SUCCESS STORY

Making the Grade: Achieving Broadcast-Quality Uptime at the Cronkite School

Photo by Bill Timmerman

KEY HIGHLIGHTS

Location: Phoenix, Arizona

Industry: Education

The Challenge

- Provide a tapeless, high-availability, play-to-air solution using Apple Xsan and Promise VTrak RAID

- Deliver I/O bandwidth needed for up to four simultaneous DVCPRO HD streams with non-disruptive failover in the event Xsan failure occurs during playout

- Provide additional mirrored protection for Retrospect backup servers

Benefits

- Uninterruptible, high-availability broadcast storage solution that protects against failures of Xsan storage systems and fabric during broadcast

- Continuous, consolidated protection for both news broadcast content and backup servers

- Provides local disaster recovery protection via separate data storage sites

- Simple, centralized administration and reduced complexity

The Customer

Located in downtown Phoenix, Arizona State University's Cronkite School of Journalism prepares students for media careers in television, radio, and print as well as public relations. Nationally recognized and taught by a faculty of award-winning professional journalists and renowned media scholars, the school produces some of the best and brightest journalism students in the United States.

Befitting its legendary namesake, Walter Cronkite, the school has constructed a 225,000 sq. foot, state-of-the-art journalism facility for students to develop their skills in television writing, shooting, editing and broadcasting. Representing an investment of $71 million, the building is equipped with 14 digital newsrooms and computer labs, two TV studios, and 500 Apple Mac computers running Final Cut Studio and enterprise-grade Xsan infrastructure. Far more than a classroom laboratory, the facility provides a real-life news broadcast environment in which students produce and air a live news program that reaches over 1 million households four nights a week over cable and public television channels.

The Challenge: Achieving Broadcast-Quality Uptime

The delivery of daily news depends on Apple IT infrastructure. The school's entire news workflow, from video ingest to playout of the day's programming, is accomplished entirely on Mac computers and Xsan-compatible storage infrastructure.

The process begins with the uploading of student reporter footage and news content to Xsan folders on Mac editing stations, which are subsequently edited by other students using Final Cut Pro. Once editing is completed and checked by faculty reviewers, the news show

Figure 1. HA-AP Flexibility. HA-AP engines can be clustered over Fibre Channel to create mirroring locally or at a distance. Single engine appliances may also be located in separate physical locations and connected via FC link, creating a single, logical appliance to mirror over distance for local disaster recovery applications.

is storyboarded and programmed for play-to-air using AP news broadcast management and Sienna video production applications. Upon completion, the entire day's programming resides on Xsan-based storage, awaiting the start of the daily broadcast.

High Availability and High Performance Solution. Like any commercial broadcast environment, the school's news program delivery hinges on the continuous availability of digital programming content before and during broadcast. To achieve this, the digital broadcast infrastructure must not only be able to withstand component failures, but video stream delivery must also meet exacting performance standards to ensure that video content can be delivered without interruption.

Faced with this need for high-availability broadcast infrastructure, the school's Director of Computer Services, Sasan Poureetezadi, went through careful evaluation of each storage component comprising the play-to-air storage system. First, he chose QLogic 9100 and 5602 SAN switches to provide the fabric between Xsan storage and an Exabyte 448 tape library, which he selected for broadcast archival.

For the mission-critical storage system, Mr. Poureetezadi evaluated several Xsan-compatible, network storage solutions before deciding on an HA-AP SAN Appliance from Loxoll Inc. and a mirrored, 24- terabyte VTrak RAID system from Promise Technology. As shown in Figure 2, the two, 24-terabyte RAID systems and Qlogic switches are maintained in separate locations across the street from one another. This separation provides an additional level of physical protection in case of data room disasters such as fire or flooding.
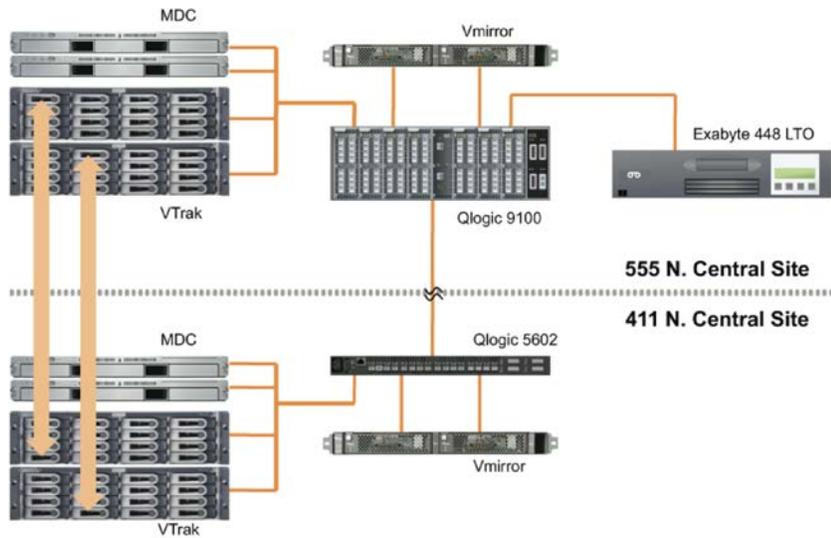

Figure 2. Cronkite School Play-to-Air SAN Configuration

The VTrak RAID, which is equipped with dual, high-performance RAID controllers, is an ideal complement to the HA-AP appliance, since both systems employ built-in failover in case of internal component outage. To ensure playout of the news broadcast, HA-AP provides two fully redundant data paths between playout server and the mirrored VTrak RAID arrays. Should an outage occur anywhere on either of the two data paths, HA-AP instantly fails over to the alternate, good data path, enabling playout to continue without interruption.

Cost-Effective Choice. Following installation, Mr. Poureetezadi was not only impressed with the performance and operation of the HA-AP-protected playout system, he was also pleased that it was his most affordable high-availability option. While cost was not the primary factor in his decision, it remains an important consideration in budgeting and running the school's IT operations.

The advantages of the HA-AP choice were further reinforced when Mr. Poureetezadi sought a way protect a file-server backup system used for Mac systems external to the playout system. He quickly realized the backup file storage could be mirrored easily with an additional SAN connection to the HA-AP playout system. By assigning the backup storage as another VTrak volume, Vmirror automatically mirrored the backup data to VTrak storage located at the other site, with no additional management. In Mr. Poureetezadi's words, "With HA-AP, I got a high-availability storage solution that provided continuous protection of both playout and critical backup data, in real time."

Business Benefits: Assured, Mission-Critical Broadcast Performance and Support

The HA-AP playout solution exceeded Mr. Poureetezadi's expectations. In early operations of the school's SAN, a blade failure occurred in one of its switches, and in another instance, a "network connectivity" issue was experienced. In both cases, HA-AP worked flawlessly, automatically shifting access away from the problem and to the good VTrak data without interrupting operations.

To Mr. Poureetezadi, not only has the HA-AP system provided continuous data protection and high-availability insurance against outages, but Loxoll has also provided exceptional support to the school. Said Mr. Poureetezadi, "The great thing about Loxoll is not only do they have a great product, but they have great customer service, too."