

# DATA SHEET: Riverbed Steelhead® Appliances

Companies of all sizes depend on Riverbed Steelhead appliances to accelerate the performance of applications over wide area networks.

Steelhead appliances deliver the highest performance, most scalable wide-area data services solution available, overcoming both bandwidth and latency problems simultaneously.

With Steelhead appliances, data moves faster, applications perform seamlessly, and IT managers can deploy a simpler, more effective, more secure network infrastructure. The possibilities are endless.

## Leading-Edge Performance for Wide Area Data Services

Steelhead appliances have dramatically changed expectations when it comes to application performance over the WAN.

With Steelhead appliances, IT departments can meet the expectations of the most demanding users while still achieving their own strategic objectives. Enterprises can now provide LAN-like performance to users anywhere in the world – while consolidating previously distributed servers and storage, reducing remote backup infrastructure, and even cutting bandwidth expenses.



### Key Benefits

**Acceleration of all applications.** Riverbed® Steelhead appliances deliver dramatic performance increases across the Wide Area Network (WAN) for all TCP applications, by 5 to 50 times, or as much as 100 times. Distributed teams can collaborate more effectively by getting updated files and emails in seconds instead of minutes or hours. SSL support accelerates all secure business applications without breaking the preferred trust model. QoS functionality enables additional optimizations for UDP applications such as VoIP and video, and all TCP-based applications as well.

**Consolidation of IT infrastructure.** Steelhead appliances enable the consolidation of file servers, Exchange servers, storage, application servers, and tape backup systems from remote branches into data centers, without giving up the performance users need.

**Reduced bandwidth utilization.** Steelhead appliances enable massive reductions in bandwidth utilization. Customers typically eliminate 60% to 95% of their current utilization after deploying Steelhead appliances.

**Accelerated, simplified backup and replication.** With Steelhead appliances, secure backups over the WAN can take minutes instead of hours, enabling shorter backup windows and the ability to eliminate remote backup infrastructure such as tape backup equipment and dedicated backup servers.

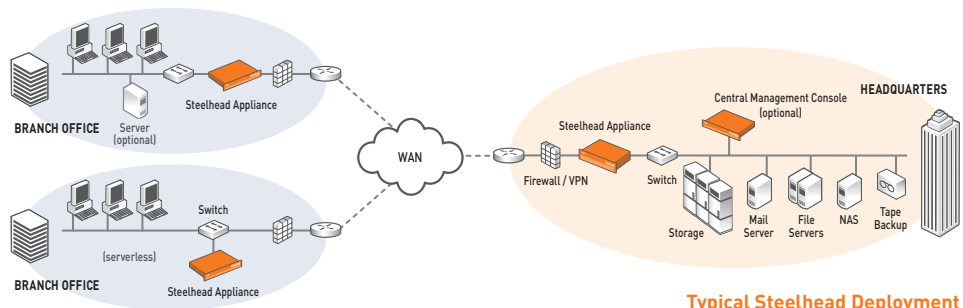
## The Riverbed Optimization System (RiOS™)

RiOS software powers Steelhead appliances. RiOS combines patent-pending data reduction, TCP optimization, application-level latency optimizations, and remote office file and management functionality. Together, these technologies provide a comprehensive solution for enterprise wide-area data services. RiOS consists of four key components:

- **Data Streamlining** – RiOS Data Streamlining works across all TCP applications to reduce bandwidth consumption, typically by 60% to 95%. Data Streamlining works across file sharing (including Windows and NFS), email (including MS Exchange and Lotus Notes), CAD, ERP, Web-based HTTP and HTTPS applications, databases, and all other applications that use TCP. Data Streamlining also provides QoS for bandwidth prioritization, enabling additional performance benefits for all TCP and UDP applications.
- **Transport Streamlining** – RiOS Transport Streamlining reduces the number of TCP packets required to transfer data by 65% to 98%. Transport Streamlining enables the end-to-end acceleration of SSL-encrypted traffic throughout the enterprise. RiOS Transport Streamlining also enables greater utilization of high bandwidth, high latency connections – even in the face of packet loss – with HS-TCP and MX-TCP capabilities.
- **Application Streamlining** – RiOS Application Streamlining provides additional order-of-magnitude application performance improvements by reducing application protocol chattiness up to 98% and minimizing application overhead. By doing so, RiOS can provide massive throughput increases to applications including file sharing (CIFS and NFS), Exchange (MAPI), Web (HTTP and HTTPS), and database (MS-SQL). RiOS also includes additional features for disconnected operations and data pre-population.

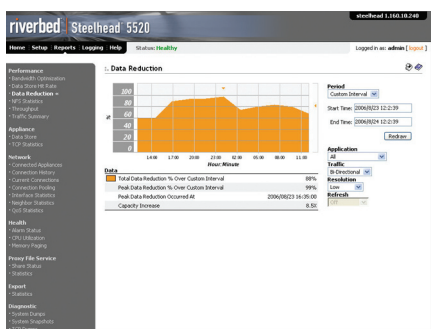
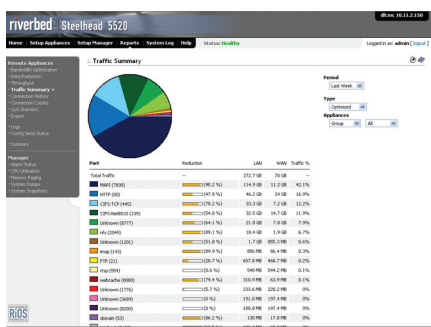


WAN Optimization – Riverbed RiOS 3.0



Typical Steelhead Deployment

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- **Management Streamlining** – RiOS simplifies the deployment and management of application acceleration infrastructure by employing a transparent approach to communications. RiOS enables easy deployment through auto-discovery of peers and auto-interception of traffic, with no reconfiguration of clients, servers, or routers necessary. RiOS simplifies ongoing management by providing simple but powerful Web-based and command line interfaces, reporting, and configuration. RiOS also enables additional management features including many deployment configurations, redundancy, IPsec encryption, RADIUS/TACACS+ authentication, and SNMP traps

## The Right Choice For Your Business

Riverbed Steelhead appliances have been proven to dramatically accelerate application performance in some of the most demanding customer environments. Our customers consist of Fortune 5 companies, Global 100 companies, and even local companies with as few as two offices.

Riverbed's award-winning products have consistently proven themselves as the highest performing accelerators across the broad spectrum of applications that enterprises depend on.

## FEATURES

### Optimization

- **Data Streamlining** – Reduces bandwidth utilization by 60 to 95%; QoS enforcement and low-latency queuing
- **Transport Streamlining** – Overcomes TCP limitations; Accelerates encrypted SSL traffic; Provides Virtual Window Expansion; Enables High-Speed TCP and MX-TCP
- **Application Streamlining** – overcomes application protocol limitations for CIFS, NFS, MAPI, HTTP, HTTPS and SQL; Enables disconnected operations; Provides transparent pre-population

### Scalability

- **Per-Device Capacity** – Up to 40,000 TCP connections – roughly 10,000 users – supported on a single appliance; Ten models to choose from
- **Bandwidth** – Up to 310 Mbps supported on a single appliance; Nx310 Mbps supported via clustering
- **Clustering** – Serial (in-path), Parallel (out-of-path), or Virtual In-Path clustering for massive scalability
- **Interceptor™ Support** – With the Riverbed Interceptor, support for up to 1,000,000 connections and up to 4 Gbps of throughput from a cluster of Steelhead devices

### Network Integration

- **Transparency** – Export real-time flows from a Steelhead appliance to a 3rd party Netflow collector, giving full visibility into WAN traffic by source, destination, IP address, application port, and more
- **Auto Discovery** – Appliances automatically find in-path peers in the network, with no tunnel configurations required
- **Deployment** – Installs transparently in-line or as a “one arm” attachment to routers/switches with direct configuration, WCCP, PBR, and L4 switch redirection modes
- **Multi-port Interfaces** – 4 Port GigE Card available (optional on all rackable models); Up to 3 cards (12 ports total) per Steelhead appliance
- **Asymmetric Routing** – Asymmetric route detection and Connection Forwarding for support of route asymmetry on both the client and server sides
- **Network Agnostic** – Full mesh, hub and spoke, and multi-drop topologies supported; MPLS, IP VPN, Satellite, Frame, ATM and any other IP transport supported

### Management and Policy

- **Configuration** – Web UI, command line interface, and Central Management Console (CMC)
- **Marking** – DSCP, port, and VLAN mapping and/or preservation. Automatic Port-to-Application mapping for reporting
- **Reporting** – Robust real-time performance statistics gathering, export, and graphical reporting; Local, CMC, and Syslog logging; Report on traffic by QoS class, application, and more; SNMP support
- **Optimization Policy** – Per-application admission and optimization controls
- **Bandwidth Management** – HSF-C based QoS allows for application prioritization, low-latency queuing for VoIP; Settable WAN bandwidth rate controls included

### High Availability and Security

- **Fail-to-Wire** – Ensures no loss in network connectivity in the event of device failure
- **N:1 and 1:1 Redundancy** – Hot-standby redundancy and N:1 clustering
- **Redundant Disk and Power** – Available RAID and dual power supplies on larger models
- **Security** – RADIUS and TACACS+ support for authenticating access. Configurable IPsec encryption for WAN traffic
- **Dual Image SW Upgrades** – Scheduled over-the-wire software upgrades with dual image, rollback, and scheduled restart/reboot

### Security

- SSL acceleration that maintains traffic encryption without breaking the preferred trust model
- RADIUS and TACACS+ support for authenticating access.
- Configurable IPsec encryption for WAN traffic
- Secure registration ensures only approved devices communicate with the central management console (CMC)

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