

OVERVIEW

To meet the needs of a distributed, fluid enterprise, IT organizations are driving toward greater infrastructure consolidation and pursuing a stateless branch architecture where remote offices and services are easily provisioned, yet data is centrally managed and protected. Riverbed Steelhead EX + Granite sets a new architectural standard by enabling greater consolidation and centralization with a powerful combination of wide area network (WAN) optimization, a virtual services platform, and innovative edge virtual server infrastructure (edge-VSI).

Riverbed Steelhead EX + Granite

The virtual edge of the data center

With Steelhead® EX + Granite™, Riverbed Technology delivers an enterprise-class branch office box that lets organizations drive greater consolidation of branch infrastructure than ever before. Steelhead EX + Granite enables the consolidation of servers as well as the separation of branch computing from data storage making complete sever and storage consolidation possible for the first time.

Why do servers and storage remain in branch offices?

Despite the success of massive consolidation initiatives enabled by virtualization and WAN optimization, server and storage infrastructure still remains in remote and branch locations. Why? The demands of custom and write-intensive applications in the branch, the need to work with large data-sets that defy acceleration over a WAN, and the concern of user productivity in the face of WAN outages have required compute and storage resources to be maintained at the edge.

The deployment of storage and servers closer to users solves the performance problem, but managing infrastructure at the edge comes at a cost, increasing the IT support burden and introducing risk to valuable corporate data assets managed outside the data center.

Enabling Greater Consolidation and Centralization

With Steelhead EX + Granite standalone servers and dedicated storage are no longer required in the branch office to deliver performance. A single appliance enables applications required in the branch to be consolidated with data centrally hosted in a data center. Performance is ensured through unique and innovative technology only available from Riverbed. Steelhead EX + Granite deliver a complete solution that enables IT departments to centralize and consolidate more infrastructure while ensuring an accelerated and reliable end-user experience regardless of location.

With Steelhead EX + Granite organizations can:

- Reduce the amount of hardware needed at the branch office to a single branch office box.
- Lower costs and simplify administration, while delivering high-quality local services.

Steelhead EX Appliance

Steelhead EX is an enterprise-class WAN optimization and virtualization platform that services the needs of active branch offices. Steelhead appliances deliver the highest performing and most scalable WAN optimization solution available, overcoming both bandwidth and latency problems to deliver LAN-like performance to branch offices or mobile workers across the globe. Steelhead EX features the award-winning Riverbed® Optimization System (RiOS®) and the flexibility of the Riverbed Virtual Services Platform (VSP) that leverages the industry-leading VMware hypervisor. Steelhead EX is built with robust memory, compute and storage resources to enable the consolidation of servers and applications to run as virtual machines in the branch. With VSP, branch services such as print, DNS, and DHCP as well as more resource intensive applications like a Windows 2008 R2 Server can all run directly on the Steelhead EX appliance in a dedicated partition. Steelhead EX branch office boxes support fine-grained configuration of data rules allowing virtualized services to run in or out of path.

Granite Products

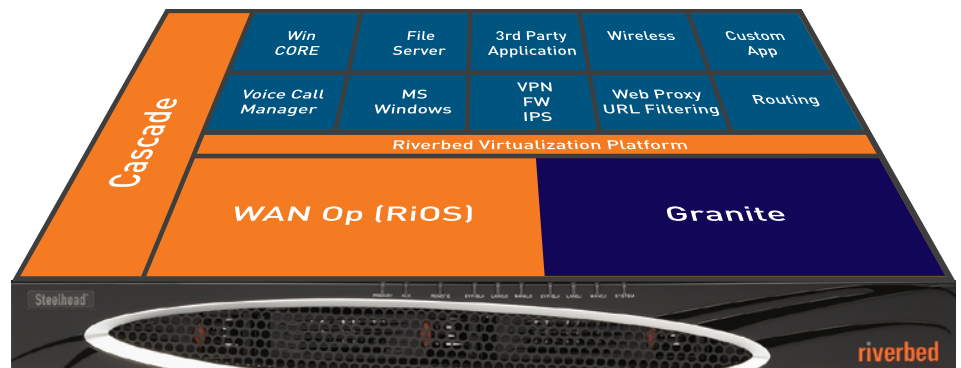
Riverbed Granite™ is edge virtual server infrastructure (Edge-VSI). Granite radically reduces operational burden on IT managers while massively increasing their control over the infrastructure—all at a lower total cost of ownership. Granite is the innovation that enables an architectural disruption known as Edge Virtual Server Infrastructure (Edge-VSI). Edge-VSI enables the best of all worlds: 100% consolidated data and applications that deliver LAN performance at the edge over the WAN.

Granite products enable edge virtual server infrastructure (edge-VSI) an architectural disruption created by Riverbed. It radically reduces operational burden on IT managers while massively increasing their control over the infrastructure—all at a lower total cost of ownership. It essentially enables the best of all worlds: 100% consolidated data and applications that deliver LAN performance at the edge over the WAN.

Now, users and applications in branch locations can write to and access centrally managed storage with local performance. By accelerating branch access to data center deployed storage, IT organizations no longer need to maintain dedicated storage resources in branch offices.

- **Granite Core** – a physical or virtual appliance that resides in the data center
- **Granite Edge** – a module that runs on a Steelhead EX appliance in the branch office

Granite Core mounts storage provisioned in the data center and extends it to branch offices running the Granite Edge module. Granite Edge virtually presents one or more storage targets in the branch which can be utilized by services and systems running within the VSP as well as externally to the Steelhead EX appliance. This industry-first, file-system aware, block acceleration capability allows data from centralized storage to be available wherever and when-ever it is needed. Through asynchronous, block-based write acceleration Granite Edge ensures that data created in branch office locations is securely stored in the data center.

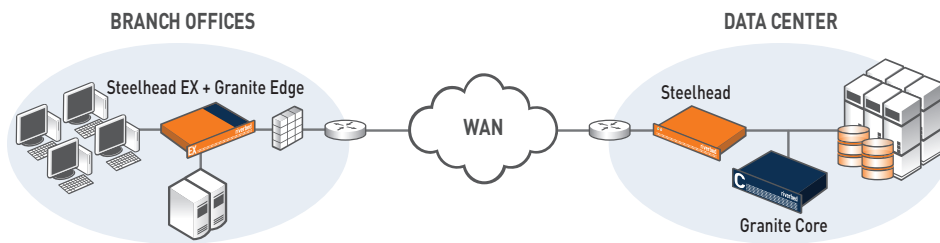


Transforming Branch Office IT

By enabling organizations to centralize and consolidate storage infrastructure from branch offices without degrading performance, as well as consolidating branch services and applications onto a single appliance, Steelhead EX + Granite allows organizations to transform the way they manage branch office IT. Storage management, and even data protection operations can be performed in the data center leveraging resources and tools available to a centralized IT organization. Branch office costs are significantly reduced not only by eliminating the need to purchase and manage extensive IT infrastructure in remote locations, but also through the elimination of costs associated with space, power, and cooling. As business requirements change and grow, Steelhead EX + Granite also makes it easy to rapidly deploy services wherever they are needed.

Steelhead EX + Granite

- Virtualize services and servers
- Consolidate virtual machines
- Consolidate storage



Key Benefits

Enables Greater Consolidation

With Steelhead EX + Granite, IT can consolidate branch services and successfully separate branch computing from data storage, eliminating the need to purchase and support storage that is traditionally hosted in branch offices for performance reasons. All data can be managed centrally to take advantage of data center tools and cost efficiencies.

Resilient to WAN Outages

Though the IT infrastructure has been completely centralized, Steelhead EX + Granite enables remote office workers to have local access to data even when the WAN link to the office goes down.

Centralize Data Protection

With Steelhead EX + Granite, services and data are protected and secured in the data center, leveraging the same tools and methodologies applied to all corporate data, eliminating the need to purchase, install, and manage a backup solution in the branch office. Steelhead EX + Granite helps you reduce RTOs and gain better RPOs.

Data Security

With storage in the branch, data is exposed to risk. Steelhead EX + Granite enables state-of-the-art authentication and encryption to ensure the security of data assets while in-flight from the data center as well as in-use in the branch.

Simplify Management

By eliminating the need to maintain and manage standalone servers and storage in branch offices, Steelhead EX + Granite significantly reduces administration overhead and costs. A single appliance in the branch is easier to support and by centralizing storage, data management activities can take place in the data center. Branch-based IT personnel and "fly-and-fix" missions are no longer required.

Key Features

Edge Virtual Server Infrastructure (edge-VSI)

Fully virtualize edge servers and storage, consolidate to the data center, and project data and applications to edge locations as if they were local.

Industry-leading WAN optimization

Overcome bandwidth and latency problems to speed application performance and data transfers over the WAN.

Virtual Services Platform

Consolidate basic branch services and business applications directly on the Steelhead appliance leveraging VMware to run multiple virtual machines.

Wizard Configuration

Easy-to-use wizard configuration and intuitive user interface simplifies setup and management.

Pre-population

Data known to be required at the branch can be proactively prepopulated to the Granite Edge device to ensure fast access by remote office workers.

Snapshot Integration

Integration with Microsoft Volume Shadow Copy Service supports consistent point-in-time data snapshots and seamless integration with backup applications.

Security

Includes support for industry-standard Challenge-Handshake Authentication Protocol (CHAP) to authenticate users and hosts and a secure vault to protect sensitive information using AES 256-bit encryption.

Reporting

Customizable reports provide visibility to key utilization, performance, and diagnostic information.

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.



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