Shoreline Communications Meets a Rising Tide of Data Storage with Scalable IP SAN from StoneFly Networks

Shoreline

Provider of next-generation IP voice systems eases significant storage demands and streamlines critical backup support requirements

As the specialist in the evolving voice-over-IP (VoIP) market, Shoreline Communications embraces leading-edge technology to support a steady swell of demand for multi-site IP PBX systems. Founded in 1996, and headquartered in Sunnyvale, Calif., Shoreline provides next-generation voice systems that turn business phone systems into powerful platforms that enable new levels of voice and data collaboration. The company's distributed IP PBX technology lets organizations leverage resources and expertise across multiple sites to improve customer service, increase employee productivity and lower operational costs.

Shoreline's award-winning system, now in its fourth release, is used by a growing base of Fortune 1000 organizations and emerging technology companies. According to Steve Winter, manager of information technology for Shoreline, a top priority for his department is ensuring that engineers have access to all the data they need to handle product development and customer service initiatives. In particular, the IT department maintains source code for each respective Shoreline release as part of the company's "build management" process, which is a vital part of the software lifecycle and instrumental in expediting customer service.

"Shoreline needs much more storage than most companies its size," explains Winter. "Maintaining source code for our different product releases as well as keeping a large amount of logs and diagnostics on hand for customer support creates a huge volume of data, which represents the disk needs of a much larger organization." Shoreline's data-intensive operation was served by direct-attached storage until a nagging concern about running out of disk space prompted Winter to search for more scalable, flexible and easy-to-manage options.

Before evaluating alternatives, the team reviewed their own environment to gauge the best way to

Industry/Market:

- Voice-over-IP (VoIP) systems

Challenges:
- Support rapidly expanding VoIP system with extensive storage requirements
- Direct-attached storage couldn't scale sufficiently to keep up with storage demands
- Tedious and time-consuming tape backups had a negative impact on production environment
- NAS solutions didn't provide enough performance for the price

Solution:
- StoneFly Networks Storage Concentrator i1500, Nexsan ATABoy 2 Storage Array, Asante Gigabit Ethernet Switch, Intel PRO/1000 T IP Storage Adapters

Benefits:
- Economical IP SAN yielded $50,000 to $70,000 in equipment savings
- Development team has improved access to build management data, boosting productivity
- Faster problem resolution increases responsiveness of customer service
- Accelerated disk backups and restores reduced need to retrieve offsite tapes by 60 percent; requests for older data also lowered by 30-to-40 percent

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storage requirements of their users, approximately 20 Microsoft Windows 2000 servers, an aggressive in-house software development effort, a Siebel customer relationship management (CRM) system as well as a SQL database-driven web application and robust financial system. In addition, the team assessed its current tedious and time-consuming method of offloading storage and archiving data through incremental and full tape backups.

Charting a Storage Course

In mid-2002, an initial review of viable storage options led the team to Network Attached Storage (NAS) solutions from EMC Corp. and Network Appliance. Both alternatives solved some immediate storage problems but didn't meet all Shoreline's selection criteria, which included scalability, ease of use and an economical way to handle backups. The NAS products were cost prohibitive and provided insufficient scaling. "Initially, we thought that implementing a NAS solution would provide some storage relief until we realized that it wouldn't scale sufficiently to meet our rapidly expanding requirements," explained Winter. "We were concerned about deploying a 'forklift' solution so we started to explore other options."

The emerging IP-based storage area network (SAN) market piqued the team's interest, and a review of message boards and news sources led Shoreline to StoneFly Networks, one of the first iSCSI market entrants. The StoneFly Storage Concentrator i1500 appeared to meet the selection criteria and had been shipping since June 2002.

The Shoreline IT team put the product through its paces, taking into consideration its scalability, ease of use and management along with its ability to support critical backup needs. On all fronts, the StoneFly Storage Concentrator met Shoreline's selection criteria. StoneFly's IP SAN configurations, including the Storage Concentrator storage provisioning appliances, interoperable iSCSI initiators and ATA disk-based arrays could scale from 1 terabyte up to 10.5 terabytes of storage at a cost of less than one cent per megabyte.

In addition, StoneFly provides centralized storage management, control and monitoring of virtualized storage clusters through a web-based graphical user interface, which was important to Shoreline. Finally, StoneFly's IP SAN could replace Shoreline's cumbersome backup processes with a consolidated backup procedure designed for faster, more reliable backups.

The IP SAN scaled much better than the NAS solutions for the price," said Steve Winter, IT Manager for Shoreline Communications. "StoneFly gave us all the functionality we needed at a price we could afford."

"Life is much easier now that our StoneFly IP SAN is in place," concludes Winter. "We have already realized a significant return on our initial investment in terms of greatly improved access to mission-critical resources that drive Shoreline's business and guarantee top-notch customer support."

**Steve Winter
Manager of Information Technology
Shoreline Communications**

Smooth Sailing with StoneFly

In March 2003, Shoreline purchased a StoneFly Storage Concentrator through Network Computing Architects (NCA), a Bellevue, Washington-based StoneFly reseller. The StoneFly IP SAN was installed and the Shoreline team quickly began consolidating data storage onto the new system. The IT team first moved non-essential servers over to the IP SAN without a glitch. A transparent migration of file and print services for 85 users followed. Next, they focused on servers with high file utilization, such as Shoreline's build management data. "We need to maintain different versions of our software releases," said Winter. "Our engineers demand instantaneous access to compiled source code to support both product development and customer service."

As a company with a significant software development effort, Shoreline had a requirement to maintain bug fixes and patch releases, typically storing up to two months of fixes online with the rest stored offsite on tape. "In the past, we asked our tape backup vendor to locate an older fix or build and rush it to us, which added time and money to the equation," noted Winter. "Thanks to our IP SAN, we now can store more builds on our server, drastically reducing the time to restore critical data, making it much easier to access every software build, bug fix and patch release developed so far this year."

Shoreline also was able to expand the engineering group's network disk space significantly. In the past, backing up engineering workstations was time-consuming and often interrupted production. Winter's team now provides these engineers with 200-to-300 gigabytes of file space on the IP SAN and lets them store files without the intervention of the IT team. This capability reduces the time it takes support engineers to identify and resolve problems, boosting overall customer service responsiveness and productivity.

Performance and management of the StoneFly IP SAN, enabled by the Storage Concentrator, have completely met Shoreline's expectations. The team has added 10 servers to the IP SAN and plans to migrate its Microsoft Exchange Server, Siebel CRM and SQL Server-based financial system to the StoneFly IP SAN for improved storage utilization as well as to support data replication and disaster recovery requirements. Shoreline also expects the current IP SAN configuration to provide sufficient storage for at least two years, after which another ATA disk array will be added for expanded capacity.

IP SAN Buoys Backups

One of the biggest advantages of the StoneFly IP SAN is the ease and speed with which Shoreline resolved its disk-to-disk and tape backup challenges. Shoreline encountered a lot of problems previously in conducting tape backups for multiple servers. Because of increasing data volume, backups took longer and longer, often disrupting access to the network. "We started our backup procedures on Friday night at 8:00 p.m., and we were still backing up files on most Tuesday afternoons," said Winter. "We used to get a lot of user complaints, especially from key engineers, since the backups had an adverse affect on their productivity."

The StoneFly IP SAN enabled Shoreline to achieve faster, more reliable backups through a disk-to-disk backup process, reducing their overall backup window by 75 percent. Backups conducted Friday night now are completed by Saturday. Also, logical volume management lets Shoreline create a separate volume for each server, which to the server appears as a locally attached disk. Using the IP SAN to speed Shoreline's backup has completely eliminated the need for intermittent backups to tape. Once disk-to-disk backup is complete, Shoreline sends an archival copy to tape as a background activity that has no impact on network performance.

Shoreline now has more critical data readily available to support important product development and customer support efforts. The time and cost associated with obtaining backup tapes from offsite storage has been reduced by more than 60 percent. Also, requests for older build management data have been lowered by 30-to-40 percent. "Life is much easier now that my StoneFly IP SAN is in place," concludes Winter. "We have already realized a significant return on investment in terms of greatly improved access to mission-critical resources that drive Shoreline's business and guarantee top-notch customer support."

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System Configuration:
Clients/Servers: Microsoft Windows® Clients; approximately 20 Windows NT and 2000 Servers
Network Set-up: StoneFly Networks™ Storage Concentrator™ i1500, 2.2 Terabyte Nexsan ATAboy2 Storage Array; Asante Gigabit Ethernet Switch; Intel PRO/1000 T IP Storage Adapters

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