



# Axis and the British Library

> **Making  
Knowledge  
Accessible  
to Everyone**

**Library Reduces Costs  
by Using  
State-of-the-Art  
CD-ROM  
Networking Technology**

) The British Library recently completed a move to its new £520m headquarters in London's St Pancras. The new building gave the British Library the opportunity to install a central database of CD/DVD-ROM titles that were previously held at three sites across London.

In a normal year, the library receives more than 500,000 visitors. Because of the move to its new home, public interest was at an all-time high. It was important that a new system used by the public to access digital reference material should be up and running promptly, and be reliable enough to remain available at all times.

The system also needed to be physically small as space is at a premium in the new headquarters.

The library holds a comprehensive archive of books, newspapers and a host of other materials such as printed manuscripts and recorded music from home and overseas. Each year, it adds more than 500,000 items. Given the expected explosive growth of new media and titles in digital format, the library needed the new storage and reference system to be extremely scalable.

#### **Special Needs, Tailored Solution**

As with any organisation, especially one in the public sector, cost was a major issue – not just the cost of purchasing the solution in the first instance but also the cost of maintaining and operating it over time.

Following competitive tender, the British Library contract was awarded to Mosaic Systems Ltd, which based its solution on the new Axis CD/DVD-ROM server, the AXIS StorPoint CD E100.

With its years of expertise in the CD storage sector and its close relationship with Axis, Mosaic knew that with the StorPoint CD E100 it could meet all of the British Library's special requirements. The Mosaic solution, called DataCache, uses ten industry-standard 19" racks, each containing an AXIS StorPoint CD E100, six CD-ROM drives, one DVD drive and a 36 Gigabyte hard disk drive. This multiple-server approach eliminates the single point of failure of traditional CD-ROM file servers; thus reducing the risk of a total loss of service to the public should any individual component fail. The system is also scalable, enabling DataCache units to be easily added as capacity needs grow.

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David Baker, Mosaic's Managing Director, said: "Before we installed the Axis-based solution, the British Library had a number of legacy systems that it had assembled over a number of years. It had ten to twelve servers with 43 seven-bay CD-ROM towers, spread across three sites. The towers were from different manufacturers, with different speeds and specifications, so there were performance, administration and reliability issues. The library was also using CD-Jukeboxes, which were slow and unreliable due to the internal mechanics."

In terms of 'total cost of ownership' the new Axis-based system won out because it is an extremely efficient solution overall. The system includes multiple redundancy built into each unit, a hot-swap modular construction and a complete spare unit inside the enclosure. First-line maintenance is performed by the British Library IT staff, thereby eliminating the high cost of on-site maintenance.

Mark Davies, the British Library's Digital Media Development Manager, said: "The new system has proved itself to be near perfect. We had a series of special requirements and the DataCache solution incorporating the AXIS StorPoint CD E100 has allowed us to tick all the boxes in our list of needs. Moreover, it does not stop there, the solution is flexible enough to grow with our needs, not only in terms of the current uses of storage but also in terms of the special projects that are underway, such as the Digital Library initiative."

## Public Enjoying Improved Access to Reference Material

Davies continued: "On the subject of performance, there has been a marked improvement on access to the CD-ROM titles and no reported problems from staff or the public due to service failure. Users in the reading rooms of the British Library are reported to be impressed with the speed of the new system, which is due to the hard disk caching option that allows numerous CDs or DVDs to be copied to its internal hard disk cache. The caching significantly improved data access speed and increases the number of CD/DVDs available to network users."

The number of CD/DVDs is limited only by the size of the hard disk, which maximises the investment made by the British Library."

System administrators have several options to optimise performance for their applications. The AXIS StorPoint CD E100 allows users to have new CD/DVDs automatically, mirrored (complete caching of CDs), partially cached (directory and file caching), or archived (available only from hard disk). Through hard disk caching the user does not have to wait for data from the CD itself. Data from any cached CD or DVD is available almost instantly, dramatically improving data access and transfer speeds. With this system, multiple CDs/DVDs can be available simultaneously to all network users. Furthermore, there are no delays, downtime or unavailable data from discs in multi-disc changers; and valuable CDs and DVDs can be electronically locked into the system or physically removed and kept in a secure location.

## New System Provides Numerous Benefits

A distinct advantage of mirror caching is that it ensures the British Library is totally compliant with all CD/DVD software licensing, which could be potentially infringed by copying data to a hard disk and physically removing the media.

Moreover the DataCache proactively feeds British Library administrators with vital business information about CD/DVD usage, thereby maximising the use of resources it makes available to the public. This feature is especially useful at the British Library because some CDs or DVDs are in much more demand than others, and the status feedback that DataCache provides allows managers to order more user licences of these titles to ensure sufficient availability. All these preferences are managed via an intuitive Web interface.

The Axis-based solution was able to integrate seamlessly into the library's Novell Directory Services (NDS). This allowed the technical staff at the British Library to easily integrate the new system into their existing network security structure. Novell awarded the AXIS StorPoint CD E100 Novell 'Yes' approved status, which means the technology is fully compatible with NDS.



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