

XenData Digital Video Archive Case Study: Channel 4, UK

One of the UK's most successful independent broadcasters, Channel 4 recently went live with its Media Access Project that uses Pharos Mediator and XenData's MX64 archive system.



User



Channel 4 Building, London

Channel 4 transmits across most of the UK and is available on all digital platforms (terrestrial, satellite and cable) as well as through traditional analogue transmission.

Channel 4 also operates a number of other services, including the free-to-air digital TV channels E4, More4 and Film4, and an ever-growing range of online activities at www.channel4.com, including the broadband service FourDocs and Channel 4's bespoke video-on-demand service 4oD. The Film4 production division produces and co-produces feature films for the UK and global markets.

Project Challenge

Channel 4 has grown substantially since its inception and wanted to advance its entire operation from video tape to file-based playout. This project will allow fast and efficient response to new business developments in the rapidly diversifying broadcast marketplace.

Solution Provider: Pharos

Pharos is a software systems developer that is founded on 10 years of design, development and integration of desktop control, automation and media management solutions in high-technology broadcast environments around the world. More information is available at: www.pharos.tv

Solution Key Components

- Pharos Mediator, a scalable broadcast media management system
- Omneon ingest servers
- Isilon iQ 42 TB disk storage system
- Sony PetaSite tape library with 3,000 LTO-3 tape cartridges
- XenData Archive Series software, MX64 Edition, running on four 64 bit servers

Solution in Detail

Pharos Mediator is a scalable broadcast media management system which can be configured to co-ordinate single or multiple workflows in any broadcast environment. Ingested content can be catalogued, researched, loaned and shared between users, providing collaborative working. Files can be outgested to any selected format, such as complete programmes, music compilations for post-production or DVDs for local distribution. Multiple client libraries can be configured to provide security and privacy for clients without the expense and complexity of separate hardware for every client.

Incoming programs and interstitials are ingested at full 50 Mbit/s I-frame MPEG2 via Omneon ingest servers to an Isilon central online storage system. A browse copy is made simultaneously. Content is held on the Isilon storage system before being automatically transcoded to 15 Mbit/s Long GOP MPEG2 for playout via the existing Pinnacle TX server system. Using Mediator, Channel 4 is able to perform the entire broadcast operation from its online digital library store. MXF 50i was chosen as the file format on the basis that it maintains optimal quality and is a relatively easy standard to export and to decode.

The Media Access Project uses multi-tiered storage under the control of Mediator Transfer Manager. Incoming programs and clips are digitized to Omneon ingest servers. The high resolution files are then moved onto a 42 TB (terabyte) Isilon iQ central storage server which also stores all the browse proxies. The Isilon iQ comprises 8 nodes for immediate access to the stored material.

Another storage tier controlled by Mediator Transfer Manager is a very high capacity near-line archive consisting of four 64 bit servers running XenData software and a Sony PetaSite LTO tape library. This is currently the largest LTO-3 PetaSite installation in Europe with three thousand 400 GB LTO-3 data tapes. It provides 1.2 PB (petabytes) of



storage, capable of archiving over 50,000 hours of high resolution content recorded at 50 Mbits/s. The Sony PetaSite is managed by the MX64 Edition of XenData software which runs on a master server and three datamover servers. This configuration provides high transfer rates for archiving to and restoring from the tape library. The XenData software makes all of the archived video files appear within a single standard Windows logical drive which means that Mediator can write to and read from the archive as though it were a standard shared disk-based logical drive.

Sony PetaSite library containing 3000 LTO data tapes

Channel 4's ingest area is equipped with quality control booths for content that needs careful eyeballing and fast-track desks for material that does not need to be viewed in real time. Both are controlled via Mediator. All ingested content is exported to the browse system through MPEG1 encoders at the same time as it is transferred for transmission. The browse system is used for off-air logs, for all compliance viewing and for checking of commercial break running order. A playlist function is already built in. A generic Application Program Interface is used to ensure flexible control.

The entire Media Access Project - ingest server, content store, archive manager, Petasite tape library and file transfer management - are managed by the Pharos Mediator media management system and database. Most of the system is located in the library operations area. It includes four dedicated dual VTR ingest and QC positions, Omneon online servers and the XenData / Petasite data tape archives plus all the control stations.



Mediator manages export of video, files and metadata to any chosen destination using an XML interface for metadata. Outgest 1 is DigiBeta, Outgest 2 is Digital Rapids Version X, and so on. Outgest to graphics is handled similarly, exporting clips directly into a Pixel Power Clarity for making promotional graphics.

Material destined for issue on DVD by the Channel 4 press office is transcoded from 50i and a logo superimposed. A Pharos database within Mediator makes a title slate which is added to the DVD chapters. Transcoders are used to generate 15 long-GOP files for transmission from Pinnacle servers. All broadcast schedules for a week or more go into the Mediator and that actually drives the transcode process.

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