
Cloud Networking

Next-generation networking for the digital era

Digital transformation is a crucial imperative for enterprises worldwide. Technologies such as cloud, mobile and analytics have become a foundation for digital business success, providing the agility companies need to get new offerings to market faster.

While compute and storage have kept pace with advances in cloud architecture, networking has not. Legacy networks can no longer deliver the performance and flexibility needed to meet today's dynamic business requirements. Digital transformation is mandating network evolution.

New technologies such as SD-WAN and SD-LAN are meeting the challenge by simplifying network design, deployment, and management so enterprise networks can be as elastic and dynamic as the Cloud.

“Traditional network offerings are not well-suited to fulfill enterprise expectations for rapid delivery of new services, more flexible business models, real-time response and massive scalability.”

Gartner: 2018 Strategic Roadmap for Networking, 3 May 2018, Neil Rickard, Andrew Lerner

Challenges

Most enterprise networks were designed for the way things were 10-15 years ago. Consequently, IT teams and their networks are straining to meet rapidly evolving needs. Here are some of the challenges they face.

Managing complex networks

The job of managing networks has become more challenging. Legacy management systems were not designed to deal with the complexity of networks or the rate of change in the age of Cloud and mobility. The management tools tend to be rigid and error-prone because they are device-oriented and rely on command

line interfaces (CLIs). Consequently, it can take hours or days to implement a routine change to the network. Moreover, reliance on a patchwork of legacy tools makes it difficult to deliver seamless services from the cloud to end users.



Figure 1 The new network reality. Most enterprise networks are out-of-date, brittle, and device-centric. IT teams are trying to manage global networks with tools designed for the way things were 15-20 years ago.

Application performance issues

Poor application performance impacts productivity, user experience and, eventually, business performance. Mobile workers and globally-distributed teams are especially vulnerable to application performance issues because their experience depends on how and where applications are accessed.

Performance issues can start where a device connects into the network if bandwidth is not adequate to support peak usage levels. Reliance on the Internet for cloud connectivity can make performance unpredictable because of bandwidth and path uncertainties. Also, network latency can be worsened when traffic is backhauled through a central point of Internet access.

Bandwidth vs. budget

Increasing use of bandwidth-intensive applications is straining networks from Wi-Fi to WAN and crowding out the traffic of other applications. This has driven the need for more bandwidth at affordable prices across all networks. In the WAN segment, MPLS is too costly and of limited obtainability to meet the need—especially at remote/global branch office locations. This has given rise to the use of other WAN options in hybrid WAN configurations.

Security and availability risks

Internet break-outs at branch offices can improve the performance of cloud applications but come with security risks. Broadband Internet and LTE are also less reliable than MPLS. The risk of downtime and security breaches is further increased by network complexity and a patchwork of legacy management systems.

Solution

Redefine your network with a comprehensive solution that enables you to reliably deliver fast and secure access to cloud-based applications. Riverbed® simplifies connectivity and management across the entire network, thereby increasing operational agility and efficiency. This makes it possible for organizations to deliver new digital services and open business locations in days instead of weeks.

Unified connectivity and management

With Riverbed, you can implement a cloud-to-edge solution with unified connectivity and management. Our product portfolio includes:

- SD-WAN gateways for edge/branch sites and data centers
- Cloud-native SD-WAN gateways for AWS and Microsoft Azure
- Wi-Fi access points and LAN switches

Riverbed SD-WAN gateways support MPLS, broadband Internet, and LTE wireless uplinks. Enterprise-class routing capabilities and support for advanced topologies enable quick and seamless integration into existing network environments. Secure connectivity to AWS and Microsoft Azure can be established with a single click.

The solution can be managed from a central, cloud-based console, which simplifies operational workflows and minimizes the IT footprint at branch offices.

Centralized policies and orchestration

Riverbed provides tools that simplify the management of cloud-connected networks. Our solution makes network operations more agile and efficient with centralized orchestration of workflows and business-aligned policies.

Setting up wireless LAN access points and SD-WAN gateways is easy with a design-first, deploy-later approach that uses a unique shadow appliance concept and true zero-touch provisioning.

Ongoing administration is greatly simplified with policy-based management from a central, cloud-based console with a graphical user interface. Riverbed uniquely enables you to write business-aligned policies in natural language—not in ports/IP addresses—with reference to applications, users, location, performance and security.

Single sign-on with federated ID management simplifies user access to network resources. Policies governing access and security follow users across SD-LAN/Wi-Fi locations.

“As Australia’s largest and most iconic lighting retailer, it is essential we keep pace with the digital age, and still provide an optimal in-store experience for our customers. Riverbed SteelConnect appealed to us because of the ability to simply deploy and manage Wi-Fi and SD-WAN together from a single cloud console.”

Mick Tan,
CIO, Beacon Lighting

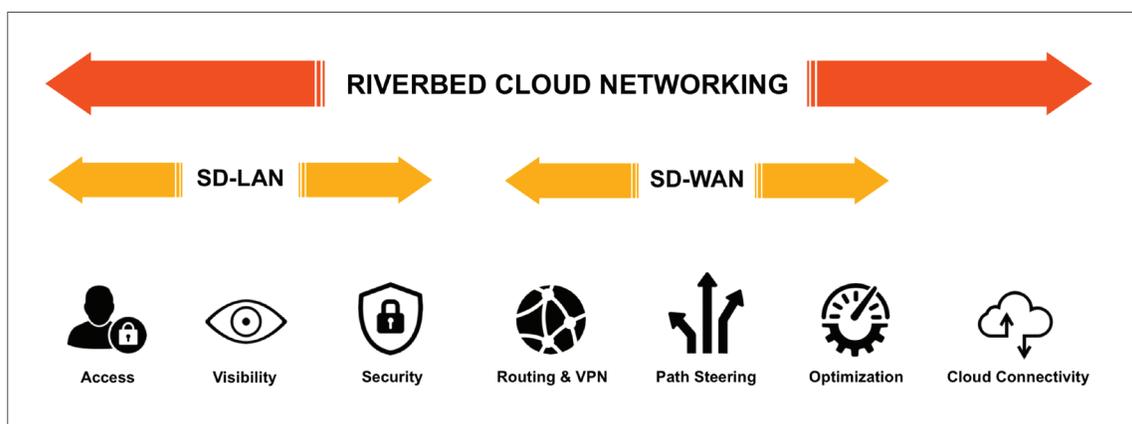


Figure 2 Riverbed goes beyond conventional implementations of SD-LAN and SD-WAN to provide a unified solution for cloud networking.

Complete performance assurance

Riverbed gives IT teams the ability to proactively identify a performance issue, quickly troubleshoot the cause, and take action to ensure that end users stay productive.

Our portfolio of Digital Experience Management (DEM) tools combines end-user experience monitoring (EUEM), application performance management (APM), and network performance management (NPM) to provide real-time monitoring with visibility all the way from the end user into the Cloud.

Network performance is important for business-critical applications—especially when they run in the Cloud. But not all network traffic needs to move quickly. Our cloud networking solution automatically identifies over 2,000 applications via deep packet inspection (DPI) and enforces policies that determine line speed and path selection. Also, Riverbed Wi-Fi can prioritize, block or throttle applications to deliver optimal performance at the edge, where users connect.

When bandwidth is constrained on a wireless LAN, software-defined access points can instantly boost Wi-Fi capacity with a click of a button. SD-WAN monitors the health of WAN links and can automatically steer traffic onto an alternate link when the primary link is down or congested. But that doesn't help if all links are bad. WAN optimization can dramatically improve performance across bandwidth bottlenecks.

Enhanced security and reliability

Our approach to cloud networking enhances security and reliability starting with device connectivity. Single sign-on with Microsoft Azure and Google enables role-based user access to applications and data. Riverbed SD-WAN also provides comprehensive security with a native firewall, AutoVPN connectivity, and deep integration with best-of-breed security partners.

The ability to use a variety of uplinks in a hybrid WAN maximizes connectivity and increases resiliency. SD-WAN can recognize congestion or another problem on a WAN link and automatically steer traffic onto an alternate, healthier link.

Learn More

The Riverbed approach to cloud networking is simple yet comprehensive and powerful. It gives you the agility needed to bring your network to the digital era. We can help you redefine your network to deliver fast and secure access to cloud-based applications and data.

To learn more, visit riverbed.com/cloud-networking.

About Riverbed

Riverbed®, The Digital Performance Company™, enables organizations to maximize digital performance across every aspect of their business, allowing customers to rethink possible. Riverbed's unified and integrated Digital Performance Platform™ brings together a powerful combination of Digital Experience, Cloud Networking and Cloud Edge solutions that provides a modern IT architecture for the digital enterprise, delivering new levels of operational agility and dramatically accelerating business performance and outcomes. At more than \$1 billion in annual revenue, Riverbed's 30,000+ customers include 98% of the *Fortune* 100 and 100% of the *Forbes* Global 100. Learn more at riverbed.com.

The Riverbed logo consists of the word "riverbed" in a lowercase, sans-serif font. The letters "river" are in a dark orange color, and the letters "bed" are in a lighter, peach-colored orange. A registered trademark symbol (®) is located at the top right of the letter "d".