

# Branch Infrastructure Consolidation Solutions

## Functionality at the front lines

Branch locations, such as retail stores, regional offices, and local production sites, are the front lines for sales, production, and customer interaction. Employee productivity in the branch affects the level of product development, service delivery, and even sales revenue for the greater enterprise. But ensuring the highest level of productivity must be balanced with the costs involved -- both hard costs for infrastructure and real estate, as well as the soft costs to administer and manage supporting infrastructure and facilities.

For IT organizations, that challenge to ensure productivity at branch locations involves supporting necessary branch infrastructure, delivering applications that perform at or above branch user requirements, and ensuring availability of local and centralized services. In many ways, these are the same requirements at headquarters, but must be achieved with lower cost and complexity to scale out to multiple sites.

Centralizing servers, storage, and even desktops from branch locations into central data centers reduces the complexity of branch IT infrastructure and allows IT to take advantage of greater cost efficiencies at data centers, where virtualization and automation achieve their maximum impact. However, IT must ensure that centralized data and applications still meet or exceed branch user performance requirements, as well as support any remaining infrastructure and ensure the availability of services.

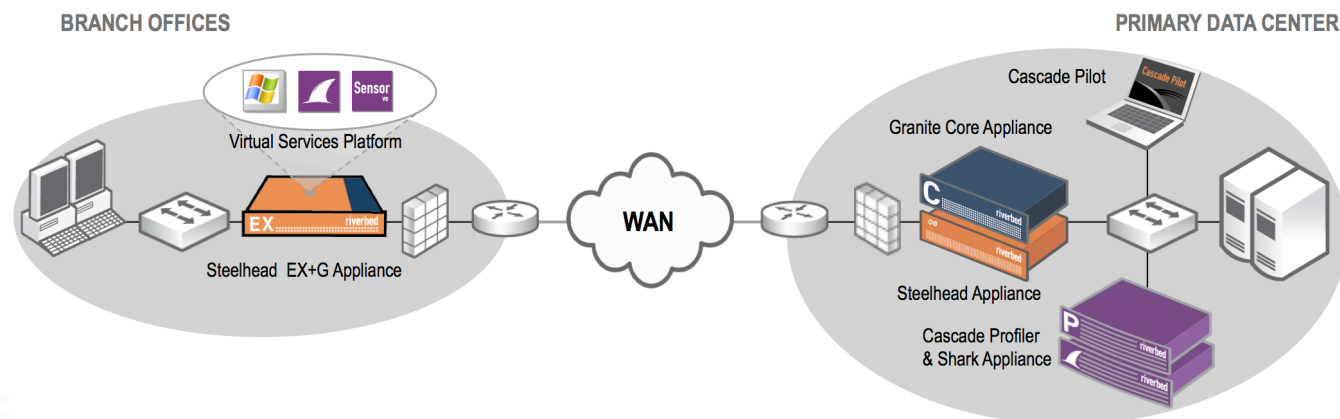
## BENEFITS

- Centralize servers and data without compromising performance for branch users
- Virtualize local services onto a single appliance to minimize infrastructure in the branch
- Gain visibility for troubleshooting and performance management without additional infrastructure

## Riverbed Technology solution for high performance consolidation at the branch

Riverbed® offers a comprehensive approach to consolidating branch office infrastructure, including optimizing WAN links to centralized applications, centrally monitoring and troubleshooting application performance, and minimizing infrastructure in the branch. Key technologies within this comprehensive solution include:

### Riverbed Consolidation Deployment Architecture



- **Riverbed Steelhead® WAN optimization**, which simultaneously reduces bandwidth utilization by 60-95% and accelerates applications up to 100x. The Steelhead product's Riverbed Optimization System (RiOS®) is available as an appliance, mobile client, virtual appliance, or public cloud instance.
- Riverbed's **Virtual Services Platform (VSP)** on Steelhead EX appliances uses VMware virtualization to enable organizations to run their own applications as virtual machines directly on the Steelhead appliance.
- **Riverbed Cascade®** application aware network performance monitoring provides visibility and monitoring of end-user experience of the services and applications that are critical to the enterprise, with drill-down into detailed performance information for accelerated troubleshooting. Cascade's tight integration with Steelhead appliances allows visibility into optimized and non-optimized WAN environments.
- **Riverbed Granite™ with BlockStream™ technology** presents central storage as a local drive in remote branches, allowing end-users and applications, including custom and write-intensive applications, to connect to a Steelhead EX + Granite appliance in a branch office in order to write to and access centrally managed storage as though it were local, without security or duplication risks.

### Benefits of Riverbed's consolidation solution for branch offices

Riverbed's branch consolidation solution enables the virtualization of basic local services onto a single appliance, the centralization of servers and storage to enhance data protection and management, the optimization and prioritization of WAN traffic between branches and centralized infrastructure, and the reduction in bandwidth requirements to further reduce ongoing operational costs. When combined with Riverbed network performance management solutions and strategic technology alliances for local branch services, the Riverbed branch consolidation solution enables organizations to streamline branch office infrastructure with a powerful, multi-functional appliance.

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*"With the installation of the Steelhead appliances, we have changed the way we deploy remote infrastructure and back up remote data. We no longer need to maintain as much remote IT infrastructure."* — Oliver Rideau, Systems and Production Group Manager, Aelia

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### Centralization without compromising performance

Relocating servers and data from branch offices to central data centers allows IT organizations to realize the reduced cost and complexity of consolidation, as well as enhanced data protection. However, the negative impact on application performance to end-users in the branch introduces a challenge. Steelhead product technology enables IT organizations to overcome these challenges by improving WAN performance and the end user experience for numerous applications, including Microsoft Exchange, Microsoft SharePoint, Windows file sharing, Lotus Notes, and many more. When deployed with Granite, Steelhead appliances enable further consolidation with block data cached and streamed back to centralized storage in the data center.

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*"We can virtualize the few services that did need to be local, and then consolidate the services that can operate from the data center, while still allowing a relatively seamless level of access due to the acceleration capabilities of Riverbed."* — Jeff Wilhelm, Vice President of Information Technology, AccuData Integrated Marketing

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### Branch office box for streamlined branch infrastructure

Even with most applications and file servers centralized, services like print, DNS, DHCP and security firewalls need to remain in the branch location. But maintaining onsite servers dedicated to each service increases the overhead of each branch as well as creates greater management complexity. With the Steelhead EX product, customers can run multiple virtual instances on the Steelhead EX appliance with the Riverbed Virtual Services Platform (VSP), enabling customers to consolidate multiple local services in the branch such as print, DNS and DHCP.

### Visibility to the edge

As each branch operates on its own LAN environment, visibility at the branch is

necessary to monitor optimized WAN traffic and local LAN traffic (including some Internet and SaaS traffic) that never reaches the data center. Whether or not IT personnel are available on site, the IT organization is responsible for identifying and resolving issues affecting local LANs, and with bandwidth-intensive applications like VoIP and video increasingly deployed, managing performance is as important as ever. To get to the most granular level of detail, any visibility solution requires a lot of data generation points, and WAN optimization can create blind spots in the network. Many solutions require probes to be deployed all over the network to capture this local traffic. Dedicated probes, however, increase the IT footprint at each branch office, introducing administration and infrastructure overhead.

Steelhead appliances natively support the export of flow records, as well as on-demand packet capture. RiOS 7.0 includes integration of Cascade Shark™ functionality on Steelhead appliances for on-demand capture and analysis of application problems with an intuitive, visual interface. This feature is fully integrated with Wireshark to enable customers to isolate application-specific issues and even replay application transactions. Furthermore, Cascade Sensor-VE can be deployed as a virtual machine on VSP to deliver performance metrics (such as round trip time, server delay, client delay, retransmits, etc.) for analysis of both optimized WAN and LAN environments in Cascade.

### Solution summary

By enabling organizations to centralize and consolidate infrastructure from branch offices without degrading performance, as well as consolidating branch services and monitoring technology onto a single appliance, Riverbed allows organizations to minimize the footprint of IT infrastructure in the branch. This streamlined approach simplifies the support of branch infrastructure, while meeting business needs for high performing and available applications for productive workers on the front lines of operations.

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## About Riverbed

Riverbed delivers performance for the globally connected enterprise. With Riverbed, enterprises can successfully and intelligently implement strategic initiatives such as virtualization, consolidation, cloud computing, and disaster recovery without fear of compromising performance. By giving enterprises the platform they need to understand, optimize and consolidate their IT, Riverbed helps enterprises to build a fast, fluid and dynamic IT architecture that aligns with the business needs of the organization. Additional information about Riverbed (NASDAQ: RVBD) is available at [www.riverbed.com](http://www.riverbed.com).



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