Accelerate Data Replication and Meet Recovery Point Objectives with Silver Peak and NetApp

Protecting critical data is an essential part of business continuity. NetApp SnapMirror and SnapVault address the challenge of data protection by replicating data off-site quickly and easily. But as data volumes have grown, so has the amount of data requiring protection. All too often, storage managers cannot replicate some data assets because the inefficiencies in the WAN undermine SnapMirror or SnapVault performance. Initial source-target synchronization fail to complete. Incremental replication may take too long, exceeding the RPOs.

The immediate answer, adding bandwidth, cannot solve the problem. Moving large amounts of data over distance is limited by network quality and latency, even tripling the bandwidth will not impact performance. Unless these issues are addressed, storage managers will be faced with an impossible decision – protect less data or risk missing their RPOs.

Silver Peak and NetApp

Silver Peak Velocity replication acceleration software eliminates the network inefficiencies that limit replication throughput. Distance limitations between source and target filers are overcome by accelerating replication traffic and efficiently using all of the available bandwidth. SnapMirror and SnapVault replication traffic is also deduplicated and compressed in real-time. All accelerated traffic can be further protected with real-time AES encryption – without impacting performance.

Performance Results

Lab tests show that Silver Peak software improves replication performance by up to 50x. Performance improvement is particularly significant when networks exhibit packet loss and latency, together those two factors dramatically reduce replication performance.

During testing, NetApp SnapMirror replicated 2 megabits-per-second (Mbps) across a simulated, 20 Mbps, coast-to-coast Internet VPN (see "Testing Details"). With Silver Peak software, NetApp SnapMirror performance improved to 100 Mbps, a 50x improvement (See Figure 1). Silver Peak strongly encourages organizations to test NetApp-Silver Peak performance themselves as numerous factors may impact individual results.

Silver Peak customers report similar experiences. Comcast shortened NetApp replication from 24 hours to 20 minutes, a 72x improvement in performance. Computer Associates reduced replication times by more than half, going from 48 hours to less than 19 hours (see Figure 2).

Summary

50x improvement in replication performance during lab testing.

Over 70x improvement in customer replication performance.

Testing Details

Silver Peak examined the impact of replication acceleration on NetApp SnapMirror and SnapVault in its labs and in two customer deployments.

Lab testing simulated a 20 Mbps network with 60ms of delay and 1% loss, typical of a coast-to-coast Internet VPN. NetApp storage efficiency was enabled, including deduplication and thin provisioning. Testing synchronized target and source volumes across the simulated network. Incremental replication used a 10 percent change rate.

Customer results were gathered from Comcast and Computer Associates. Comcast replicated 63 GB with NetApp across its 1 Gbps network. Packet loss was .1% and latency was 65ms.

Computer Associates replicated 200 GB with NetApp across its 100 Mbps network Packet loss was 5% and latency was 100ms.

Architectural Benefits

- Accelerate replication by 50x
- No network knowledge required
- Deploy in minutes - not weeks
- Storage-friendly management
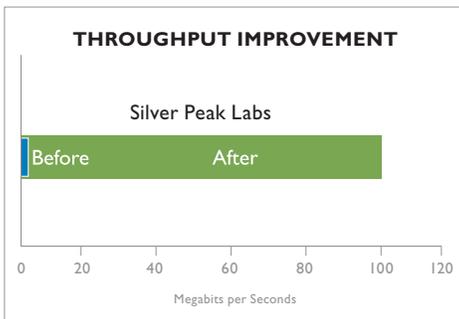- No proprietary hardware
- Minimum purchase cost

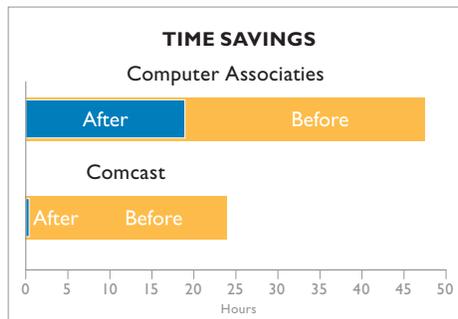*Figure 1: With NetApp and Silver Peak, replication throughput improved 50x in lab testing.*

Figure 2: NetApp customers dramatically reduced the time to replicate their data by deploying Silver Peak.

Silver Peak Features

Silver Peak software addresses the major challenges confronting NetApp SnapMirror and SnapVault replication over distance:

- Increase replication throughput limited by poor network quality.
- Maximize available bandwidth for replication through byte-level deduplication and compression.
- Replicate over long distances by overcoming latency.
- Secure replicated data with an AES-256, IPSec VPN.

Silver Peak Software Deployment and Management

Fixing the problems undermining replication would normally require extensive networking expertise and take weeks, if not months, to resolve. Adding bandwidth incurs delays,

as a service provider reprovisions the line, and still will not solve the problem. Silver Peak software can be downloaded from Silver Peak's software marketplace and deployed in 20 minutes or less with six simple mouse clicks.

Once deployed, Silver Peak's storage-specific reporting enables any storage professional to easily manage the Silver Peak implementation. Reports are in storage-friendly terms (see Figure 3) showing the data replicated (in bytes) and replication performance. Storage traffic is segmented by type, such as replication and / or backup traffic, and metrics are reported over a 10-day interval in part to accommodate traffic increases during weekends.

With NetApp replication and Silver Peak acceleration, you can protect more data in less time even across the toughest of networks.

Deployment Benefits

Meet Recovery Point Objectives (RPOs)

Replicate more data in less time to remote off-site locations.

Protect All Of The Organization's Data

Protect important, but less critical data within existing RPOs.

Secure Replicated Data

Encrypt data in transit at no additional cost.

Replicate Over Longer Distances

Eliminate distance limitations between source/target devices.

Lower Disaster Recovery Costs

Eliminate costly dedicated networks for replication; avoid bandwidth upgrades.

Improve Business Continuity

Better protection of critical data for rapid recovery.

For More Information

Take 20 minutes and see how much Silver Peak will improve your SnapMirror replication. Download a free Silver Peak Velocity trial from http://marketplace.silver-peak.com/
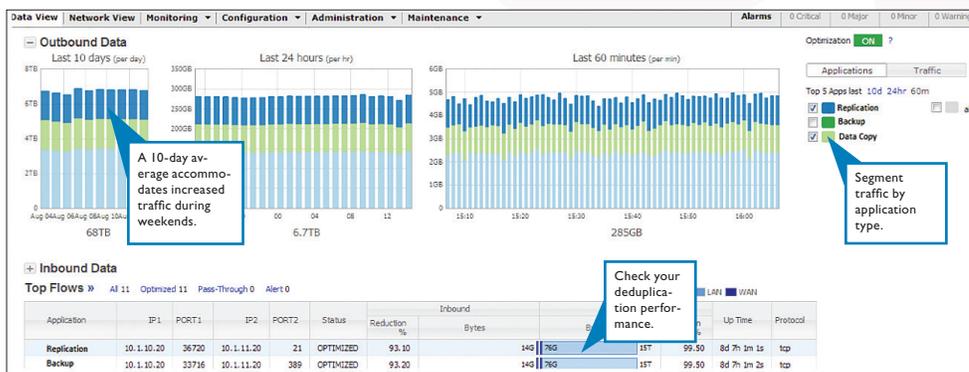

Figure 3: Silver Peak Velocity's storage-specific view makes evaluating replication performance intuitive for storage managers.