

STARZ SHOOTING FOR NEXT GENERATION OF COMMUNICATIONS CHANNELS

With AMD Opteron™ processor-based HP ProLiant servers, the Starz Entertainment Group saves substantially on content-packaging costs for its existing business, and has built a platform that will sustain future initiatives in emerging communications channels.

THE CHALLENGE

- Dependent on expensive, labor-intensive, hardware-dependent technology with cost-prohibitive scalability
- Quickly and cost-effectively leverage licensed content for use on a variety of delivery platforms
- Open new channels for content delivery and repackage licensed content
- Constantly changing landscape in cable TV, satellite, and IPTV industries

THE SOLUTION

- Created Starz proprietary MediaForge integrated platform
- HP ProLiant DL585 servers, each powered by four Dual-Core AMD Opteron™ processors
- HP Media Storage solution comprised of HP StorageWorks Enterprise Virtual Array 8000 storage area network with 175 terabytes of capacity
- ADIC StorNext data management software allows storage to be presented to applications as single, high-performance file system
- Onboard video capture hardware and software

THE IMPACT

- \$1 million in direct cost savings per year
- 100 percent return on investment expected within 18 months
- Dual-Core AMD Opteron processors help contain operations costs by performing twice the work within the same power envelope and without facility upgrade or expansion
- 24x7 availability and unattended operations previously impossible to accomplish
- Multiple iterations of a high-performance, throughput-intensive application running on a single server
- More products to customers faster



Terms like scalability and throughput are so overworked in today's technology environment that we often regard them as mere buzzwords. But for Starz Entertainment Group, the challenges loomed large as strategic concerns governing the company's growth and success in managing content for its existing businesses and for the chance to take advantage of opportunities in the future.

Starz, through licensing arrangements with studios and film distribution companies, provides a catalog of movies for home viewing audiences—primarily through cable and satellite television providers. In its early days it operated much like a suburban theater multiplex, showing specific movies at a certain time. The key to success back then was licensing more movies that people wanted than competitors like HBO, then scheduling screenings at times that would attract the biggest audiences.

James Porter, vice president, post production and broadcast operations and Stephen Smith, systems integration and automation manager for Starz Entertainment Group.



Now, however, the viewer is in charge. The advent of on-demand programming and the increasing number of devices available on which to watch all this content have empowered viewers—and raised expectations for content providers like Starz.

Starz has answered the call by engaging in more competitive packaging—creating, for example, channels for specific age groups, demographic segments, and for fans of specific film genres. It burst free of scheduling constraints by offering movies and other content as on-demand services so viewers who couldn't watch a movie at its scheduled time could pay to watch it whenever they wanted.

The company meets these demands with advanced technology—specifically, AMD Opteron™ processor-based servers that form the foundation of its MediaForge platform. MediaForge enables Starz to prepare content for distribution within a software-driven, computer-based environment, rather than using the hardware-based tools of the past that were labor-intensive and cost-prohibitive to scale.



The new platform has already delivered a number of significant benefits:

- \$1 million in direct cost savings per year
- Investment expected to pay for itself within 18 months
- Able to deliver more products to customers faster
- Delivering twice the work within the same power envelope and without facility upgrade or expansion

The speed, bandwidth, and scalability of Dual-Core AMD Opteron processors have enabled Starz to take its show competitively into the on-demand era.

The Business of Starz

Founded in 1991, Starz, a subsidiary of Liberty Media Corp., husbands some of the most recognizable content-providing brands. Customers include Charter Communications, Comcast Corp., and DirecTV. Starz content reaches more than 181 million subscribers through services including Starz HDTV, Starz On Demand, and Starz Ticket.

The company's 13 digital movie channels include its two flagship stations, Starz and Encore. It has segmented some of its content offerings into more viewer-friendly categories like Westerns, love stories, and older movies.

Starz HDTV provides high-definition versions of recent films transmitted in wide-screen formats with Dolby Digital 5.1 sound. The Starz On Demand service for digital cable includes DVD-like functionality and bonus content. And Starz Ticket was the first subscription-based, on-demand premium movie service for high-speed broadband customers.

The Challenge

To keep up with the demands of a multi-channel, multi-format, on-demand environment, Starz must prepare separate versions of each licensed product for each channel. Historically, this process required dozens of technicians using a wide variety of expensive video-editing and transcoding equipment and consuming hundreds of thousands of dollars in broadcast-quality videotape stock each year. Each tape was encoded with a channel logo, audio announcements and graphical overlays, along with additional materials at the beginning and end of each film. Preparing one movie from a master in the film vault for airing on one channel could take a full day.

The mushrooming variety of content delivery platforms posed packaging and delivery issues for Starz as well—and each required the same time- and resource-consuming content delivery process. Starz and other providers have long debated the prospects of

transferring the content preparation process from the traditional hardware-based broadcast editing and transcoding processes to a software-driven computer-based capability. Although all knew it was theoretically possible, the processing and data transfer power required simply wasn't available. Yet.

The Solution

Starz enlisted the help of AMD and HP to bring its content creation process into an on-demand world. In just a few months the company completed a groundbreaking systems integration project resulting in the creation of the Starz MediaForge platform.

The new platform not only proved the concept but delivers at performance levels no one imagined possible.

"What the new environment does is get us to the scenario in which they use the tape only once," said Stephen Smith, Starz's systems integration and automation manager. "We capture the tape into a common format and then, using the AMD boxes, we ship those bits around within those files to make them into different flavors of video and audio files that are compatible with the various different digital systems."

THE DEMANDS OF VERSIONING

Each "flavor" in the Starz package requires repackaging—making copies of the master, editing in content for branding and programming, and revamping the copy to the formatting required by cable and satellite outlets, for download to PCs and, in the future, for smaller format wireless devices like handhelds and phones. These now include (among others):

- 15Mbps variable bit-rate MPEG-2 for the Pinnacle Systems linear environment
- 3.75Mbps MPEG-2 for on-demand content for cable TV providers
- 700Kbps RealNetworks player-compatible format for Starz Ticket
- Two different versions for Windows Media Player
- QuickTime version for edit and media-creation systems in the Macintosh environment

Obviously, the faster this work can be performed, the quicker Starz can get the product to market and start realizing revenue—which is why the Dual-Core AMD Opteron™ processor has made such a dramatic impact on operations in such a short period of time.

The nucleus of the MediaForge platform is the 64-bit Dual-Core AMD Opteron™ processor, four of which power each HP ProLiant DL585 server. According to the Starz IT staff that tested the processors against other servers, throughput from the AMD Opteron processor-based machines was exponentially faster.

The Impact

Once satisfied that the software-based approach had sufficient muscle to carry the mission-critical transcoding operation to the future, Starz also realized that the savings would offset the cost of the MediaForge platform in just 18 months. Of the \$1 million a year the company estimates it will save, \$300,000 is attributable to now-unnecessary expenditures on videotape.

"We've allowed a product line under the Starz umbrella to brand and package their content automatically," says James Porter, vice president of post production and broadcast operations for Starz. "There is no intervention by an editor; there's no intervention by additional equipment such as specialized keying devices, editing devices to create the final deliverable."

With the MediaForge platform, a single operator can fully prepare 12 to 18 feature-length films in a 10-hour day. Although the actual components of the MediaForge system are not physically located in one place or one "box" (they're all connected on the standard corporate network), it all comes together as one view on the desktops of technicians using the product—from wherever they happen to be working.

Now that much of the process has been automated, operators from any workstation connected to the MediaForge platform can queue up jobs to run at specific times even when in remote locations. And, since most of the process is software-based, there's no need for all that excess videotape. The production master is simply captured in digital format with data rapidly manipulated and stored in the various formats required.

"The other thing to bear in mind is that what this system has allowed us to do is capitalize on a lot of existing systems that were in place already," says Porter. "So it ties the scheduling software environment to the basic trafficking database of all our materials to the preparation environment so that it presents all the necessary data to the operator without anyone having to go out to multiple applications to find data."

RAVE REVIEWS

The critics agree—Starz is right on target with their products delivered through content providers.

Reports from the ratings firm Nielsen in 2005 showed that Starz's ratings had increased about 18 percent over the previous year, part of a five-year trend in which each of the 13 Starz networks increased year-to-year viewership.

Entertainment industry publications like *Variety* credited the uptick in ratings to "fresh on-air looks" and Starz's ability to alter content presentation to appeal to various audience segments like families, teenagers, and even die-hard fans of both old "cowboy" movies and modern adult Westerns. *Encore Westerns* was Starz's highest-rated viewer segmentation in mid-2005.

With its MediaForge platform, powered by the AMD Opteron™ processor, Starz will continue to meet the demands of an increasingly diverse movie-watching population, and set itself apart from the competition.

The initial capture of the film into the storage environment still has to be done in real time, Smith explains. Just as in the old-fashioned, reel-to-reel world, it takes 110 minutes to copy a 110-minute feature. But with MediaForge, one operator can man four to eight decks, all running concurrently and, as automated aspects take care of some of the previously hands-on processes, the operator can perform other tasks, like loading new tapes and performing quality checks of end products.

Ironically, some of the other strong features of the AMD Opteron™ processor, like its thermal efficiency and low power consumption, were not significant deal-makers for Starz. They were regarded as nice-to-have extras. However, in implementation, Porter says that the Dual-Core AMD Opteron processor's ability to perform twice the work within the same power envelope and within the same footprint as a single-core server presents a compelling value proposition.

But the bottom line was, would the AMD Opteron processor enable the company to solve the problem of throughput and scalability and move from hardware-based transcoding to software-based content preparation and delivery?

The answer is yes—the AMD Opteron processor made it happen. Starz directly attributes money-saving productivity enhancements to the level of performance delivered by the AMD Opteron processor-powered servers: One guy does in fewer hours what it used to take many guys to do in a lot more time. And without getting the process tangled in lots of costly videotape.

The Future

Starz's vision of the future now includes facilitating totally new concepts in programming. The company sees as its "new frontier" the ability to deliver the most advanced forms of electronic media in one package: voice, video, high-speed Internet access, and wireless capability. As Starz Entertainment Group President and CEO Robert B. Classen says, the company's challenge "will be to make the fullest possible use of all these platforms ensuring that for the consumer, the value of the whole package will be greater than the sum of its parts."

Whatever the future brings, Starz believes it's now better equipped to meet customer demands and competitive challenges. For one thing, affordable scalability is no longer an issue but a simple matter of adding storage and servers. And, although currently running 32-bit software on backward-compatible 64-bit AMD Opteron processors, Starz can upgrade to 64-bit software and applications when needed with existing hardware.

"It was when we began to visualize where the organization could go that motivated the need to look at things from a different perspective," says Starz's Porter. "There is tremendous opportunity out there for us to repurpose our licensed content. The prospect of having to scale up to all those opportunities in the traditional form really became a major prohibition against the growth of the organization. It was an insurmountable hurdle against taking advantage of all those opportunities."

With the MediaForge platform—powered by the AMD Opteron processor—that formidable hurdle is already cleared.