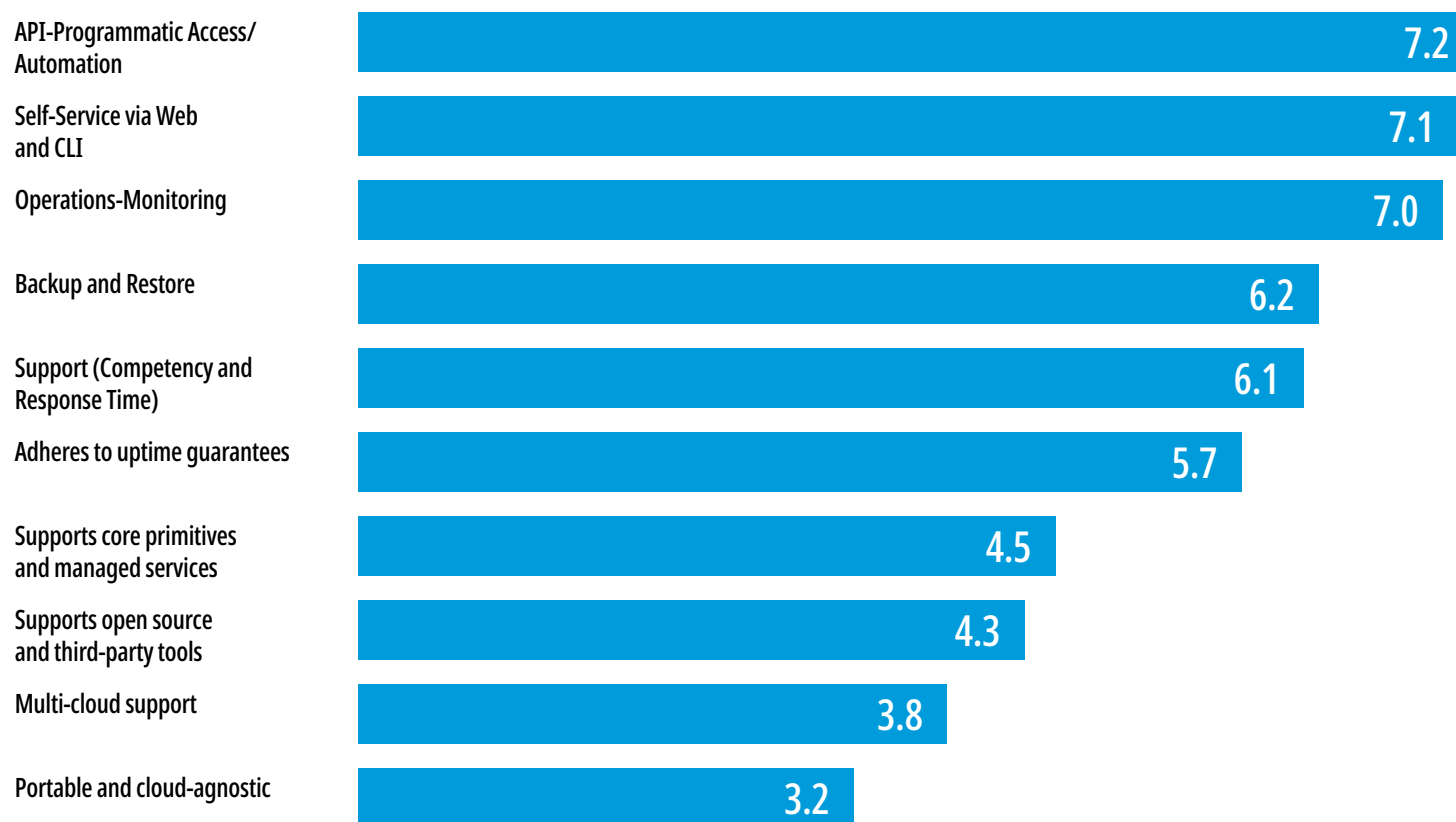
What matters most?

Accepting the inevitability of compliance and data security requirements, 83% of respondents believe high data security is very important or critical. Consistent with the other findings, DevOps-friendly characteristics including technical know-how of support (69%), access to customer support (65%) and ease of use (62%) are also rated as very important or critical. It's clear that the cloud is entering a new phase of acceptance. **As such, once organizations know their data will be safe, they are looking for a development-friendly platform providing openness, ease of use and support to meet the increased demands for software-delivered capabilities.**

EASE OF USE

3%	7%	28%	41%	21%

HIGH DATA SECURITY

1%	4%	12%	29%	54%

ACCESS TO CUSTOMER SUPPORT

1%	7%	27%	39%	26%

TECHNICAL KNOW-HOW OF SUPPORT

2%	4%	25%	45%	24%

SIMPLICITY OF PLATFORM AND OFFERINGS

2%	7%	31%	41%	19%

BUILT ON STANDARDS WITH A FOCUS ON REMOVING VENDOR LOCK-IN

3%	10%	27%	38%	22%

■ Not important; ■ Somewhat important; ■ Important; ■ Very Important; ■ Critical

The Move to the Distributed Cloud: Secure With Global Scale and Connectivity

As we start looking at DevOps professionals' technical expectations for a cloud platform, it is no surprise that security tops the list. A full 73% rate security capabilities as very important or critical and granular identity management is close behind (67%). After that, DevOps pros want foundational cloud services: compute, storage, managed database and managed container services.

To understand the requirements for emerging applications, we asked about additional capabilities in this quarter's survey, including outbound network capacity, content delivery and edge computing. The perceived importance of these capabilities validates that the cloud is a strategic global application delivery platform. In fact, 89% of respondents believe that having large outbound network capacity is important, very important or critical. Offering a content delivery platform (80% ranked this as important or greater) and global compute infrastructure (76%) also rated highly.

We also want to highlight an emerging feature that we believe will be increasingly important as we enter 2023—edge computing. We expect a surge of interest in the edge as organizations figure out how to distribute their workloads to minimize latency, increase performance and maintain cost-efficiency. We believe the industry is still figuring out how to leverage edge computing, but that it will be a key capability of cloud providers moving forward.

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Needs vs wants

How important is it for cloud providers to offer the following:

TABLE STAKES

EMERGING REQUIREMENTS

	COMPUTE (Virtual Machines, Mare Metal, Serverless, Cloud GPUs)	STORAGE (S3-compativle objet sptrage. block storage, backups)	MANAGED DATABASES (PostgreSQL, MongoDB, mySQL)	MANAGED CONTAINERS (Kubernetes, Docker, etc)	GLOBAL COMPUTER INFRASTRUCTURE COVERAGE	LARGE OUTBOUND NETWORK CAPACITY	SECURITY CAPABILITIES (DDoS, WAF, Bot Management)	GRANULAR IDENTITY & ACCESS MANAGEMENT POLICIES	COMPLIANCE CERTIFICATIONS (FedRamp, SOC, PCI)	CONTENT DELIVERY PLATFORM	EDGE COMPUTING
Not important	2%	1%	5%	4%	6%	2%	2%	2%	5%	6%	9%
Somewhat important	9%	9%	10%	11%	17%	9%	6%	7%	11%	14%	18%
Important	24%	23%	25%	27%	30%	28%	19%	23%	26%	33%	33%
Very Important	29%	32%	33%	31%	27%	40%	30%	36%	32%	31%	27%
Critical	35%	34%	27%	27%	19%	21%	43%	31%	27%	16%	13%

■ Critical ■ Very Important ■ Important ■ Somewhat important ■ Not important

The Techstrong Research View

OUR THIRD QUARTERLY DevOps and the Public Cloud report underscores three major trends. First, as cloud consumption continues to scale, cloud platforms must have global reach, significant outbound network capacity and high data security capabilities.

Cloud buyers can and should consider alternative providers to reduce reliance on a specific cloud provider. Still, they need to do sufficient due diligence because migrating between cloud platforms is expensive and time-consuming. Price-performance is the top reason to consider alternative providers. Yes, re-platforming is expensive, but so is staying on a cloud provider that doesn't aggressively follow the technology commodity curve. Third-party risk assessments should focus not just on the cloud provider's security capabilities but also on its global network infrastructure, support capabilities and responsiveness.

Cloud-provider security services, especially around application security (WAF, DDoS, bot management, API security, etc.), can address integration challenges and leverage the existing procurement process, thus removing the friction of protecting cloud-based workloads. Although cloud-provider security services can be less functional than third-party alternatives, organizations must determine what is "good enough."

Second, the cloud wars continue to focus on winning over the developers. This constituency requires ease of use, simplicity and programmability from the platforms where they deploy their applications. That makes developer support a huge factor in a cloud provider's ability to meet the needs of these teams, as toolkits, APIs, easily integrated PaaS services and a thriving ecosystem of pre-integrated third-party add-ons accelerate the developer's ability to deploy quickly and reliably. Technical support must be responsive and knowledgeable, as developers have little patience for infrastructure issues that hinder their ability to ship code.

Cloud platforms are also expected to support open infrastructure and core primitives making it easier to deploy common workloads, which is another way of saying simplicity and programmability of the application stacks.

Finally, we believe these first two trends will come together as organizations increasingly look for a global cloud platform with sophisticated edge computing capabilities. Providers with these capabilities will need to control a large global network to cost-effectively deliver these services and a value-added set of application services to allow developers to deploy their applications as close to the users as possible.

This global, distributed edge cloud will introduce a new class of cloud providers, help organizations scale their application environments, support API-first software designs, facilitate integration with PaaS and third-party add-ons and assist customers in migrating to a modern deployment platform (like Kubernetes). These distributed cloud providers go beyond the alternative clouds by having the scale and support to get customers to a cloud-native application environment without the complexity and cost of the hyperscalers.
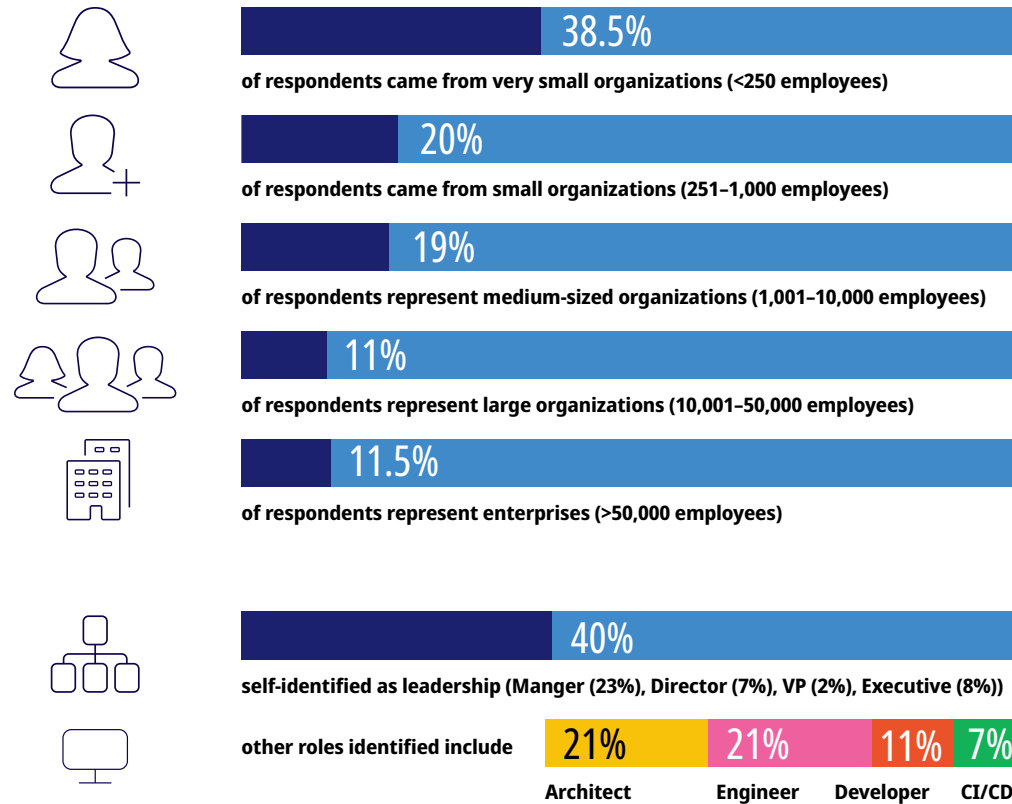
Survey demographics

Techstrong Research conducted a global study on the use of distributed cloud in DevOps environments. The survey was conducted during July and August of 2022. A total of 549 individual contributors, managers and executives involved with DevOps distributed cloud procurement, operations and strategy completed the survey.
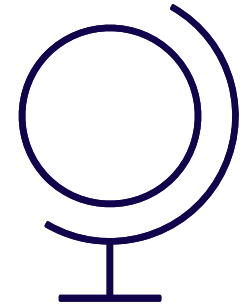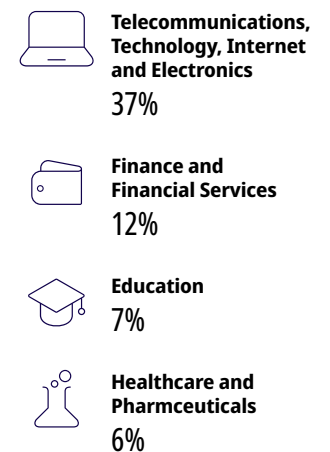
Respondents hold a variety of roles and come from a broad range of organizational sizes:

38.5%
of respondents came from very small organizations (<250 employees)

20%
of respondents came from small organizations (251–1,000 employees)

19%
of respondents represent medium-sized organizations (1,001–10,000 employees)

11%
of respondents represent large organizations (10,001–50,000 employees)

11.5%
of respondents represent enterprises (>50,000 employees)

40%
self-identified as leadership (Manger (23%), Director (7%), VP (2%), Executive (8%))

other roles identified include **21%** Architect **21%** Engineer **11%** Developer **7%** CI/CD

Survey responses came from a global cross-section of 89 countries in three major regions: **North America (36%), APAC (31%), Europe (10%)** and **LATAM (5%).**

Twenty industries were surveyed, including:

Telecommunications, Technology, Internet and Electronics
37%

Finance and Financial Services
12%

Education
7%

Healthcare and Pharmceuticals
6%

About the author

MIKE ROTHMAN is the GM of Techstrong Research, bringing 30+ years of experience as a research analyst and security leader and is recognized as a voice of reason for business leaders in an often over-hyped and extremely complex security industry. For the past 10 years, his research has focused on cloud security and most recently DevSecOps and securing cloud-native environments, helping organizations navigate this disruptive migration without compromising on information and infrastructure protection. Mike also serves as Chief Strategy Officer for Techstrong Group and appears frequently at industry conferences and on the various Techstrong TV streaming video programs.

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About Techstrong Research

Techstrong Research accelerates the adoption of disruptive technologies that drive business outcomes and provide actionable strategies in rapidly changing markets. We are the only organization serving the needs of IT leaders, practitioners and the industry ecosystem with research, analysis, content, events and education. We bring deep knowledge about today's leading technologies such as DevOps, cloud, data and AI/ML, security/governance initiatives and supporting infrastructure. We offer our customers a holistic business perspective essential to adapt and thrive in the digital economy. The Techstrong Research team has the knowledge, experience and credibility earned by working with hundreds of businesses across many industries to provide consulting, thought leadership and research services.

Techstrong Research is relentlessly focused on the business outcomes of disruptive technologies.