SANRAD
A SAN FOR ANY SERVER

Challenge

To create an improved storage architecture that would deliver highly-available storage to more than 700 users and handle multiple servers without constantly running out of space.

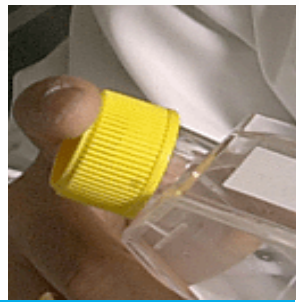
Solution

Deploying SANRAD's V-Switch as the centerpiece of its SAN, with Intel iSCSI HBAs, the department now has 2 to 3 terabytes of virtualized storage that can be quickly and easily apportioned to any server when it reaches a capacity limit.

Benefits

- Increased server performance with iSCSI as compared with direct attached storage
- iSCSI offers same benefits as FC at a fraction of the cost
- Based on familiar IP infrastructure
- Centralized storage management & virtualization
- Dynamic storage allocation
- Compatible with wide range of storage arrays and server operating systems

"It's nice to be able to add storage space virtually in a SAN environment. We like the flexibility of assigning additional gigabytes of iSCSI storage to a machine. This architecture gets rid of the limitations of direct attached storage and makes it easier for us to grow."
Alaric Battle, Network Systems Administrator
UCSF DEPT. OF EPIDEMIOLOGY AND BIOSTATISTICS



University of California San Francisco chooses SANRAD

IP SAN - A Smarter, More Affordable SAN Solution

The Department of Epidemiology and Biostatistics at the University of California San Francisco provides essential tools for understanding disease origins and for identifying effective and efficient approaches to prevention and treatment. UCSF researchers in the Department of Epidemiology and Biostatistics are currently performing ongoing clinical trials in a variety of areas, including cancer and molecular epidemiology, chronic disease and women's health and AIDS and infectious diseases. These critical research trials and all operations within the department are supported by an IT infrastructure based on an iSCSI Storage Area Network (SAN) powered by SANRAD.

The department has deployed SANRAD's V-Switch as the centerpiece of its SAN, delivering highly available storage to more than 700 users. The decision to install an iSCSI SAN instead of a conventional Fibre Channel SAN came down to one simple factor, according to Alaric Battle, Network Systems Administrator for the department: bang for the buck.

"It's the cost factor," he said. "Fibre Channel is coming down, but when you think about it iSCSI makes more sense than Fibre Channel, especially when you think about going into the 10 Gigabit range."

The Challenge

Battle oversees an installation based on the Microsoft Windows environment: multiple Exchange servers, a data management system running on several SQL servers, a web server and additional Windows servers running proprietary applications for image processing and other needs. The move to the iSCSI SAN and SANRAD was necessitated by a Direct Attached Storage (DAS) architecture that was constantly running out of space and becoming increasingly difficult to upgrade.

"We were running into problems because there was no more space to fit additional storage on the server, and I can't do direct attached because I can't get close enough to that server with another direct attached unit without rearranging my rack space. iSCSI is a better idea."

The SANRAD Choice

SANRAD eliminated those problems with its innovative iSCSI V-Switch that provides a convergence of functions, including protocol bridging, storage routing, switching, security, load-balancing, high availability and volume management, within a single easy to manage platform designed to reduce the inherent complexity of storage networks. iSCSI V-Switches introduce all-in-one iSCSI storage networking, guaranteeing the full availability and seamless management of stored information across standard Ethernet networks, affording a complete storage continuity solution that is easy to deploy with excellent price/performance.

On-Site Configuration

The Department of Epidemiology and Biostatistics now has the infrastructure to more easily support its growing storage needs with the SAN built on the SANRAD V-Switch and Intel iSCSI HBAs. Battle has 2 to 3 terabytes of virtualized storage on the SAN that he can quickly and easily apportion to any server when it reaches a capacity limit.

"It's nice to be able to add storage space virtually in a SAN environment," said Battle. "We like the flexibility of assigning additional gigabytes of iSCSI storage to a machine, and if I need more I just attach another device to the SANRAD switch and allocate that space to the servers. This architecture gets rid of the limitations of direct attach storage and makes it easier for us to grow."

"Compared to the old servers with direct attached storage, we're getting better performance with iSCSI," said Battle. "We're running our RAID arrays in 0+1 configuration to get the most speed we can out of it. It takes a lot of drives but it's giving us really good performance. We were shocked. We did not expect it to be that fast. Everybody compares iSCSI to Fibre Channel; they say we need the speed. iSCSI is a little slower than Fibre Channel, but then we'll step up to the next level at 10 Gigabit and get more performance out of it as necessary. However, the (current) performance is a lot better than we expected."

After making the decision to move to iSCSI based on the cost advantages, Battle said that they purchased the SANRAD iSCSI solution, even though it was actually more expensive than a competitive product, but provided a better value and more comprehensive feature set, including the integrated virtualization engine. Battle also said the SANRAD reference accounts compared to the competitor made his decision an easy one.

"SANRAD actually pointed us to some of their big projects, such as the University of Michigan, that was using their products and those places had much bigger installations than we had. We figured if they were using it on that type of scale it should probably work for us," he said. "The University of Michigan test environment was 18,000 users and we don't have that many users total. We went over the network configuration and talked to them about it, and they told us what the whole project was about and that impressed us."

Conversely, the competitor's reference account turned out to be one server with a single RAID array on the SAN. "I have servers that have more storage space than that," said Battle.

What really clinched the deal, said Battle, was the challenge from Zophar Sante, Vice President of Business Development at SANRAD, who told Battle that if he was still unconvinced, try the V-Switch and give us your evaluation.

"His attitude and that 'dare' was really what made us take a close look at SANRAD," said Battle. "The firm belief in the product he was selling, we respect that a lot. You don't see that often these days and it was pivotal in our decision. We have seen this type of attitude in all of interaction with the people from SANRAD. We were actually going to give up and buy Fibre Channel and that one conversation changed our direction."

The success of the SANRAD-powered iSCSI SAN has impressed UCSF's Department of Epidemiology and Biostatistics to the degree that it is currently evaluating installing a second SANRAD V-Switch offsite for remote replication over an IP connection. Replicating data to a remote site with a SANRAD V-Switch will give UCSF affordable data protection against a major disaster at the primary site. As an integrated feature of the V-Switch, SANRAD provides remote management from anywhere across the network to set and manage the replication parameters. Using IP connectivity instead of Fibre Channel to the remote site can save users approximately 70 percent in connectivity costs and up to $7,000 per server.

