

# Riverbed & VMWare

## Riverbed and VMWare Deliver Site and Server Consolidation

In this new era of globalization, the demands on information technology are changing. More employees than ever before work outside the headquarters and at the same time IT managers are striving to consolidate and simplify their IT infrastructure. Organizations are increasingly looking to consolidate their file/application server infrastructure from remote offices to reduce costs, simplify management and meet compliance demands. In addition, they are looking to increase server utilization and lower their total cost of ownership.

Riverbed enables consolidation of IT from branch offices to central sites or data centers without affecting the end user experience; VMware enables server consolidation at the central site or data centers. Together, VMware and Riverbed offer an unbeatable solution.

### Site and Server Consolidation with VMware and Riverbed

Server consolidation and containment solutions implemented with VMware virtual infrastructure software meet the challenges of server sprawl and underutilization while building a better computing infrastructure that is ready to meet future computing needs. Virtual machines and their data are encapsulated in easily managed virtual disk files and hardware independence is ensured by the uniform x86 virtual platform provided to each virtual machine by the VMware virtualization layer. Each workload that previously required a dedicated physical server can be placed in a virtual machine, making it simple to consolidate multiple workloads onto each physical server. In addition to consolidating servers today, implementing VMware virtual infrastructure provides a solution to contain future server growth. Fulfilling requests for new servers with virtual machines defers the need to purchase new physical servers and improves utilization. This ability makes it possible to accurately forecast and strategically manage future growth in computing capacity.

Remote site server consolidation is a clear win in terms of reducing operating costs and improving data security. When WANs are involved, client-server applications that worked fantastically on LANs break down and work poorly, or not at all. The reason is threefold:

- Constrained WAN bandwidth
- TCP throughput drop-off with latency
- Application chattiness multiplies the effect of latency



## Solution Overview



### The VMware and Riverbed Joint Solution

VMware Infrastructure combined with Riverbed's Steelhead appliances enable true consolidation. The two companies enable

- Consolidation of application/fileservers at a central site resulting in elimination of redundant remote IT infrastructure.
- Seamless and accelerated collaboration amongst remote employees in a centralized environment
- Improved backup and data compliance processes within your organization

## Solution Overview

### About VMware

VMware is the world's leading provider of virtualization solutions for x86-based servers and desktops. Through a pioneering approach to virtualization, VMware technology works to separate the software from the underlying hardware. This allows a single computer to run multiple operating systems and applications, delivering significant improvements in efficiency, availability, flexibility and manageability. Founded in 1998, VMware is headquartered in Palo Alto, California, with offices around the world. VMware's customer base consists of more than 20,000 organizations of all sizes, including 100% of Fortune 100 companies.

### LTI DataComm

23020 Eaglewood Ct. #100

Sterling, VA 20166

[www.ltidata.com](http://www.ltidata.com)

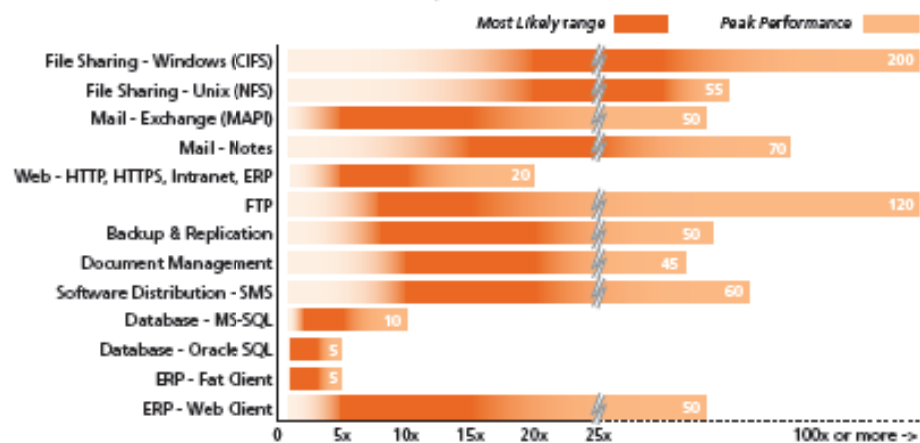
800-677-5050

©2009 Riverbed Technology. All rights reserved. Riverbed Technology, Riverbed, Steelhead, RiOS, Interceptor and the Riverbed logo are trademarks or registered trademarks of Riverbed Technology. All other trademarks used or mentioned herein belong to their respective owners.

Copyright LTI DataComm, 2009. All rights reserved.

Riverbed's Steelhead appliances accelerate the performance of all TCP based WAN applications by addressing all three bottlenecks to WAN performance. Steelhead appliances optimize both application and transport protocol chattiness, and offer unprecedented bandwidth optimization. These optimizations work in harmony with each other to provide the highest levels of performance improvement. The improvements in performance can be up to 100 times or more. With this kind of "LAN-like" performance, site consolidation projects can proceed without impacting end users. The chart below illustrates the performance of typical enterprise applications across WAN with Riverbed Steelhead appliances.

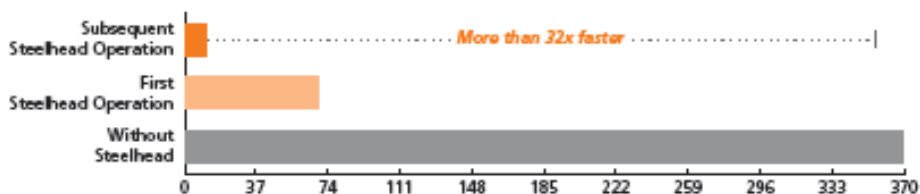
Steelhead Appliances Accelerate a Broad Range of Applications



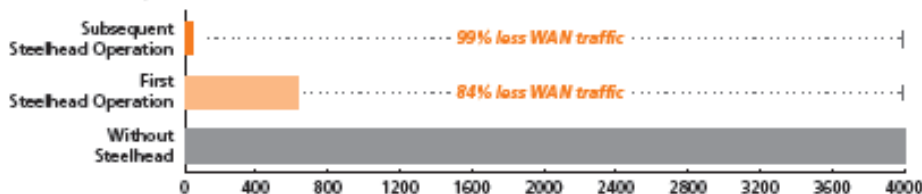
Riverbed Steelhead appliances can help streamline VMware's Software Lifecycle Automation by facilitating the centralization of the VMware image store across the organization. This approach will benefit organizations by

1. Saving storage, backup, and management costs
2. Streamline software lifecycle automation process across the organization resulting in increased productivity
3. Reduce time and bandwidth usage

Time Improvement for Downloading of a 4000MB VMware image across a T1 line with 100msec latency - Time to Complete (in seconds)



Bandwidth Reduction for Downloading of a 4000MB VMware image across a T1 line with 100msec latency (in megabytes)



\*These results are based on the testing scenario presented in this paper. Your results may vary based on the conditions of your own network and the specifics of your own use cases.