SHOWCASE

Intelligent Cloud Networking Solutions for Business-critical Applications

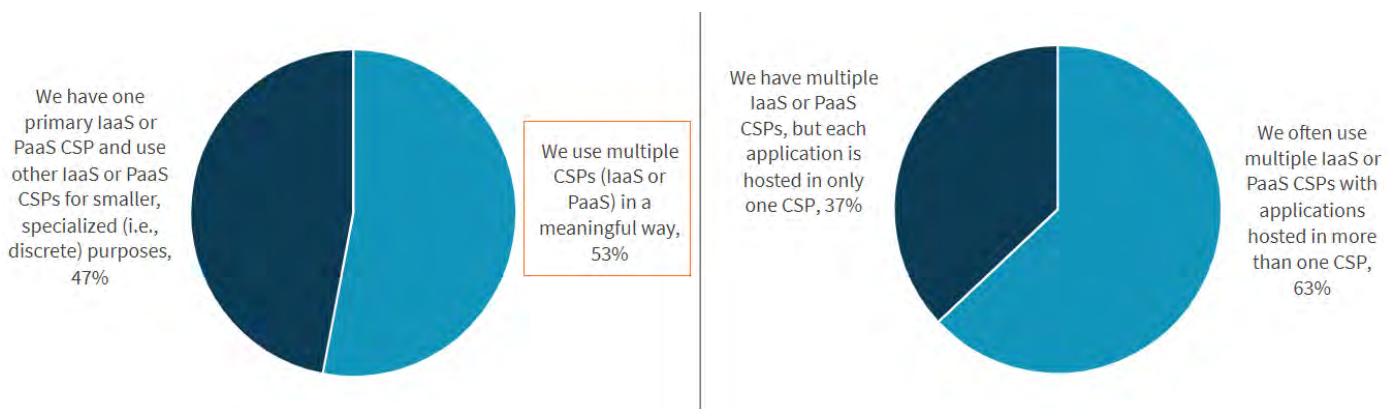**Date:** November 2022 **Author:** Bob Laliberte, Principal Analyst

ABSTRACT: Organizations are increasingly deploying data and applications across public clouds. This includes an increase in not only production applications but also in business-critical applications deployed in public clouds. Migrating these applications to the cloud can be time-consuming, risky, and costly. To help mitigate the risk, accelerate the migration process, and ensure availability, organizations are leveraging intelligent cloud networking solutions to secure and simplify not only the migration but also day-two operational efficiency.

The Enterprise Requirement for Multicloud Networking

For more than a decade, organizations have been steadily adopting public clouds to host data and applications. TechTarget's Enterprise Strategy Group research now indicates that 95% of organizations are using IaaS and SaaS to some extent.[1] While early usage was related to data storage and backups, organizations have evolved their use, and the majority (88%) are now running production workloads in public clouds.[2] This includes mission-critical business applications, such as SAP or Oracle.

In addition to evolving their application use, we have also seen organizations really begin to leverage multiple public clouds, with 86% reporting that they use multiple public clouds and of those, just over half (53%) report using them in a meaningful way. Indeed, 63% of those respondents using multiple public clouds in a meaningful way use multiple public clouds with applications hosted in more than one public cloud provider (see Figure 1).[3]

Figure 1. Use of Multiple Public Clouds

We have one primary IaaS or PaaS CSP and use other IaaS or PaaS CSPs for smaller, specialized (i.e., discrete) purposes, 47%

We use multiple CSPs (IaaS or PaaS) in a meaningful way, 53%

We have multiple IaaS or PaaS CSPs, but each application is hosted in only one CSP, 37%

We often use multiple IaaS or PaaS CSPs with applications hosted in more than one CSP, 63%

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

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[1] Source: Enterprise Strategy Group Research Report, *2022 Technology Spending Intentions Survey,* November 2021.
[2] Source: Enterprise Strategy Group Research Report, *Cloud-native Applications,* May 2022.
[3] Source: Enterprise Strategy Group Complete Survey Results, *Distributed Cloud Series: Application Infrastructure Modernization Trends,* March 2022.

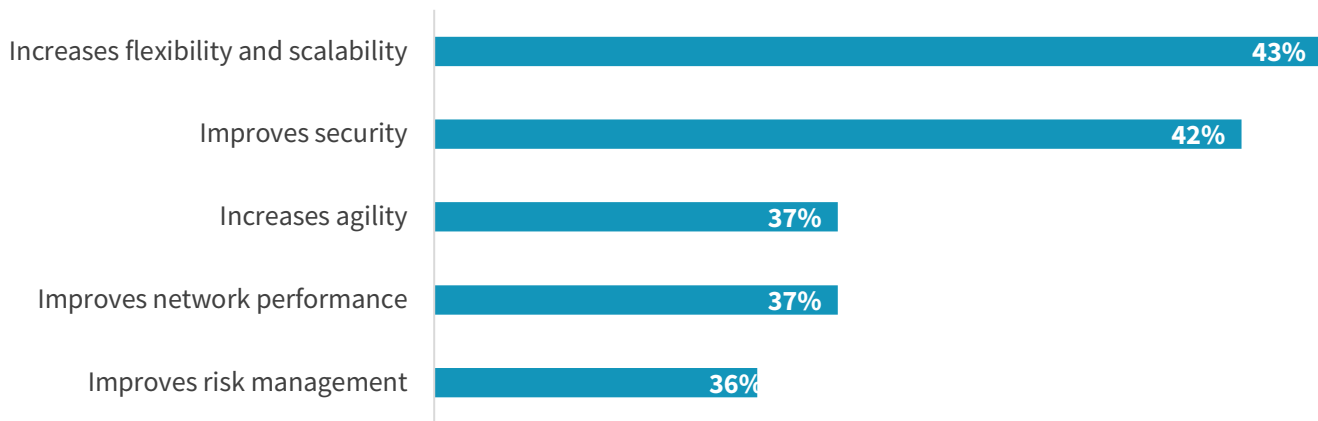The key to understanding the use of public clouds is the fact that organizations need to deliver positive user experiences and drive operational efficiencies. As a result, organizations tend to deploy application workloads in the public cloud environments that they work best in. However, in order to do this, organizations require the appropriate underlying network and security infrastructure that provides consistent visibility, troubleshooting, and automation, regardless of which public cloud environment best suits an application workload.

This public cloud adoption is driven by accelerated digital transformation initiatives, with organizations indicating that some of their top drivers for public cloud are increased flexibility and scalability (43%), improved security (42%), increased agility (37%), and network performance (37%).[4]

Figure 2. Top 5 Drivers for Using Public Clouds

What are your organization's biggest drivers for choosing a public cloud service for production workloads? (Percent of respondents, N=363, multiple responses accepted)

Driver	Percent
Increases flexibility and scalability	43%
Improves security	42%
Increases agility	37%
Improves network performance	37%
Improves risk management	36%

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

Yet, organizations are challenged to achieve these goals, especially when they are deploying applications in a public cloud environment that requires operations teams to relearn network and security architectures and commands with each new cloud platform they add. Having a consistent network and security platform to connect to all data centers, public clouds, and edge locations can dramatically accelerate adoption and drive operational efficiency.

Aviatrix Intelligent Cloud Networking

To enable organizations to take full advantage of the migration to public clouds and rapidly growing cloud networking environments, Aviatrix created a platform to abstract the complexity of connecting to and working with multiple different public cloud vendors while still ensuring secure, performant network connections. It provides the requisite levels of security, visibility, and control, combined with automation, to ensure optimal customer experiences and drive greater operational efficiencies in complex cloud networking environments. However, leveraging the Aviatrix platform can provide benefits for organizations even when they access a single public cloud environment.

For example, organizations can leverage the platform to move those production or mission-critical applications to the public cloud that are most suited to those applications, while also supporting applications running in multiple clouds. Most modern applications running in production environments leverage cloud-native constructs, which need to be supported. For business-critical applications, organizations are looking to take advantage of advanced capabilities for not only

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[4] Source: Enterprise Strategy Group Complete Survey Results, *Distributed Cloud Series: Application Infrastructure Modernization Trends,* March 2022.

network and security functions, but also to provide the requisite levels of automation, data, and analytics, as well as workload and performance management software.

The Aviatrix platform was designed for the public cloud and delivers the advanced capabilities required for production and business-critical applications. Specifically, it provides operational efficiency by abstracting the networking and security functions of the public clouds. Operations teams only need to learn one system but can operate in multiple different public clouds. The Aviatrix platform also accelerates problem resolution. Since it understands the complexity of networking in and between multiple private data centers and multiple public clouds, it provides deep telemetry to collect, correlate, and identify the root causes for fast troubleshooting and resolutions. The platform also takes advantage of embedded distributed layer-4 firewalling, with the ability to direct traffic for deeper inspection when warranted. This ensures security while reducing the cost of bolting on next-generation firewalls for east-west inspection. Finally, to accelerate migrations, deployment, and day-two operations, the Aviatrix platform provides automation capabilities across complex public cloud environments. Given the complexity inherent in these highly distributed environments, organizations must leverage Infrastructure as Code to ensure timely moves, adds, and changes, especially as environments scale up with more applications and scale out to additional public cloud vendors.

The capabilities provided by the Aviatrix platform enable organizations to not only realize the top goals for public cloud use, but to reach those goals faster with less risk. This would be particularly valuable when deploying production or business-critical applications in the public cloud.

Enabling SAP in AWS

It took a number of years for organizations to move production applications to the public cloud, but now, as noted above, almost nine out of ten organizations deploy production applications there. Increasingly, we are seeing business-critical applications shifting to public clouds as well.

One example of this shift is the migration of SAP to public cloud provider AWS. This is great example of a business-critical application that can be run in a public cloud environment and can benefit greatly from leveraging advanced network and security capabilities. For example, how do organizations plan to handle:

- The **requirement for overlay IPs for initial deployment,** which allows instances in **two availability zones** without using the same IP address, automatically redirecting the overlay IP to the primary or secondary instance when failover is required.

- The need to ensure that the environment **remains highly available and secure** despite any adds, moves, and changes that occur immediately after it is deployed. Aviatrix automates time-consuming and error-prone manual updates to routing tables.

- **Tight integration with AWS APIs.** Aviatrix has worked closely with AWS to provide advanced network services leveraging APIs with AWS so it can automate changes to routing tables and provide visibility and operational efficiency in a very complex, business-critical environment. This includes ensuring a high availability network environment across all AWS availability zones.

Business-critical also means highly secure.

- The Aviatrix platform is capable of securing SAP in AWS. It has built its security into the network. Organizations benefit from high-performance IPSec encryption both over AWS Direct Connect circuits and in AWS up to 100Gbps for secure

data transfers when migrating SAP to AWS, and the platform's ability to provide network segmentation delivers an extra layer of security.

- Distributed firewalling is a key capability of this platform. This enables security services to be distributed where they are most needed, not just where they can be bolted on as independent inspection points. Organizations can leverage layer-4 distributed firewalling that is built into the network and also redirect traffic to next-generation firewalls (NGFW) when needed. This combination mitigates risk and reduces the cost of deploying security applications for an SAP environment.

- Centralized policy control enables organizations to ensure that their SAP applications are properly protected regardless of where the platform is operating from. Organizations can program their intent into the Aviatrix platform and allow the intelligent cloud network to decide where security rules are implemented across the network for optimal protection.

To facilitate the migration of SAP to AWS, the Aviatrix platform is available on AWS Marketplace, which allows organizations to download and launch Aviatrix and apply metered billing against their AWS commitments. These SAP migrations tend to be very large, costly projects with timelines that are often measured in months or years. And while the Aviatrix component is typically a small piece of the overall budget, it can deliver significant value by accelerating timelines, simplifying deployments, mitigating risk, and ensuring streamlined day-two operations and troubleshooting.

The Bigger Truth

Modern IT environments have been defined by the shift to public clouds. It is common today for organizations to deploy production applications and even business-critical applications into single or multiple cloud environments. However, these highly distributed environments can be complex to navigate.

Organizations need simplified yet intelligent network solutions that are able to abstract complexity, mitigate risk, and accelerate the deployment of business-critical applications like SAP into a robust public cloud like AWS.

Aviatrix was purpose-built to enable highly performant, secure, and operationally efficient cloud network environments. The Aviatrix platform provides several key benefits, including the ability to accelerate and ensure successful migrations of business-critical applications like SAP to AWS environments. While only a fraction of the overall project cost, the Aviatrix platform delivers a great deal of value not just for migration and initial setup (advanced networking, automation and operational visibility), but also for supporting day-two operations. Its deep telemetry data provides the visibility to accelerate troubleshooting, while automation capabilities abstract complexity and eliminate time-consuming, error-prone manual processes. The platform's ability to abstract network functions of cloud environments streamlines data ingestion from different sources. The distributed firewalling capability ensures security is built into the solution and not bolted on. Lastly, being part of AWS Marketplace ensures that all Aviatrix services count toward organizations' AWS commitments.

If, like so many others, your organization is planning to migrate a business-critical applications like SAP to AWS, it would be worth your time to explore how an intelligent cloud networking solution could benefit not only the migration but also the ongoing operations.

For more information on the Aviatrix solution on AWS Marketplace, please visit [Aviatrix in AWS Marketplace.](#)

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