

Riverbed Steelhead 1010 accelerates applications dramatically over WANs

Companies faced with a WAN performance problem with their remote sites often think of it purely as a "bandwidth problem." Yet the problem is bigger than just bandwidth.

Compression and caching solutions address the bandwidth component of the problem, but application performance is also affected by latency related to chatty transport and application protocols. What's needed is a solution that optimizes bandwidth in multiple ways simultaneously to provide dramatic improvements at the remote site.

Riverbed Technology, Inc. commissioned The Tolly Group to evaluate the performance of its Steelhead™ 1010 WAN Traffic Optimization and Acceleration appliance. Engineers established the degree to which the Steelhead appliance can improve perceived performance of applications accessing data remotely.

The Steelhead 1010 appliance is an application acceleration appliance that promises to improve dramatically the throughput of applications that traverse WANs by: (1) Reducing repetitive data transmitted across the WAN, (2) Reducing the round trips required by TCP and (3) Improving the efficiency of specific tools like Windows, Exchange and other "chatty" applications.

Test Highlights

- Delivers significant increases in both effective WAN link capacity and application throughput across various simulated circuits
- Provides a sizeable reduction in the amount of data transiting a WAN link, through the combination of compression, remote-side data storage, and protocol acceleration
- Speeds up file transfers from 3X in a "cold," or first-time transfer, to up to over 170X faster in a "warm" run

Effect of Steelhead 1010 on File Transfer Times

Protocol of transaction and test file size	Simulated WAN scenario	Baseline (No Steelhead optimizations)		Cold run	Warm run	Time Improvement Over Baseline	
		Avg	Avg			Cold run	Warm run
				Avg	Avg	Cold	Warm
CIFS	512 Kbps, 250 ms RTT	222.8	55.9	1.3	4.0	171.4	
	2048 Kbps, 100 ms RTT	66.5	14.4	1.4	4.6	47.5	
MAPI	512 Kbps, 250 ms RTT	49.4	5.5	2.0	9.0	24.7	
	2048 Kbps, 100 ms RTT	9.5	1.7	0.9	5.6	10.6	
Lotus Notes	512 Kbps, 250 ms RTT	29.6	20.5	1.1	1.4	26.9	
	2048 Kbps, 100 ms RTT	11.5	5.3	0.7	2.2	16.4	
FTP	512 Kbps, 250 ms RTT	77.6	27.3	3.9	2.8	19.9	
	2048 Kbps, 100 ms RTT	20.1	7.8	2.0	2.6	10.1	
HTTP	512 Kbps, 250 ms RTT	17.4	10.1	1.2	1.7	14.5	
	2048 Kbps, 100 ms RTT	4.7	2.9	0.6	1.6	7.8	

Tolly Group engineers specifically focused on two key metrics: (1) effective WAN throughput, and (2) transfer time (time to complete) – that is, measuring how much

combination of compression, remote-side data storage, and protocol acceleration results in a sizable reduction in the amount of data transiting a WAN link when compared to bandwidth consumption over a baseline WAN application environment without the Steelhead 1010. Moreover, the Steelhead 1010 speeded up file transfers from 3X in a "cold" – or first time transfer to up to over 170X

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Products under test:

- Steelhead 1010 version 1.2.2 Build 13

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For more info on this test, visit: <http://www.riverbed.com>

greater the effective WAN connection is, and showing how much the "wait" times for data can be reduced – especially when the data sent has previously been processed by the Steelhead 1010.

Results show that the Steelhead 1010 delivers significant increases in both the effective WAN link capacity and the application throughput across various simulated circuits tested especially when handling requests for data files previously processed by the appliance – so called "warm" data. Tests results indicate that the

faster in a "warm" run than without Steelhead appliances across the various test scenarios. Actual throughput for an end-user will also be impacted by the type of data in the file as compression efficiency varies based on data characteristics.

Check out the full report on The Tolly Group's Web site at:

<http://www.tolly.com/DocDetail.aspx?DocNumber=205109>