



High Availability Through Data Consolidation

At Turner Broadcasting System's new Network Operations Center, 19 separate broadcast networks, including TBS Superstation, TNT, Cartoon Network, TCM, Boomerang, and Turner South, share access to digital content thanks to Fibre Channel Storage SAN technology and Quantum's StorNext®. The end result is streamlined data management and maximized storage resource utilization.

TV BROADCASTING AND HIGH-PERFORMANCE DATA ACCESS

In the all-digital broadcast environment, each network stages its own content and plays it out from a pod, or group of similar master control operations, with mirrored media servers and local disk arrays that hold about 100 hours of programming. In the old configuration, each Broadcast Operations Center (BOC), the predecessor to the pod concept, was an isolated storage island, responsible for ingesting and managing all its own content. Since a high percentage of content is shared among networks, the BOCs were duplicating efforts and storing many copies of the same files.

"As much as forty percent of the commercial and promotional content that the networks broadcast is shared," explained Clyde Smith, Senior Vice President of Broadcast Entertainment Technology for Turner Entertainment Networks. "When the old BOCs managed that content themselves, we weren't able to maximize personnel utilization or server time and disk space, creating a management challenge."

DATA CONSOLIDATION AND SAN FILE SHARING

The storage island challenge is solved in the new Network Operations Center. It creates a centralized storage system and media operations group that serves all of the broadcast networks, giving them access to a common set of more than 30,000 commercial and promotional files. With this solution, only the media operations group ingests material, and they manage it over time in a high bandwidth, high availability, multi-tiered, shared storage environment.

"The idea is simple, but we needed very powerful technology to pull it off," Smith said. "NAS filers didn't have enough bandwidth or capacity, so we installed a large SAN with 22TB of disk capacity and eleven UNIX servers to stream data to the pods. The key to making this architecture work is the right SAN file system. After evaluating all the options, we chose StorNext." StorNext, is a distributed file system that manages high-performance shared access to files stored on disk resources over a switched fabric. What Turner Broadcasting System needed for its central storage pool was a combination of transparent data access, high performance, and high availability.

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Clyde Smith
Turner Entertainment Networks
 Senior Vice President, Broadcast Entertainment Technology

SOLUTION OVERVIEW

- Application: Data access and management in a SAN environment
- Data Management Software: Quantum StorNext Avalon Archive Manager
- Reasons for Selecting:
 - High-performance access to large files
 - Resiliency of data availability
 - File sharing in a heterogeneous environment
- Server and Storage Environment:
 - Platforms: SUN Solaris
 - SAN Fabric: McData
 - Disk Arrays: EMC Clarion RAID
 - DVD Libraries: ASAKA
 - Media Servers: Pinnacle Data Systems

For access, StorNext lets each of the servers access all the data in the disk arrays directly and at wire speeds, creating a shared storage pool. It offers flexible, high performance streaming, even with the large file sizes (250MB to many gigabytes) characteristic of digital media applications. "StorNext was the best choice we found for handling our very challenging combination of providing simultaneous access to large files with high performance streaming," Smith said.

StorNext leverages the SAN for multiple network destinations by allowing multiple copies to be created and moved through the fabric at the same time from a single master file. It can also give bandwidth priority to specific jobs, which is important for time-critical tasks. "Because we often need to create many local copies from the central master, time and bandwidth management are critical to our success. StorNext's ability to create multiple simultaneous streams from a single file is critical to us."

When storage resources are centralized, high availability is also essential. Since the new architecture makes the same content available transparently to multiple hosts, it provides built-in protection against the failure of any host. "StorNext adds high availability features as well. It is fully journaled, allowing rapid rebuilds in case of a system fault, and it provides fast automated failover between primary and standby control servers," Smith added. "It also allows us to add new hosts without interrupting operations."

The selection of StorNext was also linked to its ability to provide the same high level of performance for multiple operating systems in heterogeneous SANs. "Today, our file streaming hosts are Solaris machines, but StorNext allows us to use a lower-cost Wintel cluster for the file system metadata. It also gives us the option of adding other platforms in the future, while continuing to meet our overall performance and reliability requirements."

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ABOUT TURNER BROADCASTING SYSTEM

Turner Broadcasting System, Inc., an AOL Time Warner company, is a major producer of news and entertainment product around the world and the leading provider of programming to the basic cable industry. Turner's new Network Operations Center, the largest all-digital facility of its kind, provides wide-ranging 24-hour functional support for the Turner Broadcasting System, Inc.'s Entertainment Networks including TBS Superstation, WTBS-17, TNT East and West, Cartoon Network East and West, Turner Classic Movies, Boomerang, and Turner South, as well as nine Latin American networks.

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