



SUCCESS STORY

Smooth Skies Ahead with Vmirror-Protected Post-Production



KEY HIGHLIGHTS

Industry: Commercial Avionics

The Challenge

- Provide high-availability, post-production video system services using Apple Xsan and 250TB of ActiveRAID storage from Active™ Storage.
- Deliver I/O bandwidth needed for 50-70 video editing users and quality assurance monitoring stations while also providing non-disruptive failover in the event of unexpected system or data path failures.

Vmirror ES Benefits

- Uninterruptible, high-availability storage solution protects against failures of FC fabric, primary and archival storage during video editing, and QA payout.
- Continuous, consolidated data protection for business-critical entertainment content.
- Simple, centralized administration and reduced complexity

The Customer

The customer is the in-flight entertainment division (IFED) of one of the world's leading providers of commercial communication and entertainment systems for the airline industry. The IFED business consists of custom video packaging, editing, and delivery to major airlines around the world.

IFED prepares and edits movies, television programs, and commercials that are delivered on physical storage media to individual airlines on a scheduled basis. To support these operations, the company's U.S. production site is equipped with 20 Apple Mac workstations, Final Cut Pro backed by 250TB of Xsan-based primary, and archival storage.

Challenge: On-time Delivery of Business-Critical Content

Due to the high tempo of IFED's video operations, its business depends on the 24x7 availability and protection of video content stored on its Xsan-compatible storage systems.

In addition to video editing, IFED must also package the resulting video output to match specific display types. Video formats vary significantly among aircraft types and seat displays, and display formats must be adjusted for a wide range of specifications. Moreover, to ensure that the final video content plays properly, IFED quality assurance personnel run all finished video content target systems from beginning to end, further adding to production time.

IFED is contractually obligated to make on-time, physical delivery of its video content according to Service-Level Agreements (SLA) with each

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airline that set requirements for schedules and shipments made around the world. Because post-production and quality assurance operations are performed entirely on Mac workstations, availability and system reliability are paramount. Any delays stemming from system downtime or data loss translates into lost revenues and SLA penalties.

Heightening this concern, IFED had previously experienced outages and data loss associated with its initial Xsan-compatible storage system. Instead of selecting a high-availability system, IFED had decided to use a high-reliability RAID system and periodic backups to protect its work product. Problems arose when one of the RAID system's controllers began to malfunction. To make matters worse, in the process of restoring the system, an IFED system administrator mistakenly reformatted a LUN and lost all data in the process. Several months later, another controller failed, causing additional data loss.

Solution: High-Availability Access and Continuous Data Protection

As with any large post-production environment, time is money to IFED; downtime and data loss equate to missed delivery deadlines and SLA penalties. Though IFED's video infrastructure is relatively simple, it must be able to withstand component failures without compromising system availability to users and protection of stored video content.

Unwilling to risk additional downtime and data loss, IFED immediately tasked its system specialist for video operations with the responsibility of finding a new storage solution.

After evaluating enterprise scale-out NAS proposals from a major storage system manufacturer and several video storage companies, IFED's specialist found that the mirroring appliance Vmirror ES from Vicom Systems and video RAID system ActiveRAID from Active Storage offered a high-availability, easy-to-manage solution that could best meet IFED's requirements. The Vicom and Active Storage combined solution would deliver a higher streaming performance than all of the alternatives under consideration. The cost of ownership for the Vicom-Active Storage solution was also one-third the cost of the enterprise storage solution.

ActiveRAID is a fault-tolerant RAID system. Each active component in the system is field replaceable. All mechanical components, including cooling modules and hard drives, are redundant and hot swappable. Adding an additional and critical level of redundancy, Vicom's Vmirror ES appliance creates two fully redundant data paths from mirrored ActiveRAID arrays to attached workstations and servers. Should an outage occur anywhere on either of the two data paths, Vmirror continues to access data through the good data path, allowing storage access without interruption.



Figure 1. Vmirror ES Versatility. Vmirror ES engines can be clustered over Fibre Channel to create local or remote mirroring. 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.

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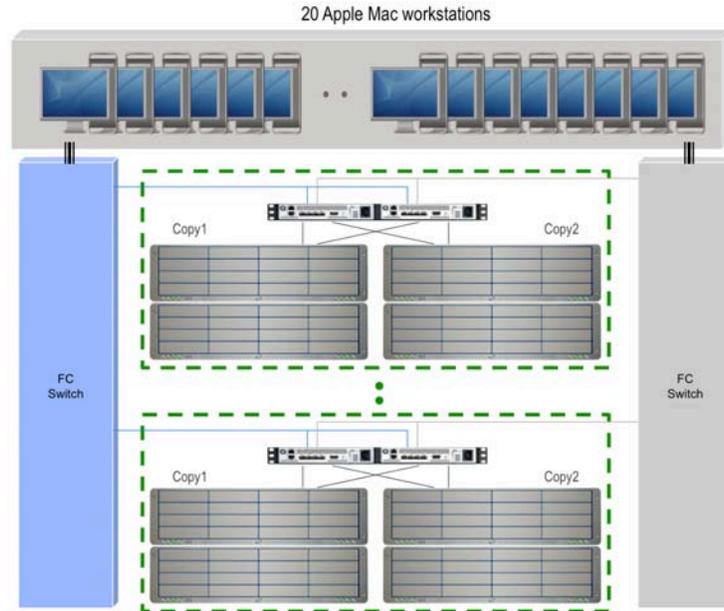


Figure 2. IFED Storage Cluster Configuration

During normal system operations, the Vmirror appliance reads from both mirrored RAID systems, which doubles sustained streaming and I/O rates.

Benefits: On-time Delivery of Business-Critical Content

Encouraged by these findings, the specialist recommended that IFED install a test configuration that would comprise one of nine storage clusters needed for IFED operations. After putting the system through its paces, test results were both convincing and compelling.

Tests and operations to date have shown that Vicom's appliance and ActiveRAID deliver on all counts with streaming performance of over 1.5 GB/second and continuous protection of stored video content. Physical redundancy of both RAID and data paths and serviceability has eliminated IFED's exposure to component failures, and Vicom's transparent and instantaneous failover has shown it remains impervious to streaming interruptions caused by dropped frames.

Based on these results, IFED plans to expand its storage capacity to over one petabyte using the same Vicom-Active Storage configuration.