

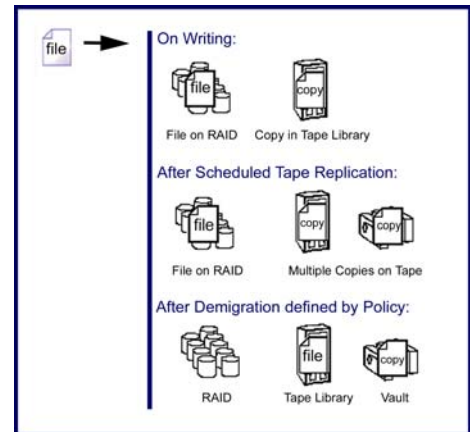
## Meeting SEC 17a-4 Regulations Using WORM Tape and XenData Archive Series Software

### About XenData Archive Series Software

XenData Archive Series software manages RAID and a WORM-enabled tape library on a Windows server. It presents these storage devices as a shared logical drive letter allowing use with standard applications without the need for any special interface.

The administrator defines policies that determine where the data is stored. The software supports both rewritable and unalterable WORM tape cartridges. When using WORM tape, the storage solution meets the compliance requirements of the SEC 17a-4 mandate, as described in this paper. The administrator-defined policies include file retention times on RAID and scheduling of tape cartridge replica updates for off-site retention. This functionality allows the physical storage location of the data to be matched to the information's business value, making for a cost effective overall solution.

This solution replaces backup, as the software automatically generates WORM tape cartridge replicas for off-site retention and the complete system can be rapidly restored from tape.



### Background to SEC Requirements

The Securities and Exchange Commission mandates that broker-dealers preserve a wide range of records which may be stored in electronic form. The SEC defines strict requirements for storage of these electronic records as detailed in its Rule 17a-4 (reference 1).

Rule 17a-4 applies to many types of records including financial accounting documents, all communications received and all communications sent. This means that appropriate email management is very important in achieving compliance.

A key aspect of Rule 17a-4 is that the digital storage media or system must preserve the records exclusively in a non-rewritable, non-erasable format.

The SEC makes it clear in its interpretation of May 2003 (reference 2) that systems which use software techniques to protect electronic records, such as authentication and approval policies, passwords or other extrinsic security controls do not maintain the records in a manner that is non-rewritable and non-erasable. Also systems that simply create a "finger print" of a record based on its content do not meet the requirement because the ability to overwrite or erase the records stored on these systems makes them non-compliant.

Originally, Write-Once-Read-Many (WORM) optical disks provided the only available technology to meet the non-rewritable, non-erasable requirement of Rule 17a-4. More recently, two new options have become available: WORM tape and the use of hard disk systems with "integrated hardware and software control codes".

By combining WORM tape with RAID, a broker-dealer can achieve all of the following:

- compliance with Rule 17a-4,
- fast data access from RAID and
- an affordable solution with low total cost of ownership.

**Rule 17a-4 Storage Requirements**

The Rule 17a-4 states that the electronic media or system must:

- a. preserve the records exclusively in a non-rewritable, non-erasable format;
- b. verify automatically the quality and accuracy of the storage media recording process;
- c. serialize the original and, if applicable, duplicate units of storage media, and time-date for the required period of retention the information placed on such electronic storage media; and
- d. have the capacity to readily download indexes and records preserved on the electronic storage media to any medium acceptable under this requirement of the SEC or the self-regulatory organizations of which the member, broker, or dealer is a member.

**AIT Formats: Examples of How WORM Tape Meets Compliance**

Sony AIT tape cartridges are available in WORM formats which provide non-rewritable and non-erasable data storage. AIT-3 WORM cartridges provide 100 GB of native (uncompressed) capacity. The prior generation AIT-2 WORM format has half the capacity at 50 GB per cartridge.



Cohasset Associates, Inc. reviewed AIT-2 and AIT-3 WORM for compliance with Rule 17a-4 and the results are presented in reference 3. In Cohasset’s opinion, “the AIT 2/3 WORM Tape Cartridges comply with both the letter and spirit of SEC Regulation 17a-4”.

The Cohasset results for AIT-WORM are summarized in the table below and the requirements supported by XenData software are identified.

<b>Rule 17a-4 Requirement</b>	<b>Met by AIT-WORM</b>	<b>Supported by XenData S/W</b>
Preserve the records exclusively in a non-rewritable, non-erasable format	Yes	Yes
Verify automatically the quality and accuracy of the storage media recording process	Yes	Yes
Serialize the original and time-date for the required period of retention the information placed on such electronic storage media	Yes	Yes
Duplicate units of storage media	N/A	Yes
Provide the capability to readily download indexes and records preserved on the electronic storage media	Yes	Yes

**Notification to the Designated Examining Authority**

Before introducing a storage system other than an optical disk based system, the broker-dealer must notify its Designated Examining Authority by letter. The letter states simply that the firm will be moving to a system other than optical disk and gives 90 days notice to the Designated Examining Authority.

**XenData Archive Series Software Features for Rule 17a-4 Compliance**

The Advanced Edition of XenData Archive Series Software supports both rewritable and WORM tape formats. WORM tape cartridges are used to achieve compliance with Rule 17a-4.

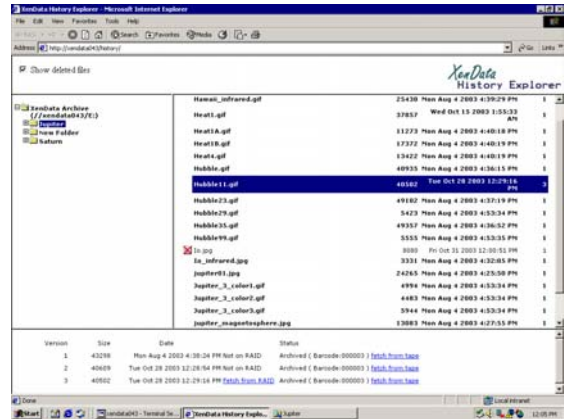
The software manages a WORM enabled tape library and magnetic disk storage which is usually in a RAID configuration. The software writes data to both RAID and tape simultaneously. Data is archived to

WORM tape as soon as a file is closed. Consequently, there is no period when the data could be altered before being written to WORM media.

The software automatically generates WORM tape replicas according to administrator policies which define the number of tape replicas that will be produced.

With data written to both RAID and WORM tape cartridges, the normal operational reading of data will be from RAID. This delivers high performance for day to day operation. In addition, the software includes a utility, called XenData History Explorer, which allows direct retrieval of data from WORM tape even though the data may also be on RAID.

The XenData History Explorer utility is illustrated on the right. It allows any file to be retrieved directly from WORM tape. Furthermore, it provides a full audit trail of the file system, allowing authorized users to review all versions of a file and all files that have been 'deleted' via the normal network interface. Of course, all files are retained because they have been written to non-rewritable and non-erasable WORM tape.



**System Configuration for Data Destruction**

XenData Archive Series Software allows the mapping of subdirectories to specified groups of WORM tape cartridges with administrator defined destruction dates. With appropriate mapping, this approach ensures that a firm meets the record retention periods defined by Rule 17a-4.

**Conclusion**

By combining WORM tape cartridges and RAID, a broker-dealer can achieve compliance with Rule 17a-4 and obtain fast data access for day to day operations. This solution provides much higher performance, improved ease of use and lower cost than WORM optical disk systems. Relative to proprietary hard disk based compliance approaches, WORM tape - RAID solutions offer a very attractive alternative at a fraction of the cost.

**References**

1. SEC 17 CFR Part 240, Release No. 34-38245, "Reporting Requirements for Broker Dealers Under the Security Exchange Act of 1934", January 31, 1997. This is available at [www.sec.gov/rules/final/34-38245.txt](http://www.sec.gov/rules/final/34-38245.txt).
2. "SEC Interpretation: Electronic Storage of Broker Dealer Records", Release No. 34-47806, US Securities and Exchange Commission. Effective May 12, 2003. This is available at [www.sec.gov/rules/interp/34-47806.htm](http://www.sec.gov/rules/interp/34-47806.htm).
3. "Evaluation and Report of Sony Electronics Inc.'s AIT-2 and AIT-3 WORM Tape Cartridges' Compliance with SEC Regulation 17 CFR 240.17a-4", Randolph A. Kahn, Diane J. Silverberg, Cohasset Associates, Inc. Updated February 25, 2003. This report is available at [www.xendata.com](http://www.xendata.com).

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