Company Migrates Multiple SANs on Time, with No Downtime

Cisco Services helps customer migrate over 7200 ports and mission-critical applications in 14 weekends.

EXECUTIVE SUMMARY

CHALLENGE
- Outages related to legacy SAN switches
- Accelerated replacement time frame
- Large number of ports and data centers to migrate

SOLUTION
- Cisco Services Planning, Design, and Implementation
- SAN Optimization Service

RESULTS
- Completed entire migration with no downtime
- Moved 7200 ports and four data centers in seven months
- Increased stability and reduced maintenance requirements

Challenge

When a large company with millions of customers acquires an equally strong competitor, the resulting consolidation often results in multiple networks and data centers, as well as thousands of servers. In this case, the acquiring company had a large storage area network (SAN) based on legacy Fibre Channel switches. After the acquisition, the combined environment included storage platforms from three different vendors, servers from every vendor on the market, and operating systems that ran the gamut from outdated platforms to the latest systems available. Approximately 7200 ports supported up to 600 mission-critical applications and multiple petabytes of data.

In late 2008, the existing SAN was due for refreshing. However, a series of Fibre Channel switching outages were affecting operations at all of the company's data centers, and so the company decided to not only refresh the SAN but also consider another vendor. The acquired company had standardized on a Cisco network prior to the acquisition, and the company's IT team was impressed with the network's reliability.

"We did not intend to perform a total SAN migration," says a company representative. "However, the outages convinced us that we needed to completely move off of the existing switches as quickly as possible. We chose Cisco for its proven solutions, its expertise with the technology, and its ability to handle large-scale projects."

The company's storage vendor helped initiate the migration project, and in January 2009, the company's team and storage vendor met with Cisco Services and outlined requirements. Cisco brought its architecture team, and together the three groups assessed the current SAN architecture, the desired future state for its SAN, naming standards, and configuration standards. Many of the existing standards had to be applied in the finished SAN environment because of internal requirements. The company also wanted to automate as much of the process as possible and have tools that enabled it to convert systems and map them out ahead of time, so that the migration could easily be replicated across all four data centers.

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Solution

During the migration planning phase, Cisco Services planned for the installation of Cisco® 9513 Multilayer Director Switches in each data center. New fiber infrastructure had to be installed in each data center, as well as patch panels, cabling, and other elements for the overall migration. The Cisco team worked with the company's facilities team to purchase, install, and connect 7200 fiber links at the data centers, and also worked with the company and its storage vendor to coordinate the numerous server groups for the migration.

Cisco Services provided customized migration tools for converting and verifying syntax between the legacy SAN and the new Cisco switches. They also provided training for the migration process and port migration cross-reference validation procedures. In May 2009, the company and Cisco conducted a pilot migration on a small subset of ports using the port migration tools. The company's on-site data center teams relied heavily on the tools and worked with the storage vendor's team as they pulled new fiber, laid and labeled cables, and migrated ports. Each activity was easily tracked in real time using the tools. For example, if a cable was pulled and plugged into the wrong port, the team knew instantly and could fix it.

"Cisco Services' knowledge and expertise helped us determine what to track during the migration and the tools greatly streamlined the migration process," says a company representative. "Migrating the data and information from the old SAN to Cisco was done without an issue. And with the slightest issue, Cisco was there with the right expertise to help us diagnose, troubleshoot, and remediate before it became a production impact."

With a successful pilot behind them, the company and Cisco launched the first major migration over successive weekends. Cisco SAN Optimization Services will provide ongoing support for operational requirements and SAN enhancements in the future.

Results

Together, Cisco and the company completed 12 migrations, moved 7200 ports at four data centers within seven months, all without downtime. The team began by migrating 400 ports per weekend, eventually reaching a peak of 900 ports per weekend. On the final weekend, the migration started at 6:00 p.m. Friday night and was completed by midnight. At each site, all server and storage devices were successfully moved within the allotted maintenance time frame.

During each migration, each port was monitored and validated in real time. Cisco dedicated on-site resources lived at the data centers in shifts through each entire weekend, monitoring, documenting, and tracking every move from shift to shift.

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During the migration, devices and operating systems were standardized, which has increased stability and reduced maintenance requirements. Standardization also simplifies management, training, and hiring efforts because the company no longer has to support multiple platforms.

"The successful migration also increased confidence in our organization internally," says a company representative. "In the past, we would never have been able to gain approval for taking an entire SAN down and relying on the alternate SAN. We've proved that we can take on a data center-wide activity and rely on our redundancy."

Next Steps

The team is now taking on a fifth data center migration. When that migration is completed, the company will have migrated 10,000 ports in five data centers.

PRODUCT LIST
Routing and Switching • Cisco 9513 Multilayer Director Switches

For More Information

To find out more about Cisco Services, visit: www.cisco.com/go/services.

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