

## Digital Rapids StreamZ Provides Efficient, High-Quality Encoding Workflow for TVN Entertainment

by Dave Bartolone – VP, Technology, TVN Entertainment



TVN Entertainment Corporation is the largest digital content aggregation, management, distribution, and service company in North America, delivering Video-on-Demand (VOD) content to millions of viewers through its telecommunications, cable and broadband partners. TVN has been chosen as the VOD solution for many leading multi-service operators (MSOs) and telecommunications companies including Comcast, Charter, Cox and Verizon.

TVN currently packages, distributes, and manages more than 3000 hours of VOD programming every month from more than 150 content providers, including every major studio and networks in the United States, making it available in both SD and HD in compression formats including MPEG-2, H.264 (MPEG-4 Part 10) and Windows Media (SMPTE VC-1). Multiple Digital Rapids StreamZ SD media encoding servers are critical elements of our daily encoding operations.

The Digital Rapids systems were initially selected to solve challenges we faced in our early workflows for encoding VOD files in the SMPTE VC-1 format. As a way to support the requirements of a major TVN customer, we began with primitive, command line tools to control Microsoft Windows Media Encoder in order to produce broadcast-quality VC-1 VOD files. Second to good quality, though, achieving a real-time or better workflow is an important consideration for us, considering the large amount of hours of content we produce and distribute (as mentioned above, over 3000 hours per month in multiple formats). Given our environment, we knew that a manual process using the command line interface (CLI) was not the ultimate solution, so we created a list of requirements and interviewed a number of companies. We found that the Digital Rapids system was only solution that met the majority of our needs, including the ability to start and stop based on Linear Time Code (LTC) so that we could piggyback our VC-1 encoding onto our MPEG-2 encoding. The StreamZ family delivers a good-quality encoded product with good built-in workflow, and integrated Dolby Digital (AC-3) encoding support. We worked for a while with Digital Rapids and their technology partners to refine the system to our needs, then put it into production – where it has worked flawlessly ever since (about two years).

Since the original installation, the systems have been enhanced features such as Watch Folder based transcoding. TVN was also a beta test site for Digital Rapids' now-released Studio AVC Encoder module,

**The User:** TVN Entertainment Corporation

**The Challenge:** high-quality, real-time encoding workflow for VC-1, H.264 and more

**The Solution:** StreamZ

“The Digital Rapids systems have delivered the workflow efficiencies and high-quality output that we were looking for in a solution, with the flexibility to grow with us.”

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**North America:**  
tel. 905-946-9666 ext. 212  
sales.na@digital-rapids.com

**Europe:**  
tel. +44 1428-751012  
sales.eu@digital-rapids.com

**Asia Pacific:**  
tel. +61 2 954-61300  
sales.ap@digital-rapids.com



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# Rapid Users

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which provides advanced H.264 encoding for VOD and IPTV. Optimized for the stringent specifications of IPTV delivery by leading telecommunications providers, the Studio AVC Encoder enables the encoding of VOD assets complete with Closed Captioning. The local support that we received with the systems has also been an asset as our needs evolve.

Our input sources to the Digital Rapids systems can be file-based or tape-based. The systems are connected to our Digital Betacam, HDCAM and D5 tape decks through SDI or HD-SDI with embedded audio. We take advantage of the Digital Rapids StreamEnterprise software's ability to start and stop encoding based on Linear Time Code to synchronize with other existing equipment. Our existing MPEG-2 encoders control the decks, while the Digital Rapids systems monitor the decks' time code output and start encoding at the designated "Mark-In" point. This allows us to roll a tape once, and get two encodes (for example, MPEG-2 and H.264) in real time.

We are also realizing business benefits from the multi-format capabilities of the system. As we venture into areas of new business, we are presented with requirements that are not typical in the broadcast industry – such as transcoding a QuickTime .mov file to a CableLabs-compliant MPEG-2 file. It seems that no matter what the input format is, the Digital Rapids systems will read it and allow us to produce any output format of our choice. This flexibility allows us to accommodate the changing requirements of our content providers. Transcoding steps are kept to a minimum, saving us time and money.

As TVN's need to encode and transcode more and more hours content for the H.264 IPTV community grows, I expect that so will our need to operate more and more Digital Rapids systems, possibly growing into a centrally managed transcoding "farm" environment as offered by Digital Rapids Transcode Manager. The Digital Rapids systems have delivered the workflow efficiencies and high-quality output that we were looking for in a solution, with the flexibility to grow with us.



#### About the Author:

*Dave Bartolone joined TVN in 1998 as Director of Engineering and Technical Operations through the acquisition of GRTV Network, a satellite based infomercial programming distributor. In 2000, he was promoted as Vice President of Technology for TVN. In this position, he works closely with the Business Development division, researching and reporting on new technology and the new business opportunities that they may present. Dave also supports the Sales division by explaining current TVN technology and gathering customer needs and turning them into new products and services. He establishes and maintains relationships with all technical partners and is active in defining the next generation of VOD functionality in CableLabs VOD committees.*

*Prior to joining GRTV, Dave was a Systems Integrator and involved in the design and installation of production and post-production facilities for many major entertainment companies such as Disney and FOX. Dave started in the Cable TV industry over 20 years ago designing and building systems on the east coast. He holds a BSEE from Rutgers University.*

**North America:**  
tel. 905-946-9666 ext. 212  
sales.na@digital-rapids.com

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tel. +44 1428-751012  
sales.eu@digital-rapids.com

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tel. +61 2 954-61300  
sales.ap@digital-rapids.com



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