Financial services and the cloud:

Nutanix Enterprise Cloud Index 2018

ABOUT THIS REPORT 03

KEY FINDINGS 04

WORKLOAD DISTRIBUTION TODAY 05

THE HYBRID CLOUD'S APPEAL 07

BUILDING THE IDEAL IT MODEL 08

MULTICLOUD ADOPTION TRENDS 12

HOW WELL CLOUDS MEET ENTERPRISE NEEDS 15

SUMMARY AND CONCLUSIONS 17

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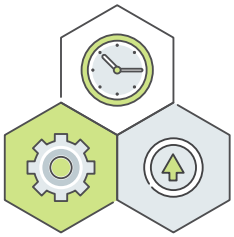
97% of companies say that the mobility applications between cloud environments is needed

91% of companies say that hybrid cloud is the ideal IT model for organizations



87% say that hybrid cloud will have a positive impact on their future

97% of companies surveyed said that there are benefits to using hybrid cloud

About This Report

In mid-2018, VansonBourne conducted research on behalf of Nutanix to gain insight into a broad cross section of enterprise plans for adopting private, hybrid, and public clouds. VansonBourne interviewed 2300 IT decision makers around the world about where they are 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.

The respondent base spanned 11 industries and multiple business sizes and geographies, which included the Americas; Europe, the Middle East, and Africa (EMEA); and Asia-Pacific (APJ) regions. See the appendix of this document for complete demographic details.

This report has been customized to highlight the cloud deployments and plans of those in financial services organizations, including banking and insurance companies, that participated in this survey. It also compares this industry's activity with those of global enterprises in general and specifically with enterprises in other vertical markets. The research firm surveyed 333 worldwide financial services organizations, which accounted for about 14% of the overall survey base.

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TERMINOLOGY

- **"Private cloud"** is used in this report to refer to automated, highly virtualized installations of IT infrastructure managed by an organization's own IT team.

- **"Public cloud"** indicates the use of an infrastructure-as-a service (IaaS) offering managed by a third-party provider.

- **"Hybrid cloud"** describes the combined use of at least one private cloud and at least one public cloud service, with some degree of integration between the two cloud environments.

- **"Multicloud"** is referenced in this report to indicate the use of more than one public cloud service.

NUTANIX ENTERPRISE CLOUD INDEX 2018:

Financial Firms Near the Top in Hybrid Cloud Adoption

Still, they run a greater percentage of traditional data centers than other industries

KEY FINDINGS

Today, enterprise IT teams decide where to run a given business application based on whether an infrastructure option meets their criteria for a number of factors. The enterprises surveyed for this report ranked data security and regulatory compliance, performance, ease of management, and cost as their top considerations in determining where to put their workloads. They also clearly indicated that their cloud use would rise sharply during the next 12 to 24 months.

The financial services sector, like other industries, most often cited security and compliance as the top factor in deciding where to run its workload:

> while **31%** of respondents across all industries and geographies named security and compliance as the number one decision criterion, **30%** of financial organizations did so.

Nearly all respondents indicated that they would like to see improvements in application mobility and interoperability among cloud environments for greater flexibility in matching applications to the most appropriate infrastructure. They cited security and a scarcity of hybrid cloud skillsets as challenges to achieving these goals.

With these indicators in mind, the Cloud Index key findings indicate the following trends:

- **Workloads are shifting locations**. Enterprise workloads are quickly moving out of traditional data centers and into a variety of public, private, and hybrid clouds. Traditional data centers handle 40.5% of IT workloads today on average, but that number will drop by more than half to just 18% in two years' time as cloud usage accelerates.

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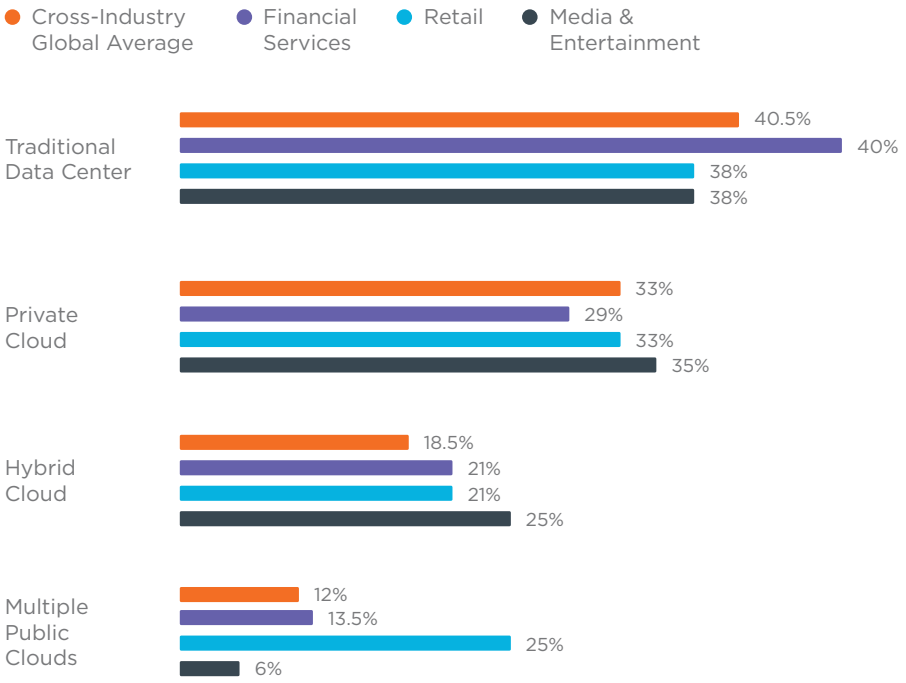
- **Hybrid clouds are growing the fastest**. Hybrid clouds currently support 18.5% of enterprise workloads across industries, but their use will more than double to support 41% of the world's workloads two years from now.
- **Financial services' hybrid deployments outpace the averages**. The deployment of hybrid clouds in financial companies has reached 21% penetration today, outpacing the global average of 18.5% and tying with the retail industry (also 21%). Only the media and entertainment sector, with 25% penetration, reported greater hybrid adoption than the financial services and retail sectors.
- **Financial services still use traditional data centers more often than most other industries**. Despite their progressiveness with hybrid clouds, financial organizations have lower usage levels of private clouds than any other industry (29% penetration compared to the average of 33%). They also currently run more traditional data centers than most other industries with 46% penetration. Only the construction and property and the energy/utilities industries had more traditional data center deployments still in use, with 53% penetration each.

They also currently run more traditional data centers than most other industries with

46%

penetration.

Figure 1. Enterprise Workload Distribution Today



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The two-year outlook for these deployment trends has financial companies outpacing both the cross-industry averages and the media and entertainment industry in hybrid cloud uptake with 44% penetration (**Figure 2**). In fact, just two industries of the 11 surveyed are planning greater hybrid cloud deployments than the financial sector in 24 months' time: energy/utilities (47%), and manufacturing and production (45%).

Figure 2. Enterprise Workload Distribution in 12 to 24 Months

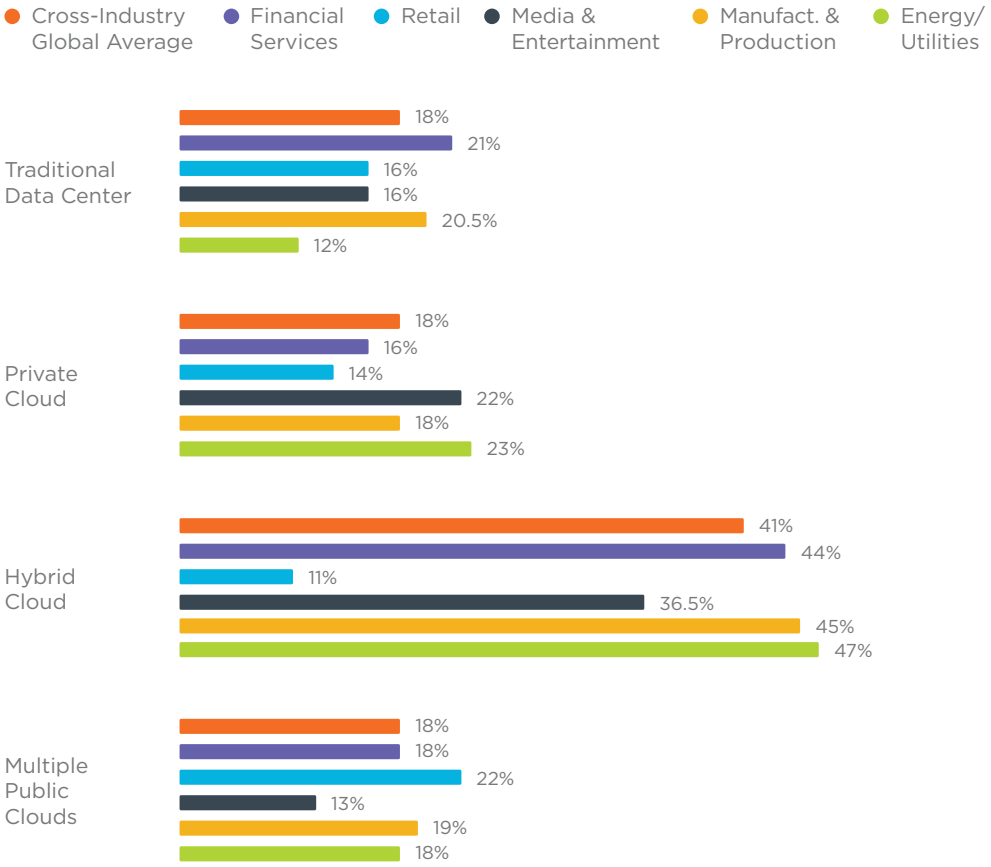
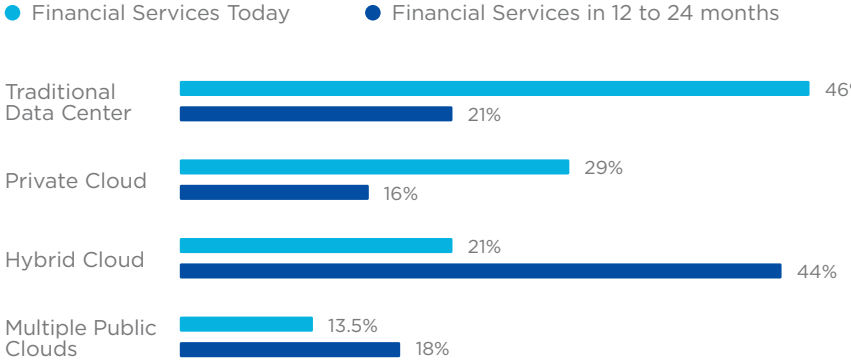


Figure 3, below, shows the financial sector's workload distribution today compared to the distribution expected in two years. During that time, hybrid cloud use will more than double, traditional data center use will drop by more than half, and private cloud use will drop by close to half. Financial companies' use of multicloud services increases moderately, at a pace in line with the global averages.

Figure 3. Comparative Workload Distribution: Today and in 12 to 24 Months



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THE HYBRID CLOUD'S APPEAL

The bullish overall outlook for hybrid cloud adoption is reflective of an IT landscape growing automated and flexible enough that enterprises have the choice to buy, build, or rent their IT infrastructure resources based on application requirements. Not surprisingly, nearly three-fourths (74%) of all respondents reported that the advent of cloud computing has increased the efficiency of their IT teams.

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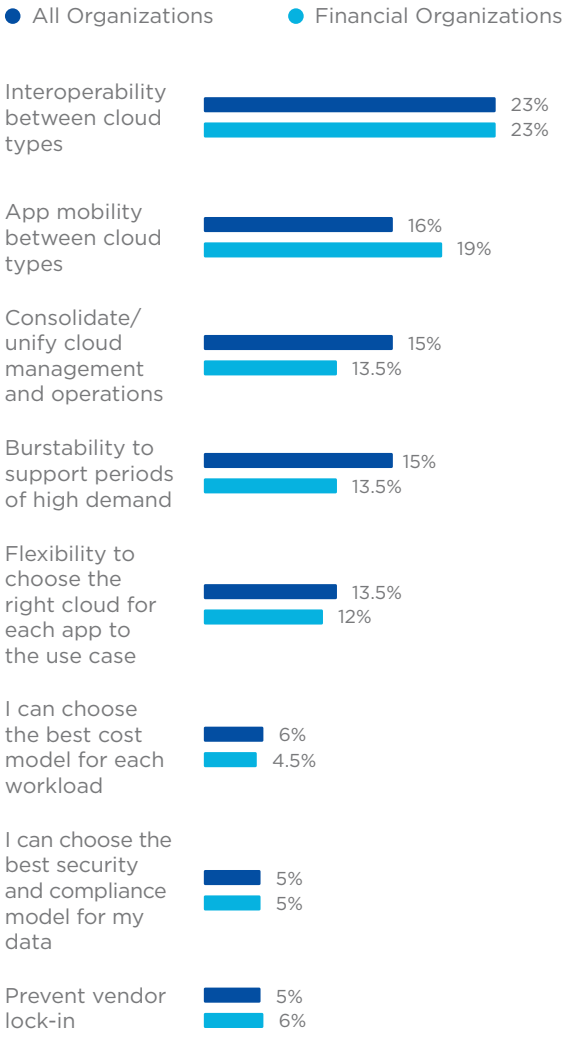
Figure 4. Perceived Benefits of Hybrid Cloud



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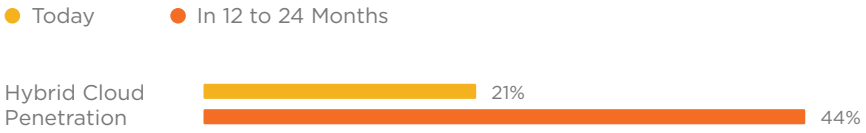
- **Application mobility across clouds**. Inherent in that flexibility is the ability to move apps and workloads back and forth across private and public cloud infrastructures as workload type or economics warrant, while enjoying unified management and operations. Both financial companies and other industries chose application mobility between clouds second most often as the number one perk to hybrid cloud, although the financial sector chose it 3% more often than the averages.

- **Burstability benefits**. Overall, the companies surveyed also chose burstability—having the flexibility to dial up cloud resources on demand as requirements dictate—second most often (16%) as the top benefit of hybrid cloud computing. Financial services companies, however, valued this capability moderately less (13.5%).

  All the above factors are driving significant growth in hybrid cloud adoption, as noted earlier (**Figure 5**).

Figure 5. Projected Hybrid Cloud Growth in the Worldwide Financial Sector



Given the relative difficulty in moving enterprise-scale applications from one operating environment to another, the more-than-doubling of financial services' usage of hybrid clouds in a short time span represents a significant increase. It indicates that these companies consider the value derived from balancing their applications across private/public cloud environments to be substantial.

Building the Ideal IT Model

IT teams have been discovering that workloads with predictable characteristics, such as the number of concurrent users, storage I/O requirements, and bandwidth consumption, often run most cost-effectively in a private cloud. It's fairly straightforward to forecast the consumption needs of predictable workloads and to plan accordingly to add resources as needed to accommodate expected growth.

By contrast, unpredictable workloads, such as those supporting new customer services or those that are seasonal in nature, often run best in the public cloud. That's because a public cloud is able to deliver greater IT resource elasticity to satisfy dynamic application requirements.

- **Choosing the right cloud**. Enterprise Cloud Index 2018 findings support these approaches when it comes to the averages. Respondents across industries and geographies, for example, reported currently using private clouds most often for more predictable applications like data backup (54%) and internal databases (51.5%). By contrast, cross-industry respondents said they used the public infrastructure most often for less predictable digital/mobile/AI (46%) and Internet of Things (IoT) applications (41%).

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- **Financial companies embrace the public cloud**. Financial companies largely followed the above pattern in terms of where they were running their respective applications. However, they were consistently more likely to use public clouds for all types of applications.

Financial organizations' current adoption levels of multiple public cloud services (13.5%) are just slightly ahead of the current cross-industry average (12%). However, as Figure 6 shows, financial companies were more likely than others to use the public cloud for any number of applications. Most notably:

- **Data analytics and business intelligence**. The financial sector, with 45% penetration of these apps in the public cloud, outpaces the global average by 8%.

- **Databases**. The financial sector, with 42% penetration of these apps in the public cloud, again outpaces the global average by 7%.

- **Development and testing**. Public cloud deployments are 6% greater in financial organizations than elsewhere.

Other areas where financial institutions' use of public cloud services outnumber those in other industries are highlighted in **Figure 6**.

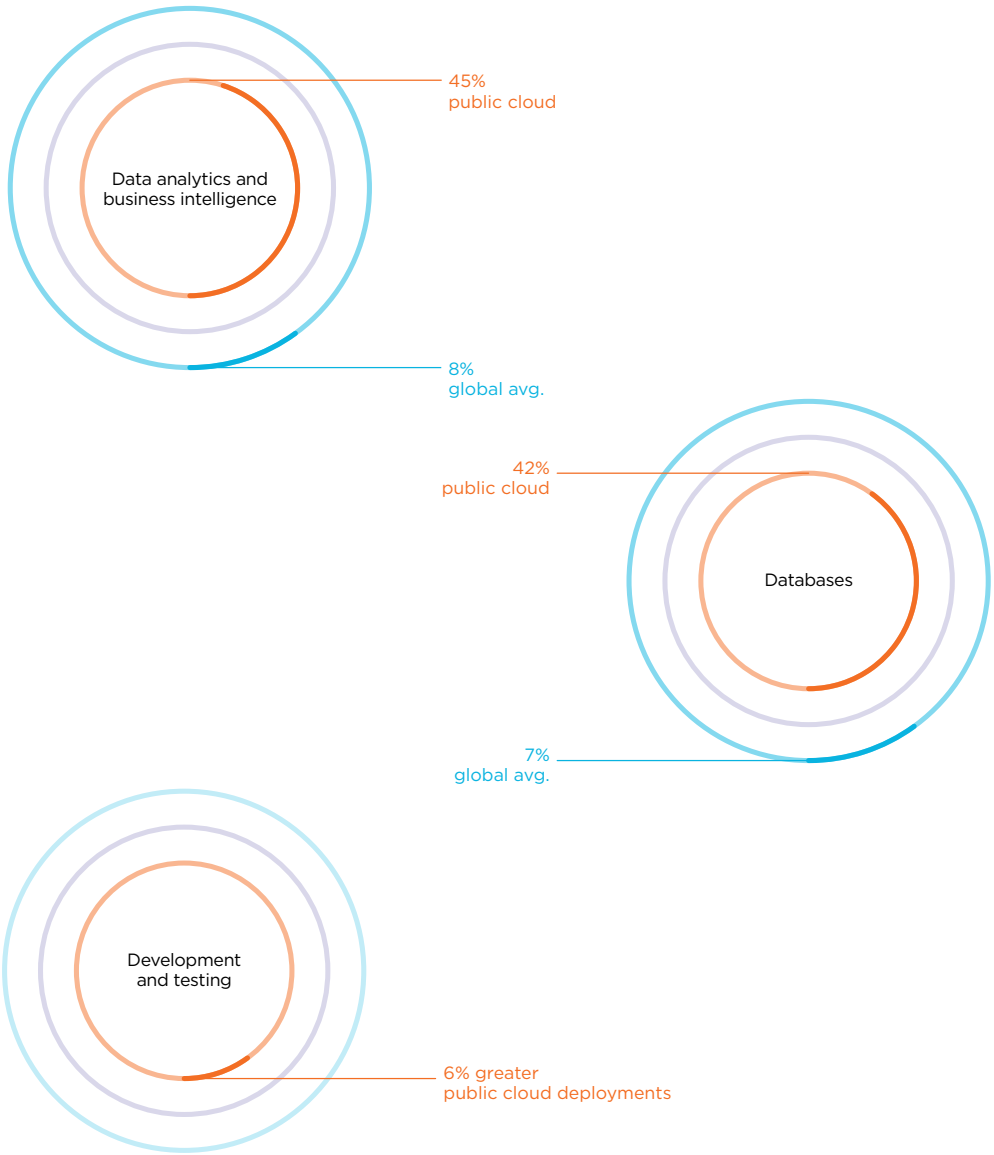

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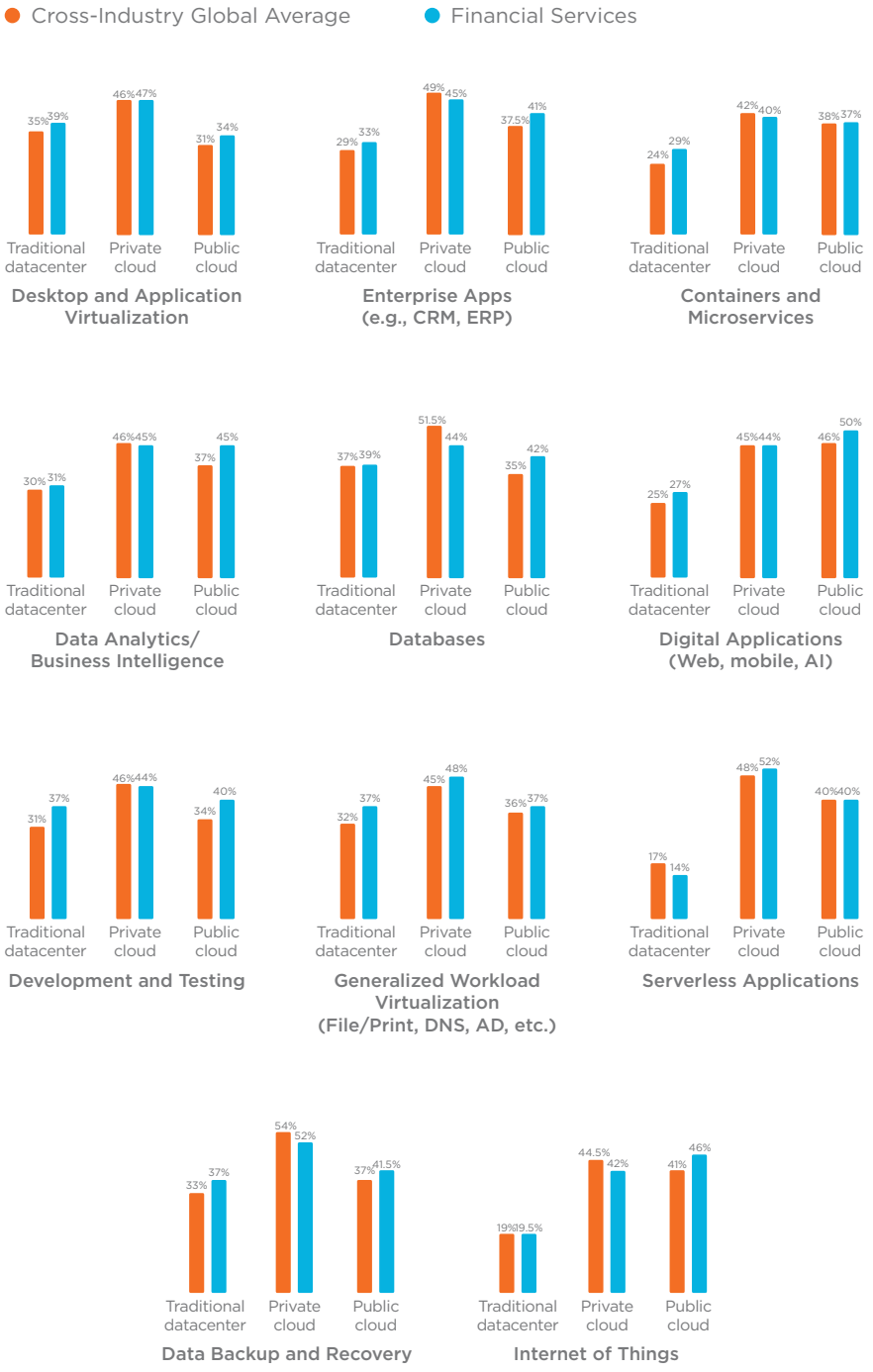
Figure 6. Which Apps Where?



- **Unified infrastructures on IT wish lists**. Public cloud services offer the agility to turn capacity up and down, and a hybrid approach will ultimately allow organizations to move applications between private and public clouds as seasons and traffic patterns warrant.

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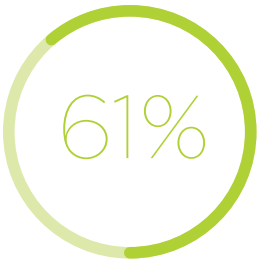
This is one reason that application mobility, mentioned earlier, ranked fairly high overall on IT wish lists. Application mobility implies the ability to quickly and seamlessly move applications and their associated data, networking services, and security policies between different types of clouds. Well over half of all respondents (61%) said they considered inter-cloud application mobility "essential," and even more financial industry respondents (63%) said it was so.



Well over half of all respondents (61%) said they considered inter-cloud application mobility "essential,"

and even more financial industry respondents (63%) said it was so.

- **Today's limitations**. Technical barriers limit application mobility across clouds today, keeping enterprises from fully embracing the promised flexibility of hybrid cloud technologies. These challenges likely account for at least part of the disparity between 91% of respondents ranking hybrid cloud as the ideal IT model and today's relatively low hybrid cloud penetration levels of just 18.5%.

Limited application mobility is a likely factor in the disparity between 91% of respondents citing hybrid cloud as the ideal IT model and current hybrid penetration levels of just 18.5%.

Why is application mobility important? In an IT landscape focused on the agility that comes with digital transformation and cloud computing, the best runtime environment for a given application could easily change on the fly. Fully realizing the promise of cloud computing technologies, then, means enabling IT teams to:

- Pick the right cloud environment for each application based on service, cost, and security requirements.
- Change the runtime environment for a given workload at any point in time, as application and/or business requirements change. One example might be moving to a different provider with cloud resources in time zones that are closer to an organization's customer base for faster application response times.
- Avoid vendor lock-in.

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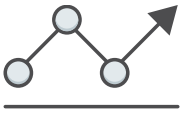
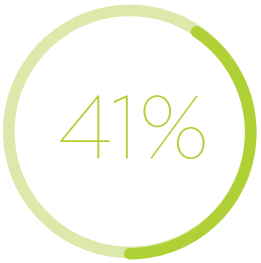
Multicloud Adoption Trends



A common hypothesis of how enterprises might avoid vendor lock-in is to use multiple public cloud offerings. While the survey data indicated that this approach is in play, growth in the number of companies planning to use more than one public cloud was modest, increasing from 12% currently to just 18% within two years. Again, this could be due to current technical challenges with achieving full orchestration across disparate cloud environments.

As noted earlier, financial organizations slightly outpace the global averages with their adoption of multiple cloud services today and their predicted near-term growth is moderate. The financial industry has achieved 13.5% penetration today, and its plans indicate that its multicloud use will bump up to 18% in two years' time, on par with the global average plans of all companies surveyed.

Across industries, multicloud usage lags that of hybrid cloud adoption. We've noted that 41% of companies plan to adopt hybrid cloud architectures in the next two years, when public cloud usage across industries will be at a comparative 18%. This finding implies that some organizations will seek to avoid lock-in more often by making applications and data portable between public and private clouds (in other words, using a hybrid setup), rather than relying on multicloud strategies.



We've noted that 41% of companies plan to adopt hybrid cloud architectures in the next two years,

when public cloud usage across industries will be at a comparative 18%.

- **Controlling cloud spend**. Another motivation for deploying hybrid clouds is likely enterprises' need to gain control over their IT spend. Organizations that use public cloud spend 26% of their annual IT budget on public cloud, with this percentage set to increase to 35% in two years' time. Most notable, however, is that more than a third (36%) of organizations using public clouds said their public cloud spending has exceeded their budgets.

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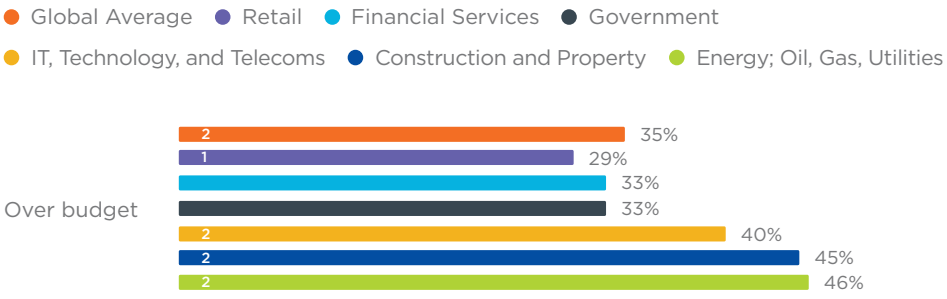
Financial institutions are doing marginally better than others at managing their public cloud expenses. About 33% reported being over budget, compared to 36%, on average, of cross-industry global companies (**Figure 7**). The IT/telecoms, construction and property, and energy/utilities industries reported far higher levels of public cloud overspending, while the industry most successful at controlling its public cloud spend was the retail industry. As the figure shows, the government sector reported the same percentage of overspending as the financial group (33%).

All these budget overages represent a significant number and will need to be addressed by all industries as their public cloud adoption increases.

About 33% reported being over budget,

compared to 36%, on average, of cross-industry global companies (**Figure 7**)

Figure 7. Managing Public Cloud Budgets: How Financial Services Stacks Up



[1] Sectors overspending on public cloud **less than** financial companies

[2] Sectors overspending on public cloud **more than** financial companies

What's causing the budget forecasting inaccuracies with public cloud computing?

- **Shadow IT and other complications**. Shadow IT practices that circumvent enterprise IT teams pose a significant challenge to forecasting and controlling public cloud spend. Well over half of all respondents (57%) report one or more incidents of shadow IT. Because respondents can only report incidents that are known, it follows that the actual number may be far greater.

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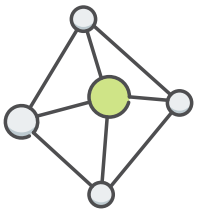
One core problem with shadow IT is that certain teams or departments might use cloud services that aren't well-suited for their applications. In addition, those services can end up underutilized or abandoned while the company continues to be charged for them (see Nutanix paper, "Optimizing Your Cloud Spend,").

A good portion of enterprises surveyed (30%) said they felt their organizations lacked skills when it came to decentralized IT purchasing and shadow IT, and financial industry responses surpassed that average at 33%.

Other challenges with public cloud service forecasting have to do with complex and frequently changing pricing from the cloud service providers.

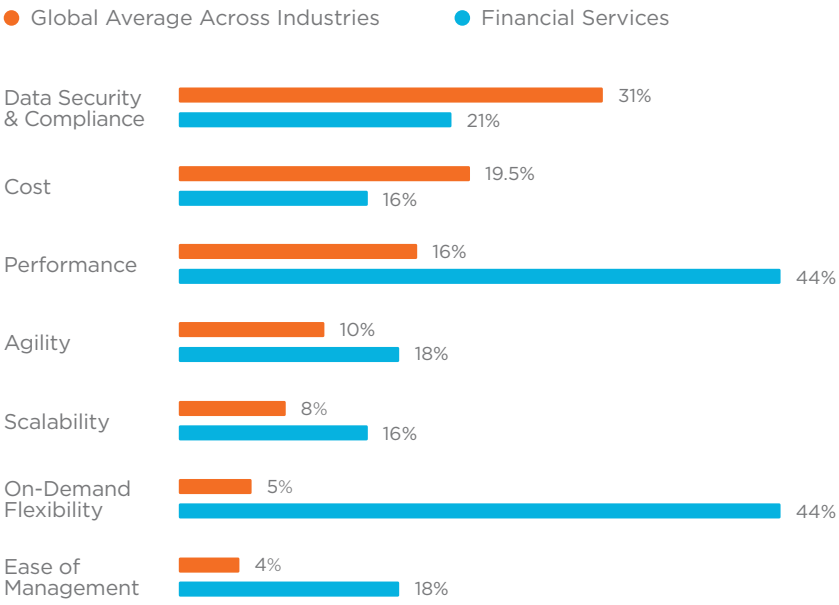


Which Cloud? Deciding Where to Run Workloads

Enterprise IT departments use a variety of criteria in deciding which infrastructure to use for their various applications. Data security and compliance ranked highest among global companies across all industries, on average, followed by cost and performance. Financial industry respondents fell in line with the averages in their top-three rankings, though they mentioned security slightly less and cost and performance slightly more often than the average (**Figure 8**). They also cited "agility" slightly more often as the top criterion in where to run their workloads.

Figure 8. Public/Private Cloud Decision Factors

Percentage of Respondents Ranking Attributes the #1 Criterion in Where to Run Workloads



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How Well Clouds Meet Enterprise Needs

A realization may be setting in that, while the public cloud is important, alone, it's not a panacea. Just over a 42% of companies across industries reported having all their organizations' needs met by public cloud; among healthcare companies, the number dropped slightly to 40%.

- **Where improvements are needed**. Respondents indicated a need for greater orchestration and application mobility across cloud environments as they seek greater flexibility to move apps to the "right" cloud on a more dynamic basis.

More than half of the respondents said that data security/compliance, performance, management, and TCO are critical factors in deciding where to put their application workloads. However, more than 25% cited these same variables as challenges with adopting public cloud. In other words, as is often the case with new IT solutions, the most important criteria are also the most difficult to achieve.

- **IT talent shortage**. While 88% of respondents said that they expect hybrid cloud to positively impact their businesses, hybrid cloud skills are scarce in today's IT organizations. These skills ranked second in scarcity only to those in artificial intelligence and machine learning (AI/ML), though the differential was a significant 10 points. Financial services respondents generally followed the global trends, although they generally reportedly slightly greater deficits in skillsets across all categories except for AI/ML (**Figure 9**). The greatest disparities were in blockchain technology and hybrid cloud skillsets: 6 percent more financial services respondents reported a lack of blockchain skillsets than other companies, on average, and 4% more reported a lack of hybrid cloud skillsets, as the figure shows.

88%

of respondents said that they expect hybrid cloud to positively impact their businesses.

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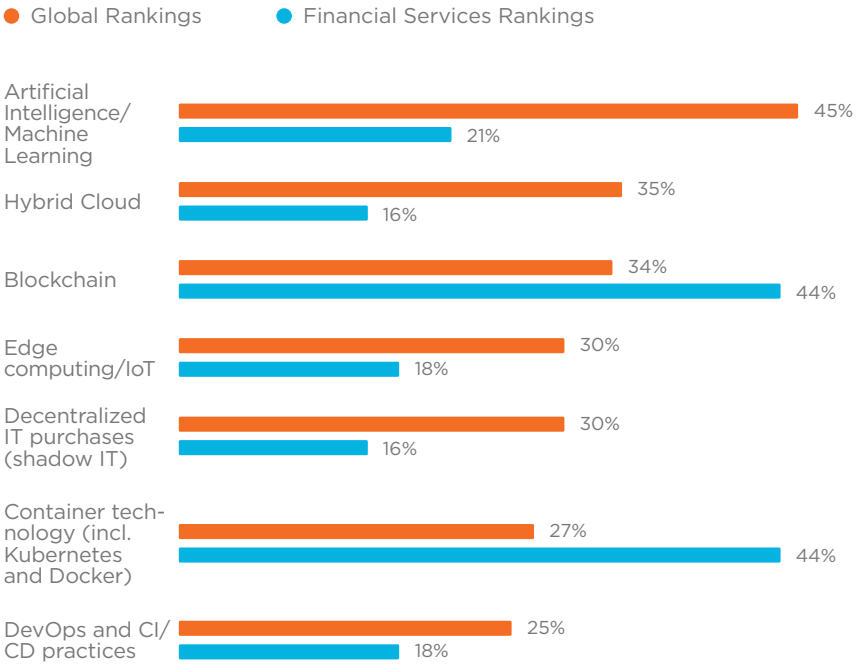
Figure 9. Which Skills Are Lacking within IT Organizations



Specialized skills in hybrid cloud are required, according to 74% of all respondents surveyed, because IT vendors do not currently provide the right hybrid cloud solutions, forcing IT experts to architect hybrid clouds using legacy technologies.

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Summary and Conclusions

1. **A hybrid direction is clear.**
   Enterprises are increasingly leaning toward hybrid cloud infrastructures, which combine private and public cloud services and their respective benefits. The financial services industry ranks among the top in its current hybrid cloud deployments with 21% penetration: it ties with the retail industry (21%), while media and entertainment companies are out front with 25% penetration. That landscape is poised to change dramatically in two years' time, when financial services' hybrid cloud use will rise to 44%, surpassing both M&E usage (36.5%) and the global average penetration of 41%.

2. **Hybrid clouds are attractive for optimizing application runtimes and avoiding vendor lock-in, but challenges remain.**
   A hybrid design will ultimately allow applications and components to interoperate between clouds, making applications portable across runtime environments and reducing the risk of lock-in to a single cloud vendor. Interoperability and application mobility among cloud types scored the highest in terms of what respondents perceive to be the biggest benefits of a hybrid cloud infrastructure. However, technical barriers limit application mobility across clouds today, likely accounting for at least part of the disparity between 91% of respondents ranking hybrid cloud as the ideal IT model and today's relatively low hybrid cloud penetration levels of just 18.5%.

3. **Application mobility, cloud interoperability, and new skillsets are essential to hybrid and public cloud success.**
   Going forward, hybrid cloud capabilities constitute a growing necessity in the dynamic, digital business climate, in which enterprises demand the freedom to dynamically provision and manage applications based on business needs. Enterprises are learning that where a given application is hosted today might not be the best place for it tomorrow. It comes as no surprise, then, that 61% of all companies and 63% of financial respondents cited application mobility among clouds as "essential" going forward.

As interoperability across cloud environments improves, with applications' network, identity, security, and management dependencies following apps across dissimilar infrastructures, enterprises are likely to achieve a better balance of cloud usage, improving their cloud economics and application performance, but without the current concerns that keep some applications trapped in traditional data centers. Reaching this ideal IT operating model will require more comprehensive hybrid vendor solutions, as well as greater expertise in designing, building, and operating hybrid clouds.

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