WAN Optimization For Software Defined Networks

Silver Peak Velocity Replication Acceleration Appliance and IBM Software Defined Network for Virtual Environments
There are many challenges to deploy networking technologies like firewalls, load balancing and Wide Area Network (WAN) Optimization using traditional network infrastructure. Planning and configuring any of these networking services can be complex, time consuming, and error-prone. Businesses are looking for efficiencies in managing today’s complex applications in their networks—wherever they reside—corporate data centers, branch offices or on public or private clouds.

Silver Peak’s core competencies in WAN optimization and virtualization combine with IBM SDN for Virtual Environments (SDN VE) to reduce the complexities of deploying WAN Optimization services. Compared to traditional approaches, Silver Peak with IBM SDN VE reduces the time required to deploy both local and long distance network services. Simplified software-defined rules and intuitive graphical user interfaces replace complex network configurations, eliminating potential configuration errors.

**Introducing Silver Peak Velocity Replication Acceleration Software with IBM Software Defined Network for Virtual Environments**

SDN VE is IBM’s platform for delivering software defined networking via virtual network overlays and physical OpenFlow environments. IBM SDN VE Controller offers the following benefits:

- Simplification – integrates workloads and infrastructure, eliminating the need for IT specialists to deploy network services
- Massive scalability – adaptive service and performance levels make it possible to scale resources on demand
- Rapid rollout – automation of best practices speeds up application deployment

**Silver Peak WAN Optimization Software**

Silver Peak VX and VRX virtual appliances help customers overcome network performance challenges and lower their ongoing WAN costs by addressing the primary factors affecting performance of applications over distance – latency, WAN quality, bandwidth and security:

- **Latency** exacerbates application performance over the WAN. Long distances between data centers, and chatty protocols that require back/forth acknowledgements when communicating across a WAN all increase latency and reduce performance. Silver Peak streamlines the protocols underlying enterprise applications.
- **WAN quality** problems over shared network infrastructure such as congestion, oversubscription can lead to packet loss or out of order packets. Both can affect application performance over the WAN considerably. Silver Peak software dynamically chooses the least-congested path to a location, recovering and re-sequencing packets in real time, and employs traffic shaping and QoS.
- **WAN bandwidth** constrains the amount of data that can be sent at any one time. Silver Peak minimizes bandwidth usage with real-time, byte-level de-duplication. Silver Peak inspects, compresses, and stores a single local copy of all outgoing traffic. Subsequent instances of the traffic are never sent across the WAN, but delivered from the local Silver Peak instance, saving bandwidth.
- **Security** concerns about government interception of corporate Internet traffic are on the rise. Businesses want to secure critical communications and data transfers to remote sites. Silver Peak WAN optimization software secures site-to-site traffic with SSL termination and accelerated IPSec.
Silver Peak offers two versions of software:

- VX WAN optimization software for geographically distributed, multi-site access
- VRX replication acceleration software for data migration and ongoing replication/backup between a remote data center

Benefits of the IBM SDN VE and Silver Peak solution

In collaboration with IBM, Silver Peak has tested Silver Peak VX and VRX virtual WAN optimization in IBM SDN-VE environments. By utilizing IBM SDN-VE instead of traditional network redirection techniques (WCCP or PBR) to re-direct traffic to Silver Peak, customers receive the following benefits:

- Reduce complexity and need for advanced networking knowledge – customers without advanced knowledge in networking and scripting knowledge can still configure and manage their networks
- Speed implementation times – with IBM SDN VE and Silver Peak, customers can optimize their WAN application quickly and easily
- Scale quickly – to accommodate quickly changing demands and ensure internal and external performance SLAs (like RPOs for replication) are met
- Flexibility to support heterogeneous environments - Silver Peak VX and VRX appliances support all major hypervisor environments. With IBM SDN-VE’s broad hypervisor support, the combination of IBM SDN-VE and Silver Peak can be deployed across typical enterprise or cloud environments

IBM SDN VE Reference Architecture with Silver Peak Velocity Replication Acceleration Appliance

Figure 1: SDN VE Reference Architecture
Figure 2: IBM SDN VE and Silver Peak simplify and improve network performance in both LAN and WAN in virtual environments

**Conclusion**

Together, Silver Peak VRX and IBM SDN-VE enable the redirection and optimization of traffic between different virtual machines without the need to manually configure routers or other networking hardware. This solution allows the performance of individual workloads to be quickly and easily optimized as they route between different data centers, remote offices and the cloud.

**For more information**

To learn more about IBM SDN solutions, please visit: www.ibm.com or contact your IBM representative.

Silver Peak software accelerates data movement between data centers, remote offices and the cloud. Download a free trial at marketplace.silver-peak.com.
For More Information
IBM Software Defined Network for Virtual Environments
Silver Peak Velocity Replication Acceleration Appliance
http://www.ibm.com/systems/networking/
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