Techstrong Research

DEVOPS AND THE ALTERNATIVE CLOUD

CONTENTS

👉 EXECUTIVE SUMMARY

CLOUD TECHNOLOGIES have moved from single workload projects to the mainstream. Cloud Infrastructure-as-a-Service (IaaS) is popular. The market for these services grew by nearly 40% in 2019. With IaaS the cloud provider operates the underlying IT infrastructure — servers and virtual machines, storage, networking, and operating systems — using an on-demand and a pay-as-you-go model. Organizations rely on this most basic category of cloud computing to supplement or replace their internal IT infrastructure. Public cloud infrastructure services are increasingly becoming a preferred infrastructure backbone for digital transformation initiatives and IT modernization. Selecting which provider to use is an important, but daunting task.

Accelerated Strategies Group (ASG) set out to gain greater insight regarding what capabilities and priorities cloud infrastructure providers are expected to deliver. The research was conducted by surveying developers who directly work with the technology on a day-to-day basis. Input from developers provides a different perspective. We conducted the survey in February 2021, collecting 384 responses from developers familiar with their organization's cloud infrastructure. The worldwide survey covered companies of all sizes. The developers were also asked to identify their primary role. Roles included architect, developer, security, quality assurance, engineering, continuous integration/continuous delivery (CI/CD), operations and infrastructure. The job categories were widely distributed with no one category covering more than 16% of the responses.

As an examination on cloud infrastructure, it was not surprising cloud usage was high. Looking at the amount of IT activity attributed to the cloud, ASG estimates that 62% of the IT infrastructure is handled in the cloud. It is anticipated this share will rise to 66% within the next year. One in six companies have a multicloud environment. This is expected to change drastically as over half of the organizations surveyed report they are considering adding one or more cloud infrastructure providers. In terms of which cloud infrastructure vendors are being used, the HyperScale Cloud providers (e.g. Amazon Web Services, Microsoft Azure, and Google Cloud Platform) top of the list. The interesting aspect in the data is the impact of Alternative Cloud Infrastructure providers. Enterprises looking for value when adopting multicloud infrastructure strategies are utilizing Alternative Infrastructure Cloud vendors that provide core primitives. Six vendors (DigitalOcean, Equinix, Hetzner, Linode, OVH Cloud and UpCloud) were identified in the survey. In aggregate, nearly a third of the respondents are working with at least one of these suppliers. For small and midsized companies the combined share of the named Alternative Cloud Infrastructure providers is comparable with the Google Cloud Platform.

Companies and organizations expect specific benefits from using cloud infrastructure. Interestingly, nearly all of the survey's listed benefits — improving time to market, infrastructure performance, cost efficiencies, a modern software architecture and business continuity — polled similarly. All were selected by six out of 10 developers. When the benefits of cloud infrastructure are viewed by the prism of the developer's primary role, differences emerge. Developers appreciate the availability of a modern software architecture and performance. While Quality Assurance focused developers

look for time to market and Business Continuity. Interestingly, those performing CI/CD roles have an above average view on all the advantages save one.

Choosing the right company to support your IT Infrastructure is an arduous decision. ASG's survey asked respondents to rank from high to low the importance of a number of attributes a cloud infrastructure service provider should possess. For additional granularity the characteristics were segmented by company operations, overall services and financial. The highest ranked company characteristic, which scored 4.15 out of 5, is "a company I can trust." Closely followed by "easy to do business with" (3.93). Determining the most important service characteristic a cloud infrastructure provider must possess wasn't close. Over 50% of the responses placed "provides excellent data security" as critical. This was twice as large as any of the other requirements. Important attributes in the financial category were "predictable flat pricing" (30% critical), "affordable and accessible" (25%), and "proven to save money" (23%). Predictable pricing is more important for small companies (500 or fewer employees) as the item was critical on 36% of the surveys.

In addition to learning about vendor characteristics it is important to know what specific factors people consider when selecting their cloud infrastructure provider. The survey takers were able to select any number of the provided factors they considered critical. Ensuring that the infrastructure is always available is the most consequential criteria. Companies want and expect 99.99% uptime. Strong cloud management, worldwide support, and adherence to security and compliance standards are also important determinants. Enterprises are less interested in the type of hardware the cloud infrastructure platform uses and in the third-party apps available.

When selecting vendors, companies solicit input from many within their organization. Ultimately though the final decision is made by management, be that either the CIO/CTO, chief architect, or a company vice president. Two out of

three selections are made by management. The IT operations department is the primary decision-maker about 20% of the time. Interestingly, developers are not the decision makers, even when the cloud infrastructure is to be used for development.

To provide contrast on what drives the usage and selection of cloud infrastructure providers, the survey asked what roadblocks impede the use of cloud infrastructure. It is not unexpected that security or privacy concerns would be the runaway greatest obstacle. Over half of the respondents, who are developers, see security as a key concern. Companies need to have confidence their data and critical operations are protected in the cloud. The next highest roadblock is a lack of cloud skills, both for development and operations. Staff know how to handle on-premise technology, but as they develop and operate within a cloud environment, they realize additional skills are required.
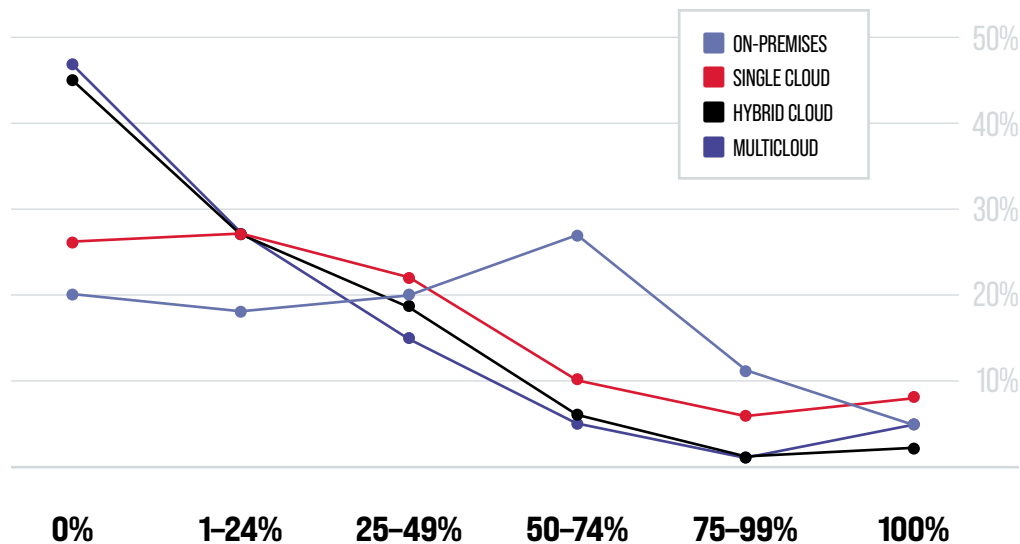
When looking at the data it pays to not just concentrate on what is most important. Looking at the items that are of less concern also conveys valuable insight. Under the roadblock segment, only 28% said the lack of management support was an impediment. Since this is not a concern, the converse would mean management supports efforts to leverage cloud IT infrastructure services.

The research provides insight on how developers view Cloud IaaS providers and where cloud activities could be heading in the future. Although the big three hyperscale vendors dominate the market overall, the various alternative cloud providers as a group have a significant position. Many of the features they prioritize (e.g. trust, support technical customers, data security, flat pricing and accessibility) are those most prized by developers. Many companies state they will be increasing cloud usage and half are considering adding cloud infrastructure providers. There is a high probability that companies will select an Alternative Cloud vendor. The positives available from this segment of providers are very appealing.

IT INFRASTRUCTURE IN THE CLOUD

WHERE IS YOUR CURRENT IT INFRASTRUCTURE LOCATED?

Legend:
- ON-PREMISES
- SINGLE CLOUD
- HYBRID CLOUD
- MULTICLOUD

X-axis: 0%, 1–24%, 25–49%, 50–74%, 75–99%, 100%
Y-axis: 10%, 20%, 30%, 40%, 50%

In a survey on cloud usage, it's no surprise that only **5% of the respondents would report not using any cloud services**. What is interesting? **20% of companies have no on-premises IT infrastructure.** This table reiterates a wide range of deployments. With the exception of zero (far left), no category reached 30% in usage.

KEY HIGHLIGHTS

- **The level of IT infrastructure utilizing cloud technology varies widely.** First there is the question of what amount of services should be handled in the cloud and then the question of how many providers are required.

- **One size does not fit all.** The averages of cloud usage from the survey show there is a wide range in deployment options.

- Overall, **38% of the IT infrastructure is on-premises.**

- **62% of IT activity is associated with the cloud.** Of that 15% is hybrid cloud, which mixes on-premises and cloud providers. 30% rely on a single cloud provider while 17% use a multicloud infrastructure.

- Companies are **twice as likely to use only one cloud provider.**

CLOUD USAGE TO INCREASE

Of the 5% of respondents who were 100% on-premises, 74% expect to add some level of cloud-based infrastructure within the year.
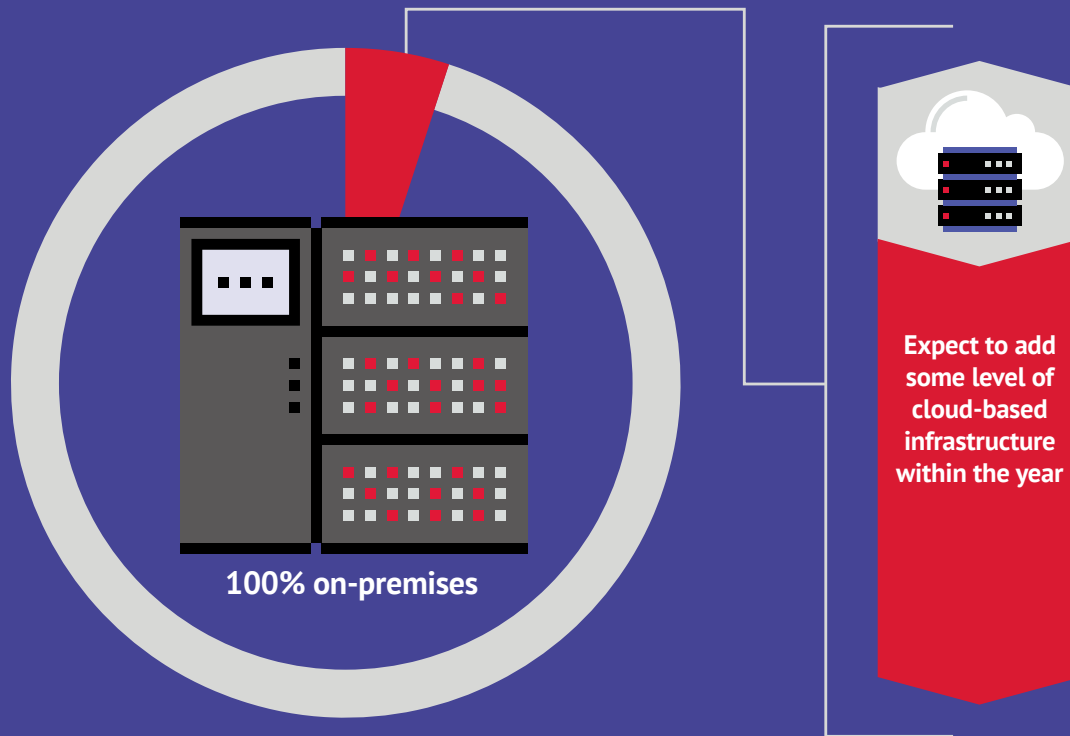
Over the next year it is expected that the overall share of IT infrastructure utilizing the cloud will increase from 62% to 66%. This represents a 7% growth rate.
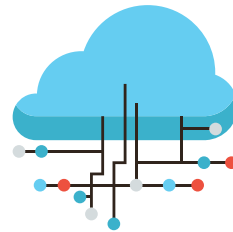
100% on-premises

Expect to add some level of cloud-based infrastructure within the year

2021

2022

+7% GROWTH
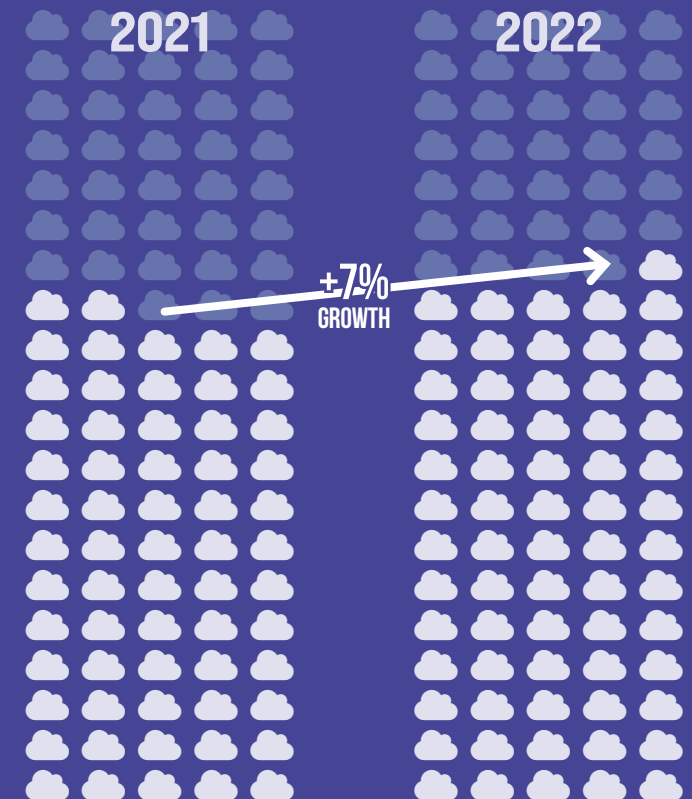
CLOUD INFRASTRUCTURE PROVIDERS

Leading Cloud Infrastructure Providers Are the Usual Suspects
HyperScale Cloud providers, Amazon Web Services (AWS), Microsoft Azure and Google Cloud Platform are used by the majority of companies. AWS and Microsoft Azure are used by three out of four companies with over 5,000 employees.


 # OF EMPLOYEES
- <500
- 501–5000
- 5000+
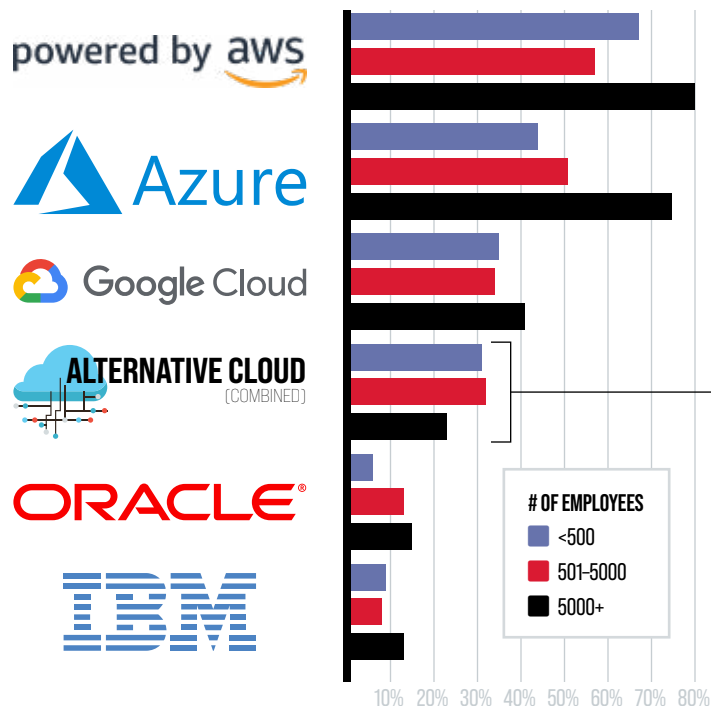
ALTERNATIVE CLOUD
(COMBINED)

DigitalOcean

OVHcloud®

UpCloud

EQUINIX | METAL

HETZNER

linode

Alternative infrastructure cloud providers are finding success. These companies focus on delivering core services, which are referred to as core primitives. Enterprises looking for value when adopting multicloud infrastructure strategies are utilizing fully capable alternative infrastructure cloud vendors. Their impact is considerable. The six vendors identified in the survey, in aggregate, are used by a third of the survey respondents. For small and midsized companies usage is on par with the Google Cloud.

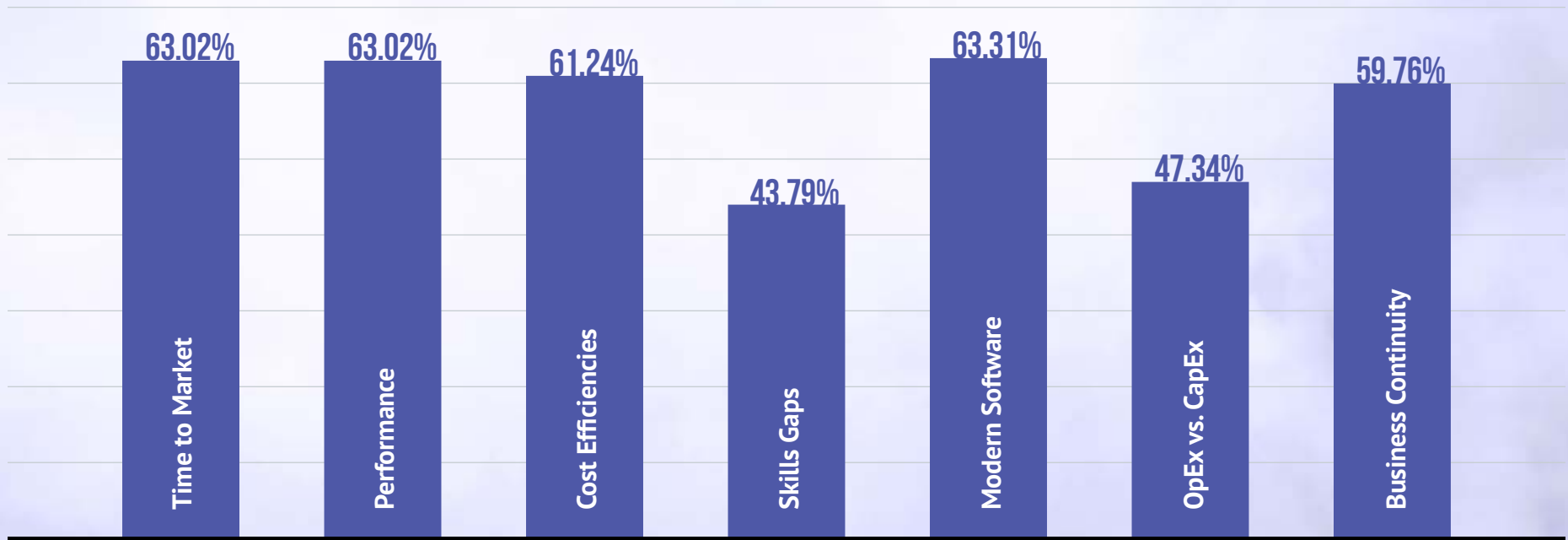## COMPANIES CONSIDER ADDITIONAL VENDORS
Enterprises are investigating the possibility of using multiple infrastructure cloud providers. Over 50% of the organizations are considering adding one or more cloud infrastructure providers in 2021. **It is anticipated the additional vendor will be drawn from the alternative cloud vendors.**
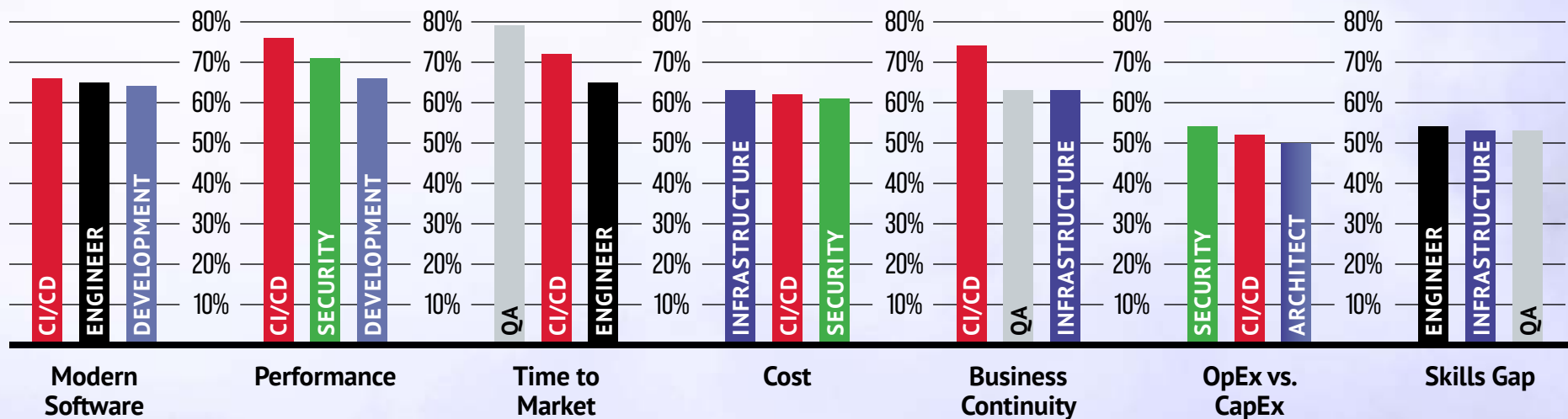
50%+
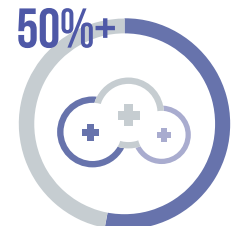
THE BENEFITS OF BUILDING/OPERATING APPLICATIONS IN THE CLOUD

WHAT BENEFITS DO YOU EXPECT TO RECEIVE FROM BUILDING AND OPERATING APPLICATIONS IN THE CLOUD?

Time to Market	Performance	Cost Efficiencies	Skills Gaps	Modern Software	OpEx vs. CapEx	Business Continuity
63.02%	63.02%	61.24%	43.79%	63.31%	47.34%	59.76%

CLOUD BENEFITS — THE DEVOPS DRIVERS

When the benefits of cloud infrastructure are viewed by the prism of the developer's primary role, differences emerge. For example developers appreciate the availability of a modern software architecture and performance. While developers focused on quality assurance (QA) look for time to market and business continuity. Interestingly, those performing CI/CD roles have an above average view on all the advantages, save one.
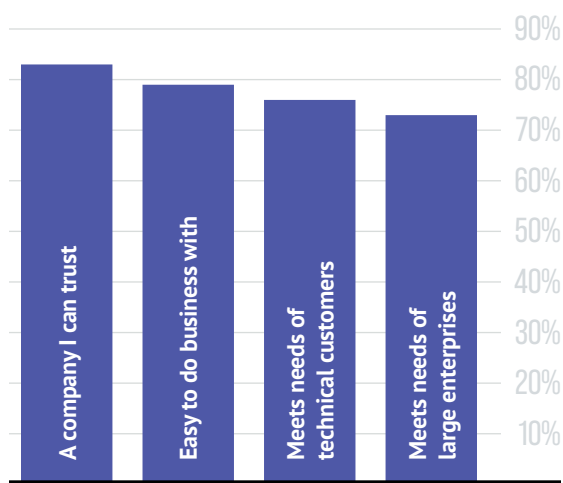
TRUST, DATA SECURITY AND PREDICTABLE PRICING

There are many factors evaluated when selecting a vendor. Choosing the right company is especially important when that vendor is going to be supporting your IT infrastructure. ASG asked DevOps staff to identify the most important attributes for a cloud infrastructure service provider to possess. Characteristics were segmented by company operations, overall services and financial elements. The most important aspects in each category: trust, excellent data security and predictable pricing.

IMPORTANT CLOUD CHARACTERISTICS
How important a company characteristic is for a cloud infrastructure provider to possess.

Bars (left to right):
- A company I can trust
- Easy to do business with
- Meets needs of technical customers
- Meets needs of large enterprises

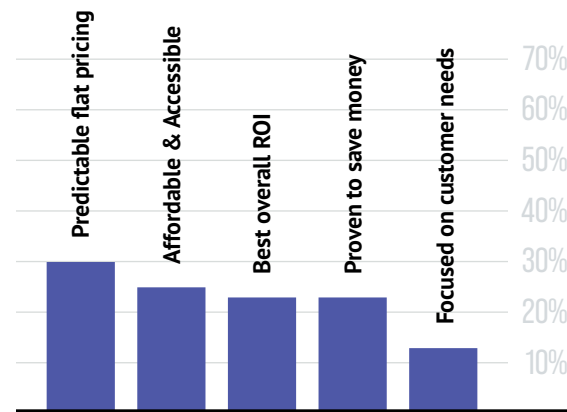Y-axis: 10% 20% 30% 40% 50% 60% 70% 80% 90%

IMPORTANT SERVICE CHARACTERISTICS
Determining what the most important service characteristic a cloud infrastructure provider must possess wasn't close. Over 50% of the responses placed **Provides Excellent Data Security** as critical. "Ease of Use," "Accessible Customer Support," "Simple Cloud Hosting" and "Built on Open Standards" were statistically similar.

52%
DATA SECURITY

IMPORTANT FINANCIAL CHARACTERISTICS
When averaged, all of the financial elements are similar. **When segmented by those elements considered most critical,** clear differentiation is visible. Predictable flat pricing is clearly the most important characteristic.

Bars (left to right):
- Predictable flat pricing
- Affordable & Accessible
- Best overall ROI
- Proven to save money
- Focused on customer needs
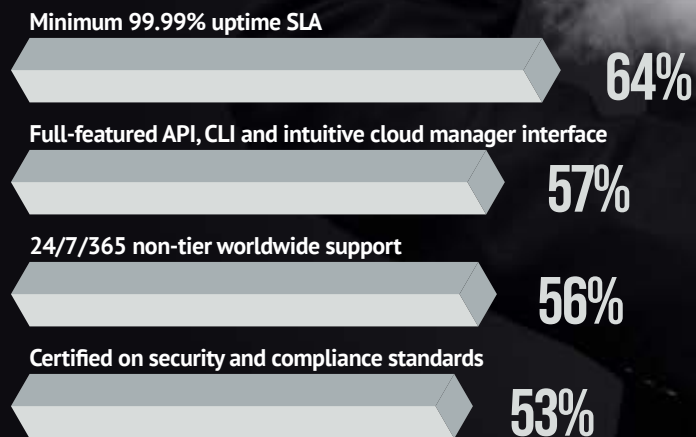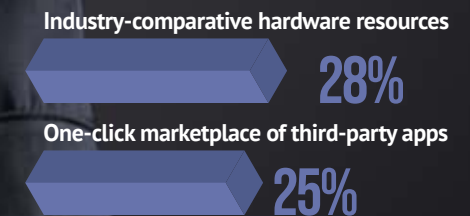
Y-axis: 10% 20% 30% 40% 50% 60% 70%

THE WHYS OF SELECTING A CLOUD PROVIDER

Organizations expect their vendors to provide specific fundamental components. Factors considered when selecting a cloud infrastructure provider include support, hardware, SLAs, customer service and core primitives. The survey takers were able to select any factor they considered critical. **The most consequential criteria, not surprisingly, is 99.99% uptime.** Followingly closely behind are strong cloud management, worldwide support, and adherence to security and compliance standards. Enterprises are less interested in the type of hardware the cloud infrastructure platform uses and in the third-party apps available.

MOST CONSEQUENTIAL FACTORS IN CHOOSING A CLOUD PROVIDER

Minimum 99.99% uptime SLA
64%

Full-featured API, CLI and intuitive cloud manager interface
57%

24/7/365 non-tier worldwide support
56%

Certified on security and compliance standards
53%

LEAST CONSEQUENTIAL FACTORS IN CHOOSING A CLOUD PROVIDER

Industry-comparative hardware resources
28%

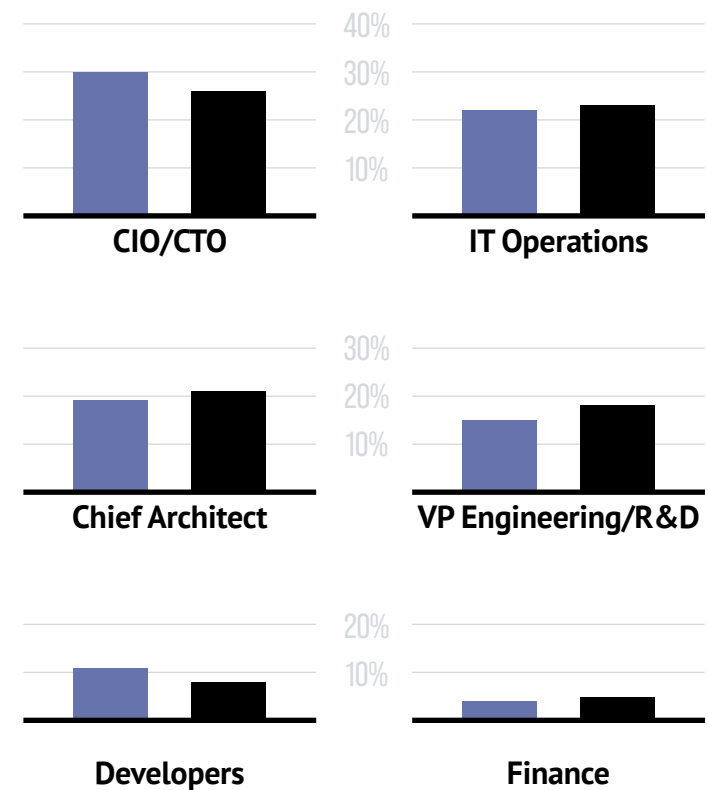One-click marketplace of third-party apps
25%

WHO SELECTS A CLOUD PROVIDER?

When selecting vendors, companies solicit input from many within their organization. Ultimately though the final decision is made by management, be that either the CIO/CTO, chief architect, or a company VP. Two out of three selections are made by management. The IT operations department is the primary decision-maker about 20% of the time. Interestingly, developers are not the decision-makers, even when the cloud infrastructure is to be used for development.

Surprisingly, there is statistically insignificant differentiation in the decision-makers when the cloud infrastructure is primarily for development or production use.

WHO SELECTS A CLOUD INFRASTRUCTURE PARTNER FOR:
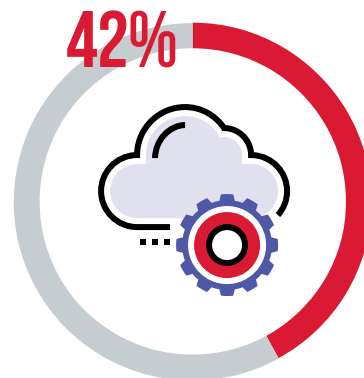
■ DEVELOPMENT ■ PRODUCTION

CIO/CTO — 40%, 30%, 20%, 10%

IT Operations

Chief Architect — 30%, 20%, 10%

VP Engineering/R&D

Developers — 20%, 10%

Finance

ROADBLOCKS

TOP 3 ROADBLOCKS THAT GET IN THE WAY OF USING CLOUD INFRASTRUCTURE

58%

Security/Privacy Concerns

42%

**Lack of Cloud Operational Skills**

40%

Lack of Cloud Development Skills

There are a number of impediments to the use of cloud infrastructure. It is not unexpected that **security or privacy concerns would be the runaway greatest obstacle. 58% of respondents choose this as the key concern.** Companies need to have confidence their data and critical operations are protected in the cloud.

The next highest roadblock is a lack of cloud skills, both for development and operations. The underlying information technology is the same between on-premises and cloud infrastructure, but how the technology is manipulated differs. Staff know how to handle on-premises technology, but as they develop and operate within the cloud, they realize additional skills are required. Developers and operators understand they require more knowledge about standard and alternative cloud infrastructures.

THE SMALLEST OBSTACLE: MANAGEMENT SUPPORT (A POSITIVE NEGATIVE)

When analyzing survey results it pays to not just look at the highest numbers, but at the smallest responses. This is especially applicable when the question is asking about obstacles. A low response should be considered a positive. In this survey **only 28% said the lack of management support was a roadblock.** Conversely this should mean that management supports efforts to leverage cloud IT infrastructure services.

28%
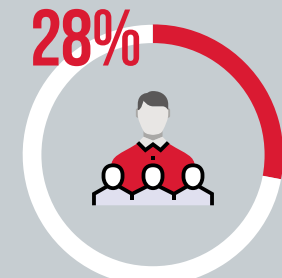
Lack of Management Support

THE ACCELERATED STRATEGIES GROUP VIEW

COMPANIES ARE increasingly moving their workloads from on-premises infrastructure to the cloud. To make this work requires Cloud IaaS offerings. Selecting which provider to use is an important, but daunting, task. Determining what capabilities and priorities cloud infrastructure providers are expected to deliver is what ASG explored in this research. Developers are key users of software and cloud technologies, thus the survey was geared to get an understanding of what is most important to developers instead of general IT staff and managers.

The research revealed developers do not have a parochial perspective, but instead exhibit a grand view of what is required. This positioning is most striking when looking at the most important attributes for a cloud infrastructure service provider to possess. Developers admit it is most critical for providers to be trustworthy, to provide excellent data security, and to have predictable pricing. These elements are not ones that would generally contribute to advancing their work activities. Developers also admitted that after security concerns, the lack of cloud skills is a roadblock to cloud development. It is heartening that developers readily admit that cloud activities require additional knowledge.

ALTERNATIVE CLOUD VENDORS

By deeply analyzing the data, ASG is convinced the research provides insight as to why Alternative Infrastructure Cloud providers are finding success. Enterprises looking for value when adopting multicloud infrastructure strategies are utilizing fully capable Alternative Infrastructure Cloud vendors. Their impact is considerable. The six vendors identified in the survey, in aggregate, are used by a third of the survey respondents.

Alternative cloud providers supply scale and quality of infrastructure needed for enterprise workloads. The overall market has commoditized around basic services, what are called "core primitives" — things like servers, databases, bare metal, Kubernetes, and other basic infrastructure components. Alternative cloud providers focus on delivering these core primitives. They do so with predictable costs, being easily engageable, meeting technical customer requirements, having reliable uptime and full feature APIs, and limited customer lock-in. Exactly the types of characteristics developers find most desirable.

ASG understands organizations stake their business future on their third-party cloud infrastructure service provider. When companies utilize an Alternative Cloud Infrastructure provider, they are conveying confidence that these companies are up to the task. It is not a coincidence "a company I can trust" was the top company characteristic an infrastructure cloud provider company should possess.

In summary the research reinforces that companies and organizations expect the use of cloud infrastructure to provide specific benefits. Development staff as a group expect the cloud to provide a range of benefits including improving time to market, infrastructure performance, cost efficiencies, a modern software architecture, data security, and business continuity. Given the importance of all of the benefits, Cloud Infrastructure providers need to offer a wide range of capabilities.
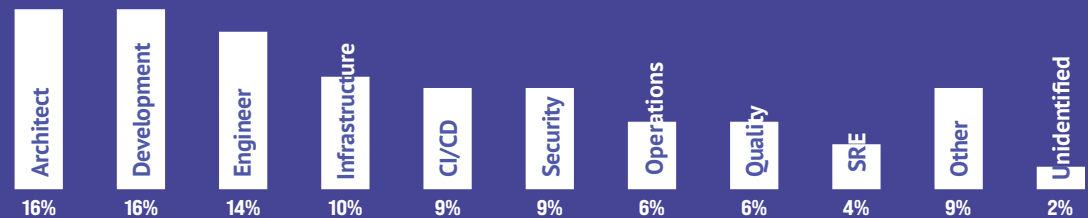
DEVOPS AND THE ALTERNATIVE CLOUD

SURVEY DEMOGRAPHICS

ASG conducted research into important characteristics and features cloud infrastructure providers should exhibit. The survey was conducted during Q1 of 2021. A total of 384 responses from developers familiar with their organization's cloud infrastructure completed this survey.

This survey on attitudes towards Alternative Cloud Infrastructure providers was directed towards front-line DevOps staffers. The primary role survey respondents attributed to themselves was:

Architect	Development	Engineer	Infrastructure	CI/CD	Security	Operations	Quality	SRE	Other	Unidentified
16%	16%	14%	10%	9%	9%	6%	6%	4%	9%	2%

Respondents come from a broad range of organizational sizes:

38% of respondents came from small organizations (<500 employees)

32% of respondents represent midsized organizations (501 – 5,000 employees)

30% of respondents represent large enterprises (>5,000 employees)

Survey responses came from across the globe. Regional breakdown of respondents were **North America (35%), India (28%), EMEA (19%)** and **Asia (8%).**

ABOUT THE AUTHOR

CHARLES J. KOLODGY is a security strategist, visionary, forecaster, educator, historian and advisor who has been involved in the cybersecurity field for over 30 years. His views and understanding of information and computer security were shaped during his years at the National Security Agency. During that time he held a variety of analyst and managerial positions. Following NSA, he was a research vice president covering security markets for IDC and then a senior security strategist for IBM Security.

Over the years he has identified market trends and authored numerous documents to explain market realities. He has spoken at many security conferences and events, including the RSA Conference, CIO Conference, CEIG and IANS, and has been widely quoted in the press. He is best known for naming and defining the Unified Threat Management (UTM) market, which continues to be one of the strongest cybersecurity markets with vendor revenue of $3 billion per year. He has been a leading analyst on application security, encryption and the human element.

Charles holds a B.A. in Political Science from the University of Massachusetts at Lowell and an M.A. in National Security Studies from Georgetown University.

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ABOUT THIS REPORT

This report is based on an inclusive survey conducted by Accelerated Strategies Group. It asked developers what features and capabilities they believe are most important when selecting cloud infrastructure. This worldwide survey of developers provides specific insights on selecting cloud infrastructure providers. The research was specifically interested in viewpoints towards alternative cloud providers. This brief summarizes and provides analysis of the findings. Linode commissioned the research.

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