

Microsoft SharePoint Services

Riverbed Technology Steelhead® Appliances Accelerate Microsoft SharePoint Services

Microsoft SharePoint Services Over the WAN

Microsoft SharePoint Services allow users from around the globe to share documents and information in a collaborative environment. Although SharePoint Services provide a rich suite of team productivity tools, they do not overcome the limitations that congested pipes, long distances, and variable connections impose on overall application performance. With just one participant working from a remote location, live collaboration on shared documents can quickly become a strain on all participants, even those on the same network as the SharePoint server. IT managers have realized that like their mobile workers, variable links, constantly changing connection locations, and network latency make it difficult to alleviate slow file operations and screen refreshes. To use SharePoint as it was intended, it's essential to provide quick document check-in/check-out performance to all team members, regardless of where they're trying to connect from or their distance from the server.

Steelhead Enhances Microsoft SharePoint Services

Riverbed® significantly optimizes Microsoft SharePoint Services to deliver LAN-like performance for remote offices by utilizing the Riverbed Optimization System (RiOS™), which simultaneously addresses bandwidth constraints and the combined effects of latency and protocol inefficiencies. RiOS uses fine-grain data reduction and compression to perform data streamlining, typically reducing bandwidth utilization by 60 percent to 95 percent. Transport and application streamlining minimize protocol chattiness, eliminating 65 percent to 98 percent of packet round trips across the WAN. RiOS also utilizes specialized application streamlining for HTTP, SharePoint's underlying protocol, which enables dramatic performance improvements for team productivity using a centralized instance of Microsoft SharePoint Services. With RiOS, distributed SharePoint servers and complex replication models are no longer necessary for accelerated performance at any office, anywhere in the world.

Performance Improvements

Test results show that Riverbed Steelhead appliances dramatically accelerate common operations in Microsoft SharePoint Services, and significantly reduce WAN bandwidth utilization. A popular SharePoint application like PowerPoint can perform up to 44 times faster and utilize 99 percent less bandwidth. Other popular applications like Word and Excel are accelerated up to 40 times, with more than 99 percent reduction in bandwidth utilization.

TEST RESULTS

- SharePoint operations are up to 30 times faster
- Bandwidth utilization is reduced by up to 99 percent

TESTING PARAMETERS

These tests were performed using Windows 7 Enterprise as the client platform connecting to a SharePoint 2010 Server running on Windows 2008 R2 with the SQL Server 2008 Desktop Engine.

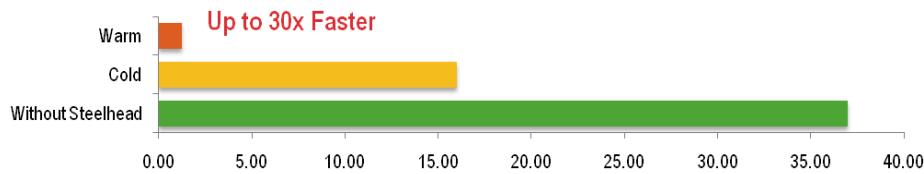
The applications tested included Microsoft PowerPoint, Excel and Word, using a variety of file sizes. Operations were performed using a SharePoint Team Web Site and included a set of common activities such as checking out, editing, and checking in modified files.

The performance tests were run on T1 WAN links with a latency of 100ms. The variables tested included the size and type of the file.

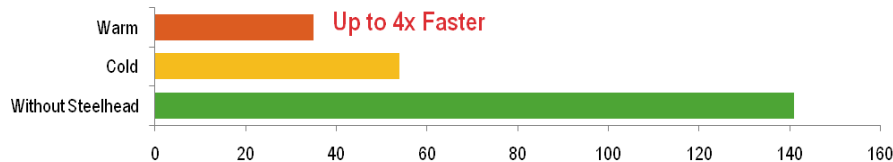
A "first operation" is defined as a data transfer that has never been seen by the Steelhead appliance before (completely new data).

A "subsequent operation" is defined as a data transfer in which the Steelhead appliance has seen most or all of the data before (an incremental change or data that has been used by another application across the WAN).

PowerPoint: Download 6.3 MB file over T1 WAN – time to complete (in seconds)



Word: Check-out/edit/check-in 6.42 MB file over T1 WAN – time to complete (in seconds)



Excel: Check-out/edit/check-in 2.4 MB file over T1 WAN – bandwidth utilization (in kb)



Steelheads Powered by Riverbed Optimization System (RIOS)

RiOS software 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, scaling across a range of applications and network topologies to accelerate applications up to 100 times. RiOS consists of four key components:

Data streamlining. RiOS data streamlining works across all TCP applications to reduce bandwidth consumption by 60 percent to 95 percent. Data streamlining works across Windows file sharing (including MS Office), Email (including MS Exchange and Lotus Notes), CAD, ERP, databases, and all other applications that use TCP, to ensure the same data is never sent more than once over the WAN. Data streamlining also supports rules-based policy administration of optimization classes and packet marking for QoS and route control.

Transport streamlining. RiOS transport streamlining reduces the number of TCP packets required to transfer data by 65 percent to 98 percent. Transport streamlining overcomes TCP limitations by adapting transmission characteristics such as window scale, loss handling, congestion notification, and more. RiOS transport streamlining also enables greater utilization of high bandwidth, high latency connections with high-speed TCP capabilities.

DEPLOYMENT BENEFITS

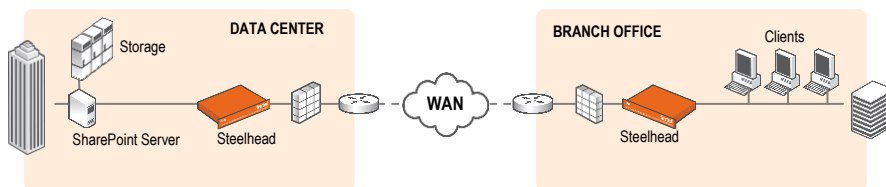
Deploying Riverbed with Microsoft SharePoint Services provides multiple benefits, including:

- **Improved productivity.** Microsoft SharePoint Services over the WAN can now be significantly accelerated. By dramatically reducing the time needed to complete the most typical operations, users can save hours each day.
- **Faster, more efficient collaboration.** By reducing the time to conduct common operations with Microsoft SharePoint by an order of magnitude or more, Steelhead appliances enable users in multiple offices to check shared data in and out at accelerated speeds, allowing more efficient collaboration.
- **Reduced bandwidth utilization.** Steelhead appliances significantly reduce bandwidth utilization for remote offices utilizing Microsoft SharePoint, thus reducing IT costs.
- **Simpler SharePoint deployment.** Steelhead appliances enable accelerated performance to remote offices from a central SharePoint server. Multiple SharePoint instances and complex replication models can be consolidated without compromising performance to even the most remote branch.

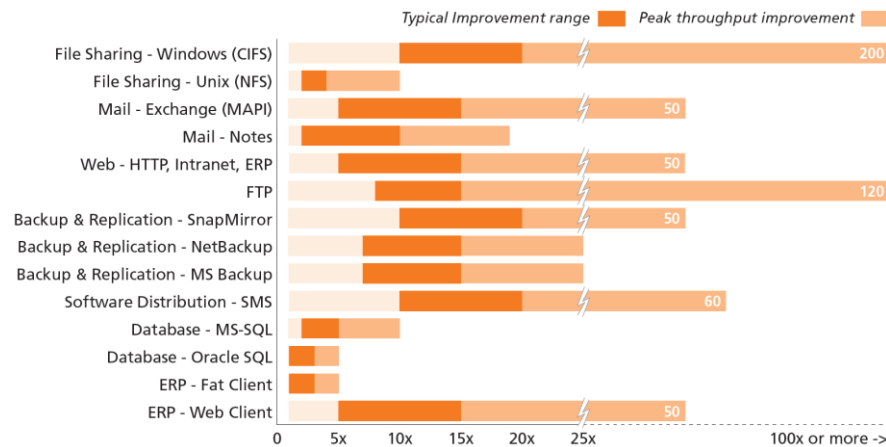
Application streamlining. RiOS application streamlining provides additional order-of-magnitude application performance improvements by reducing application protocol chattiness up to 98 percent and minimizing application overhead. By minimizing application demands on the network such as application protocol round trips and required network connections, RiOS can provide massive throughput increases to applications including Windows file sharing (CIFS), Exchange (MAPI), Web (HTTP), and Database (MS-SQL). RiOS also includes important features for maximizing branch office productivity, such as file server capabilities and the transparent pre-population of popular data.

Management streamlining. RiOS simplifies the deployment and management of application acceleration infrastructure by employing a transparent approach to communications. RiOS enables easy deployment through the auto-discovery of peers and the 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 and reporting, as well as integrated, centralized management and configuration. RiOS also enables a host of additional management features including dozens of deployment configurations, redundancy capabilities, optional IPsec encryption, RADIUS/TACACS+ authentication, and SNMP traps.

Typical deployment architecture



Steelhead appliances accelerate a broad range of applications



About Riverbed

Riverbed is the IT performance company. WAN optimization solutions from Riverbed liberate businesses from common IT constraints by increasing application performance, enabling consolidation, and providing enterprise-wide network and application visibility – all while eliminating the need to increase bandwidth, storage or servers.



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