

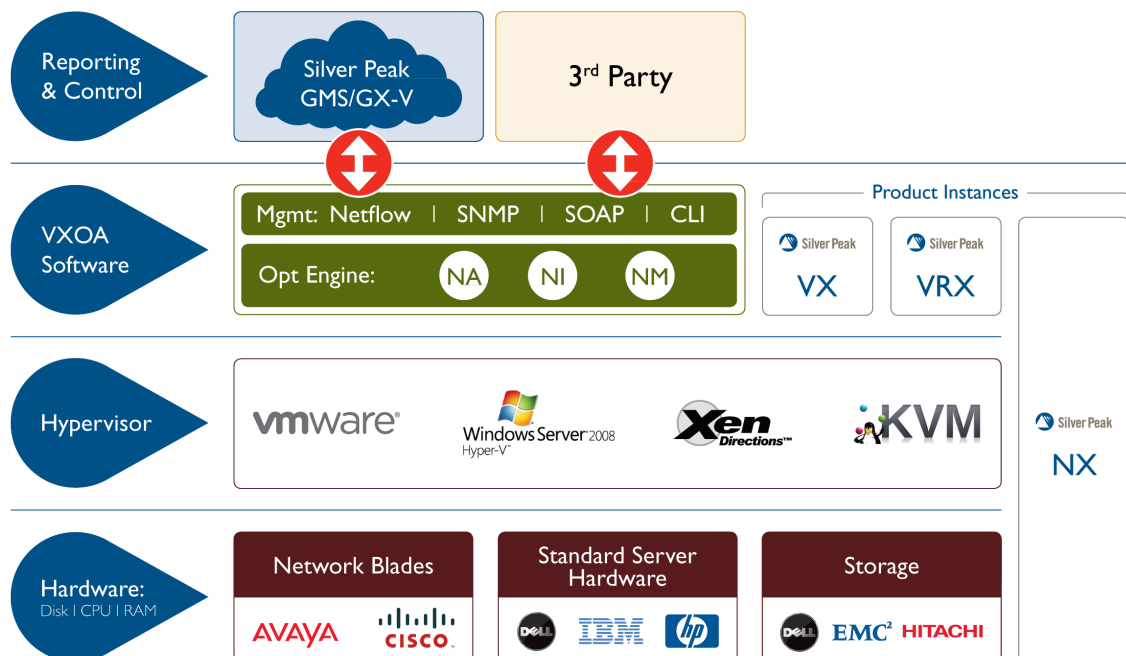
Silver Peak's Virtual Acceleration Open Architecture (VXOA)

A FOUNDATION FOR UNIVERSAL WAN OPTIMIZATION

The major IT initiatives of today – data center consolidation, cloud computing, unified communications, virtualization, and disaster recovery – share a common theme: they all presume a well performing Wide Area Network (WAN).

The reality though is that most WANs are unable to compensate for the increased packet loss, latency, and bandwidth problems endemic to publicly shared infrastructure. Applications running across these networks often underperform, aggravating the customer while raising support and deployment costs.

WAN optimizers, such as those from Silver Peak, correct these problems enabling applications to perform dramatically faster on the WAN. This makes WAN optimization complementary to a variety of technologies, including storage,



Third-party hardware examples above with more options possible and announcements to come.



VXOA revolutionizes enterprise networking by enabling WAN optimization to be easily and cost effectively deployed everywhere across an enterprise

routing, and servers. To date, however, it has been difficult to tightly integrate WAN optimization with these products due to the fact that each required their own dedicated hardware. Now, all of that has changed.

The increased use of virtualization and the presence of underutilized computing resources within the network has enabled Silver Peak to introduce the Virtual Acceleration Open Architecture (VXOA), a new approach to WAN optimization that makes deployment, management, and growth easy and cost effective.

VXOA takes Silver Peak's award winning WAN optimization software and provides valuable tools for easy integration with 3rd party devices. In addition, it introduces new pricing models that facilitate WAN optimization deployment and ensures ongoing investment protection.

VXOA revolutionizes enterprise networking by enabling WAN optimization to be easily and cost effectively deployed everywhere across an enterprise – not just on a select few links. In addition, the investment in WAN optimization can easily grow with changing end user requirements. With VXOA, ubiquitous WAN optimization is finally a reality.

THE NEED FOR WAN OPTIMIZATION

WAN optimization is vital to all aspect of a distributed enterprise. Gone are the days when it is required on a handful of problem WAN links. But, is universal WAN optimization possible?

Small branch offices in remote locations benefit significantly from WAN optimization as it accelerates key productivity applications, such as file, email and web. As desktop virtualization becomes more common, these locations are even more dependent on a highly tuned network. The challenge, though, is that many enterprises cannot justify deploying WAN optimization in those locations due to a small number of users, or a lack of onsite IT expertise.

Large offices need WAN optimization as these are often the lifeline of a business. In any hub and spoke architecture, these are the locations where critical data and applications are stored. The challenge, here, is twofold. One, the WAN optimization devices required for these locations must support high WAN capacities and thousands of simultaneous sessions. How can this be achieved in a cost effective manner? Second, real estate is often at a premium as wiring closets in corporate offices are already packed with networking equipment. Adding a WAN optimizer (or several appliances) at times isn't just difficult, it's often impossible.



With VXOA, Silver Peak has completely separated the benefits of WAN optimization from underlying hardware requirements.

Data centers are often used as dedicated resources for server and storage centralization. Proper disaster recovery and business continuity plans require constant data movement between these locations, with seamless failover in the event of a problem. WAN optimization is critical to a most data center-to-data center initiatives, such as replication, data migration, and virtual server, which require large volumes of data to be moved quickly across various distances.

The question is – how can a single WAN optimization solution be deployed in all of these environments and address the concerns of cost and space on the low end and capacity and reliability on the high end?

VXOA: A FOUNDATION FOR UNIVERSAL WAN OPTIMIZATION

Conventional WAN optimization solutions are unable to address all of those concerns because of their dependence on hardware, requiring dedicated equipment for performance and/or security. Shipping and installation costs of these appliances are in turn fairly high in these environments, and deployment options are often quite limited. As such, WAN optimization solutions cannot be cost effectively and easily deployed in many locations, particularly smaller offices.

The shift towards virtualization and an abundance of CPU and memory in both data centers and branch offices is changing this market dynamic. By leveraging these trends, Silver Peak's VXOA is enabling a new kind of approach to WAN optimization that enables ubiquitous deployment.

Complete Hardware Independence. With VXOA, Silver Peak has completely separated the benefits of WAN optimization from underlying hardware requirements. For the first time ever, virtual WAN optimization appliances perform as well as physical appliances.

This is because VXOA is highly intelligent, constantly monitoring available resources and adjusting usage for maximum efficiency. In addition, VXOA is highly elastic, designed for deployment in all hypervisor environments, including VMware vSphere, Microsoft Hyper-V, Citrix XenServer, and KVM. Regardless of the underlying medium, Silver Peak delivers data center class performance.



Silver Peak VXOA allows for Silver Peak to be deployed, virtually, on any platform that meets the minimum system requirements.

ROBUST NETWORK OPTIMIZATION TECHNIQUES.

At the core of VXOA is Silver Peak's award winning network optimization software, which solves common bandwidth, latency, and WAN quality challenges without requiring application plugins. This is achieved using the following real-time techniques:

- **Network Acceleration:** TCP and other protocol acceleration techniques minimize the effects of latency on application performance and significantly improve application response time across the WAN.
- **Network Integrity:** Adaptive Forward Error Correction (FEC) mitigates packet loss by reducing the need for retransmissions when routers are oversubscribed. Packet Order Correction (POC) is a real-time solution for overcoming out-of-order packet delivery across the WAN.

Silver Peak employs a variety of Quality of Service (QoS) and traffic shaping techniques to optimize traffic handling, including advanced queuing, scheduling, and standards-based packet-marking. Silver Peak virtual appliances can honor existing QoS tags or create new policies for granular QoS control.

- **Network Memory™:** Each virtual appliance inspects WAN traffic at the byte level and stores copies of content in high-capacity disk drives. Advanced finger-printing techniques recognize repetitive patterns for local delivery. Network Memory operates at the network layer and supports all IP-based protocols including TCP, UDP, and RTP.

TIGHT THIRD PARTY INTEGRATION.

Silver Peak's VXOA supports the integration of data center class virtual WAN optimization with third-party products. Silver Peak VXOA allows for Silver Peak to be deployed, virtually, on any platform that meets the minimum system requirements. This includes virtual machines, stand-alone servers, storage arrays, and blades on a router or multi-function device. The Silver Peak VXOA also includes an SDK with open application protocol interfaces (APIs) to allow technology partners to integrate Silver Peak's data center class WAN optimization into their own products.



Silver Peak “Investment Protection” allows customers to start with a smaller virtual license and upgrade to a higher-capacity license as network and business demands dictate.

FLEXIBLE PRICING.

With VXOA, Silver Peak offers various pricing options that make it easy to deploy new WAN optimization solutions and cost effective to grow an existing WAN optimization deployment. With these new additional pricing options, Silver Peak provides the industry’s most competitive pricing options for WAN optimization – making WAN optimization affordable for all locations, in all enterprises.

- **Subscription Licensing** — This is known as “pay as you go” pricing. Silver Peak subscription-based pricing for the VX and VRX family of virtual WAN optimization appliances, and virtual Global Management System (GMS), means customers can avoid larger up-front capitalized expenditures (Capex) and pay for only what is required as an operational expense (Opex). As such, payments are made annually for the use of the Silver Peak product.
- **Investment Protection** — This is known as “pay as you grow” pricing. Silver Peak “Investment Protection” allows customers to start with a smaller virtual license and upgrade to a higher-capacity license as network and business demands dictate. Customers can upgrade at anytime and only pay the difference between the original smaller license and the larger upgraded license. Payment is made one-time for the specific Silver Peak product.

Enterprises can select the ideal pricing model for their environment – by appliance, by office, by region, or across an entire company. With Silver Peak’s perpetual and subscription based pricing options, it has never been easier and more cost effective to capitalize on the benefits of WAN optimization!

WHERE CAN I FIND VXOA?

VXOA is used on all Silver Peak virtual and physical appliances today, including the VX, VRX, and NX .

Silver Peak’s long term vision is that WAN optimization will be tightly integrated in a variety of networking and storage components, including routers, servers, switches, and storage arrays. To that end, Silver Peak is actively working with our long list of data center partners on various integration projects.



Silver Peak VXOA allows for Silver Peak to be deployed, virtually, on any platform that meets the minimum system requirements.

Avaya, for example, has announced the use of VXOA to integrate Silver Peak's VX virtual WAN optimization appliances with the Avaya Secure Router (SR) 4134, a multiservice platform that integrates WAN routing, stateful firewall, VPN, VoIP gateway, and Ethernet switching into a single highly-reliable device.

The integration of Silver Peak data center class WAN optimization with the Avaya Secure Router 4134 is the combination of two best-in-class solutions. The integration optimizes the performance of enterprise voice, video, and unified communications (UC), and ensures that remote users have fast and reliable access to all centralized applications. It allows customers to reduce IT complexity by simplifying equipment needs in their branch and remote offices, and help them improve employee productivity by enhancing the performance of enterprise-wide business applications.

Stay tuned for more exciting integration projects....

THE FUTURE OF WAN OPTIMIZATION IS HERE TODAY

The growing use of virtualization, cloud services, and distributed applications is gated by an underlying WAN infrastructure plagued by bandwidth limitations, latency, and packet loss. This has driven a need for more flexible WAN optimization that can be cost-effectively deployed across the private and public networks — from the cloud, to data centers, to branch offices. The problem is that hardware-based offerings have been unable to service this growing market effectively because they are tightly bound to the underlying hardware in a closed architecture, limiting deployment flexibility and scalability. Silver Peak is committed to providing customers, partners, and service providers with the most simple, flexible, and cost-effective options for deploying WAN optimization across the entire network on any platform. Silver Peak's open architecture, via its software-based approach, dynamically leverages the performance of standard CPUs, general-purpose hardware, and standard hypervisors to provide customers the most comprehensive options for deploying WAN optimization on any platform.

With Silver Peak's VXOA, universal WAN optimization is easy and affordable. Best of all — it is available today.