SOLUTION BRIEF

LTO DATA TAPE FOR VIDEO SURVEILLANCE



A XENDATA TIERED STORAGE SYSTEM SAVES UP TO 80%

A XenData tiered storage system will greatly reduce costs. It is ideal for systems that require 1 PB or more. And the larger the volume of storage required, the greater the cost savings. The benefits include:

Lower Costs

- LTO cartridges provide much lower cost per TB than cloud or hard drives.
- LTO requires much lower energy costs than hard drives.
- Saves up to 80% compared to cloud and hard drive storage.

Easy Expansion

- Nearline LTO is easily scaled by adding expansion modules to the robotic library.
- Offline LTO will scale to 100+ PB – all managed by the XenData appliance.

Ransomware Protection

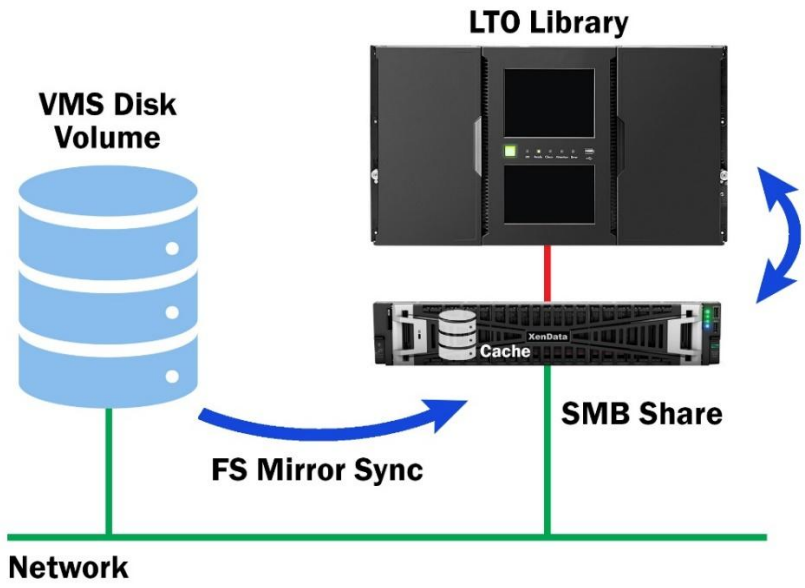
- XenData file version management provides strong ransomware protection.
- Offline LTO cartridges intrinsically have air-gap protection.

Three Storage Tiers:

- **First Tier – T1**: RAID for the most recent recordings. For existing surveillance systems, this can be the RAID storage already in place.
- **Second Tier – T2**: LTO data tape in a robotic LTO library provides automatic retrieval from nearline. The LTO library is managed by a XenData appliance, and the video files are accessed as a standard network share.
- **Third Tier – T3**: Offline LTO cartridges provide the lowest-cost storage. The XenData appliance presents the offline content in the same network share as the nearline LTO files and keeps track of the LTO cartridge barcodes on which every file is stored. It will issue email alerts that identify the barcodes when a file is requested. An operator then imports the required LTO cartridges into the LTO library where they become automatically available.

HOW IT WORKS

The XenData tiered storage system is connected to the same network as the VMS disk volume. The XenData system consists of an X-Series LTO Archive Appliance and a robotic LTO library with one or two LTO drives. The appliance presents the contents stored on LTO cartridges as a network share.



The X-Series Appliance runs a XenData synchronization utility, FS Mirror, which copies all the files created by the VMS on its disk volume to the XenData appliance. However, when the VMS deletes a file from its disk volume, it is not deleted from the XenData file system. Consequently, the XenData file system includes both the current files and all the files that were previously deleted from the standard VMS disk volume.

The X-Series Appliance includes a disk cache. The cache acts as a buffer, allowing files to be written to the XenData system even if an LTO drive is not available – perhaps because the LTO drives are being used to read files from LTO cartridges. The cache is not only used to buffer files as they are being written to the XenData system, but also used to retain files restored from LTO, keeping them online on the cache for analysis.

The X-Series Appliance manages all the operations of the LTO library from control of the robotic arm that moves LTO cartridges between storage slots and LTO drives, to LTO drive cleaning, to error reporting. It automatically writes the files written to the Appliance cache by FS Mirror to LTO cartridges and when a cartridge becomes full, it will automatically initialize a blank cartridge and start writing to it.

As the LTO library comes close to becoming full, the X-Series Appliance will issue email alerts. A human operator should then remove some of the oldest LTO cartridges and replace them with blank cartridges. The cartridges are easily exported using a management console within the XenData Appliance.

The XenData system can manage an unlimited number of exported LTO cartridges. All the files stored on these exported cartridges are effectively offline, but they still appear in the XenData file system. And if an attempt is made to restore an offline file, the X-Series Appliance issues an email alert that identifies to an operator the barcode of the cartridge that contains the file. The operator then imports the cartridge into the LTO library to make all its contents available nearline.

IN SUMMARY

By using LTO tapes, organizations can store massive amounts of video data in a cost-effective and scalable manner, while also ensuring data integrity and long-term retention.

In a multi-tier video surveillance storage system, LTO tape in a robotic library serves as the second tier (T2) where older or less frequently accessed video data is replicated from the primary T1 storage layer, typically RAID. And by exporting LTO cartridges from the library, but keeping track of the offline content, a very low-cost managed T3 is created.

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