
CACHE-A

**Prime-Cache / Pro-Cache
LTO Archive Appliance**

Getting Started Guide



Cache-A A-Series Archive Appliance Getting Started Guide CA-P4011.

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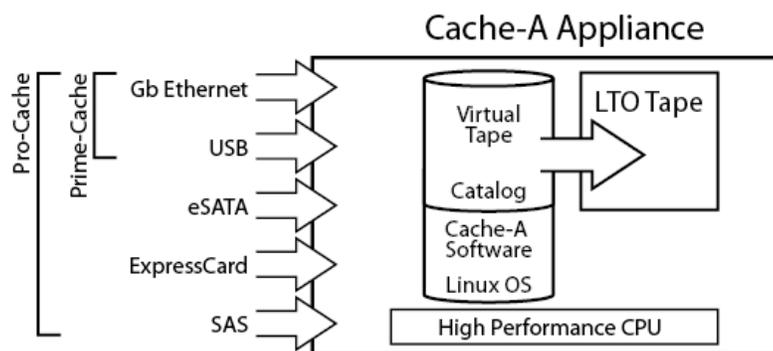
Chapter 1: Introduction

Cache-A archive appliances were created to provide an easy and flexible means for archiving, backing up and restoring data. Cache-A devices create archival tapes in a user choice of format; the universal cross-platform Unix/Linux evolved “tar” format, or the LTO specific “LTFS” format (Linear Tape File System). As the Cache-A product line was developed originally with tar, this manual describes operations with that format. Where LTFS operations differ, call-out notices in the left column identify those differences.

Cache-A archive appliances are designed to assist video and other media professionals meet their needs in storing and archiving large image content files. These archive appliances are able to store and share all forms of computer data including high definition and standard definition video files for video production and archiving.

System Architecture

Cache-A archive appliances are comprised of a hard disk drive (or array), an LTO Data Tape drive, a high performance compact computer server running an embedded Linux operating system, and a variety of external interfaces. These components are packaged with a file tracking catalog database and software to make a complete integrated system with everything needed for archiving in an easy-to-use appliance.



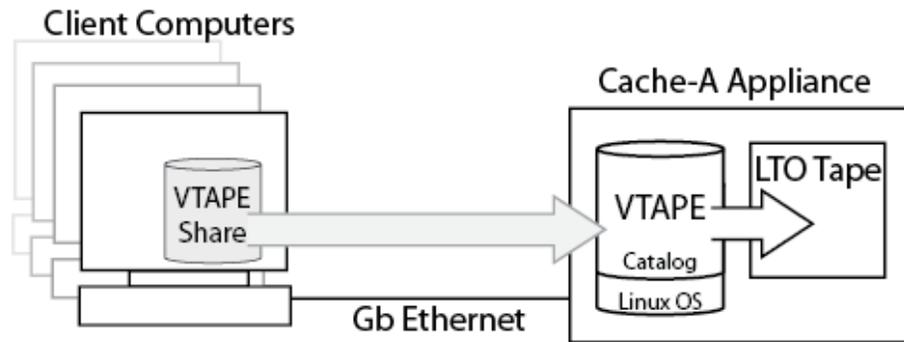
Archive Appliance constituent components

Cache-A archive appliances offer a variety of connection interfaces. Basic Network attachment is supported by a Gigabit Ethernet interface and provides the ability to mount the archive

appliance internal disk storage as a “share” on any other computer on the network (or multiple computers concurrently).

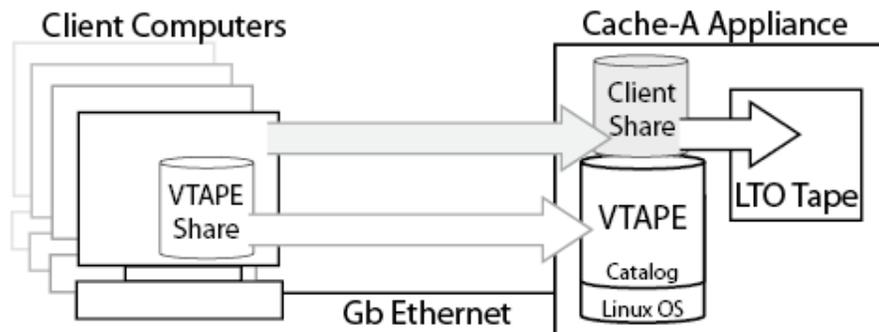
LTFS Info

Data can be easily archived simply by dropping files into a folder on the shared volume identified as the “VTAPE,” a virtual tape folder that represents the physical tape. From there, it is automatically archived to tape in the background without any need for further user actions. In the case of LTFS formatted volumes there is no VTAPE, but rather the LTFS volume with its full file system representation itself appears in the Cache-A share (see LTFS features called out in the following sections for more information).



Archive Appliance VTAPE Sharing

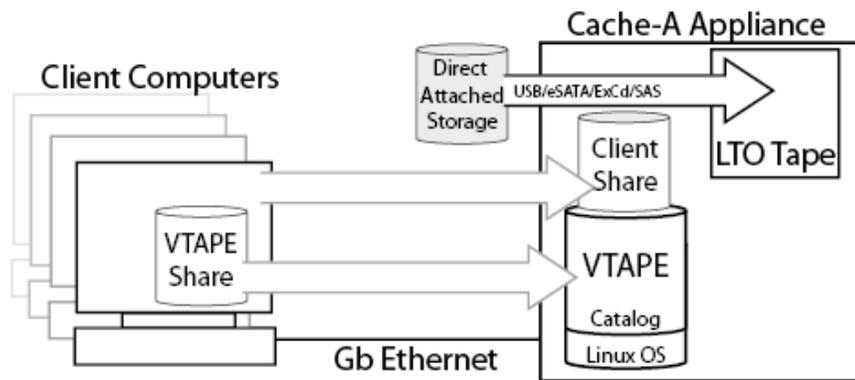
The Gigabit Ethernet interface also allows the Cache-A archive appliance to do the inverse, that is, mount any shared folder of any computer on the network using the “Mount Manager” facility (SMB or NFS shares only at this time). Contents of these shared folders can be archived manually using the web-page-based “File Manager” or automatically using the web-page-based “Backup Schedule” facility.



Archive Appliance Client Sharing

In addition, external storage volumes ranging from thumb drives or RAM cards to hard disks can be directly attached through the physical connections provided on each system.

Prime-Cache systems offer 6 USB ports for this purpose (2 on the front panel which are USB 3.0 on Prime-Cache5 models). Pro-Cache systems offer 6 USB ports plus one eSATA, one ExpressCard slot and one multilane connector with 3 lanes of SAS and one lane of SATA.



Archive Appliance Direct Attached Storage

Note that the arrows in all these diagrams show the archiving direction but in fact work equally in the other direction for restoring data.

Tape Table of Contents

Each data tape cartridge contains a table of contents (TOC) that provides a directory of the tape’s file system, allowing you to treat the contents of the tape similarly to that of a hard disk drive and giving independent access to any individual file or group of files stored on the tape. This TOC is written to the tape by the archive appliance’s tape manager software after each data transfer session at the end of data (EOD). This TOC is also saved in the deck’s internal Catalog database which tracks all tapes it has ever seen and allows for user searches of all content (see Catalog and Search sections for more information).

LTFS Info

When tapes are formatted as LTFS volumes, Cache-A TOC information is still recorded on the volume and in the Catalog. Users can directly employ the LTFS file system by accessing its

volume through the share when managing content or use the TOC information through the Cache-A web interface

System Preparation

Cache-A archive appliances are designed to be used in a wide variety of environments but users should attempt to keep the system in a reasonably cool, low humidity and clean area. There is wide latitude for this within the systems specifications, but the life of tapes and the tape drive will depend to some extent on these parameters.

Prime-Cache is intended for tabletop operation and can be used standing up vertically or lying on its side with the drive toward the top (drive door opens up).

Pro-Cache is intended either for tabletop or rack-mount applications used with our rack mounting kit or on a rack tray.

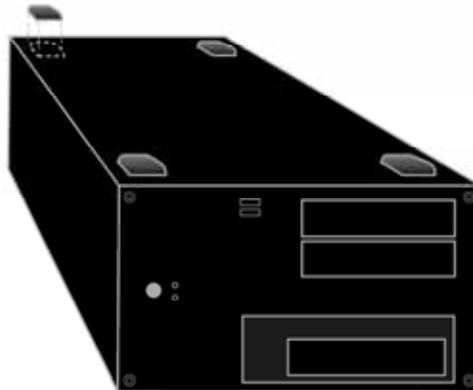


Warning

Regardless of how your Cache-A system is mounted and used it is important to always keep all vent holes clear of obstructions to assure adequate system cooling.

Installing Pro-Cache Desktop Feet

If the system is not going to be rack mounted, invert the unit onto a soft surface to prevent scratching the top and install the 4 adhesive backed rubber feet provided.



Adding Rubber Feet to Pro-Cache

Ensure that the bottom surface of the unit is clean and dry and press each foot on each of the 4 corners of the bottom of the unit. Install the feet about ½” or 1 cm in from each corner of the unit for maximum stability. Do not install any feet if the Rack Kit is to be used.

Installing the Pro-Cache Rack Kit

One or two Pro-Cache units may be mounted in a 3RU rack space. Consult the complete instructions for rack installation that accompany each Pro-Cache rack kit.



Pro-Cache Rack Kit

Chapter 2: Getting Started

This chapter describes how to set up your Cache-A archive appliance and shows the basic approaches for archiving files.

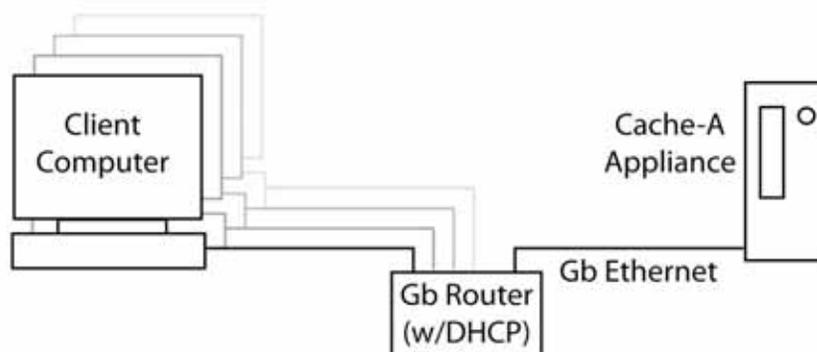
- Setting up a Cache-A archive appliance on your network
- Accessing the Cache-A archive appliance from your Browser
- Simple Archiving to a Network Share
- Simple Restoring with the Web Based File Manager

This section will get you started, however, you are encouraged to read at least the Cache-A technologies chapter to understand the power of your archive appliance.

Setting Up a Cache-A Archive Appliance on your Network

By default, Cache-A archive appliances must be connected to an Ethernet network with DHCP and will obtain a connection via an assigned IP address. This means your network needs to include at least a client computer, the Cache-A deck and a router.

You can use either of two Ethernet connections available on the back panel of the Cache-A archive appliance. We recommend using our default connection next to the 3 colored audio ports.



Archive Appliance Network Connection

Once the system's Ethernet is connected to a DHCP network, connect power and turn on the system by pressing the power button on the front panel.

Upon powering up, the system will obtain an IP address from the router and then advertise itself on the network using both Apple Bonjour and Windows name services.



**This may
take a few
minutes**

Note that DHCP assignment and Windows/Bonjour name advertisement may take some time on some network/system combinations. Normally Cache-A systems will appear within a minute, but may take as long as a half hour to show up.

Static IP Addressing

If you want to employ a user defined static IP address you can do so from the Network Settings page of the Cache-A appliance web page (see Network Setting section for more details).

This can be done from the browser which is normally reached through the DHCP setup referenced above – or – you can connect a monitor, keyboard and mouse directly to the back panel of the unit (see Maintenance Terminal section for more details).



Warning

Static IP settings apply to the currently active Ethernet port – note which port is connected to the network when making changes.

Making this change may make your system unreachable on the network if you forget its IP address or if you connect to the wrong Ethernet port.

Accessing the Cache-A Web Page

In order to get started using your Cache-A Archive appliance, you will first need to access it from a browser and confirm initializing a tape as described below.

You will need to know the Host Name or Bonjour Name of your Cache-A device to proceed. The default hostname of any Cache-A Archive appliance is:

archiveXX

where XX is the last two digits of your serial number. For example serial #CA-P4001-30010 would be *archive10*.

Accessing the Cache-A web page on a Mac:

Either the system's **Bonjour name** or its **IP address** can be used to access the system's web page.

The Bonjour name of any Cache-A Archive appliance is:

hostname.local -or- *archiveXX.local*

where *XX* is the last two digits of your serial number. For example serial #CA-P4001-30010 would be *archive10.local*

You can access the Cache-A web page by typing the Bonjour name (*archiveXX.local*) in your browser's URL bar. If you are using Safari, you can also find the Bonjour name as a clickable link under Safari's **Bookmarks** > **Bonjour** item.

The system's **hostname** or its IP address can also be used to mount the network share – you should see the hostname in the “SHARED” group in the left column of any Finder window.

Accessing the Cache-A web page on a PC:

Some PCs also have Bonjour services installed (i.e. if the PC has iTunes installed) and that would allow the same naming as noted above.

The Cache-A web page can also be accessed on most PC systems simply by typing the hostname (*archiveXX*) in your browser's URL bar.

Accessing the Cache-A web page by IP Address:

On any operating system you can always reach a Cache-A system by typing the system's IP address in the URL bar (this will be a 4 part number separated by periods of the form XXX.XXX.XXX.XXX – for example: http://192.168.1.123).

You can find your Cache-A archive appliance's router-assigned IP address by connecting to your router and viewing its DHCP assignment table. You can also connect a maintenance terminal from which you can launch Firefox and view the system's IP address on the Network Settings page.

The Cache-A Archive Appliance Browser Interface

The first step towards using a Cache-A Archive appliance is to bring up its web page so you can control and monitor the system's activity. This will also allow you to initialize your first tape.



Important

NOTE: Cache-A systems have been tested with **Firefox** and **Safari** web browsers – this user interface does not work properly with Windows Internet Explorer.

When you have connected to your Cache-A system as outlined above, you will see the **Login** Page:



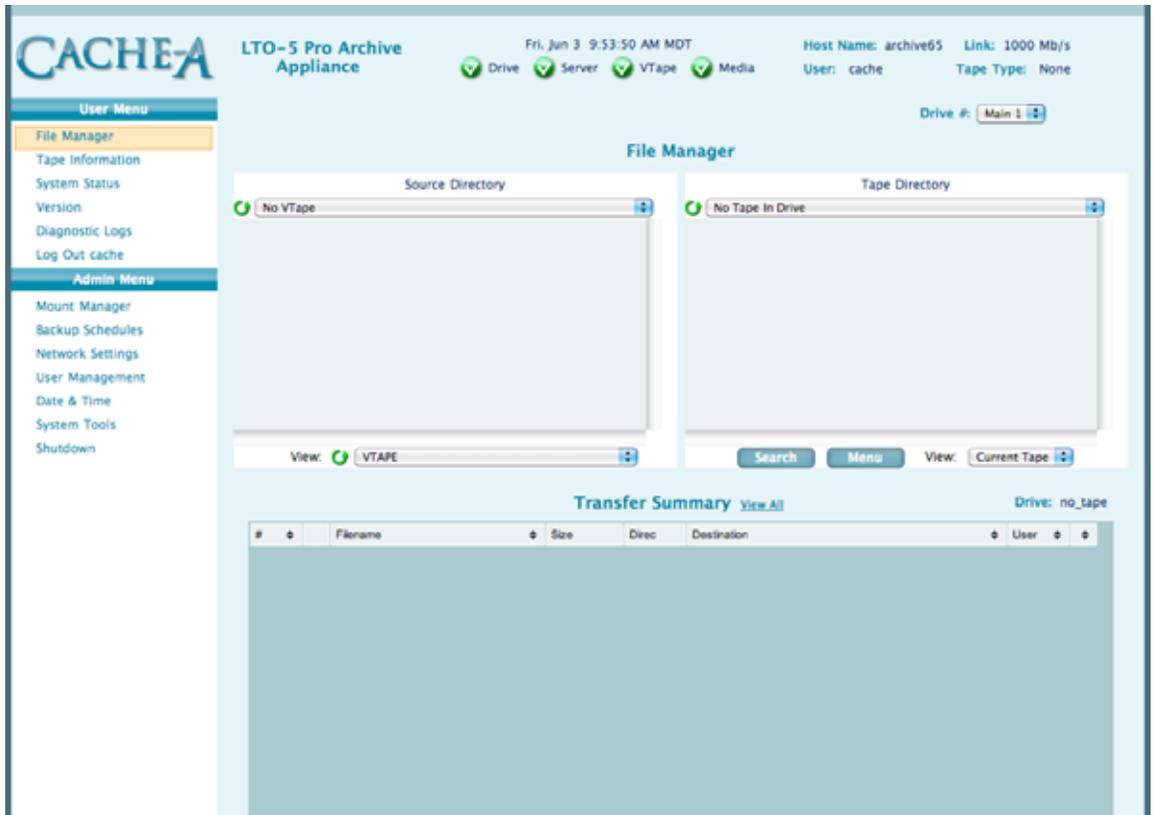
The Cache-A Archive Appliance Login Page

Type in the User Name and Password in the spaces provided:

- The default login user name is **cache**
- The associated default password is **cache123**

We recommend you keep this user and password to always have an easy way into the system, however users can be added and this password can be changed later if desired.

When you have successfully logged in, you will see the **File Manager** page:



The Cache-A Archive Appliance blank File Manager Page

? **Important**

Once you can access the Cache-A appliance’s web pages, you can also access the full User Manual by selecting the “Versions” page and selecting the “User Manual” button.

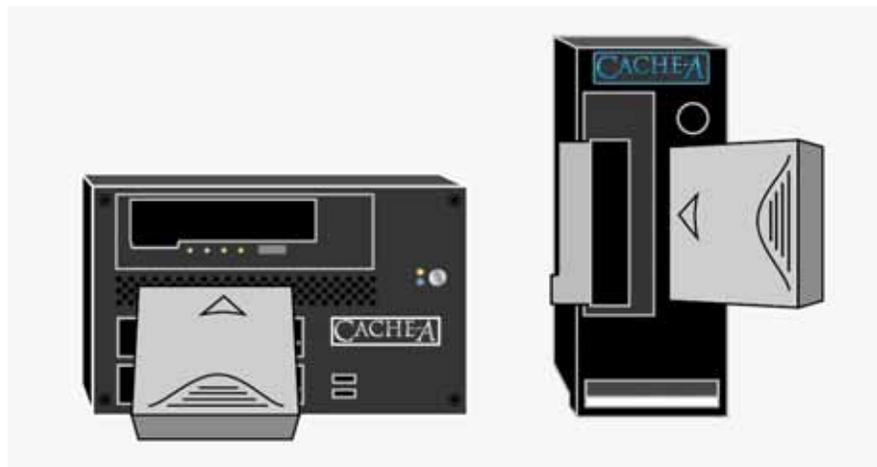


Link to On-line Full User Manual

The full manual provides explanations of additional operations capabilities, detailed descriptions of each control and setting as well as extended configuration information. We **strongly recommend** you read the complete document to get the most out of your Cache-A archive appliance.

Formatting a Tape

The next step to use a Cache-A Archive appliance is to insert a blank tape. To do so, lift the flap over the drive tape hole and orient the tape so that the arrow on the top of the tape cartridge is pointing into the hole. Slide the tape in until the mechanism grabs it (which occurs about 3/4" from fully inserted) – the drive will draw the tape cartridge in and complete the insertion process.



Inserting a tape into your Archive Appliance



**This may
take a few
moments**

Once the system has threaded the tape into the drive and read the solid-state memory in the tape, it will recognize that you have inserted a new tape cartridge and present you with the following dialog:



Archive Appliance Initialize Tape Dialog

LTFS Info

Formatting a Tape

When a new tape is inserted (or when you select **Erase** from the **Menu** dropdown) you will be presented with the option to format as Cache-A or LTFS as shown in the dialog below.

TIP ✓

We recommend you use Cache-A format unless you anticipate the need to interchange content with others who do not have Cache-A devices. LTFS formatted tapes take longer to mount, format and eject; LTFS also uses tape less efficiently.

Select your preferred format and **Initialize/Erase** in this dialog and wait for the File Manager web page to update – this is complete when it shows the tape cartridge’s Manufacturer’s ID number in the title button over the Tape Directory List:



Archive Appliance Tape Ready for Use

You are now ready to begin archiving.

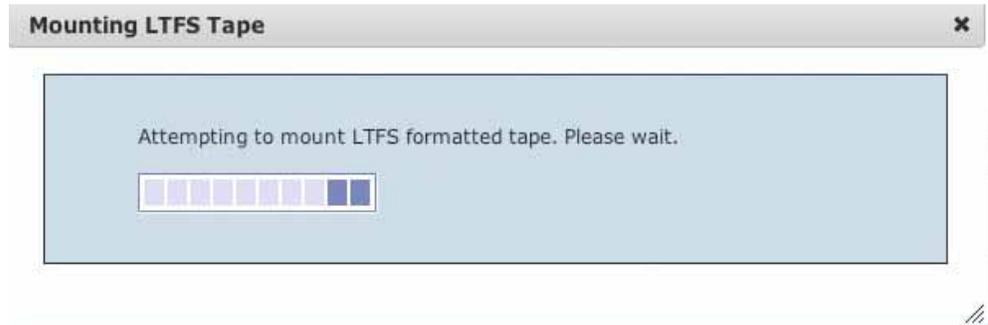
LTFS Info

Selecting **Cache-A Format** causes the system to write in Unix/Linux standard “tar” format and appends a table of contents (TOC) at the end of data. Selecting **LTFS Format** writes in the new open standard that keeps a separate “index” partition that tracks a true file system on the tape (note that Cache-A’s TOC file is also written to LTFS formatted tapes in order to improve performance on our systems).

Select **Erase** or **Initialize** as appropriate, and wait for the File Manager web page to update – this is complete when it shows the tape cartridge’s Manufacturer’s ID number in the title button over the Tape Directory List (identical to with Cache-A formatted tapes).

Upon the completion of formatting a tape as LTFS (or simply mounting a previously written LTFS volume) the operation takes

longer than with Cache-A format, a dialog is presented while this takes place:



Mounting LTFS advice dialog

The amount of time to mount an LTFS volume will depend upon the number and size of files on the tape and may take up to slightly longer than a minute but will usually be faster than that.

You can confirm that the Current tape has been formatted as LTFS by checking the **Tape Type** status in the upper left of the browser window as shown below:



Cache-A header showing tape format

Simple Archiving to a Network Share

Cache-A Archive Appliances offer many methods to archive content. These various methods are based on accessing user data from one of the following sources:

- Via the **network shared volume** offered by the appliance where you drop content to be archived (covered below – for more detail see the Network Share Guidelines section).
- Via a **client shared volume** where the appliance mounts a folder from one or more of the computers on your network (see the Mount Manager section for more information).
- Via a **direct mounted volume** that is physically connected to the appliance's USB, SATA, SAS, or ExpressCard slot (see the Direct Mount section for more information).

The most common archive method and the easiest way to get started archiving is to use the **Network Share** method. In order to use this technique, you must mount the Cache-A archive appliance to your client computer. The following descriptions discuss how to achieve this on Macs and PCs.

Mounting the share on a Mac:

The system will appear in the Finder by its Host name in the **SHARED** Item of the left column. Mount the Cache-A network share by highlighting that item and clicking on the **Connect As** button and providing your Cache-A user name and password (default: **cache**, **cache123**):



Mounting the Archive Appliance on a Mac

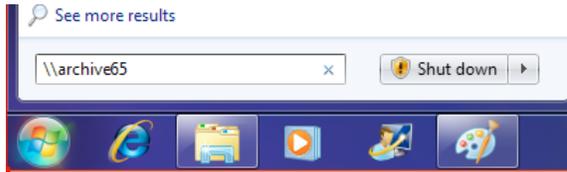
Cache-A shares can appear twice under the “SHARED” column as OS X systems will see both the normal Macintosh (afp) and Windows (SMB) share offered by each system. Note: you can archive using the Windows share however, this is not recommended for a variety of reasons, most importantly because afp is much faster with Mac clients.

Mounting the share on a PC:

The system will appear in the Windows Explorer when you Search your Network Neighborhood for your appliance hostname. Mount the Cache-A network share by opening your Windows Network Neighborhood view – depending upon the windows version, the Cache-A share may be displayed automatically.

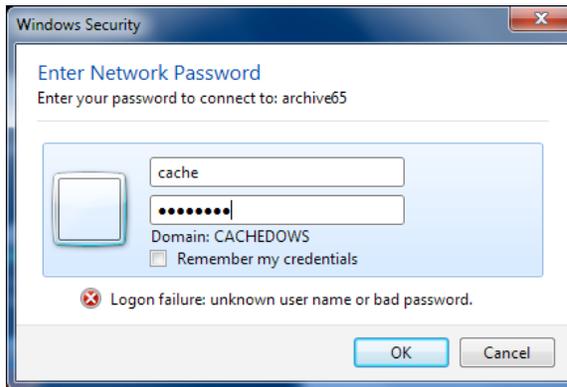
You should also be able to directly locate the system by typing its explicit path as **\\ARCHIVEXX\CACHE-A**

Alternately, you can usually find the Cache-A share with a simple search in the Start menu:



Searching for the Cache-A Share

Once located, complete mounting the Cache-A share by providing the username and password (default: **cache**, **cache123**):



Login to the Cache-A Share on a PC

Prepare to Archive

Now that you have the Archive Appliance mounted, you will see the Cache-A share containing:

- a folder labeled with a number - this represents the tape itself (as explained below this folder is referred to as the “**VTAPE**”)
- a file called **Eject** which can be used to eject the tape cartridge by dragging it to the trash or otherwise deleting it

What is the VTAPE?

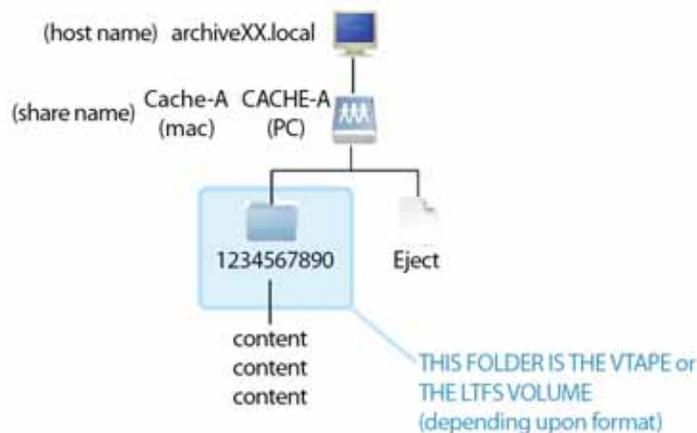
The name “VTAPE” is short for “virtual tape” and is what allows the archive appliance to be shared by multiple users and to effectively mount a tape as if it were disk based storage (it is, in fact, disk storage). When we talk about the VTAPE throughout this manual – it is this folder to which we refer.

LTFS Info

When the tape has been formatted as an LTFS volume, the folder that represents the tape is not a virtual volume but in fact the actual file system on the tape, however, it appears in the same location and behaves similarly except as clearly noted throughout.

The numerical identification that initially appears on this folder is the hard coded manufacturer's unique tape cartridge ID – the appliance uses this for the tape name by default. You can rename the tape cartridge from the File Manager > Menu button at any time and this folder will inherit whatever new name you assign. This is also known as the “Volume Name” of the tape.

The following diagram shows the structure of a Cache-A share. On a PC the share will be named “CACHE-A” and on a Mac, it will appear as “Cache-A” – the VTAPE is the folder within the share with the tape name – in this example the tape has an ID of “1234567890.”



Archive Appliance Mount Structure



Warning

NOTE: Do not delete the VTAPE folder from the Windows or Mac desktop – doing so will prevent archiving.

Do not rename the VTAPE folder from a Windows or Mac client when a tape is inserted – always use the File Manager “Rename” function for this – renaming the VTAPE folder from the client can prevent proper archiving.

To begin archiving, simply drop a folder containing your content onto the VTAPE folder. Once you have copied one or more items into the VTAPE you will also see a Transfer log and, if any problems occurred, an Error log.

There are a number of other ways to create archives – several are described in the following **Archiving Paths and Workflows** section.

When you are done archiving, eject your tape by selecting the “**Eject**” item in the **Menu** button at the bottom of the Tape Directory column.

- Upon ejecting a Cache-A formatted tape you will be presented with a dialog giving you the option to **Erase** or **Keep** the contents of the VTAPE.
- Ejecting an LTFS formatted tape will cause those files on tape to no longer be displayed (they were only archived to tape and not stored on the Cache-A share). See the Workflows section for ways to archive to LTFS and keep a copy on the share.

Normally, users will erase the VTAPE to be prepared to start a new archive. If you still have use for that content and want to keep it around for any reason, you should feel free to do so. However, remember that you will need enough space on the Cache-A share for your next archive and may need to delete any retained content at that time. Note that when you do elect to erase the VTAPE, it will take some time to fully remove many Gigabytes of data. You can check how much room is available at any time by checking the **System Status** page, VTAPE Remaining report.

TIP 

You can check how much room is available on the Cache-A share at any time by checking the **System Status** page, VTAPE Remaining report.

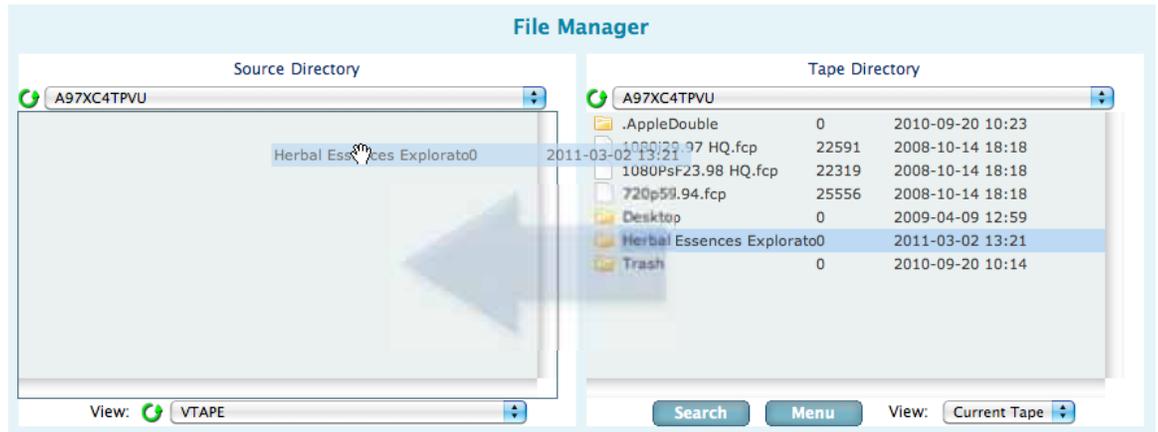
Simple Restoring with the Web Based File Manager

The Cache-A Archive Appliance File Manager web page offers tools for recovering data from your catalog of tape cartridges.

Restoring Files from Cache-A Tapes

Files to be restored are selected in the Tape Directory column and moved to the Source Directory column. Normally restored files are moved onto the VTAPE, and from there copied elsewhere or used as needed. Assure that this is the case by noting that “VTAPE” appears in the dropdown menu at the bottom of the Source Directory column.

Navigate the contents of the current tape by double clicking folders in the Tape Directory list (see the File Manager section below for more help on navigation). Once the desired file or directory is displayed, it can be restored by simply dragging them from that list on the right to the Source Directory list on the left.



Restoring a Single File with Drag and Drop

Multiple files and/or directories can be selected using the shift key and dragged as a group to restore more than a single item. Note: drag the group upon selecting the last item (do not release).

You can also restore the entire contents of any tape by selecting the “Recover All” command from the **Menu** button.

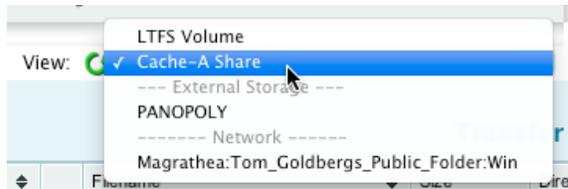
LTFS Info

Restoring Files from LTFS Tapes

As soon as you insert an LTFS tape and the system has mounted the LTFS volume, you will be able to see all the files on that tape from your client computer in the Cache-A share.

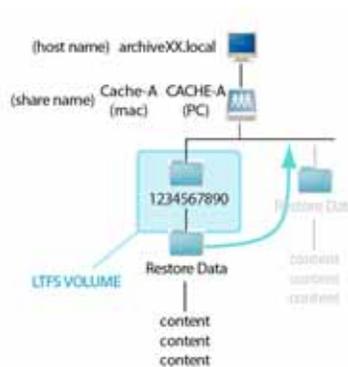
If you are only going to restore a few files, you can simply select those files from the Cache-A share and drag them to any desired destination just as you would had they been on a shared hard disk.

If you are going to restore many files, we recommend you use the File Manager operations as described in the Cache-A formatted tapes section above, with “Cache-A Share” selected in the Source Directory **View** dropdown menu.



Selecting the Cache-A Share in the Source Directory View

Making this selection allows you to access the top level of the volume you see whenever the Cache-A is mounted on a client computer.



Restoring to the Cache-A Share level

When you drag and drop from the Current Tape to the Cache-A share, you are copying content from the LTFS volume. This will make a copy of the files to be restored on the Cache-A system's local hard disk drive.

The reason we recommend this approach rather than dragging more than a few files from the LTFS Volume directly, is that the Cache-A File Manager knows what order items are stored on tape and will recover them in that order for maximum efficiency and speed. If you use Finder or Windows Explorer, they will be recovered in whatever order the OS initiates the copy and may take a very long time due to excessive tape seek accesses. See the section on **LTFS Limitations** for more information about this.

Searching for Files

You may know what files on what tape cartridge you are interested in restoring, but frequently you will begin with a search of your catalog to find the tape containing the files with the names in which you are interested.

A search for your files is initiated by selecting the **Search** button at the bottom of the Tape Directory column, and typing in all or part of the file name you are seeking.

The search results will show all of the tapes containing files that match your search string. Double clicking on any tape will “open” it and allow you to see the exact files that matched. Searching can also be used to find Barcodes and metadata (see the Searching section for more information).

Drag-and-drop any file or combination of files you want to restore from the search results in the Tape Directory column to the Source Directory column to initiate a restore session. If the files you are requesting are not on the currently loaded tape, the current tape will be ejected and you will be prompted to insert the necessary tape for the next items to be restored. If they are on multiple tapes, you will be prompted for each needed tape.

Cleaning

A brief mention about cleaning the tape drive should be noted. LTO tape drives need cleaning from time to time, normally after several hundred tapes. This will vary depending upon the temperature and humidity as well as tape brand. The drive will tell you when it needs cleaning by illuminating the cleaning LED.

Only insert a cleaning tape when the drive indicates it is needed or when instructed by Cache-A support.

TIP

Keep an Ultrium cleaning tape on hand for this eventuality – once the tape drive mechanism identifies that it needs cleaning, it will not work again until this has been done.

Archiving Paths and Workflows

Archiving by dropping files and folders into the VTAPE is the easiest way to get content onto tape, but it is not always the best way. This section discusses the benefits and tradeoffs of a variety of archiving strategies.

For a full explanation of the various paths and how the Cache-A system is organized, we recommend you read **Chapter 3: Understanding Cache-A Technologies**.

Direct to the VTAPE

As described in “Simple Archiving to Network Share” section above, this solution is straightforward and easy to understand. The downsides of dropping your content into the VTAPE are:

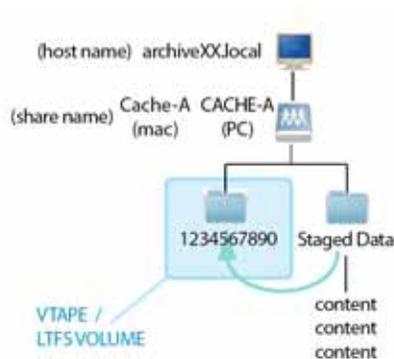
- Content will not arrive on the share as fast as the Tape Drive can archive it – this causes excess tape activity (stopping, starting and reversing – also called “shoeshining”)
- Users naturally drop bits and pieces of their archive content as they are encountered – this causes excess archive sessions and unnecessary additional metadata to be stored

Both of these conditions will use more space on tape than absolutely necessary. Additionally, over time, such shoeshining can cause excessive wear and tear on both the tape itself and the drive and head mechanisms.

The process for archiving via the VTAPE is as described in the preceding Simple Archiving to a Network Share section.

Staging Data on the Cache-A Share

The most recommended process for archiving files is to copy your content over to the Cache-A share and organize it into one or more folders (not the VTAPE). When all content to be archived is already on the Cache-A disk drive, then drag and drop these folders into the VTAPE.



Staged data archiving

The benefits of staging your data are:

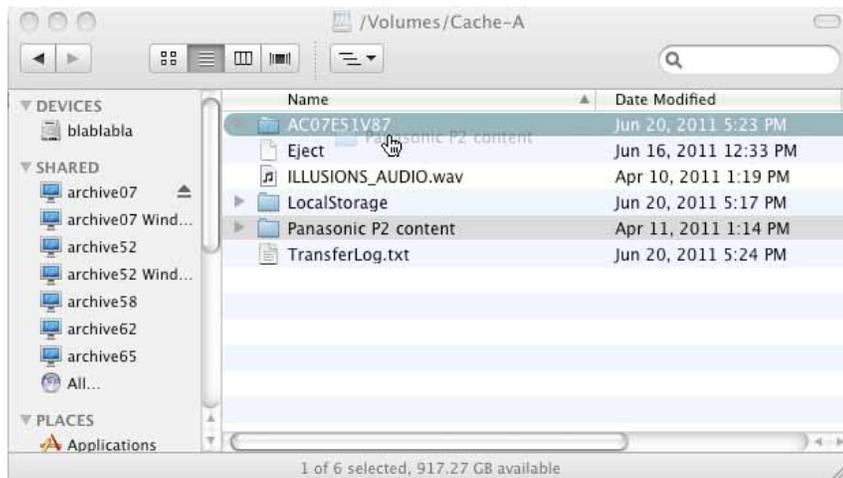
- Data is provided to the Tape Drive at the fastest rate possible thus assuring most efficient use of tape and the least wear and tear on the tape and drive mechanism
- Since the system is not trying to keep track of a changing list of files (which is what happens when you drop files and folders into the VTAPE directly), this method provides the highest level of security that every file was fully written to tape
- Organizing your content in this manner gives you the opportunity to double check that everything you want is prepared and to double check the folder sizes and tape information to assure there is sufficient room on the tape for the archive before committing

The downsides of staging your content are:

- A second user action is required after all content has been placed on the Cache-A drive (that of moving it to the VTAPE)
- Overall archiving duration is longer than just dropping on the VTAPE

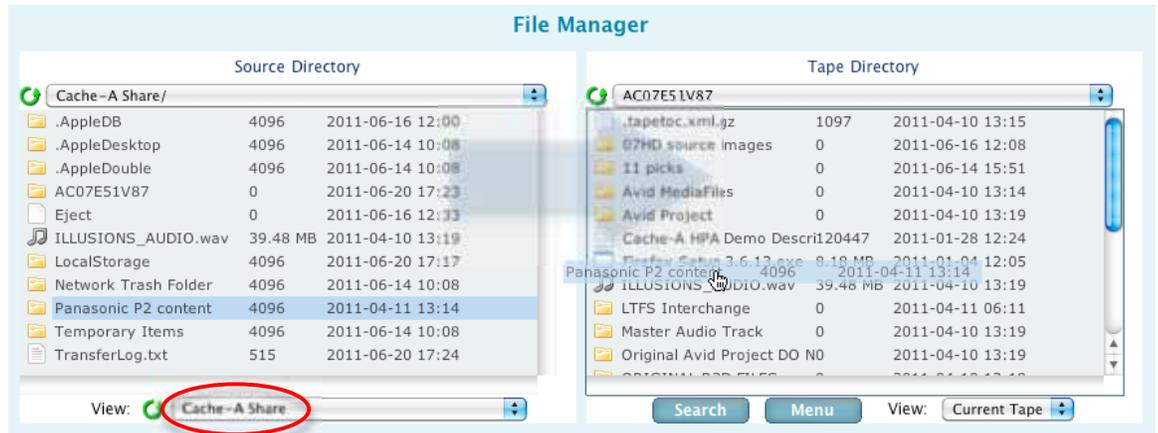
The process for archiving Staged content can be achieved via either of two optional workflows, from the Client computer’s file manager (Mac Finder or Windows Explorer, Linux terminal, etc.) or from the Cache-A browser interface itself.

To archive staged content via the client computer, simply drag and drop the desired folders onto the VTAPE or LTFS Volume as shown below. Note that the VTAPE in this case is the folder “AC07ES1V87” and the content to be archived is the folder called “Panasonic P2 content.”



Archiving “Staged” data from the Mac Finder

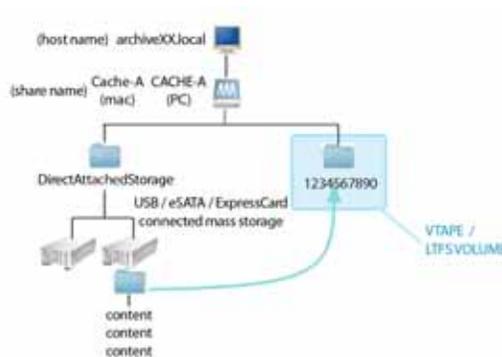
To archive staged content via the Cache-A browser interface, select the Cache-A Share from the Source Directory View dropdown menu and then drag the desired folder(s) onto the current tape.



Archiving “Staged” data using the Web User Interface

Pulling from Direct Attached Storage

When you have data to be archived on hard disk drives, memory sticks, camera cards or other storage mechanisms, there are several options for archiving, however, the fastest is to attach the storage device directly to your Cache-A appliance.

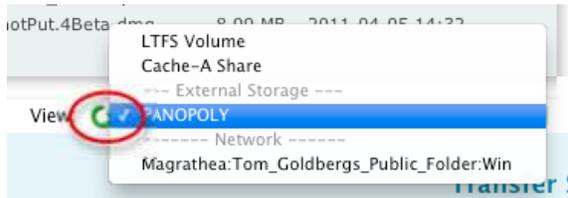


Pulling from Direct Attached Storage

On Prime-Cache models storage devices must be connected via the USB ports, the Prime-Cache5 offers USB 3.0 ports on the front panel which can transfer data 10 times faster than USB 2.0. On Pro-Cache models a variety of direct attached options are available in addition to USB 2.0 including the eSATA port and the ExpressCard port that can be used with several kinds of options such as a FireWire adapter card. See the section on Pro-Cache

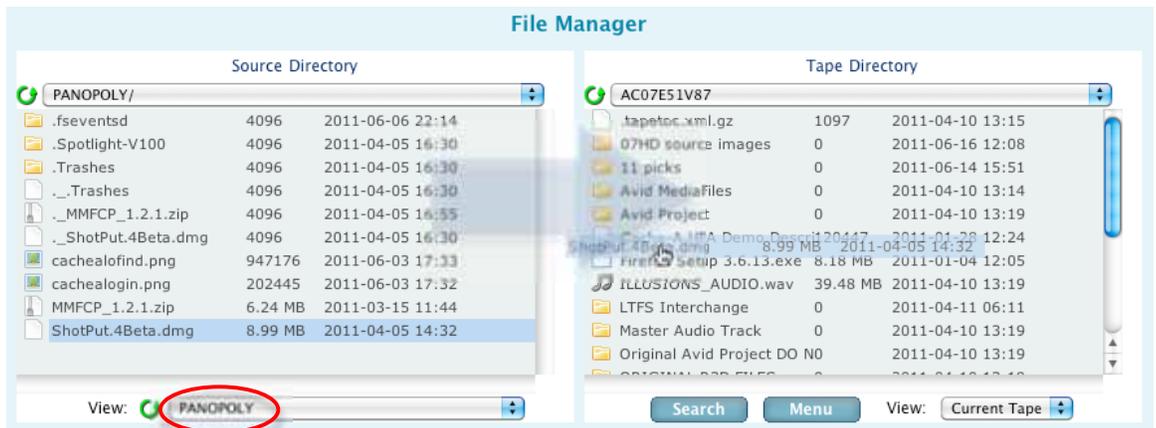
Direct Attached Storage Interfaces for more information on connecting devices.

Once a device has been direct attached, you can find it in the Source Directory View dropdown menu under the “External Storage” heading – you may need to click on the green “refresh” circular arrow to get it to show up here:



Selecting Direct Attached Storage in the Source Directory View

Once that item is selected in the dropdown and the device’s file list is displayed, you can select as many items as desired (shift click, drag upon last click) and drop them onto the current tape to start archiving.



Archiving from a Direct Attached source

Note that the reverse direction is equally possible – you can restore anything from the current tape onto a direct attached device by dragging from the Tape Directory column to the Source Directory.

Pulling from Network Attached Storage

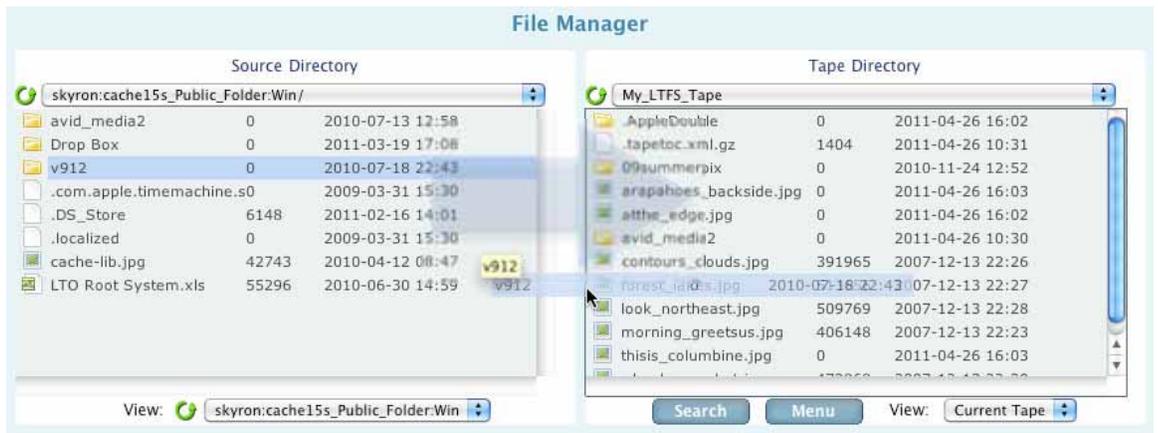
When you have data to be archived on a NAS (Network Attached Storage) or any client computer with a shared folder, the fastest archive performance will usually be to mount the volume directly to your Cache-A appliance. To set this up, you will need to use the **Mount Manager** page as described in that manual section.

Once a device has been mounted to the Cache-A system, you can find it in the Source Directory View dropdown menu after clicking on the green “refresh” circular arrow:



Selecting Network Attached Storage in the Source Directory View

Once that item is selected in the dropdown and the device’s file list is displayed, you can select as many items as desired (shift click, drag upon last click) and drop them onto the current tape to start archiving.



Archiving from a Direct Attached source

Note that the reverse direction is equally possible – you can restore anything from the current tape onto a direct attached device by dragging from the Tape Directory column to the Source Directory.

Important Operational Cautions



Important

Understand the VTAPE

Content dropped into the VTAPE will initiate archiving – content dropped onto the top level share will be copied to the Cache-A drive(s) but will not be archived until moved into the VTAPE.



Warning

NOTE: Do not delete the VTAPE folder from the Windows or Mac desktop – doing so will prevent archiving.

Do not rename the VTAPE folder from a Windows or Mac client when a tape is inserted – always use the File Manager “Rename” function for this – renaming the VTAPE folder from the client can prevent proper archiving.



Warning

Do not attempt to change the name of files in the VTAPE or to move them.

- If you do so after the session is complete, you will cause additional full copies of changed files to be re-archived.
 - If you do so *before or while* they are being copied to tape, you may cause serious archiving errors.
-



Warning

Understand System Limitations

Always put all files within a folder when archiving onto the top level of the VTAPE (especially important when archiving via the Mac OSX Finder). Failure to do so can result in extra file copies and potentially data loss.

Always keeping files within folders when archiving makes tapes much more manageable and eases user operations.



Warning

Do not attempt to Cancel a transfer while files are being copied into the VTAPE – it will NOT cancel and you will cause archiving errors.

**Warning**

If you put too much data on your Cache-A Share and/or VTAPE, the system may not have enough room left for the revised Catalog after archiving – Check available space on your VTAPE by visiting the System Status page – note the exclamation mark warning and delete files from the share to make room as needed.

**Warning**

If you try to put too much data onto your tape, you will end up with un-archived files and no TOC on tape (damaged tape) - you will not be able to restore individual files from the tape (Recover All will still work).

We recommend you not try to put more than 740GB per LTO-4 or 1425GB per LTO-5 tape to avoid any possible issues unless using the Multiple Volumes feature.

**This may take a long time**

Understand LTFS Limitations

Displaying the LTFS Volume within the mounted Cache-A Share using the *Icon* or other graphical views from Mac OS or from Windows Explorer can cause the tape drive to read every file in the directory and take considerable time (always use *List* views instead). You may end up causing the Mac Finder or Windows Explorer to be hung until all the files in the selected directory have been read.

**This may take a long time**

Do not attempt to restore any more than a few files on an LTFS volume using the Mac Finder or Windows Explorer. These programs do not understand where files are on tape and will cause significant unnecessary tape seeking.

**Warning**

You cannot Eject, Erase or Rename an LTFS volume if you are viewing its files. In order to execute any of these functions, you must assure that no clients are currently viewing those files from Finder, Windows Explorer or via a Terminal shell. You must first close those windows or navigate outside of the LTFS Volume.



CACHE-A

Archive Appliances

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