As storage volumes grow, it becomes increasingly difficult to recover from data loss. Real-time replication between data centers or to a disaster recovery (DR) facility requires security and protection, but it can be difficult to achieve within your current infrastructure.

This difficulty may be due to various replication solutions that are poorly suited for your operations over a Wide Area Network (WAN). These solutions waste WAN bandwidth by replicating unused storage between sites, and are ill equipped to recover from network latency and congestion, which can severely diminish replication throughput. As a result, your organization may overspend on WAN services without ensuring that your recovery point objectives (RPO) are adequately met.

**Solving replication challenges over distance**

To protect data and meet RPOs, your storage administrators must continually replicate data. In order to help you with this process, the patented technology in Dell Compellent’s Remote Instant Replay intelligently optimizes replication traffic at the block level, only replicating used storage to the remote Storage Area Network (SAN). In addition, incremental replication is completed by replicating highly efficient “Replays”, which only send changes since the last replication to the remote site.
At the same time, Silver Peak uses real time network optimization techniques to increase replication throughput over the WAN. More specifically, Silver Peak’s Virtual Acceleration Open Architecture (VXOA) software provides the following advantages when deployed in conjunction with Dell Compellent Remote Instant Replay:

- **Maximize available bandwidth through byte level deduplication and compression.** Silver Peak complements the deduplication option offered in Remote Instant Replay by looking for recurring data patterns within data blocks and matching patterns across all IP applications (not just Compellent traffic). This is critical when replication traffic shares the WAN with other applications, like file, email and web. On average, Silver Peak delivers 6x to 30x more bandwidth on Compellent replication traffic.

- **Extend replication distance by minimizing transport protocol chattiness over the WAN.** With Silver Peak and Dell Compellent, source/target devices can be placed anywhere, ensuring business needs are not hampered by network limitations.

- **Prioritize replication traffic and guarantee available bandwidth,** so that voice, video, data and storage traffic can all coexist on one converged network.

Compellent Remote Instant Replay provides a mechanism to limit the amount of bandwidth that will be used for replication. Silver Peak complements this with traffic shaping techniques that guarantee available bandwidth for replication traffic.

- Fix packet delivery issues so replication can be placed on low cost shared WANs, like Multi Protocol Label Switching (MPLS) and the Internet.
- Secure data in transit using IPsec encryption
- Simplify deployment and troubleshooting with real-time dashboards that collect and display network conditions and monitor the performance of Dell replication traffic over the WAN.

In summary, Dell Compellent and Silver Peak can help you eliminate the challenges that undermine offsite data replication.

**Real-world benefits**

With Dell Compellent Remote Instant Replay and Silver Peak, you can improve your replication performance while also lowering DR costs. The following are examples of how this solution helped several of our customers:

- An engineering consulting company is using Dell Compellent Remote Instant Replay and Silver Peak to replicate 200 GB of data between Houston and Maryland. Originally, the company was only getting 2.4 Mbps of replication throughput on a 45 Mbps WAN due to high latency (40 ms) and high packet loss (1%). The combined Silver Peak/Dell solution delivered a 25x improvement, reducing replication times from 180 hours to less than 7 hours, well within the company’s 12 hour RPO.

- Similarly, a regional credit union improved replication performance by more than 66 percent with Dell Compellent Remote Instant Replay and Silver Peak. Prior to deploying the joint solution, replication of a 50 GB data set between Anchorage and Fairbanks Alaska took 11 hours. After deployment, replication times have been reduced to less than 5 hours, beating the company’s 8 hour RPO.

In joint lab testing conducted by Dell Compellent and Silver Peak, the combined solution delivers 6x to 30x better replication performance on average for customers. As an example, testing with a 155 Mbps WAN connection and 40 ms latency (approximately Atlanta to Dallas), the Dell Compellent replication throughput increased from 15.75 GB/hr to 400 GB/hr. The time to replicate a 20 GB data set would be reduced from approximately 13 hours to 30 minutes—which would be the difference between meeting or not meeting your RPO.

**Dell Compellent and Silver Peak: The right choice for offsite disaster recovery**

By deploying Dell Compellent Remote Instant Replay with Silver Peak’s VXOA software, enterprises can meet and reduce their RPOs, lower disaster recovery costs, and extend distances between replication sites. The Silver Peak\Dell Compellent solution does all of this across the widest variety of WAN conditions—saving costs and providing headroom for future growth.

**Services to help find the right solution**

Dell Compellent is a self-optimized, intelligent tiered storage for block and file technology that can be utilized to optimize your storage and meet your business goals. Dell IT Consulting Services** can work collaboratively with you to determine a blueprint that fits within your specific business needs through a catalog of well-defined engagements including best practice data archiving design.

For more information visit: www.silver-peak.com/velocity_compellent and www.silver-peak.com/dell

*S6x-30x was based on joint performance testing conducted with Dell and Silver Peak.
**Availability and terms of Dell Services vary by region. For more information, visit www.dell.com/servicedescriptions

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