X10 Media Appliance

## Creates and Manages an LTO Archive

X10 Appliance

External LTO drives

The X10 Appliance supports one or two connected external LTO drives and may be used stand-alone or connected to your network. It manages an unlimited number of offline LTO cartridges, providing a cost-effective way to manage a highly scalable media archive.

It combines a file system interface and a web interface that provides previews of video and image files. But it is not limited to media files; it archives all file types, and all file names supported by Windows.

Here is how it works:

➢ Archive your files to LTO by writing to an X10 network share or copying from a USB device attached directly to the Appliance.

➢ During the archive operation, the appliance creates previews of video and image files. These are stored on the X10's 4TB disk cache and are accessible via the X10's web interface.

➢ You can access archived files via your network or locally as a file system. Alternatively, use your browser to access the web interface. Then search for files, view the previews and identify which LTO cartridges contain the files.

➢ Load the applicable LTO cartridge(s) into the attached LTO drive(s). Then restore your files via the file system interface or via the web interface using your browser.
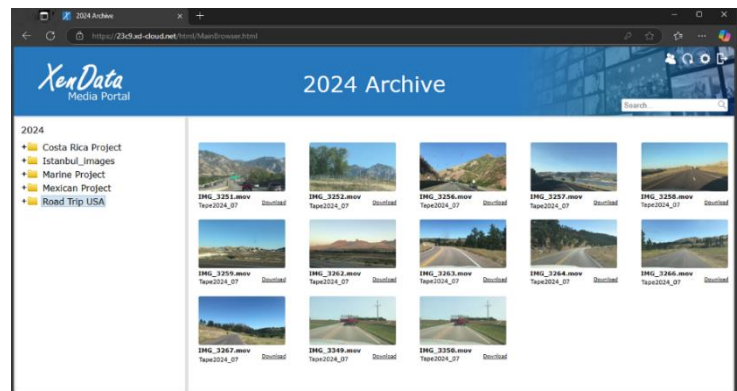
The web interface allows users to browse and search the entire archive, view previews of video and image files and then download selected files.

File System Interface

The X10 runs a Windows 11 Pro operating system and presents the LTO archive locally as a single logical drive named X: When the X10 is first installed, the X: drive is empty and then you create folders and write files, just like writing to a disk-based logical drive.
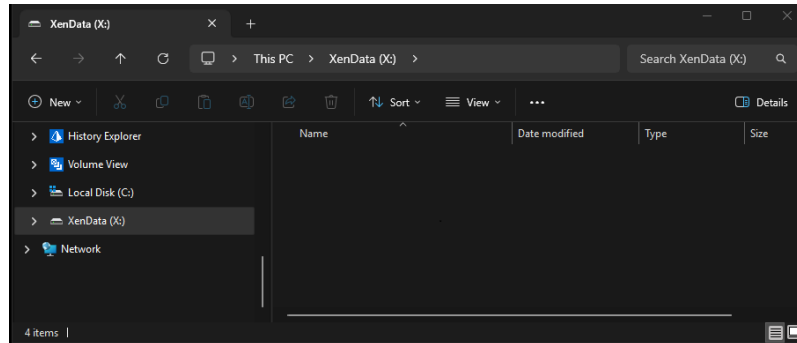

If you are connected to a network, you can create shares to make folders available across the LAN. The system adheres to the Microsoft security model based on Active Directory which means it is easy to add the X10 Appliance to an existing Domain or to a Workgroup.

Files and folders are easily restored from LTO. If a file is on a tape within the external LTO drive, simply read or copy the file, as though from a disk-based volume. There will be a delay before the file starts to transfer while the tape is wound to the beginning of the file. And, if you attempt to restore a file that is stored on an offline tape, your application will provide notifications saying that the file is not available and a XenData message will identify the name of the tape cartridge on which the file is stored.

Web Interface

The X10 Appliance has a web interface that allows users to browse the archive file system and to search for files based on the file name and path. The user interface shows video and image previews. For users given download rights, the selected files may be downloaded.
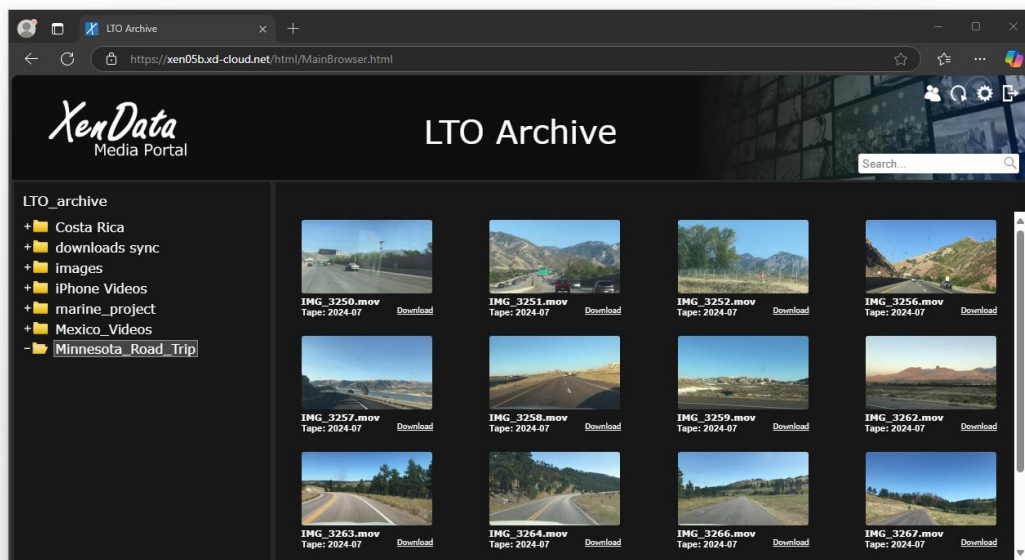
To play a preview of a selected file, the user moves the cursor over the preview image and the player controls appear, as illustrated opposite.

The web interface is compatible with the following browsers: Microsoft Edge, Chrome and Safari.

The X10 Appliance has an SSL certificate to support secure access to the web interface using HTTPS. The system may be configured to support access over the network and/or remotely.

DSC_0478.MOV
Barcode:06086AL
Download
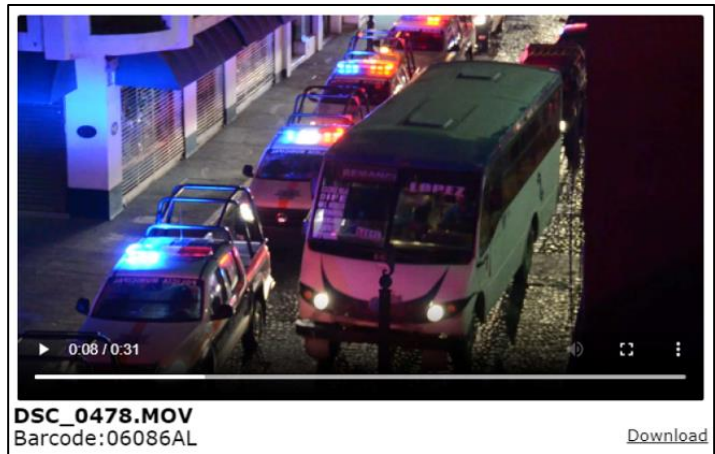
Cartridge Formats: LTFS and TAR

The X10 supports both LTFS (Linear Tape File System) and TAR (Tape ARchive) cartridge file system formats. These formats define how data is written to the tape. When configuring a new group of LTO cartridges, the user selects either TAR or LTFS as the cartridge file system format. In either case, the file restored from the system is identical to the original archived file. For example, if an MXF file is written to the archive, the same MXF will be restored.

The choice of cartridge file system format is important when transferring cartridges from one system to another. The LTFS format was developed by IBM and announced in 2010. Since then, it has been widely adopted, making it an exchange standard which allows cartridges to be moved between systems created by different vendors. LTFS tapes written on other systems, including non-XenData systems, are easily imported into the X10 archive file system.

The X10 is compatible with both standard rewritable LTO cartridges and unalterable WORM cartridges. The TAR format is used with WORM cartridges as LTFS is intended for rewritable tapes and does not support WORM.

LTO Drive Compatibility

The X10 is compatible with external LTO drives from many different manufacturers including drives from Dell, HPE, IBM, Quantum and Symply. For a full list of supported LTO drives, please refer to the XenData web site.

Spanning File Transfers Across Tapes

The X10 supports file transfers that span multiple LTO cartridges. It does this using the internal 4 TB cache disk: after an LTO cartridge becomes full, the disk cache is used to temporarily store new files written to the system and these are then written to the next tape after the full tape is swapped for a blank tape.

Syncing Network Volumes

The X10 Appliance includes FS Mirror, a XenData utility that provides file-folder synchronization and mirroring functionality. You can schedule tasks to sync any accessible file-folder structures to LTO. FS Mirror tasks are easily configured using the User Interface illustrated below.

By enabling logging for an FS Mirror task, a log report is created each time the task is run. This can list all files copied, all deleted files and any files that were skipped due to being open. An example log report is shown here.

Task Performance

Start Time/Date:	9:45:00 AM 11/26/2019
Stop Time/Date:	9:47:39 AM 11/26/2019
Volume of Data Copied:	691 KBytes
Average Transfer Rate:	43 KBytes/s

Task Summary

Total number of files processed on source	50454
Files successfully copied	5
Files skipped due to error	0
Other files skipped	50449
Number of files deleted on destination	1

Errors

None

Files Deleted on Destination

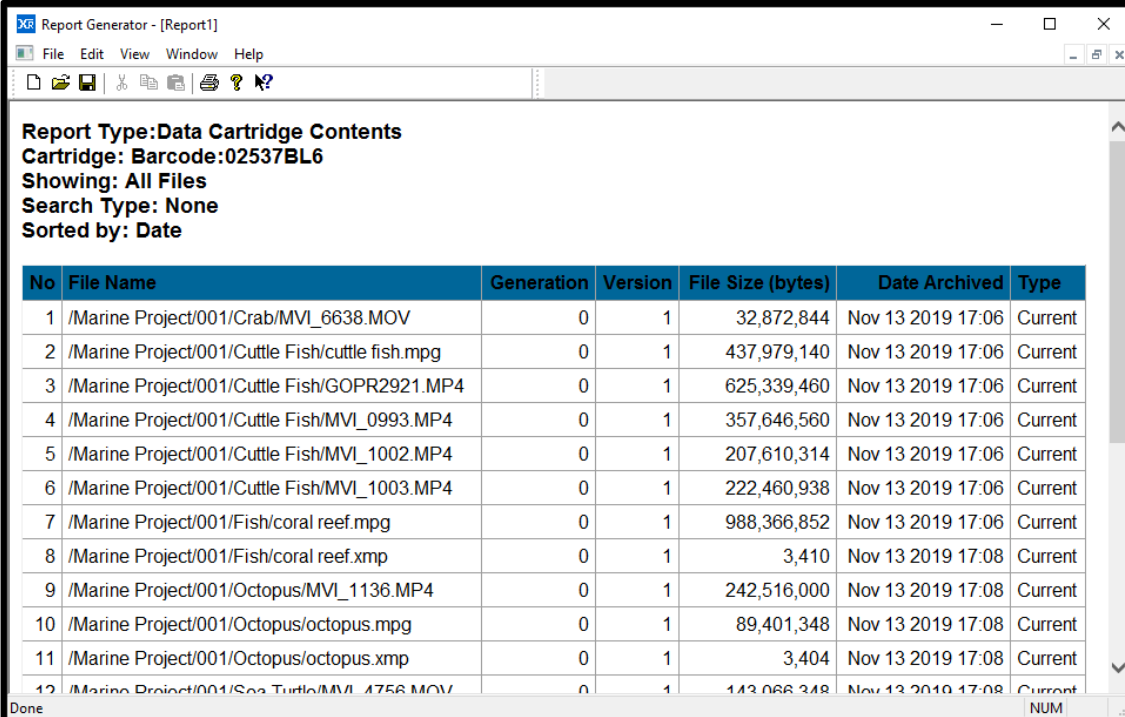X:\S-Drive\Companies\N-Z\Invoices\Inv US19xxx Oct14-19 - PO 2Checkout.pdf

Files and folders copied

\\xen-us-06.xd-us.local\All_Users\OneDrive - XenData\Shared with Everyone\Sales\Companies\N-Z Services\Invoices_POs\Inv US19555 - Jul15-19 - PO 2Checkout-PAID.pdf
\\xen-us-06.xd-us.local\All_Users\OneDrive - XenData\Shared with Everyone\Sales\Companies\N-Z Foundation\Invoices\Inv US19803 Nov04-19 - PO 2Checkout-PAID.pdf
\\xen-us-06.xd-us.local\All_Users\OneDrive - XenData\Shared with Everyone\Sales\Companies\N-Z Foundation\Invoices\Inv US19803 Nov04-19 - PO 2Checkout.pdf
\\xen-us-06.xd-us.local\All_Users\OneDrive - XenData\Shared with Everyone\Sales\Full_Access\LatinAmerica\Companies\Quotes\LEE191126-1.pdf
\\xen-us-06.xd-us.local\All_Users\OneDrive - XenData\Shared with Everyone\Sales\Full_Access\LatinAmerica\Companies\Quotes\LEE191126-2.pdf

Reports – Simplifying Archive Management

The X10 Appliance provides reports that simplify management of your LTO archive. The following report types are available:

- LTO Cartridge Contents – this lists files on a selected cartridge and includes deleted and overwritten files
- Unarchived Files – lists files on the 4 TB cache that are not written to LTO but should have been
- File Search – identifies LTO cartridges for files that meet specified search terms.

An example of a cartridge contents report is shown below. Results may be saved to a .txt file suitable for import into Excel.

Report Type:Data Cartridge Contents
Cartridge: Barcode:02537BL6
Showing: All Files
Search Type: None
Sorted by: Date

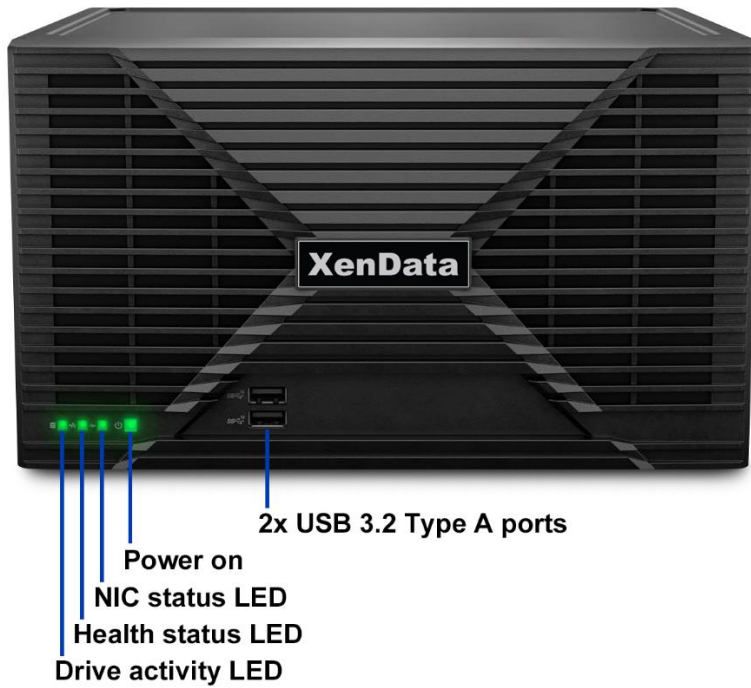| No	File Name	Generation	Version	File Size (bytes)	Date Archived	Type
1	/Marine Project/001/Crab/MVI_6638.MOV	0	1	32,872,844	Nov 13 2019 17:06	Current
2	/Marine Project/001/Cuttle Fish/cuttle fish.mpg	0	1	437,979,140	Nov 13 2019 17:06	Current
3	/Marine Project/001/Cuttle Fish/GOPR2921.MP4	0	1	625,339,460	Nov 13 2019 17:06	Current
4	/Marine Project/001/Cuttle Fish/MVI_0993.MP4	0	1	357,646,560	Nov 13 2019 17:06	Current
5	/Marine Project/001/Cuttle Fish/MVI_1002.MP4	0	1	207,610,314	Nov 13 2019 17:06	Current
6	/Marine Project/001/Cuttle Fish/MVI_1003.MP4	0	1	222,460,938	Nov 13 2019 17:06	Current
7	/Marine Project/001/Fish/coral reef.mpg	0	1	988,366,852	Nov 13 2019 17:06	Current
8	/Marine Project/001/Fish/coral reef.xmp	0	1	3,410	Nov 13 2019 17:08	Current
9	/Marine Project/001/Octopus/MVI_1136.MP4	0	1	242,516,000	Nov 13 2019 17:08	Current
10	/Marine Project/001/Octopus/octopus.mpg	0	1	89,401,348	Nov 13 2019 17:08	Current
11	/Marine Project/001/Octopus/octopus.xmp	0	1	3,404	Nov 13 2019 17:08	Current
12	/Marine Project/001/Sea Turtle/MVI_4756.MOV	0	1	143,066,348	Nov 13 2019 17:08	Current

End-to-End Logical Block Protection

End to end logical block protection is a technology that allows XenData software to cooperate with a tape drive to ensure data integrity. The software calculates a checksum for each block of data as it reads a file and sends the checksums to the tape drive alongside the data. The tape drive performs a read-after-write verification operation and calculates its own checksum from the data stored on the tape, then compares the two checksums to ensure that the data written to the tape matches the original data. The checksum is also used by the LTO drive to verify the integrity of every block of restored data.
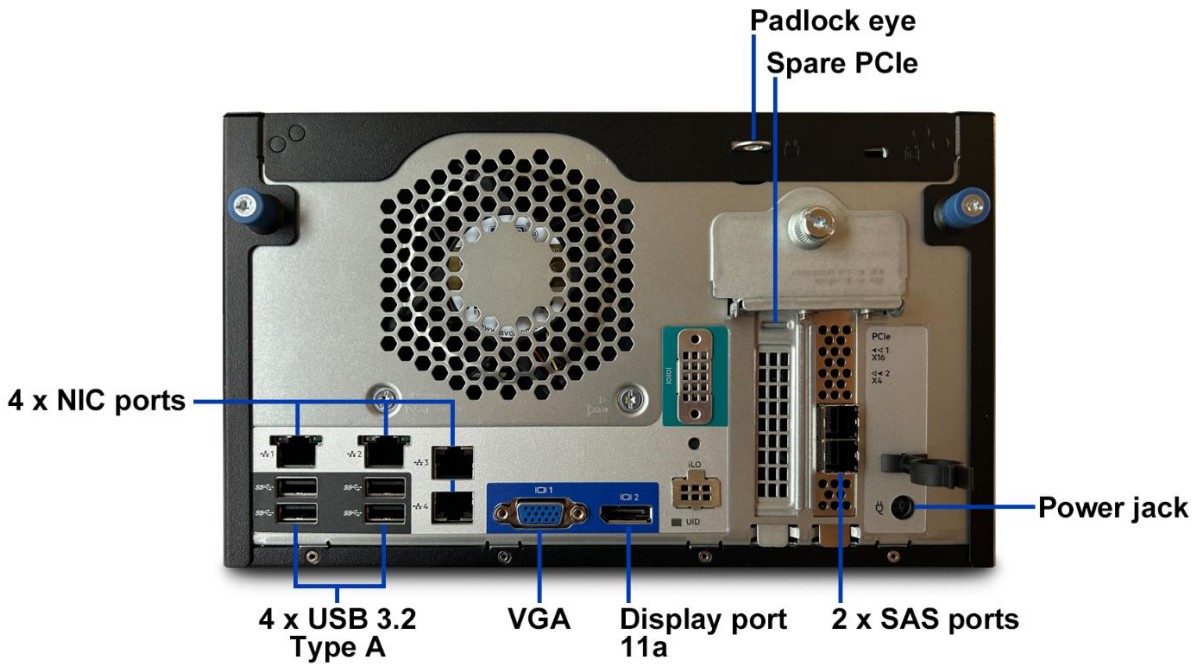
In summary, end-to-end logical block protection provides an effective method to ensure the integrity of all archived and restored files.

Connections

2x USB 3.2 Type A ports

Power on

NIC status LED

Health status LED

Drive activity LED

Padlock eye

Spare PCIe

4 x NIC ports

Power jack

4 x USB 3.2 Type A

VGA

Display port 11a

2 x SAS ports

X10 Specification

XenData SKU: 243010	
Management software:	XenData Archive Series, LTO Server Edition XenData FS Mirror XenData Media Portal, Standard Edition
Licensed number of external LTO drives:	1
Maximum number of external LTO drives	2 (requires a license upgrade)
Licensed number of external LTO cartridges:	Unlimited
Operating system:	Microsoft Windows 11, Professional Edition
Processor:	Pentium G7400 3.7 GHz 2-core processor
RAM:	16 GB
System disk:	480 GB SSD
Cache disk:	2 x 4TB - mirrored
Security	Embedded TPM (Trusted Platform Module) 2.0 support
SAS ports for connection to LTO drives	2 x SFF-8644 12 Gb/s
Network ethernet connection:	4 x RJ45 connector (1GbE)
USB connections:	2 x USB 3.2 gen 2 Type-A (front mounted) 4 x USB 3.2 gen 2 Type-A (rear mounted)
Display connection:	1 x Rear VGA port 1 x Rear DisplayPort 1.1a See Notes 1, 2
PCIe expansion slot	1 x PCIe Gen5 low-profile slot x16 See Note 3
Power:	180 W
Included power brick voltage range:	100 – 240 V
Dimensions (HxWxD):	6.06" x 10.28" x 9.82" (154 mm x 261 mm x 249 mm)
Operating Temperature	50 - 95°F (10°C - 35°C)
Weight:	14.5 lbs. (6.6 Kg)

Notes

1. When connecting two display devices to the VGA port and DisplayPort, the same image is shown on both displays.
2. Use active type HDMI or DVI adapters for the DisplayPort. Passive-type adapters are not supported.
3. The PCIe expansion slot is used when a 10 GbE upgrade is installed.

Upgrade Options

Upgrade Description	XenData SKU
Ethernet 10Gb 2-port BASE-T Adapter	143001
Ethernet 10Gb 2-port SFP+ Adapter - Optical transceivers (SKU 101081) not included.	143002
SFP+ 10 Gb/s LC Short Range Transceiver for insertion in SKU 143002	101081
Upgrade of the XenData X10 software license to add support for an additional LTO drive.	143003

Contact Us

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