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Simplifying Cloud Complexity: The Nutanix Hybrid Multicloud Solution

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Abstract: Hybrid multicloud can be an ideal IT operating model, as long as it is set up correctly. Nutanix leverages a software-defined, hyperconverged infrastructure to deliver a single, unified platform that simplifies management and deployment across dispersed hybrid and multicloud environments.

Overview

“Multiple cloud” environments differ from “multicloud” environments because in the latter, various clouds being leveraged are interconnected and can be managed similarly. Multiple cloud environments are pervasive. But when those multiple separated clouds operate as independent silos, the business impacts can be crippling—slowing operations, increasing costs, and adding unnecessary risk.

As newer Amazon S3 and Kubernetes standards make it more feasible to move data and apps as needed, workloads are increasingly moving between data centers and multiple public cloud environments. However, challenges still persist in transferring workloads due to siloed cloud and data center environments. Even though some feasibility has been achieved, the need for a common plane remains evident. According to research from TechTarget’s Enterprise Strategy Group, at least half of IT professionals surveyed said their organizations move data between data centers and public cloud services (cited by 53%) and between multiple cloud services (50%) regularly or all the time.¹ An optimal environment must provide consistency across those locations and providers, both on and off premises.

Over the next several years, the movement of data and applications is expected to keep expanding—not only in frequency, but also in the number of locations being used.² That expansion is occurring because organizations are continuing to modernize their application environments. That modernization work is accelerating the distribution of the environments across various cloud, on-premises, and remote/edge locations.

As a result, organizations increasingly need a hybrid multicloud infrastructure that includes a consistent architecture to manage all of those deployment locations. In other words, organizations need a multiple cloud manager that handles the management of on-prem and edge sites just as well as it helps to manage cloud locations. Aware of this growing need, [Nutanix](#) allows organizations to run applications and databases with consistent performance and scalability under a single platform that is easy to manage and that comes with integrated automation to offload tedious, manual operational tasks.

¹ Source: Enterprise Strategy Group Complete Survey Results, [Distributed Cloud Series: Application Infrastructure Modernization Trends](#), September 2022.

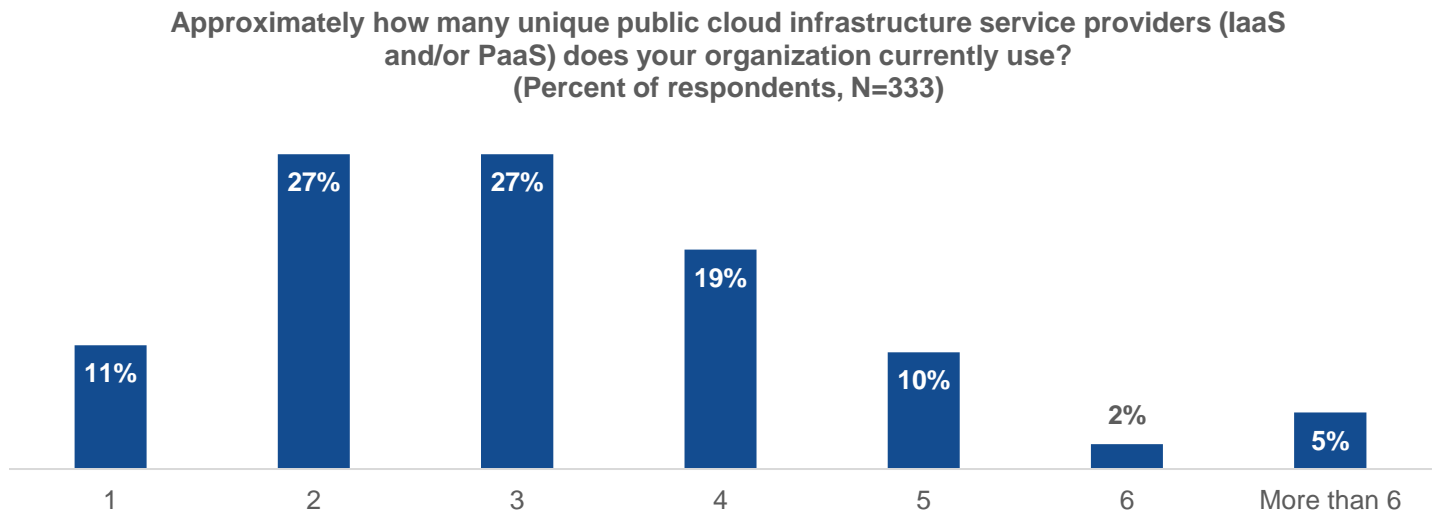
² Ibid.

The Need for Consistency Across Multicloud Environments

Enterprise Strategy Group research sheds light on the challenges of running a multicloud environment that encompasses data centers, edge locations, and multiple clouds, including why organizations feel the need to move that data and why they need to modernize their environments before transferring the data back. These organizations seek transformational rewards but are finding that the multicloud era is fraught with complexity.

Public cloud services now play a massive role in supporting modern IT, with 90% of surveyed organizations stating that they currently leverage two or more public cloud providers (see Figure 1).³

Figure 1. Nearly Nine in Ten Organizations Leverage Multiple Public Cloud Infrastructure Providers



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

The top challenges of using multiple cloud service providers include:

- Connecting disparate environments.** When connecting dispersed apps and data via the network, it can be difficult to coordinate various management and monitoring tools, align numerous processes, and incorporate everything into the continuous integration and deployment DevOps pipeline. Addressing challenges associated with the variations of each location has become one of the biggest roadblocks organizations face when leveraging multiple cloud providers.

Specifically, 32% of respondents reported that they experienced issues with network interconnections, 31% cited problems connecting to legacy environments, and 31% indicated ensuring application performance as challenges related to their multicloud deployments. Organizations also needed help with establishing the organizational dynamics that are required to support multiple cloud environments, with team-coordination issues leading that list (32%).

Addressing challenges associated with the variations of each location has become one of the biggest roadblocks organizations face when leveraging multiple cloud providers.

³ Source: Enterprise Strategy Group Complete Survey Results, *2023 Distributed Cloud Series: The State of Infrastructure Modernization Across the Distributed Cloud*, to be published August 2023. All Enterprise Strategy Group research references and charts in this showcase are from this survey results set unless otherwise noted.

- **Meeting expectations and achieving consistency across locations.** Many organizations identified challenges ensuring that applications meet business expectations when deployed and managed across locations. When it comes to multicloud application management, meeting security expectations has challenged 31% and managing different APIs has been problematic for 30%. With cloud migration projects, meeting security expectations is a common concern when using multiple CSPs, cited by 25%.

Those findings reinforce that businesses need consistency across edge locations, multiple cloud providers, and multiple on-premises data centers if they want to manage that entire infrastructure while predictably meeting applications' performance and security needs.

Ultimately, the ability to simplify and accelerate operations across multiple cloud and data center environments is vital to the success of digital initiatives at scale.

The Nutanix Solution for Hybrid Multicloud Environments

The Nutanix Cloud Platform architecture extends Nutanix's hyperconverged (compute, storage, and networking virtualization) technology to provide a consistent infrastructure and management experience spanning on-premises data center environments, public cloud services, and edge locations. It supports multiple hypervisors and container-based applications while offering flexibility via varied compute, storage, and network capabilities.

Organizations can use the [Nutanix Cloud Clusters](#) (NC2) solution to reduce the operational complexity of hybrid, multicloud deployment and management by leveraging a single set of tools and constructs when extending, bursting, and migrating applications and workloads. Some of the benefits of this fully multicloud solution include the ability to:

- Use existing AWS and Azure accounts and services.
- Use existing cloud credits.
- Leverage Nutanix Cloud license portability.
- Leverage an identical operating model across different endpoints.

And with the [Nutanix Central](#) solution, organizations gain a common cloud-based control plane to visualize, provision, manage, and perform infrastructure self-service wherever Nutanix technology resides—in the data center, in the cloud, or at the edge.

Through the robustness and flexibility of this architecture and technology portfolio, Nutanix can deliver transformational benefits to IT and cloud operations teams, including:

- **Reduced training and staffing burdens.** Attaining consistency and commonality across hybrid, multicloud, and edge environments minimizes an organization's need to train and retrain administrators on the nuances of native-cloud technologies.
- **Accelerated data movement by reducing complexity and risk.** IT teams can easily move applications and data across clouds, on-prem locations, and the edge when they achieve consistency across those locations. Nutanix offers the option to use a single, common set of security policies across all environments. With that standard technology everywhere, organizations gain the flexibility to move applications and workloads to the cloud quickly, with no re-factoring or re-platforming necessary.
- **Flexibility and choice with consistency.** The Nutanix partner ecosystem gives organizations more flexibility through its support for software and hardware options. In the public cloud, Nutanix supports AWS and Azure, along with numerous service providers. Nutanix offers hypervisor flexibility that goes beyond its AHV virtualization technology. Additionally, Nutanix offers a range of Kubernetes developer environments, including Red Hat OpenShift, Docker, AWS EKS-A, Google Anthos, Rancher, Kubermatic, Nutanix Kubernetes Engine (NKE), and D2IQ, along with supporting Azure Arc Kubernetes-enabled services. That last benefit is important.

Given the increased pace of application modernization initiatives, along with current market dynamics, it is advisable to evaluate and leverage multiple options to prevent being locked in if needs or capabilities shift.

- **Financial flexibility and optimization.** Nutanix offers portable licensing across the cloud and on-premises and edge environments, so if demands change, licenses can move with the workload. For example, suppose an organization wanted to move a set of workloads to the cloud. In that case, existing on-premises Nutanix licenses can be ported to cloud-resident solutions when the organization is ready to migrate. This benefit simplifies and accelerates operations while reducing costs. Nutanix even offers cost-governance tools to help organizations better manage and optimize their infrastructure costs across locations.
- **Accelerated operations and innovation.** With consistency achieved across locations, Nutanix and its [Prism control plane](#) can simplify the implementation of self-service provisioning of hybrid, multicloud infrastructure by platform teams, developers, and line-of-business teams. Self-service speeds up digital initiatives while reducing burdens on internal IT resources.

Conclusion

In this era, every organization needs to be cognizant of the different architectures and partners it is working with. The focus should always be on simplifying the IT environment, considering that so much complexity now stems from using a mix of on-premises, public cloud, hybrid cloud, and edge IT.

Nutanix offers a tremendous amount of capability in such deployments. Organizations using Nutanix solutions enjoy the benefits of one consistent, identical architecture to manage everything across cloud, edge, and on-prem locations.

But this is about more than just having a single architecture. It's also about having the benefit of the same constructs in place everywhere as well, which reduces or even negates the need to maintain teams with different IT skill sets. Establishing an identical experience across the data center, cloud, edge, etc., then makes it easier for IT teams to confidently perform other tasks, such as moving apps and data across those environments.

Other vendors claim to offer such seamless capabilities, but the reality is that it is very difficult to do. Nutanix, however, has succeeded in ensuring that the location where apps and data reside becomes irrelevant. And that makes it possible for IT admins, including remotely located staff, to manage, monitor, and move all workloads, wherever they are, from a single platform economically and with ease.

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