Optimizing Microsoft Exchange Mailbox Replication with F5 BIG-IP WOM

BIG-IP® WAN Optimization Module™ (WOM) optimizes Microsoft Exchange mailbox replication across the WAN and accelerates transfer time. With WOM, your Exchange replication can be fast, secure, and optimized.

Microsoft Exchange Server Mailbox Replication

Replication technology in Microsoft Exchange Server enables high availability for Exchange Server data stores. Data can be duplicated at a remote location for use in case of planned or unplanned downtime, such as during upgrades and for disaster recovery. During a loss of connectivity at the primary data center, clients can be redirected to the backup data center, and the email system data will be available.

However, the success of remote replication of any data is subject to the reliability of the Internet connection over which the data is being transferred. Microsoft Exchange compresses data before sending it over the wire, but WAN optimization is not Microsoft Exchange's primary focus.

The time that it takes to create a replica when first deploying this solution and the time it takes to keep that replica up to date are critical to the success of your deployment. If the replica never completes or is out of date when an emergency occurs, the duplicate mail server might not be a sufficient replacement, and you will be scrambling to have a usable mail server until the primary server is once again available.

Solution

BIG-IP WAN Optimization Module helps create the most complete and stable Microsoft Exchange replication possible given the parameters of your environment. By mitigating the effects of latency, helping to quickly overcome packet loss, and optimizing the TCP sessions between locations, BIG-IP WOM improves the performance and reliability of Microsoft Exchange replication.

Symmetric adaptive compression and symmetric deduplication reduces the bandwidth required to keep your replica up to date as well as the time required to replicate any given message.

In general, the greater the amount of data being transferred, the more benefit BIG-IP WOM will offer. And since you can offload encryption of the replication stream to BIG-IP WOM, the CPU overhead that Exchange will bear on your systems is less, making them more responsive also.

Key features
- **Compression**—Sends less data in the bandwidth available
- **Deduplication**—Prevents transmission of redundant blocks of data
- **Encryption**—Encrypts off the server to save resources
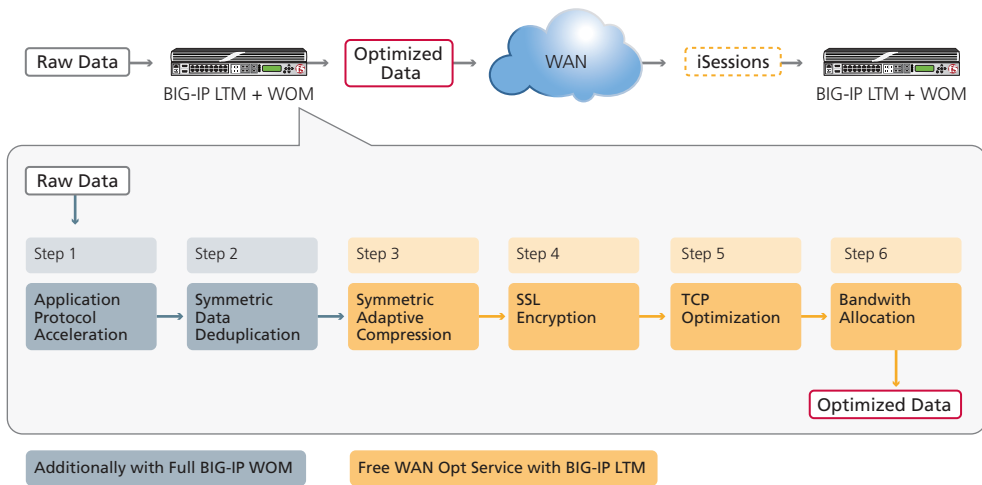- **TCP Optimization**—Recovers from TCP communications problems more easily

Key benefits
- **Increase Performance**—Improves RPO and RTO by reducing data replication time
- **Increase Efficiency**—Maximizes bandwidth utilization
- **Cost Savings**—Reduces WAN costs and offloads CPU-intensive processes from servers
- **Improve Security**—Encrypts mailbox replication over the WAN

BIG-IP WAN Optimization Module (WOM) enables you to:

• Accelerate data replication/backup across the WAN.

• Mitigate the effects of latency.

• Optimize existing bandwidth to replicate the same data, thus controlling costs and eliminating the need for costly bandwidth upgrades.

• Guarantee bandwidth and prioritize replication traffic.

• Meet SLAs for data replication and recovery times.

BIG-IP WOM does this by layering optimization techniques onto the TMOS® operating system, as illustrated in the following graphic.

Raw Data → BIG-IP LTM + WOM → Optimized Data → WAN → iSessions → BIG-IP LTM + WOM

Raw Data

Step 1	Step 2	Step 3	Step 4	Step 5	Step 6
Application Protocol Acceleration	Symmetric Data Deduplication	Symmetric Adaptive Compression	SSL Encryption	TCP Optimization	Bandwith Allocation

Optimized Data

Additionally with Full BIG-IP WOM

Free WAN Opt Service with BIG-IP LTM

Layers of optimization techniques in BIG-IP WOM accelerate and secure Microsoft Exchange mailbox replication.

Example

In this example, 3.59 GB of data was transferred over a 155 Mbps WAN link with 100 ms latency and 0.1 percent packet loss. BIG-IP WOM reduced the transfer time for Exchange 2010 by more than eight times.

Duration in seconds

▨ Without BIG-IP WOM   ▩ With BIG-IP WOM
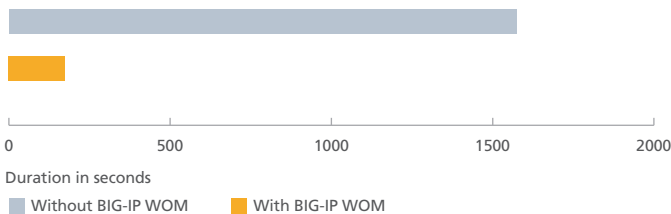
In a replacement scenario, BIG-IP WOM significantly reduced the transfer time for Exchange 2010.

Learn more

For more information about BIG-IP WOM solutions, use the search function on f5.com to find these resources.

Product overview

BIG-IP WAN Optimization Module Overview

Datasheet

BIG-IP WAN Optimization Module Datasheet

White paper

BIG-IP WAN Optimization Module Performance

Podcast

Byte Caching, Compression, and WAN Optimization

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