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CLEAR CHOICE ROUNDUP

WAN optimization

Give your WAN a boost

Optimization tools offer compression and prioritization to reduce telco charges.

BY BARRY NANCE, NETWORK WORLD LAB ALLIANCE

Optimizing WAN links can reduce telco charges in either of two ways. For mature links with fairly steady usage (neither growing nor shrinking), you can use WAN optimization devices to compress the data and then tell your telco to dial back the bandwidth you're leasing. You pay less for the link, yet the same information flows through it. For links with rapidly increasing bandwidth usage that you plan to upgrade soon, WAN optimization devices can compress the data and thus let you defer the upgrade to a much later date. A WAN link that was near maximum capacity suddenly can handle present and future traffic with ease.

NX-3500

Silver Peak's NX-3500's caching algorithms shine

Silver Peak Systems submitted two NX-3500 WAN optimization devices for testing in our Alabama labs. The devices performed admirably, and we suspect that 2-year-old Silver Peak will become a major contender in the WAN optimization market. The NX-3500 was reliable, had excellent protocol support, and was amazingly easy to set up and configure. We were concerned with its ability to scale, but Silver Peak says the company plans to extend the NX product line in the future.

Intended for regional hubs and small data centers, the NX-3500 appliance ($18,000) works on a peer-to-peer basis when connected via WAN link to other NX-3500s; aggregates multiple session data from as many as 50 model NX-2500s (a $10,000

NX-3500

entry-level machine with less capacity than the NX-3500) at remote sites; and, when used with the high-end Silver Peak NX-7500, ties a hub or small data center to a major data center at a central site. The NX-7500, the vendor says, handles 155Mbps WAN speeds, has 2TB of disk space and is priced at $65,000. We think the huge price and performance gap between the NX-3500 and NX-7500 cries out for at least one midrange WAN optimization device to help capacity planners choose the right tool for the right job.

Caching strength

The NX-3500 did a good job of compressing data and accelerating protocol streams. Its biggest strength, however, was its effective caching algorithms. In our FTP tests, we transferred large files from remote branches to a central site. Between transfers, we made slight changes to the files to emulate a typical day's business activity against the files. For every transfer after the first, the NX-3500 units transported just the compressed changes (known as compressed deltas) over the WAN link. A transfer that consumed 19 minutes without WAN optimization took about 20 to 35 seconds with the NX-3500 and yielded an average bandwidth-increase factor of 28.5.

The NX-3500's caching approach was intelligent and practical. The appliance copied inbound and outbound traffic onto its internal hard disk. While this data store is application-independent, the NX-3500 remembered the operation (for example, FTP) requesting the data, in addition to the identity of the session partner making the request. The NX-3500 also tracked the number of requests for the data. Least-used data was discarded when the cache became full, but daily or weekly usage of the data will keep it in the cache. When the appliance detected changes to the cached data, it computed deltas to represent those changes. Any session partner (for example, another NX-3500) requesting the data repeatedly received the deltas (compressed), reassembled the data at the destination site and supplied the full, correct data set to, for example, an FTP client asking for the data.

Beyond file transfers, the NX-3500s perform Common Internet File System- and Network File System-based file copy operations, as well as backup and restore operations, that benefit from caching to a degree similar to that of the FTP operations. For e-mail and Web (HTTP) traffic, we saw an average bandwidth-increase factor of 8.0 to 12.4. As expected, pure text traffic gave us the higher number, compared to messages and Web pages that contained graphic images. For Citrix and VoIP traffic, we experienced an average bandwidth-increase factor of 3.5. To our delight, the NX-3500 devices added virtually no latency to our WAN links, and can support WAN speeds as much as 10Mbps.

The NX-3500 appliance is a 2U rack-mountable device with 2GB of RAM and two 250GB hard disks. It has four Gigabit Ethernet ports, two for WAN inbound/outbound connections and two for management. The NX-3500 also has a serial port for ASCII terminal command line-based management. It uses 128-bit Advanced Encryption Standard (AES) for disk security and IPSec (again, 128-bit AES) for network security. Two redundant power supplies help ensure reliability, and the appliance automatically fails over to pass-through mode if power is interrupted or the unit suffers a hardware problem. In our tests the failover was nearly instant, without data loss.

For configuration and reporting, the NX-3500 offers a command-line and a Java-based interface. The NX-3500's Java-style windows (which the vendor is recasting as pure Web pages) let us easily perform a full range of configuration tasks, and the user interface was intuitive and simple.

The reports showed traffic statistics, throughput measurements and compression rates for each WAN link. The unit was particularly easy to install and configure, and the documentation was clear and comprehensive.

The NX-3500 is an effective, install-it-and-forget-it way to reduce your telco private data line charges by a considerable amount.

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WAN OPTIMIZATION

NX-3500

Silver Peak Systems www.silver-peak.com

NetResults 4.0

$18,000

Pro: Excellent caching feature.

Con: Product line needs a midrange option.

The Breakdown

Performance **30%**	5	**Scoring Key:**
Protocol support **20%**	4	**5:** Exceptional.
Ease of use **20%**	4	**4:** Very good.
Scalability **20%**	3	**3:** Average.
Documentation/installation **10%**	3	**2:** Below average.
Total score	**4.0**	**1:** Subpar or not available.