

Disaster Recovery Case Study

“With the help and expertise of Govplace, West Hills is now on the cutting edge.”

-- Jack Ramsey, Network Manager, West Hills Community College

West Hills Community College District is located at the heart of earthquake country in California's Central Valley. The main campus is at Coalinga, and a second campus at Lemoore is about 40 miles away. Old timers still talk about the earthquake of '83 – a 6.5 trembler that came close to destroying the college and the entire town. Since both Coalinga and Lemoore are close to earthquake faults, there's always the chance it could happen again.

West Hills' student population is presently approaching 5,700. Off-campus students enrolled in an online distance learning program -- a major source of revenue for the school -- account for a large part of that population. Computer uptime is critical to the success of the distance learning program, and systems must be up 24/7. If an earthquake or other disaster were to strike the local area, the course work of students, both on- and off-campus, would be severely impacted.

Meeting the Challenge

The school needed a more advanced computer system that would accommodate the extensive needs of its distance learning program, and create a way to recover valuable data in case of a disaster.

In addition, the new system would have to address the issue of server proliferation. The computer area at West Hills was a prime example of server sprawl. Workstations were lined up in racks. Outdated machines were simply resting on wheels inside the Data Center, taking up much needed floor space and consuming valuable power resources. The cost of maintaining the antiquated machines and constantly replacing worn out components was fast becoming exorbitant.

Govplace, an IT integrator based in Irvine, California, was called in to develop a solution that would provide the school with the computer uptime so essential to its growth and success. “We talked to several integrators,” said Jack Ramsey, the school's network manager. “Govplace turned out to be best qualified in storage area network design and virtual infrastructure architecture. Besides that, we were influenced by their strict focus on the public sector.” In what was to be a highly successful partnership, Govplace senior account manager Jeff Smith designed a solution for West Hills around virtualization technology. The company's professional services team collaborated with the school's IT Department to implement that solution.

Creating a Virtual Environment

In a virtual environment, an x86 based server is divided into multiple partitions, each with its own operating system and applications. A layer of specialized software manages these “virtual machines” as a single, logical pool of resources. The machines operate independently and run simultaneously, so there is no need to disrupt one application in favor of others. In the West Hills case, blade servers were used to optimize available space, thus satisfying the school's requirement for server consolidation.

Each of the blade servers was partitioned into ten fully functioning virtual machines and housed in high-end storage arrays to produce a storage area network (SAN).

For redundancy protection, SAN systems were installed at both the Coalinga and Lemoore campuses. An ultra-high-speed Internet connection between sites allowed the two systems to carry on a dialog and check the health of one another. If a disaster were to affect one system's health, the other could pick up the work and continue uninterrupted.

A Solution for Today and Tomorrow

It took more than a year to design a system large and powerful enough to fill the school's threefold needs: distance learning, disaster recovery, and server consolidation. "We wanted to make sure we could adapt to any advances in virtualization technology, plus any changes we might make to our internal systems, and do it all with minimal investment," Jack Ramsey explained. "The SAN is the future, the basis of what West Hills will be five, ten, twenty-five years down the road."

"Right now, our system is huge -- all new servers with 4.7 terabytes, allowing Coalinga and Lemoore to be totally redundant," he added. "If an earthquake should knock out Coalinga, everything could be replicated in Lemoore in minutes."

With the SAN now affording more programs and services, Ramsey and his crew take pride in providing advanced learning resources for the students so they can stay current and get good jobs. "SAN is the direction we're going," Ramsey said. "With the help and expertise of Govplace, West Hills is on the cutting edge."

West Hills anticipates a substantial return on its SAN investment, partly because there will be no need to buy additional physical servers for the foreseeable future. Add to that a considerable reduction in man-hour requirements, and administrators expect to see payback within about 10 months.