

# Cloud Migration

Migration to the cloud is a significant undertaking for any organization. It is a fundamental shift from on-premises servers to public cloud service providers like Amazon Web Services, Microsoft Azure and SaaS applications.

Digital transformation continues to be a top priority for CIOs and over 88% of the businesses use some form of public cloud<sup>1</sup>. Moving applications and data, often core to the business, takes enormous planning and time to migrate.

All systems and services cannot move at the same time. Some systems may migrate while others continue to be operated out of the on-premises data centers. Supporting the migration and managing this hybrid environment while ensuring business operates at peak performance is a challenge for IT organizations.

Migrating to the cloud doesn't have to be a gamble. Enterprises need integrated solutions that provide complete performance awareness of their apps, make optimal use of their network resources and improve user experience.

## The Business Challenge

Many organizations have adopted a cloud-first strategy that includes a goal of moving all users and apps to the cloud. This is not surprising because there are many benefits to using cloud services. Cloud provides elasticity, scalability and efficiency to drive business.

For a good end-user experience, however, the performance and availability of the cloud-based applications must be comparable to the on-premises versions. This can be difficult for distributed enterprises to achieve—particularly for remote users. Building networks from the enterprise to the cloud, within clouds, and between cloud vendors can be complex.

Migrating to cloud moves applications and data further away from the users introducing latency, increased round trip times and higher potential for performance unpredictability with reliance on internet.

Choices must also be made between high-cost, SLA-guaranteed MPLS and lower-cost, broadband internet. Organizations that underestimate network requirements may incur project delays and unplanned costs to mitigate performance issues.

To assure optimal performance or to identify the source of any performance bottlenecks, support organizations need visibility across the hybrid infrastructure. No question, monitoring hybrid and multi-cloud environments can be challenging.

Just knowing who is responsible for troubleshooting can be a point of contention, let alone tools to gain visibility. Even when you do have tools, they often operate in silos, creating major blind spots across distributed applications and infrastructure.

<sup>1</sup>O'Reilly – Radar: Cloud Adoption in 2020

## The Riverbed Solution

Riverbed® solutions can help you speed your migration to the cloud by keeping network and application performance consistently high and improving productivity by delivering a better end-user experience. Throughout the cloud migration and beyond, Riverbed DEM and NPM solutions provide complete visibility into network and application performance and end-user experience across your hybrid infrastructure.

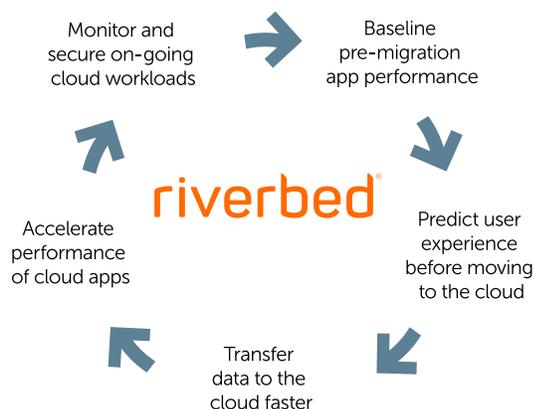
### Understanding before and after performance

Migrating on-premises applications to public cloud can be difficult. Performance can be negatively affected by differences in the infrastructure stack and insufficient network design, as well as changes to latencies between application tiers.

Riverbed solutions provide complete lifecycle support and help you identify hidden risks and constraints that can lead to performance issues, unexpected delays and unplanned costs by:

- Map and understand your application dependencies
- Establish network baselines, including throughput and latency, for comparison to post migration results
- Use modeling to predict cloud experiences
- Accelerate transfer of your data to the cloud
- Monitor and secure on-going cloud workloads, ensure similar performance to on-premises
- Drive adoption by comparing end user experience before and after migration to show improvements in service
- Accelerate performance of cloud apps

Our suite of performance management tools provides the insights that are central to this cloud migration planning phase.



**Figure 1:** Riverbed complete cloud migration solution from planning to executing to sustaining.

### Speeding data transfer to the cloud

Accelerating data migration from on-premises to the cloud can have its own set of challenges. If not planned correctly, this process can be time-consuming, and bandwidth constraints can lead to application performance degradation.

Riverbed can help you secure and optimize data migration by:

- Improving the performance of all applications by using WAN optimization between your enterprise and the cloud
- Minimizing bandwidth consumption by up to 97% and delivering up to 33x faster file downloads, in the process reducing cloud egress costs
- Encrypting data end-to-end, from on-premises all the way to the cloud

### Ensuring performance of cloud applications

Enterprises are addressing new concerns about the unpredictable performance of cloud workloads. Data takes longer to get to and from distant locations, and therefore, the performance of cloud workloads may be hindered by latency and quality of connectivity to SaaS and IaaS applications.

Our solution optimizes performance from the user's device to cloud applications, over any network, anywhere by:

- Accelerating access to IaaS workloads through proven data, transport and application streamlining
- Offering end-to-end acceleration of leading enterprise SaaS applications, along with a built-in software-defined ECDN for great user experiences of live and on-demand video
- Extending best-in-class optimization and acceleration technology to work-from-anywhere users, providing accelerated access to on-prem, IaaS, or SaaS-based applications even in less-than-ideal conditions

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## Modernizing the network for cloud access

Traditional WAN management systems were not designed for the cloud. Configuring, managing and scaling branch offices can be a very complex and manual process involving arcane CLI commands.

Riverbed's solution leverages SD-WAN technology to provide:

- Transport-agnostic data migration, giving you the ability to select network paths and prioritize traffic by application, user or location
- Direct routing from the branch to the cloud—without several touch points needed to stand up a robust VPN framework
- More agile connections to the cloud, without compromising security, by decreasing manual configurations through increased automation and orchestration

## Monitoring cloud applications and end-user experience

Businesses need a holistic understanding of how apps and digital services are performing after migration—across all locations and devices.

Riverbed's high fidelity unified network performance management solution gathers all packets, all flows, all device metrics—all the time. It does this across all environments, on-premises, virtual, and cloud, to enable business-centric views across all your domains.

Riverbed tools give you the ability to assure that the post-migration application performance and end-user experience are optimal with:

- Real-time monitoring of applications, including SaaS apps
- Powerful analytics that illuminate hidden network and application performance issues and pinpoint their causes
- Insights on application response times, network paths and traffic flow trends with synthetic testing
- Performance and consumption analytics that hold cloud vendors accountable for SLAs and costs
- Visibility into where and why you are incurring cloud costs, plus information on how you can deploy more efficiently

## Learn More

Let Riverbed help you achieve a faster, smoother and a more secure migration to the cloud, please visit: [riverbed.com/solutions/cloud-migration](https://riverbed.com/solutions/cloud-migration).

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### About Riverbed

Riverbed enables organizations to maximize visibility and performance across networks, applications and end-user devices, so they can fully capitalize on their IT, hybrid workplace and digital investments. Riverbed solutions enable organizations to visualize, optimize, remediate and accelerate the performance of any network for any application, while supporting business objectives to mitigate cybersecurity risk and enhance the digital experience for all end users. Riverbed offers two best-in-class product lines: end-to-end visibility solutions – including Network Performance Management and Digital Experience Management (APM and EUEM) – that delivers actionable insights; and network and acceleration solutions, including application acceleration (SaaS, client and cloud acceleration), WAN optimization, and enterprise-grade SD-WAN. Riverbed's 30,000+ customers include 95% of the *Fortune* 100. Learn more at [riverbed.com](https://riverbed.com).

The Riverbed logo consists of the word "riverbed" in a lowercase, sans-serif font. The letters are orange, and the "i" and "e" have a distinctive shape with a dot and a tail that curves around. The logo is positioned in the bottom right corner of the page.