

# Cloud Maturity Drives Business Success

Scale Cloud Infrastructure And Security Best Practices To Gain Competitive Advantage

A FORRESTER CONSULTING THOUGHT LEADERSHIP PAPER COMMISSIONED BY HASHICORP, JUNE 2024



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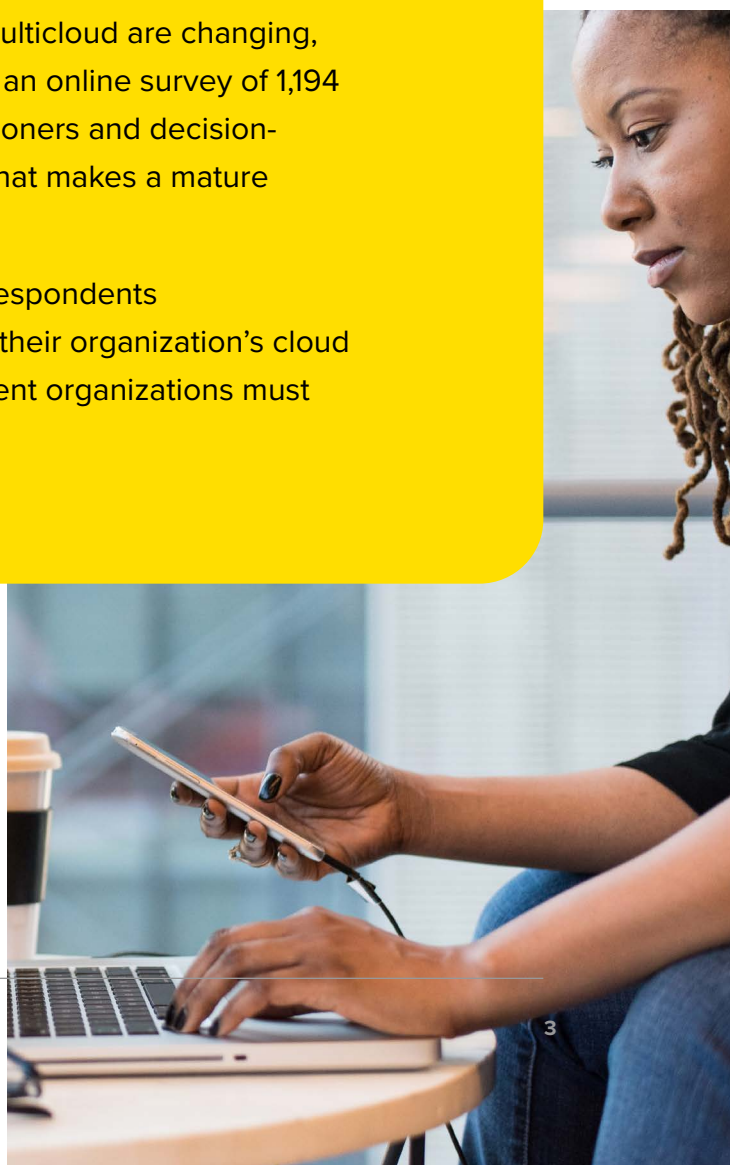
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## Executive Summary

As cloud infrastructure capabilities evolve, so does the baseline of a mature cloud strategy. This year, we evolved the [2023 multicloud maturity model](#) developed by HashiCorp and Forrester by comparing organizations' cloud maturity to standardized criteria. We discovered that maturity now means more than just operationalizing the cloud; it means moving past adopting and standardizing into scaling key infrastructure and security practices. In doing so, organizations enable better adaptability, efficiency, and security. However, critical challenges — especially skills shortages — continue to increase security risks and inhibit operational maturity. New to the cloud infrastructure mix is generative AI (genAI). Though nascent, respondents see its potential to increase infrastructure and security automation while controlling costs.

In January 2024, HashiCorp commissioned Forrester Consulting to understand firms' cloud maturity as multicloud capabilities evolve and how the drivers, challenges, and opportunities of multicloud are changing, including the impact of genAI. Forrester conducted an online survey of 1,194 global, cross-industry enterprise technology practitioners and decision-makers and continued to evolve our definition of what makes a mature enterprise cloud strategy.


Notably, high maturity remains elusive. Just 8% of respondents demonstrated the highest levels of maturity across their organization's cloud infrastructure and security practices. Most respondent organizations must make improvements to fully reap cloud benefits.




## Key Findings



**High-maturity organizations are focused on strategy and scaling their infrastructure and security practices.** This includes establishing platform teams and adopting internal developer platforms (IDPs) and standardized security and compliance practices. Respondents from high-maturity organizations are also significantly more likely to believe their cloud infrastructure strategy helps achieve overall business goals, enables a stronger security posture, reduces risk, and simplifies compliance.



**Low-maturity firms are focused more on tactical considerations.** Compared to firms at higher-maturity levels, lower-maturity firms are focused on budgets and bottom lines, indicating a greater interest in short-term cost-cutting goals rather than the long-term strategy and scaling goals of higher-maturity organizations.



**Skills shortages cause big problems at lower-maturity organizations.** Though a universal challenge, staff expertise shortages are more prevalent at low-maturity firms, creating problems in many areas and elevating cloud security risks. To evolve their maturity, these organizations must shore up their skills gaps.



**GenAI has the potential to play a critical role in the future of cloud strategy.** Though genAI is still nascent, respondents believe it has the potential to address the most important factors in cloud strategy success — security, skills, availability, and scalability — and their organizations are beginning to investigate how to integrate it into their systems to accomplish their cloud goals.

## The 2024 Maturity Model

This year, we refined our cloud maturity model to be more objective (vs. relative) in terms of what it means to be a mature cloud organization. We sharpened our focus on the impact of scaling key practices across an entire organization and their effect on maturity. The model was based on two key pillars of cloud maturity:

### 1. Cloud security

### 2. Cloud infrastructure

Each of these pillars has three levels of practices (see Figures 1 and 2):

1. **Adopting.** These are the foundational practices where organizations begin their cloud journeys. The “adopting” level, or basic-level security practices, include storing secrets in a centralized location, using tools to manage observability, and securely accessing critical systems without managing credentials or exposing networks. Infrastructure practices at this level include using infrastructure as code (IaC) for cloud infrastructure provisioning and collaborating for IaC development leveraging some source control.
2. **Standardizing.** These intermediate “standardizing” practices are where organizations begin to differentiate themselves from their peers. Security practices that fall under the standardizing/intermediate level include issuing just-in-time, short-lived dynamic secrets as well as managing human access to privileged systems. Infrastructure practices include using IaC-based provisioning, implementing governance policies as code that enforce corporate standards, and using a centralized library for IaC workflows including modules and images.
3. **Scaling.** These “scaling” practices define high-maturity cloud programs. Security practices include managing anonymized structured data and dynamically generated certificates and eventually extending cloud security practices to private data centers. Advanced infrastructure practices include using IaC to provision infrastructure in private data centers, using automatic security notifications to protect from unauthorized IaC changes, ultimately extending cloud practices across the entire digital estate.

FIGURE 1

Security Maturity Practices

LOW MATURITY: ADOPTING (Basic practices)	MEDIUM MATURITY: STANDARDIZING (Intermediate practices)	HIGH MATURITY: SCALING (Advanced practices)
CRITERIA		
<ul style="list-style-type: none"><li>• Storing secrets in a centralized location</li><li>• Using tools to manage observability and secret storage</li><li>• Using an identity broker to consolidate multiple user profiles to a single access point</li><li>• Securely accessing critical systems without managing credentials or exposing networks</li></ul>	<ul style="list-style-type: none"><li>• Generating just-in-time secrets for short-lived access</li><li>• Auditing access to and activity within critical systems</li><li>• Observing, tracking, and monitoring services across the organization’s estate</li><li>• Establishing trusted IaC workflows without exposing secrets to users</li></ul>	<ul style="list-style-type: none"><li>• Managing anonymized structured data (e.g., personally identifiable information)</li><li>• Managing dynamically generated certificates</li><li>• Extending cloud security practices to private data centers</li></ul>

Source: Forrester Research, Inc.

Definitions

**Low maturity** – Some or none of the app development teams are doing the **adopting** practices.

**High maturity** – Most or all app development teams are doing **adopting** and **standardizing** practices and at least some of the app development teams are doing **scaling** practices.

FIGURE 2

Infrastructure Maturity Practices

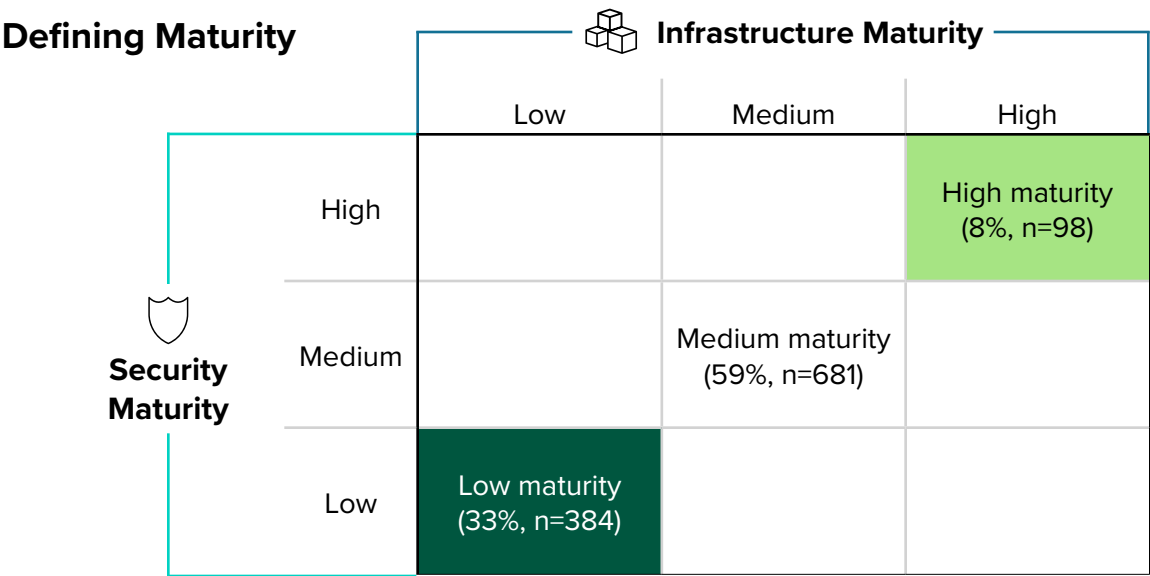
LOW MATURITY: ADOPTING (Basic practices)	MEDIUM MATURITY: STANDARDIZING (Intermediate practices)	HIGH MATURITY: SCALING (Advanced practices)
CRITERIA		
<ul style="list-style-type: none"><li>Using IaC to provision infrastructure in the cloud</li><li>Collaborating on IaC configurations and image definitions through source control</li></ul>	<ul style="list-style-type: none"><li>Using IaC-based provisioning as a shared service</li><li>Implementing policy as code that enforces corporate standards</li><li>Using a centralized library for IaC modules and images</li><li>Incorporating third-party capabilities into IaC workflows (e.g. security, compliance, cost control)</li><li>Using observability and monitoring capabilities for assets/workloads provisioned via IaC</li><li>Using IaC to manage the organization’s network infrastructure</li></ul>	<ul style="list-style-type: none"><li>Using IaC to provision infrastructure in private data centers</li><li>Using automatic security notifications to protect from unauthorized IaC changes</li></ul>

Source: Forrester Research, Inc.

Respondents were shown multiple security and infrastructure practices across the adopting, standardizing, and scaling categories. They were then asked to respond with the practices their firms currently follow. Their organizations were then ranked low, medium, or high on the maturity scale based on these answers. Most organizations fell into the low- and middle-maturity ranges, with plenty of work required to maximize their cloud ROI. We defined the levels of maturity as follows (see Figure 3):

- 1. **Low maturity.** The 33% of respondent organizations that ranked lowest on the maturity scale (i.e., at the adopting level) have adopted only some (or none) of the basic security and infrastructure practices listed above.
- 2. **Medium maturity.** The 59% of organizations who fell into this category (i.e., standardizing) have adopted all the basic security and infrastructure practices listed above plus some of the intermediate practices.
- 3. **High maturity.** Just 8% of respondents’ organizations achieved high maturity (i.e., scaling). These organizations have adopted all basic and intermediate security and infrastructure practices and at least some advanced practices.

FIGURE 3



Base: 1,163 global application development and delivery decision-makers with budget authority for new investments  
Source: A commissioned study conducted by Forrester Consulting on behalf of HashiCorp, March 2024

Why did we define maturity in this matrixed manner? Without basic practices in place, organizations are very likely to face significant challenges when it comes to enhancing their cloud strategy. Both pillars — security and infrastructure — play a critical role in organizational success. Growing maturity in one area cannot succeed without growing maturity in the other. The intertwined nature of these pillars, in combination with their respective importance to successful cloud strategy helped us define this maturity model. Upon evaluating the responses of the surveyed IT respondents, it became clear that high-maturity status is not common but rather something that 92% of respondents' organizations have yet to fully realize.

Once we examined responses based on our maturity matrix, we quickly saw that high-maturity organizations see far greater benefits from their cloud strategy. To sum it up in one data point, 89% of respondents at high-maturity organizations said their cloud strategy has helped their organization achieve their overall business goals compared to 55% of those from low-maturity organizations.

## Cloud Investment Continues To Grow

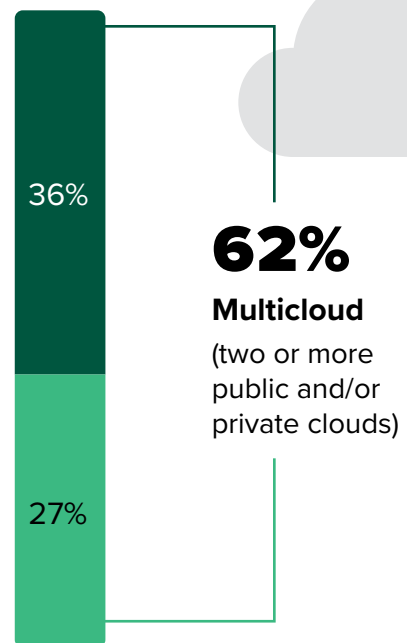
As they evolve their cloud infrastructure strategies, organizations are continuing to expand their multicloud footprint while also holding on to private data centers. However, enterprises across maturity levels still face at least some level of avoidable cloud spend. We found that:

- **Cloud infrastructure investment continues to increase compared to previous years.** Compared to last year's study, cloud infrastructure spending continues to accelerate, with 66% of respondents reporting an increase over the past 12 months compared to 55% last year. These investments typically manifest in a hybrid and multicloud approach, which 62% of respondents reported having implemented (see Figure 4). These results are reinforced by Forrester's 2023 Infrastructure Cloud Survey, where enterprise decision-makers estimated their organizations spent \$35 million on public cloud platforms compared to \$33 million in 2022.<sup>1</sup>
- **Private infrastructure isn't going away.** Of course, a portion of resources remains in a private cloud or data center. For most respondents, hybrid was the most common infrastructure choice, especially in highly regulated environments like financial services and healthcare.
- **Cloud waste is a drain on cloud cost efficiency.** Avoidable cloud spend, also known as cloud waste, remains a challenge for 91% of respondents. One reason: Few platform teams

FIGURE 4

### Multicloud Implementation Continues To Increase And Remains The Most Frequently Used For Cloud Strategy

- Implemented, not expanding/upgrading
- Expanding or upgrading implementation



Base: 1,194 global application development and delivery decision-makers with budget authority for new investments

Note: Total percentages may not equal separate values due to rounding.

Source: A commissioned study conducted by Forrester Consulting on behalf of HashiCorp, March 2024

(29%) have taken advantage of the opportunity to optimize costs through chargebacks and/or showbacks. The importance of a skilled workforce — or in this case, a lack thereof — also reemerges as a key contributor to cloud waste for 41% of respondents, jumping from third place in last year’s survey to the top cause this year. Overprovisioning of resources (40%) and idle or underused resources (35%) round out the top three cloud waste factors (see Figure 5).

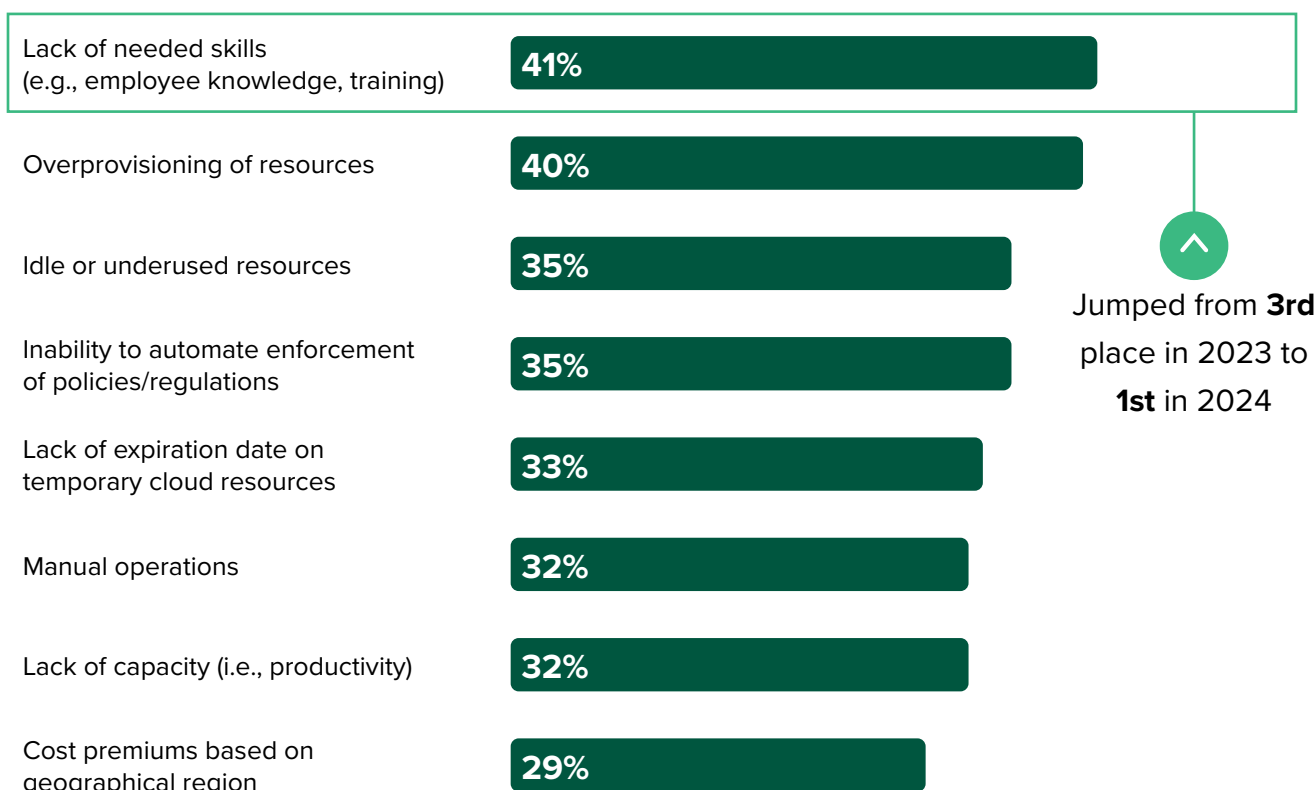
91%

of respondents reported difficulties with cloud waste at their organization.



FIGURE 5

### A Lack Of Skills And Overprovisioned/Idle Resources Are Biggest Cloud Waste Factors



Base: 1,194 global application development and delivery decision-makers with budget authority for new investments

Note: Showing top eight responses

Source: A commissioned study conducted by Forrester Consulting on behalf of HashiCorp, March 2024

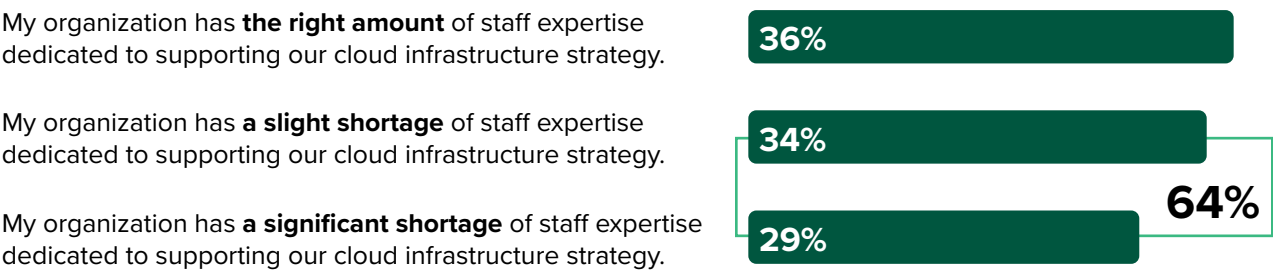
# Achieving High Maturity Requires Skilled Employees

Staff expertise is critically important to a successful cloud strategy. At respondents' organizations, talent is both a key contributor to cloud success and a key challenge. Low-maturity organizations in particular struggle with staffing and skills shortages. We found that:

- **Nearly two-thirds of respondents have staff and skills gaps at their organization.** Building and retaining cloud talent remains a big challenge for enterprises.<sup>2</sup> For 64% of respondents, a shortage of staff expertise presents a barrier to building, maintaining, and advancing cloud infrastructure strategy (see Figure 6).
- **There is a significant gap between maturity groups when it comes to staff expertise.** When examined by maturity levels, it is apparent that having enough staff with the right cloud skills is paramount to operating at a high-maturity level. Though many still have room to improve, nearly half (48%) of respondents from high-maturity firms reported that their organization has the right amount of staff expertise dedicated to supporting cloud infrastructure strategy (see Figure 7). On the other side of the coin, more than two-thirds (71%) of respondents from low-maturity firms reported not having adequate staff.

FIGURE 6

## Most Organizations Face Cloud Infrastructure Expertise Shortage

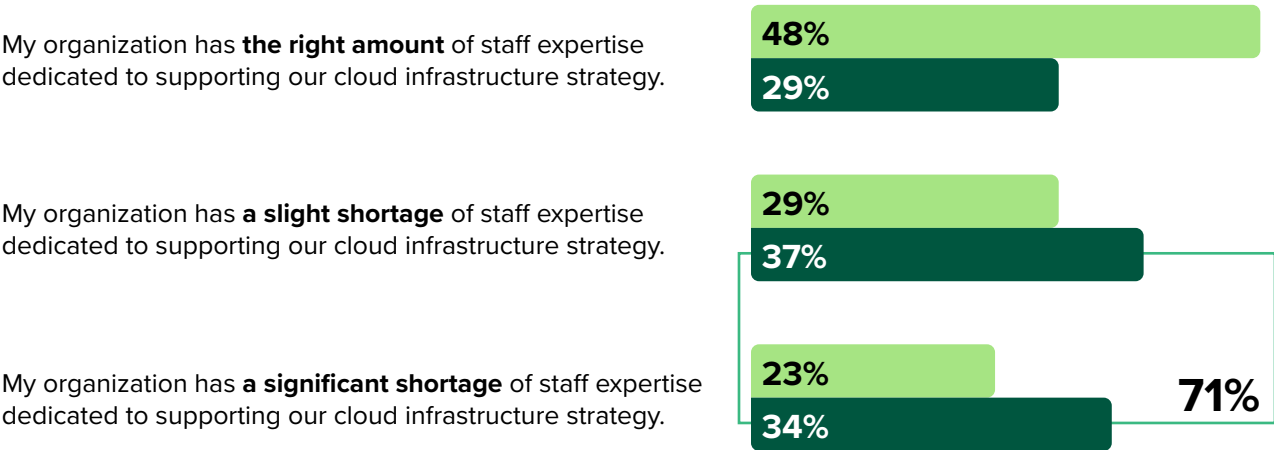


Base: 1,194 global application development and delivery decision-makers with budget authority for new investments  
Note: Total percentages may not equal separate values due to rounding.  
Source: A commissioned study conducted by Forrester Consulting on behalf of HashiCorp, March 2024

FIGURE 7

Cloud Infrastructure Expertise Shortage Is Particularly Significant For Low-Maturity Firms

● High maturity  
● Low maturity



Base: 482 global application development and delivery decision-makers with budget authority for new investments from either a low- or high-maturity organization  
Source: A commissioned study conducted by Forrester Consulting on behalf of HashiCorp, March 2024

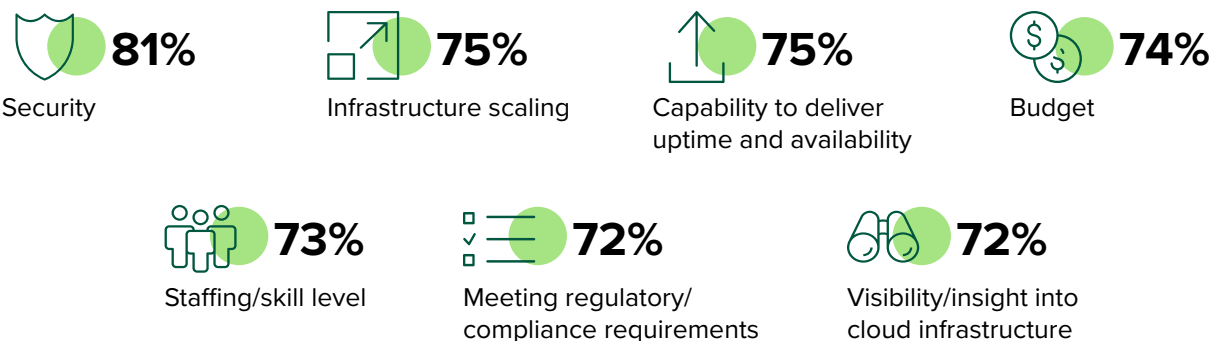
# What Drives Successful Cloud Infrastructure Strategy?

Respondents indicated that the key markers of a successful cloud strategy are security, infrastructure, and uptime and availability. However, the maturity of a given organization, i.e., whether they are adopting, standardizing, or scaling their infrastructure and security, plays a huge part in how the organization measures success.

- **Security remains the most important factor in cloud infrastructure success regardless of maturity.** Four out of five respondents (81%) indicated that security is fundamental to determining the success of their organization’s cloud strategy (see Figure 8). Infrastructure scaling and the capability to deliver uptime and availability round out the top three success factors with 75% of respondents noting the high degree of importance of each. It is important to highlight that our pillars of organizational maturity — infrastructure and security — are also the top two indicators of success across maturity groups. Even low-maturity groups understand the importance of not just implementing but scaling both elements.

FIGURE 8

## Security, Availability, And Infrastructure Are The Keys To Cloud Strategy

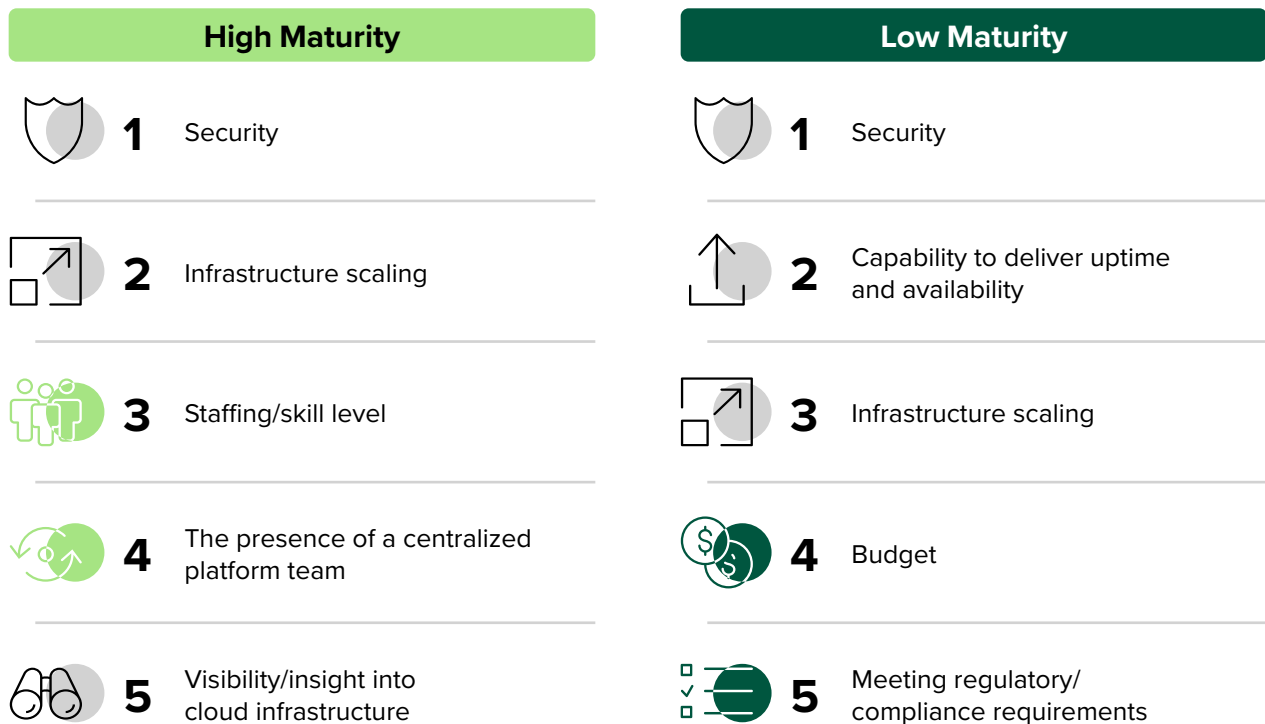


Base: 1,194 global application development and delivery decision-makers with budget authority for new investments  
Note: Showing top seven “Important/Very important” responses  
Source: A commissioned study conducted by Forrester Consulting on behalf of HashiCorp, March 2024

- **Low-maturity organizations focus more on budget.** When examined by maturity level, the perception of what determines a successful cloud infrastructure strategy differs (see Figure 9). This difference is a direct reflection of where respondents of different maturity levels are in their cloud journeys. Respondents whose organizations ranked lower in the maturity model selected budget as one of their most important determinants of success. This emphatic focus suggests a greater concern with short-term goals and cost-cutting instead of prioritizing future-fit cloud infrastructure. Likewise, a greater focus on meeting regulatory and compliance requirements indicates that these lower-maturity organizations may still be laying the groundwork for standardizing and scaling their cloud strategies.

**FIGURE 9**

## Top Cloud Strategy Success Factors For Low- And High-Maturity Groups



Base: 482 global application development and delivery decision-makers with budget authority for new investments from either a low- or high-maturity organization

Note: Showing top five responses for each maturity

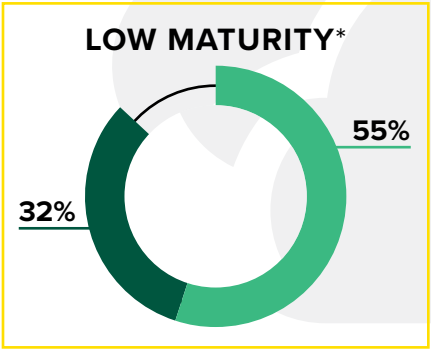
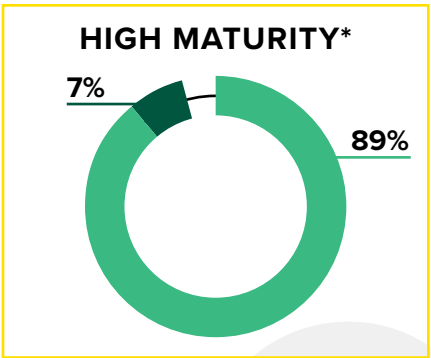
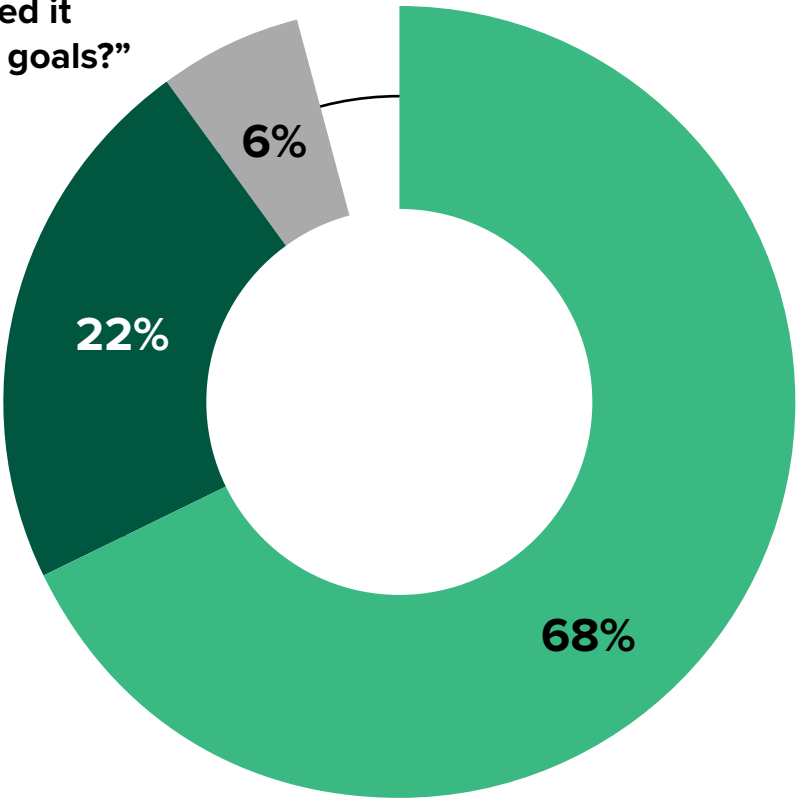
Source: A commissioned study conducted by Forrester Consulting on behalf of HashiCorp, March 2024

- **High-maturity organizations understand the value of staffing and platform teams.** Conversely, for respondents from high-maturity organizations, budget does not even factor into their top five indicators of successful cloud strategy. Instead, in addition to the security and scaling that guides all organizations, high-maturity organizations also place the skill level of their staff and the presence of a centralized platform team on their list of most important indicators of successful cloud infrastructure strategy. Why does this matter? Respondents from the most mature organizations understand the value skilled employees bring to their cloud infrastructure strategy, especially when those skilled employees are concentrated in a centralized platform team where they can more easily have organizationwide impact. Digital transformation and multicloud are integral to business success, but they don't work without employees who have the skills to make these endeavors successful.
- **Cloud programs help organizations achieve their overall goals.** As to whether a solid cloud strategy plays a role in business success, respondents were resoundingly affirmative, with 90% agreeing that their organization's cloud strategy has already helped or will soon help them achieve their overall goals (see Figure 10). High-maturity organizations are already reaping these benefits, with 89% already seeing results compared to 55% of low-maturity organizations.
- **High-maturity organizations reap more benefits from their cloud infrastructure strategies.** With their more advanced approaches to infrastructure and security, the most mature organizations are also reaping more benefits (see Figure 11). Stronger security posture ranks as the top benefit with 86% of respondents from mature organizations indicating success with this compared to 66% from low-maturity organizations. Likewise, 85% of mature respondents have seen faster updates of their cloud service options compared to 64% of low-maturity respondents, and 84% noted their organization has greater infrastructure provisioning agility compared to 66% from low-maturity firms. Given current economic concerns, costs are always a high priority, and the most mature organizations are much more likely to have optimized costs from their cloud infrastructure strategy compared to low-maturity organizations (82% vs. 63%).

FIGURE 10

“Has your organization’s cloud infrastructure strategy helped it achieve its overall business goals?”

- Yes
- No, but we expect it to within the next 12 months.
- No, and we don't expect it to.

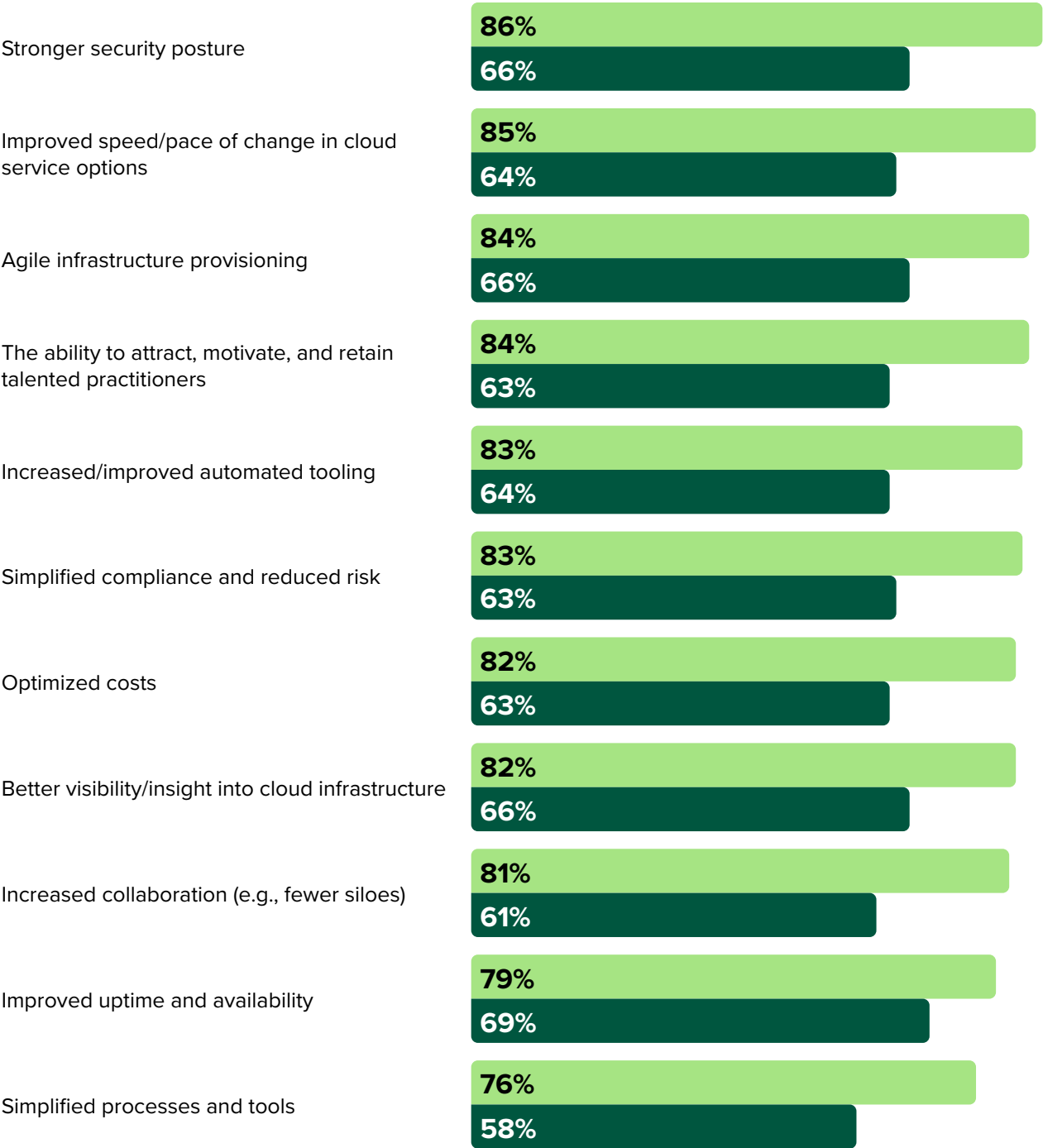


Base: 1,194 global application development and delivery decision-makers with budget authority for new investments  
\*Base: 482 global application development and delivery decision-makers with budget authority for new investments from either a low- or high-maturity organization  
Source: A commissioned study conducted by Forrester Consulting on behalf of HashiCorp, March 2024

FIGURE 11

High-Maturity Organizations See Far More Benefits From Their Cloud Infrastructure Strategy

● High maturity  
● Low maturity



Base: 482 global application development and delivery decision-makers with budget authority for new investments from either a low- or high-maturity organization  
Source: A commissioned study conducted by Forrester Consulting on behalf of HashiCorp, March 2024

## Mature Organizations Have Platform Teams And Internal Developer Platforms

Platform teams and IDPs are critical to adopting, standardizing, and especially scaling cloud infrastructure strategy. Forrester has earlier reported that the most mature cloud practices have moved past forming a cloud center of excellence to creating cloud platform teams that specialize in the top cloud platforms in use with a cloud business office.<sup>3</sup> Similarly, just over half (53%) of respondents in Forrester's 2023 Infrastructure Cloud Survey were in the early stages of building and establishing platform teams.<sup>4</sup> In addition, this current study uncovered the following:

- **Few platform teams have fully standardized and scaled practices.** Those organizations that are utilizing platform teams most frequently employ them to architect cloud solutions; develop and standardize infrastructure strategy; and select cloud vendors and/or technologies to be used in production. However, only about one-third of respondents with existing platform teams have fully standardized and scaled these and additional cloud operations practices across their organization (see Figure 12).
- **Skills and staff shortages hold organizations back from establishing and scaling platform teams.** Among those respondents whose organizations have not yet established platform teams, 46% reported having distributed responsibility for their cloud infrastructure strategy and 38% reported a shortage of skills and/or staff. These two barriers are connected.

FIGURE 12

### Organizations Are Beginning To Standardize And Scale Cloud Management Practices Via Platform Teams

- We have fully standardized this practice at scale across the organization.



**36%**

Architect cloud solutions



**35%**

Develop and standardize cloud infrastructure strategy



**35%**

Select cloud vendors and/or technologies to be used in production



**35%**

Take operational responsibility for site reliability



**34%**

Create and distribute cloud management and operational policies and best practices



**34%**

Build in security and compliance

Base: 1,111 global application development and delivery decision-makers with budget authority for new investments at an organization with platform teams  
Note: Showing six responses  
Source: A commissioned study conducted by Forrester Consulting on behalf of HashiCorp, March 2024

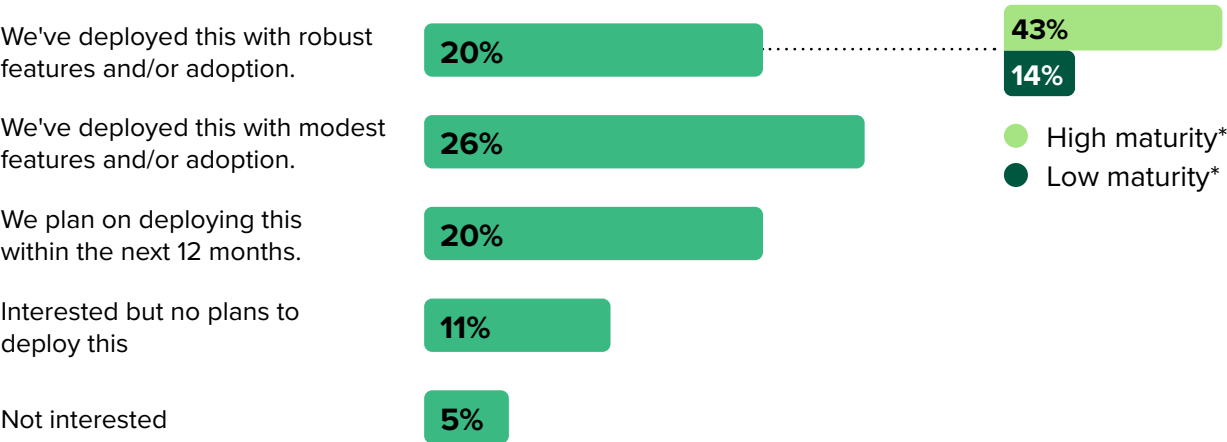
Without the staff and skills needed to establish and manage a platform team, responsibilities remain distributed across application teams. These organizations find themselves at an impasse. While respondents understand platform teams can alleviate skills shortages by leveraging expertise across an organization, their organizations need a certain level of that expertise to build a workable platform team.

Addressing these issues requires investing in skills. Beyond training alone, organizations must set a direction and goals, find people that align with that agenda, train them, and plan change management. Motivation, communication, metrics, and continual learning must also be addressed.

- **IDPs are a key adoption area.** Nearly half (46%) of respondents with platform teams have deployed IDPs with at least modest features (many may be considered traditional developer portals). Another 20% are planning to deploy an IDP within the next 12 months (see Figure 13). However, a small subset of high-maturity organizations are much more likely to have deployed IDPs with robust features (43%) compared to low-maturity organizations (14%).

FIGURE 13

IDPs Emerge As Key Focus Area, Especially For Mature Organizations



Base: 1,194 global application development and delivery decision-makers with budget authority for new investments  
\*Base: 482 global application development and delivery decision-makers with budget authority for new investments from either a low- or high-maturity organization  
Note: Showing five responses  
Source: A commissioned study conducted by Forrester Consulting on behalf of HashiCorp, March 2024

# Ensuring A Robust Security Posture Remains A Key Concern

Maintaining strong security measures remains a key concern and challenge for respondents who must address both internal and external security threats, both of which continue to evolve rapidly. In addition:

- Strong cloud strategy improves security.** For high-maturity organizations, the top benefit respondents have seen from their cloud strategy is a stronger security posture (86% vs. 66% from low-maturity organizations). This benefit also jumped from third to first place between 2023 and 2024 at high-maturity organizations, indicating an understanding of the evolution of cloud and the necessity to scale practices accordingly.
- Data theft emerged as the top concern this year.** Compared to last year, data theft rose from the second most common security threat to the first. Phishing (46%), password leakage (45%), and third-party software attacks (41%) are also crucial security considerations for those surveyed (see Figure 14).
- Data and privacy challenges are the primary security threats.** Respondents stated the largest internal security threats to their organizations are challenges with protecting data (41%), threat detection and remediation (39%), and cloud infrastructure complexity (35%).
- A lack of skills and staffing is a significant issue for low-maturity organizations.**

FIGURE 14

## Top Cloud Security Threats

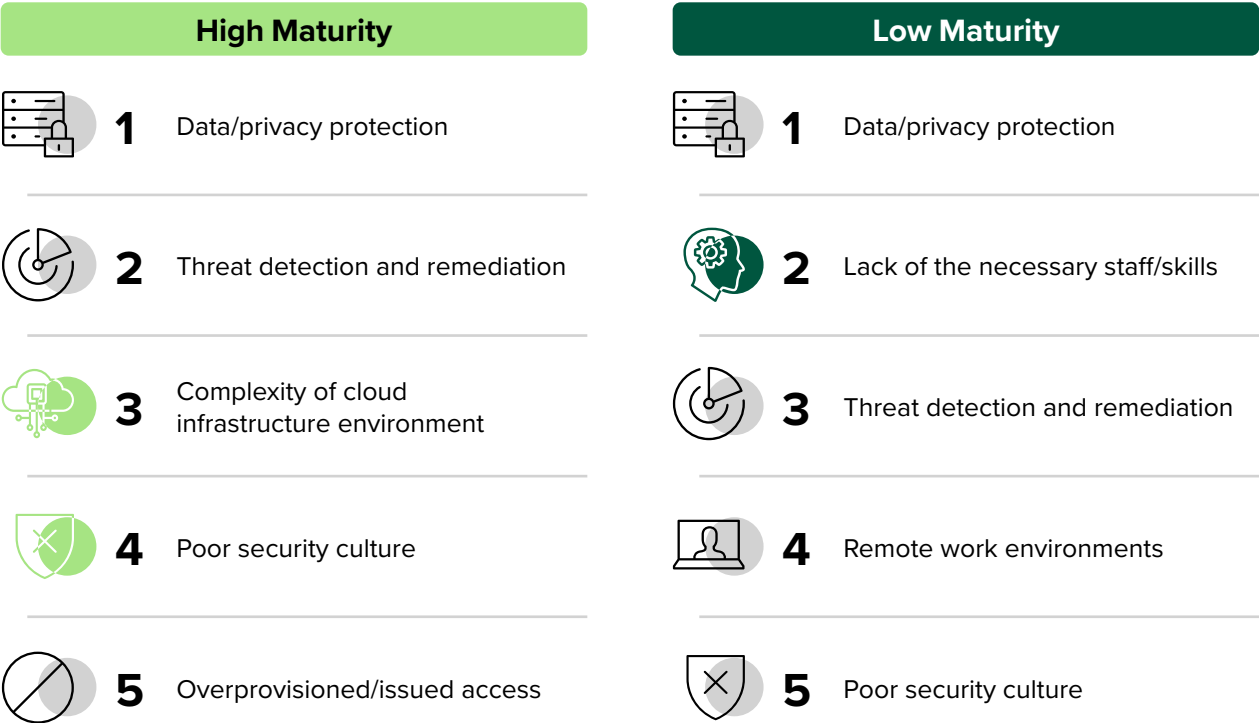


Base: 1,194 global application development and delivery decision-makers with budget authority for new investments  
Note: Showing top five responses  
Source: A commissioned study conducted by Forrester Consulting on behalf of HashiCorp, March 2024

Respondents at low-maturity firms cited a shortage of necessary staff and skills as their second-greatest internal threat. Meanwhile, for those from high-maturity organizations, this was not a critical concern, once again indicating that the focus more mature organizations have on staff expertise has served both their security and infrastructure needs (see Figure 15).

FIGURE 15

Top Internal Cloud Security Threats



Base: 482 global application development and delivery decision-makers with budget authority for new investments from either a low- or high-maturity organization  
Note: Showing top five responses for each maturity  
Source: A commissioned study conducted by Forrester Consulting on behalf of HashiCorp, March 2024

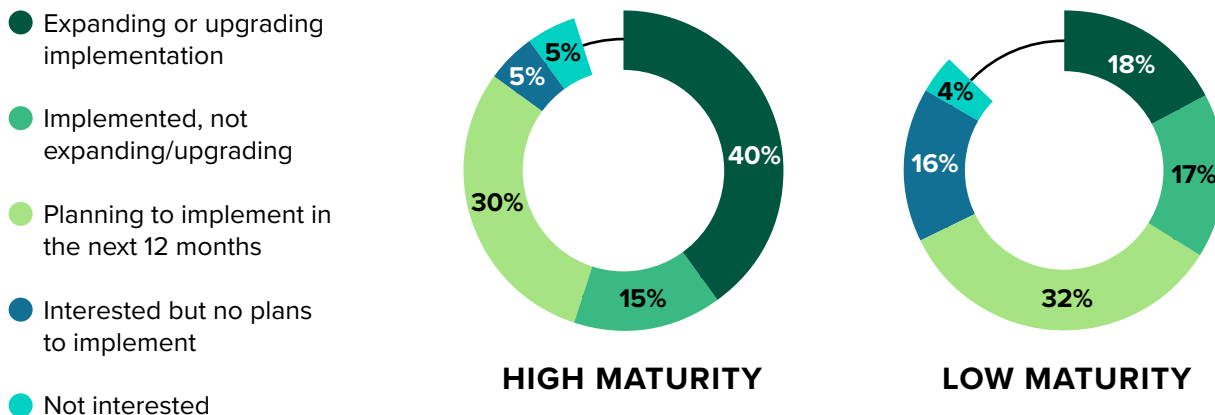
## Could GenAI Be The Future Of Security And Infrastructure?

Respondents are starting to see the potential of genAI and explore how it could be used to enhance cloud security and infrastructure, especially when it comes to automating processes and alleviating staffing issues. We found that:

- **GenAI for cloud strategy is still nascent but interest is high.** Currently, less than half of respondents have implemented any form of genAI to support their cloud strategy, but almost all (85%) are interested in implementing it in the future. In fact, 70% of them plan to deploy it within the next 12 months.
- **High-maturity organizations are adopting genAI faster than low-maturity organizations.** Eighty-five percent of respondents from high-maturity organizations said they plan to implement genAI, while only 68% of respondents from low-maturity firms have similar plans. However, there is an overall increase in the adoption of genAI in both maturity organizations (see Figure 16).

FIGURE 16

### GenAI Adoption Rates Are Higher At High-Maturity Organizations



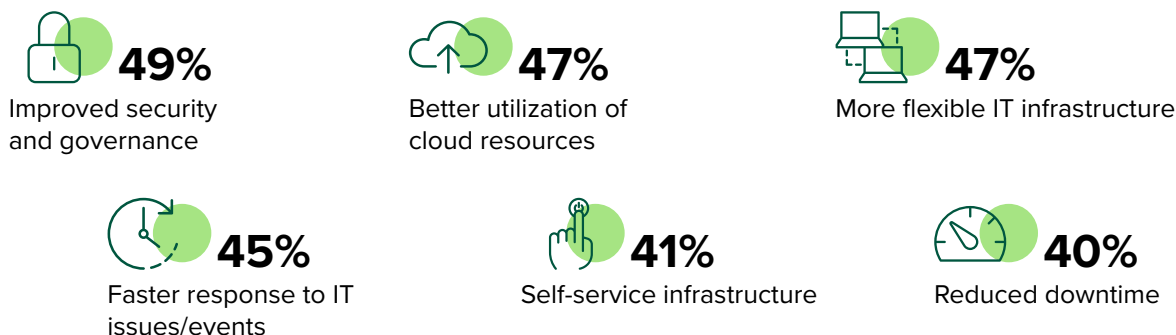
Base: 482 global application development and delivery decision-makers with budget authority for new investments from either a low- or high-maturity organization

Source: A commissioned study conducted by Forrester Consulting on behalf of HashiCorp, March 2024

- **Automation through genAI can help alleviate staffing issues.** The most prevalent use case for genAI today is the automation of operational tasks, with 75% of respondents saying automation tools are important to operationalize their cloud infrastructure strategy. By automating basic tasks, firms can allocate their time and efforts towards more complex and urgent issues. Respondents indicated that consistent and automated tooling can contribute to better utilization of cloud resources (47%), improve flexibility of IT infrastructure (47%), and increase responsiveness to IT issues (45%) (see Figure 17).
- **Respondents recognize genAI's potential to address key cloud priorities.** Survey respondents saw genAI's ability to automate processes, improve security and customer experience (CX), and help train staff as key use cases. This directly aligns with key cloud strategy priorities.
- **A lack of skills holds organizations back from their genAI journeys.** Respondents cited a lack of skills as the top barrier to genAI adoption at their organization. Security and the inability to operationalize at scale — two other critical themes — also hinder organizations from fully adopting genAI. Obtaining the right talent is the key to both a successful cloud infrastructure strategy and the adoption of genAI (see Figure 18).

FIGURE 17

## GenAI Improves Operations



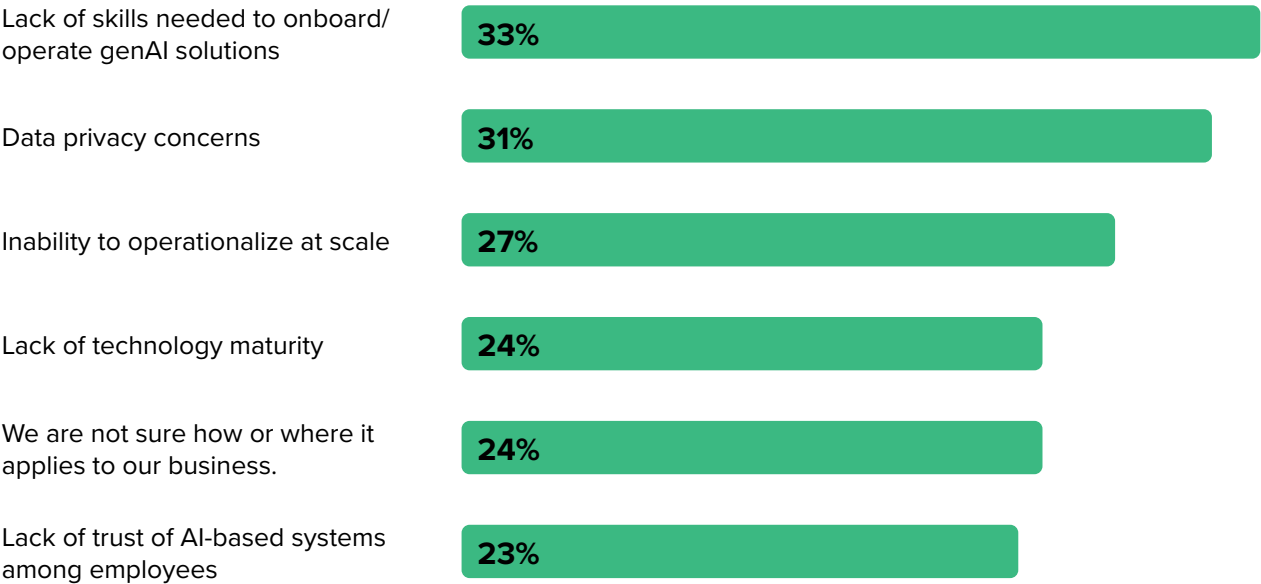
Base: 1,194 global application development and delivery decision-makers with budget authority for new investments

Note: Showing top six responses

Source: A commissioned study conducted by Forrester Consulting on behalf of HashiCorp, March 2024

**FIGURE 18**

**Top Factors Preventing Organizations From Adopting GenAI For Its Cloud Strategy**



Base: 229 global application development and delivery decision-makers with budget authority for new investments who are not planning to implement or implementing genAI at their organization

Note: Showing top six responses

Source: A commissioned study conducted by Forrester Consulting on behalf of HashiCorp, March 2024

## Key Recommendations

Forrester's in-depth survey of application development and delivery decision-makers and practitioners around the world with budget authority for cloud investments yielded several important recommendations:

### **Invest in upskilling.**

Given the significant impact of staff expertise on the success of cloud strategies, organizations should prioritize investments in modernizing practices (like a robust centralized IaC operation) and upskilling current employees in cloud, cybersecurity, and genAI applications to address skills gaps. These two acts — modernizing and upskilling — creates a cycle of continuous improvement. Modernizing practices attracts more skilled developers, who are enticed by the promise of a modern environment where they can be more productive.

### **Enhance your organization's multicloud and hybrid cloud strategy.**

With cloud infrastructure investment on the rise and organizations favoring a mix of multicloud and hybrid setups, flexibility should be embedded into cloud solutions. This caters to the specific needs of the organization while allowing for increased scalability, improved security, and optimized costs.

### **Implement cloud cost optimization practices.**

To tackle the challenge of avoidable cloud spend, firms must first implement policies that underpin cost optimization practices, such as regular audits of cloud usage, employing autoscaling, and leveraging tools for cost management. Encouraging a culture of cost awareness and responsibility across teams can also reduce wastage.

### **Strengthen security measures.**

Security remains a top priority across all levels of cloud maturity. Organizations should focus on solidifying their security posture through advanced threat

detection systems, data encryption, regular security assessments, and training staff on security best practices.

**Exercise caution but leverage genAI for automation and innovation.**

GenAI shows promise in automating operational tasks and optimizing cloud strategy. Organizations should consider investigating genAI technologies to alleviate staffing issues, enhance security, and foster innovation. It also means the organization's strategic objectives should include training or customizing it to the environment so that it can help address skill gaps for its adoption. GenAI may not be right all the time — and current AI solutions may not be ready to make true contributions to use cases — so be cautious on going all-in too soon.

## Appendix A: Methodology

In this study, Forrester conducted an online survey of 1,194 application development and delivery decision-makers in director and above positions, as well as practitioners. Respondents were offered a small incentive as a thank-you for time spent on the survey. The study began in completed in March 2024.

## Appendix B: Demographics

REGIONS	
APAC	35%
EMEA	30%
NA	24%
LATAM	11%

INDUSTRIES (TOP 6)	
Technology and/or technology services	16%
Financial services and/or insurance	12%
Telecommunications services	6%
Healthcare	6%
Manufacturing and materials	6%
Retail	6%

CURRENT TITLE (TOP 6)	
DevOps engineer	8%
Cloud engineer	8%
Systems engineer	6%
Solution architect	6%
Cloud architect	6%
Security engineer	6%

CURRENT POSITION	
Director and above	40%
Practitioner	60%

EMPLOYEE SIZE	
15,000 or more employees	19%
8,000 to 14,999 employees	12%
5,000 to 7,999 employees	16%
2,000 to 4,999 employees	23%
1,000 to 1,999 employees	31%

LEVEL OF RESPONSIBILITY WHEN IT COMES TO MAKING INVESTMENT DECISIONS	
I provide input for investment decisions related to my organization's cloud infrastructure strategy.	40%
I share primary responsibility for making investment decisions related to my organization's cloud infrastructure strategy.	29%
I am primarily responsible for making investment decisions related to my organization's cloud infrastructure strategy.	16%
While I provide input on my company's cloud infrastructure strategy, I do not provide strategic input on investment decisions.	15%

LEVEL OF RESPONSIBILITY FOR APPLICATION INFRASTRUCTURE		LEVEL OF RESPONSIBILITY FOR APPLICATION SECURITY	
I am the final decision-maker for decisions related to this practice.	<b>25%</b>	I am the final decision-maker for decisions related to this practice.	<b>25%</b>
I am part of a team making decisions for this practice.	<b>38%</b>	I am part of a team making decisions for this practice.	<b>35%</b>
I influence decisions related to this practice at my organization.	<b>26%</b>	I influence decisions related to this practice at my organization.	<b>25%</b>
I am knowledgeable in this practice, but not responsible for it.	<b>9%</b>	I am knowledgeable in this practice, but not responsible for it.	<b>13%</b>
I am neither responsible nor knowledgeable in this practice.	<b>2%</b>	I am neither responsible nor knowledgeable in this practice.	<b>1%</b>

## Appendix C: Endnotes

<sup>1</sup> Source: [2023 Public Cloud Benchmarks, Global](#), Forrester Research, Inc., November 2, 2023; [Average Yearly Enterprise Cloud Spend Reaches \\$33 Million](#), Forrester Research, Inc., February 10, 2023.

<sup>2</sup> Source: [Mind The Cloud Skills Gap](#), Forrester Research, Inc., March 11, 2020.

<sup>3</sup> Source: [Your Next-Generation Cloud Strategy Model](#), Forrester Research, Inc., January 2, 2024.

<sup>4</sup> Ibid.

The background is a dark teal color with abstract, flowing shapes. A large, semi-transparent sphere is centered in the lower half of the image. To its upper left, there are two smaller, similar spheres, one slightly above and to the left of the other, creating a sense of depth and movement.

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