

# SERVER CONSOLIDATION

## GOING BEYOND WIDE AREA FILE SERVICES (WAFS) OPTIMIZATION

### In Summary

Acceleration/optimization specifically for WAFS

A holistic solution: WAFS, QoS, caching, TCP acceleration and security

Complete server-less solution for the remote branch

Full Microsoft domain integration

SMB signing support

### Benefits

Complete server consolidation solution to centralize application, file, print and backup servers in the datacenter

Ability to separate WAFS and other WAN Optimization technologies in the datacenter

Significantly improves ROI and reduces costs by making server replacements and WAN upgrades unnecessary

LAN-like performance over the WAN

Protect business critical applications through QoS

Cost savings and concerns over data security have made server consolidation a top priority in IT. Eliminating servers at the edge of the network and consolidating them in the datacenter significantly lowers management and monitoring costs. Having a single repository of data within an organization that can be controlled in a central spot simplifies data security and meets regulatory requirements.

The downside of server consolidation is network performance. Because the Common Internet File Services (CIFS) protocol that Windows PCs use to communicate with file servers is very chatty—requiring a lot of back-and-forth communication between client and server—a file or application that worked efficiently over the Local Area Network (LAN) is going to be significantly slower over the Wide Area Network (WAN).

As a result, server consolidation initiatives can also cause user dissatisfaction, lost productivity and data security issues when users compensate by downloading and storing important data locally instead of at the central site.

### How Expand Does It

Expand offers a complete solution for file server consolidation that combines Wide Area File Services (WAFS) with a holistic approach to WAN Optimization and application acceleration:

**Application and Protocol Acceleration:** Expand offers plug-ins for accelerating specific applications as well as protocol acceleration technology focused on the general infrastructure. The CIFS plug-in overcomes the “chatty” back and forth requests and replies.

The TCP acceleration plug-in, which is based on the industry-standard SCPS protocol (the Space Communications Protocol Standards), mitigates the effects of latency.

Combined, they dramatically reduce the effect of chattiness, delivering clearly perceivable performance improvements.

**SMB Signing/Microsoft Transparency:** Expand supports Server Message Block (SMB) signing—maintaining the integrity of the digital signature on each SMB packet that goes from client to server and enabling Expand solutions to operate transparently in the Windows environment.

Transparency in the Microsoft domain makes it possible to place an Expand appliance into the network with little administrative effort, offering a significant cost savings. Competitive solutions that act as a CIFS proxy may not be able to maintain the integrity of the SMB signatures.

**Improving Return on Investment (ROI):** Expand solutions can typically pay for themselves—often within a matter of months—by making server replacements and WAN upgrades unnecessary, and from the cost savings generated by:

- Lower capital expenditure by consolidating application/file/backup servers from remote branch offices to the datacenter, which also results in reduced licensing fees.
- Lower operational expenditure by reducing resources needed to manage and administer servers.
- Reduced bandwidth costs.
- Higher employee productivity.

### Why Expand?

By providing a comprehensive solution for optimizing network performance and accelerating applications over the WAN, Expand makes it possible to enjoy the cost savings of server consolidation without sacrificing application performance, user satisfaction or data security.

## EXPAND NETWORKS — COMPREHENSIVE SOLUTIONS FOR WAN OPTIMIZATION

<b>QUALITY OF SERVICE (QOS):</b> Control of network bandwidth, filtering, shaping and marking	
<ul style="list-style-type: none"> <li>• Automatic Layer-7 application discovery</li> <li>• Both inbound and outbound traffic</li> <li>• Packet fragmentation (assures VoIP/video latency budget)</li> <li>• End-to-end application performance monitoring</li> <li>• Transparent to existing QoS infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>• Priority treatment for critical applications</li> <li>• Guarantee bandwidth for business sensitive applications</li> <li>• Restrict rogue and greedy applications</li> <li>• Seamless integration with compression and byte level caching</li> <li>• Integration with MPLS network</li> </ul>
<b>ACCELERATION:</b> Powerful acceleration solutions for both protocols and applications	
<ul style="list-style-type: none"> <li>• TCP acceleration (based on SCPS Standard)</li> </ul>	<ul style="list-style-type: none"> <li>• Application acceleration (Citrix/ICA, HTTP, RDP, Telnet/TN3270, FTP, DNS, webified applications)</li> </ul>
<b>VISIBILITY &amp; MANAGEMENT:</b> Comprehensive monitoring and graphical reporting	
<ul style="list-style-type: none"> <li>• Centralized management through ExpandView</li> <li>• Total network visibility</li> <li>• Automatic traffic discovery</li> <li>• Simple configuration</li> <li>• Traffic monitoring</li> <li>• Historical and real-time reports for applications and links (throughput, performance, acceleration)</li> <li>• Easy-to-use WebUI and central deployment stations</li> <li>• Quick and easy configuration via front panel keypad</li> <li>• Secure management with HTTPS, SSH, SNMP</li> </ul>	<ul style="list-style-type: none"> <li>• Integrates with existing user authentication and administration systems (RADIUS, TACACS+, and Windows Directory)</li> <li>• Full NetFlow compliance: replaces the need for costly probes, enables collecting traffic statistics on routing devices and reports them to the collector.</li> <li>• Out-of-band management</li> <li>• HSRP/VRRP failover</li> <li>• External flash card for device swap-out</li> <li>• Switch-to-wire and software watchdogs</li> </ul>
<b>WAFS:</b> Full-scale acceleration for WAFS and CIFS-based applications	
<ul style="list-style-type: none"> <li>• CIFS optimization</li> <li>• Faster file transfers</li> </ul>	<ul style="list-style-type: none"> <li>• SMB-signing (full Microsoft compliance)</li> <li>• Virtual-Server (DNS, DHCP, and print services) Addresses 'WAN-outs' in case of network outage</li> </ul>
<b>COMPRESSION &amp; CACHING:</b> Compression algorithms that are dynamic and self learning; caching in memory / hard drive	
<ul style="list-style-type: none"> <li>• Byte-level caching</li> <li>• Packet header reduction</li> <li>• Dynamic bandwidth adjustment</li> </ul>	<ul style="list-style-type: none"> <li>• Adaptive packet compression</li> <li>• Network transparent RTM (Router Transparency Mode)</li> <li>• Dynamic routing</li> </ul>
<b>SECURITY:</b> Robust security and data protection for enterprises	
<ul style="list-style-type: none"> <li>• IPSec (AES-128, AES-192, AES-256 or 3DES algorithms)</li> </ul>	<ul style="list-style-type: none"> <li>• Authentication, authorization, and accounting (AAA)</li> </ul>

### LEARN MORE

Expand pioneered WAN Optimization solutions in 1998. Expand's extensive experience and technology leadership have consistently placed it in the Gartner's Leaders Quadrant for WAN Optimization Controllers.\* Some of the best-known names in financial services, manufacturing, retail, health care, as well as leading government agencies and the military, rely on Expand Networks. For more information on how Expand solutions and services can benefit your company, contact your local Expand representative today or visit us at [expand.com](http://expand.com)

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