

BT TV

Digital Preservation Platform for Video on Demand

CASE STUDY



Non-proprietary
content
management



Seamless integration
with existing and
future workflows



Secure from
accidental or
malicious deletion



Future-proof scalability,
searchability, and
disaster recovery



Maintain
uptime without
management effort

Overview

In 2017, BT added Pixitmedia's Vision browser to its infrastructure, allowing it to search for, browse, and playback clips from the entire catalogue should the incumbent MAM not be available. The proxy generation to browse and playback clips from within the Vision interface is provided by Glookast.

BT TV experienced an uptime of 99.99% even including scheduled upgrades and outages.

The Challenge

The British Telecom 'BT TV' platform provides video on demand (VoD) to its broadband customers across the UK. Content that is ingested from many varied delivery networks is required to be protected and available to be transcoded into any number of formats for future delivery to end customers.

Originally the VoD content was only protected in a large LTO tape robot making access to the material slow and cumbersome. BT required a solution that could provide instant access to the content it needs to protect and re-purpose whilst requiring little or no administrative management.

After ruling out the continued use of an LTO product on the basis of speed and management overhead, the MatrixStore private cloud platform from Object Matrix was selected as the best solution.

Amongst the other requirements to be fulfilled were:

- Must integrate with existing technologies and future workflows
- Must provide economic and operational benefit to the business
- Must be secure from accidental or malicious deletion
- Must be scalable with no down time or management effort
- Must be future-proof from hardware obsolescence
- Must be non-proprietary in hardware and file formats

The Solution and Workflow

Pixitmedia's Object Matrix solution acts as a highly-secure private cloud platform providing on-premises content protection and business continuity capability at a second location. Object Matrix complements the high-performance storage and provides guaranteed access to clips as and when required. All access to those clips is audited, with details of those audits available to be downloaded and processed using applications from Pixitmedia or built in-house.

"Object Matrix has allowed BT to deliver a number of high- profile projects with some very challenging timescales and will continue to support the delivery phases of any new or associated projects. The simplicity and efficiency allows high volume master restoring to enable new or extended file formatting ensuring related deadlines are achieved.

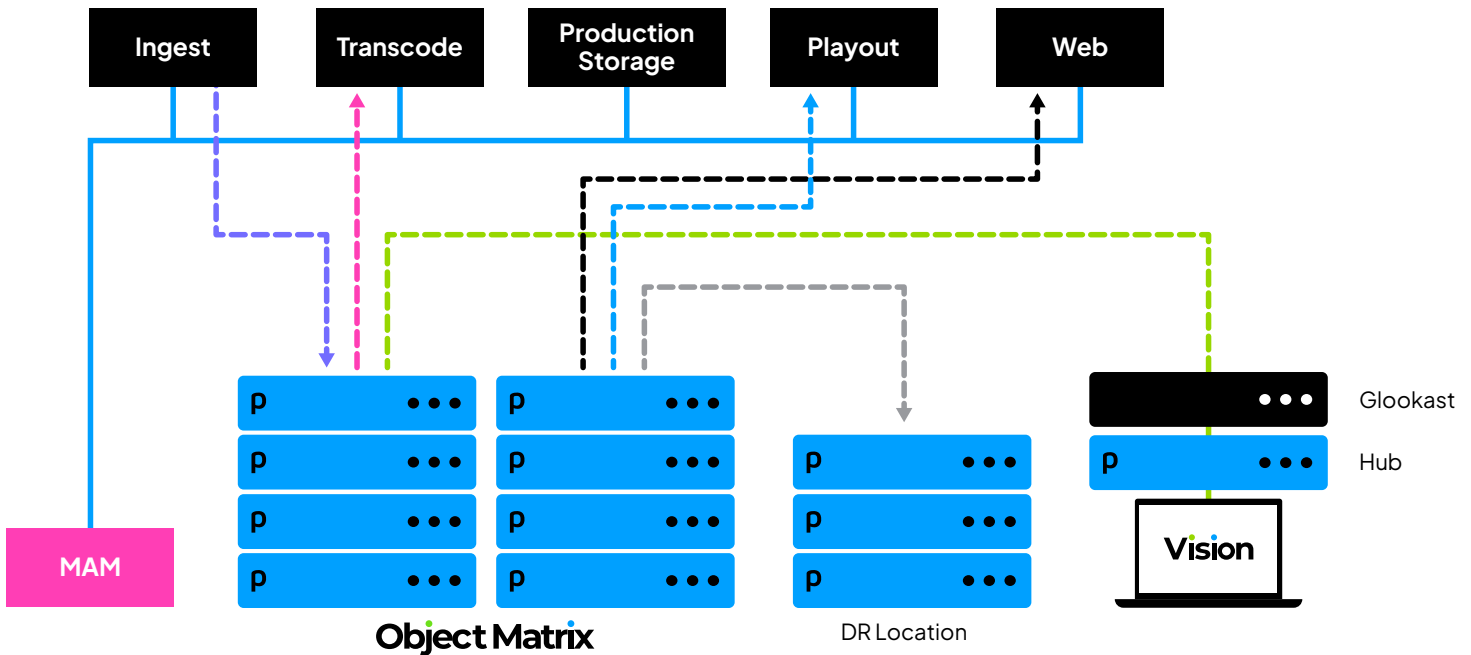
In addition, the media volumes required to support BT TV's Video On Demand offering has increased significantly in the last 2-3 years and we would have been unable to support the numbers if expansion to the estate had not been so easy to manage. The addition of the "Vision" tool has been a great choice and allowed greater operational control and file management."



Peter Baker
Head of Operations, Content Media Operations, BT TV.

The existing MAM solution manages the ingest of high-resolution content into Object Matrix for long-term protection. That content is then transcoded and also protected in a Object Matrix vault for future delivery via playout servers or a multitude of other platforms.

BT TV VoD Topology



The Solution

BT now has over 1.8 petabytes of Object Matrix storage that has grown seamlessly over the last 8 years with little or no management effort. There are currently 19 Object Matrix nodes in the primary cluster and 3 Object Matrix nodes in the disaster recovery location. Object Matrix vault technology ensures BT TV has complete control over the data protection policies based on the importance of the data.

In 2008, BT TV installed an initial Object Matrix cluster consisting of eight 48TB nodes which, over time, grew to over 50 nodes. When the original nodes become over 6 years old they are decommissioned and replaced by fewer, denser nodes. That decommissioning process involved no down time whilst the data on the older nodes migrates automatically to the newer hardware. This seamless experience of migrating to new generations of hardware was the complete opposite of the experience of migrating to newer formats in the old LTO archive.

Out of the box, Object Matrix provides:

- Guaranteed data authenticity and sovereignty coupled with ongoing automated data verification and repair
- Standard file protocols for transformation workflows and an open API for integration with existing and future file based workflows
- A scalable solution that requires little or no management enabling the addition of future storage technologies as and when they become available
- Compatible in any NLE workflow allowing content to be browsed directly from the private cloud platform
- Migration in place:
Content moves automatically to newer storage technology as and when legacy hardware is decommissioned
- Highly secure vaults instantly and constantly protecting content based on defined policies

A History of Future Proof Upgrades

Facts from the 8 years of operation:

- Original private cloud platform: 8 nodes
- Highest number of nodes: 50 (primary cluster)
- Generations of hardware: 10 (at one point 8 generations existed in the same cluster)
- Applications used: Object Matrix API, Vision, MXFS, DropSpot
- Nodes decommissioned: 37 (Replaced with 10 nodes providing more capacity, taking less space and power)
- Object Matrix is operational 8,760 hours in the year
 - Hours spent managing the solution: 15 hours per year

The system support team, when required, has provided a full and comprehensive service ensuring operational downtime is minimal. Our growing estate allows the flexibility and reliability BT TV requires to ensure the media is readily available, easy to manage, and consistently reliable."



Peter Baker
Head of Operations, Content Media Operations, BT TV.

Effortless and Proven Digital Preservation

Object Matrix sells into heavily regulated industries such as banks (Deutsche Bank, Nomura Bank, UBS, etc) and utility companies (EDF) where there is an increasing focus on complying with internal and external compliance requirements around data protection authenticity and access.

In these industries governance, authenticity, and audit trails are required throughout the lifetime of the content from capture to archive. These exact requirements are increasingly being sought in media organizations with file-based workflows and are some of the features within Object Matrix that helped BT to make their decision.

Preservation Requirement MatrixStore Solution	
Policy-based detention of data	Policy ensures data cannot be deleted before a retention period dictates.
Audit logs and log files	Configurable audit log can track all operations (administrative & data).
WORM	Data stored as fixed content cannot be modified.
Authenticity	Digest calculated when the data is stored acts as a guarantee that the data is exactly the same bitwise when it is read back as when it was originally stored. Periodic validation of the content also ensures this remains the case.
Security and privacy	Full network security is employed to stop replay, sniffing, data modification and other tracks. User access rights can be set only giving access to authorised personnel.

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Accessibility	Time to first byte is sub-second, even under heavy load.
Searchability	Built-in database can support many searches per second across hundreds of millions of database entries. Data entered into the store can be entered with hundreds of keywords to enable web-style search of unstructured data.
Disaster Recovery	Covered on two levels: by replication to a separate cluster and/or by generation of tapes. Data is stored on a single cluster such that 5 disks simultaneously would need to irrevocably fail before data is at risk.
Different regulations need to be handled	Since each object stored can be given its own policy, the same MatrixStore can be used to handle many differing regulations.
Ever-growing storage capacity is required	Extra storage capacity can be added easily via plug and play. It is possible to add best-of-breed storage technology to the existing storage pool as and when it becomes available providing future-proof ability to scale.
Future-proof	Any qualified storage can be added to an existing cluster. When older hardware is decommissioned the content automatically migrates, in place, to the newer platforms.



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Pixitmedia by DataCore, is a leading provider of intelligent content and metadata management solutions for the media and entertainment industry. We go beyond storage to deliver a smarter ecosystem for media workflows, with end-to-end solutions that combine high-performance file, nearline, and archive platforms with metadata enrichment, indexing, and search. Enabled by data orchestration tools, our multi-tier technology simplifies content management and migration to ensure media assets are always where our customers need them.

Pixitmedia's innovative solutions integrate seamlessly into existing M&E workflows, optimizing efficiency and collaboration at every level – from ingest to archive to delivery. With Pixitmedia, content is always searchable, secure, and available whenever it's required.

For further insights, visit:

hello@pixitmedia.com | pixitmedia.com

