Optimizing Microsoft Exchange Traffic over the WAN
OPTIMIZING MICROSOFT EXCHANGE TRAFFIC OVER THE WAN

Introduction:
Microsoft Exchange performs poorly on WANs, so much that large enterprises often deploy distributed Exchange servers to support their local users. As a result, maintaining Exchange servers is an expensive and complex process.

By deploying Steelhead appliances, users in remote offices can access Exchange servers in a centralized and distant data center with roughly the same responsiveness as a local mail server.

Exchange 2007 Acceleration
The Riverbed Optimization System ( RiOS) has support for Microsoft Exchange environments, and Riverbed was the first to deliver a protocol optimization specifically for MAPI 2K7. Email encryption is also supported and optimized across the WAN.

Exchange 2003 Acceleration
Riverbed was also the first WAN optimization vendor to provide application layer protocol optimization for Exchange 2003, which has been available since the RIOS 1.2 release. To date, Riverbed is still the only vendor to accelerate Exchange 2003 traffic at layer 7.

Cached Exchange Mode
Outlook cache mode does not accelerate Exchange; it merely hides the latency-induced reduction in performance by not displaying email until it has been delivered. More information on how using Cached Exchange Mode affects performance can be found at http://www.riverbed.com/results/solutions/accelerate/outlook_cache.php.

Microsoft Outlook / Exchange Settings

Encryption
Encryption of data between Outlook and Exchange is optional. Only Outlook 2007 has encryption turned on by default. To disable in Outlook 2007 or Outlook 2003, go to the Security tab in the Preferences section (see figure 1).

If Encryption is desired, please go to the next section, Steelhead Optimization Settings.

Steelhead RiOS 5.5 Optimization Settings
MAPI Optimization is on by default. Native MAPI 2007 Acceleration is off by default. Go to the Configure -> Optimization -> MAPI
section (see figure 2) to enable this option.

Enable Encrypted Optimization is off by default. To optimize encrypted MAPI traffic, please go to the Riverbed Support site at https://support.riverbed.com/kb/solution.htm?id=50170000000Ak0s.

Verifying Optimization

Figure 3 is a screenshot of the Reports -> Networking -> Current Connections screen in the Steelhead web interface. If Microsoft Outlook, Exchange and RiOS are configured correctly to optimize across the network, the Current Connections will show as MAPI under the Application field, and reduction statistics will appear for the connection. In figure 3, the computed reduction is 97%.

Performance Summary

Outlook 2007 / Exchange 2007 were tested in a simulated WAN environment using 100 millisecond latency across a T1 link. The
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test operation consisted of sending a 6.3 MB file attachment over the WAN. A “Cold Run” is defined as a data transfer that has never been seen by the Steelhead appliance before (a completely new file). A “Warm Run” is defined as a data transfer in which the Steelhead appliance has seen most or all of the data before (a bulk e-mail or a forwarded e-mail with attachment).

Test results show that Riverbed Steelhead appliances dramatically accelerate Exchange 2007, and significantly reduce WAN bandwidth utilization. The send file attachment test operation resulted in more than an 18 times speed improvement (see figure 4) and over 98% data reduction in bandwidth utilization (see figure 5). Depending on data types and WAN configuration, your results may vary.

![Figure 4 – Sending Email with Attachment (Time to complete in seconds)](image1)

![Figure 5 – Sending Email with Attachment (Bandwidth Utilization in KB)](image2)
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