



CASE STUDY

BBC Northern Ireland Leverages Quantum StorNext for Continuous Output Workflow and Dual-Redundant Data Centers

Switching to an all-digital capture system presented workflow challenges for Northern Ireland's public broadcasting system (BBC NI). In response, the company, which had leveraged the Quantum StorNext scale-out storage solution for more than a decade to manage its ever-growing media asset library, expanded its StorNext environment. The results were higher-speed ingest and transcoding, faster production, and a dual-site, fully redundant workflow environment.



BBC

NORTHERN IRELAND

FEATURED PRODUCTS



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Roland Rodgers

Technology development and infrastructure specialist, BBC NI



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SOLUTION OVERVIEW

- Quantum M660 appliances powered by StorNext®
- StorNext AEL6000 tape archive
- Cinegy Media Asset Management Software

KEY BENEFITS

- Scalable system enables growth as storage demands increase in the future.
- Automated movement of data between disk and tape tiers provides backup and archive.
- Dual-redundant systems with two copies of key data support around-the-clock operations and provide DR protection.
- Single file system presentation gives multiple users collaborative access to all content on disk and tape, and supports full range of applications.
- Interoperability with Cinegy provides a unified asset management environment that spans multiple storage tiers.
- Support for high-speed, multi-stream transcoding delivers content into the work area quickly, accelerating production schedules.
- Increased editing stations allow more editors to work simultaneously for faster production.
- High reliability and strong service and support from Quantum and partners reduces IT administrator workloads.
- Non-disruptive upgrades update the system without slowing down production.

As the national branch of the BBC for Northern Ireland, BBC NI produces a complete schedule of news and current affairs programming that it distributes over two television channels, two radio stations, and multiple online platforms. BBC NI also delivers content from other BBC production centers to Northern Ireland audiences. In addition, its facilities also serve as a central digital archive for the Rewind Projects, hosting thousands of hours of existing content from all of the BBC's different national sites—storing, protecting, and making the content available for reuse by the public and the entire BBC archive community. Serving as Northern Ireland's largest public service broadcasting resource is a complex, 24x7 job carried out by roughly 700 employees, most of them in its Broadcasting House headquarters in Belfast. When the company transitioned to an all-digital capture and media asset management (MAM) system, BBC NI needed to make sure the infrastructure could support these changes.

FULLY DIGITAL CAPTURE SYSTEM STRESSES STORAGE AND NETWORKS

BBC NI moved into digital workflow in several stages. Initially, Digital Northern Ireland, led by the BBC and Siemens Business Systems, installed Cinegy Asset Management Software, StorNext software, one storage node, and a single tape library for archive in one of the BBC NI sites. The recording cameras at that time still used traditional tape, and workflow stresses on the system began showing up within six months. Roughly one year later, the team shifted to a completely file-based system.

"When we converted to an all-digital, file-based capture system," explains Roland Rodgers, BBC NI's technology development and infrastructure specialist, "the production team was immediately able to take advantage of the file-based workflow—but we did not anticipate the impact it created on the storage systems and networks."

The new recording devices, which led to greater volumes of media as a result of increased shoot ratios, dramatically increased the sheer volume of data. On top of that, the proliferation of recording devices meant that there were more and more different formats that had to be transcoded before content could be edited for broadcast. The results threatened to create bottlenecks throughout the system and slow down production.

“Frankly, the IT team was surprised at the impact of the change,” Rodgers recalls. “It became obvious that we had to plan carefully and upgrade our systems in a smart way to avoid creating delays for the editors.” The biggest needs were more seats with collaborative access to content, higher overall performance, and an easier way to scale the system in response to growth.

UPGRADING TO PROVIDE FLEXIBILITY AND AVOID BOTTLENECKS

The solution, which was recommended by the specialists at Siemens Business Systems, Quantum, and Cinegy, was to overhaul the workflow system, upgrading applications and the network as well as the storage systems. It also dramatically expanded the BBC NI’s existing StorNext environment to include two Fibre Channel-connected locations.

During the evolution of the system, its application also changed. The original digital library initiative only supported news content production. As older material accumulated on the system, a tape archive was added so that expensive, higher-performance disk was only used for current productions. Rodgers explains, “Later, the workflow system, including StorNext and the Cinegy software, was applied to long-form current affairs programming with features from 30 to 60 minutes in length.” A second tape archive library was added to support this expanded application.

Over time, the new solution added hundreds of terabytes of new disk storage, expanded the Fibre Channel storage area network (SAN), replaced the StorNext controllers with new, higher-performance models, and upgraded

drives and media in the archive libraries. “Except for changing the controllers, virtually all of the upgrades were non-disruptive,” Rodgers notes.

MEETING NEEDS FOR PERFORMANCE, REDUNDANCY, AND DR PROTECTION

“The new system has much faster performance overall,” says Rodgers, “and it provides much more flexibility. Now, we have 200 seats with high-performance access to all the shared content through the StorNext File System—so that more editors can work faster and more collaboratively, and spend less time moving themselves or the content around.”

Each of the two locations in Belfast has performance disk resources and a StorNext AEL6000 tape library acting as an archive to hold existing content and protect work in progress. “We have organized the active work to be split between the two locations,” Rodgers says. “One holds the news proxy files on disk and nearly a petabyte of the Rewind archive while the other holds all the full-quality content for the news. Dividing the work gives us maximum performance, but the two sites are linked via Fibre Channel. So, in a pinch either one can act as a backup for the other. We have one StorNext File System spanning the entire system, making it easy to share files.”

MIRRORED LIBRARIES PROVIDE PROTECTION AND A LOW-COST ARCHIVE

The two LTO-based StorNext AEL6000 Archives protect the data and store existing content. “As soon as data hits the working disk, StorNext automatically writes two copies—one to each of the LTO libraries,” says Rodgers. “That way, we have a copy of everything stored in two places for backup and DR protection. And when files are no longer actively being worked on, we remove the disk copy to free up space for new content—that helps us save money on disk capacity. StorNext and Cinegy, however, see all the content on disk and tape, so that editors have access to everything.” Editors normally work from proxy files stored on disk, and when the full-resolution versions are created, Cinegy pulls the full-quality versions from disk or tape, depending on their location.

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Roland Rodgers,
Technology development
and infrastructure
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ABOUT CINEGY

Cinegy develops software solutions for collaborative workflow encompassing IP, capture, editing, and playout services tools, integrated into an active archive for full digital asset management. Either SaaS, virtualisable stacks, cloud or on-premises, Cinegy is COTS using standard IT hardware and non-proprietary storage technology. Cinegy products are reliable, affordable, scalable, easily deployable, and intuitive. Cinegy is truly Software Defined Television.



MAXIMUM PERFORMANCE FROM TRANSCODING TO BROADCAST

The new StorNext system supports higher data rates, which facilitate ingest and transcoding for faster production. “News footage is ingested into the disk environment at high speed—where StorNext supports multiple parallel transcoding operations—so the data is made available with minimal delay to the content production teams,” Rodgers explains. “StorNext lets us get the maximum performance out of all our disk resources.

“StorNext’s flexibility has allowed us to mix resources from different suppliers. Right now, we’re using a StorNext disk alongside third-party RAID arrays. It lets us select the right disk resources for different jobs to keep performance high and costs low. It also gives us lots of options for the next stage of our growth.”

NON-DISRUPTIVE UPGRADES KEEP PRODUCTION ON SCHEDULE

In a news-heavy environment where programming teams are on around-the-clock cycles, the StorNext support for transparent upgrades is vital. “We are constantly scaling our environment to meet new demands, and StorNext helps us do that without interrupting our production and broadcast schedules,” Rodgers says. “Over the years, we moved from a minimum-sized implementation—one storage node and one library at one location—to a fully redundant, highly resilient, dual-site implementation without significant downtime or disruption to our users. This capability is a strength of StorNext, and the way that it and Cinegy work together.”

In an environment where IT resources are stretched thin, one of the biggest benefits of StorNext is how easy it is to maintain. “We have used StorNext for nearly a decade. Once it’s up and running, it does its work in the background and requires little active management from the IT team,” explains Rodgers.

ABOUT THE BBC NORTHERN IRELAND

The BBC Northern Ireland is a national division of the BBC and the primary public broadcaster in Northern Ireland, providing news, sports, current affairs content, dramatic series, and cultural programming. BBC NI serves Northern Ireland audiences, and it supports the overall mission of the BBC to enrich people’s lives with programs that inform, educate, and entertain. BBC NI distributes original material, and it airs programs developed by other national BBC centers over two television channels, two radio stations, and a broad range of online and new media platforms.

Quantum

Quantum technology and services help customers capture, create, and share digital content—and preserve and protect it for decades at the lowest cost. Quantum’s platforms provide the fastest performance for high-resolution video, images, and industrial IoT, with solutions built for every stage of the data lifecycle, from high-performance ingest to real-time collaboration and analysis and low-cost archiving. Every day the world’s leading entertainment companies, sports franchises, research scientists, government agencies, enterprises, and cloud providers are making the world happier, safer, and smarter on Quantum. See how at www.quantum.com.