

AIT-WORM: New Solution for Fixed Content Data

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Over half the digital data generated worldwide in 2005 and beyond will be fixed content according to a number of leading analyst organisations. The term 'fixed content' refers to data such as digital images, e-mail messages, video content and medical images that don't change over time. Unlike transaction based data, fixed content is usually retained for long periods of time, often to comply with legal requirements.

This fast growing category of data needs new strategies to manage it, because conventional backup of RAID suffers from a number of disadvantages beyond the classic backup window issues. The greatest problem occurs when there is a legal requirement to preserve the data, because backup provides no guarantee that the files are original and authentic. Any changes or deletions simply cycle automatically through to the backup copies. Another problem with backup of fixed content data is the ease with which uncontrolled copies of data can be generated. Often with fixed content data, there is a requirement to ensure that the number copies and location of the data are tightly controlled. This is particularly true in healthcare where patient data must not be retained on uncontrolled backup tapes.

EMC recognised the need for new storage solutions to manage fixed content and, in April 2002, launched Centera, a solution based on mirrored ATA drives specifically designed for this data type. Centera is a relatively expensive proprietary solution starting at about £100,000 for 4 TB, but it has been well received by the market. EMC is now delivering an impressive number of Centera systems, totalling over 2 Petabytes (2000 TB) in just the first quarter of 2003. This reinforces the analysts' projections that fixed content is growing very fast.

Earlier in 2003, Sony started shipping its AIT-WORM tape cartridges, a brand new option for storing fixed content data. AIT-WORM is an acronym for Advanced Intelligent Tape - Write Once Read Many and any data written to the tape cartridges are unalterable and non-erasable. They work in multifunction AIT tape drives and libraries that will read and write both standard rewritable and WORM AIT tape cartridges. With a native data capacity of 100 GB per cartridge and a data life of 30 years, AIT-WORM has opened up new possibilities for storing fixed content data.

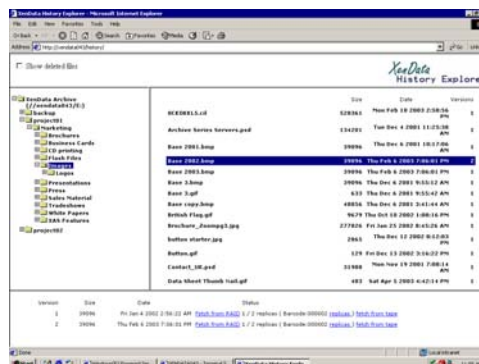
The issue with tape has always been data access time. The Sony AIT tape format has one of the shortest access times, but it still averages 27 seconds which is just not good enough for most fixed content applications. However, when coupled with RAID and policy based hierarchical storage management (HSM) software, tape creates a compelling storage solution for fixed content applications. For example a total storage solution consisting of a NAS file server with 4 TB of RAID and an AIT tape library with a capacity of 7 TB will cost about £50,000.

The AIT-WORM tape format has been embraced by a number of the major tape library vendors including Plasmon, Qualstar and Spectra Logic. Available tape libraries range in capacity from 1 TB to 60 TB and a single library can be used for both archiving of fixed content data to AIT-WORM tape cartridges and backup of other data to rewritable tapes.



Qualstar Multifunction tape libraries deliver up to 7 TB in a 5U 19 inch rack form factor.

XenData is providing software specifically designed for managing fixed content data on RAID and tape in a Windows Server environment. With non-erasable AIT-WORM, the XenData software virtualizes the RAID and tape library and presents these devices over the network as a standard rewritable logical drive letter. This means that when a file is changed or deleted, the old version or deleted file is hidden from normal view, which allows the storage system to work with standard applications. However, all deleted files and old versions can be retrieved via a XenData utility that provides a full audit trail.



XenData History Explorer is a browser based utility that allows authorised users to access all versions of a file and all deleted files.

The XenData software, branded as Archive Series, provides HSM functionality when required. The administrator can define policies that initially write data to both RAID and AIT tape cartridges. When a file reaches the point in its lifecycle where there is little chance of it being accessed, it can be automatically flushed from RAID. After flushing, files are available over the network, albeit with longer access times.

However, for many applications using RAID and AIT-WORM, the XenData HSM functionality is not used and files are kept on both RAID and tape for the lifetime of the data. In this case, data retrieval is always very fast and the purpose of the AIT-WORM is for disaster recovery, replacing conventional backup, and to provide a file audit trail for legal compliance.

As the amount of fixed content data grows within an organisation, users should consider their data assets as falling into two categories: fixed content and more transient data. Organisations should then implement data management strategies appropriate to the respective data categories. The newest option for fixed content data is AIT-WORM tape libraries coupled with RAID and policy based management software, which provides a cost effective, yet high performance solution. This approach provides a full file audit trail showing any deletions or changes of the data. It delivers a controlled number of data copies. And, because writing to tape and RAID occur simultaneously, there is no backup window to worry about.

Storwave uses RAID / AIT Tape for New Image Hosting Service

Storwave is a leading UK provider of document management solutions that include bureau scanning services, image storage and retrieval products, and comprehensive managed services for document management. Storwave has now adopted the RAID/tape approach and is using it with its latest Internet-based document image hosting service, Alchemy Fileline.

Business Development Manager at Storwave, Keith Ireland, commented, "The use of AIT tape libraries, RAID and XenData HSM software provides the reliable solution our customers require, with the additional benefits of WORM. This is responding to customers' increasing emphasis on the legal admissibility of image data."



Storwave's Hosting Facilities are located
in Bristol and Aldershot, UK

Useful links

www.aittape.com for more about Sony's AIT tape format

www.emc.com for EMC

www.plasmon.com for Plasmon

www.qualstar.com for Qualstar

www.spectrallogic.com for Spectra Logic

www.storwave.co.uk for Storwave

www.xendata.com for XenData