

## Microsoft SharePoint Services

### Riverbed Steelhead Mobile® 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 is essential to provide quick document check-in/check-out performance to all team members, regardless of where they are trying to connect from or their distance from the server.

#### Steelhead Mobile Enhanced Microsoft SharePoint Services

Steelhead Mobile significantly optimizes Microsoft SharePoint Services to deliver mobile workers nearly identical performance whether they are at their desks or thousands of miles from it. By utilizing the same Riverbed Optimization System (RiOS) as the Steelhead Appliance to simultaneously address bandwidth constraints and the combined effects of latency and protocol inefficiencies, Steelhead Mobile enables dramatic performance improvements in productivity for mobile users using a centralized instance of Microsoft SharePoint Services. With Steelhead Mobile distributed SharePoint servers and complex replication models are no longer necessary for accelerated performance for any user, anywhere in the world.

#### Performance Improvements

Test results show that Riverbed Steelhead Mobile dramatically accelerates common operations in Microsoft SharePoint Services, and significantly reduces bandwidth utilization. A popular SharePoint application like Word can perform up to 33 times faster and utilize 99% less bandwidth. Other popular applications like Excel and PowerPoint are accelerated up to 21 times, with more than 99% reduction in bandwidth utilization.

#### Steelhead Mobile Powered by Riverbed Optimization System (RiOS)

Steelhead Mobile utilizes the widely applicable, most scalable architectural approach to enterprise application acceleration. Steelhead Mobile relies on the same patent-pending Riverbed Optimization System (RiOS) used in the Steelhead Appliance and was designed from the ground up to provide enterprises with an easy to manage solution that can accelerate all key applications where ever their users are.

#### TEST SUMMARY

- SharePoint operations are up to 60 times faster
- Bandwidth utilization is reduced by up to 99%

#### TESTING SCENARIO

These tests were performed using Windows XP Professional with Steelhead Mobile 3.0 as the client platform connecting to a SharePoint 2007 Server running on Windows 2003 R2. The browsers used for testing were Microsoft Internet Explorer 7.0.5730.11 and Firefox 2.0.0.16

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 256k and 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 Mobile client before (completely new data).

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

**Data Streamlining** –Data Streamlining works across all TCP applications to reduce bandwidth consumption by 60% to 95%. 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 network.

**Transport Streamlining** –Transport Streamlining reduces the number of TCP packets required to transfer data by 65% to 98%. Transport Streamlining overcomes TCP limitations by adapting transmission characteristics such as window scale, loss handling, congestion notification, and more.

**Application Streamlining** –Application Streamlining provides additional order-of-magnitude application performance improvements by reducing application protocol chattiness up to 98% and minimizing application overhead. By minimizing application demands on the network such as application protocol round trips and required network connections, Steelhead Mobile can provide massive throughput increases to applications including Windows file sharing (CIFS), and Exchange (MAPI).

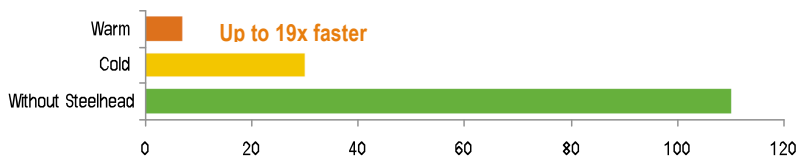
**Management Streamlining** – Steelhead Mobile simplifies the deployment and management of mobile clients by employing concurrent user support, link-based licensing, and Steelhead auto-detection. Ongoing management is made more effortless by providing simple but powerful Web-based and command line interfaces and reporting

**DEPLOYMENT BENEFITS**

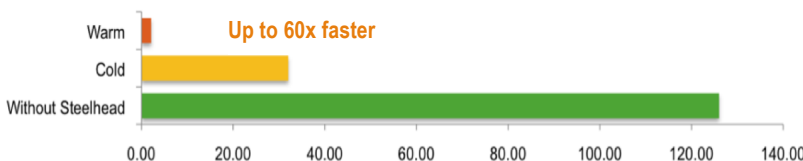
Deploying Riverbed with Microsoft SharePoint Services provides multiple benefits, including:

- Improved productivity. Microsoft SharePoint Services over the network can now be significantly accelerated. By dramatically reducing the time needed to complete the most typical operations, mobile 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 Mobile enable users in multiple locations and offices to check in and check out shared data at accelerated speeds, allowing team members to collaborate more fluidly.
- Reduced bandwidth utilization. Steelhead Mobile significantly reduces bandwidth utilization for mobile workers utilizing Microsoft SharePoint, thus reducing the costs of links like 3G data cards and satellite.
- Simpler SharePoint deployment. Steelhead Mobile enable accelerated performance to mobile workers from a central SharePoint server. Multiple SharePoint instances and complex replication models can be consolidated without compromising performance to even the most remote user.

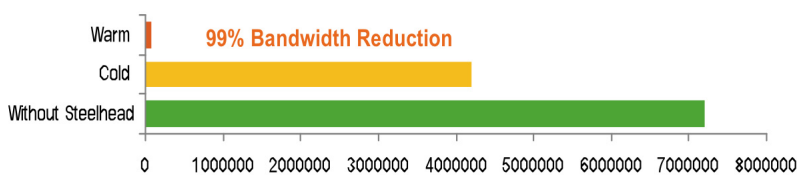
**PowerPoint: Firefox Upload of a 6.14 MB file – Time to Complete (sec)**



**Word: Firefox Open a 4.88 MB file – Time to Complete (sec)**



**PowerPoint: Internet Explorer Upload of a 6.14 MB file – Data Transferred (bytes)**



**About Riverbed**

Riverbed Technology is the IT infrastructure performance company. The Riverbed family of wide area network (WAN) optimization solutions liberates 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. Thousands of companies with distributed operations use Riverbed to make their IT infrastructure faster, less expensive and more responsive. Additional information about Riverbed (NASDAQ: RVBD) is available at [www.riverbed.com](http://www.riverbed.com)



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