



ESG WHITE PAPER

Dell Technologies APEX

Transforming IT Infrastructure and Delivering a Path
to the Post-hybrid Cloud Era

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Introduction

The roles of data and technology have evolved within modern businesses, moving from business necessities/cost centers to business enablers, and now to full-fledged business creators. These days, IT must be prepared to delight their internal and external stakeholders. This is no longer about just meeting expectations related to a particular project; it is about creating a superior employee/customer/developer experience that leads to greater efficiency and higher levels of engagement by all.

To do that, however, IT leaders are often required to cobble together disparate pieces into larger hybrid or multi-cloud solutions. This approach needs to change. It is not advantageous to manage a precarious collection of disparate, disaggregated technical silos. A rat's nest of technology introduces risk and can be too complex for IT staff to completely understand.

While valuable, the concept of “hybrid cloud” has become too simplistic. It does not describe, let alone address, the disaggregated, multi-cloud, multi-data center, multi-edge world of modern IT. Today's dispersed infrastructures face increased challenges, which often hinder and can even cripple business operations and success, including:

- Mounting operational complexity as IT environments scale.
- The constantly evolving data security and compliance landscape, which increases pressure on IT and adds risk to the business.
- Crippling IT agility that hinders business initiatives as complexity increases.

It is time for IT and business leaders to ask the question, “If IT environments continue to become more dispersed and disaggregated, then what comes after hybrid cloud, or even after multi-cloud?” Businesses need IT solutions that can deliver predictable, valuable outcomes across sites, with the ability to:

- **Consolidate and simplify IT operations, planning, and monitoring** across sites to substantially reduce the personnel burden and improve visibility and transparency of usage and costs.
- **Leverage natively embedded security and compliance** to substantially reduce business risk.
- **Increase IT's agility** to meet business needs and accelerate operations.

[Dell Technologies](#) is strongly positioned to address these challenges. Its APEX offering represents the start of a path to the post-hybrid cloud future that businesses so desperately require.

Hybrid Cloud and the More Complex Reality

The idea of a hybrid cloud—specifically, one data center combined with infrastructure from a single public cloud provider—is a myth for many businesses. Nearly every IT organization is operating with exceptions to that hybrid cloud archetype. According to ESG research, 78% of the IT organizations surveyed currently leverage public cloud infrastructure services, 68% expect to increase their investment in public cloud infrastructure services in 2021, and 78% of them already leverage multiple cloud providers.¹



78% of cloud users leverage multiple cloud providers

The use of more than one cloud provider is increasingly deliberate—51% of multiple cloud users report leveraging various providers in a meaningful way rather

¹ Source: ESG Master Survey Results, [2021 Technology Spending Intentions Survey](#), December 2020.

than working predominantly with only one.² That percentage has increased substantially from 2019, when only 22% of respondents identified that their cloud spending was relatively evenly split across multiple providers.³

On-premises investments continue to grow as well:

- **46%** of survey respondents expect to increase their data center-related spending in 2021, with 43% expecting to maintain current spending levels.⁴
- **56%** of surveyed storage decision makers expect their on-premises data to grow at a rate of 21% or more over the next three years, with 25% expecting their on-premises data growth rate to exceed 50%. When compared with expected growth rates for public cloud infrastructure services (IaaS/PaaS), the rates are about the same: 61% of respondents expect their data to grow at a rate of 21% or more, and 23% expect their cloud infrastructure data growth rate to exceed 50%.⁵

As environments scale, organizations desire the agility of cloud services to accelerate initiatives, but they also need the visibility, control, security, and compliance adherence provided by their existing data center technologies. Too often businesses are forced to make a choice between agility and control when it comes to application deployment in traditional hybrid cloud environments. The result has been increased complexity, hindered agility, and added risk related to keeping pace with business demands, including data security and compliance. IT needs more than what traditional hybrid clouds offer. It needs agility everywhere, not just in the cloud.



56% of storage decision makers expect their on-premises data to grow at a rate of 21% or more over the next three years.

Increased Operations Complexity as IT Environments Scale

The huge increase in IT scale alone can cripple operations and drive up costs. Every IT system, software, and service touts itself as being easy to use, yet complexity continues to mount, in part due to the assortment of components, locations, and services that must be overseen. In a recent ESG research study, 75% of respondents said that IT is more complex than it was just two years ago, with 38% identifying higher data volumes as a top driver of that increased complexity and 29% identifying increases in the number and types of applications as a driver.⁶ It appears that “compounded simplicity at scale” actually leads to increased complexity.

Adding cloud services to the mix is not the solution, as 29% of respondent organizations that leverage both on-premises data centers and public cloud providers see that setup as a driver of increased IT complexity. Other top complexity drivers include new data security and privacy regulations (cited by 38%), the need to incorporate emerging technologies such as AI and ML (28%), and increases in applications that leverage new architectures such as Kubernetes (28%).⁷

Of course, cost control is also imperative both on- and off-premises. Nearly a third (29%) of IT decision makers expect cost reduction to be a top-five business initiative that will drive the most technology spending in their organizations in 2021. And as for cloud costs, only 43% of cloud users believe the cost benefits they



75% say that IT is more complex than it was just two years ago

² Source: ESG Master Survey Results, [2021 Technology Spending Intentions Survey](#), December 2020.

³ Source: ESG Master Survey Results, [2019 Technology Spending Intentions Survey](#), March 2019.

⁴ Source: ESG Research Report, [2021 Technology Spending Intentions Survey](#), January 2021.

⁵ Source: ESG Research Report, [Data Storage Trends in an Increasingly Hybrid Cloud World](#), March 2020.

⁶ Source: ESG Research Report, [2021 Technology Spending Intentions Survey](#), January 2021.

⁷ Ibid.

receive by leveraging the cloud has exceeded their expectations, with the remaining 57% saying that their cloud costs have either met expectations or have been disappointing.⁸

The existing hybrid cloud IT model built with traditional systems and public cloud services has expanded the complexity burden for modern IT organizations at scale, adding cost and risk to IT and digital business initiatives.

Increased Risks Presented by the Constantly Evolving Data Security and Compliance Landscape

Data security is the most common reason companies bring workloads back on-premises. According to ESG research, 66% of IT decision makers expect their organizations to increase spending on cybersecurity in 2021. 47% said that strengthening cybersecurity is one of the business initiatives that will drive the most technology spending for their organizations in 2021, and 27% identified regulatory compliance assurance as one of those initiatives driving the most technology spending for their organizations in 2021.⁹

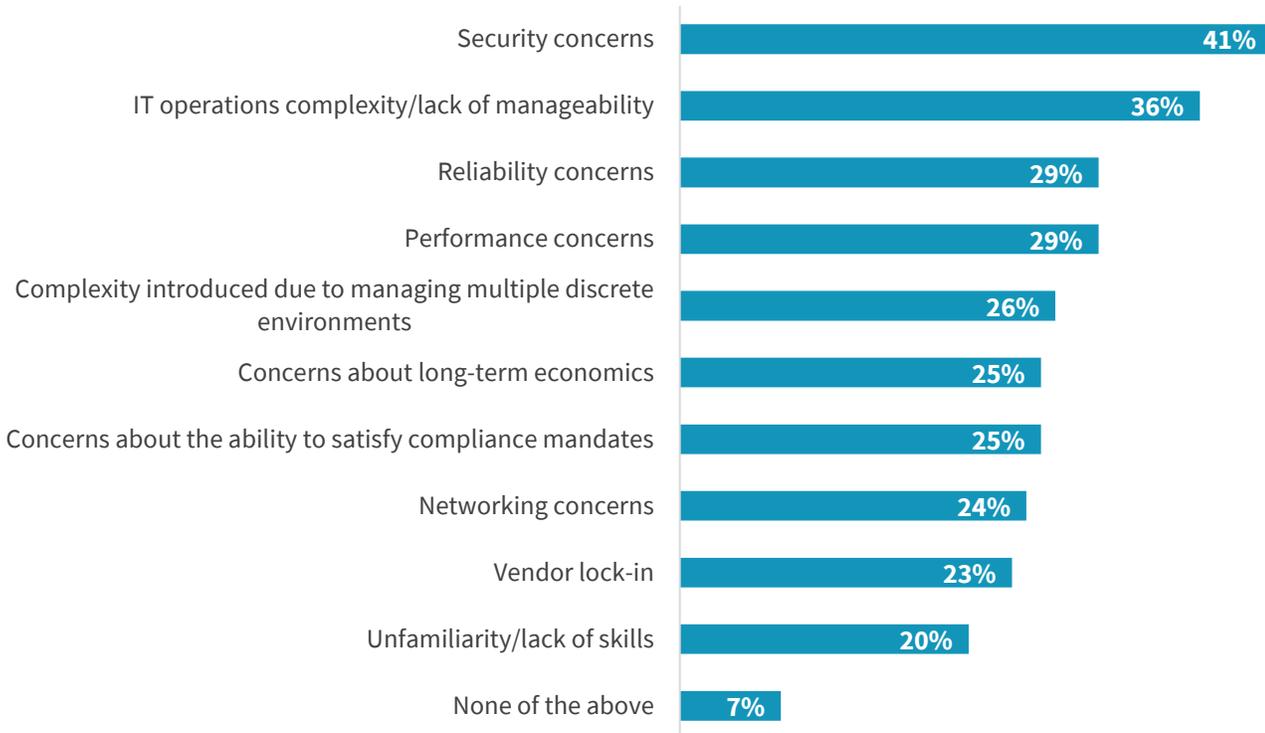


47% of organizations reported seeing an increase in cyberattacks over the past year

In general, security and compliance are top priorities, and they should be. That prioritization is even more important given the shift to remote work. This year, 47% of organizations reported seeing an increase in cyber-attacks.¹⁰

Figure 1. Concerns Limiting Public Cloud Adoption

Which of the following concerns, if any, are limiting the degree to which your organization is leveraging public cloud infrastructure? (Percent of respondents, N=1,257, multiple responses accepted)



Source: Enterprise Strategy Group

⁸ ibid.
⁹ ibid.
¹⁰ Source: ESG Research Report, [The Impact of the COVID-19 Pandemic on Remote Work, 2020 IT Spending, and Future Tech Strategies](#), June 2020.

Cybersecurity (41%) and compliance (25%) are among the top six concerns that limit public cloud usage. Off-premises public cloud services often do not align with strong data sovereignty rules. As Figure 1 shows, other concerns also come into play, including a lack of visibility/manageability (36%), reliability concerns (29%), and performance issues (29%). Interestingly, 93% of organizations selected at least one concern, with the average respondent selecting close to three concerns.¹¹ These findings suggest that traditional cloud services are not providing enough visibility, capability, security, and regulatory compliance to meet the actual needs of businesses today.

This essential need to ensure control, security, and compliance limits the business's ability to harness the agility advantages of public cloud services, often forcing their decision to leverage specific locations and dedicated infrastructure.

Increased Complexity and Security Risks Cripple IT Agility and Hinder Business Initiatives



55% of storage decision makers say their organization has moved at least one workload back from the public cloud to on-premises infrastructure

Combined, these complexity and security challenges often lead to missteps that slow down IT projects, sometimes necessitating costly restarts. Fifty-five percent of surveyed storage decision makers say their

organization has moved at least one workload from a public cloud back to on-premises infrastructure. Their top reasons included data security issues (36%), cost (28%), regulatory compliance issues (26%), data recovery issues (25%), poor performance (25%), and an inability to meet elasticity expectations (25%).¹²

As IT groups face extra pressure to leverage specific locations and dedicated infrastructure to ensure security and control, the burden on personnel resources increases. As organizations attempt to scale to meet these needs, they are also encountering costs related to retraining people and hiring new (often more expensive) experts. Modern IT organizations face increasingly problematic skill shortages in the areas of:

- Cybersecurity (reported by 48%).
- Cloud architecture and planning (36%).
- IT architecture and planning (34%).
- IT orchestration and automation (32%).¹³

Those findings support the conclusion that IT is too complex to “retrain everyone on everything.” And attempting to solve this problem by continuing to try to hire new people is too difficult and expensive.

As for ongoing management and maintenance of the infrastructure, organizations are shifting away from hiring domain experts. Sixty-two percent of storage decision makers identified that the majority of hired positions in their organizations going forward will be IT generalists.¹⁴

As levels of domain expertise shrink across IT organizations, the need to automate and offload tasks to keep pace with business needs increases. Modern IT organizations need IT services that surpass those of traditional on-premises providers *and* those of traditional public cloud providers if they wish to compete and thrive.

¹¹ Source: ESG Research Insights Paper, *The Cloud Complexity Imperative*, February 2020.

¹² Source: ESG Research Report, *Data Storage Trends in an Increasingly Hybrid Cloud World*, March 2020.

¹³ Source: ESG Research Report, *2021 Technology Spending Intentions Survey*, January 2021.

¹⁴ Source: ESG Master Survey Results, *2019 Data Storage Trends*, November 2019.

The Post-hybrid Cloud Era and the Need for Outcome-based IT Services Everywhere

Hybrid cloud environments emerged in attempt to build a “best-of-both-worlds” solution. IT organizations can access the agility benefits of the cloud that the business wants, while still leveraging on-premises data center resources for security, compliance, and control of the business demands.

At scale, however, given the complexity of modern dispersed multi-cloud and multi-data center environments, even the value offered by hybrid cloud solutions is often not enough to address the added complexities, security concerns, and personnel shortages.

Fortunately, a solution is available. It starts with IT and business leaders ceasing to think of the cloud as a “place,” considering it instead an operating model that can and should be deployed everywhere. IT needs a solution that delivers the flexibility, agility, and resource offload capabilities of a cloud service—and the security, transparency, and best-of-breed technology of an on-premises solution. It has to be able to be located anywhere, on-premises, in the cloud, or at the edge.

Modern businesses need outcome-based IT services. That new wave of capabilities will likely be what comes next after the hybrid cloud era.

Dell Technologies APEX

Dell Technologies APEX is a foundational IT services portfolio that delivers value today while also being potentially capable of serving as the outcome-based IT services offering that businesses also urgently need.

The Delivered Experience

The Dell Technologies APEX managed portfolio of IT infrastructure services offers consumption-based (pay-as-you-use) economics. It is designed to deliver cloud-like agility on best-of-breed technology, with on-premises levels of performance, control, and transparency where it is needed most.

As part of the APEX experience, Dell offers the Dell Technologies APEX Console, which will deliver a unified experience to manage the entire cloud and as-a-service environment. From a single console, IT admins can manage, optimize, scale, or evolve their IT environment with the ability to:

- Scale the environment and add services.
- Deploy new workloads and solutions.
- Optimize performance and utilization.
- View and manage all their active subscriptions with Dell Technologies APEX.
- Discover and order new additional APEX services.

Dell Technologies APEX enables organizations to shift from focusing on systems to focusing on outcomes:

- For the technical side of the house, it helps IT to achieve better, more differentiated outcomes for any workload on the broadest infrastructure portfolio.
- For operations, it helps to streamline the data lifecycle, providing value-added services to realize a best-in-class experience.

- And in regard to consumption of the services, it helps organizations align their costs to business needs thanks to flexible payment options that fit any environment.

The Financial Aspects

As mentioned, Dell APEX is a usage-based, flexible consumption solution. Here are some specifics:

- It allows IT to right-size capacity for workloads that shrink and grow over time.
- Dell Technologies measures and bills buffer capacity by average or actual usage.
- IT can decrease costs for the whole organization by committing to offering higher levels of service for longer terms.
- The offering encompasses asset recovery, deployment, and support services in one agreement.

How APEX Helps IT Operations

The impact of Dell Technologies deploying capacity, managing the infrastructure, and updating the hardware liberates IT from having to monitor and plan capacity or perform other mundane tasks. The key high-level pillars of the Dell Technologies APEX strategy are simplicity, agility, and control:

- **Simplicity** of planning and managing, with infrastructure lifecycle management designed to be effortless using a self-service console that helps deliver desired outcomes.
- **Agility** in meeting business needs, thanks to high-velocity operations that are optimized to save time and money with a transparent payment model that frees up capital and facilitates scaling up and down dynamically.
- **Control** to help ensure security and to meet compliance requirements. IT also has the control to locate infrastructure where it is most needed for optimal performance.

It would be hard to overstate Dell Technologies' credibility in this space. Notably, Dell Technologies has spent years establishing a long history of success with multiple consumption-based payment programs, which provides extra credibility to this offering. The Dell Technologies on Demand (DTOD) offerings, for example, serve as testimonials that Dell has been in the as-a-service business for quite some time. DTOD offerings are still available but as more customized versions if an organization wants something specific due to internal policies or wants to choose the technology used.

Dell Technologies already has storage-as-a-service and hybrid cloud offerings available, and they are among the first of many services Dell Technologies has planned for APEX.

The Bigger Truth

APEX represents an almost aspirational picture of the post-hybrid-cloud future that Dell foresees. Modern IT needs to look beyond hybrid cloud and even beyond multi-cloud.

The real future is having the IT services you need, where you need them, and when you need them—with the transparency and control you expect to minimize your business risk.

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