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## Silver Peak VX Appliances

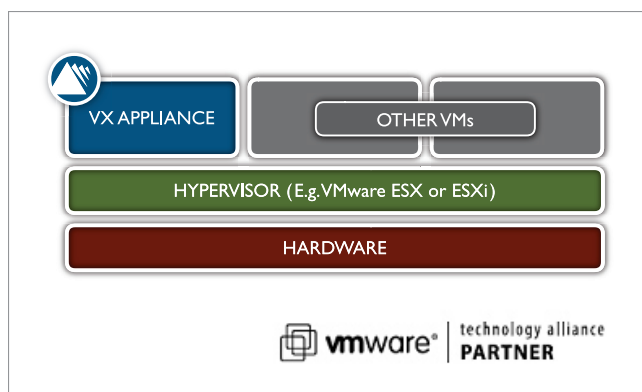


### DATA CENTER CLASS WAN OPTIMIZATION

Silver Peak's VX appliances are software versions of the company's award winning NX appliances. They support Silver Peak's complete spectrum of real-time optimization techniques, which optimize Wide Area Network (WAN) performance by overcoming common bandwidth, latency and network quality challenges.

VX appliances leverage all the benefits of server virtualization, which include:

- **Ease of deployment / mobility** – instantly deploy Silver Peak's WAN optimization technology anywhere in the world; Easily re-locate appliances as needed.
- **Reduced IT costs** – consolidate different applications onto common hardware platforms.
- **High availability** – Leverage existing high availability tools inherent in virtual solutions (e.g VMware VMotion).
- **Flexible platform options** – Deploy WAN optimization on any hardware platform of choice, including industry standard x86 servers or other custom platforms.



### REAL-TIME NETWORK OPTIMIZATION TECHNIQUES

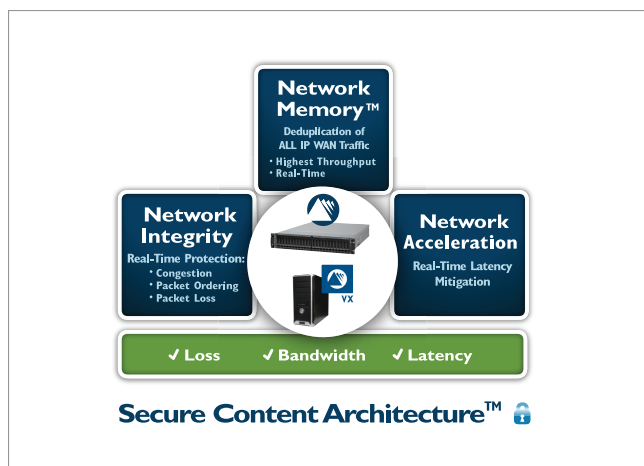
The following real-time optimization techniques are used by all Silver Peak appliances, including the VX family. By working primarily at the network (IP) layer, they ensure maximum performance across the widest range of applications and WAN environments:

- **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.

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

- **Network Memory™:** Each VX 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.

VX appliances also leverage state-of-the-art header and cross-flow payload compression for immediate first pass gains.



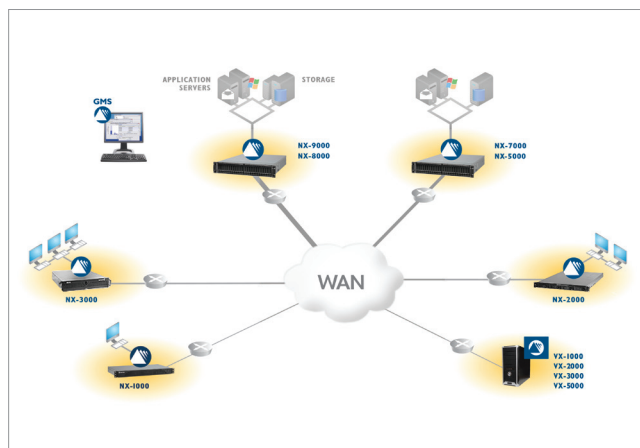
## ENTERPRISE-FEATURES

- Silver Peak appliances optimize all IP applications. This includes:
  - Backup and recovery applications, including asynchronous backup/replication tools from EMC, HDS, Dell, NetApp, Symantec, Double-Take, and other leading vendors
  - Traditional TCP applications, such as Windows file sharing, MS Exchange, MS Sharepoint, Lotus Notes/Domino, Siebel, Oracle, and VMware
  - Non TCP applications, such as Veritas Volume Replicator, Aspera, EMC Disk library, and Brocade FCIP
  - Interactive applications, like Virtual Desktop Infrastructures (VDI), Citrix XenApp, Sunray, and Remote Desktop Protocol (RDP)
  - Real-time applications, like VoIP, video conferencing, video streaming and other unified communications.
- Security: All Silver Peak appliances use AES encryption to protect data stored locally. IPSec encryption protects data sent between appliances. Advanced algorithms ensure that data security is achieved with no impact on application performance.

- High Availability Deployment: To maximize uptime, VX appliances can be deployed redundantly in I+I or N+I configurations, with failover and load balancing.
- Easy to Manage: An intuitive Graphical User Interface (GUI) simplifies network monitoring, policy provisioning, and device management. Powerful wizards simplify configuration. A full-featured CLI is available via SSH.

Larger deployments can easily be managed using Silver Peak's Global Management System (GMS). This is a comprehensive platform for deployment, management, and monitoring of a Silver Peak-enabled WAN. In addition to centralizing the administration of Silver Peak appliances, GMS provides detailed visibility into all aspects of application delivery across a distributed enterprise, including application behavior, WAN performance, Quality of Service (QoS) policies, and bandwidth utilization.

- Easy Deployment: Silver Peak's VX appliances are deployed out-of-path using Policy-Based- Routing (PBR) redirection, Web Cache Coordination Protocol (WCCP), or Virtual Router Redundancy Protocol (VRRP). By leveraging existing virtualization management and configuration tools, typical deployment takes less than 10 minutes per appliance.




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## Model-Specific Specifications

FEATURES	VX-1000	VX-2000	VX-3000	VX-5000
WAN Capacity (NA, NI and NM + encryption enabled)	4 Mbps	10 Mbps	20 Mbps	50 Mbps
Certified Connections	8,000	64,000	64,000	64,000
AES Disk Encryption	Real Time	Real Time	Real Time	Real Time
IP Sec Traffic Encryption	Real Time	Real Time	Real Time	Real Time
Redundant Deployment	VRRP or WCCP 1:1, N+1	VRRP or WCCP 1:1, N+1	VRRP or WCCP 1:1, N+1	VRRP or WCCP 1:1, N+1

### HARDWARE/SOFTWARE REQUIREMENTS

CPU	Two 64-bit x86 logical processors with a minimum speed of 2.3 GHz	Four 64-bit x86 logical processors with a minimum speed of 2.3 GHz	Four 64-bit x86 logical processors with a minimum speed of 2.3 GHz	Four 64-bit x86 logical processors with a minimum speed of 2.3 GHz
RAM	2 GB	4 GB	4 GB	8 GB
Disk	100 GB of free contiguous disk space	100 GB of free contiguous disk space	100 GB of free contiguous disk space	100 GB of free contiguous disk space
Network Interfaces	2 x 1 Gbps network interfaces	2 x 1 Gbps network interfaces	2 x 1 Gbps network interfaces	2 x 1 Gbps network interfaces
Hypervisors	VMware ESXi or ESX (4.0 or later)	VMware ESXi or ESX (4.0 or later)	VMware ESXi or ESX (4.0 or later)	VMware ESXi or ESX (4.0 or later)

## VX-Family Specifications

### DEPLOYMENT

Out-of-Path (Router) Mode	Attached to WAN router out-of path with policy-based-routing redirection, WCCP and VRRP (on all models)
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### MANAGEMENT

CLI	Full-featured CLI available via SSH
GUI	<ul style="list-style-type: none"> <li>Web-based Appliance Manager available via HTTPS (default) or HTTP</li> <li>Global Management Systems (GMS) provides centralized configuration, monitoring, and management of all Silver Peak appliances</li> </ul>
SNMP	SNMPv2c, SNMPv3
Secure Access	SSH and HTTPS
Logging	Syslog with configurable levels. Email alerts
Authentication	Local database, RADIUS, TACACS+
Statistics	Graphing and monitoring, real-time and historical