February 2021
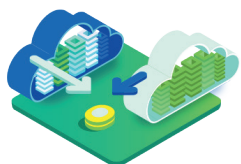
virtana

Survey Report

The State of Hybrid Cloud

Executive Summary

The public cloud IaaS and PaaS market was worth $84.8 billion in 2019, and this combined market is anticipated to grow at 27% CAGR over the next five years, [according to IDC](#). Within the context of this heavy push into the cloud, Virtana commissioned a survey to better understand organizations' multi-cloud deployment, experience, and success.

Key findings include:

SURVEY PARTICIPANTS AND METHODOLOGY

Virtana commissioned Arlington Research to conduct an online survey in November 2020. The 350 IT professionals who participated were in USA- or UK-based organizations with 250+ employees and had decision influence or purchase authority regarding on-premises, private, and/or public cloud infrastructure.

72%

72% of respondents state that their organization required applications to be repatriated for performance or cost reasons, or a combination of both, as a result of insufficient planning. Too many companies are failing to meet business-line demands when workloads are migrated to public cloud infrastructure/delivery.

95% of respondents have started their migration and 68% report having migrated 25% or more of their applications to a public cloud.

No single cost visbility tool garnered more than 20% of organizations' usage. While they agree that cost visibility across multiple clouds is a must-have, there's no clear approach to achieve this given the hodgepodge of tools currently deployed.

78%

78% of companies are investing in the public cloud at the same or an accelerated pace even in the current economic climate, and multi-cloud is the norm, with 81% using multiple public cloud providers.

Respondents indicated that this hybrid/multi-cloud trend will continue with organizations moving more traditional on-premises assets or workloads to the public cloud in 2021, making it imperative that they be able to improve visibility and manageability across hybrid/multi-cloud environments.

KEY FINDINGS:

Too many companies are getting the public cloud wrong the first time.

A staggering 72% of respondents report having had to bring applications back on-premises after migrating them to a public cloud. Given the time and effort it takes to migrate workloads and applications, this can result in significant setbacks and disruption for these businesses. Moreover, this can also result in a project costing 3x more as the workloads will be migrated, repatriated, and then potentially migrated again after additional planning and assessment.

Why does this happen? The biggest reason, cited by 41% of respondents, is that they migrated applications to the public cloud that should have stayed on-premises. The inference is that these organizations had insufficient information to make the right decisions about which applications to migrate and which should remain on-premises. The number two and three reasons reflect a lack of clarity regarding how those applications would behave in the public cloud: 36% reported provisioning issues in the public cloud, and 29% stated that performance degradation drove them to repatriate applications. **(Figure 1)**
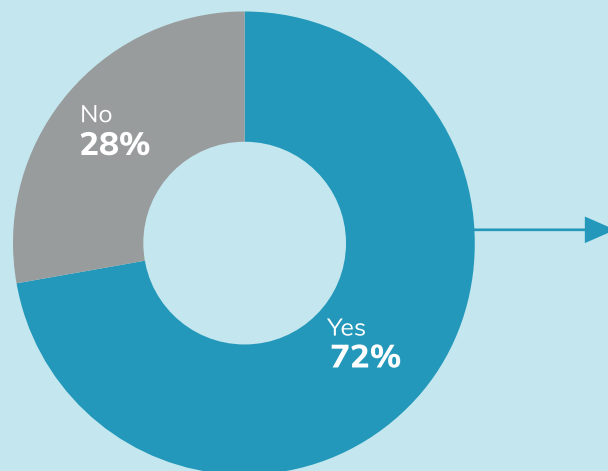
41% migrated applications to the public cloud that should have stayed on-premises

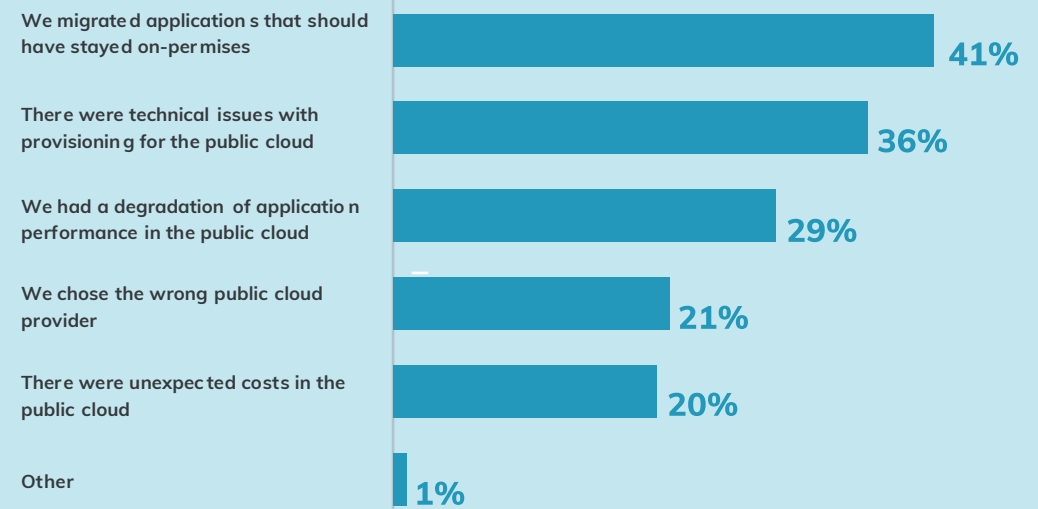**36%** reported provisioning issues in the public cloud

FIGURE 1

Have you ever migrated applications to a public cloud and then moved them back on-premises? (n=350)

Why have you migrated applications to a public cloud and then moved them back on-premises? (n=253)

No **28%**

Yes **72%**

We migrated applications that should have stayed on-premises	41%
There were technical issues with provisioning for the public cloud	36%
We had a degradation of application performance in the public cloud	29%
We chose the wrong public cloud provider	21%
There were unexpected costs in the public cloud	20%
Other	1%

Source: Arlington/Virtana Hybrid Cloud Survey, Nov 2020

FIGURE 2

Why have you migrated applications to a public cloud and then moved them back on-premises?

(n=253)

Source: Arlington/Virtana Hybrid Cloud Survey, Nov 2020

3 or more reasons
12%

2 reasons
21%

1 reason cited
67%
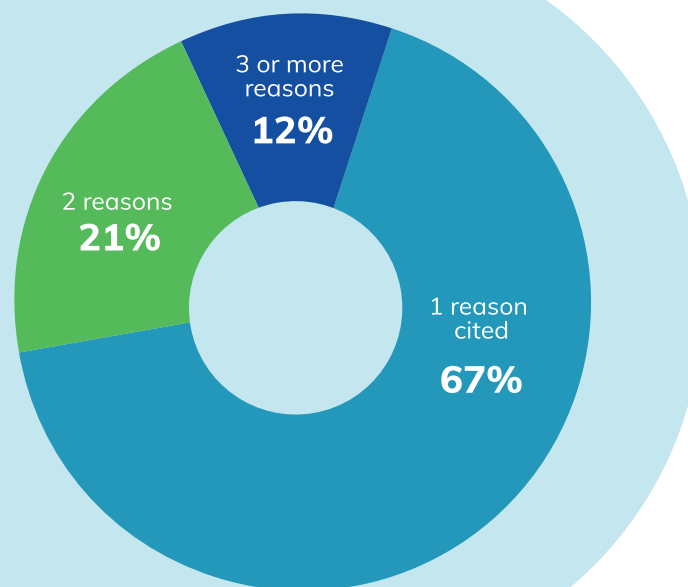
For many organizations, the repatriation decision wasn't driven by just one reason. In fact, one-third (33%) of the respondents cited two or more reasons for the rollback, and 12% experienced three or more of these issues. **(Figure 2)**

It's evident that these organizations are drastically misjudging the impact of migrating their applications and workloads to the public cloud environment.

These findings are curious given the high level of confidence organizations expressed in knowing what is running in their private and public clouds.
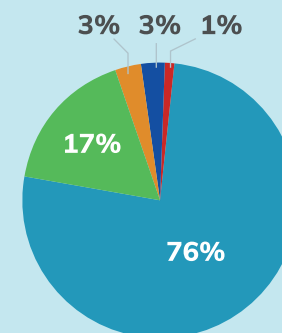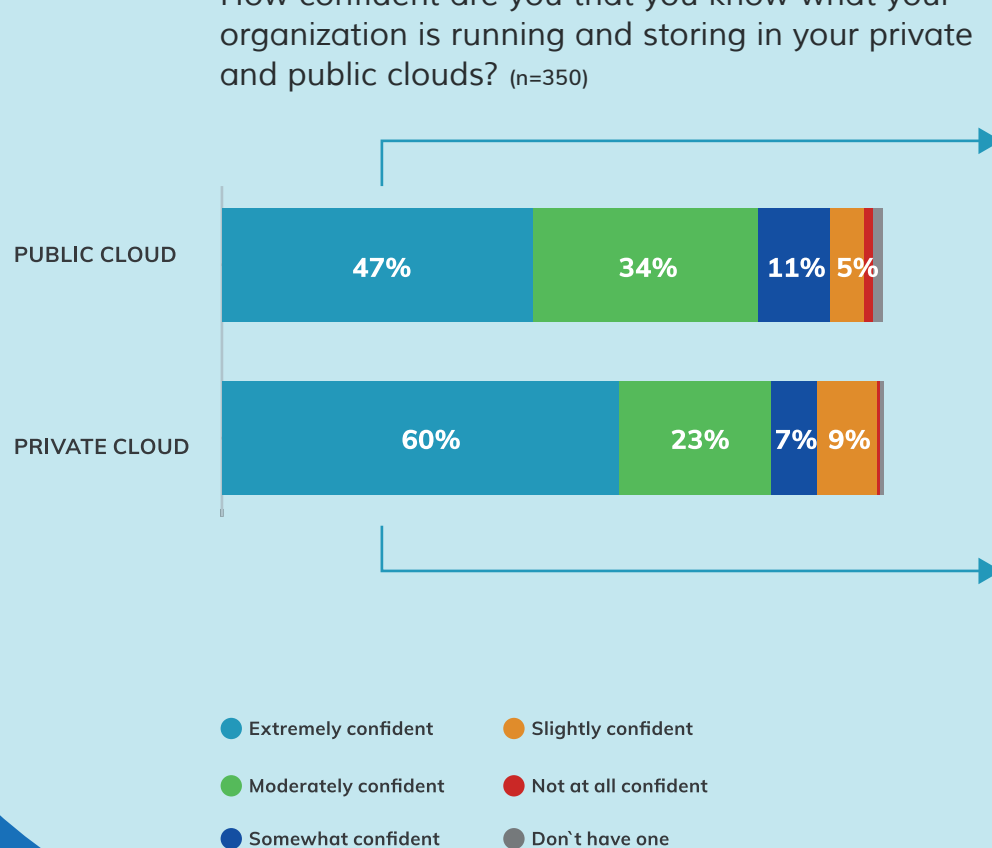
More than 80% of respondents stated that they are extremely or moderately confident they know what their organization is running and storing in the public and private cloud (81% and 83% respectively). **(Figure 3)** Confidence levels are higher for the private cloud, with 60% reporting that they are extremely confident compared with only 47% when it comes to public cloud.

This may not be surprising given the increased control organizations typically have over their private cloud. In fact, of the 211 respondents who said that they are extremely confident they know what's in their private cloud, only 60% are also extremely confident they know what's in their public cloud. But of the 166 respondents who said that they are extremely confident they know what's in their public cloud, 76% are also extremely confident they know what's in their private cloud. **(Figure 3)**

FIGURE 3

How confident are you that you know what your organization is running and storing in your private and public clouds? (n=350)

PUBLIC CLOUD: 47% | 34% | 11% | 5%

PRIVATE CLOUD: 60% | 23% | 7% | 9%

Legend:
- ● Extremely confident
- ● Moderately confident
- ● Somewhat confident
- ● Slightly confident
- ● Not at all confident
- ● Don't have one

Pie chart 1: 76%, 17%, 3%, 3%, 1%

Respondents who are extremely confident they know what's in their PUBLIC cloud on how confident they are about what's in their PRIVATE cloud. (n=166)

Pie chart 2: 60%, 33%, 2%, 4%, 1%
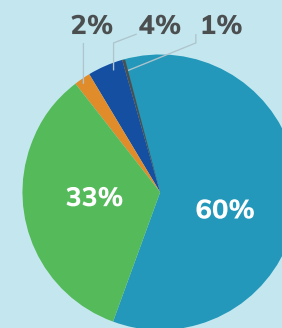
Respondents who are extremely confident they know what's in their PRIVATE cloud on how confident they are about what's in their PUBLIC cloud. (n=211)

Source: Arlington/Virtana Hybrid Cloud Survey, Nov 2020

Clearly, there's a big difference between simply knowing **what you have** and understanding **how it operates** in a given environment. Having basic inventory-level visibility, which is important but insufficient by itself, may be providing companies with a false sense of cloud-readiness.

That disconnect is even more apparent when correlating perceived confidence with the reasons for repatriation. Nearly half (45%) of respondents who repatriated public-cloud-deployed applications back in-house because of unexpected costs also strongly agree that they are able to manage and optimize costs in multiple public and private clouds. That's five points higher than the 40% in the overall respondent pool. **(Figure 4)**

FIGURE 4

We are able to manage and optimize costs in multiple public and private clouds

(e.g., a hybrid strategy).

Source: Arlington/Virtana Hybrid Cloud Survey, Nov 2020

All respondents
(n=350)

| 4% | 15% | 38% | 40% |

Respondents who repatriated applications because of unexpected costs in the public cloud (n=51)

| 6% | 12% | 37% | 45% |

Strongly disagree - ● 1 ● 2 ● 3 ● 4 ● 5 - Strongly agree
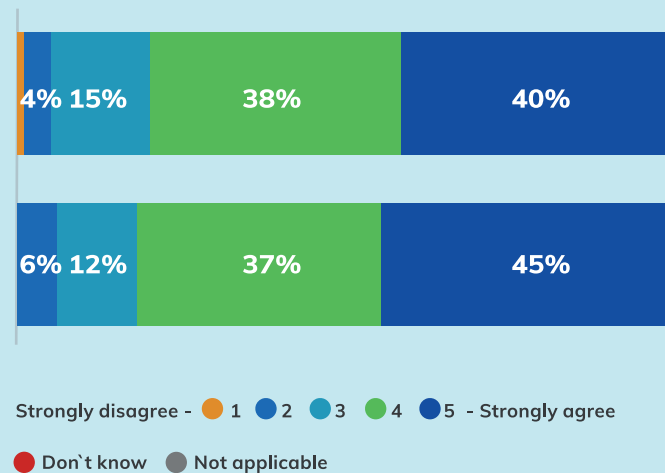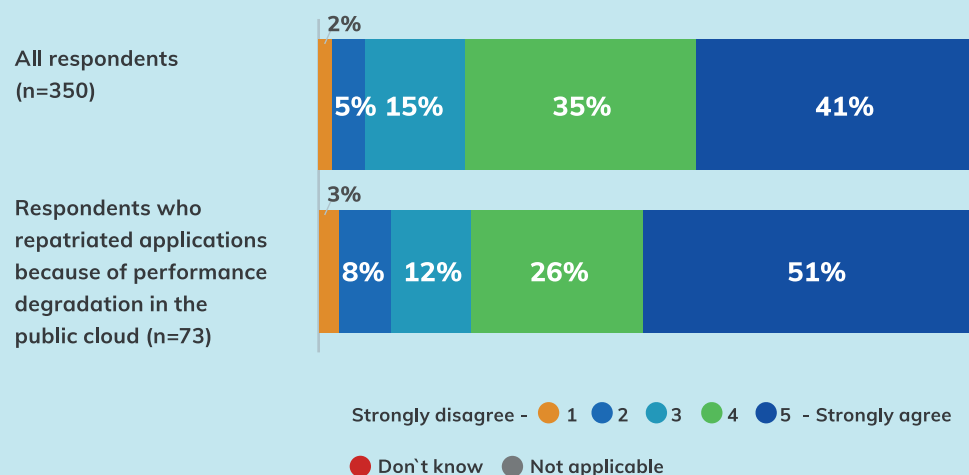
● Don't know   ● Not applicable

FIGURE 5

We are able to monitor and manage the performance of critical services and application infrastructure anywhere within our distributed enterprise environments.

All respondents
(n=350)

2%	5%	15%	35%	41%

Respondents who repatriated applications because of performance degradation in the public cloud (n=73)

3%	8%	12%	26%	51%

Strongly disagree - ● 1 ● 2 ● 3 ● 4 ● 5 - Strongly agree
● Don`t know ● Not applicable

Source: Arlington/Virtana Hybrid
Cloud Survey, Nov 2020

Further, 51% of respondents who repatriated applications because of performance degradation also strongly agree that they are able to monitor and manage the performance of critical services and infrastructure in distributed environments—ten points higher than the 41% of the overall respondent pool. **(Figure 5)**

While it would seem that the higher level of repatriation correlated with an organization's estimate of its monitoring abilities, it does beg the question, why wasn't this knowledge available prior to migration? Without insight into application behavior and interdependencies, and a realistic assessment of their organization's ability to monitor, manage, and optimize costs and performance, IT professionals may be setting themselves up to make poor migration decisions. This would have a significant effect in terms of what gets migrated or how the destination public cloud instance is configured that can end up costing time and money.

Cost visibility across multiple clouds is a must-have, but there's no clear approach.

Given the strategic nature of public/multi-cloud deployments, it's imperative that organizations can observe and manage capacity, consumption, and performance across multiple public and private cloud environments. Not surprisingly, that's exactly what respondents indicated they are looking for in cloud cost reports. Over half of respondents would like to see detailed bill analysis with the ability to group, sort, and filter; rightsizing recommendations; and a consolidated view across all public and private clouds. Just under half want to get recommendations that aim to improve purchasing decisions. **(Figure 6)**

FIGURE 6

What would you like to see in your cloud cost report?
(n=267)

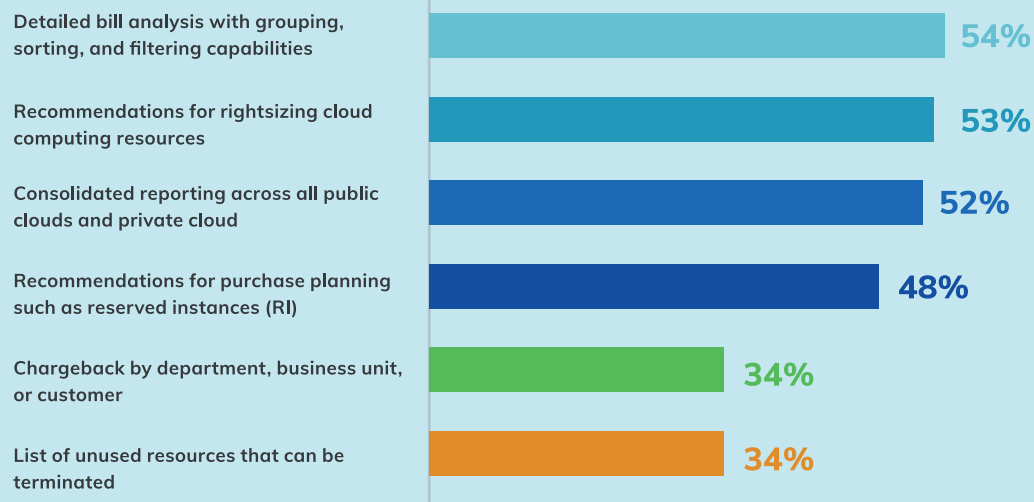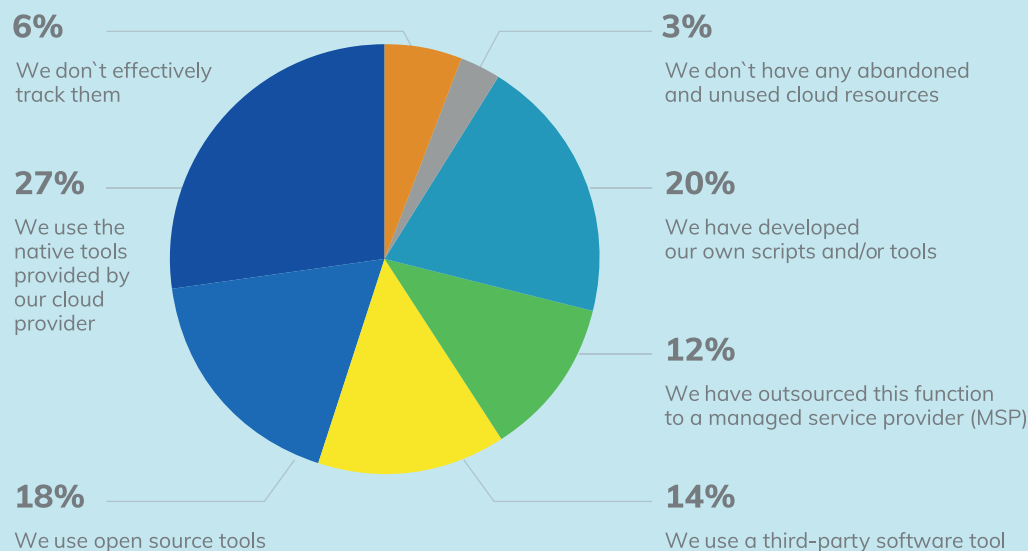Source: Arlington/Virtana Hybrid Cloud Survey, Nov 2020

Detailed bill analysis with grouping, sorting, and filtering capabilities	54%
Recommendations for rightsizing cloud computing resources	53%
Consolidated reporting across all public clouds and private cloud	52%
Recommendations for purchase planning such as reserved instances (RI)	48%
Chargeback by department, business unit, or customer	34%
List of unused resources that can be terminated	34%

FIGURE 7

How do you track any abandoned and unused cloud resources your organization has? (n=350)

6%
We don`t effectively track them

3%
We don`t have any abandoned and unused cloud resources

27%
We use the native tools provided by our cloud provider

20%
We have developed our own scripts and/or tools

12%
We have outsourced this function to a managed service provider (MSP)

18%
We use open source tools

14%
We use a third-party software tool

Source: Arlington/Virtana Hybrid Cloud Survey, Nov 2020

While not at the top of the list, more than one-third of organizations do want reporting on unused resources that can be terminated, **(Figure 6)** but how are they finding that information today? Only 3% of respondents believe they don't have any abandoned and unused cloud resources, so it would seem that companies are clearly aware of the concern. **(Figure 7)**

What's not clear is the best strategy to identify those orphaned resources, as respondents seem to be all over the map. Most (79%) employ some sort of tool whether it's offered by their cloud provider—the most prevalent option indicated by 27% of respondents— available as open source, purchased through a third party, or developed in-house. **(Figure 7)**

The public cloud is a strategic investment and adoption is accelerating.

The responses we've examined so far are particularly concerning given the prevalence of public cloud migrations and the strategic importance of those initiatives to the participant's organization. In fact, the vast majority of respondents indicated that their organization has started moving some applications to the public cloud, with about one-third in the early stages having migrated less than one-quarter of their applications, one-third having moved between one-quarter and half of their applications, and one-third with more than half of their applications already in the public cloud. **(Figure 8)**
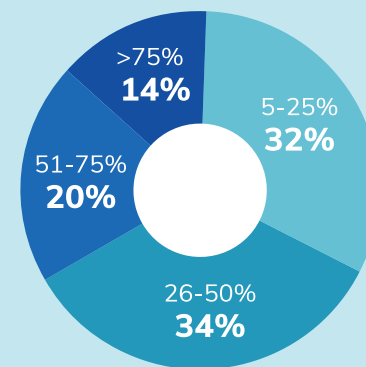
FIGURE 8

Has your company started migrating applications to a public cloud such as AWS, Microsoft Azure, or Google Cloud Platform?
(n=350)

Source: Arlington/Virtana Hybrid Cloud Survey, Nov 2020

No
5%

Yes
95%
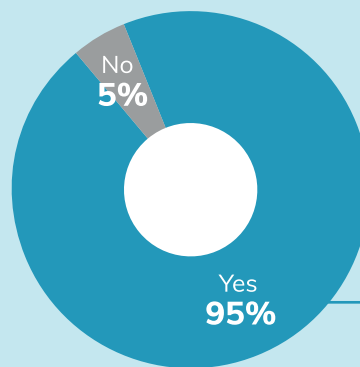
What percentage of your applications have you already migrated to a public cloud?
(n=330)

>75%
14%

5-25%
32%

51-75%
20%

26-50%
34%

The current economic climate has forced most organizations to sharply redefine their priorities and adjust their initiatives.

With 42% of respondents continuing their migration to the public cloud at the same pace, and 36% accelerating their plans, it's clear that more than three-quarters consider public cloud deployments are a strategic investment. **(Figure 9)**

Further, they're not putting all their eggs in one cloud basket. The vast majority (81%) of companies who have started their migration to the public cloud have engaged multiple providers. **(Figure 10)**

FIGURE 9

What impact has the 2020 changed economic climate had upon your migration of applications to a public cloud? (n=350)
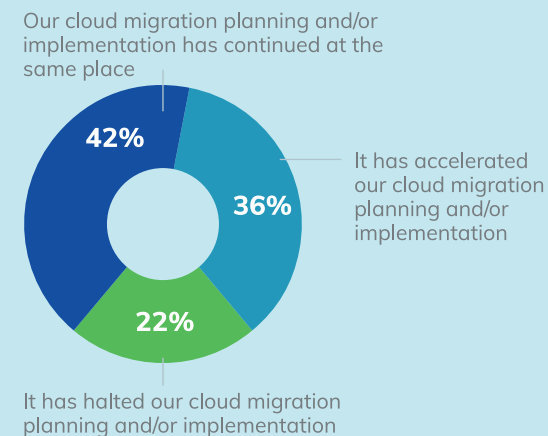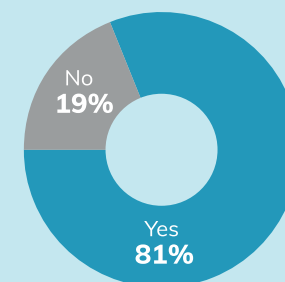

Our cloud migration planning and/or implementation has continued at the same place — 42%

It has accelerated our cloud migration planning and/or implementation — 36%

It has halted our cloud migration planning and/or implementation — 22%

FIGURE 10

Are you using multiple public cloud providers such as Azure, AWS, IBM, or Google? (n=331)
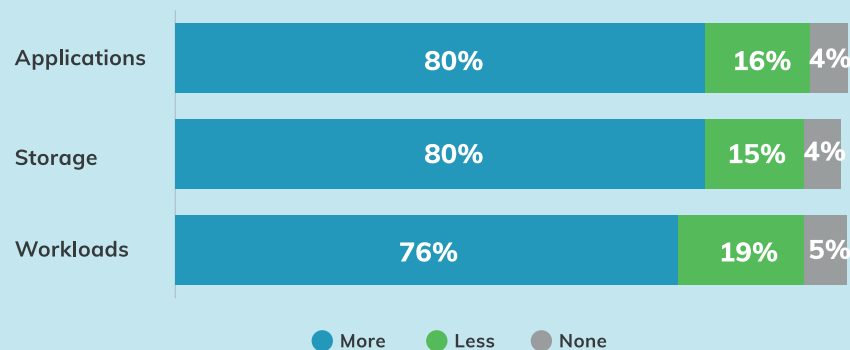

No 19%

Yes 81%

Source: Arlington/Virtana Hybrid Cloud Survey, Nov 2020

FIGURE 11

Thinking about your plans for 2021, do you plan to use the public cloud for more or less of the following? (n=350)

	More	Less	None
Applications	80%	16%	4%
Storage	80%	15%	4%
Workloads	76%	19%	5%

● More   ● Less   ● None

Source: Arlington/Virtana Hybrid Cloud Survey, Nov 2020

The respondents indicate that their march to the public cloud will continue in 2021, with the majority planning to migrate more of everything to the public cloud, with a slight edge going to applications and storage. **(Figure 11)**

This is unsurprising given the strategic position the public cloud holds within most organizations and their continued investment in it even during the 2020 economic climate. The question is whether they will be able to overcome the past challenges that resulted in some level of repatriation.

The State of Hybrid Cloud in 2021

When you #KnowBeforeYouGo, the likelihood of a successful cloud migration can be greatly increased.

When it comes to hybrid/multi-cloud, organizations in this survey indicated that they are "all in" and forging ahead with investments. But their ability to truly understand what happens to their applications and workloads before, during, and after migration is at best limited.

To realize the full potential of their cloud strategy and investments, organizations must be able to manage and optimize resources effectively so that the business overall can contain costs, ensure performance, and avoid waste. However, the responses illustrated in this report indicate that many organizations' achievements in this regard may be falling short of perception.

To avoid repeating, or worse exacerbating, early mistakes that forced them to backtrack, companies must undertake an honest assessment of their ability to:

- Model the behaviors and costs of workloads in the public cloud before migrating them;

- See detailed usage, performance, and other characteristics across multiple cloudenvironments; and

- Easily manage the entire infrastructure no matter how many public and private clouds are involved.

Once gaps in those capabilities are identified, organizations will be well-positioned to make the appropriate investments and accelerate the transformational benefits of the hybrid cloud.

Virtana: Know Before You Go

Virtana delivers the industry's first unified platform for migrating, optimizing, and managing application workloads across public, private, hybrid, and multi-cloud environments. Using artificial intelligence for IT operations (AIOps) technologies, including machine learning and advanced data analytics, the cloud agnostic Virtana Platform solves the most difficult challenges facing enterprises as they seek to leverage public clouds.

The platform enables a "know before you go" approach by providing intelligent observability into which workloads to migrate. It also ensures that unexpected costs and performance degradation are avoided once workloads are operating in the cloud. With the Virtana Platform, enterprises can confidently speed cloud adoption and reduce cloud operating costs by simplifying management of their IT environments.

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