

THIRD ANNUAL

NUTANIX

ENTERPRISE
CLOUD INDEX

How the Public Sector Compares

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Third Annual Nutanix Enterprise Cloud Index

HOW THE PUBLIC SECTOR COMPARES



of public sector respondents said COVID-19 has caused IT to be viewed more strategically



of public sector respondents consider hybrid cloud their ideal operating model

About This Report

For the third consecutive year, Nutanix has commissioned research to learn about the state of global enterprise cloud deployments and adoption plans. In mid-2020, U.K. researcher Vanson Bourne surveyed **3,400** 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.

This year, survey respondents were also asked about the impact of the COVID-19 pandemic on current and future IT infrastructure decisions and how IT strategy and priorities might be changing because of it.

This report supplements the global **Third Annual Enterprise Cloud Index (ECI)** master report and focuses on cloud deployment and planning trends in the **global public sector**, with a brief breakout section on the **U.S. Federal Government**. It highlights key data points gleaned from IT professionals working in the public sector and how they compare to other global vertical markets with enterprise cloud experiences and plans.

The **Third 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.

KEY FINDINGS

- 1 More than three-fourths (82%) of global public sector respondents identify hybrid cloud as the ideal IT operating model for their organization.** They're evolving their infrastructures to get there, with reported plans that call for doubling their hybrid cloud usage within one year and growing their deployments to about **56%** penetration within five years, up from just under **13%** penetration today.
- 2 The journey to hybrid cloud requires significant decommissioning of legacy architecture, and public sector entities have already cut back extensively.** About **22%** of public sector organizations exclusively run traditional, non-cloud-enabled datacenters, down from **53%*** last year. Over the next five years, the public sector expects a 20-percentage-point drop in legacy datacenter installations and a substantial 43-point increase in hybrid cloud deployments.
- 3 Cost isn't the primary driver behind infrastructure change.** The public sector's top motives for modifying its IT infrastructures are to gain greater control of IT resource usage (**54%**) and to gain the flexibility (**50%**) and speed needed (**44%**) to meet business requirements.
- 4 The global pandemic has raised IT's profile and fueled cloud adoption.** Two-thirds (**70%**) of public sector respondents said COVID-19 has caused IT to be viewed more strategically in their organizations. In addition, public sector respondents said they increased their hybrid cloud, public cloud, and private cloud investments as a direct result of the pandemic, while the percentage of respondents with remote workers has nearly doubled.
- 5 More than half of public sector organizations plan to use multiple public clouds.** In line with global averages, **30%** of public sector respondents are currently running a mixed model of public cloud, private clouds and traditional non-cloud enabled datacenters, the highest percentage of any deployment model. However, **34%** also reported currently using more than one public cloud, a number that is expected to grow to **52%** within the next 12 months.
- 6 Security is top of mind for public sector organizations.** Public sector respondents identified security, privacy and compliance as the number one factor driving their deployment decisions. Similarly, the majority of respondents in this industry (**59%**) identified these same factors as the reason for moving applications back on-premises.

¹ The Third Annual ECI survey in 2020 asked which IT models respondents were running exclusively, while the 2019 survey asked simply which models were in use. The fact that reported private cloud usage is higher in 2020 is even more significant given that 2019 responses were not limited to that same exclusivity.

IT MODELS IN USE AND ON DECK

The Third Annual Enterprise Cloud Index research revealed global enterprise plans to aggressively shift investment to hybrid cloud architectures during the next five years. Global public sector respondents fell directly in line with that trend, with intentions to boost their use of hybrid cloud by **43 percentage points**, more than the global respondent average of **37 points** during that time.

Public sector organizations remain less united on whether hybrid cloud is the ideal IT model for their organizations than other industries. For example, hybrid cloud was cited most often as the ideal IT operating model by **86%** of all global, cross-industry respondents, while a comparative **82%** of public sector respondents said so (up slightly from **76%** last year). That number increases to **87%** when looking at respondents in the U.S. Federal Government specifically.

It's clear that public sector organizations and all industries have embarked on a journey to significantly ramp up hybrid cloud use. The steps they need to take to accomplish this involve decommissioning traditional, non-cloud-enabled datacenters as they adopt private and public clouds, which they will then integrate into a cohesively managed hybrid environment. This journey to a hybrid model has been affected by both pros and cons of industry and macro trends.

Mitigating Factors

For example, management tools that work across dissimilar cloud platforms are still maturing, and IT shops seek cross-platform cloud talent that's currently challenging to find. More than a third of public sector respondents (**36%**), for example, said they were short on skills needed to manage mixed private/public cloud environments, and **32%** said they lacked expertise in cloud-native technologies and containers, including Kubernetes. These issues have contributed to organizational struggles to fully adopt hybrid cloud.

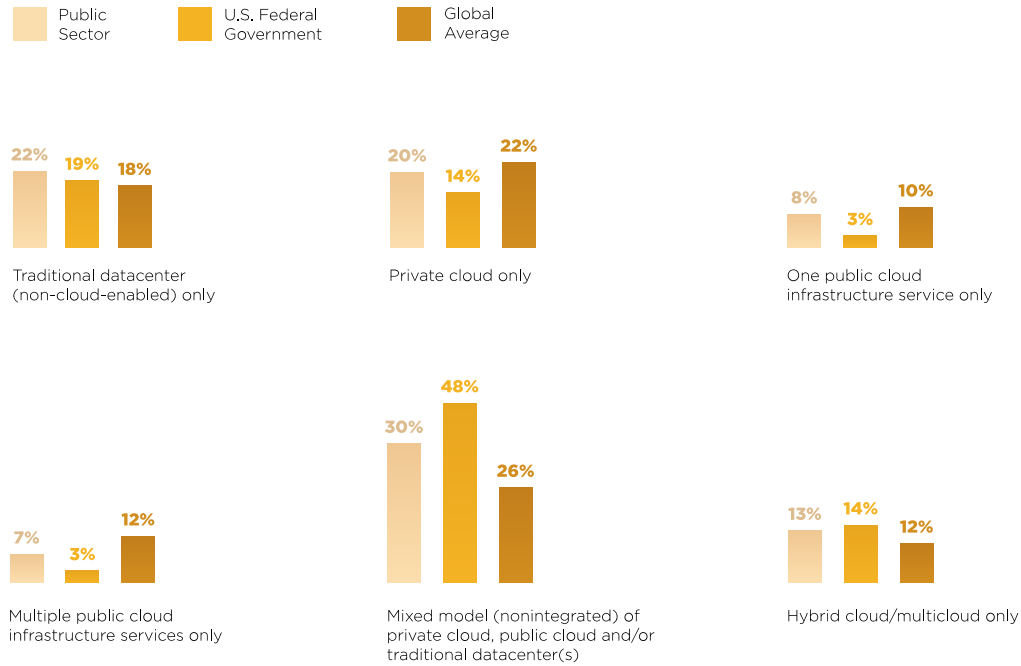
On the other hand, the COVID-19 pandemic has forced IT's hand in the public sector and elsewhere to quickly dial up their cloud computing deployments in support of sudden masses of remote employees. Work from home is a trend that respondents say will slightly, but not entirely, reverse itself in the coming years. This uptick in cloud usage bodes well for accelerating both hybrid cloud and digital transformation initiatives in global government agencies and other industries.

Integrating Mixed IT Models

More public sector respondents (**22%**) than the global average indicated that they're running traditional, non-cloud-enabled datacenters. However, **30%** are running a mixed model of private cloud, public clouds, and traditional on-premises infrastructure, putting them ahead of the global average. Respondents in the U.S. Federal Government specifically, seem to be ahead of both the public sector overall, with **19%** of respondents running traditional, non-cloud enabled datacenters and **48%** running a mixed model infrastructure. **(Figure 1)**

Being ahead of the global average in their mixed model deployments indicates that government organizations have begun their journeys toward a hybrid cloud environment. To reach their hybrid cloud goals, government agencies will have to evolve their private and public cloud adoption, and also merge them into integrated hybrid public clouds with unified visibility, management, security, and application portability. That step is dependent on the industry providing adequate management and migration tools, which experts say should see significant progress this year and next.

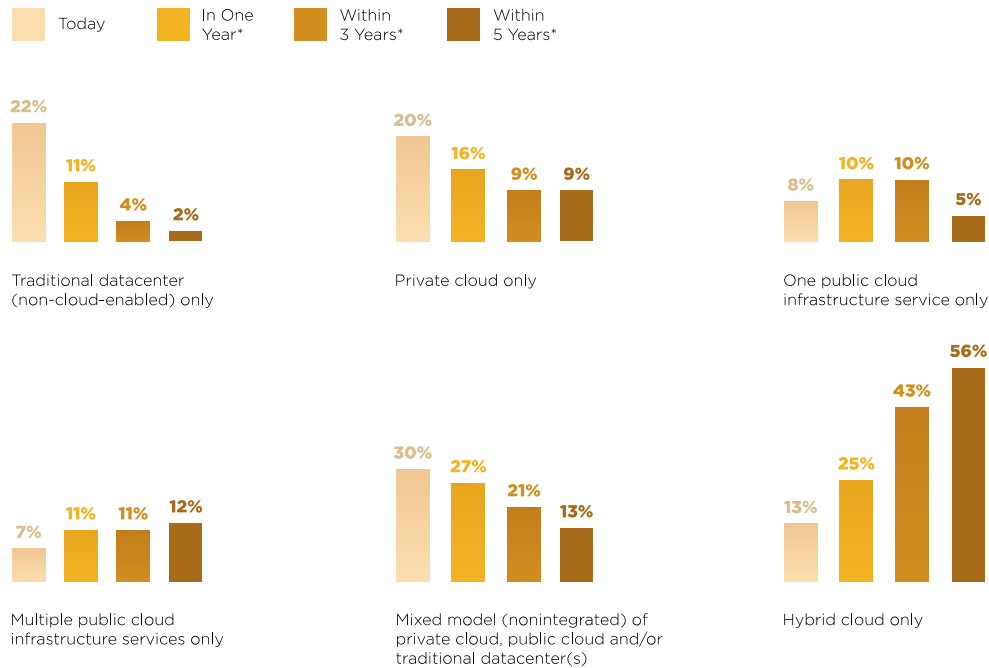
Figure 1. Comparative State of IT: What's Running Today*



*Percentages have been rounded to the nearest whole number

Global public sector respondents also reported ambitious plans to decommission, evolve, and integrate their mixed-model environments. In their five-year outlook, for example, the only IT models showing significant positive growth are hybrid cloud and, to a much lesser degree, multiple public clouds (multicloud) (Figure 2).

Figure 2. A Look Ahead: Current and Planned Public Sector Deployments

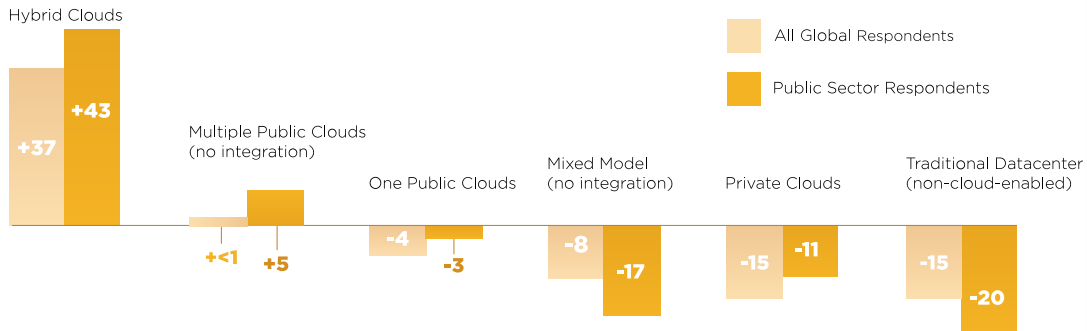


*Predicted; percentages have been rounded to the nearest whole number.

Over the next five years, public sector respondents expect a significant drop of **20 percentage points** in their use of non-cloud-enabled datacenter technology and a **17-point drop** in nonintegrated mixed models of various IT environments. **Figure 3** shows these trends for the public sector as compared to the global average, which accounts for all 3,400 ECI respondents polled across 13 industries.

Figure 3. Expected Infrastructure Deployment Changes by 2025*

Comparative percentage-point differentials: public sector vs. cross-industry averages



*Percentages have been rounded up or down to the nearest whole or half number

As cloud usage matures, it's not uncommon for companies to realize that one public cloud infrastructure service may not meet all their needs—whether because of price, location, performance, tools availability, or something else. As a result, some companies need to run more than one public cloud infrastructure service, which ultimately will get folded into the hybrid cloud mix. In fact, **34%** of **Third Annual ECI** respondents in the public sector reported currently using more than one public cloud alongside other IT models, and that number is expected to grow to **52%** within the next 12 months. This is especially true among U.S. Federal Government respondents, where **74%** expect to use two or more public clouds in 12 months' time.

HYBRID CLOUD: ITS PROMISES AND CHALLENGES

Why does the hybrid cloud infrastructure option continue to rank so high with IT departments? The **Third Annual ECI** responses indicate that, generally, the appeal is about more than cutting costs, which was the initial draw to cloud computing a dozen years ago.

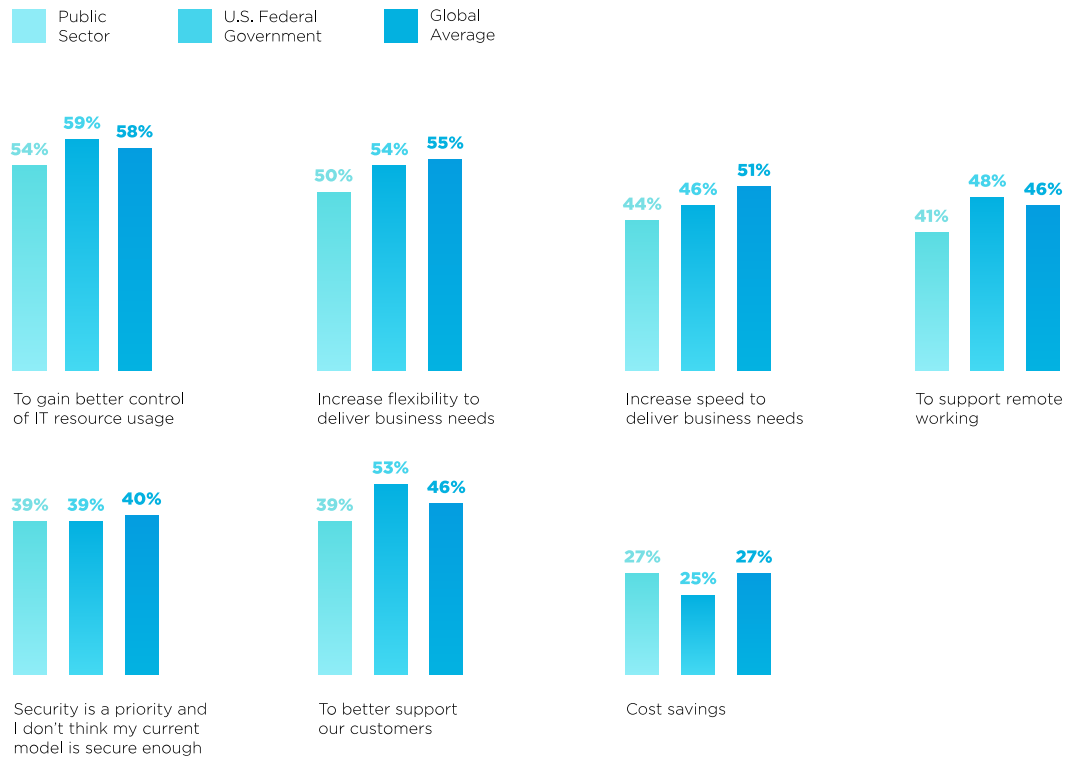
Improving Organizational Outcomes

Respondents said they're moving away from their current IT deployment models, first and foremost, to achieve better organizational outcomes. Among public sector respondents, specifically, the three anticipated benefits cited most often as reasons for modifying their IT infrastructures were:

- Greater control of IT resource usage **(54%)**
- Increased flexibility to meet organizational requirements **(50%)**
- Increased speed to meet organizational requirements **(44%)**

In this respect, global government respondents were similar to the global averages in that both groups picked top three outcomes that were the same, even though a smaller percentage of public respondents chose them. As **Figure 4** shows, moderately fewer public sector respondents chose remote work support and better customer support as reasons to change their IT infrastructures than their global peers. Additionally, unlike overall public sector respondents and the global average, more U.S. Federal Government respondents are focused on better supporting customers **(53%)** and remote working **(48%)** above increasing speed to deliver business needs **(46%)** when selecting their IT models.

Figure 4. Top Reasons for Migrating to Cloud-Enabled Infrastructure*



*Percentages have been rounded to the nearest whole number

Cost savings are less of an anticipated outcome across the board, with just over a quarter (**27%**) of public sector and global respondents citing it as a reason for changing their IT operating models, as the figure shows.

With these organizational goals in mind, why do public sector IT teams associate the benefits in **Figure 4** with hybrid cloud infrastructure? The answer might at least partially lie in defining what a true hybrid cloud is and does.

Optimizing Workloads

Global organizations have consistently indicated that they want the freedom to run workloads in the cloud infrastructure best suited to them based on fluctuating criteria. The “best” location could be dynamically determined by IT resource demands, compliance requirements, time-to-market pressures, cost, and other variables.

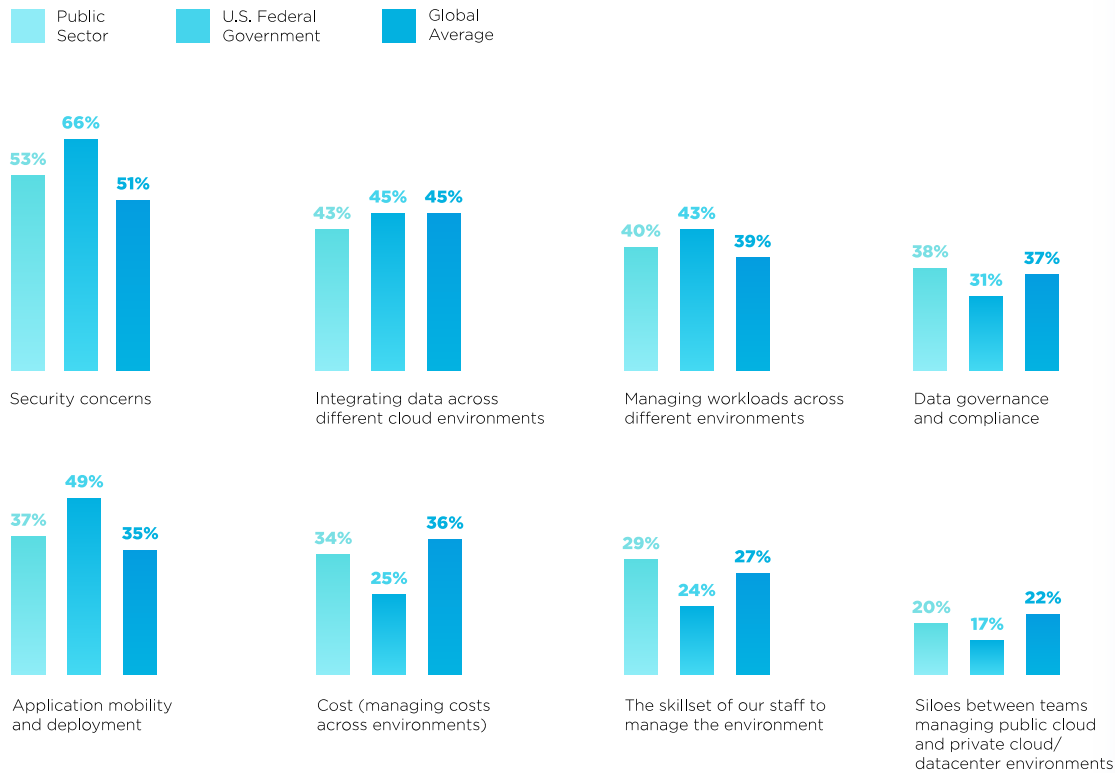
The ideal cloud of the moment might be private or public, and organizations want the agility to move workloads among them as requirements change. Private and public cloud infrastructures that can interoperate to support this application and workload fluidity with common management and uniform security are considered a hybrid cloud foundation. As such, they make borders between cloud environments all but invisible to employees and IT personnel alike.

Adoption Impediments

Most public sector and other ECI respondents indicate that they're in the process of transitioning to the described hybrid cloud infrastructure. Yet for most organizations, transitions don't happen overnight. Legacy applications may justify keeping older infrastructure for a time, for example, or require re-platforming skills that organizations may not have on hand.

Year over year, most ECI respondents cite security and related governance and compliance concerns as among their largest decision factors and greatest challenges with cloud computing. This year, public sector and global respondents alike mentioned security concerns most often as challenges to maintaining a hybrid cloud environment, though public sector respondents cited it slightly more often. Integrating data across different cloud environments came up second most often by public sector respondents (**43%**), followed by managing workloads across different environments (**40%**). The U.S. Federal Government follows similar trends, although security is seen as a concern for **66%** of respondents. **Figure 5** shows the top-ranked challenges of operating a hybrid cloud.

Figure 5. Biggest Challenges in Maintaining a Hybrid Cloud Environment*



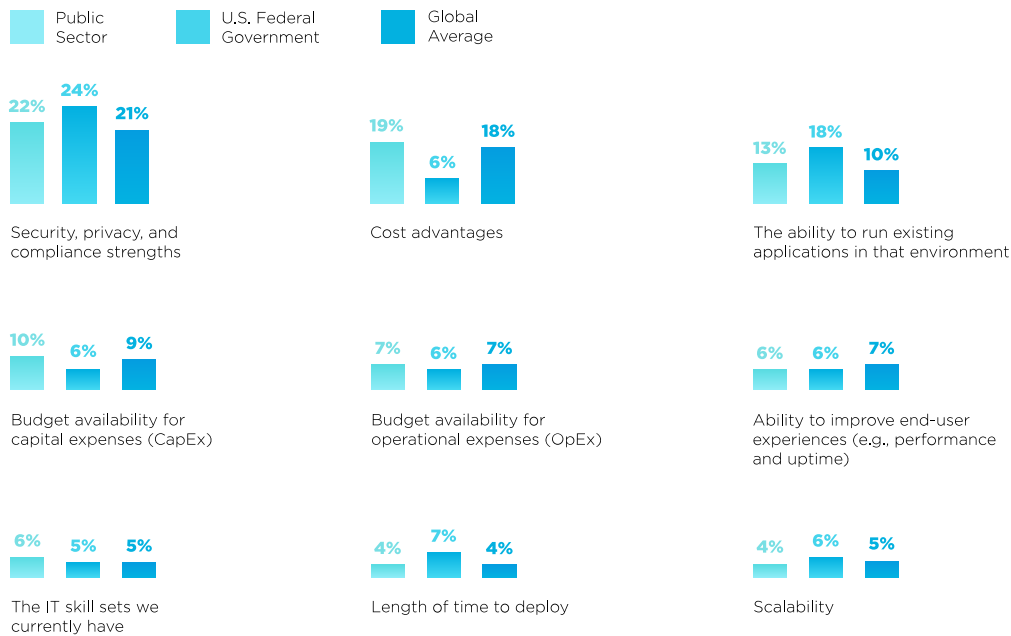
*Percentages have been rounded to the nearest whole number

The ability to migrate applications to and from private and public clouds and maintain application mobility across cloud environments is a core hybrid cloud attribute that's still maturing. This factor ranked similarly among public sector respondents compared to the global average. When asked about whether application migration had become easier or more difficult during the past year, more than half of public sector respondents (**53%**) noted that it has not improved.

When it comes to deciding what infrastructure(s) to deploy, all respondents mentioned the security, privacy, and compliance triumvirate as the number one decision factor, and public sector respondents fell right in line with the global average (**Figure 6**). In fact, they were in line with the averages down the line, with cost advantages mentioned second most often as the top factor, ability to run existing apps the factor cited third most often, and so on, as the figure shows. Once again, the trends were slightly different for U.S. Federal Government, with cost ranking lower with only **6%**, and the ability to run existing applications coming in second at **18%**.

Figure 6. Most Important IT Deployment Decision Factors

Percentage of global public sector respondents who ranked factor as first/most important*



*Percentages have been rounded to the nearest whole number

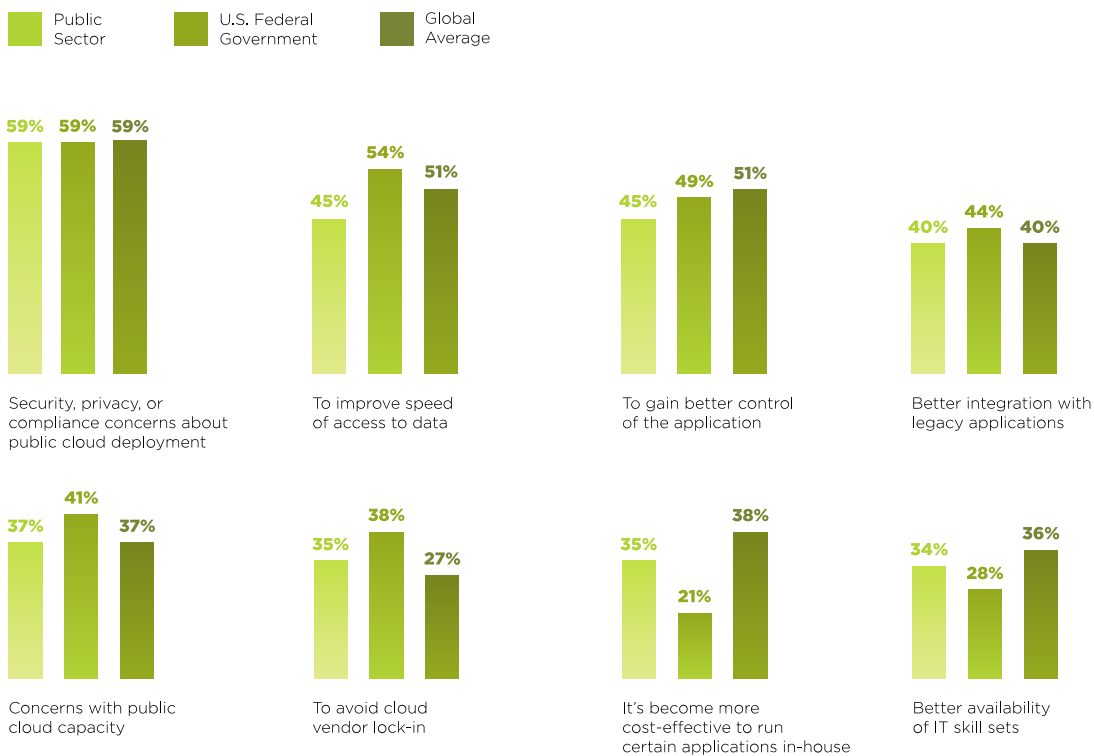
APPLICATION TRENDS

Short-term cloud deployment plans hit a speed bump between 2018 and 2019, when nearly three-fourths of ECI 2019 respondents (**73%**) reported moving applications out of the public cloud and onto private infrastructure. Correspondingly, the use of traditional datacenters increased from 2018 to 2019, which was unexpected. That's why, in 2020, we followed up with questions targeted at discovering the appeal of bringing apps back on-prem and to gain a better understanding of decision-making about where applications run today and will run in the future.

While it usually becomes cost-effective to move applications from a public cloud to existing on-premises infrastructure once their resource requirements become predictable, this didn't appear to be the driving reason behind public sector actions. Most cited worries about security, privacy, and compliance with public cloud (**Figure 7**).

Public sector respondents chose "improving speed of access to data" second most often, a nod to the faster application response times that are generally achievable when accessing resources across high-speed local-area networks, compared with having to traverse a wide-area network to reach public cloud resources. The biggest discrepancy, where public sector respondents deviated most from the global average, was in the area of avoiding cloud vendor lock-in, with **35%** of public sector respondents identifying this a driver for moving applications back on-prem, compared to only **27%** of global respondents, as the figure shows.

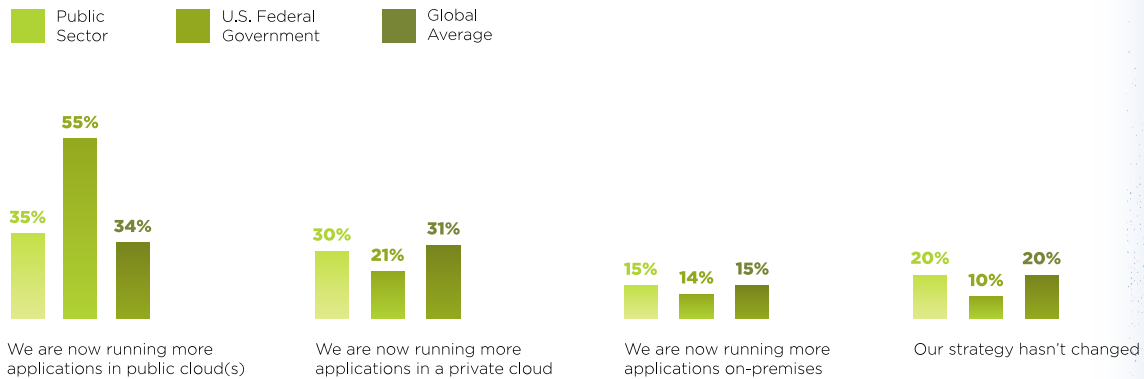
Figure 7. The Comparative Appeal of Running Apps On-Premises*



Public sector IT pros care mostly about security and improving data access speeds as reasons to run certain applications on-prem.
*Percentages have been rounded to the nearest whole number

Figure 8 shows public sector respondents' assessments of how much they've increased their use of various IT infrastructures between 2019 and 2020 and how those changes compare to all respondents. As **Figure 9** shows, public sector respondents follow global trends. U.S. Federal Government respondents, on the other hand, reported moving more applications to the public cloud than the broader public sector. This is likely, in part, in response to the pandemic as less than a quarter of respondents in this sector (**23%**) reported that their infrastructure was fully ready to support remote work before COVID-19 hit.

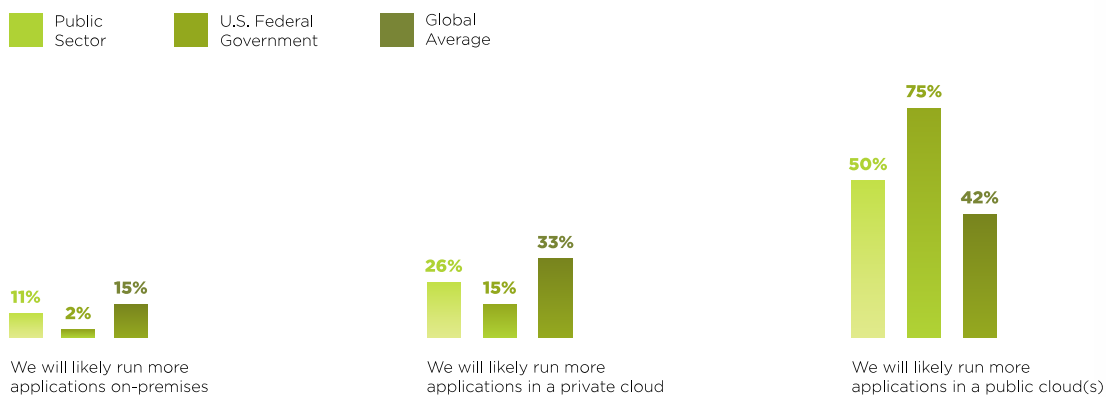
Figure 8. Changes in Where Apps Are Running, 2019 to 2020 *



*Percentages have been rounded to the nearest whole number

Figure 9 indicates still greater optimism that more applications will make their way to a public cloud infrastructure. Half of public sector respondents, and three-quarters of U.S. Federal Government respondents said they're likely to run apps there next year, outpacing the global average.

Figure 9. Where Will Apps Run Next Year?*



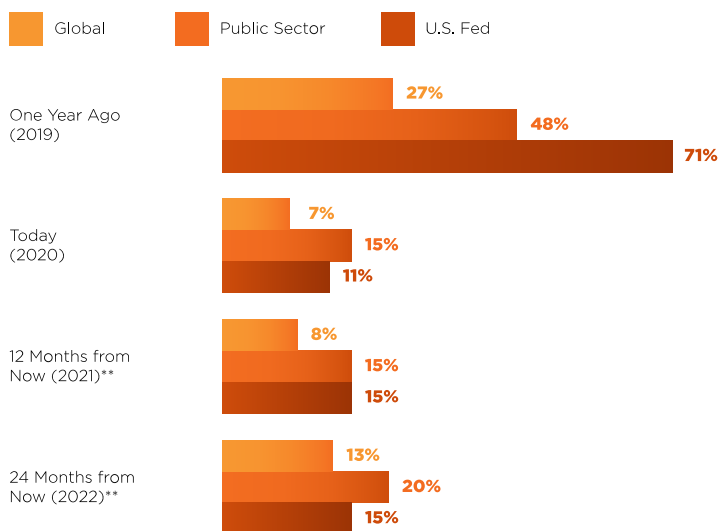
*Percentages have been rounded to the nearest whole number

COVID-19'S IMPACT ON THE PUBLIC SECTOR

The majority of ECI respondents said that the COVID-19 pandemic has caused IT to be viewed more strategically within their organizations, and nearly three-quarters (**70%**) of public sector respondents agreed. As indicated earlier, the pandemic has in many cases forced IT shops to turn to the cloud for readily available infrastructure that can accommodate larger numbers of work-from-home employees. While nearly half (**48%**) of public sector respondents, and **71%** of U.S. Federal Government respondents, said their organizations had no employees working remotely one year ago, that percentage has fallen by more than half to **15%** and **11%** respectively since the onset of the pandemic (**Figure 10**). Interestingly, both groups expect to continue to support a high percentage of remote workers after the pandemic.

Figure 10. Pandemic Drives Remote Work

Percentage of respondent companies with no employees working from home on a regular basis*

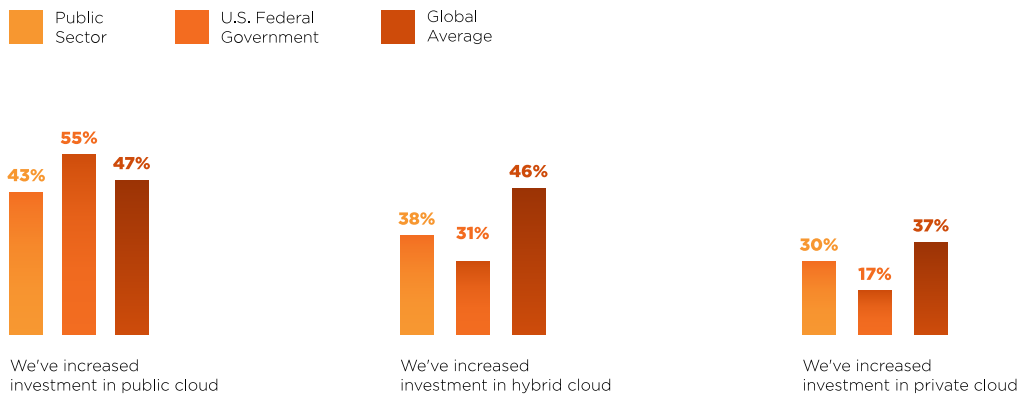


*Percentages have been rounded to the nearest whole number

**Predicted

All ECI respondents said that they have increased their cloud investments as a direct result of COVID-19. Public sector respondents' activities fell in line, but more aggressively than others. Both overall public sector and U.S. Federal Government respondents increased their public cloud environments more than the global average because of the pandemic (**Figure 11**). These moves likely reflect an effort to quickly provide access for new work-from-home employees where they were previously behind.

Figure 11. New Cloud Investments as a Direct Result of COVID-19



*Percentages have been rounded to the nearest whole number

HOW THE U.S. FEDERAL GOVERNMENT COMPARES

The global public sector can be broken into a number of sub-vertical markets, including education and per-country governments. This section takes a quick look at how global public sector IT trends compare specifically to the U.S. Federal Government.

Overall, the U.S. Federal Government is ahead of the global public sector in many areas, yet it faces similar challenges including hybrid cloud adoption and support for remote work.

Key findings among U.S. Federal Government respondents include:

ECI respondents in the U.S. Federal Government sector indicated ambitious hybrid cloud growth plans that outpace those of other industries. A sizable majority (**87%**) identified hybrid cloud as their ideal IT operating model, and they're evolving their infrastructures to get there. Government respondents' plans call for more than doubling their hybrid cloud usage within one year and growing deployments to about **74%** penetration within five years, up from about **14%** penetration today. These plans exceed the stated hybrid cloud growth expectations of respondents in all other vertical markets included in this year's study.

Cost isn't the primary driver behind plans for IT infrastructure change. The three anticipated benefits U.S. Federal Government ECI respondents cited most often as reasons for modifying their IT infrastructures were: 1) greater control of IT resource usage (**59%**); 2) greater flexibility to meet organizational needs (**54%**); and 3) better ability to support employees and other users (**53%**). Cost ranked low on government respondent priority lists and also on their lists of challenges associated with cloud computing.

The global pandemic has raised IT's profile and fueled cloud adoption. Two-thirds (**78%**) of U.S. Federal Government respondents said COVID-19 has caused IT to be viewed more strategically in their organizations. In addition, they've sharply increased their cloud investments as a direct result of the pandemic: more than half (**55%**) said they increased their public cloud usage, **31%** said they grew hybrid usage, and **17%** said they expanded their private cloud environments. These moves likely reflect an effort to quickly accommodate the sharp increase in work-from-home employees reported by government respondents with access to IT resources.

Fewer U.S. Federal Government respondents use public cloud services than any other industry, but they're aggressively increasing adoption. More than half of U.S. Federal Government respondents (**55%**) said they're running more applications in public clouds this year than last, and three-quarters (**75%**) said they're likely to run still more in the public cloud next year—significantly outpacing the **42%** of global respondents with plans to boost public cloud use next year.

Remote work is here to stay. While the U.S. Federal Government lagged behind all other industries, including the public sector overall, in remote work adoption prior to the pandemic, with **71%** of respondents indicating their organization did not support any remote work, that number has plummeted to **11%** today. More importantly, most organizations in this sector are planning to maintain support for remote workers, with only **4%** planning to go back to their pre-pandemic approach.

CONCLUSIONS

Public sector organizations, like most of their global colleagues in other industries, **favor a hybrid cloud architecture**. They've embarked on a journey to achieve it with an uptake in their use of private and public clouds and **rapid decommissioning of legacy datacenter architecture**. About a third said they're **running more apps both in public clouds and private clouds** this year. Half (**50%**) said they'll likely run more applications in public clouds next year, and a quarter (**26%**) said they'll run more applications in private clouds. Upping the use of both types of clouds are key steps on the journey to a hybrid model, as they form the components that will ultimately be integrated into the hybrid environment.

Public sector organizations are less driven by serving external users—remote workers and customers—than other industries when it comes to making IT infrastructure changes. Their motives have more to do with **gaining control of IT resources and increasing the speed and flexibility** they need to meet organizational requirements. And while their work-from-home population has increased with COVID-19 like all industries, **a greater number still report having a 0% remote work population** than most industries (**15%** compared to the **7%** global average).

Understandably, security, compliance, and governance drive much of the public sector's infrastructure decision-making and, like other industries, these organizations find security-related issues to be among the greatest challenges with operating their infrastructures. While the global response pool cited integrating data across different cloud environments as the biggest challenge with running a hybrid infrastructure second most often after security concerns, this issue ranked fifth with the public sector. However, public sector respondents cited managing workloads across environments third most often after security and governance issues.