FRONT PORCH DIGITAL

Case Study: Arqiva

About Arqiva

Arqiva operates at the forefront of network solutions and services in an increasingly digital world. The company provides much of the infrastructure behind television, radio and wireless communications in the U.K. and has a growing presence in Ireland, mainland Europe and the U.S.

Based in Chalfont, Buckinghamshire, the Satellite Media Solutions division provides DTH (direct-to-home) delivery in the United Kingdom and contribution services throughout Europe and the United States. Arqiva delivers fully managed playout services from an automated, state-of-the-art, high-capacity U.K. facility that effortlessly allows clients to expand the number of channels they broadcast.

Programs can be delivered for playout from a secure Internet link, from studios, on tapes, over fiber links, or via satellite links for delivery across multiple channels and platforms, providing global coverage and exceptional levels of security and reliability.

arqiva

"We chose to partner with Front Porch because they are one of the leading providers of archive management solutions worldwide. The technology behind deploying a digital video archive can be complex, but Front Porch's DIVArchive solution provided everything we needed to meet our requirements for functionality and scalability. With the Front Porch team's expertise and experience behind us, our archive implementation went smoothly, leaving us to concentrate on managing the operational side of our business."

– Mark Cronin, Business Development Director
at Arqiva Satellite Media Solutions

The Challenge

Arqiva currently plays out 50+ TV channels and has expanded its facility infrastructure to allow customers to store, repurpose, and reuse their media content more effectively.

The company had been relying on dedicated ingest systems that recorded content from tape to digital formats and then processed those assets into online playout services. It was an efficient system; however, implementation of a deep storage archive was necessary to enable Arqiva to offer other services, including new workflow systems it was developing. These workflow services would enable customers to edit content and use it in more regions across Europe, the U.S. and beyond. As a result of this development, the company needed the ability to store large amounts of content for longer periods of time.

The workflow service model required that Arqiva move beyond its reliance on disk-based media servers; the company needed flexible access to content on a datatape archive suited to significantly greater storage needs. To this end, Arqiva engineers and management sought a content storage management solution provided by a vendor with a deep knowledge of the broadcast world.

Following a rigorous tender process, Arqiva chose Front Porch Digital to provide its content storage management system. Arqiva's selection of DIVArchive was based upon the company's ability to manage the archive in the way it wanted and the DIVArchive's ability to interface with existing systems. Another important factor was that the future roadmap of the product and its capability to grow in line with Arqiva's needs matched the company's ambitions.

The Solution

The Front Porch Digital DIVArchive system has been integrated with Arqiva's Omneon Spectrum transmission servers and OmniBus Systems Colossus automation, as well as the new workflow system being introduced by the company. DIVArchive is attached to an IBM 3584 data-tape library currently holding over 10,000 hours of media.

With DIVArchive, Arqiva's system is enabled with central storage, allowing publishing to multiple platforms through media management tools, without the use of tapes. The system also features highly efficient automated ingest with expandable capacity, which is currently working at 200 + hours per day. With Cerify software, Arqiva's system features both automated and manual ingest quality control.

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The system is fully operational 24/7 with highly trained and experienced engineers working around the clock from the master control room. Automated systems continuously monitor every channel's output and content. Starting from a centrally held pool of digital assets, programming for each remote TV channel can be created and scheduled directly from the desktop.

Near-line storage currently exceeds 60-TB capacity via an IBM tape robot library equipped with LTO-2 tape drives. On a regular basis, the archive contents are selectively deleted and Front Porch Digital's DIVArchive repack function is used to reduce fragmentation and maximize tape usage efficiency. If tape capacity is reached, datatapes can be physically externalized while DIVArchive maintains a record of which content is stored on which locations when manual re-insertion is required.

DIVArchive consists of two major software components:

- DIVArchive Manager maintains the DIVArchive database, manages all requests issued by the applications and controls the storage resources.
- DIVArchive Actors move the content data from the video servers to the storage resources or from the storage resources to the video servers.

In a DIVArchive system, there are as many Actors as determined by the amount of data to transfer per day and by the level of redundancy required, while only one Manager is running at a time. If a DIVArchive Manager or Actor fails, the second server takes over, providing a good level of redundancy.

In the Arqiva implementation, a Sagitta disc array is used as a cache to manage different read/write speeds during the archive object movements. Archive and restore requests can be initiated manually via the DIVArchive GUI, independently of direct requests from the OmniBus asset management application.

Front Porch Digital was responsible for installation, commissioning and training of Arqiva personnel, and support capability includes full 24/7 hotline access.

DIVArchive architecture is based on a combination of software and hardware components, which are integrated and tested to provide a turnkey solution. These components allow Arqiva to build a variety of configurations from a small archive solution to a large distributed storage repository.

The system is uniquely flexible in this regard. DIVArchive solutions can combine on-line disk, near-line automated tape libraries, DVD jukeboxes and off-line storage, and enable applications to transparently store, archive, and retrieve objects or files from this archive. The product encompasses hierarchical storage management (HSM) and disk-extender functions and is "video aware."

As a result, DIVArchive simplifies the process of preserving, managing and accessing content with infinite capacity and performance. Architectures are modular and can scale from small disk-only systems to large-capacity systems using different forms of physical storage to balance response time, performance and cost.

Advantages and Benefits of the Solution

The key to this system is fast access to media without the need to re-digitize or perform the same operations and processes repeatedly. DIVArchive makes media available quickly, and its partial restore functionality allows operators at Arqiva to use timecode information to restore select segments of media to clients — just the material needed —rather than the whole piece.

For example, the company can provide content for the highlights of a football match rather than send off the entire match. It's more efficient in terms of both bandwidth and time, and it saves the client time and work as well.

DIVArchive is particularly adapted to a SAN architecture and is considered to be a true SAN product in the sense that it takes advantage of the SAN benefits:

- Resources sharing – The tape drives are not physically allocated to a particular DIVArchive Actor, which allows a better load balancing of the traffic.
- Extensibility – Adding new tape drives or additional DIVArchive Actors for larger traffic volumes is very easy and does not disturb operation of the system.
- Redundancy – The failure of a tape drive or a DIVArchive Actor does not impact the complete system, thanks to the flexible DIVArchive resources allocation.

Another critical benefit of DIVArchive is in its treatment of media as an object, to which operators can append extra essence such as audio tracks. Thus, assets can be grown over time without the need for re-digitizing.

Future Evolution

The new installation allows Arqiva to offer new workflows it has developed by providing flexible access to content on a datatape archive. With this ability to access material within deep storage, Arqiva makes it easy for their customers to launch new channels or reach new platforms with their existing content.

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