



MIMOSA  
SYSTEMS

## Technical Brief

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- Mimosa NearPoint and Riverbed Steelhead WAN Acceleration Appliances  
*Optimization for Microsoft® Exchange Disaster Recovery*

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## Executive Summary

Microsoft Exchange information is very challenging to replicate over long distances due to the large amount of information contained in its database files. Typical Exchange database files can range from <10GB for a small to medium size organization, to over 100GB for a very large organization. For a typical T1 connection, the time to transfer the database files can range from hours to days of total time. For this reason, only customers with great amounts of bandwidth (and large budgets) can replicate Exchange information in a reasonable amount of time.

WAN acceleration and optimization appliances (“WAN optimizers”) are a new class of network equipment that can dramatically improve the performance of existing networks. WAN optimizers can be used to improve access to remote offices and increase the overall performance of applications without increasing network bandwidth.

This paper presents test results performed in the Mimosa Systems lab using the Riverbed Steelhead Model 3510 WAN optimizer appliance. Riverbed is a manufacturer of WAN acceleration appliances and more product information can be found at <http://www.riverbed.com>. The tests were performed using a WAN simulator, and actual Exchange database files.

This paper presents test results performed in the Mimosa lab using a WAN simulator, actual Exchange database files and a WAN Acceleration Appliance.

## Mimosa NearPoint

Mimosa NearPoint is a unified information management platform for Microsoft Exchange Server that manages Exchange information for local data protection and email archiving. In a typical configuration, NearPoint is co-located with the Exchange Server(s) and performs its unique method of continuous data protection – Application Shadowing while connected to the Exchange Server via a LAN (1GB typical), so network performance is not an issue.

In two scenarios, NearPoint manages the Exchange database files over a WAN and network performance is a very critical issue. The first scenario is when an Exchange Server is located at a remote location or branch office. In this case, it may be more attractive economically to shadow the remote Exchange Server with a NearPoint server located in the primary datacenter, especially when the remote Exchange Server is managing only a small number of mailboxes (Figure 1). The challenge in this scenario is performing a full copy of the Exchange database file for NearPoint shadowing and in the event a full database recovery needs to be performed should a fault occur.

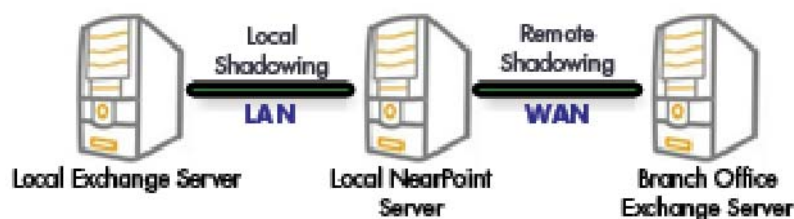


Figure 1

The second scenario is for Exchange disaster protection. Mimosa NearPoint serves as a solution for Exchange DR when the Exchange database files located on the local NearPoint server are replicated over a WAN to a standby Exchange Server. The NearPoint DR Option is an add-on option that manages the remote replication and performs the automated failover and re-start of Exchange services should a disaster occur (Figure 2). The challenge in the DR configuration is the initial copy of the full Exchange database file to the standby Exchange Server. Depending on the size of the file, the total copy time may take days.

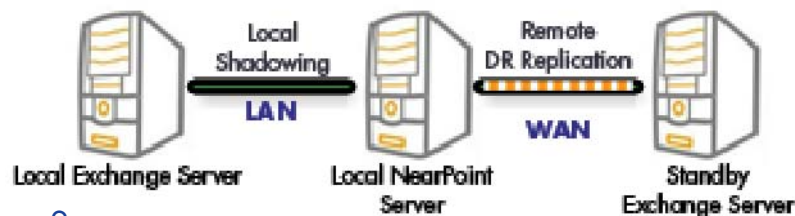


Figure 2

## WAN Optimizer Test Results

A test environment was constructed with two NearPoint servers connected via a WAN simulator set to 1.5Mbits/sec bandwidth (Figure 3). The test files consisted of one 5.71GB Exchange EDB, one 2.0 MB Exchange STM and ten Exchange log files. The file set was transferred between servers on four occasions and the total time to transfer all the files was recorded. (Table One.) In the first transfer, the WAN simulator was not used and a 100 Mbits/sec LAN was used. In the second transfer, the WAN simulator was used without a WAN optimizer. In the third and fourth tests, the WAN optimizer was used.

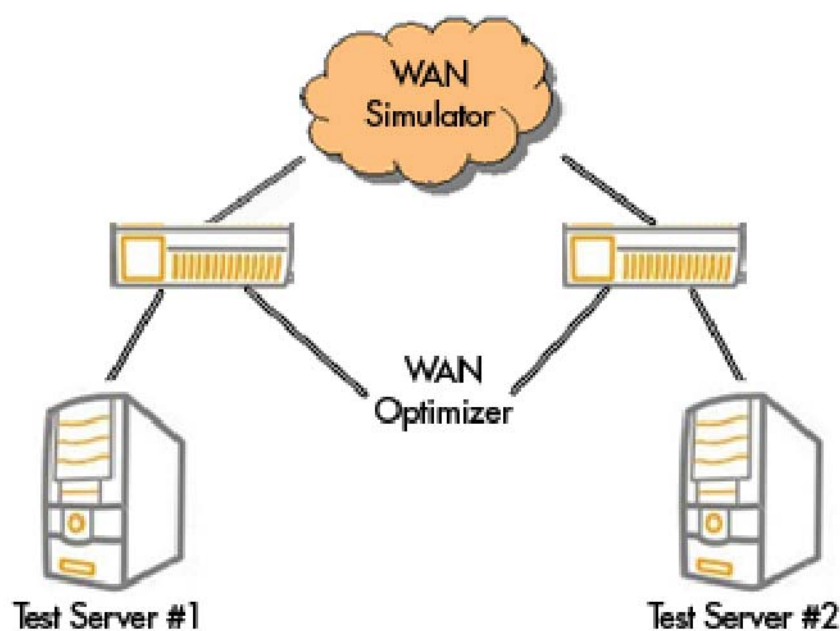


Figure 3



Test	Line Speed Mbits/sec	Files Copied	Copied Size	Copy MB/sec	Copy Mbits/sec	Elapsed Duration (hr:min:sec)	Speedup
LAN	100	12	5.77 OB	9.42	75.35	0:10:27	na
WAN Bypass	1.50	12	5.77 OB	0.13	1.07	12:18:02	1.0
Riverbed 1st Pass	1.50	12	5.77 OB	2.46	19.68	0:40:00	18:45
Riverbed 2nd Pass	1.50	12	5.77 OB	7.83	62.65	0:12:34	58:73

The shortest elapsed time was achieved by the LAN and this was expected. The longest elapsed time was the WAN Bypass test. The fastest times were achieved using the Riverbed appliance. Riverbed not only improved performance on the first pass, it improved performance on the second pass of the data by eliminating duplicate data in the transfer. This “de-duplication” is one of the ways that Riverbed Steelhead improves network performance.

Based on the findings two important results emerge. First, when the sample Exchange database files are first copied to the remote server, the results achieved when using the Riverbed appliance are over eighteen times the performance of the WAN alone. When NearPoint is deployed for remote shadowing or for disaster protection, this will greatly reduce the time to replicate the Exchange database files over the WAN.

Next, notice the performance gains when the same Exchange database files are copied on the second pass. The performance gain increases to almost sixty times the WAN alone. This represents the performance gain that can be achieved when the Exchange database files are replicated a second time, for example during a restore operation (either for the branch office or for disaster recovery).

## Conclusion

These simple tests performed in the Mimosa Systems labs clearly show Exchange database files can be copied over a WAN much faster using a Riverbed WAN acceleration appliance. In situations where an Exchange Server is located in a branch office, the test results show that Riverbed can reduce the time to copy a remote Exchange database file and make it feasible to shadow a remote Exchange Server with a NearPoint server located at a primary data center.

For Exchange disaster recovery using Mimosa NearPoint, the test results show that Riverbed improves the performance of the initial replication as well as the second replication of the Exchange database file(s). For Exchange disaster protection, Riverbed can provide increased performance without the expense of additional bandwidth. For critical email service and disaster recoverability, Mimosa NearPoint combined with Riverbed Steelhead WAN acceleration appliance offers attractive benefits for Microsoft Exchange.

## Find out More

For more information about Mimosa Systems and how NearPoint can help solve your archiving, eDiscovery, recovery and storage management issues, contact Mimosa at 408.970.9070 or visit our web site at [www.MimosaSystems.com](http://www.MimosaSystems.com).

