Stairway to Cloud Networking Nirvana

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Introduction

Is your cloud a silo?

Whether you're new to the Amazon Web Services (AWS) Cloud or a long-time user, it is safe to assume what you're hoping to benefit from - elasticity, reduced time-to-market, and cost-effectiveness. Like the many networking folk before you however, you'll soon discover that the complexity of legacy network management solutions can hold you and the cloud back from delivering what was expected. Rather than leverage router-based systems that can take days to be configured and deployed, you want utilize modern solutions that match or enhance the benefits that the cloud can deliver.

Putting this philosophy into practice is called "cloud-centric networking." It is an approach towards network architecture and management that treats the cloud as an integral part of your enterprise network, versus a loosely connected silo. Workflows are designed with cloud-based resources in mind enabling you to actually deliver the expected benefits from your cloud deployments. Ultimately, it shifts focus away from network constraints and tedious, CLI-based configurations and onto initiatives that align with core business values.

Net result – You can have an elastic, agile, and efficient solution throughout the application delivery chain, end user to cloud-based server. All managed with easy and seamless workflows.
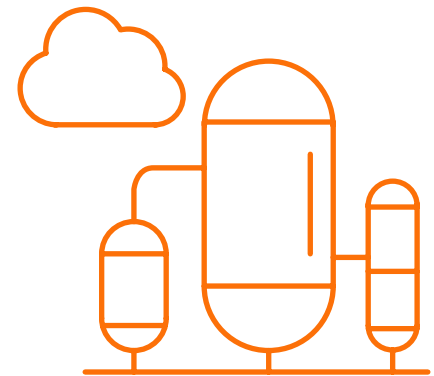
Cloud + SD-WAN = Cloud Networking Nirvana

Once you're convinced that a cloud-centric networking approach can be beneficial, it's time to learn how you can implement one. This can be done by deploying a software-defined WAN (SD-WAN) solution.

But, the SD-WAN solution you pick should leverage adequate automation and business-aligned workflows to really deliver the agility you need. Holistic SD-WAN solutions extend software-defined control into the cloud to ensure simple management for the complete network – cloud, LAN and WAN.

AWS, a market leader in cloud technology, has a technology partnership with Riverbed, a market leader in WAN technology. The two solutions integrate to deliver seamless control, managed centrally and with ease.

Simply stated, SD-WAN is an approach that aims to overcome the complexity and rigidity experienced when using legacy tools for managing modern networks.
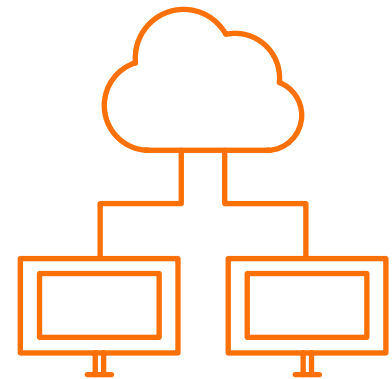
aws | riverbed®

LET'S LOOK AT WHAT YOU CAN DO BY SUPPLEMENTING YOUR AWS ENVIRONMENT WITH RIVERBED SD-WAN:

Set up secure connections from branch office locations to and between AWS VPCs, in just a few clicks

How does this work? – The Riverbed system automatically creates an SD-WAN instance in AWS and automates secure full mesh connections

Steer traffic directly from the branch office to the cloud, without a backhaul into the data center

How does this work? – The SD-WAN system automatically inspects application traffic, encrypted or unencrypted, leaving your branch office and steers appropriate traffic to the appropriate WAN link. If WAN path quality degrades, the next best link is used. Built-in firewalls in the SD-WAN appliance, or cloud-based security brokers can be leveraged to secure traffic.

Ensure performance through latency reduction and bandwidth optimization

How does this work? – If your end goal is performance assurance/availability, application acceleration is SD-WAN's trusted wingman. With built-in visibility, you'll know it's working.

Manage everything simply and centrally

How does this work? – If you want a cloud instance running in minutes, AWS makes it easy to set one up and Riverbed makes it easy to connect to with assured performance and security. Everything is managed via easy, point-and-click workflows on a central management console.

LET'S LOOK AT SD-WAN IN THE CONTEXT TYPICAL BUSINESS IMPERATIVES FOR IT:

Slow Business Agility:
Business agility requires IT agility. But, you cannot improve IT agility when dealing with inconsistent performance and complex network management.

Poor Application Performance:
The world runs on applications, so when your apps aren't running up to par, revenue is affected.

Deficient Network Security:
As you extend your network architecture, you increase your attack surface. Thus, it is imperative to understand and eliminate any vulnerabilities.

Throughout this eBook, we'll look into each of these challenges and explain how Riverbed SD-WAN on AWS helps overcome them.

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We've been able, with AWS and Riverbed, to not have any infrastructure that we own from an asset perspective. Other than all the financial benefits of now having an operational cost, rather than capital that we need to depreciate and manage from the financial perspective, **we've got an ability now to very quickly build and deploy a global network** which would have taken months of planning and deployment before, now in hours.

–Rob Gillan
Chief Technology Officer, SimplePay

Challenge
Slow Business Agility

Solution
Simple And Seamless Management

Once you get started on AWS, you're able to provision resources on-demand and pay only for what you use. You want to do this faster, at scale, and with no chance for human error. Automated resource provisioning with AWS-native services, such as AWS Lambda and AWS CloudFormation, fulfill this need.

But what about automation in the network between you and AWS? Or between all branch offices in your enterprise and AWS – all VPCs in all regions? Do you have a

quick and painless way of establishing full mesh secure connections so Intellectual Property remains confidential, without spending weeks creating VPNs?

Leveraging legacy, CLI-based approaches not only slows the agility you gained from AWS, but it reintroduces the likelihood of human error and becomes a time-suck on network administrators. When you're left carrying out mundane configurations and arcane coding, you've effectively wiped out all gains from AWS.

The solution is actually simple. You can complement your AWS services by extending automation to network management. Riverbed SD-WAN enables network administrators to automate secure connectivity as new resources are provisioned, removing manual configurations and much of the associated burden left by legacy router-based solutions. Now that configurations are alleviated, what else could derail an IT administrator's day? How about sudden performance complaints from your end users? With Riverbed SD-WAN, you gain deep visibility into network performance and end-user experience, enabling you to proactively solve any issues before the phone starts ringing. You can also enable application acceleration from within our SD-WAN solution, ensuring optimal end-user experience.

In a nutshell – Riverbed SD-WAN gives you one console for simple, cloud-centric management to add secure connectivity and performance to and between AWS VPCs.

Challenge
Poor Application Performance

Solution
Visibility, Acceleration And Software-Defined Control - All In One

Businesses like yours are becoming more and more dependent on applications. And the applications you leverage are only becoming richer, more diverse, and more extensive. Concurrently, users are expecting applications to be faster than ever before, irrespective of the device or network they are being used on.

So, it is understandable that the pressure to deliver business-relevant applications with consistently high performance is becoming increasingly taxing.

You must reshape how you manage the network to accommodate this shift, focusing network management around:

- **Visibility into real-time application performance**
- **Visibility into real-time network link quality**
- **Application priority to the business**
- **Ability to change priorities or add capacity for new applications quickly**

Juggling all of this sounds like a heavy task, but Riverbed puts all of these components in one place. With Riverbed, you can assure application performance by leveraging a deeply integrated solution of visibility, application acceleration, and software-defined control, managed centrally through cloud-centric workflows.

Riverbed provides visibility into application performance metrics, network segments, site locations and/or user experience. You can also proactively monitor network performance and utilize visibility metrics to quantify performance improvements based on the corrective measures you take.When you're left carrying out mundane configurations and arcane coding, you've effectively wiped out all gains from AWS.

For business-relevant applications, Riverbed's application acceleration solution, SteelHead, increases application and data transfer performance up to 100x and can deliver a tangible competitive edge, especially since business performance has a direct correlation with application performance.

Challenge
Deficient Network Security

Solution
Security Built For Cloud Networks

When you run workloads on the AWS Cloud, AWS implements and operates security measures to protect the underlying infrastructure. But, you are responsible for securing the workloads you deploy in the cloud.

" **Payment processing is a secure business.** Every packet of data is carrying revenue, so it's something we had to very quickly focus on, and get an agile, secure architecture.

-Rob Gillan
Chief Technology Officer, SimplePay

As you extend your network architecture, you inherently increase your attack surface and the complexity of sealing vulnerabilities. But there are things you can do to secure your cloud transition:

- **Leverage security solutions** **that also deliver the benefits expected from the cloud. Cloud-based security brokers and built-in firewalls within Riverbed SD-WAN provide agile and comprehensive security for local Internet breakouts, preempting the need for a backhaul into the on-premises data center.**

- **Automate VPN connections** **into the cloud to ensure no errors and reduce the operational overhead in configuring them.**

- **Segment your network** **to ensure that confidential traffic is separated from everything else. For instance, segmented IoT systems cannot be used to hack into financial data bases.**

Again, everything is managed centrally, via one console.

The Riverbed SD-WAN solution was built from ground up with security in mind. Security is inherent to the solution.

Conclusion

As you've seen throughout this eBook, legacy networking solutions hinder your ability to thrive on AWS by introducing complexities and limitations to your cloud adoption. As a result, the benefits you look to achieve by leveraging AWS are quickly compromised.

A cloud-centric networking approach helps you strip away the complexities and limitations of network management, enabling you to rethink networking. Now, instead of focusing on network constraints and how to overcome them, you can focus on business priorities and how to achieve them.

This new way of thinking ensures performance and security control from end user device to application server, cloud-based or on-premises. With SD-WAN, integrated visibility, and optimization, Riverbed and AWS collaborate to help you fundamentally change the way you manage networks.

AWS can help you increase business agility and cost-effectiveness. However, if you're leveraging sub-optimal networking solutions, you're deprived of the full range of AWS benefits. Instead, you must leverage tools and processes that align with business priorities and complement the cloud's functionality by extending automation and ease-of-use to networking. Leveraging Riverbed and AWS fulfills this idea and helps you rethink your network strategy to deliver the agility, efficiency, and performance expected from a modern enterprise.

Customer Reviews

1-click solution for SD-WAN (5-stars): ★★★★★
"Using SteelConnect Gateway I can now readily access multiple VPCs spread across different AWS accounts and regions in a matter of minutes. For a small agile team this is incredibly useful. I can build my VPC using private subnets and connect our on-premise resources without needing to get our IT department involved (after the initial setup). Where was this three years ago when I needed it?!"

Amazing (5-stars): ★★★★★
Connected both my VPC's together and to my physical office using full-mesh in a matter of minutes after making an IAM role. The level of automation is amazing, actually delivers on the promise. A+

So Freakin' Easy (5-stars): ★★★★★
10 VPC and auto connect everything in less than 10 minutes?? Are you kidding me? This product has far exceeded my expectations and is so easy to use.

ABOUT AWS

For 10 years, Amazon Web Services has been the world's most comprehensive and broadly adopted cloud platform. AWS offers more than 90 fully featured services for compute, storage, databases, analytics, mobile, Internet of Things (IoT) and enterprise applications from 42 Availability Zones (AZs) across 16 geographic regions in the U.S., Australia, Brazil, Canada, China, Germany, India, Ireland, Japan, Korea, Singapore, and the UK. AWS services are trusted by millions of active customers around the world monthly -- including the fastest growing startups, largest enterprises, and leading government agencies -- to power their infrastructure, make them more agile, and lower costs.

To learn more about AWS, visit https://aws.amazon.com.

ABOUT RIVERBED

Riverbed enables organizations to modernize their networks and applications with industry-leading SD-WAN, application acceleration, and visibility solutions. Riverbed's platform allows enterprises to transform application and cloud performance into a competitive advantage by maximizing employee productivity and leveraging IT to create new forms of operational agility. At more than $1 billion in annual revenue, Riverbed's 28,000+ customers include 97% of the Fortune 100 and 98% of the Forbes Global 100.

Learn more at www.riverbed.com.