



SURVEY REPORT

The State of Multicloud: Virtual Desktop Deployments in 2019



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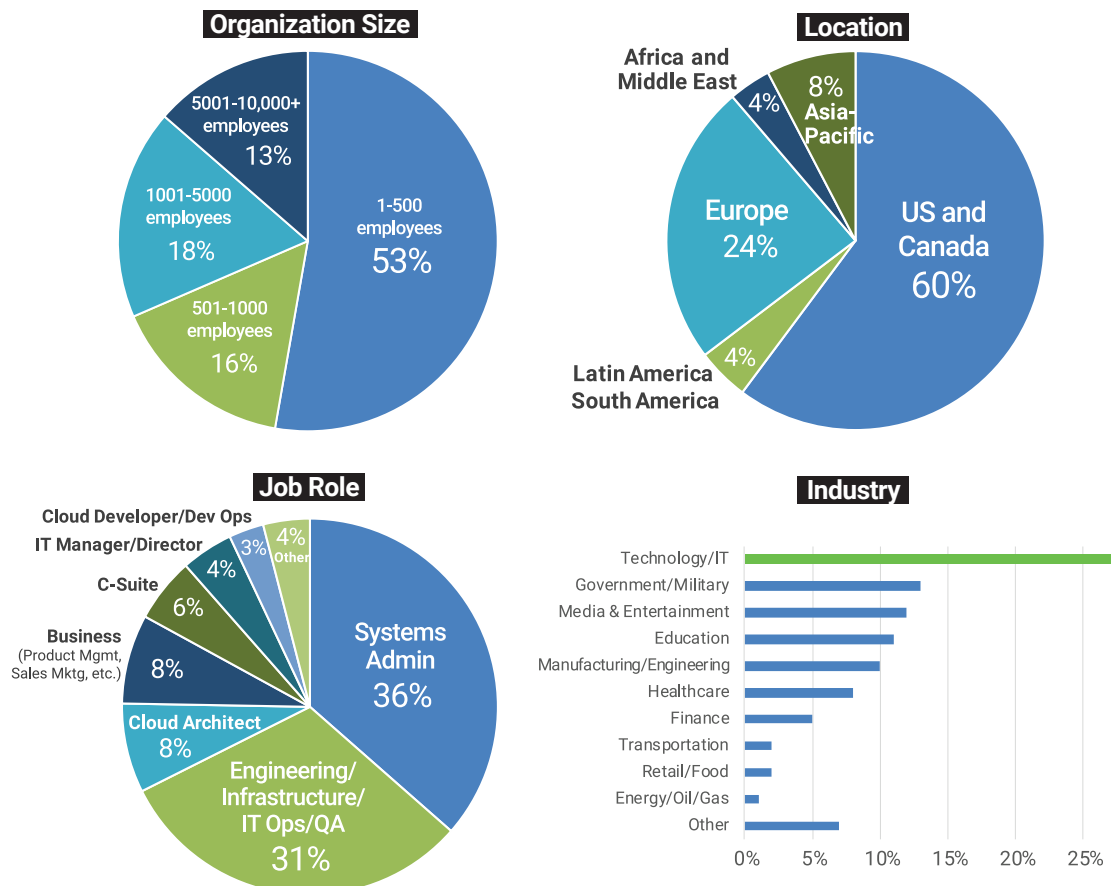
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Introduction

The backbone to this report is based on a new survey conducted by Teradici, titled “The State of Multicloud: Virtual Desktop Deployments in 2019” to better understand the landscape of hybrid and multicloud desktop deployments, including the reasons for choosing them, how workloads are managed, and challenges associated with executing a multicloud strategy. The survey included individuals holding IT roles and a secondary set of IT professionals with job titles or roles related to virtualization. Teradici’s contacts includes users who use virtualized desktops via on-premises data centers and/or public cloud providers as well as contacts who have not virtualized desktops.

The survey, which was conducted in April 2019, included 489 total. The respondents were well distributed across company size, with half of respondents from companies with less than 500 employees, and the remaining respondents split between companies with 501-1000 employees, 1001-5000 employees, and large enterprises with 5000+ employees. The majority of respondents work in the U.S. and Canada; however all other regions of the globe were represented in the results. Respondents also represented a wide range of verticals, with Technology/IT, being the most popular, followed by Government/Military, Media & Entertainment, Education, Manufacturing/Engineering, Healthcare, Finance, Transportation, Retail/Food, Energy/Oil/Gas, and Other.

Survey Participant Profile



Teradici PCoIP technology was developed to help people work collaboratively from anywhere, knowing that sensitive information never leaves the data center and work can never be lost or stolen. Our first customers remoted individual workstations to on-premises data centers, and then soon after, computing resources were moved to a virtual desktop environment. Now, many of our customers are moving to the cloud with Teradici Cloud Access Software using leading public cloud environments including AWS, Google Cloud, and Microsoft Azure.



Google Cloud



Microsoft Azure

In conducting this survey, Teradici wanted to learn more about where our current and future customers are in their migration to the cloud, and why. We wanted to better understand the landscape of multicloud desktop deployments, including the reasons for choosing them, how workloads are managed, and challenges associated with executing a hybrid or multicloud strategy.

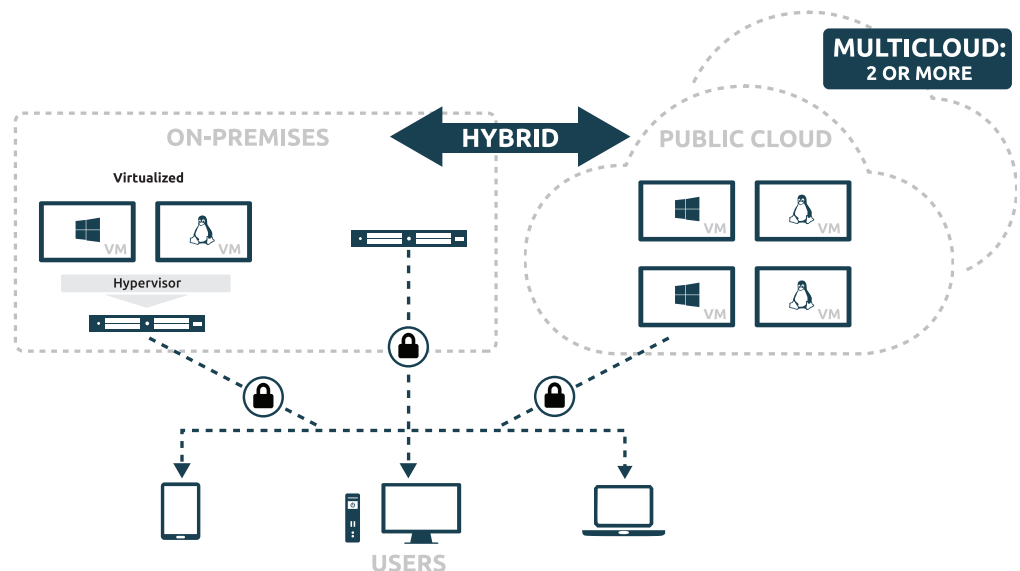
There are several clear themes that emerge from the survey results. In-line with our product capabilities, respondents overwhelmingly believed in the importance of a hybrid or multicloud strategy, regardless of whether they had actually implemented one themselves. Key findings are summarized below:

- **Ease of management** is the most important factor in choosing a virtualization solution, with more than double the percentage of respondents feeling this way, as compared to the next two factors, which are user experience and performance
- **Disaster recovery** is cited as a top factor with 65% of respondents saying that it is extremely important or very important for a multicloud virtualization deployment to help with a disaster recovery strategy
- **Training** is the most significant factor limiting organizations from migrating to multicloud deployments
- **Top reasons for moving workloads** from one cloud to another include cost savings, disaster recovery, location of data center, and availability of virtual machines/GPUs
- Not surprisingly, **cost is the top reason** for influencing the selection of a particular cloud (over 70% of respondents); while it is also the top reason why organizations without a multicloud deployment strategy hesitate to move to a hybrid or multicloud environment

What is a multicloud deployment strategy?

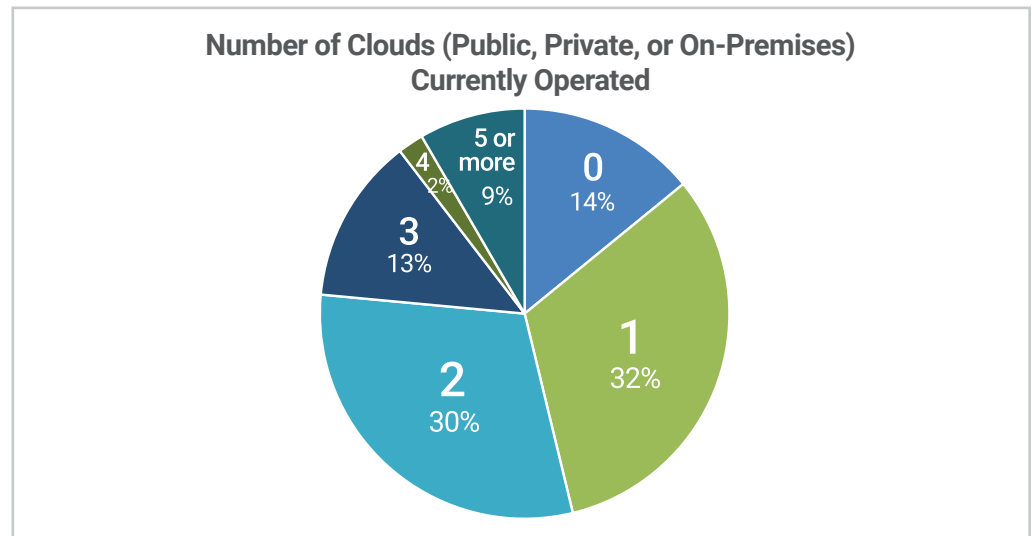
The use of the term multicloud is still new to many organizations and so for the purposes of this report, Teradici has defined multicloud environments as those utilizing the services of at least two cloud providers.

- **Public cloud providers** include AWS, Google Cloud, and Microsoft Azure, and are universally accessible to consumers.
- **Hybrid cloud scenarios** refer to a combination of on-premises plus a public cloud with orchestration between the two. For those who are reluctant to move all workloads to the public cloud or for organization with stringent security/IP mandates, a hybrid environment provides the best of both worlds; the peace of mind of on-premises data centers plus the ability to optimize availability, scale when needed, and save costs in the cloud.

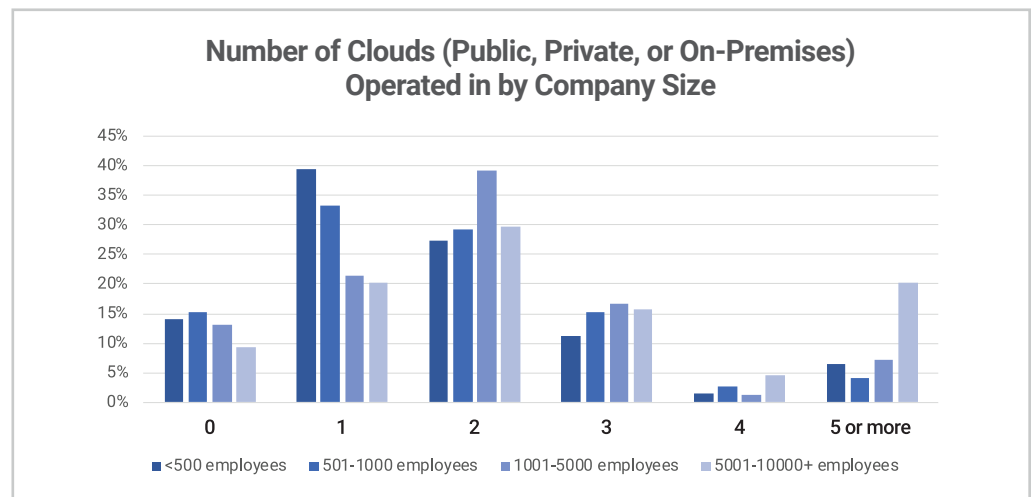


Multicloud environments, in the context of desktop deployments, are particularly advantageous for providing organizations, or groups/teams within an organization, the ability to choose where their desktops are hosted leveraging the most suitable services. This can save time, effort, and cost. It also allows the ability to manage concurrent users; such as the option to serve a single virtual machine to alternating shift workers, for example.

According to the results, nearly half of the respondents (46%) said they currently operate in a single cloud or none at all. The remaining respondents (54%) operate in a multicloud environment, most commonly with two clouds. Of the 54 percent using a multicloud strategy, 9 percent of respondents are currently using a mix of 5 or more cloud services where they have moved workloads or applications across a varied mix of public cloud or on-premises environments. In comparison, a recent [Gartner survey](#) that polled only public cloud users, found that 81% of their respondents are working with two or more providers.



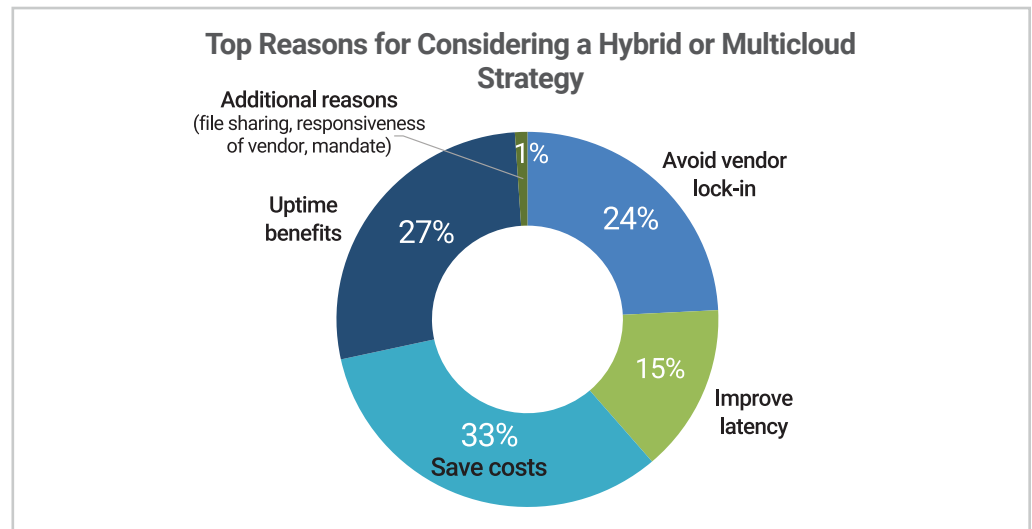
Unsurprisingly the number of clouds increases with the company size.



Those companies who are taking full advantage of the cloud's benefits, and have implemented a hybrid or multicloud strategy were largely driven by two main overarching themes: cost and performance. Following cost savings (33%), the results showed nearly a quarter (24%) of respondents said that avoiding vendor lock-in was a major reason for considering their hybrid or multicloud strategy. Having the flexibility to move workloads from one cloud provider to another, enables companies to realize price elasticity by not relying on a single public cloud provider for fees and terms.

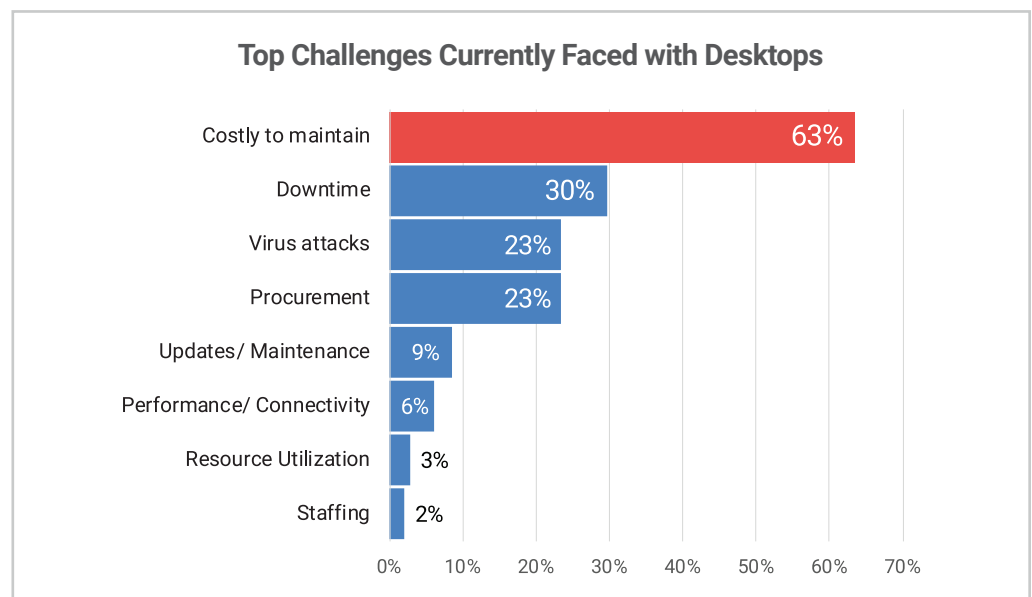
Exploring the options further, avoiding vendor lock-in is likely due to restrictions on price flexibility, and having to rely on a single public cloud provider for fees and terms. As for improving latency, being tied to a single public cloud, one is limited to the datacenter availability and locations of that public cloud provider. If multiple cloud providers are utilized, the number of available virtual machines and proximity to locations can improve.

In addition, 27 percent of respondents felt uptime benefits, were a big reason to move to a hybrid or multicloud strategy. It is also a big focus for the top cloud providers to ensure that there is limited downtime as companies need to have ongoing access to their systems at all times without interruption.

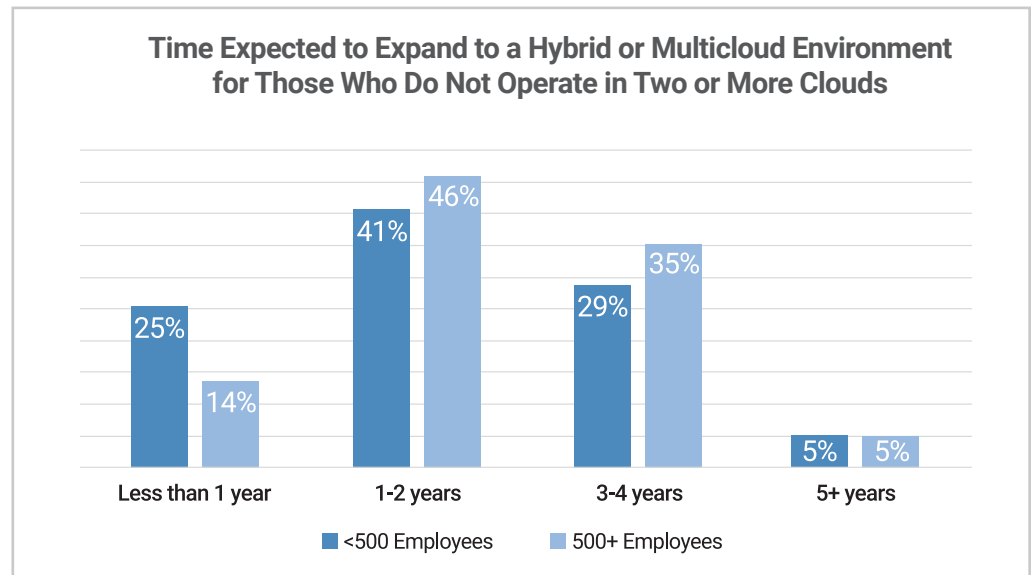


Top challenges with desktops

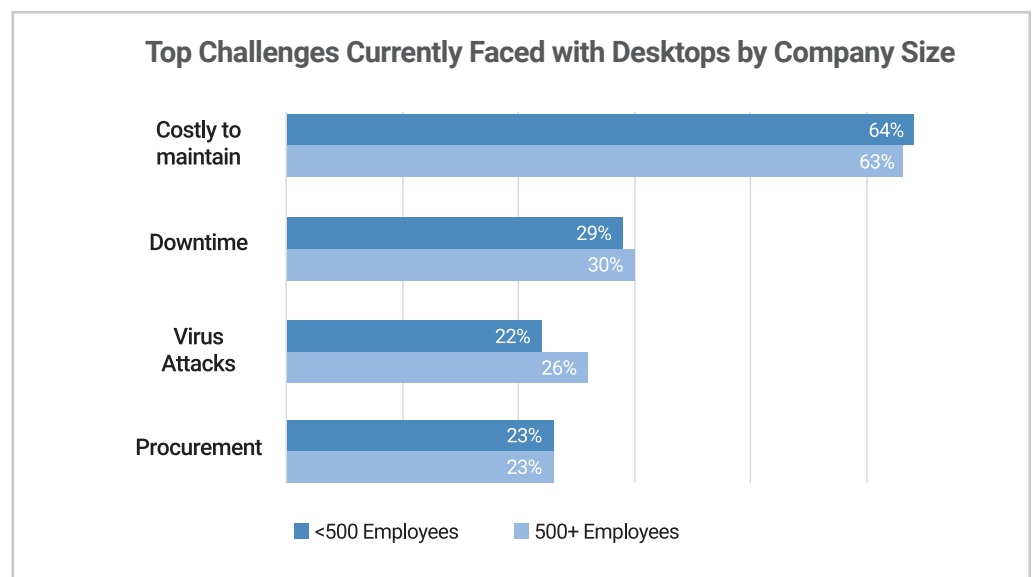
For years, desktop computers were literally on top of desks, which made procurement, deployment, and maintenance time-consuming and costly. With the increasing number of services and options, more organizations than ever before are turning to virtualization in the cloud to alleviate the burden of managing desktops. By far, the costly maintenance of desktops was found to be the most common challenge faced by the respondents.



According to the survey, sixty-seven percent of those planning to implement a multicloud or hybrid cloud strategy expect to do so within the next two years.



Interestingly, the top four challenges remain the same, regardless of company size.

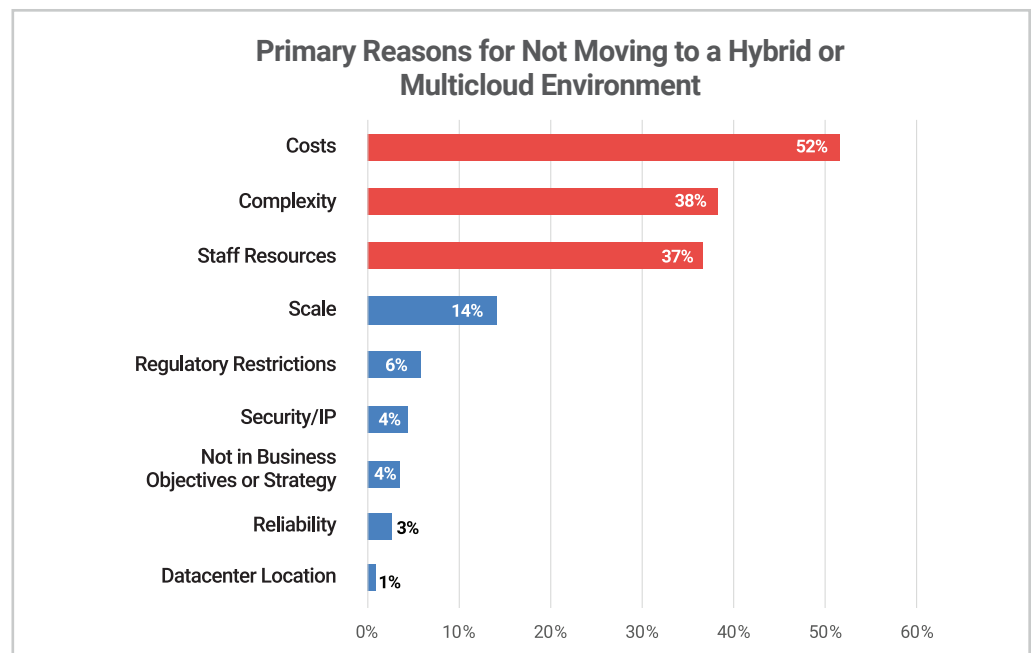


Multicloud strategy hesitations

There are several business challenges to consider when deciding how many cloud providers to engage or which services to implement. IT requires solutions to manage varying demands – for example, the different needs of contract workers in comparison to full-time workers, and applications ranging from office productivity to those requiring extensive compute resources. Mandates to avoid vendor lock-in, business continuity dependency, and total cost of ownership challenges can also present themselves when investing in a single infrastructure.

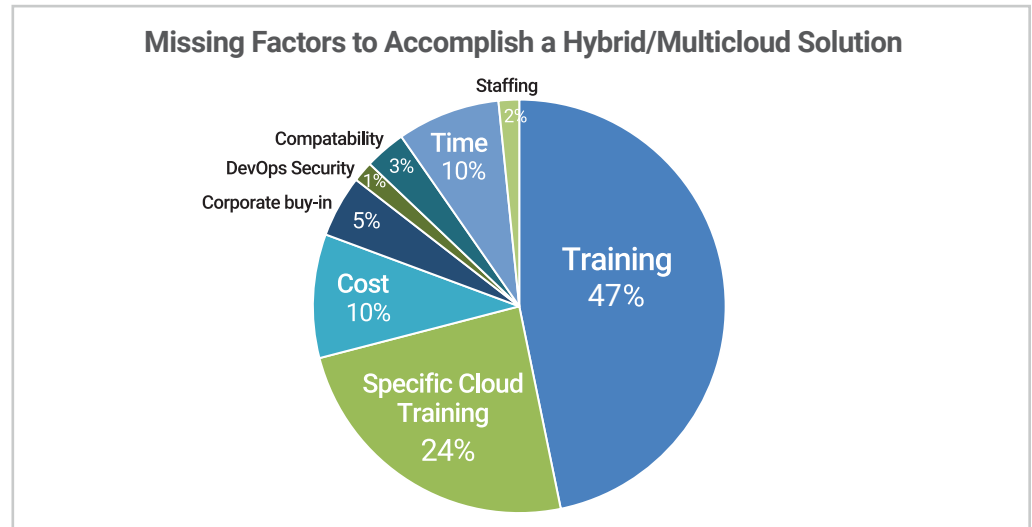
In spite of the challenges, the trend is to shift more and more to the cloud, not just data, or backup, but also entire desktops. According to a [2018 IDC CloudView survey](#), when extending beyond desktops, 94% of organizations intend to be using multiple types of clouds within the next 12 months. From the survey, again, nearly half of the respondents (46%) have a single cloud environment for their desktops or none at all.

Respondents who have not migrated to a hybrid or multicloud strategy cited cost, complexity, and staff resources as the chief reasons for their hesitation to do so. Other reasons included security and regulatory concerns, although those have declined significantly in recent years and are now cited by less than 10% of respondents.

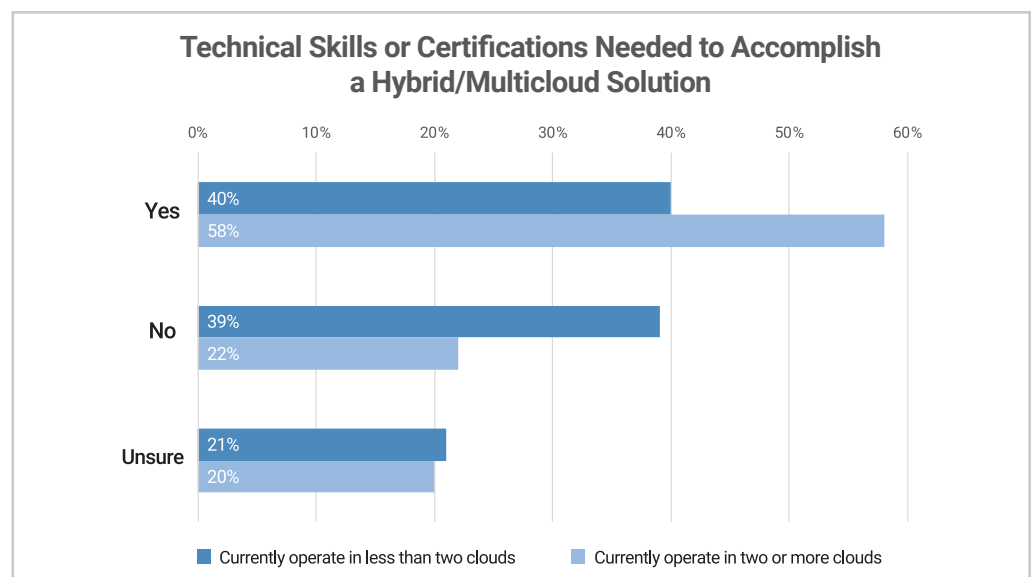


When asked what factors are missing that are in the control of the organization in order to accomplish hybrid or multicloud solution, overwhelmingly the majority (71%) say training is lacking, with 47% citing training in general and 24% citing specific cloud training (for example AWS, Google Cloud, Microsoft Azure, etc.). This indicates that many cloud IT professionals are proficient in a single cloud but not necessarily in multiple cloud provider environments. Corporate buy-in was a concern that arose from “other” field responses with some

particular commercial cloud providers”. Other factors respondents mentioned included lack of guidance, small teams without the resources to implement a large-scale change, a lack of understanding about where to start, and complex pricing.

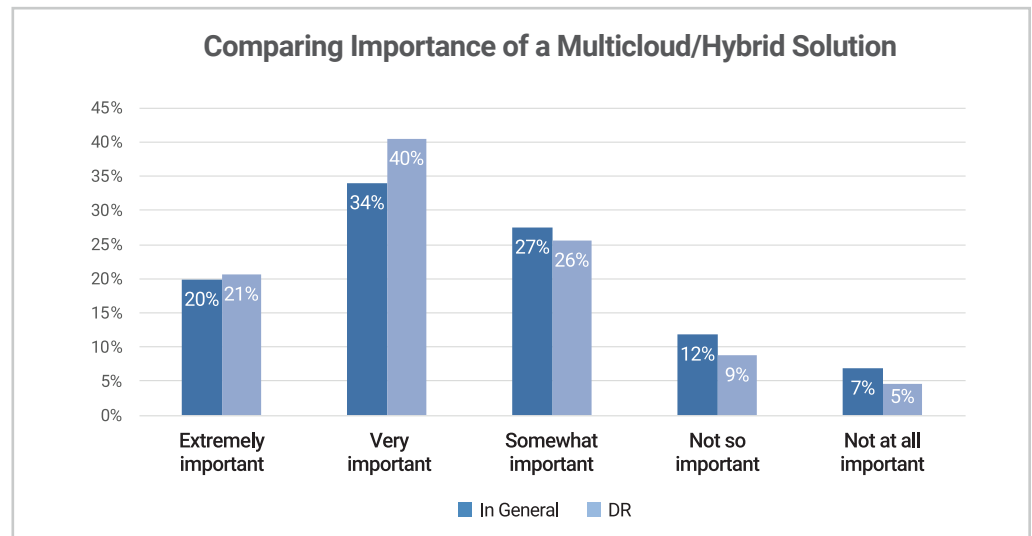


Comparing organizations that do not have a multicloud deployment versus those who do, it can be seen below how the staff perceive the technical competency of successfully accomplishing a well-tuned multicloud strategy. Obviously the percentage of those who believe they have the skills needed is higher for those who currently have a multicloud strategy, but the percentage of those who don't believe they have the skills or are unsure, is still quite high, therefore suggesting that there are a lot of educational and training opportunities to help those wanting to implement a multicloud strategy.

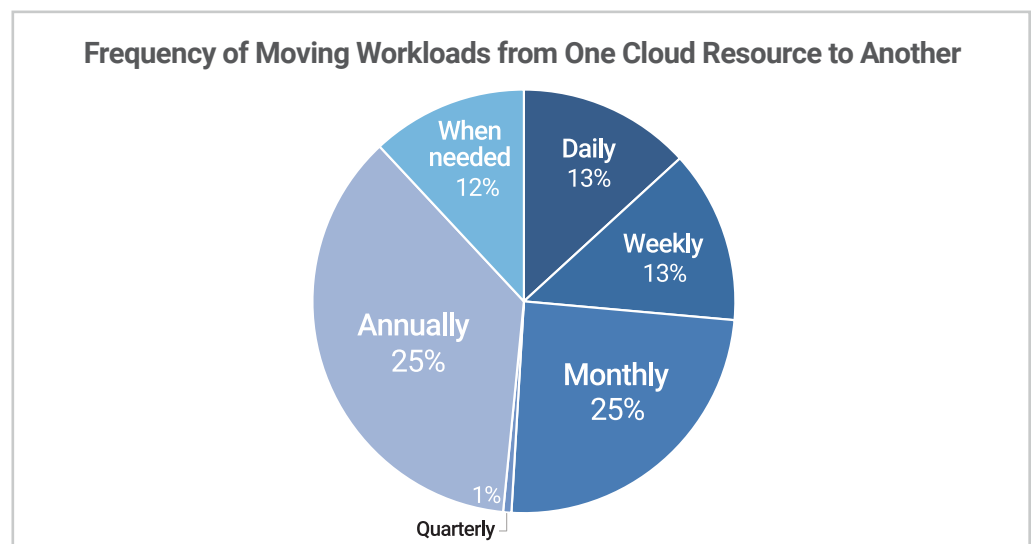


A strategic choice for disaster recovery

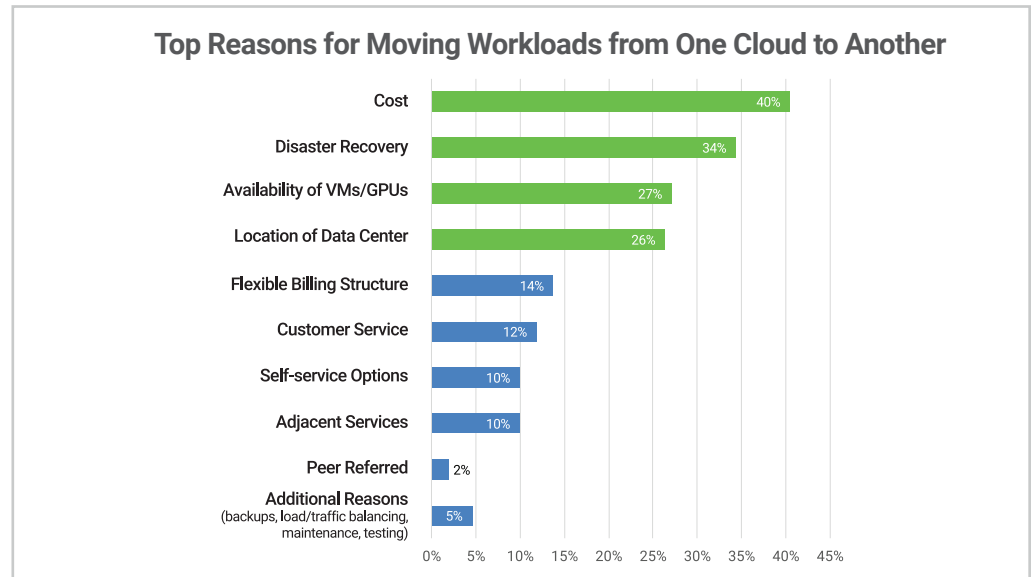
Over half of respondents who have implemented a multicloud or hybrid cloud solution (54%) view it as very or extremely important, and this number increases to 61% when asked about the importance as it related to disaster recovery, suggesting that disaster recovery is a key consideration for many of those who have implemented a multicloud or hybrid cloud strategy.



In the event of disaster recovery, whether it be a trial run or an actual catastrophic event, workloads can be moved from cloud to cloud. On the flipside, enterprises can move workloads in a shorter, more frequent timeframe for cost reasons, load balancing, or for organization restructures. Whatever the reason, of those who move workloads from cloud to cloud, the most common answer was on a cadence of monthly or annually. Surprisingly, 12% do not have a schedule and only move workloads when needed, likely to balance loads, onboard new employees, or to set up new data centers.

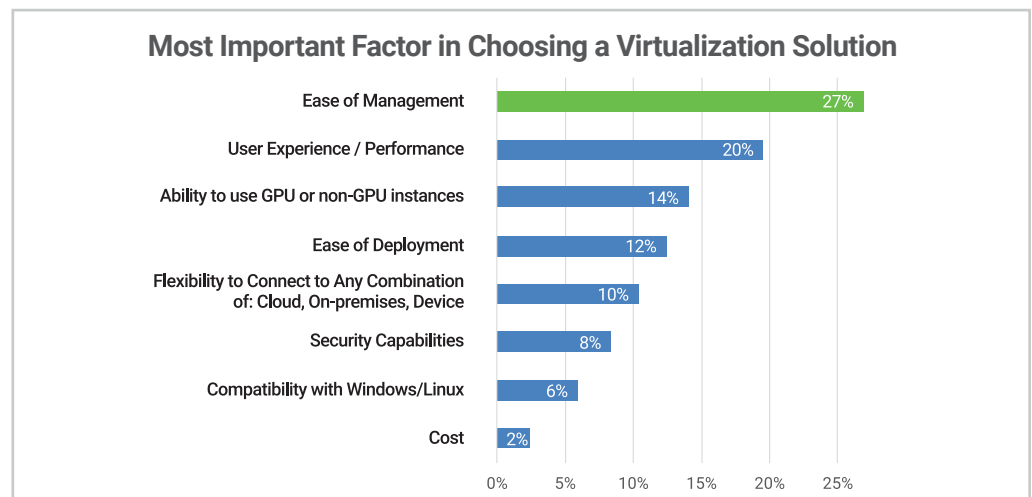


A multicloud strategy has its benefits. If a secondary, or even tertiary cloud is in active use, i.e. not dormant for backup purposes, workloads can be shifted for many practical business reasons, including cost, disaster recovery, location of the data center, and availability of virtual machines/GPUs. Being tied to one or a small number of cloud providers lessens the complexity, but from a cost and resource utilization standpoint, a multicloud deployment can evolve and adapt with greater ease.

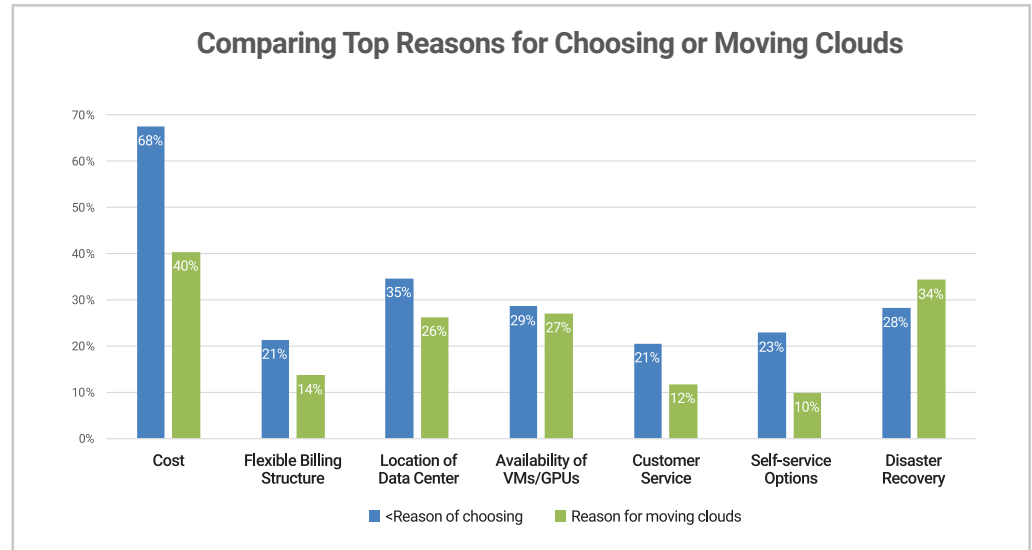


Factors to consider when choosing a virtualization solution

Ease of management, by far, was the most important factor in choosing a virtualization solution, as indicated by the responses, and this was consistent regardless of company size. A management plane or console that simplifies provisioning, brokering, updating, and power management can make managing virtual desktops less time-consuming and costly than traditional desktops.

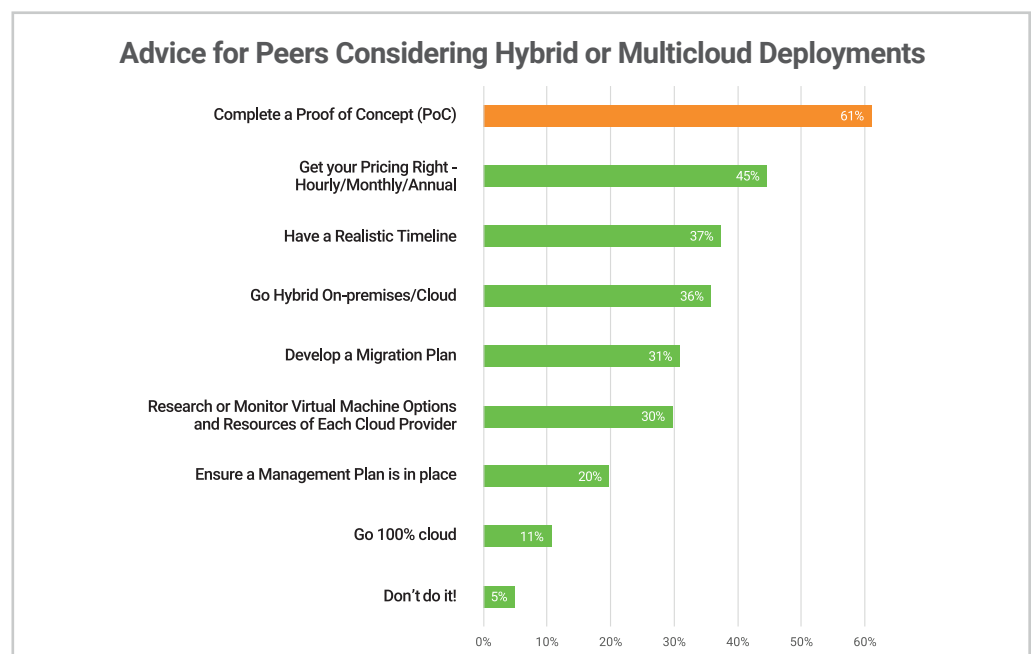


Factors that influence respondents' choice of public cloud vendor versus factors that influence reasons for moving workloads can be seen below.



What can be learned from peers with a multicloud deployment strategy

Respondents with multicloud desktop deployments offered valuable advice for their peers, including the importance of completing a proof-of-concept. Over half of respondents (61%) concurred with that advice. Research is key, say many others, including research or monitoring of virtual machine options offered by each cloud provider (30%) and getting the pricing right (45%).



Looking deeper, only 10% advised going entirely cloud-based, while 36% of respondents favored a hybrid solution (mix of on-premises and cloud). According to the [RightScale 2019 State of the Cloud Report](#), there has been a rise in enterprises with a hybrid strategy, while the number of organizations using multiple public clouds has been declining slightly. The RightScale report found that the #1 priority in 2019 is cloud cost optimization, consistent with our own findings.

Respondents advised peers to not be afraid to stop and roll back if they run into issues. Also, Trevor Stonebank, CTO at Brave Channels in South Africa, had this advice:

“Research, research, research. There are many pitfalls and many hidden boxes that need to be ticked that will cost money if you miss, [and] unfortunately it is difficult to get a proof-of-concept done on free licensing options so some expenditures will happen and will be a waste.”

Trevor Stonebank – CTO at Brave Channels

Cloud Access Software

allows organizations to transition to the cloud on their own terms. They can deliver workspaces and applications from the cloud or data center of their choice. All the computing power and flexibility an enterprise will ever need is available in the cloud. Cloud Access Software helps harness this power, freeing users to work from anywhere, on a wide variety of devices — including laptops, tablets, and ultra-secure PCoIP Zero Clients. Cloud Access Software supports all major public clouds, on-premises data centers, hybrid and multicloud environments.

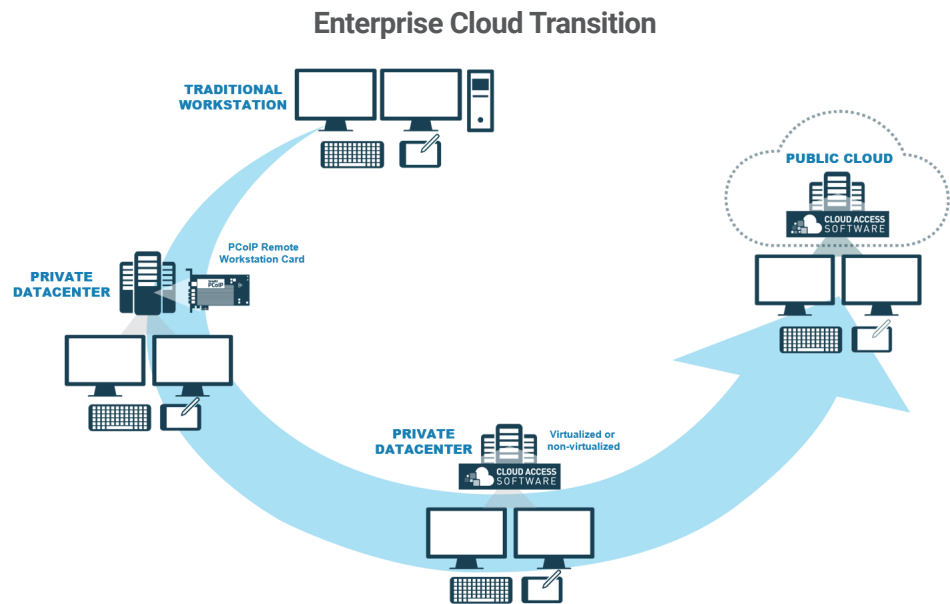
How a multicloud strategy combined with Cloud Access Software can help

With Cloud Access Software and a multicloud strategy, enterprises can:

Expand Revenue		Decrease Risk		Reduce Operational Costs	
Cloud Access Software	Multicloud Strategy	Cloud Access Software	Multicloud Strategy	Cloud Access Software	Multicloud Strategy
Hire revenue-impacting personnel faster by drawing upon remote workforces	Gain improvements to: virtual machine availability, latency, and customer experience	Secure sensitive information by transferring only encrypted pixels, eliminating data interceptions	Avoid vendor lock-in and be restricted to a single provider's terms and conditions	Leverage the scale and flexibility of the public cloud	Realize cost savings depending on cloud provider and location
Move critical workloads to the public cloud or hybrid cloud, providing better business agility		Support data protection compliance and best practices for data security		Reduce infrastructure complexity and cost through virtualization	Realize lower infrastructure costs by moving large capital expenditures to a more OPEX model in the cloud
Protect valuable IP and customer data that drives company value		Safeguard against data breaches that can negatively impact brand reputation		Remove expensive, specialized hardware from your infrastructure footprint	

Teradici's wide platform flexibility

Companies are leveraging Teradici's unique technology to accelerate their enterprise cloud transition without compromising security, ease of management or user experience. Teradici's true multicloud support enables any combination of public cloud, hybrid cloud and on-premises environments. Additional support includes Windows or Linux virtual desktops and GPU or non-GPU based infrastructure, while, in all cases, delivering the high-performance user experience that millions of enterprises using PCoIP (remote display protocol) technology enjoy today.



Respondents cited the most important factor in choosing a virtualization solution as ease of management. To aid in this, with every Cloud Access Software subscription, a management plane called Cloud Access Manager is included. It's a brokering and provisioning service that works by enabling virtual machine entitlements, optimizing consumption costs, and monitoring of system health all from a single interface. With the introduction of multicloud entitlements, companies can now create and manage these virtual environments on AWS, Google Cloud, Microsoft Azure or via their on-premise infrastructure, benefiting from the flexibility and agility that a multicloud strategy enables. workloads when needed, likely to balance loads, onboard new employees, or to set up new data centers.

Learn more about Teradici Cloud Access Software

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