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# Unlocking the Power of Multicloud with Workload Optimization

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**Abstract:** Today's workload environments are not only strategic, they are also distributed in a complex manner across multiple IT environments. Because every organization has its own diverse set of workloads and business requirements, a one-size-fits-all optimization approach just won't work. Organizations need to think about their own specific needs and then leverage the right partner to navigate their multicloud mix properly.

## Overview—Challenges with Sub-optimal Workload Alignment Today

Application and data workloads are now often distributed across multiple data centers, public cloud services, and colocation and edge locations. These distributed apps deliver benefits and are here to stay. Spending continues to increase, and all trends point to more hybrid and multicloud deployments to come.

According to research conducted by TechTarget's Enterprise Strategy Group, organizations with high relative levels of data center spending (more than 25% of their overall IT budget) expect to substantially reduce data center spending as a percentage of their overall IT budget over the next two years, from an average of 32% to 23%. However, for organizations with low levels of data center spending (less than 15% of their overall IT budget), the projection trends in the opposite direction, with organizations expecting data center spending to increase over the next two years, from an average of 7% to 10% of their overall IT budget.<sup>1</sup>

Combined, these trends suggest a movement by IT organizations toward a more balanced hybrid cloud approach. This trend toward a more balanced hybrid cloud environment is fueled, in part, by the rise in cloud-native development and the use of microservices and containers, which have bolstered the appeal of application portability and "location optionality." Smart organizations are taking a strategic approach to distributed, hybrid, and multicloud application and data placement. Even with the rise of cloud-native workloads, not everything should be in the public cloud, leading to hybrid, distributed IT estates.

Recently, Enterprise Strategy Group conducted a research study of 350 IT professionals responsible for evaluating, purchasing, and managing applications and infrastructure for their organization in order to better understand the strategy, process, personas, and considerations involved in multicloud application deployment and migration decisions. The sponsored multiclient research validates the following assertions:

- **88%** of IT decision makers surveyed by Enterprise Strategy Group believe that leveraging multiple public cloud providers delivers strategic benefits to their organization, such as improved flexibility when selecting infrastructure resources to better meet the needs of the application environment.
- **87%** believe that their application environment will become further distributed across additional locations over the next two years.

<sup>1</sup> Source: Enterprise Strategy Group Research Report, *Multi-cloud Application Deployment and Decision Making*, to be published May/June 2023. All Enterprise Strategy Group research references and charts in this Showcase have been taken from this research.

Those varying locations (data centers, public cloud services, colocation providers, and edge environments) offer both advantages and challenges. Some of the potential tradeoffs center on having greater agility but less control, more simplicity but less transparency, and more scalability but less cost predictability.

But the bottom line is that success in meeting service-level agreements, key performance indicators, and other goals while controlling for cost and risk requires effective use of every location and tool at IT's disposal.

## How Organizations Decide Among Multiple Clouds

Organizations pursue a multicloud strategy for a variety of reasons:

- Greater flexibility in performance (cited by 35% of respondents).
- The improved reliability and/or resiliency that multiple providers can offer (34%).
- More storage options (cited by 33%).
- Compliance-related reasons (33%).
- The desire to allow teams to leverage the cloud providers they prefer (30%).
- Cost flexibility (28%).

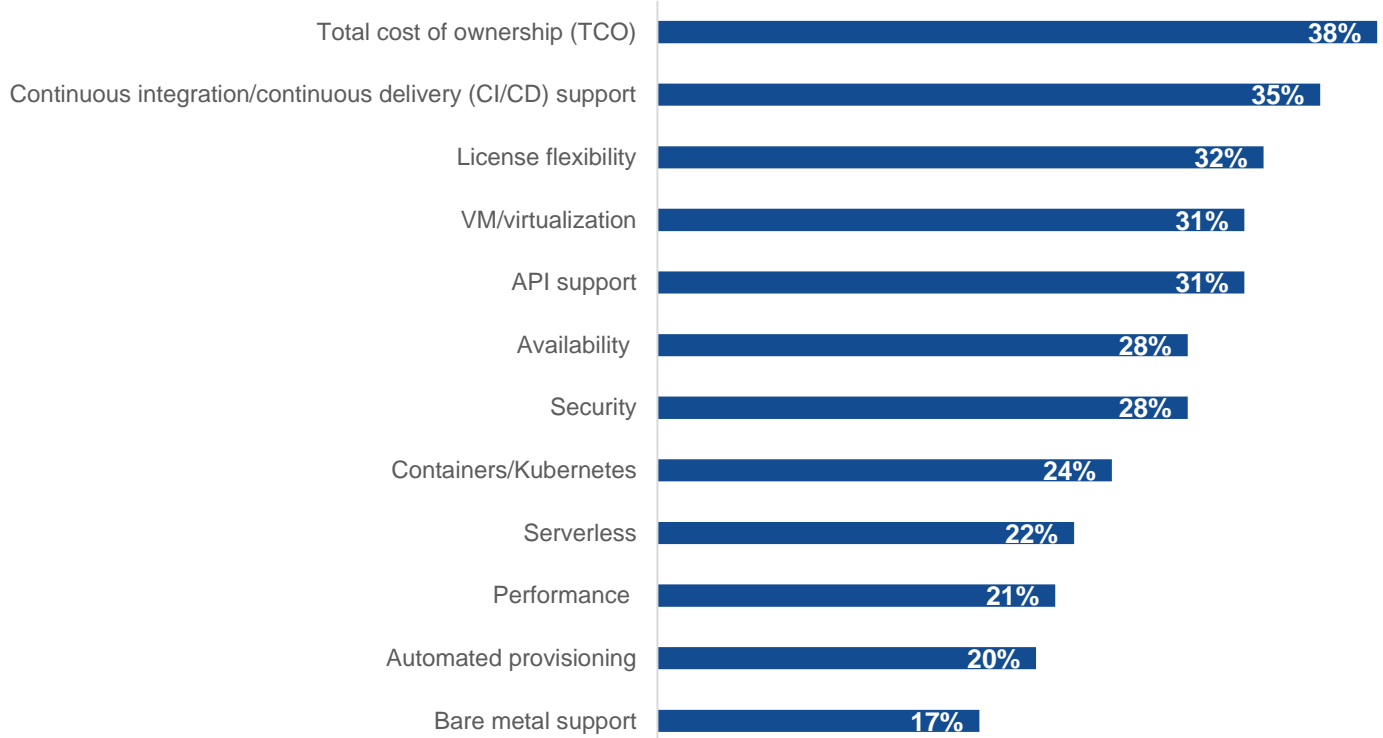
Clearly, organizations regard a multicloud approach as being strategic, with 86% of respondents reporting that they regularly migrate applications and/or data from on-premises locations to the public cloud. But managing and moving applications and data in a multicloud environment is complex and challenging:

- **83%** believe that the cost and time required to re-factor or re-platform applications adds significant cost, complexity, and risk to cloud migrations.
- **77%** agree that application deployment planning is hindered by a lack of visibility into public cloud service spending specifics.

As Figure 1 shows, when organizations look into the attributes of the ideal cloud provider for their needs, they focus not just on cost, but also on the value presented by the cloud service. For example, cloud-first organizations are likely to prioritize total cost of ownership (TCO, cited by 38%), continuous integration and delivery (CI/CD) support (35%), and factors such as availability (28%), security (28%), and platform capabilities when making their decision.

Figure 1. Attributes that Determine the Optimal Cloud Location

**You indicated your organization has a cloud-first application deployment strategy. Which of the following attributes/requirements most influence the decision of which cloud provider to use for net-new applications? (Percent of respondents, N=165, multiple responses accepted)**



Source: Enterprise Strategy Group, a division of TechTarget, Inc.

When it comes to selecting the right public cloud provider for them, strategic organizations often begin the process by evaluating their specific applications and workloads to determine which public cloud would be most suitable. For example, to evaluate the performance of on- and off-premises locations, these organizations measure factors including the count of instances (i.e., how many copies of an application can exist at a location, cited by 41% of survey respondents), user satisfaction (40%), and average response time (36%).

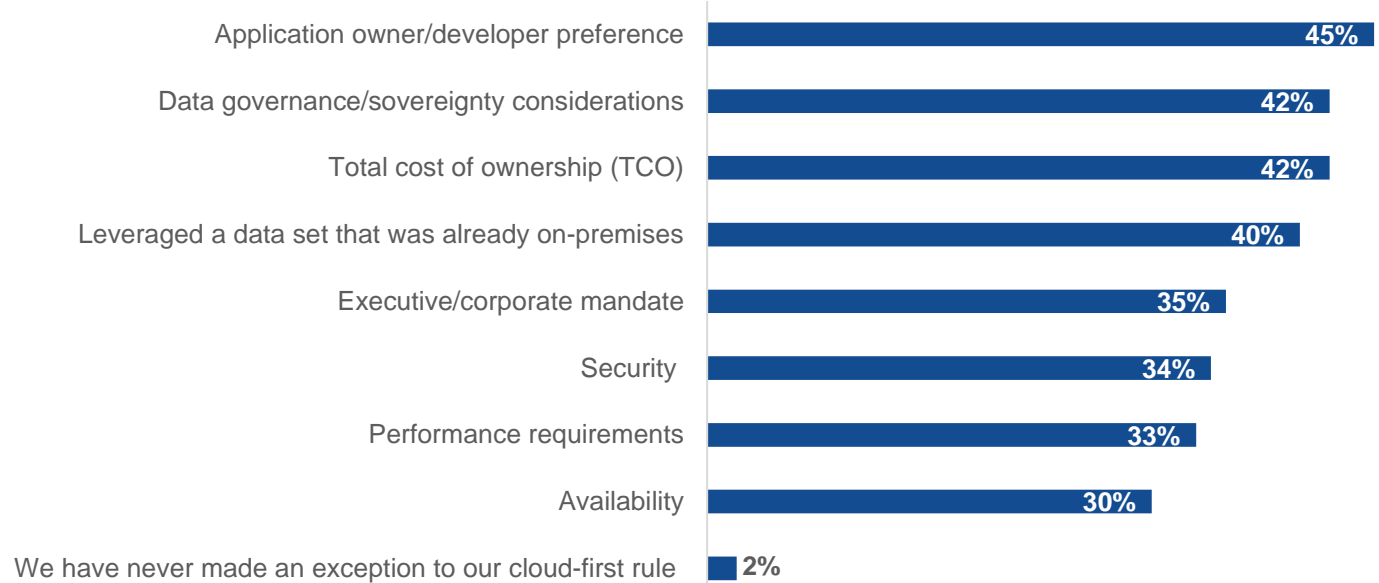
This type of analysis also leads organizations, even cloud-first ones, to decide not only which public clouds to use and when to move apps to a different public cloud provider, but also whether it may be best to deploy or keep applications on premises.

## When Organizations Move and Keep Applications On Premises

Even at cloud-first organizations, some workloads won't go to the cloud. Several factors lead organizations to shift or deploy workloads on premises. The nature of the data plays a key role in such deployment decisions: There may be data governance and/or sovereignty issues to consider (cited by 42%) or the fact that the new application will be using an existing onsite data set (40%). TCO (42%) and developer preference (45%) are among other common rationales for keeping net-new apps in the data center (see Figure 2).

**Figure 2.** Why Cloud-first Organizations Deploy Applications On Premises in the Data Center

**You indicated your organization has a cloud-first application deployment strategy. Have any of the following factors created an exception that led your company to deploy a net-new application on-premises? (Percent of respondents, N=165, multiple responses accepted)**



Source: Enterprise Strategy Group, a division of TechTarget, Inc.

Applications that may not be cloud candidates include:

- Those with specific or significant networking requirements related to latency or bandwidth (cited by 32%).
- High-value applications/data that have compliance, regulatory, or data sovereignty significance (29%).
- Artificial intelligence and/or machine learning workloads (29%).
- Applications or data with strong security requirements (28%).
- Data analytics workloads (25%).

On-premises application decisions encompass both the data center and an organization’s edge locations. Common applications that may reside in edge locations include IT infrastructure management and monitoring apps (cited by 47%), data management apps (41%), and logical security apps (35%).

## Why Organizations Leverage Colocation Providers

Besides public cloud services, data centers, and edge locations, organizations have another valuable option: colocation partners. The most common reason an organization might leverage a colocation provider relates to proximity: Close proximity to multiple cloud providers for applications and data was cited by 44% of organizations that use colocation providers. Using colocation providers enables organizations to make use of public cloud services for their applications and data, while minimizing the cost and complexity of data movement and reducing latency.

Other common reasons for choosing colocation providers include the provider’s particular industry expertise (42%) and whether this approach would provide an organization with better control over its infrastructure resources (42%). Colocation facilities can also house an offsite backup for disaster recovery purposes.

## The Challenges of Distributed IT Environments

Clear strategies and rationales tend to drive businesses to leverage all of those different environments. A “data center only” or even a “cloud only” approach rarely makes sense. This is why distributed cloud environments are now the de facto standard for contemporary IT. The result, however, is an increase in complexity. Consider that among IT decision makers surveyed by Enterprise Strategy Group:

- **82%** said they struggle to properly size workloads for the optimal infrastructure environment (on- or off-premises).
- **81%** reported that they face challenges with application and data portability across locations (including data center, public cloud, and edge).

## Dell Technologies APEX: How to Reduce Multicloud Complexity While Optimizing Your Workloads

With those complexity-related challenges in mind, it is obvious that many organizations could benefit from working with a partner that:

- Can accelerate their business and IT transformation efforts.
- Is workload location-agnostic.
- Offers solutions across all of the key infrastructure environments: public cloud, on-premises data centers, colocations, and the edge.
- Brings cloud-like experiences on premises and extends the benefits of on-premises offerings to public clouds.
- Has consultative expertise along with partnerships to help ensure multicloud interoperability.

With all of those capabilities to offer, Dell Technologies can help organizations address their multicloud complexity-related challenges, optimize workloads as appropriate, and ultimately unlock the full power of multicloud IT.

Dell APEX is Dell’s modern cloud and consumption experience. It’s a portfolio of offers that brings a cloud operating model to devices, apps, and data. APEX offers organizations simplified procurement and management experiences while increasing the agility of their IT and development organizations, allowing these organizations to maintain better control of their technology and intellectual property.

Distributed application environments that span multiple public clouds, multiple data centers, as well as edge and colocation environments are the present and future reality for IT. In addition, trends identified in this research point toward a more even distribution of applications and spending across on- and off-premises environments in the future and away from consolidation at any single location.

As IT organizations labor to manage multiple diverse locations, the dominant approach is to let the needs of the application drive the deployment decision process. As this research revealed, however, finding success is often easier said than done. The increased scale and diversity of application environments, such as with the rise of cloud-native architectures for production applications, make deployment decisions increasingly complex. This complexity increases the likelihood of missteps, increasing the cost and risk in application deployments and migrations, while also increasing the chances of another migration in the future.

To efficiently navigate application deployment decisions, organizations need to work with a partner, such as Dell Technologies, that offers solutions and validated designs across the full multicloud ecosystem. For example, Dell Technologies solutions leverage a broad portfolio of technologies as well as more than 500 partnerships for user environments spanning data centers, multiple public cloud providers, multiple colocation partners, and edge locations. Dell Technologies can help simplify application environments with common operational experiences across multiple locations, workloads, and data types.

Dell Technologies can help organizations pursue their business goals via an optimized workload strategy, one that isn't limited or locked in by particular silos or technical constraints. Any business that is struggling with multicloud complexity should be looking to Dell Technologies as an objective multicloud ecosystem workload enablement partner.

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