



# ACHIEVE YOUR CLOUD TRANSFORMATION EFFICIENTLY

Google Cloud VMware Engine Accelerates Application Modernization

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## Overview: Public cloud, application modernization, and organizational priorities

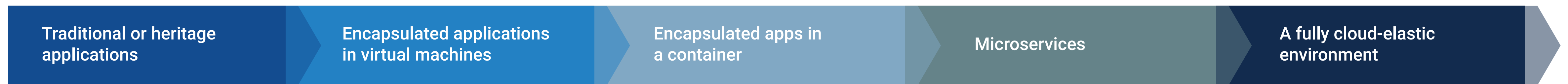
Today's businesses are evolving rapidly to meet the demands of their customers, but traditional and heritage applications often do not meet requirements. CIOs are frequently faced with mandates from their organizations to run their operations while migrating to new, modern approaches to advance the business into the future. Many organizations are taking a "cloud-first" approach to their digital transformation initiatives and are operating in a bifurcated way. Some net-new applications are delivered as cloud-native, but existing applications may not need to be refactored, and, therefore, encapsulation of the existing app while deploying in the cloud may be the best option.

### Organizations seek to:

- Reduce migration risk by eliminating rework of their applications and avoiding the challenges of infrastructure lifecycle management. Organizations should explore the possibilities with a fully functional proof of concept or development environment through a lower-cost single-node deployment.
- Improve application performance by right-sizing capacity, with the ability to expand or contract, as needed, while also having the ability to respond to customer needs in real time.
- Understand that applications do not need to be in microservices, that aging infrastructure may be out of warranty, and how to move to the cloud. By understanding these, organizations should understand that encapsulating heritage applications into the cloud may be the best option and provide acceleration, with zero down time, allowing organizations to be on the cloud rapidly.

## Understanding the Current Environment

### The Application Lifecycle Journey



“ Many organizations have **applications in various stages of this lifecycle.**”

- Paul Nashawaty, Senior Research Analyst

**Understanding  
how businesses are  
approaching cloud  
transformation**

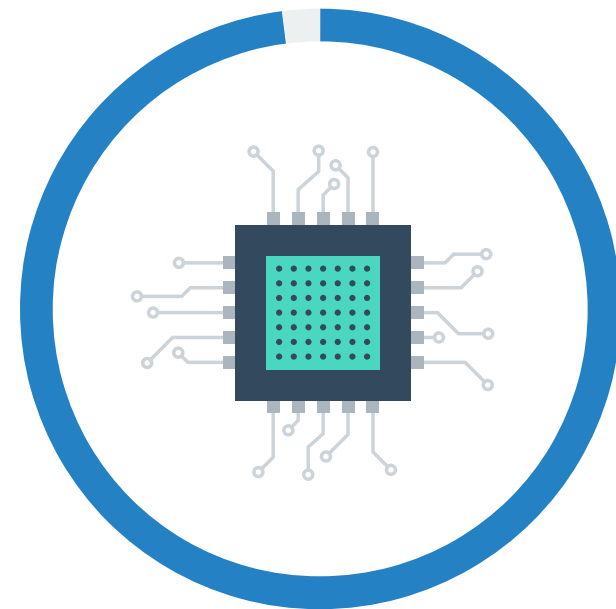


## IT Transformation Is Currently Underway at Most Organizations

The lion share of organizations are undergoing digital transformation initiatives. In fact, 98% of organizations are in some stage of a digital transformation journey, with 77% of these organizations reporting that they are currently in the process of implementing and executing their digital transformation initiatives or have already done so.

Functioning as a conduit, IT teams can efficiently orchestrate their organizations' modern data platforms. IT teams should focus less on silos and more on the overall goal of this leadership to deliver the right data to the right users as quickly and cleanly as possible to empower data-driven decision-making in their organizations and drive business objectives.

Enabling data-driven organizations is a major goal of cloud transformations so the business can better understand customer behaviors by leveraging AI/ML and analytics and acting upon them.



98%

of organizations are in **some stage of a digital transformation journey.**



77%

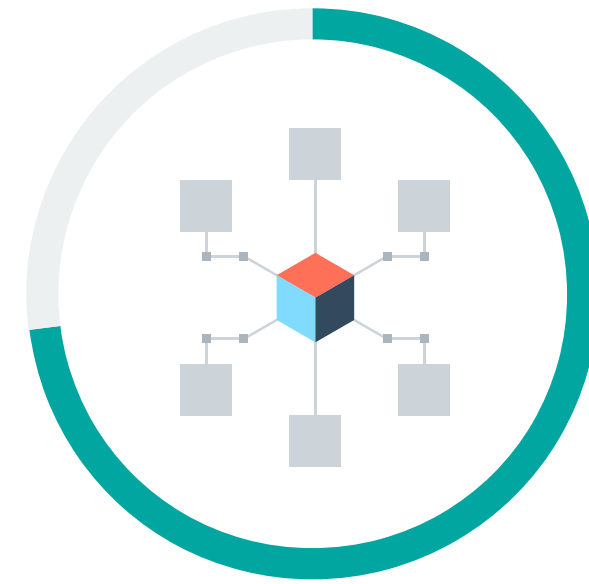
of organizations reported that they are currently **in the process of implementing and executing their digital transformation initiatives or have already done so.**

# Exploring modern application stacks and their challenges



## Organizations that refactor or build new cloud-based applications may leverage microservices

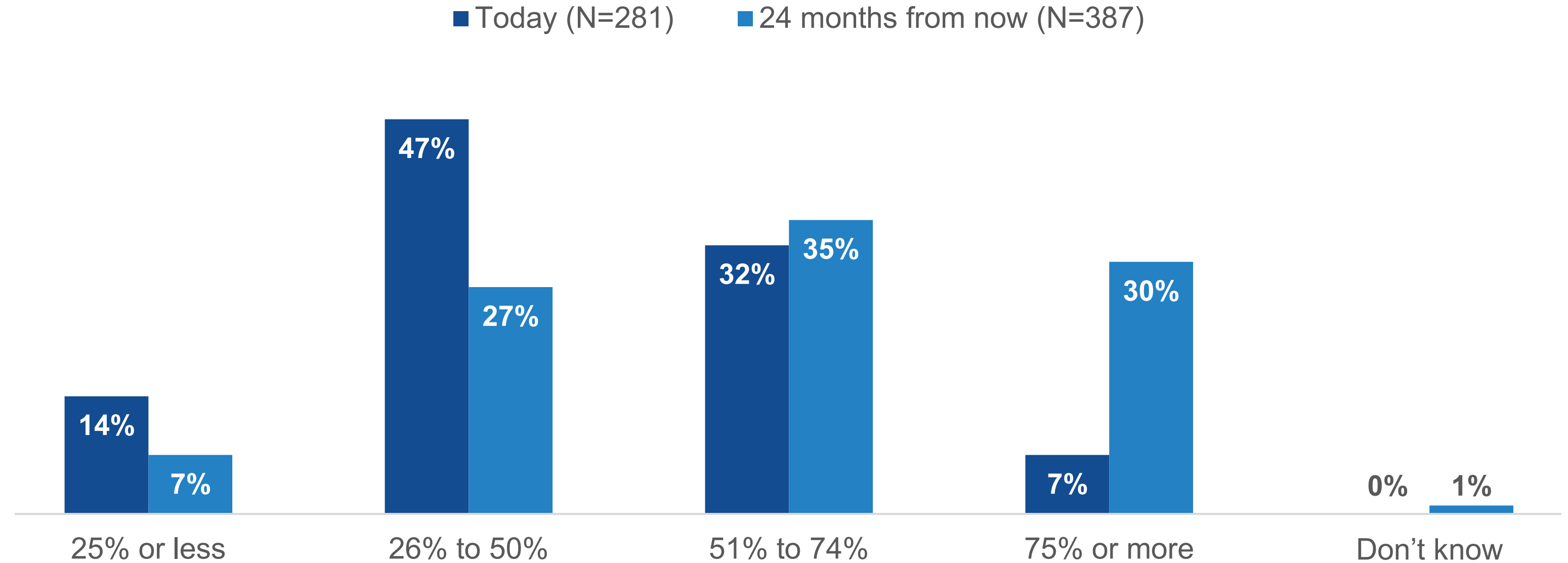
Research from TechTarget's Enterprise Strategy Group indicates that a majority of organizations are making significant progress on their application modernization journeys, with nearly three-quarters (73%) currently developing new cloud-native applications based on microservices architectures. While usage may be relatively limited at this point, almost two-thirds (65%) of organizations expect more than half of their production applications to be based on a microservices, cloud-native architecture within two years.

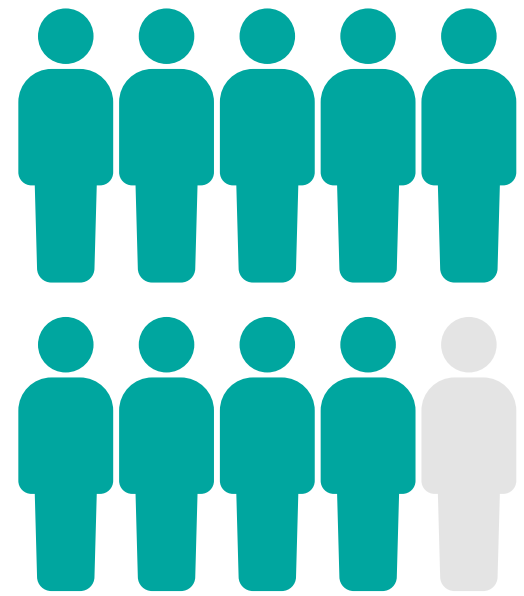


# 73%

of organizations are currently developing new cloud-native applications **based on microservices architectures.**

| Approximately what percentage of your organization's production applications are based on a microservices, cloud-native architecture today? How do you expect this to change, if at all, over the next 24 months? (Percent of respondents)

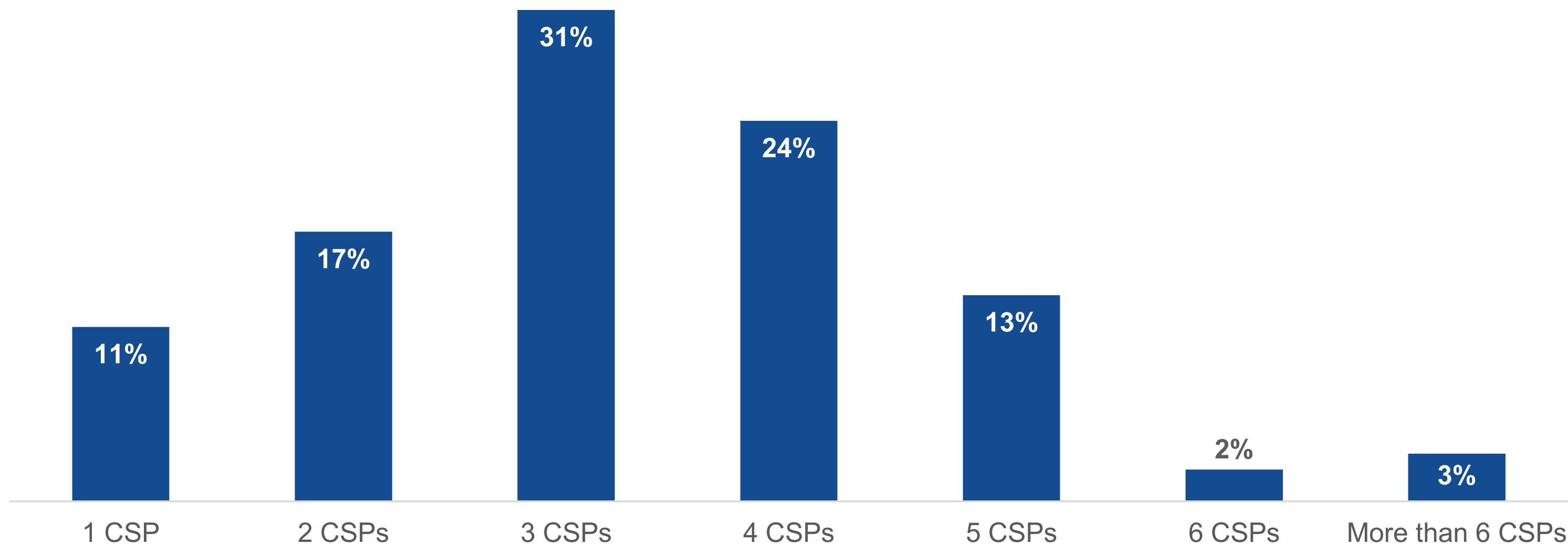




# Nearly nine in ten

organizations currently deploy production applications and server workloads **on cloud infrastructure and/or platform services.**

| Approximately how many unique public cloud infrastructure service providers (IaaS and/or PaaS) does your organization currently use? (Percent of respondents, N=339)



## Cloud-based applications are pervasive, with many employing multi-cloud strategies

Nearly nine in ten organizations currently deploy production applications and server workloads on cloud infrastructure and/or platform services. However, the vast majority of organizations are leveraging more than one unique cloud infrastructure service provider. Indeed, 42% report using at least four CSPs, which is not surprising given the importance of a distributed or multi-cloud approach to cloud-native strategies.

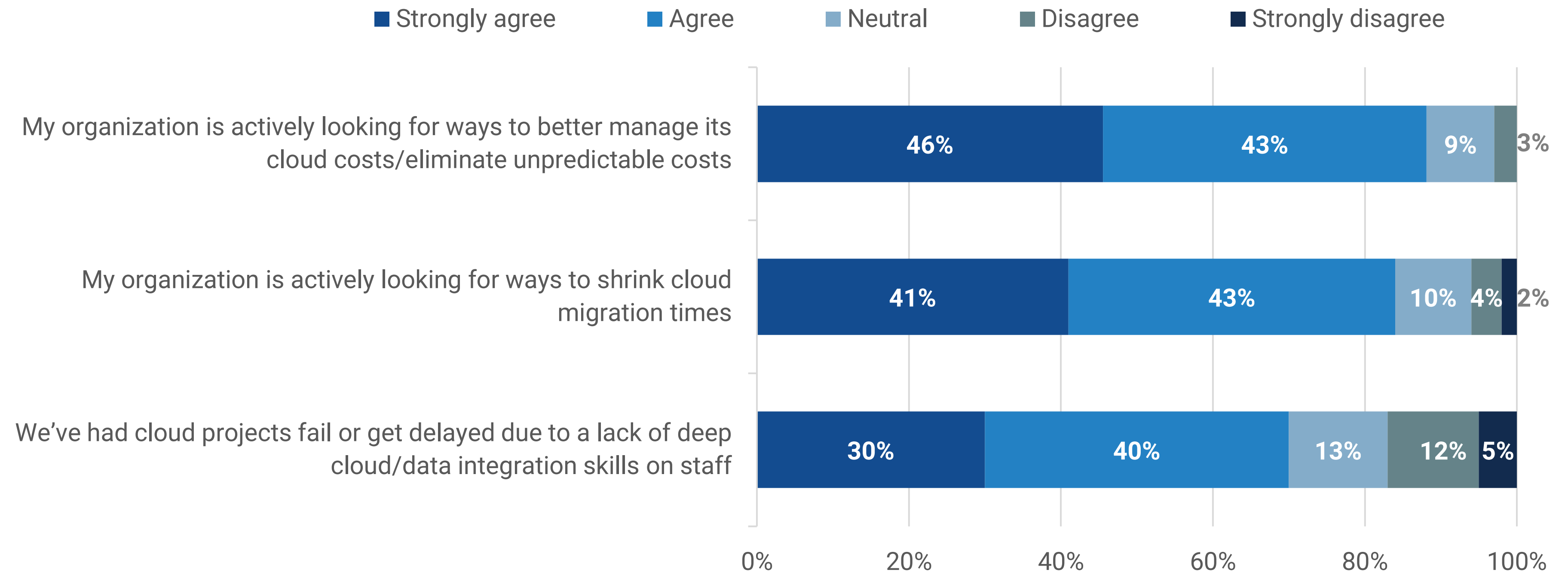


“ 70% of participants agreed that their organization has had **one or more cloud projects fail or be delayed due to a lack of skills.**”

## One or more cloud projects fail due to a lack of skills

When it comes to cloud transformation, organizations often find themselves delaying or even canceling projects. This is often due to a lack of skills or resources available to achieve the goals of the business.

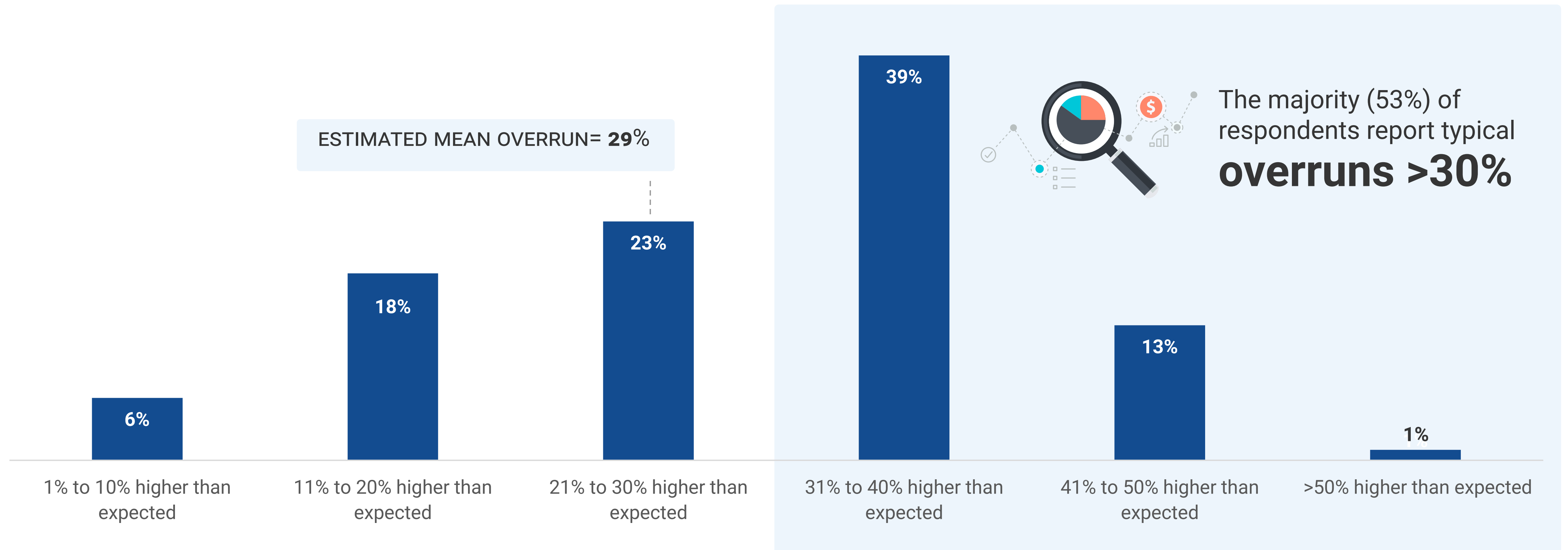
Please rate your level of agreement with the following statements about your organization's experience with public cloud infrastructure. (Percent of respondents, N=342)



## By how much do transformation costs exceed projections?

With the focus on transformation, organizations are seeing the costs of these efforts exceed projections. The majority of organizations see overruns of greater than 30%, but the focus to modernize is still a top business priority. VMware and Google Cloud provide options to overcome these challenges.

When short-term operational costs exceed expectations, by how much approximately do actual costs exceed expected costs? (Percent of respondents, N=337)



# Migrating applications and paths to modernization

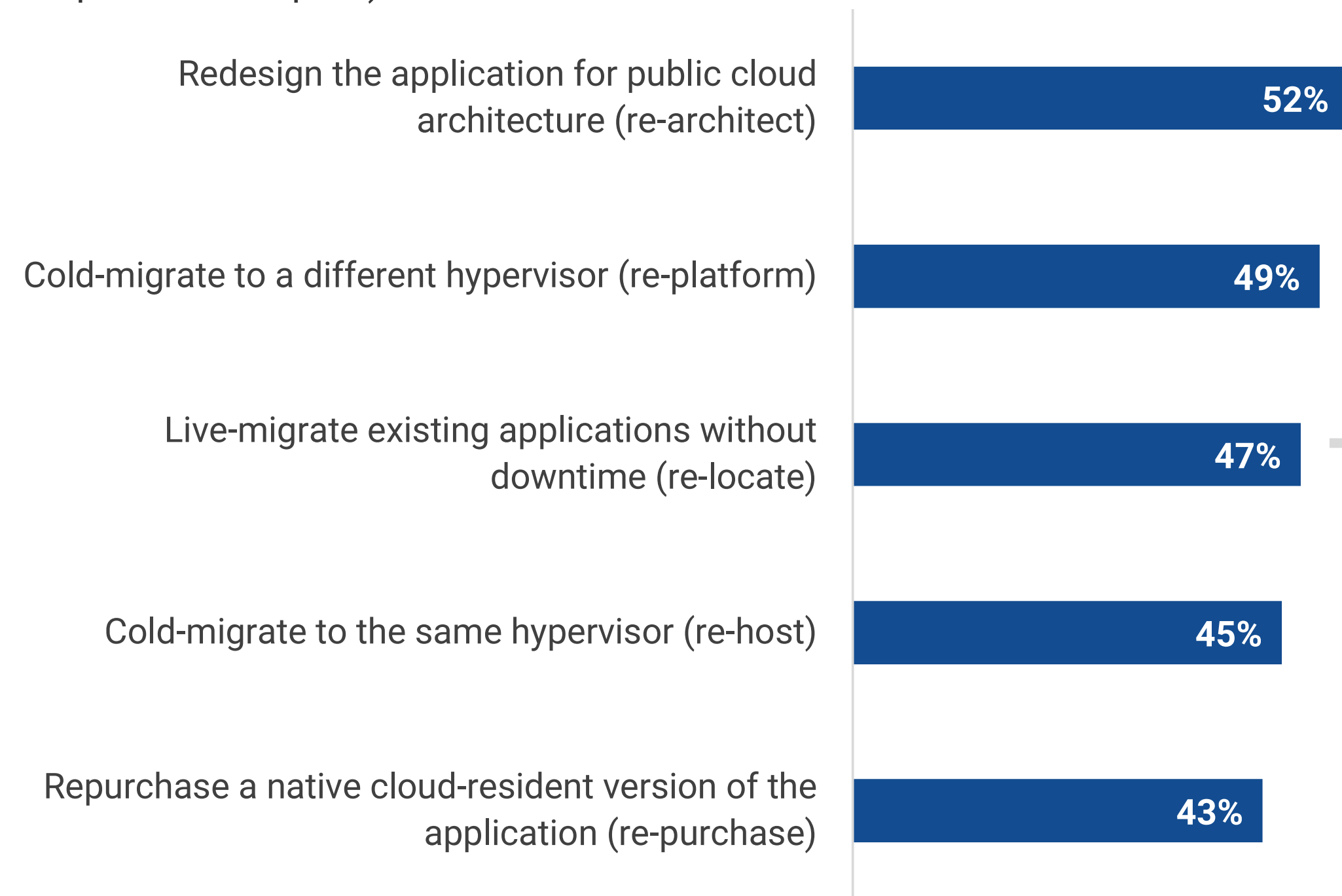


## Multiple cloud migration processes are in use and the desire for live migrations is growing

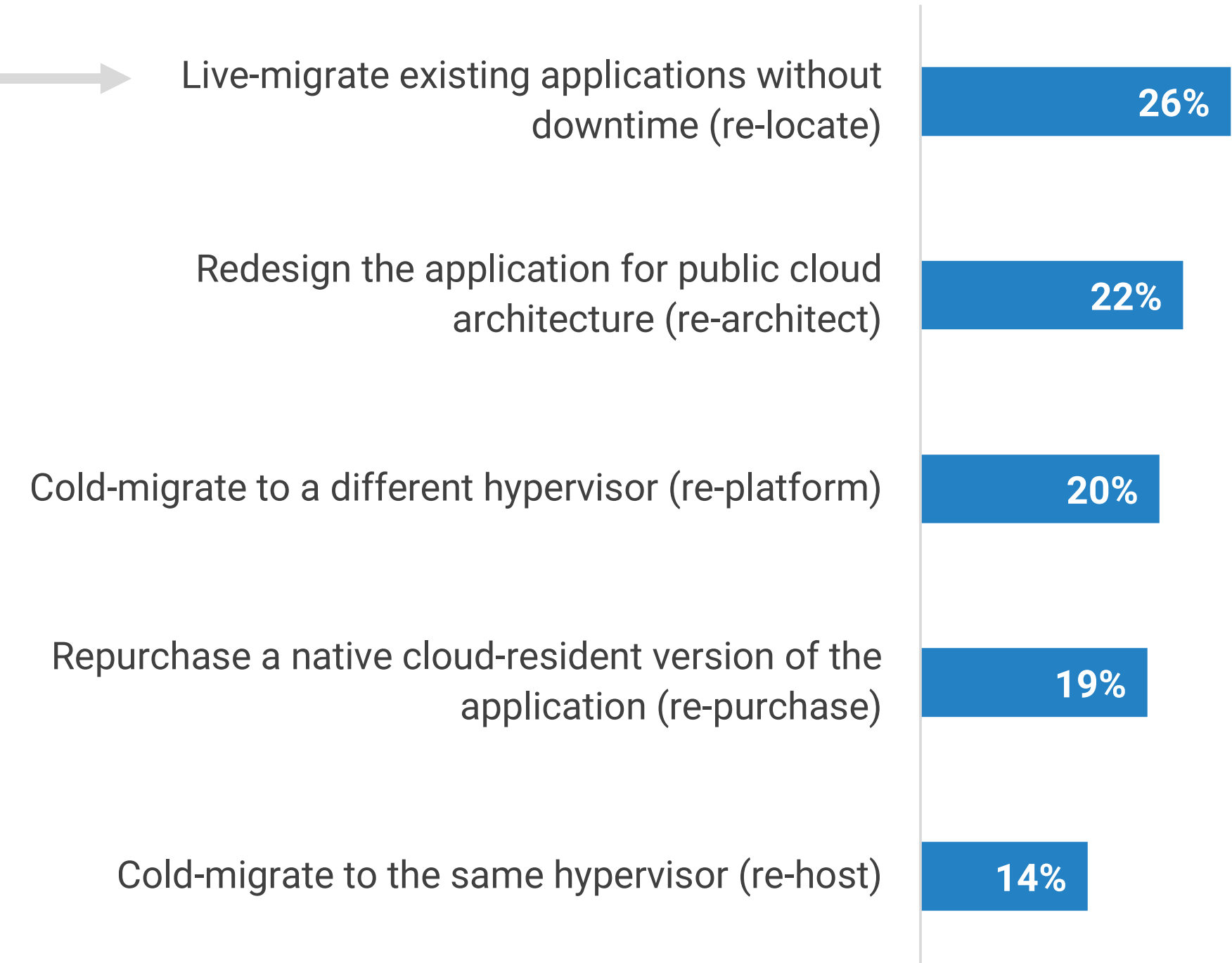
Organizations often employ multiple methods to migrate workloads to the cloud, which can result in organizations spending a significant amount of money, time, and effort on cloud migration projects.

As the number and type of public cloud providers in use increase, the time and cost spent in cloud migrations are also expected to increase. In addition, going forward, live migrations are likely to be the preferred cloud migration approach.

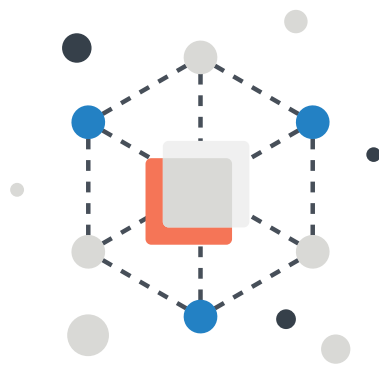
Thinking about applications/workloads your organization has migrated to public cloud services, which of the following methods has your organization employed in the last 12-24 months? (Percent of respondents, N=342, multiple responses accepted)



Thinking about the next wave of applications/workloads your organization is planning to migrate to public cloud services, which of the following will likely be its preferred migration pattern? (Percent of respondents N=349)



## Weighing the options of faster deployment



### Encapsulate applications in a virtual machine

Organizations looking to rapidly move to the cloud with their existing or heritage applications may find encapsulating the application in a virtual machine to be the best option. In fact, a typical organization has numerous applications that have moved through various stages of maturity, from on-premises client-server- or virtual machine-based applications to containers.



### Refactor existing applications

The next stage of maturity is to move the application to a refactored microservices architecture, which provides a modularity of services that allows the application to be updated, configured, and changed dynamically without being taken down. However, not all applications should be refactored. Where appropriate, heritage applications or virtual machines can easily run in the cloud with minimal lift.



### Build new cloud-native applications

Organizations are reaping the benefits of adopting cloud-native application strategies. However, more than one-third (34%) of respondents indicated that security is one of the biggest challenges their organization has faced or expects to face regarding its cloud-native applications.

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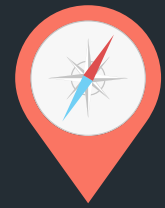
Despite the benefits realized, organizations did report encountering a variety of challenges with cloud-native approaches. In addition to security, other common shortcomings cited included meeting compliance requirements, a lack of performance monitoring, and shadow IT tendencies in the form of groups purchasing cloud services autonomously.

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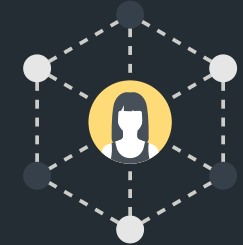
## Top Desired Outcomes for Hybrid Cloud Projects:



1. Rapid and automated cloud elasticity/scalability



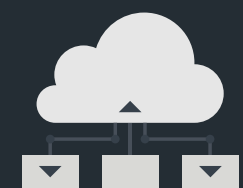
2. Leverage of off-premises cloud storage



3. Self-service end-user IT provisioning

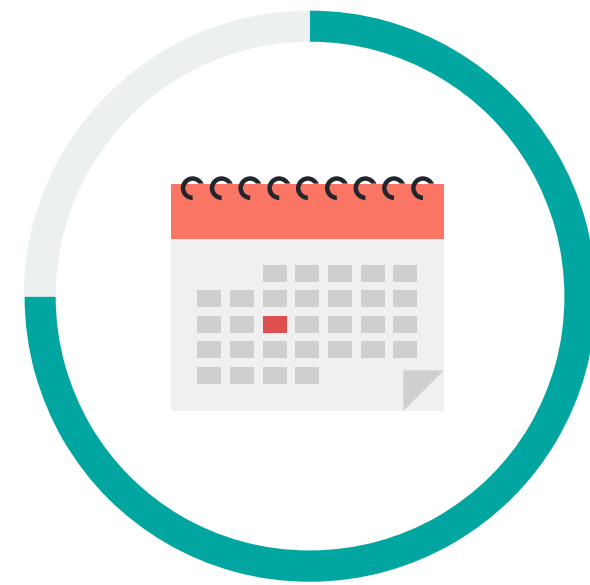


4. Continuous integration/continuous deployment (CI/CD)



5. Management of multi-cloud environments

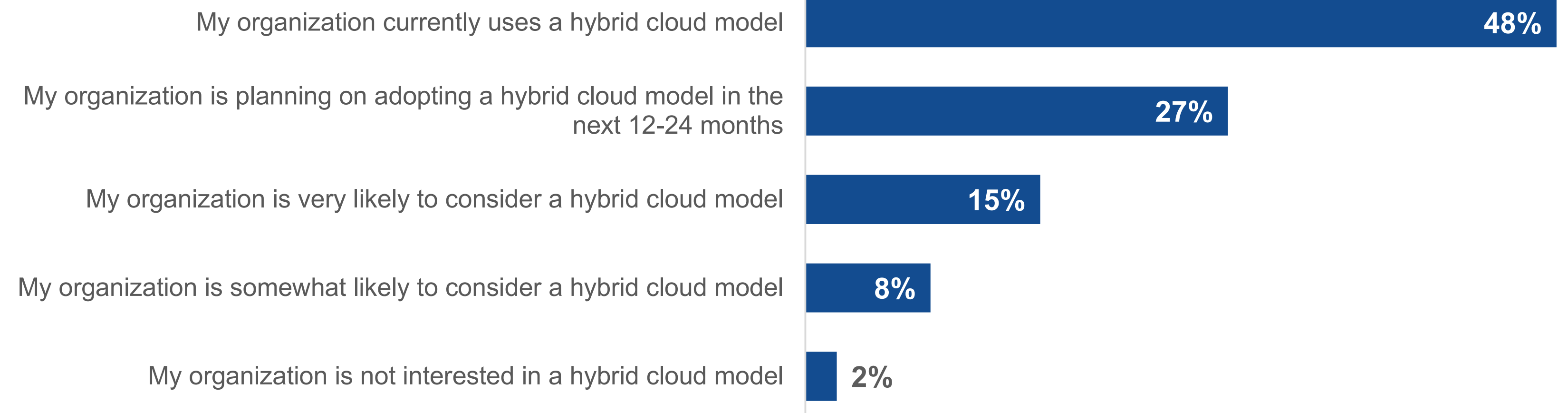
## Hybrid cloud usage and investment continue to grow, with performance and scalability top of mind



# 75%

of organizations currently use or plan to adopt a **hybrid cloud model in the next 12 – 24 months**

Which of the following statements regarding your organization's usage of a hybrid cloud model is most accurate? (Percent of respondents, N=255)

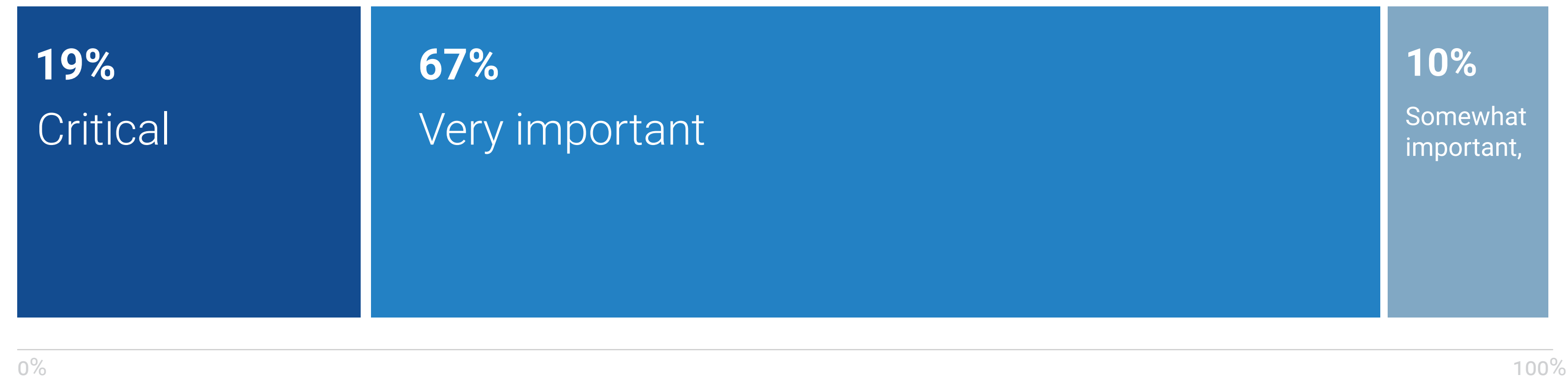


## When deploying apps in the cloud, the platform matters

When organizations are looking at their cloud journey, the cloud-based infrastructure matters. Migrating to the cloud requires an environment that is accommodating to meet the business goals and objectives. Organizations are looking for an infrastructure that allows for a seamless path from traditional applications to encapsulated virtual machines to the cloud.

Organizations were asked about the importance of application portability with a bi-directional approach, including the ability to move from data centers to edge locations and cloud services, cloud to cloud, etc. The vast majority of respondents to Enterprise Strategy Group research indicated that it is either critical (19%) or very important (67%). Those organizations taking a hybrid approach to their cloud-based application deployments were more than twice as likely (30% versus 14%) to consider application portability critical compared to their counterparts taking a purely public cloud position on deploying cloud-based applications.

How important is application portability (e.g., ability to move from data center to edge to cloud, cloud to cloud, etc.) to your organization? (Percent of respondents, N=387)



Cloud-based infrastructure also allows for organizations to benefit from cloud services and stop having to manage the infrastructure on premises. Selecting a cloud service that facilitates moving workloads and applications without rewriting them helps organizations avoid lock-in with a cloud service provider and proprietary technology.

Powerful networking that offers both low-latency and high performance is crucial to running applications appropriately. Having flexibility and resiliency allows for the best location and deployment options to meet the application and business needs.

## Conclusion

Enterprise Strategy Group research shows that organizations want to harness the benefits of cloud services but face challenges with cloud-native strategies. Virtual machines are highly prevalent, and hybrid-cloud investment continues to grow. IT leaders must prioritize technologies that enable speed to the cloud in a safe, low-risk, cost-effective way while leveraging options to tie in analytics and AI/ML to improve customer experiences and achieve digital transformation. By understanding when it is beneficial to refactor applications and when it makes business sense to migrate applications to the cloud without modification, organizations can reap more advantages: acceleration to the cloud, reduced risk, cost savings, and greater project success.

## How VMware and Google Cloud Can Help

Google Cloud VMware® Engine is a native Google Cloud service that enables users to run VMware applications in Google Cloud. The service includes familiar enterprise-grade compute, storage, and network virtualization products (VMware vSphere®, VMware vSAN™, and VMware NSX®), plus VMware vCenter® management, all running on dedicated, elastic, Google Cloud bare-metal infrastructure. This on-demand service provides rapid node deployment in under an hour, saves customers time, reduces costs, and eliminates much of the complexity and risk of moving to the cloud. Innovative networking with simplified regional and global routing, redundant switching, and 100 Gbps of dedicated east-west networking makes Google Cloud VMware Engine an excellent choice for demanding enterprise workloads. With 99.99% uptime, it can meet the needs of mission-critical workloads. Customers also have direct access to Google Cloud Platform™ services to unlock business insights as part of their digital transformation. Google Cloud VMware Engine enables enterprises to leverage their existing skills, reduce the operational burden on IT, and quickly migrate, extend, and modernize their applications in Google Cloud. Learn more at <http://via.vmw.com/google-cloud>.

Read how three companies accelerated their digital transformation.

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