Solving the challenges with multicloud environments

THE MULTICLOUD ENVIRONMENT HAS BECOME THE NORM FOR MODERN COMPANIES, who now rely on it to achieve the agility they need to compete. But as much as organizations value the flexibility of the multicloud model, it poses challenges for IT.

It's hard to overstate the benefits of the cloud. In a 2022 Foundry survey of 850 IT decision-makers, nearly three-quarters said their organizations default to cloud-based services when it's time to upgrade or purchase new technical capabilities. It's little wonder, then, that companies find themselves with multiple cloud providers.

But that's when challenges arise. With respect to multicloud, nearly 4 out of 5 (79%) respondents experienced at least one significant downside to their migration. The most common complaint was increased complexity, cited by nearly half of respondents (48%); increased costs of training and hiring were cited by more than a third (34%).

In this paper, we'll take a look at the challenges the multicloud environment presents and offer a solution for addressing them, paving the way for the simplified use and orchestration of all three major cloud providers: Amazon Web Services, Google Cloud, and Microsoft Azure.

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Multicloud challenges

Multicloud environments can present challenges ranging from increased complexity around network and workload management to security and governance — all at a time when many companies are struggling to find and retain qualified IT staff.

NETWORK PROVISIONING AND MANAGEMENT COMPLEXITY: Each cloud provider has its own unique tools and user interfaces. As companies adopt multiple providers, they must learn the intricacies, rules, and nomenclature of each one.

The use of disparate management tools without an integrated view of the network supporting cloud service providers makes it difficult for IT staff to get a single, comprehensive picture of the entire cloud landscape — or appropriately manage and monitor all connections.

MANAGING APPLICATION PERFORMANCE: Similarly, use of multiple cloud platforms can make it difficult to monitor and manage end-to-end application performance. Issues such as latency, jitter, and packet loss on any single cloud connection can negatively impact performance for entire applications and workloads. Network traffic bottlenecks can have a negative effect on other workload deployments — and, most importantly, on users.

To guarantee a quality end-user experience, companies need to be able to quickly make changes in response to network conditions, such as shifting workload traffic between providers or locations. This is difficult to accomplish in a timely manner if it requires toggling between multiple cloud providers' management consoles. Also lacking is a consolidated view of the network and its data traffic.

SECURITY AND GOVERNANCE INCONSISTENCY: Dealing with multiple cloud providers can also make it difficult to implement consistent governance policies across clouds and applications, to keep up with changing industry and geo-specific regulations.

Security likewise becomes more challenging. Using multiple cloud providers increases your potential attack surface, which now extends across numerous locations, vendors, and data sources. Companies struggle to manage endpoints and secure connections to multiple providers from across their infrastructure at a time when web application attacks are one of the leading types of security breaches.

INCREASED OPEX COSTS: The need to deal with multiple, distinct cloud platforms introduces a learning curve even for experienced IT personnel, taking their time away from other priorities. While that may be a one-time cost (albeit multiplied by numerous individuals), the additional time dedicated to the management of multiple platforms along with ongoing management tasks increase operating expenses (OpEx) and reduce support for other business needs.

SKILLED LABOR SHORTAGE: These challenges come at an inopportune time. For years companies have been finding it difficult to locate, train, and retain enough skilled staff to adequately manage their IT and network infrastructure. More than three-quarters of companies are having trouble finding the right people with the right skills in the IT sector, according to a survey of 40,000 employers by the multinational staffing firm ManpowerGroup.

The introduction of multiple cloud environments, and all the management challenges they present, only exacerbates the problem.

Addressing multicloud challenges

It's clear these myriad challenges require enterprises to adopt new support tools or platforms specifically designed to address the complexities a multicloud infrastructure presents.

To get the most out of their multicloud infrastructure, organizations need a comprehensive, integrated solution that provides the network visibility and control of all major cloud platforms : Amazon Web Services, Google Cloud, and Microsoft Azure.

NEARLY 75% OF 850 IT DECISION-MAKERS SAID THEIR ORGANIZATIONS **DEFAULT TO CLOUD-BASED SERVICES WHEN IT'S TIME TO UPGRADE** OR PURCHASE NEW TECHNICAL CAPABILITIES.

SOURCE: Foundry survey

Such a solution should deliver a number of key capabilities, including the following:

SIMPLIFIED NETWORK PROVISIONING: The fact that each cloud infrastructure provider has its own management tools and interface is the first issue an integrated solution must address. An effective multicloud solution must provide a single control portal through which IT can quickly establish and monitor connections to and between any of its cloud providers, without having to grasp the intricacies of each one's platform or dashboard.

Even better is a solution that offers preconfigured, automated cloud network provisioning capabilities. Automation helps speed the provisioning process while reducing the possibility of human error in network configuration.

COMPLETE NETWORK AND APPLICATION VISIBILITY ACROSS CLOUD PROVIDERS: A single cloud control portal should also give IT end-to-end visibility of their entire cloud infrastructure, across multiple providers, from a single pane of glass. Such a solution is far more effective than trying to piece together a comprehensive picture of network, application, and service performance from multiple consoles. With a single, consolidated view, IT can spot problems sooner and resolve them faster.

END-TO-END APPLICATION AND PERFORMANCE MANAGEMENT: Many applications are now dependent on multiple cloud providers. Network resources must be appropriately balanced across providers for optimal application performance. If a specific connection to one provider becomes congested or suffers performance degradation, the load needs to be quickly redistributed to a different network connection, perhaps in a separate geographic location.

Each of these issues makes load balancing an important consideration for a multicloud management solution. An effective solution must be able to solve for appropriately balancing network resources across all providers for optimal application performance.

CONSISTENT GOVERNANCE AND SECURITY: Ensuring proper governance and security when your network extends to multiple cloud security providers requires additional controls and capabilities.

In terms of governance, companies must ensure their policies and processes are applied consistently across all cloud providers, including compliance with regional and global rules and regulations.

An effective multicloud solution should also offer protection against attacks by blocking malicious web traffic in real-time, preventing unauthorized network access, application intrusions, and more. While these are all basic security defenses, a consolidated, consistent approach ensures enforcement across diverse cloud environments.

Benefits of a sound multicloud platform

With such a comprehensive solution in place, enterprises can address the challenges multicloud presents and reap significant benefits.
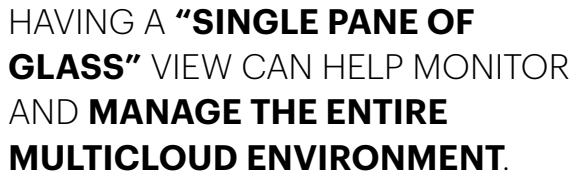
It starts with having a "single pane of glass" to monitor and manage the entire multicloud environment, including network traffic and application performance, the application-to-end-user experience, security, and cloud service provider internetworking. No more toggling between cloud provider consoles while trying to determine the cause of a performance issue or create a new cloud-to-cloud connection.

A multicloud platform delivers an integrated network design that reduces complexity by providing a single, comprehensive view of network resources across the entire environment — enabling IT to spot problems sooner and resolve them faster.

It provides simplified provisioning of network connections to multiple providers. A solution that offers automated network provisioning, with pre-integrated configurations, increases agility while reducing the possibility of human error.

Key requirements of an effective multicloud management platform

✓ Single control portal for simplified network provisioning

✓ Visibility across all cloud service providers

✓ Load balancing and end-to-end application performance management

✓ Granular security controls and governance capabilities across cloud providers

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A comprehensive multicloud management solution also addresses security concerns. A solution that includes a web application firewall will block and filter traffic so only authorized users can access applications and data, no matter where they reside. That helps prevent downtime from security issues as well as data breaches.

It all adds up to a superior end-user application experience. End users want applications to work to get their jobs done. Customers just want to be dealt with effectively, whether it is placing an order or getting assistance. With effective multicloud management, the network will be ready to accommodate any periodic demand spikes. In short, employees and customers experience less downtime and can be more productive.

> HAVING A **"SINGLE PANE OF GLASS"** VIEW CAN HELP MONITOR AND **MANAGE THE ENTIRE MULTICLOUD ENVIRONMENT**.

Verizon NaaS Cloud Management

In their ongoing effort to achieve agility and compete effectively, companies will continue to pursue a multicloud strategy. Such a strategy will work best when it includes a solution that ensures reliability while being easy to manage, use, and secure.

With its years of experience in networking, including cloud service connections, Verizon understands what it takes to deliver superior performance in a multicloud environment.

Verizon NaaS Cloud Management offers all the tools enterprises need to effectively deliver on the multicloud promise. Verizon's privately owned network backbone ensures reliability because it is not subject to the security and performance risks of the public internet.

Verizon also has deep experience with the major cloud service providers, enabling it to act like a neutral third party interested only in providing fast, reliable, secure cloud and application connectivity and management — wherever you need it, across the globe.

[Learn more](#) about how Verizon NaaS Cloud Management can help address your multicloud challenges. Email contactme@verizon.com.

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