

The Future Of A Secure Multicloud Strategy Will Be Powered By Modern Applications

How Modern Applications Drive Business Success

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Executive Summary

As companies continue to evolve in the face of global change, so too must their cloud strategies. For large enterprises, cloud usage is at scale, with most using multicloud in some form. However, multicloud deployment does not always mean the strategy is well-formed and successful. Being “cloud-smart” means that enterprises both scale their cloud environments as their usage increases and as they grow in size while maintaining centralized visibility, a proper governance framework, and cloud spend under budget.

Companies will continue to grow both their public and private cloud investments, but the challenge will be in protecting their data. When cloud environments expand, so too do vulnerabilities. This balancing act will require training and process adjustments that enable employees to work effectively with cloud and support unified cloud management across their heterogenous environments.

In March of 2022, VMware commissioned Forrester Consulting to evaluate companies’ current multicloud strategies, how they are evolving, and how application modernization and containers can help. To explore this topic, Forrester conducted an online survey with 616 global IT decision-makers who are responsible for their organizations’ cloud strategy. We found that most respondents currently have a decentralized and ad hoc approach to multicloud strategy, but that will drastically change over the next 12 months. We also found that respondents are turning to application modernization (and increased container use) in order to leverage the scalability of their applications across larger environments.



Key Findings



Respondents struggle to modernize and centralize their multicloud strategies. Increasing cloud spend equates to an increase in clouds, cloud resources, and vendors to help manage the growth. With the potential increase in cloud heterogeneity, companies will need to update their cloud management and security strategies and investments to keep their cloud environments safe, integrated, and connected through a central control plane.



Multicloud strategies must pivot to accommodate personnel challenges. With multiple environments to account for, it's difficult to keep track of workloads, know where they live, and be well-informed of the security controls managing them. As with any security initiative, people are the largest contributor to success. Enabling the right teams to own critical pieces of the application pipeline (i.e., DevOps or development, security, and operations [DevSecOps]) can ensure that firms are able to cover all kinds of workloads in an agile, scalable way.



Application modernization and Kubernetes round out a holistic multicloud strategy. For companies that have already begun their modernization journey, application modernization brings revenue and time-saving benefits. These organizations now need to activate all sides of their cloud environment and make the most of their container strategy. This holistic multicloud strategy can give organizations more options when deploying apps to the best environment and the freedom to quickly change deployments if needed.

Companies Struggle To Craft A Holistic, Modern Strategy

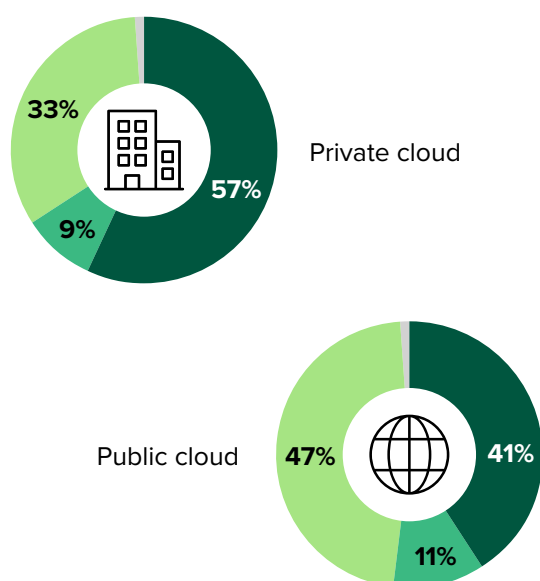
For enterprises, multicloud is the best-fit when allowing for more choice to run a variety of data processing and storage functions. While private cloud use is popular for certain use cases, public cloud use is also persistent: 79% of respondents currently use multiple public clouds. But with that level of multiple environments, strategies must also evolve to keep employees agile and company data safe. In surveying 616 global IT decision-makers responsible for their organizations' cloud strategy, we found that:

- **Respondents are keen on keeping a consistent security posture across multiple clouds as their cloud strategies evolve.** As companies add more clouds or cloud resources to their portfolios, the attack surface expands in lockstep. To meet evolving expectations from customers and the business, respondents' high and critical priorities over the next 12 months include: implementing a consistent security posture across multiple clouds (94%); increasing the speed of app delivery (83%); and replacing legacy code with cloud-native code or services (80%).
- **Cloud spend and heterogeneity are growing in tandem.** Public cloud spend is already a large part of IT budgets, and most respondents have plans to increase investments in both public and private clouds. Of those who are increasing public cloud spend, over 40% of respondents are also increasing their number of providers. The main reasons of this latter group include the desire for improved resilience (56%), increased flexibility/agility (48%), and compliance/regulations (47%) (see Figure 1). Companies are often attracted to the functionality that a new cloud or tool can provide; in fact, the number one driver for the adoption of a multicloud strategy was the unique advantages of each cloud. But this can lead companies down a path that emphasizes the addition of multiple tools for varying capabilities, as opposed to focusing in on creating a holistic integration and security strategy. In fact, the top strategy that respondents are using today is to acquire multicloud management tools à la carte, or as needed.

Figure 1

“Do you anticipate your company’s total annual cloud spend as a percentage of the total IT budget to increase, decrease, or remain the same for each of the following categories?”

● Increase ● Decrease
● Remain the same



“Why are you investing in additional cloud providers?”*

(Showing top 5 responses)

Adding cloud resources to improve resilience (e.g., disaster recovery, capacity burst, etc.)

56%

Desire to increase flexibility/agility using cloud services

48%

Need more clouds for compliance/regulations (e.g., changing local regulations, expanding to new geographic territory)

47%

Need different/specialized functionalities or capabilities

42%

To avoid vendor lock-in

40%

Base: 616 global IT decision-makers responsible for their organizations' cloud strategy

*Base: 101 global IT decision-makers responsible for their organizations' cloud strategy

Source: A commissioned study conducted by Forrester Consulting on behalf of VMware, March 2022

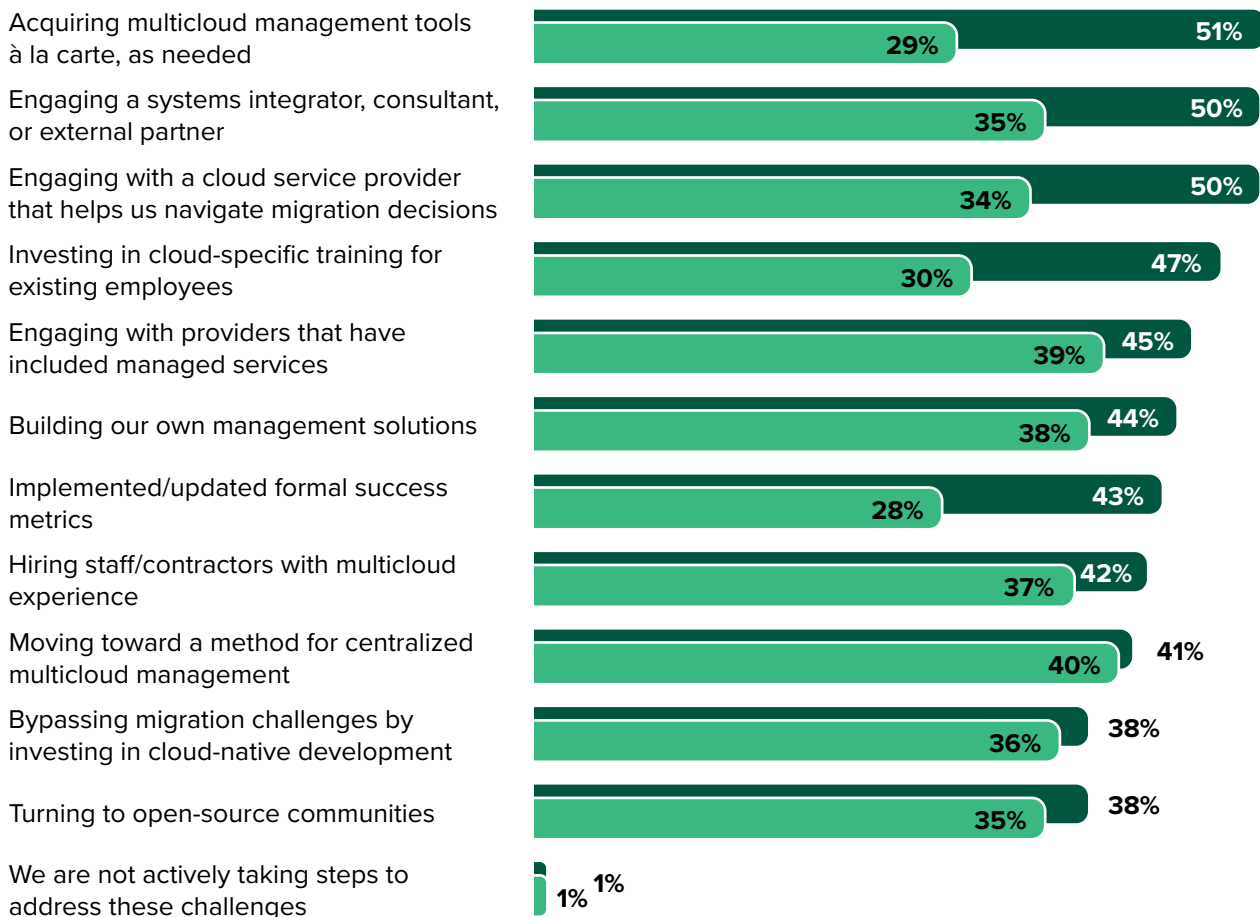
- **So, what does this cloud strategy evolution look like now? And how will it look over the next two years?** Most companies don't expect to change the cloud type used for different apps (internal, critical, customer-facing). However, they do plan to change and increase their cloud investments. The reigning theme is that investments are shifting away from on-premises environments towards public cloud. With increased cloud usage, security becomes a key focus. Respondents note that their companies are making it a top priority to configure cloud infrastructure to stay up-to-date based on new security/compliance requirements. At the same time, they are considering more advanced methods of managing their cloud environments as they become more distributed and frequently look to centralize and unify management.

- **Respondents are moving toward centralized multicloud management and away from ad hoc tool usage.** Their top cloud strategies include: acquiring multicloud management tools à la carte, or as needed (51%); engaging a systems integrator or external partner (50%); engaging with cloud service providers to help navigate migration decisions (50%); and investing in cloud-specific training for their existing employees (47%). However, in the next two years, their top strategy will pivot to centralizing multicloud management rather than à la carte tools selected in an ad hoc manner. Respondents will continue to engage third parties in the form of managed services (39%) and hiring contractors with multicloud experience (37%) (see Figure 2).

Figure 2

“Which of the following strategies is your organization using today vs. planning on using or considering in 12 months?”

● Today
● In 12 months



Base: 616 global IT decision-makers responsible for their organizations' cloud strategy

Source: A commissioned study conducted by Forrester Consulting on behalf of VMware, March 2022

Strategies Must Accommodate Security And Expertise Challenges

Growing a multicloud strategy may seem straightforward, but many variables can complicate the process. Data security is a top priority, but it requires a special set of skills to be done well. Companies must make sure they have the right talent in the right places to implement those skills and stay armed with a sustainable management plan. That means enabling infrastructure and operations teams with a modernized toolkit of applications that have diverse and integrated capabilities.

- **The biggest challenges relate to risk and data privacy.** New technology and processes mean new areas of attack and added vulnerabilities. Respondents ranked risk related to security or data privacy issues as their companies' top cloud-related issue (64%). Companies realize they must look to modernize their applications to increase resiliency; the number one expected benefit of modernizing applications is increased data security. Just over 40% of respondents also expect application modernization to increase resiliency.
- **Companies face difficulties integrating new clouds with existing infrastructure.** Integrating new technologies can be difficult, especially when merging new cloud infrastructure and services with existing legacy applications. Furthermore, many companies don't have the current internal expertise to support a smooth rollout. Finding external talent or reskilling existing employees with cloud knowledge is a difficult task, but it is one that's being addressed: 71% percent of respondents are struggling to staff their cloud initiatives appropriately, and 79% of respondents are adjusting their companies' cloud strategy to prioritize increasing their internal cloud development skills.
- **Centralized visibility is currently ineffective, driving the need for a cloud decision-making body.** Respondents are also currently struggling with visibility across clouds to make business and technical decisions; only 19% strongly agree that they have visibility across clouds to make effective business and technical decisions. They'll need internal champions to achieve these changes, and many are moving toward a more formal structure for cloud decision-making: 73% are planning to

form a cloud center of excellence (COE) (see Figure 3). With a larger governing body that has visibility across cloud environments, cloud decision-making can be done with the full environment in mind.

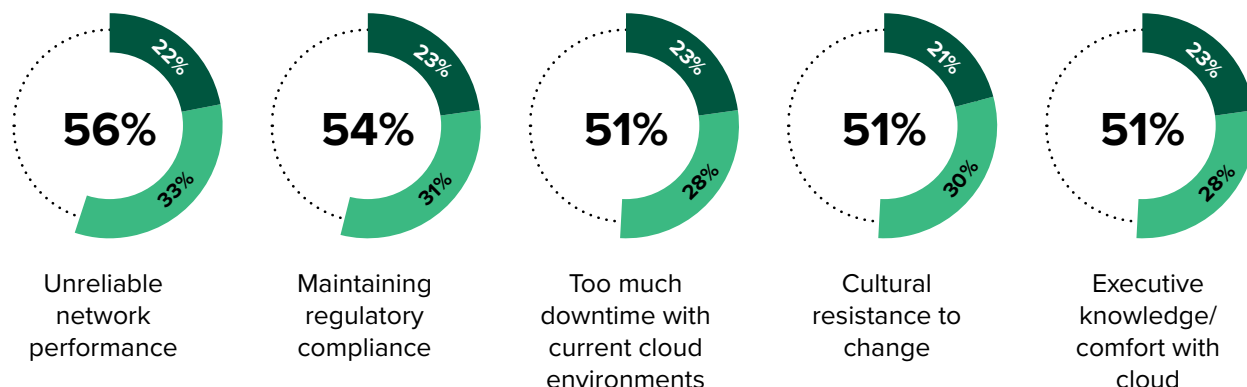
Figure 3

“Please identify how challenging the following cloud-related issues are for your company.”

● Extremely challenging

● Very challenging

(Showing top 5 responses)



“Please indicate your level of agreement to the following statements.”

(Showing top 6 responses)

● Strongly agree ● Agree ● Neither disagree nor agree ● Disagree ● Strongly disagree

We are planning to create/grow a cloud-specific strategy team or cloud COE.



We are struggling to staff our cloud initiatives appropriately.



Our organization has different teams/LOBs using different cloud environments.



Our IT leadership is not effectively tackling cloud challenges.



We have visibility across clouds to make effective business and technical decisions.



We have a lot of C-suite members making cloud strategy decisions.



Base: 616 global IT decision-makers responsible for their organizations' cloud strategy

Note: Total percentages may not equal due to rounding.

Source: A commissioned study conducted by Forrester Consulting on behalf of VMware, March 2022

HOW DOES KUBERNETES FIT IN?

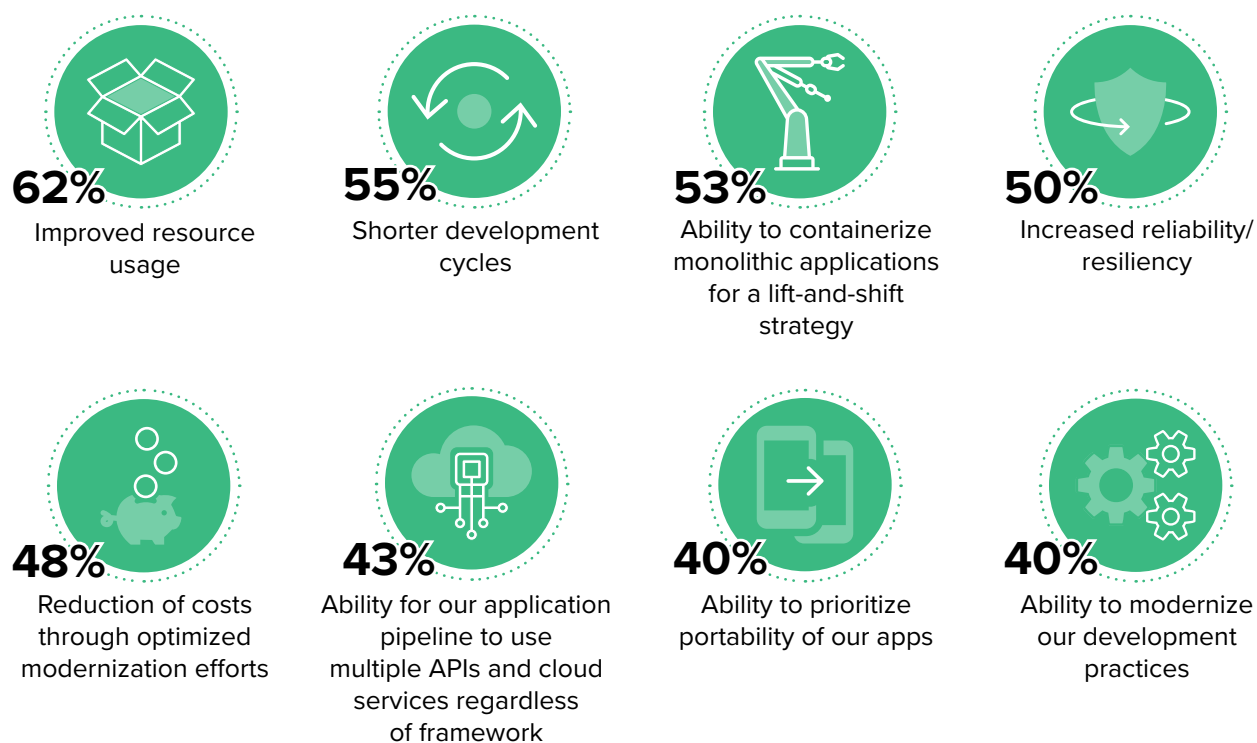
Organizations plan to increase their investment in Kubernetes. Companies know K8s provides improved resource usage (62%) and shorter development cycles (55%). Other benefits include the ability to containerize monolithic applications for a lift-and-shift strategy (53%) and increased reliability/resiliency (50%) (see Figure 4).

If the biggest challenge to app modernization is using containers, what support do they need to reap container benefits? The most common form of container support that respondents use is through a managed Kubernetes service. Managed services can help companies achieve those container-related benefits while circumventing challenges related to container management.

Figure 4

“What benefits would you associate with your company adopting Kubernetes?”

(Showing top 8 responses)



Base: 616 global IT decision-makers responsible for their organizations' cloud strategy

Source: A commissioned study conducted by Forrester Consulting on behalf of VMware, March 2022

App Modernization Plus Containers Equals A Winning Cloud Strategy

A well-managed multicloud strategy that improves visibility is a worthy first goal, but modernizing applications to leverage all cloud services is a logical next step — and it is key to a better developer experience. Companies are modernizing their applications in order to improve integration across the environment, reduce time-to-value, and save revenue by keeping employees more agile. Finding the expertise to also use containers where possible is another way many companies are leveling-up their cloud strategies. Application modernization increases portability in environments, which brings a slew of benefits:

- **Respondents see the value in modernizing applications as part of their evolving multicloud strategies.** Outside of the KPIs that seek to understand the success of application modernization efforts (uptime, revenue, etc.), the larger business benefits include: increased data security (54%); increased employee agility to streamline workflows (51%); reduced cost from running fewer legacy applications (49%); and increased portability of applications across clouds (see Figure 5).
- **Application modernization brings data security, agility, and cost benefits.** For most respondents, tracking modernization success takes several forms. The KPIs being tracked are largely related to cost and revenue, but they also include changes in productivity. The good news is that modernization positively impacts these KPIs, including revenue, total cost of operating, time-to-market, and total uptime. Due to application modernization, 56% of respondents experienced a decrease in total operating costs; 71% experienced an increase in total uptime/reliability; 50% experienced a decrease in time-to-market; and 77% experienced an increase in revenue (see Figure 6).

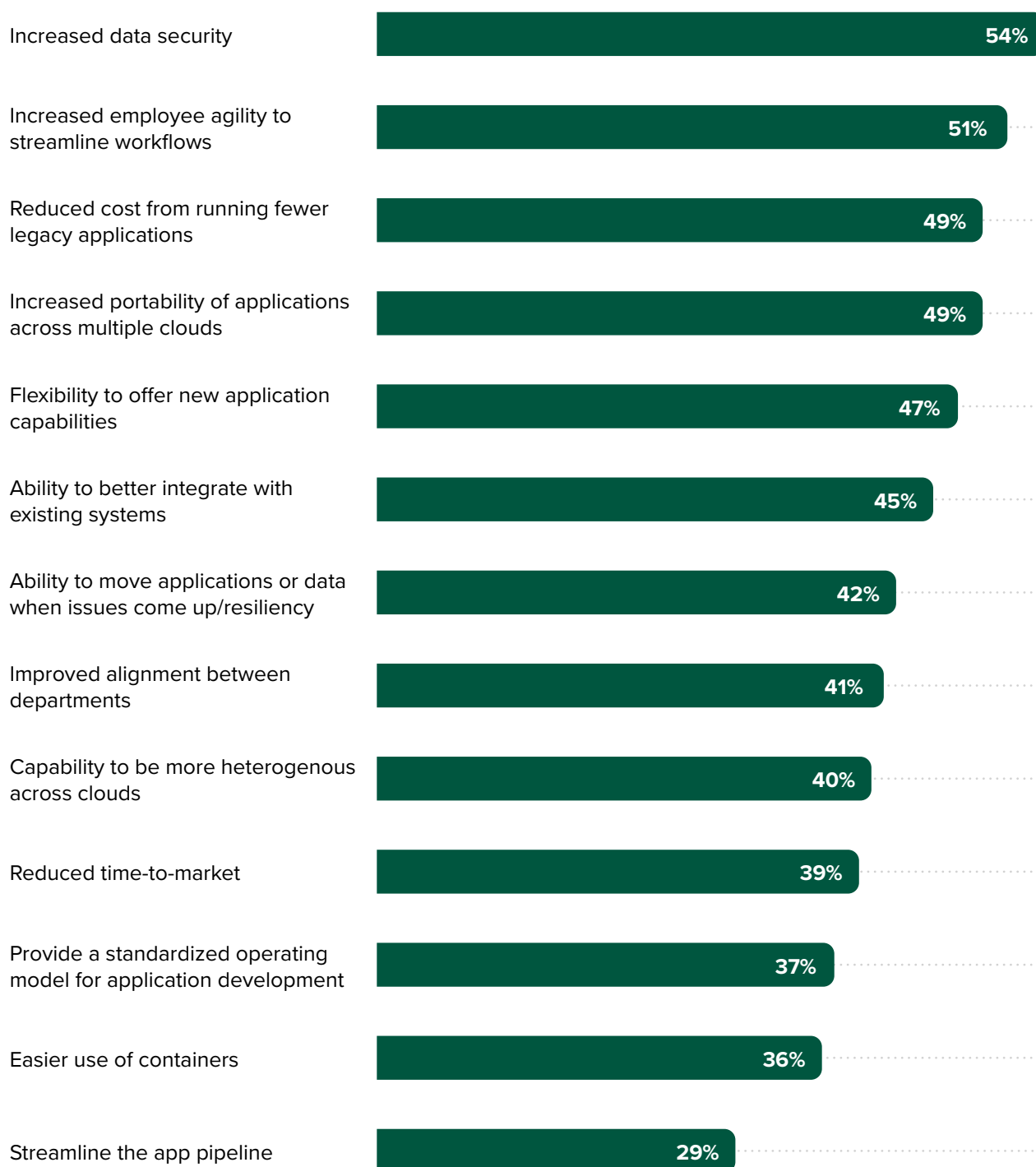
77%

experienced an increase in revenue due to application modernization.



Figure 5

“What benefits have you seen/would you expect to see from modernizing your applications?”

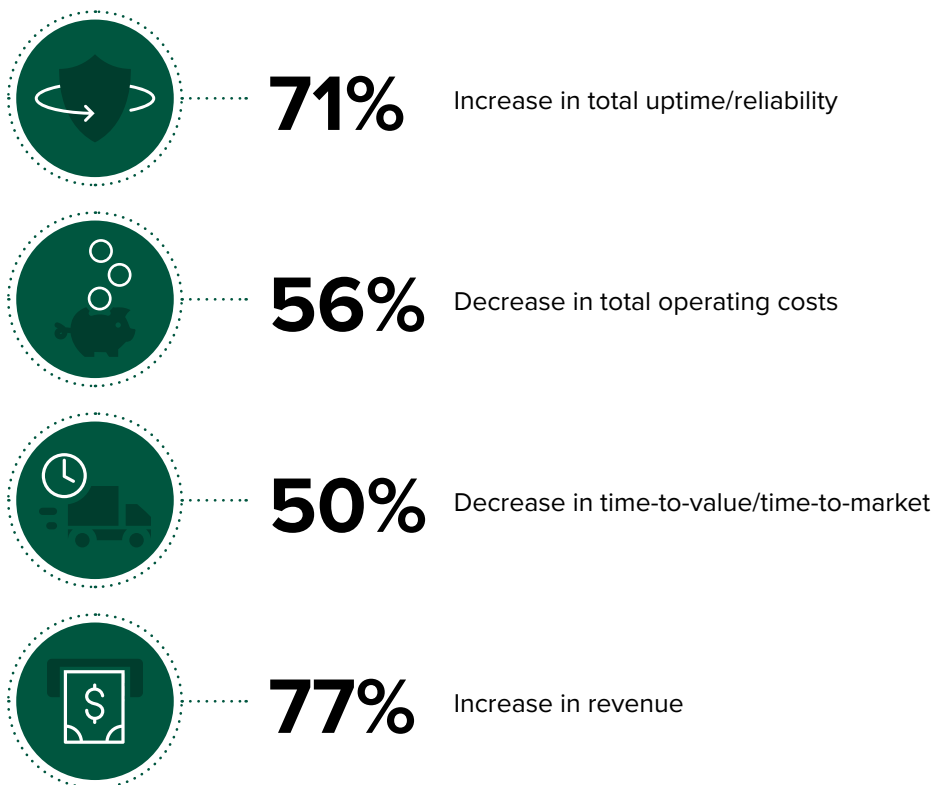


Base: 616 global IT decision-makers responsible for their organizations' cloud strategy

Source: A commissioned study conducted by Forrester Consulting on behalf of VMware, March 2022

Figure 6

Due to their efforts to modernize applications, respondents experience the following:



Base: 616 global IT decision-makers responsible for their organizations' cloud strategy

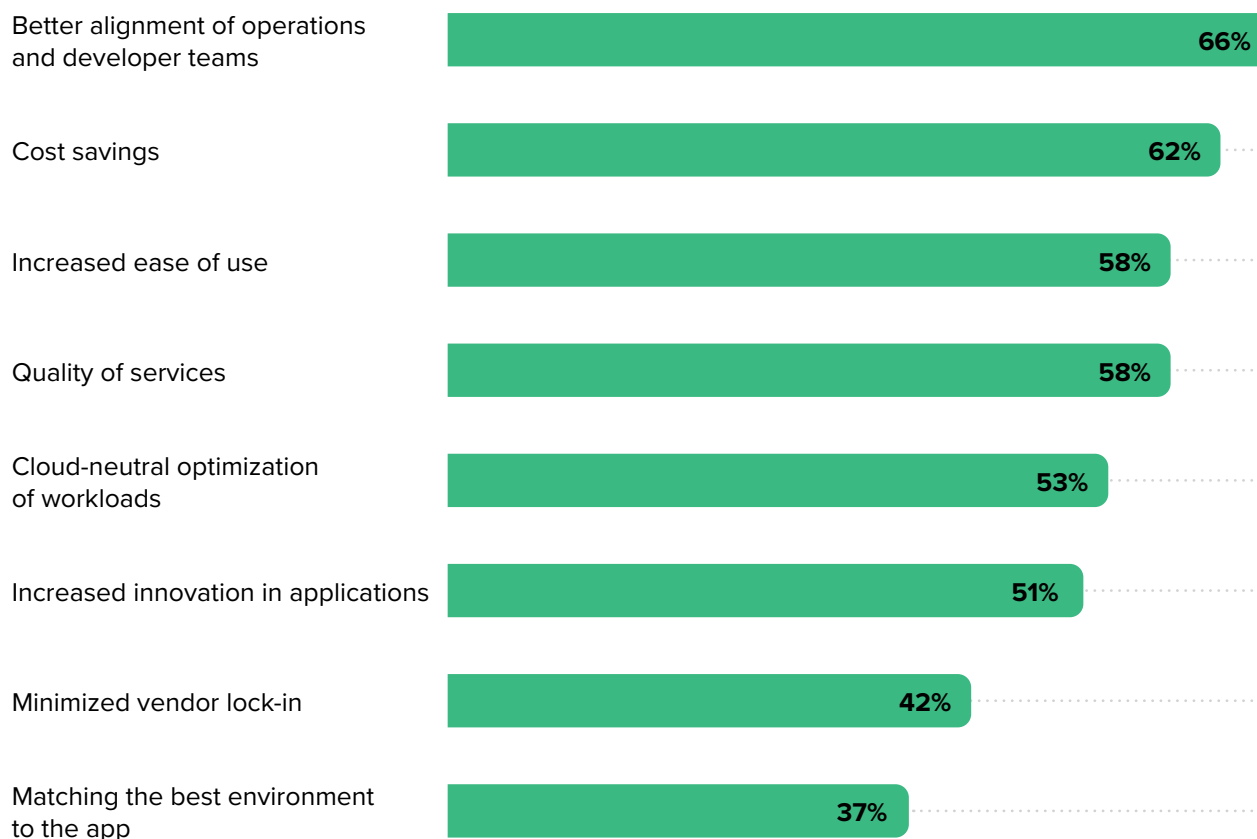
Source: A commissioned study conducted by Forrester Consulting on behalf of VMware, March 2022

INCREASED PORTABILITY FROM APP MODERNIZATION BRINGS ITS OWN BENEFITS

- Forty-nine percent of respondents experienced an increase in portability of applications across multiple clouds after modernizing their applications. Portability provides benefits across the organization that begin with collaboration between teams, as well as applications. The main benefits companies expect from increased portability include better alignment of operations and developer teams (66%), cost savings (62%), increased ease of use (58%), and improved quality of services (58%). Portability also provides an avenue for cloud-neutral optimization of workloads (53%), which is a necessary element for widely distributed cloud environments (see Figure 7).

Figure 7

“Thinking of the portability of apps and development services specifically, what benefits would you expect your company to experience from increased portability?”



Base: 616 global IT decision-makers responsible for their organizations' cloud strategy

Source: A commissioned study conducted by Forrester Consulting on behalf of VMware, March 2022

Key Recommendations

Multicloud is the new normal for large enterprises. The benefits of adopting specific services across different platforms to improve application performance, enhance an overall app portfolio, and increase cost savings are too enticing to ignore. Although multicloud may be the path for most enterprises, it's not easy for neither adoption nor implementation. One cloud environment is difficult enough, adding multiple cloud environments exponentially increases management complexity.

Forrester's in-depth survey of 616 global IT decision-makers about their organizations' cloud strategy yielded several important recommendations:

Use a management solution that provides centralized visibility.

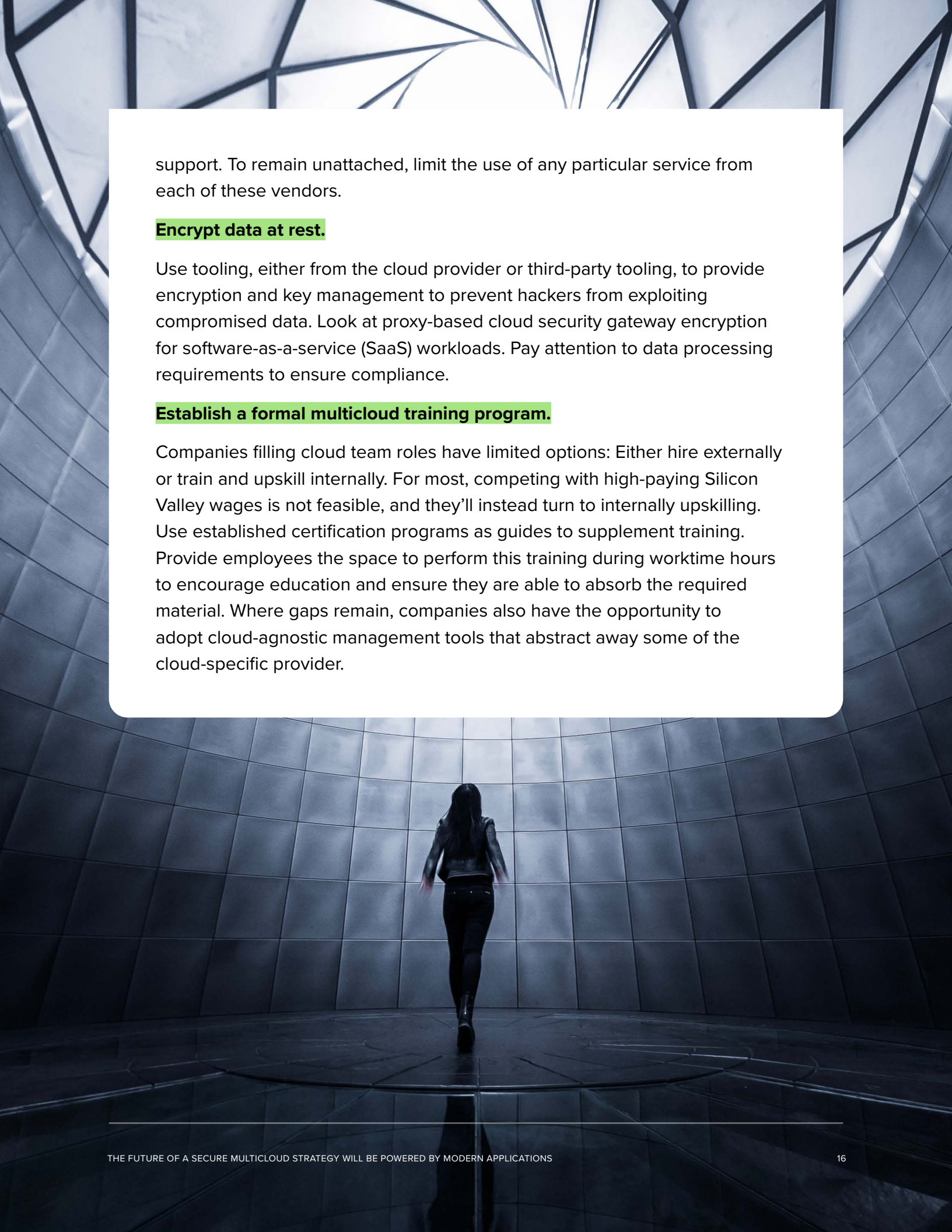
Lean on hybrid cloud management and cloud cost management solutions to provide centralized visibility across all of your environments. Use the solution to implement a consistent security posture, to keep cloud spend under budget, and to optimize your entire cloud environment. Look for solutions that enable Zero Trust security for the identification of non-compliant or insecure actions.

Security strategies must shift to accommodate multiple environments.

This means conducting detailed cloud provider vendor assessments to ensure that they meet regulatory compliance requirements. Companies should check that they can ensure data and route sovereignty to ensure an entire cloud security posture.

Leverage Kubernetes for abstraction and portability.

Some developer platforms will segregate app and infrastructure layers using Kubernetes. They perform this separation to promote portability by discouraging the use of services that are specific to a particular cloud platform. Start with this practice, then continue to choose vendors and products that ensure decoupling continues to occur. Keep in mind that all hyperscalers have their own managed Kubernetes flavors, which provide ongoing management



support. To remain unattached, limit the use of any particular service from each of these vendors.

Encrypt data at rest.

Use tooling, either from the cloud provider or third-party tooling, to provide encryption and key management to prevent hackers from exploiting compromised data. Look at proxy-based cloud security gateway encryption for software-as-a-service (SaaS) workloads. Pay attention to data processing requirements to ensure compliance.

Establish a formal multicloud training program.

Companies filling cloud team roles have limited options: Either hire externally or train and upskill internally. For most, competing with high-paying Silicon Valley wages is not feasible, and they'll instead turn to internally upskilling. Use established certification programs as guides to supplement training. Provide employees the space to perform this training during worktime hours to encourage education and ensure they are able to absorb the required material. Where gaps remain, companies also have the opportunity to adopt cloud-agnostic management tools that abstract away some of the cloud-specific provider.

Appendix A: Methodology

In this study, Forrester conducted an online survey of 616 retail, manufacturing, healthcare, government, and financial services decision-makers at organizations in North America, EMEA, and APAC to evaluate their strategies around cloud expansion, multicloud, and application modernization. Survey participants included decision-makers in IT with purview over cloud operations and management. Respondents were offered a small incentive as a thank you for time spent on the survey. The study began and was completed in March 2022.

Appendix B: Demographics

COUNTRIES

United States	20%
Canada	13%
United Kingdom	12%
India	12%
Japan	11%
Germany	11%
China	11%
France	11%

INDUSTRY

Retail	21%
Manufacturing and materials	20%
Healthcare	20%
Government	20%
Financial services and/or insurance	19%

COMPANY SIZE BY EMPLOYEE NUMBER

20,000 or more employees	7%
5,000 to 19,999 employees	43%
1,000 to 4,999 employees	50%

RESPONDENT LEVEL

C-level	5%
Vice president	13%
Director	31%
Manager	51%

DEPARTMENT

IT	100%
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