

Scalable WAN Acceleration

For the Security-Conscious Enterprise

As Interviewed By John Siefert



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How does Silver Peak define WAN acceleration?



The WAN is undergoing a transformation as a result of many key enterprise initiatives. These include business continuity and disaster recovery (both of which drive the need for network backup and data replication), server and storage consolidation, and the move to MPLS and Internet VPNs.

WAN acceleration appliances incorporate a collection of techniques that transparently and securely optimize WAN traffic to mitigate the impact of limited bandwidth, latency and packet loss for any collection of IP-based applications. The more advanced techniques are 'data reduction', latency mitigation and error correction, which recovers from dropped packets in the network. Other techniques include compression and traffic management with advanced quality of service (QOS).

Unlike previous approaches like file caching (WAFS) and HTTP caching that are application-specific optimizations, WAN acceleration is application-agnostic and does not alter client/server communications or configurations.



How does Silver Peak enable better application performance across a distributed enterprise?



WAN acceleration has transitioned from a 'tactical' technology to a strategic element of distributed enterprise networks. This changes WAN acceleration product requirements. When an enterprise is planning a large-scale rollout across its entire network, functionality such as security, capacity and being able to accelerate all application types all become critical WAN acceleration requirements.

Architecturally, Silver Peak's appliances operate at the IP layer of the network stack so they can perform advanced data reduction across all application types, including realtime and interactive applications. This unique architecture also results in higher system capacity — Silver Peak appliances deliver up to

500Mbps of optimized WAN-side throughput across hundreds of thousands of flows. Silver Peak appliances also fully encrypt content on disk and over the network to ensure data privacy.

Silver Peak's disk-based data reduction technology, called Network Memory™, uses up to seven terabytes of local storage to 'remember' the traffic that has traversed each WAN link. When duplicate information is detected, instructions are sent to the remote appliance allowing it to deliver the information from its local 'Network Memory'. If data is changed, only modifications traverse the WAN. Network Memory can eliminate 99 percent of WAN traffic, resulting in better application performance.



What are the core differentiators/unique attributes of Silver Peak's approach vs. others in the industry?



Silver Peak combines innovative new technologies, such as disk-based Network Memory, latency mitigation and loss mitigation, with traditional techniques, such as QOS, TCP acceleration and compression, to deliver a high-capacity solution

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that works across all enterprise applications. Differences that set Silver Peak apart include:

All applications — Silver Peak performs all of its optimizations, including data reduction on all IP traffic. This provides benefits across ALL enterprise applications, including data replication, network backup and recovery, SQL, VOIP, SQL, Citrix, Remote Desktop, video and other UDP traffic, file, email and Web traffic. TCP-proxy based schemes that use slow session buffers are not compatible with most of these applications.

Network capacity — Silver Peak NX appliances can process nearly 10 times more application sessions and bandwidth than alternative appliances. This makes Silver Peak ideally suited for high-capacity data centers often associated with enterprise-wide WAN acceleration implementations.

Security — Silver Peak's 'Secure Content Architecture™' ensures all data, including data on local disk drives, is encrypted in hardware using advanced AES 128 bit encryption. Deep packet inspection enables fine-grained security policies, such as barring unwanted traffic from traversing the WAN.

Q How does Silver Peak address the particular management needs of the enterprise?

A Silver Peak's Global Management System (GMS) provides a centralized, automated, point-and-click interface for managing, controlling and configuring an entire network of NX appliances.

For added network visibility, GMS provides centralized reporting and real-time monitoring of network conditions like packet loss, latency and bandwidth across each link. 'Netflow' records are exported to any external device that accepts and analyzes Netflow records for full application-level traffic visibility.

Q Which applications does your solution address and how do you see that list evolving over the next 18 months?

A The typical enterprise with over 1,000 employees runs 100 applications across the WAN, and these applications are constantly evolving. No one can predict how these applications will change, which makes it virtually impossible to effectively keep application-specific optimization techniques up to date.

By avoiding application-specific "tweaks", Silver Peak's Network Memory works consistently across all IP traffic types. This ensures that Silver Peak's products will continue to deliver industry-leading data reduction and performance for all enterprise applications, ranging from transactional applications like SQL to data replication and streaming video as these applications evolve.

Another trend we see is that more and more application traffic is encrypted. As a result, Silver Peak developed a Secure Content Architecture that delivers a hardware and software foundation to accelerate even encrypted traffic at line rate performance. This is particularly important as security-conscious enterprises turn to WAN acceleration as a key enabler of their business initiatives.

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Business Benefits of Silver Peak WAN Acceleration

Centralize Servers and Storage

Goodwin-Procter, a national law firm with over 700 attorneys, began a strategic initiative to centralize critical applications within dedicated co-location facilities. The firm has several offices connected to these facilities by redundant MPLS links ranging from 50 Mbps to 155 Mbps and running a variety of applications, including MSExchange, Microsoft file services (CIFS), Web, iManage and SQL. The goal was to reduce infrastructure costs, ensure data privacy, facilitate day-to-day IT operations and protect client information through real-time data replication.

Results

Silver Peak's NX Appliances showed a 20-fold average improvement across the WAN for CIFS and FTP. Data replication saw a 21x improvement, with up to 93 percent of WAN traffic being eliminated in a single day. By breaking down the barriers that hamper application performance across the law firm's WAN, Silver Peak enabled the company to move ahead with its strategic centralization plans

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Improve Disaster Recovery

Ernst and Young, a global leader in professional services, has large data centers and distributed offices throughout the world. In Canada, for example, the firm is paying for expensive 500-Mbps SONET connections between Toronto and Montreal to serve over 4,000 users. The company rarely could achieve more than 10-percent utilization on that link, making it difficult to perform real-time data replication using Double-Take software. This also made it difficult to deliver other applications, including Lotus Notes and Microsoft file services, from these offices

Results

After deploying Silver Peak, the firm saw a 46-fold improvement in the performance of their data replication solution – throughput improved from 10 Mbps to 460 Mbps. Similarly, the company saw significant performance improvements in other core applications being delivered across the WAN, including Microsoft file services (73x), FTP (46x) and Lotus Notes (12x).

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