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[**Silver Peak**](http://www.silver-peak.com) **- Easily Meet Your RPO with Replication Acceleration Software**

In 2004, Silver Peak was founded by a former Cisco Chief Technology Officer, David Hughes, PhD, who owns 35 patents in [WAN optimization](http://en.wikipedia.org/wiki/WAN_optimization) products. Its headquarters is located in Santa Clara, California.

Silver Peak has more than 2,000 customers globally with growth rate at 50% year over year in 2013, generated product revenue run-rate at $XXXXXX and shipped YYYY units in the 4th quarter, 2012.

Silver Peak’s Replication Acceleration software, known as “Velocity Replication Acceleration (VRX)”, will enable customers to protect more data, use bandwidth efficiently, replicate over longer distance, and meet or shrink their RPO (Recovery Point Objective - how much data can you afford to lose) and RTO (Recovery Time Objective - how much time until you are up and running again).

Generally speaking, Downtime equates to Event+RTO, and Data Loss equates to Event+RPO+RTO.

RPO is typically managed by either replicating data (e.g., Silver Peak’s Replication Acceleration Software) from source to target or backing up data from the source to disk storage or tape. In order to protect data lost or downtime, customers replicate data for backup or BCP purpose,

Three main replication issues are: latency, quality, and quantity.

1. Latency is associated with distance and will increase (e.g., from 5 ms to 100 ms) as distance increases from Local Area Network (LAN) to Wide Area Network (WAN) or from East and West coast. Latency is static or cannot be changed and will decrease the amount of data that can be sent across the network. However, leveraging the protocols and applications behavior can put more data into the replication pipe, thus, increasing the application performance.
2. Quality is associated with any issues on either the network or wide area network (WAN). When MPLS and VPNs are deployed, the quality (reliability) of the network is reduced due to dropped packets. As a result, the throughput of replication will be reduced dramatically, even though the amount of bandwidth is still available.
3. Quantity is associated with network bandwidth. A larger the bandwidth (more cost), more data can be replicated.

The Velocity has either VX, full featured software or VRX (Replication only) that enables its customers to leverage their existing storage vendors’ replication technology (e.g., NetApp SnapMirror) by dramatically reducing replication costs and increase the performance by up to 20 times on average through its patented techniques that can address out-of-order packets

**Does any storage vendor need Silver-Peak VRX?** It all depends.

In NetApp scenario, Silver-Peak VRX or VX will definitely help to increase the performance dramatically by relying on its inline compression and deduplication with a byte-level granularity, instead of a block-level in addition to mitigating the packet(s) loss that is caused by 1) carrier congestion and service level agreement (SLA); 2) TCP window size reduction by half when packets are lost and 3) retransmission of the lost packets.

Many NetApp customers have been experiencing a big performance increase by 10X to 20X after turning off its dedupe that consumes high CPU and memory resources. This is because the VX or VRX software can accelerate NetApp SnapMirror without using NetApp internal resources addition to using a real-time compression and deduplication NetApp lacks.

In other words, Silver Peak VRX software can truly complement NetApp SnapMirror and SnapVault to further optimize performance to overcome distance and congestion by efficiently conducting offsite replication, transferring only changed blocks for up to 70% of bandwidth savings by leveraging.

With VX or VRX, customers can:

• Easily meet or shrink its RPO while reducing disaster recovery costs

• Accelerate data replication and remote backup without spending an expensive bandwidth upgrades that are often useless or are not effective due to latency fixed or poor quality links from Teleco.

**Note:** The throughput is independent to the network bandwidth because it is equal to or less than the Receive Window Size divided by Round Trip Time.

• Protect more data in less time with no changes to your existing infrastructure

Another advantage for deploying the VX or VRX is to have a chance to explore your organization’s options and determine how easy replication acceleration can be deployed and managed. For example,

1. Increase the distance between your sites
2. Hurricane Sandy was another good example to illustrate why an organization should back up their data to a site far away from its primary site

**Challenges**

Microsoft Storage Server based on Windows Server 2012 R2 has dramatically changed the NAS storage landscape for NAS business with more SMB 3.0 supports by providing high-performance and low-latency access to virtualized data sets. Under the SMB 3.0 benchmark testing, the NAS performance has dramatically increased by 200% and even surpassed the Isilon’s CIFS performance in a significant margin due to the SMB 3.0 not being supported by Isilon at this writing.

With SMB 3.0 built into the Windows Server 2012, Microsoft might drive a wholesale shift away from SANs' complexities and to a simpler, NAS-like storage, such as Microsoft Storage Server HP is betting on.

**Conclusion**

Always try to keep your system simple that can be easily manageable. Albert Einstein said “Simpler is better, but not simple.” A graphics below illustrates how a system is associated with technology and requirements.



In summary, to be continued…

**Recommended Reading**

1. [State of Texas Moves More Than 100,000 State Employees to Microsoft Cloud](http://www.microsoft.com/en-us/news/Press/2013/Feb13/02-15TexasO365PR.aspx)

The State of Texas is moving more than 100,000 employees onto Office 365 at a cost of about $3.50 per user, per month, making it the largest statewide deployment of email and collaboration services in the U.S.

1. [How New York City is going to Consolidate 50 Data Centers from 40 City Agencies into One Location](http://www.informationweek.com/government/state-local/nyc-opens-consolidated-data-center/229219575)(Source: InformationWeek)

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Thanks Silver Peakfor allowing meto use a few graphics in my notes for clarification purpose!