

SERVER-BASED COMPUTING AND VIRTUALIZATION

ENHANCING THE PERFORMANCE OF CITRIX, TERMINAL SERVICES AND VIRTUAL DESKTOPS

In Summary

Acceleration/optimization specifically for interactive protocols such as Citrix/ICA and RDP

Memory-based byte-level caching/compression

A holistic solution—QoS, byte-level caching, packet aggregation, TCP acceleration and security

Specific plug-in for RDP, Citrix/ICA acceleration

Flexible—use all or part of the solution

Benefits

Enhances performance of any server-based computing application

Allows for accelerating throughput by an average of 300% and peaks of more than 1000%

Increases the number of user sessions by an average of two to three times and peaks of more than 10 times with superior network, server and user performance on the same infrastructure

Protects business critical applications

Reduces IT costs and TCO per user by up to 50%

Enforces standardization and regulatory Compliance

Accelerates remote printing

More IT departments are consolidating services in the datacenter using server-based computing and virtualization technologies such as Citrix, Virtual Desktop Infrastructure (VDI) or Terminal Services.

But transmitting applications and data from a centralized server significantly increases the amount of bandwidth required. Application performance degrades, particularly when they are graphics intensive, such as interactive presentations or training.

Expand Networks solutions enhance server-based computing and virtualization strategies by providing compression and acceleration that is specifically designed for Citrix/ICA and RDP protocols.

Expand solutions improve applications performance and reduce the amount of bandwidth needed, enhancing the user experience and lowering costs.

How Expand Does it

Expand solutions provide a range of capabilities to enhance Citrix and RDP-based application performance:

QoS: QoS removes congestion by making Citrix/ICA and RDP traffic the priority, protecting it from other adverse traffic on the network. Layer 7 QoS provides better application visibility and higher priority granularity.

Caching: Memory-based, byte-level caching sees into the Citrix/ICA and RDP packet stream and provides a significant performance improvement over traditional block-level caching.

Plug-ins: A server-based computing plug-in multiplexes multiple data streams into a single stream, providing compression and caching over all of them, a significant enhancement over Citrix/ICA and RDP native optimization algorithms which can only optimize each session individually.

TCP Acceleration: TCP acceleration enables TCP transfer speeds in excess of WAN link speed, even under challenging latency and packet loss conditions. Expand's TCP acceleration uses the standards-based SCPS protocol (the Space Communications Protocol Standards) that was developed by NASA and the DoD for performance optimization of bulky transfers (e.g., presentations, photos, etc.) over high latency links.

Printing: Expand solutions also greatly enhance printing which can be significant drain on network resources and impact performance. Expand solutions apply byte-level compression, caching, QoS and TCP Acceleration to improve printing.

These acceleration/compression techniques can be implemented holistically or individually, providing maximum flexibility.

Meeting User Performance Expectations

Expand solutions lower the costs involved in rolling out server-based computing or virtualization strategies, reducing the bandwidth needed and also maximizing the use of resources in the datacenter. The result is an effective and efficient network that meets end-user performance requirements and expectations.

- With Expand's Interactive TCP/IP plug-in, user capacity is reliably extended on the existing infrastructure.
- Up to 50% reduction in IT costs and TCO per user.
- Audio, graphics and multimedia performance are delivered without jitter.
- Users are more productive because of the improved application performance.

EXPAND NETWORKS — COMPREHENSIVE SOLUTIONS FOR WAN OPTIMIZATION

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

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

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