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Riverbed Solutions for

# Cloud Apps and Networks

Optimize application performance and simplify WAN for IaaS, PaaS, and SaaS

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The use of public and hybrid clouds has become a mainstream IT practice. Nearly 9 in 10 respondents to a 2016 survey of cloud buyers and users reported using public cloud services.<sup>1</sup>

While some may only be SaaS subscribers, enterprises are increasingly using public cloud services to develop and deploy new applications, to host migrated apps, and to create hybrid cloud architectures with modular, distributed apps.

This is not surprising because there are so many benefits to using public cloud services. However, cloud adoption still comes with risks that include loss of visibility and control over performance as well as the challenge of managing complex networks stretching from the enterprise to a cloud, across cloud regions, and between cloud vendors.

To realize the many benefits of cloud services, enterprises need integrated solutions that provide complete performance awareness of applications and make optimal use of network resources.

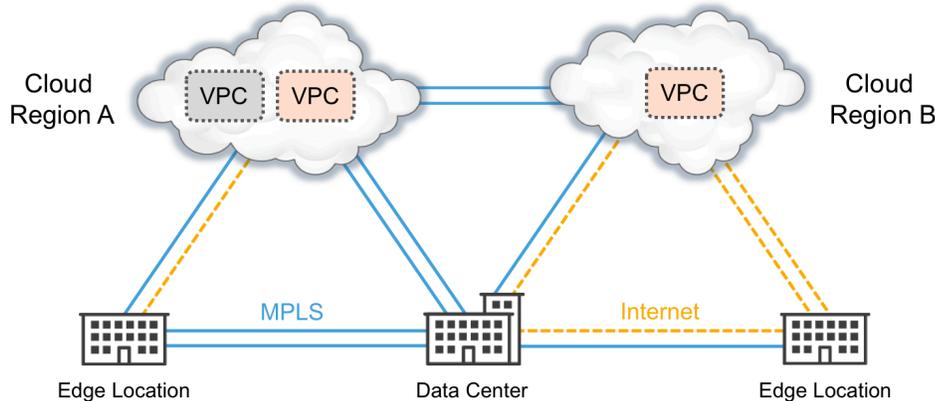
## Challenges

Applications that have been running on-premises may not perform as well after migration to the cloud due to differences in the infrastructure stack and latency issues between application tiers.

IT organizations are expected to deliver consistently high levels of performance and end-user satisfaction for cloud apps. It may be difficult, however, to identify and troubleshoot performance problems due to visibility gaps between the application and end-user.

Service provider SLAs end at the edge of the cloud. Yet IT organizations are still responsible for the overall performance of an application. They need the ability to set, manage, and deliver on service targets that extend from the edge of a cloud to integrated applications located elsewhere or to end users.

Development teams working on cloud-native applications are often under time pressure that can put software quality at risk. Some of the more challenging defects to resolve are performance issues rooted in the application code.



Seamless connectivity with single-click cloud deployment

**Figure 1**  
Riverbed SD-WAN provides seamless, end-to-end network connectivity across the enterprise, to the cloud, and between clouds with automated network build-out and single-click orchestration.

Building networks from the enterprise to the cloud, within clouds, and between the clouds of different cloud service providers can be complex. Choices must also be made between high cost, SLA-guaranteed MPLS and lower cost, broadband Internet.

Another infrastructure challenge enterprises face is the time and cost of managing storage distributed across edge locations. Distributed storage is also at greater risk for theft of data loss.

## Solutions

Whether you are just beginning to use cloud services or have been for some time, Riverbed can help you optimize the performance of cloud applications and networks. Our solutions for cloud also speed application development and improve software quality, simplify network build-out, and support the consolidation of primary or secondary storage into the cloud.

### Cloud Planning and Readiness

Migrating on-premises applications to public clouds can be difficult. Performance can be negatively affected by differences in the infrastructure stacks and network designs as well as changes to latencies between application tiers.

Riverbed Professional Services takes the drama out of migrating applications to the cloud. We help you identify hidden risks and constraints that can lead to performance issues, unexpected project delays, and unplanned costs by:

- Mapping application dependencies
- Using quantitative analysis to predict post-migration performance
- Making recommendations to improve performance and reduce risk

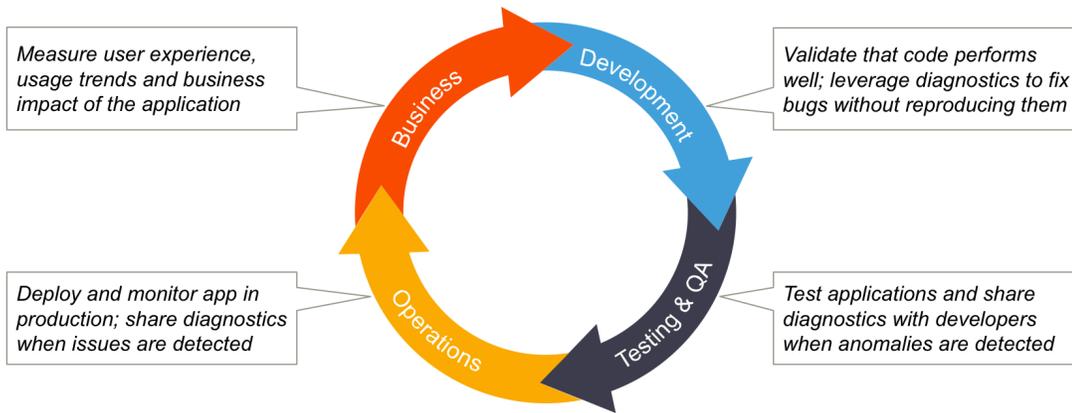
Our suite of performance management tools for applications and networks provides the insights that are central to this cloud planning and readiness solution.

### Application Performance Optimization

Riverbed can help you optimize the performance of cloud-based applications in three ways.

First, we provide the end-to-end visibility needed to find, troubleshoot, and resolve performance issues faster—regardless of whether they are due to the application, network, or end-user device.

Riverbed APM/NPM tools let you evaluate performance from the user perspective at one end, spotlight application issues at code level in the cloud, and drill down to understand network issues in the middle.



**Figure 2**  
Riverbed APM tools can help you keep pace with aggressive release schedules, maintain quality, and optimize performance for applications developed in the cloud. We can also help you measure the end user experience, identify changing usage trends, and quantify the business impact of an application

Riverbed APM tools promote faster releases and higher quality

Second, our SD-WAN gives you the ability to select network paths and prioritize traffic by application, user, or location. You might, for example, choose to route VoIP traffic on an MPLS link with high priority and send file downloads across broadband Internet.

Third, you can improve the performance of all applications by using WAN optimization between your enterprise and the cloud as well as between cloud regions.

### Ongoing Service Assurance

Maintaining acceptable levels of application performance and availability can be difficult with software updates, changing use patterns, and increasing network traffic. Service provider SLAs stop at the edge of the cloud, which is the limit of their control.

Riverbed gives you the ability to assure that ongoing application performance and availability are optimal by setting, managing, and delivering against service level objectives that go beyond the cloud with:

- Real-time monitoring of applications, networks, and end-user experience
- Auto and manual setting of performance thresholds on a user and application basis
- Analytics that identify issues before users are impacted

### Improving Continuous Delivery

DevOps teams are under pressure to deliver frequent yet high-quality releases of cloud-based applications that meet end-user expectations and achieve business objectives.

Riverbed APM tools can help you keep pace with aggressive release schedules and maintain quality with:

- Detailed diagnostics that reduce the need to replicate bugs so developers can fix them faster
- Powerful analytics that illuminate hidden performance issues in app software and pinpoint their causes down to the code level

**“Riverbed metrics and reports gives me the ability to help diagnose and fix problems quickly while ensuring the service-level delivery of business critical applications.”**

Sam Mannix  
Architecture Manager, RSM Australia

## Hybrid WAN Simplification

Deploying and managing wide area networks is becoming more complicated as IT organizations adopt broadband Internet to supplement MPLS links and increase their reliance on cloud-based applications. Traditional methods of designing and deploying WAN don't measure up to the complexity of the challenge today.

Riverbed SD-WAN provides seamless, end-to-end network connectivity across the enterprise to the cloud with automated network build-out and single-click cloud orchestration. Our hybrid WAN solution also offers centralized, intent-based policy management, a simplified cloud-oriented design/workflow, automated zero touch provisioning of branches *plus* WAN optimization and integrated visibility for performance, agility, and secure application delivery.

## Cloud-Ready Edge

Deploying and managing islands of local storage at edge locations in the enterprise is costly, time-consuming, and increases the chances of data loss or theft.

We can help you simplify IT at edge locations by combining cloud-based storage with Riverbed hyper-converged infrastructure. Our solution for a cloud-ready edge reduces costs and improves business continuity by centralizing data storage to minimize downtime or loss.

## Learn More

Let Riverbed, the leader in application performance, help ensure your success using public cloud services.

Learn more at [Riverbed.com/cloud](https://riverbed.com/cloud).

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“Unlike other traditional vendors in the market, Riverbed has really embraced a software-defined approach for the cloud. We now have the ability to very quickly build and deploy a global network in a matter of hours, which would have taken months of planning and deployment before. Now, we can easily scale up and down with both SteelConnect and AWS quickly and without any concern.”

Rob Gillan  
Chief Technology Officer, SimplePay

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Riverbed solutions for the cloud are built on the Riverbed Application Performance Platform™, which transforms application performance into a competitive advantage by giving you the tools to leverage hybrid IT for new forms of operational agility.

## SteelCentral

**Improve business performance with application visibility**

See apps end-to-end, from server to device, and drill down into any infrastructure component with HD clarity.

**LEARN MORE**

at [Riverbed.com/SteelCentral](http://Riverbed.com/SteelCentral)

## SteelConnect

**The future of your network starts here. SD-WAN | Remote LAN | Cloud**

Rethink Networking. Ensure fast, agile and secure delivery of applications across the hybrid enterprise.

**LEARN MORE**

at [Riverbed.com/SteelConnect](http://Riverbed.com/SteelConnect)

## SteelFusion

**How to build a better branch office (like a smartphone)**

Centralize and secure branch apps & data in your data center and extend the services, resilience & security to the branch.

**LEARN MORE**

at [Riverbed.com/SteelFusion](http://Riverbed.com/SteelFusion)

## SteelHead

**Visibility, optimization & control for hybrid WANs**

Transform the network into a living, breathing thing that adapts dynamically to application needs.

**LEARN MORE**

at [Riverbed.com/SteelHead](http://Riverbed.com/SteelHead)

Footnotes:

1. RightScale, January 2016, <http://www.rightscale.com/lp/2016-state-of-the-cloud-report?campaign=701700000015euW>

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### About Riverbed

Riverbed, at more than \$1 billion in annual revenue, is the leader in application performance infrastructure, delivering the most complete platform for the hybrid enterprise to ensure applications perform as expected, data is always available when needed, and performance issues can be proactively detected and resolved before impacting business performance. Riverbed enables hybrid enterprises to transform application performance into a competitive advantage by maximizing employee productivity and leveraging IT to create new forms of operational agility. Riverbed's 27,000+ customers include 97% of the *Fortune* 100 and 98% of the *Forbes* Global 100. Learn more at [Riverbed.com/About](http://Riverbed.com/About)

The Riverbed logo consists of the word "riverbed" in a lowercase, sans-serif font. The letters "river" are in a dark blue color, and the letters "bed" are in a bright orange color.