

Riverbed Optimizes IBM Tivoli Storage Manager

IBM Tivoli Storage Manager (TSM)

TSM is a centralized policy-based data backup and recovery software. The software enables a user to backup, restore, archive, and retrieve data from a hierarchy of data storage areas. The storage areas, known as pools, can be a hierarchy of disk, optical, and tape-based media.

When seeking to backup across the WAN, a typical TSM installation allows data backups from TSM clients to be spooled to random-access disk storage attached to the TSM server. That data is then migrated at a later time to less-expensive sequential-access storage, such as tape or optical disk.

Steelhead Appliances Reduce TSM Backup Windows

Steelhead appliances greatly reduce the amount of time it takes to complete backup and restoration jobs with IBM Tivoli Storage Manager. This enables organizations to centralize backups of remote offices over a WAN link and eliminate the need to maintain backup media, servers, and additional backup infrastructure in a distributed environment. In today's security conscious world, eliminating tapes at remote offices also reduces the risk of data leakage or privacy breaches. The Riverbed Optimization System (RiOS) utilizes industry-leading Data Streamlining and Transport Streamlining to provide data reduction, compression and transport protocol optimization. With RiOS, enterprises can cut TSM traffic on the WAN by as much as 99% allowing organizations to save on bandwidth costs while still completing backup jobs within the allocated windows. By enhancing restoration speeds, RiOS can also help TSM customers minimize their Recovery Time Objectives (RTO) and get their businesses back up and running should an event involving data loss occur.

Performance Improvements

Test results show that Riverbed Steelhead appliances significantly accelerate TSM backup and restoration jobs while also reducing WAN bandwidth utilization. A TSM restoration operation was 31 times faster with Steelhead optimization and reduced bandwidth by 98%. In addition, the subsequent full backup job was accelerated by 37 times with a 99% reduction on bandwidth utilization. For comparison, TSM compression provided a performance improvement of 6% for these same operations.

TEST RESULTS

- Improves backup times by up to 37x on a T1
- Reduces backup traffic by 99% on a T1
- Improves restore times by up to 31x on a T1
- Reduces restore traffic by 98% on a T1

TESTING PARAMETERS

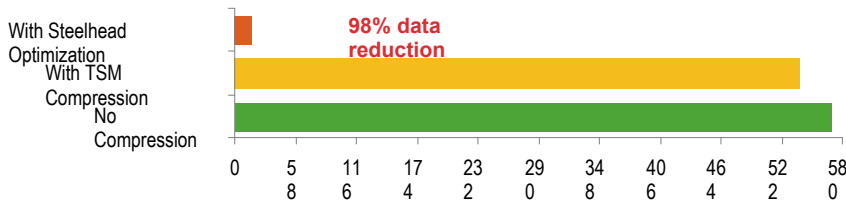
These tests were performed using a Windows 2003 Server Enterprise Edition running IBM Tivoli Storage Manager version 5.4 and backup clients running Windows XP Professional and IBM Tivoli Storage Manager Backup/Archive Client version 5.4. The backup data consisted of a range of file formats (XLS, PPT, PDF, DOC, EXE, JPG, ZIP, VSD and TXT) and totaled 569 MB. Tests with TSM compression enabled were also run to provide a comparison to testing with Steelheads.

The performance tests were run on a T1 WAN link with latency of 100ms. The testing methodology included an initial full backup of the 569 MB test directory, a full restoration of the directory, an incremental backup with a ten percent delta (typical of a nightly incremental job), and a subsequent full backup job (representing a weekly full backup).

Full Restore of 569MB over a T1 WAN – Time to Complete (in sec)



Full Restore of 569MB over a T1 WAN – Bandwidth Utilization (in MB)



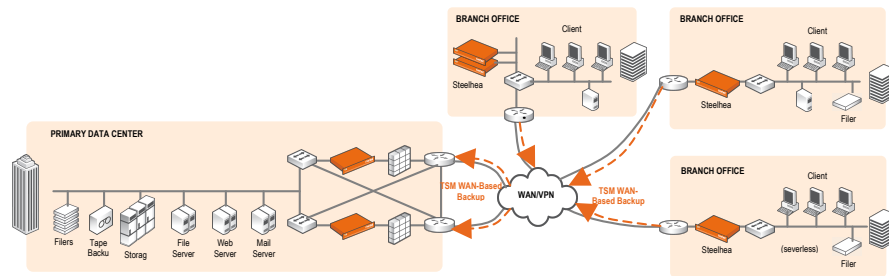
DEPLOYMENT BENEFITS

Deploying Riverbed for TSM produces significant benefits:

- **Centralize Backup.** Reducing the time to complete backup and restore jobs enables organizations to centralize their backup operations to reduce overhead and complexity and eliminate or reallocate unnecessary backup infrastructure saving additional costs.
- **Enhanced Data Protection.** By eliminating data stores, tapes and other media from remote offices, enterprises can enhance their security posture to protect critical corporate or customer information.
- **Reduced bandwidth utilization.** Steelhead appliances significantly reduce bandwidth utilization for TSM operations creating network cost-savings while alleviating WAN congestion.

Weekly Full Backup of 569MB over a T1WAN – Time to Complete (in sec)

Typical Deployment Architecture



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



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