FIBER OPTIC LEADER SHEDS LIGHT ON WAN DATA PROTECTION CHALLENGES

BACKGROUND

As more video, voice, and data traffic traverses enterprise networks, the infrastructure that carries these vast quantities of information has to keep up with the explosion in demand.

"WITH SILVER PEAK, WE CAN BACK UP DATA OVER THE WAN AT SPEEDS THAT DOUBLE AND TRIPLE THE RAW THROUGHPUT OF THE WAN LINK."

— CHIP GREEL, MANAGER OF NETWORK SERVICES, FINISAR

Finisar is at the forefront of this wave, providing optical components and testing equipment that enable high-speed communications across Ethernet local area networks (LANs), Fibre Channel storage area networks (SANs), and metropolitan area networks (MANs).

As a global company with approximately 4,000 employees, Finisar relies heavily on a fully meshed MPLS wide area network (WAN) to collaborate on a variety of projects across several continents. This collaboration typically involves the transfer of very large design images and Oracle application databases across the world between corporate headquarters in California and manufacturing facilities in Malaysia, Shanghai, and Singapore.

At the same time, the company's stringent business continuity requirements require the daily backup of all remote offices across the

WAN and the real-time replication of huge amounts of information between the primary data center at headquarters and a disaster recovery site in Texas.

More than five years ago, Finisar realized that WAN optimization was key to their business needs. They were a pioneer of data reduction technology and quickly became heavily reliant on WAN optimization to protect corporate data across the WAN and improve employee collaboration across its geographically diverse locations.

"We quickly got in the habit of using WAN optimization for every piece of data that goes across our WAN," says Chip Greel, manager of network services at Finisar. "But we found that early-generation WAN optimization solutions could not keep up with our performance and scalability needs."

MOVE MORE DATA, QUICKER

WAN optimization enabled Finisar employees in different locations to collaborate, but it was the company's data protection mandates that were the primary driver for an overhaul of the WAN optimization infrastructure.

"We wanted to backup all our sites across the WAN, but just couldn't do it," said Greel. "Our original WAN optimization solution did not have disk-based cache to hold the volume of data we needed. Because WAN backups would eat bandwidth for days at a time, we just didn't do them."

An average site requires 300 GB of backup traffic to be sent across a 2-Mbps link. In

Customer: FINISAR

Finisar

Finisar Challenges

- Trouble meeting RPO when replicating across WAN
- Could not backup remote offices in a timely manner
- Could not send large engineering files between international offices

Silver Peak Results

- 2-hour SnapMirror replication reduced to 15 minutes (8x improvement)
- 300 GB CommVault backup reduced from 4 days to 1 day
- 50 MB file transfer reduced form 8 minutes to 15 seconds between US and Malaysia (with 230 ms latency)
- 75 percent improvement in WAN bandwidth utilization avoids costly upgrades

addition, Finisar generated several terabytes of data a week using NetApp's SnapMirror for replication. For example, Oracle databases had to be replicated every 15 minutes; Microsoft file and e-mail services were replicated three times a day.

The WAN was preventing backup and replication from completing in a timely fashion, which compromised business continuity objectives and created additional IT expenditures as resources were spent troubleshooting database synchronization problems. At the same time, the sheer volume of disaster recovery traffic was consuming the company's limited WAN bandwidth and squeezing out other business applications.

"The problem was so severe that we began sending hard drives overnight between locations whenever the replication sets were greater than 100 MB," recalls Greel. "We had hit a wall with respect to what we could move across our WAN in a timely fashion. It became abundantly clear that we needed a new WAN optimization solution."

TESTING THE WATERS

Greel created a short list of WAN acceleration solutions based on analyst research reports and independent product reviews and then conducted a hands-on evaluation of three leading vendors. He ultimately selected Silver Peak's NX family of appliance for its winning combination of price, performance and capacity.

"Silver Peak's performance was slightly better than competitors, and they delivered much more usable disk space for data reduction on their appliance. We got 'more cache for less cash,' which enabled us to cost-effectively scale to support our global WAN needs."

Silver Peak NX Series appliances mitigate the negative effects of sending data over vast distances through several methods. One of the key features is Silver Peak's Network Memory™, a disk-based data reduction technology that significantly reduces the amount of data crossing the WAN by delivering duplicate information from local data stores. Silver Peak provides additional optimization techniques that complement Network Memory, including Quality of Service (QoS) to prioritize traffic and allocate appropriate bandwidth, compression and various tools to overcome the ill effects of latency and loss across the WAN.

A WAVE OF SUCCESS

As a result of the Silver Peak–optimized WAN, Finisar employees can readily access their centralized Microsoft Exchange e-mail, Microsoft Windows file services, and other applications. Integrated circuit designers in different locations can more easily collaborate on engineering drawings, despite their massive file sizes. IT can create customized Oracle applications in one location and easily move them to another location for production use. And most importantly, the ability to recover more data in less time has enabled Finisar to meet its disaster recovery objectives by backing up remote offices in a timely manner and ensuring real-time data replication.

"With Silver Peak, it takes about 15 seconds to move a 50-MB database from Sunnyvale to Malaysia versus 8 minutes without it," Greel says. "CommVault backups were reduced from 4 days to less than one day per location. In addition, the company is getting more than 100 Mbps actual WAN throughput using SnapMirror on a 35-Mbps link between California and Texas, cutting a 2-hour replication to less than 15 minutes."

"The speed of light isn't getting any faster, but with Silver Peak's technology in our network, the world seems a little bit smaller."

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Finisar has also dramatically improved its overall WAN bandwidth utilization. It averages less than 6 Mbps of capacity on a 40-Mbps link, which is a 75 percent improvement from when the company had no spare capacity on this connection. This avoids costly WAN upgrades and leaves plenty of room for future traffic growth.

Finisar is using Silver Peak's solutions in its 12 main locations around the world, and Greel says he couldn't have asked for better results. "The speed of light isn't getting any faster, but with Silver Peak's technology in our network, the world seems a little bit smaller."