

CASE STUDY

Dalet Enterprise Edition fuels High-octane HD Production for SPEED



SPEED revs up a new, end-to-end HD facility designed for fast-paced, high volume workflows.



SPEED is America's premier cable television network dedicated to motor sports and the passion for everything automotive. From racing to restoration, motorcycles to movies, autos to auctions, SPEED delivers quality programming from the track to the garage. SPEED is the home to NASCAR on SPEED, Formula One racing and popular shows like "The SPEED Report," and "Wind Tunnel." SPEED reaches more than 78 million homes in North America and has a strong following on speedtv.com. SPEED also provides content for interactive TV, broadband, video on demand, and mobile devices.



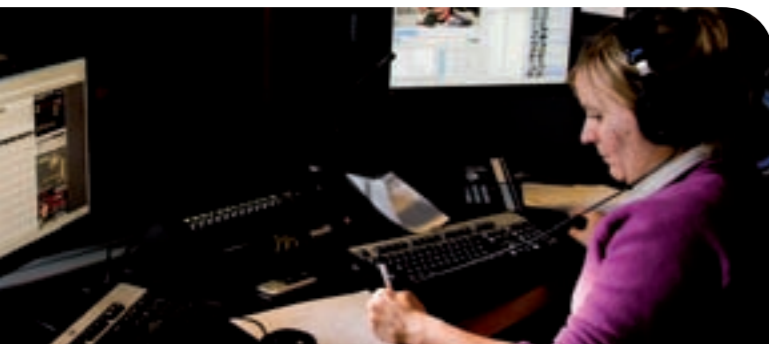
In the SPEED Broadcast Equipment Room, Dalet Enterprise Edition runs on standard IT servers and integrates with storage and broadcast systems.

“Partial restore has become an integral part of our workflow... If we didn't have that we'd be buried every weekend.”



Tom Creter, VP of Engineering, SPEED

Shot lists and simple EDLs are prepared on Dalet desktops; packages are finalized on Apple Final Cut Pro NLEs.



The Challenge

An aggressive timeline to build a full HD production chain

SPEED wanted to consolidate its two locations in Charlotte, North Carolina into a new, purpose-built facility to accommodate a high-volume, complete high-definition workflow. The goal was to improve efficiency, save on production time and costs, and leverage SPEED's high quality content across multiple platforms. As a unit of Fox Cable Networks, part the Fox Networks Group, SPEED turned to Fox Networks Engineering & Operations (NE&O) for design and implementation services. The SPEED project is one of the first end-to-end, fully HD production system for the group. The project faced infrastructure and workflow hurdles and an extremely aggressive 6-month timeline. The NE&O and SPEED project teams evaluated several options and agreed that a combination of open systems offered the most flexible and future-proof solution. "We are looking at HD end-to-end, from acquisition thru edit and broadcast with 'best of breed at every step.' We did not want to be locked into one protocol," says Richard (Rick) Miner, Senior VP for Production and Network Operations at SPEED. "We wanted the ability to be flexible. Relying on open standards was absolutely key to us."

Metadata entered during ingest are tracked throughout their media lifecycle and are fully searchable.



The Solution

Dalet Enterprise Edition for content management and control layer

Dalet Enterprise Edition is the core content management system at SPEED, managing all media and associated metadata across the entire ingest, production and distribution chain. Built on open standards, Dalet integrates seamlessly with other broadcast and IT systems, providing a control layer for a smooth end-to-end workflow. The SPEED network infrastructure includes both Ethernet and fiber (mostly for essence) to ensure efficient handling of the high-volume HD content and broadcast reliability. Dalet integrations include an Omneon Spectrum broadcast server for ingest and playout; Apple Final Cut Pro for craft editing; Data Direct Networks S2A for first tier HD production storage; HP EVA 4400 disk array for nearline, second tier HD and low-res storage; as well as Front Porch DivArchive which manages the IBM LTO storage system. Quantum StorNext provides file systems across the storage systems. "Everything is intertwined and we are charting new territory," explains Tom Creter, VP of Engineering at SPEED. "There are a lot of moving parts. Dalet worked very well with other vendors especially considering the incredible time pressures."

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Rick Miner, Senior VP, Production & Network Operations, SPEED

The Workflow

Immediate access for fast HD broadcast and new media production

SPEED operates at peak performance on weekends with scheduled broadcasts involving multiple feeds of multiple races from global venues, many at simultaneous or overlapping times. Dalet provides a seamless workflow from Ingest to Playout and everything in between. Dalet Ingest Manager is the central tool for the Technical Operations Center (TOC) which enables a small crew of operators to control and monitor 40 ingest ports. This includes centralized ingest of HD content in DVCPRO100 on 9 channels on the Omneon Spectrum and 31 cost-effective, IT-based ingest channels using DeckLink HD Extreme cards. "Having the large number of direct to SAN ingests is a huge benefit to us," adds Rick. "It was a very big cost savings."

Ingested HD content goes directly to the DataDirect Networks S2A9900 Tier 1 production storage. Dalet takes advantage of Omneon advanced low latency MXF technologies to immediately download content while recording from the Spectrum server and ingested content through the IT servers written directly to the SAN.

Dalet's solutions rely on high performance, high availability storage. Quantum's StorNext intelligent data management software is a cornerstone of this quick, resilient environment. Quantum's StorNext SAN File System and Storage Manager allows Dalet media back office servers to be connected via a fiber link directly to the central storage, accelerating drastically

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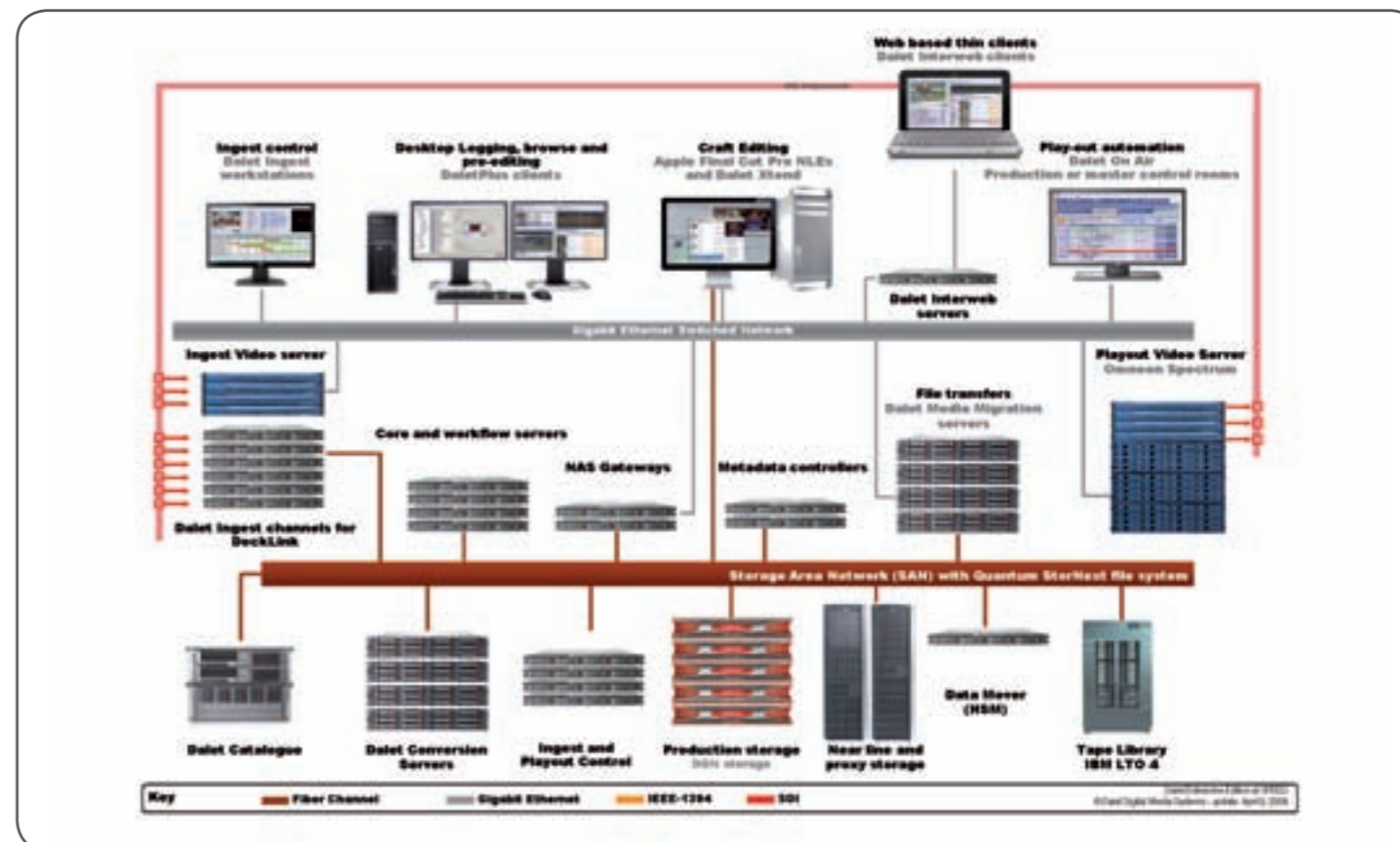
Tom Creter, VP of Engineering, SPEED

media processes such as rendering, conversions, or file transfers to video servers. This is mandatory when it comes to large HD installations.

A low-res proxy is simultaneously made available on the HP disk array for logging and pre-program production on 125 DaletPlus client workstations. Users can access content in both HD resolution and proxy resolution within seconds after the recording has started.

"One of our goals was simultaneous high and low res," says Rick. "In my dream production environment I wanted people sitting at their desk to be able to view content, mark the content, ideally do cuts only edits and then just drop it in a bin somewhere where it can be finished in post and be done with it. Fast and efficient." Producers and assistants make rough cuts or even full melts using Dalet desktop editing tools. The shot lists and rough cut packages are sent to craft editors who finalize material in HD with Apple Final Cut Pro. Dalet Xtend plug-in offers a high level of interoperability between Final Cut Pro and the Dalet system. Final packages are rendered and saved back into Dalet for upload to and playout from the Omneon server. Dalet is also used for scripting and rundown creation. In the control rooms, Dalet continually updates the rundowns which producers and directors use to manage their shows. Operators take advantage of both Dalet OnAir player and Carts modules for rundown driven and ad hoc playout.

Dalet Enterprise Edition at Speed



“Whether it's for the web, for an iPod, VOD or the network, they are all working in same bullpen, cutting the same material.”

Rick Miner, Senior VP, Production & Network Operations, SPEED

The Benefits

Unified content management, smooth workflows, improved efficiencies

The transition to a file-based environment required human as well as technical considerations. "It was a huge challenge – a totally different mindset for the staff. The whole workflow was foreign to them and we had a short training time," Rick Miner explains. "We worked closely with Dalet and we were changing things along the way. We're still learning ways to improve efficiencies." The benefits of sharing content with centralized ingest and storage were immediate. "We don't have 75 copies of the same race floating around. That cuts down on storage and costs. We also gained a lot of time in editing," he added. Dalet streamlines the workflow by providing search, browse and editing tools to the full production staff – they no longer need to tie up an edit bay to create a first draft and review with their producer. Dalet also provides a unified content management and control layer which includes file

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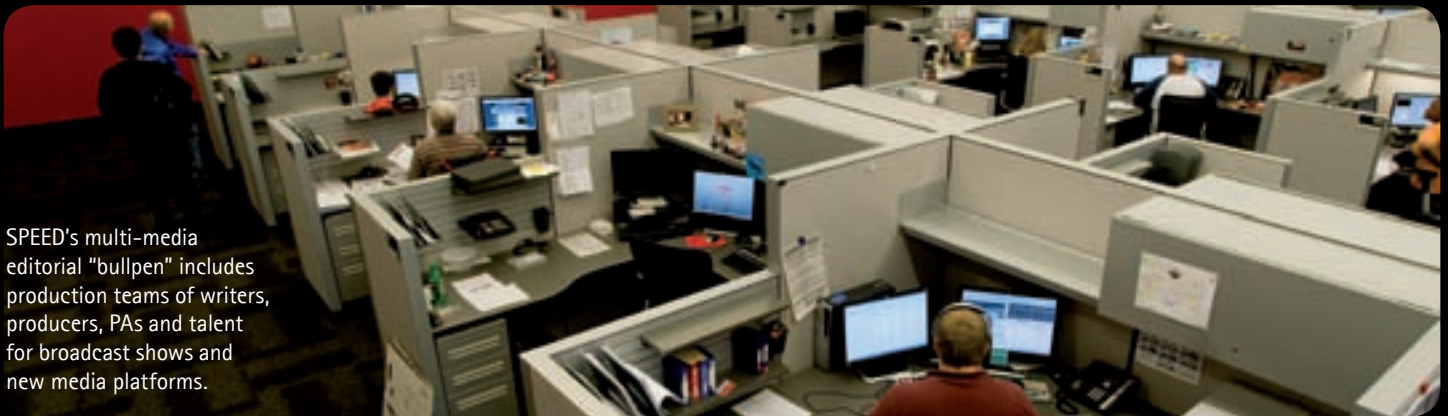
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Tom Creter, VP of Engineering, SPEED

migrations across multiple systems – regardless of where the content is stored or its delivery destination. Tom Creter highlights partial restore capability. "What a phenomenal thing. If we didn't have that we'd be buried every weekend," he says. "Partial restore has become an integral part of our workflow." Tom also appreciates Dalet's quick response to feature requests, noting "It's a huge thing that their people are so in touch with the workflow that they deliver products the way we want them to work." He cites the Dalet Dashboard, a system-wide monitor which allows administrators to view the health and status of every system from a single interface, as one example.

"The goal was an asset management system that would allow us to manage, track, produce and distribute our content on whatever platform in whatever format," says Tom. "Dalet's helping us do that. Dalet is at the heart of it."

On the race track, drivers use strategy, speed and control to win at the finish line. In production, SPEED applies the same winning formula with a best-of-breed video production system and Dalet Enterprise Edition to achieve its goal of high velocity workflow and high quality content. And it's extremely fuel efficient!



SPEED's multi-media editorial "bullpen" includes production teams of writers, producers, PAs and talent for broadcast shows and new media platforms.

Promotion and new media teams are also operating at full tilt. "Whether it's for the web, for an iPod, VOD or the linear network, they are all working in same bullpen, cutting the same material," Rick explains. "The only question is how it will be transcoded for where it's going at the

backend. Are we sending it from an Omneon down the line as video to Master Control in LA? Or converting it to files going to Hulu or iTunes? Or putting it on Speedtv.com? It doesn't matter. Dalet manages all of that in the background with watchfolders that dictate the necessary formats and transcodes, and it pops out the other side."

Because Dalet tracks metadata throughout the workflow and also provides powerful search tools, it's quite simple to search and browse the content catalogue, making the media assets needed readily available to members of the team whether show or new media producers or promo writers. Various metadata from "melts" of the races will also be available and searchable, including drivers, cars, positions on the track, in-car cameras sequences and other details – all adding considerable value over time to the archived assets.

Rick says the archive and partial restore capability in Dalet is "absolutely essential" to SPEED. Dalet allows HD content archiving and partial restore at any time by managing content on both online and nearline storage. It also interfaces with FrontPorch DivArchive which manages the IBM tape library and enables partial restore. The proxy resolution and metadata are always available for searching and browsing. "If we want 30 seconds from a 4-hour race, we don't want to bring back the whole race," Rick explains. "Right from their desks, producers can browse and mark what they want and ask for only that clip. The Dalet system will tell them 'I've got it. It's not online in tier one hi-res but I'll go get it and I'll let you know when I have it.'" File migrations and conversions are fully automated and transparent to the production staff.

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