VansonBourne

NUTANIX

4th Annual Nutanix

# ENTERPRISE CLOUD INDEX

MULTICLOUD IS HERE TO STAY

## Background and Research Goals

For the fourth consecutive year, Nutanix has commissioned research to learn about the state of global enterprise cloud deployments and adoption plans.

In August and September 2021, U.K. researcher Vanson Bourne surveyed **1,700** IT decision-makers around the world about where they're running their business applications today, where they plan to run them in the future, what their cloud challenges are, and how their cloud initiatives stack up against other IT projects and priorities. Survey respondents were also asked about the impact of the pandemic on recent, current, and future IT infrastructure decisions and how IT strategy and priorities may change because of it.

The 4th Annual ECI respondent base spanned multiple industries, business sizes, and the following geographies: the Americas; Europe, the Middle East, and Africa (EMEA); and the Asia-Pacific (APJ) region.

## Top Multicloud Trends

**91%** moved one or more applications to a new IT environment over the last 12 months

**64%** expect to be operating in a multicloud environment within one to three years

**83%** agree that hybrid multicloud is ideal

## Key Findings

1. **Multicloud—an IT operating model that combines multiple clouds, public or private—is the most commonly deployed IT environment.** It's also the only IT model on an upward adoption trajectory. More than a third **(36%)** of the overall respondent base currently uses multicloud as their most commonly used deployment model, with adoption expected to jump to **64%** in the next one to three years. Large enterprises with 5,000 or more employees report even greater multicloud adoption, with over half **(57%)** already using multicloud. Penetration among these companies is expected to soar to **80%** in one to three years.

2. **Interoperability among multiple cloud environments is crucial, though complexity, from security to data integration, remains a top concern.** More than a third of respondents using multicloud say their clouds are "fully interoperable" **(36%)**, and more than half **(56%)** report "some level" of interoperability between clouds. However, most respondents **(87%)** agree that succeeding with multicloud requires simpler management across mixed-cloud infrastructures, which use dissimilar platforms, tools, dashboards, and configuration approaches. They cite managing security **(49%)**, data integration **(49%)**, and cost **(43%)** across cloud borders as their top multicloud challenges. To help address these challenges, most respondents **(83%)** agree that a hybrid multicloud model is ideal.

3. **The pandemic has changed how nearly all organizations operate, and multicloud supports this new way of working.** Well over half of respondents **(61%)** say they're focused on offering more flexible work setups because of the pandemic. Most organizations report that while their remote workforces may shrink or grow, they are here to stay for the foreseeable future. Multicloud offers the most agile IT environment for supporting this flexibility by distributing data to diverse geolocations for user proximity and business continuity.

4. **Application mobility is top of mind.** Nearly all organizations **(91%)** have moved one or more applications to a new IT environment over the last 12 months. They cite security **(41%)** most often as the reason for the move, followed by performance **(39%)**, and gaining control of applications **(38%)**. However, **80%** of respondents agree that moving a workload to a new cloud environment can be costly and time-consuming. Containers are destined to play a role here. Accordingly, **82%** of respondents agree that containers are important to their organizations today or will be within 12 months. Further, half **(50%)** say containers are best suited to run in a mix of public and private cloud infrastructure.

5. **Enterprises are growing more strategic in their use of IT infrastructure.** Nearly three-fourths of respondents **(72%)** say they believe that the IT function in their organizations is perceived as more strategic than it was a year ago. They also cite business reasons for changing their infrastructure models, such as improving remote work and collaboration **(40%)**, supporting customers better **(36%)**, and strengthening business continuity **(35%)**. Additionally, they've begun strategically matching each workload to the infrastructure best suited to it based on factors such as security **(41%)**, performance **(39%)**, and cost **(31%)**. The adoption of this "cloud-smart" approach, leveraging the most appropriate cloud environment for each use case, is likely a primary driver behind the proliferation of multicloud.

## Overview: State of Cloud Deployments

As noted in the Key Findings section, the majority of respondent organizations **(64%)** expect to be operating in a multicloud environment as their most commonly used deployment model, one defined by the use of multiple clouds, whether private or public, within three years—up from **36%** today. In 5,000+ employee enterprises, **56%** say they've already adopted multicloud, and **80%** plan to do so in the next one to three years. Why the increase in usage of multiple clouds? The top use cases respondents cite are application modernization **(53%)**, disaster recovery **(51%)**, integration with native cloud services such as artificial intelligence/machine learning (AI/ML) **(49%)**, and test and development agility **(49%)**.

Private cloud-only usage also rose during the past year, albeit slightly, from about **23%** in 2020 to **25%** in 2021. A quarter **(25%)** of respondents cited private cloud as their most commonly used deployment model, the highest percentage after multicloud **(36%)**. Traditional, non-cloud-enabled datacenter deployments were next, with **22%** penetration remaining, while only **16%** of respondents say they run single public cloud-only environments as their most common model.

Additionally, more than a quarter of all respondents **(27%)** report currently using more than one public cloud. On average, enterprises use 1.6 public clouds, up from 1.1 a year ago. In the coming year, the percentage of respondents from organizations that don't use any public clouds is expected to drop by more than half, with corresponding increases in the adoption of two or more clouds **(Figure 1)**.

### How many public clouds does your organization use?

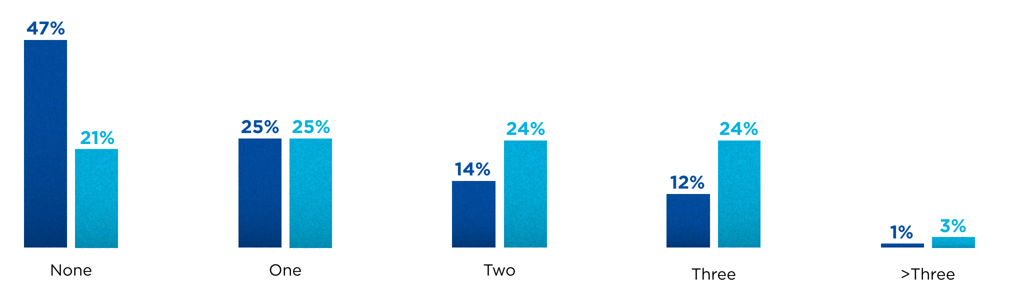


**Figure 1:** Public cloud usage, current and planned

### Traditional Datacenter Trends

Respondents running non-cloud-enabled datacenters expect to transition away from them in the near-term; just **5%** expect that they'll still be running their traditional datacenters in one to three years. While the drop from **22%** to **5%** sounds significant, previous ECI research has shown similar intentions to dramatically phase out older datacenters, with negligible follow-through so far.

It's possible that enterprises may simply be finding that they have legacy mission-critical applications that they must continue to support with their older datacenters and that refactoring or rewriting those applications for a cloud environment is a bigger job than initially anticipated. It's also likely some enterprises might have found another path to datacenter modernization, as **91%** indicated that they have already deployed hyperconverged infrastructure (HCI) or plan to do so within two years.

### Workload Distribution

Respondent workloads are divided fairly evenly among private clouds, public clouds, and traditional datacenters, though public cloud leads in organizations that have already adopted multicloud infrastructures.

**Figures 2 and 3** compare the average enterprise workload distribution of all ECI respondents with the average workload distribution of those respondents currently using multicloud; in the second group, public cloud use rises significantly.

### What percentage of workloads does your organization run in each cloud?

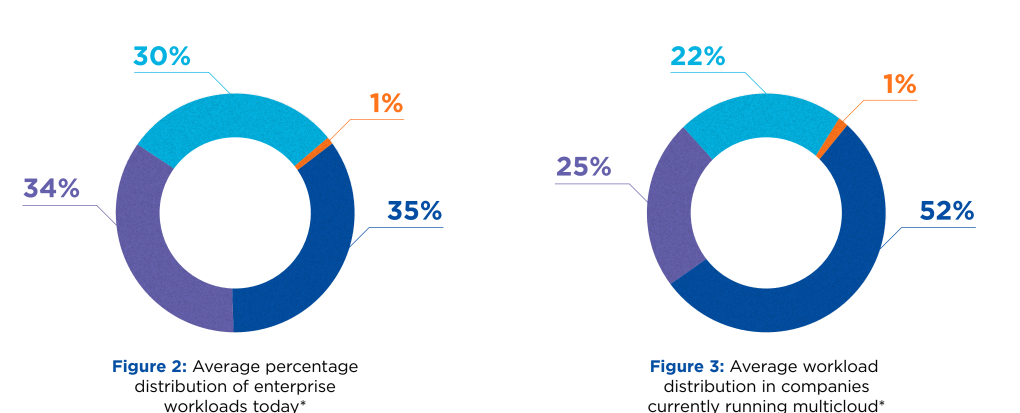


**Figure 2:** Average percentage distribution of enterprise workloads today*

**Figure 3:** Average workload distribution in companies currently running multicloud*

* Percentages have been rounded up or down to the nearest whole number
** No cloud capabilities or connectivity to other clouds

## Top 3 Multicloud Challenges

**49%** Security

**49%** Integrating data across clouds

**43%** Managing costs across clouds

## Multicloud Challenges

While adoption of multiple clouds, whether private or public, appears to be rising, enterprises also face challenges with this IT model. Specifically, nearly half of respondents identified security **(49%)** and integrating data across different environments **(49%)** as their top challenges with multicloud deployment, followed closely by managing cross-cloud costs **(43%)** and application performance **(42%) (Figure 4)**.

### What do you think are the top multicloud challenges?

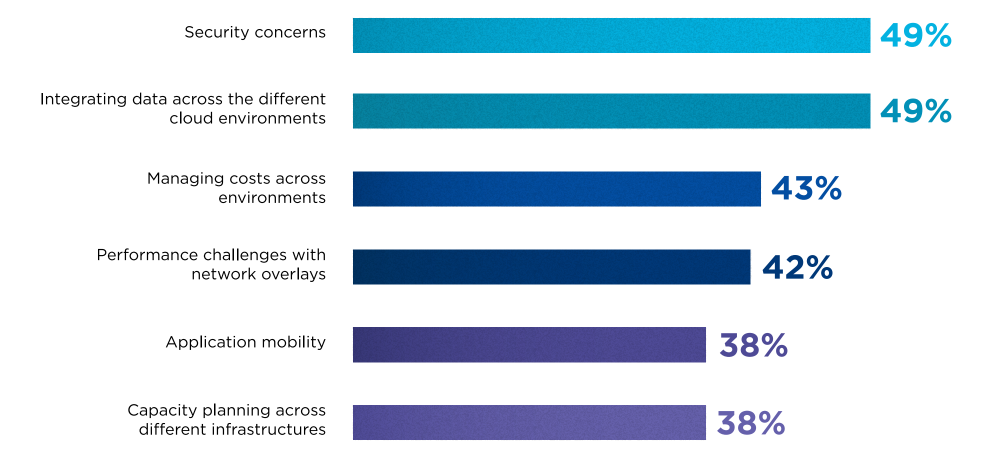


**Figure 4:** Top multicloud challenges

The reality is most organizations struggle to effectively manage heterogeneous cloud environments and moving workloads among them. In fact, most **(87%)** agree that succeeding with multicloud infrastructure requires simplifying management and operations across public cloud services delivered by different providers, whose cloud platforms use dissimilar tools, dashboards, and configuration approaches.

In addition, while **91%** of organizations have moved one or more applications to a new IT environment over the last 12 months, **80%** agreed that moving workloads to a different cloud environment is currently costly and time-consuming, and **77%** described workload portability as a moderate or significant challenge.

### Addressing Operational Complexity: Hybrid Multicloud

How can this operational complexity be addressed? The vast majority of respondents **(83%)** agree that hybrid multicloud, an IT operating model with multiple clouds both private and public with interoperability between them, is ideal. This would deliver on the flexibility and agility that more organizations seek to compete in today's digital world, while enabling enterprises to significantly simplify operations.

This model will also help address some of the key challenges of multicloud deployments, including security, data integration, and app mobility, by providing a unified cloud environment on which security and data governance policies can be applied uniformly.

A hybrid multicloud model requires that enterprises adopt tools that unify and, to a degree, automate cross-cloud operations and management. Given that more than three-fourths of ECI respondents **(79%)** say they currently lack the IT skills required to meet business demands, simplifying operations is likely to be a key focus for many enterprises in the year ahead.

**79%** currently lack the IT skills required to meet business demands

## "Cloud-Smart" IT Approach

Now that the IT industry has a decade of cloud computing experience under its belt, enterprises are learning that a one-size-fits-all approach doesn't necessarily guarantee their desired business outcomes. They've begun moving away from blanket cloud-first strategies and instead are becoming more thoughtful about which workloads run where—making a hybrid multicloud model ideal for most. These are early days for executing on these strategies, however.

### Choosing the Right Cloud

Current cloud thinking is that there's a "best" cloud environment for each workload or application based on factors such as security, compliance regulations, accessibility, performance, cost, and where an application is in its lifecycle. But these factors can shift over time.

How can IT leaders identify the best cloud for each application? While some decisions might depend on each company's unique situation, ECI respondents identified a few trends.

The largest number of respondents chose private cloud for running database, disaster recovery, and human resources applications. Public cloud received top marks for customer resource management (CRM)/customer experience, virtual desktop infrastructure (VDI)/remote workstation management, and collaboration and content management applications. When it came to enterprise resources planning (ERP) and Big Data applications, equal percentages of respondents chose private cloud and public cloud as "best" (**Figure 5**).

### Which infrastructure is best for which app?

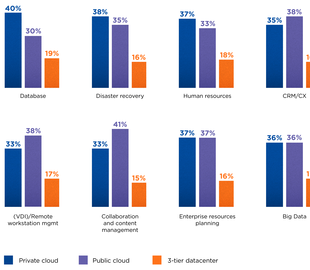


**Figure 5:** "Best suited" infrastructure by app

Respondent selections reflect the nascent stage of cloud-smart strategies; with the exception of databases and collaboration, they don't show a strong preference for one cloud environment over another for most applications. The traditional three-tier datacenter continues to earn a respectable number of votes for all apps, many of which were likely built to run in those environments initially.

Additionally, half (**50%**) of respondents indicated that containerized applications should run in a mix of public and private clouds. This answer reflects the need to move apps as conditions, requirements, or regulations change. Containerizing applications with all their dependencies is a simple, quick way to achieve this movement when the need arises. Apps might be moving in or out of different cloud types, so it follows that it would be most beneficial to run containerized apps in all cloud environments.

### Placement Considerations

As noted, different applications have varied requirements for accessibility, performance, security, regulatory compliance, cost, and business continuity that can change over time. For example, there are cost implications of using the public cloud for a given workload or application over extended periods. Public cloud services excel at lowering upfront entry costs and leveling the playing field among companies of different sizes and budgets. Over time though, cloud subscription expenditures can significantly surpass on-premises support costs as the cost to "rent" infrastructure long-term. Nearly all (**91%**) respondents moved applications from one infrastructure to another in the past year and **31%** cited cost as a reason.

Some apps, such as certain databases, might require local network performance, and **39%** of respondents say performance is a reason they moved workloads.

When it comes to security and regulatory compliance, some industry and government regulations mandate on-site data storage. In addition, perceptions change as to which environment is most secure as technology advances and the types of risk evolve. Of the **91%** respondents that moved applications between infrastructures during the past year, **41%** said they did so for security reasons.

Despite security being the main reason to move an app among infrastructures last year, it ranked seventh (**30%**) as a driver for deploying entirely new or additional infrastructure. More business-strategic reasons appear to be fueling infrastructure investments, particularly in multicloud environments (**Figure 6**).

### Why do you think your organization's deployment model will change?

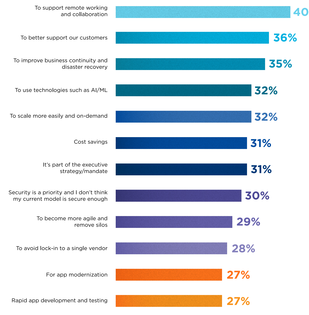


**Figure 6:** Top drivers behind changing IT deployment models

## Do you think your organization has a strong security posture?

## Update on COVID-19's Impact on IT Priorities

The COVID-19 pandemic continues to influence IT decisions and strategies, driving IT teams to focus on areas that more broadly empower the business. When asked what their organizations have done differently because of the pandemic, respondents' top answers were that they offered more flexible work options to employees (**61%**), strengthened business continuity (**53%**), focused on the digital customer experience (**53%**), and sought ways to increase their competitiveness (**43%**).

Respondents also said that they've increased their IT spending with a focus on bolstering their security posture (**62%**), implementing AI-based self-service technology (**56%**), and upgrading existing IT infrastructure (**53%**).

Interestingly, more C-suite respondents (**53%**) report that their company has a strong security posture compared to IT decision makers (**42%**). An almost equal number of respondents overall (**44%**) believes there is still room for improvement.

Going forward, enterprises continue to rank improving security posture as a top IT priority for the next 12 to 18 months (**49%**). Security was followed closely by implementing 5G wireless networks, expanding storage, and improving multicloud management and operations (**Figure 7**).

### What are your organization's upcoming IT priorities?

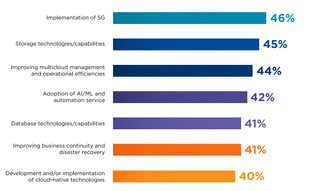


**Figure 7:** IT priorities for the next 12 to 18 months

## Summary and Conclusions

The evolution to a multicloud IT infrastructure that spans a mix of private and public clouds is underway. It is driven by enterprises' realization that optimizing IT infrastructure involves matching workloads to the environment best suited for them, even as conditions and demands change.

To fully execute on this vision of flexibility, enterprises are challenged to achieve the following:

- **Simplify and integrate manageability and security.** IT teams must have unified visibility and the ability to set and enforce security policies consistently across clouds. In the absence of on-staff skill sets that run deep in multiple different public cloud platforms, organizations will look to technology solutions that abstract the underlying differences among cloud platforms with integrated tools that deliver visibility, manageability, and cost control across environments.
- **Move apps among infrastructures cost-effectively and fast.** The majority of respondents (**80%**) say that moving apps can be time-consuming and costly and **77%** agree that workload portability is a significant or moderate challenge.

From this, a new ideal IT model is emerging, one that delivers on both the flexibility and operational efficiency most enterprises seek: hybrid multicloud. While the reality of multicloud is here to stay, enterprises are increasingly looking for ways to cut down on the complexity these strategies entail. In the coming years, we expect enterprises to move away from managing this complexity and instead finding ways to make their IT infrastructure work for them. This is where hybrid multicloud can help.