EMC Solution for Silver Peak NX Appliances

Managing replication across an IP WAN with EMC Symmetrix Remote Data Facility/Asynchronous (SRDF/A)

Congestion, latency, and out-of-order or lost packets are all common challenges associated with replicating data across an IP wide area network (WAN). Any one of these problems can impede application processes or prevent them from happening entirely. These issues can also increase the total cost of ownership (TCO) for data protection by preventing replication and backup services from taking place on shared WAN infrastructures such as MPLS and IP VPNs. EMC and Silver Peak provide a scalable solution that reduces the TCO for backup and replication solutions over IP.

The combined EMC and Silver Peak solution

EMC SRDF®/A maintains an asynchronous mirror of production data between one EMC Symmetrix® disk array and another that is usually located at an out-of-region distance, but still demands a recovery-point objective (RPO) as minimal as a few seconds.

EMC SRDF/A is designed so that each Symmetrix array supports production applications at both primary and secondary sites, with each system also providing DR capability through SRDF/A to service the remote replication process.

EMC SRDF/A uses an innovative Delta Set architecture to reduce bandwidth requirements across the WAN, with no host performance impact. By reducing the redundancy of the data block/track changes sent between sites, SRDF minimizes the bandwidth required to support remote replication operations.

Silver Peak can further enhance EMC SRDF/A with realtime WAN optimization capabilities in the following key areas:

- **Network integrity**—Silver Peak provides Forward Error Correction and Packet Order Correction to fix packet delivery errors without requiring costly re-transmissions. This ensures maximum performance across MPLS, IP VPNs, and other shared WAN environments. Advanced Quality of Service techniques can also be used to prioritize traffic and guarantee that necessary bandwidth requirements are met.

- **Network memory**—Silver Peak uses LZ Compression and disk-based deduplication to reduce the amount of data that needs to be sent across the WAN. By deduplicating at the byte level, Silver Peak typically delivers an additional 60 to 90 percent more “virtual bandwidth” for data replication processes.

- **Network acceleration**—By adjusting the TCP window size and performing selective acknowledgments, Silver Peak’s Network Acceleration techniques mitigate the impact that latency has on long-distance replication.

- **Data protection**—Silver Peak provides realtime IPSec “data-in-flight” encryption as well as 128-bit AES encryption for “data-at rest” stored on the Silver peak devices.

The Big Picture

- Improved RPO/RTO
- Reduced WAN bandwidth costs, which reduces the total cost of data protection
- Better replication performance
- Extended distance performance between disaster recovery facilities
Move more, move farther, spend less

The joint EMC SRDF/A and Silver Peak solution allows for an RPO of only a few seconds and minimizes WAN costs associated with the transfer of duplicate data. In addition, Silver Peak enables SRDF/A and other applications to work across shared networks, such as MPLS and Internet VPNs, which delivers substantial WAN bandwidth cost savings.

Common EMC SRDF/A and Silver Peak joint-use cases include solutions for:

- Disaster recovery traffic that is competing for WAN resources
- Companies with initiatives to improve recovery-time objectives (RTOs) and RPOs across the WAN
- Companies that are implementing new DR facilities that require IP-based WAN connectivity
- Companies with server virtualization projects that require improved WAN performance
- SRDF/A RPO that is no longer maintained due to WAN bandwidth limitations
- Delays experienced in Delta Set switch operations and lower effective throughput due to packet loss on the WAN

About EMC

EMC Corporation is the world’s leading developer and provider of information infrastructure technology and solutions that enable organizations of all sizes to transform the way they compete and create value from their information. Information about EMC’s products and services can be found at www.EMC.com.

About Silver Peak

Silver Peak is a leader in data center class WAN optimization. The company’s award winning NX appliances deliver unprecedented performance and capacity. Silver Peak can be integral to a variety of data center initiatives including site consolidation, data migration, disaster recovery, and global application/desktop virtualization. For more information, visit www.silver-peak.com.