IMAGINE
PRODUCTS, INC ®

Imagine Together!

myLTO®
Tape Authoring Application
User's Guide

Version 2024.1, Indianapolis, Indiana USA

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Contents

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Welcome

We're pleased that you've chosen **myLTO®** to securely archive your data files to LTO tape.
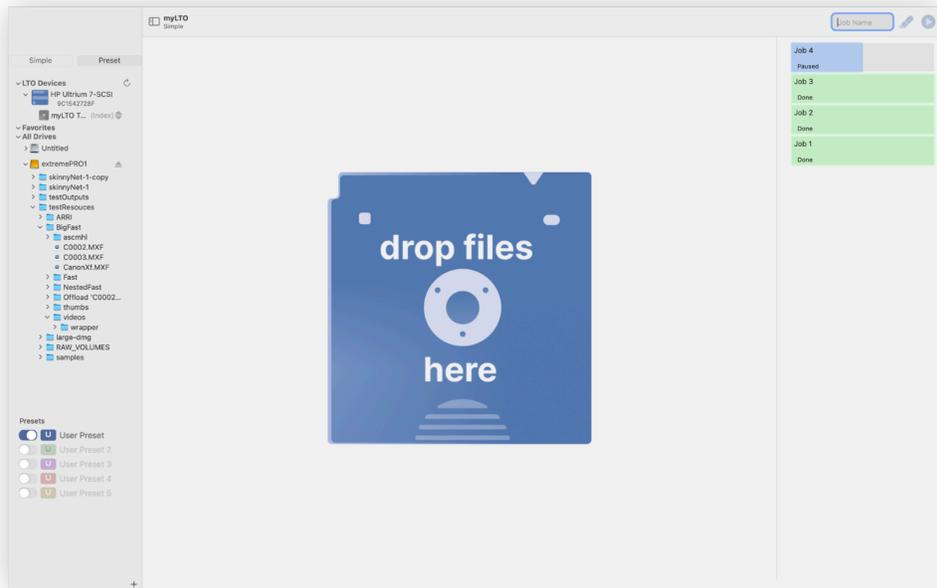
myLTO works with any content, and is not specific to video files, however, it is optimized for that purpose.

Writing to an LTO tape is easy. Simply format a tape and set it as an output location in either Preset or Simple mode.

Then drag files to be copied into the queue. Click **Begin** and myLTO will index and analyze your files and begin writing them to tape. It will calculate checksum values and extract thumbs and video metadata for reports.

NOTE: This application is engineered for the latest versions of macOS. Features and dialogs may vary slightly between them.

Overview

myLTO® for Mac is an automated copy utility application geared toward media files. The software takes advantage of the Linear File Transfer System (LTFS), developed by IBM and supported by HP, Quantum, Tandberg and other tape drive manufacturers.

LTFS mounts a tape as a user defined read/write volume within the computer's operating system. This makes it possible to write and read from the tape as if it were a disk and save files in their original format. It also makes myLTO hardware independent—you can use it with any Ultrium® LTFS compliant tape drive (e.g. LTO-7, LTO-8, LTO-9).

To save to tape, File and Folder names must comply with LTFS standards. For your convenience, the software automatically adds URL escaping to non-compliant characters and removes the escaping upon retrieval

myLTO helps control deck functions including mounting, formatting, and recovering tapes, as well as copying onto LTO tape, with a simple and easy to use interface.

Within the software you may choose to make additional copies of your assets onto multiple LTO drives and local hard disks at the same time. Copies may be verified using checksum integrity algorithms (e.g. XXHash, MD5, etc.) in addition to the LTFS write verification process.

Improve consistency by letting myLTO auto-name output folders. Select from various custom naming conventions. Further organize jobs by nested (sub) folders and label them using concatenated naming conventions such as dates, project names, locations, etc.

Alternatively, you may Drag and Drop files directly to the LTO tape without creating any additional folder names using **Simple mode**.

Jobs have progress bars and are color- coded to indicate status (copying, verifying, finished). They may be named for more clarity, and individually removed from the task list. myLTO also lets you gracefully **Pause** copy processes and **Resume** where you left off.

Job-3	
Paused	☼
Job-2	
Done	
Job-1	
Done	
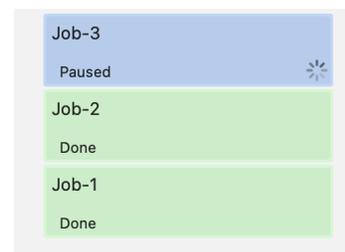
Choose a PDF report for impressive visual reports. PDFs support up to ten extracted frames (sampled towards beginning, middle and end of clips) or one (beginning only) from most known camera types.

When finished, myLTO can play a notification sound and automatically eject drives for your convenience.

You can even have the software text a notification or e-mail the verification report after each job completes.

myLTO Check-In

Before you begin working with your LTO deck, it is important to ensure that you have all of the necessary components installed. To aid with this process, we have implemented the new **myLTO Check-In**, a component check to help streamline the process of setting up your LTO device.
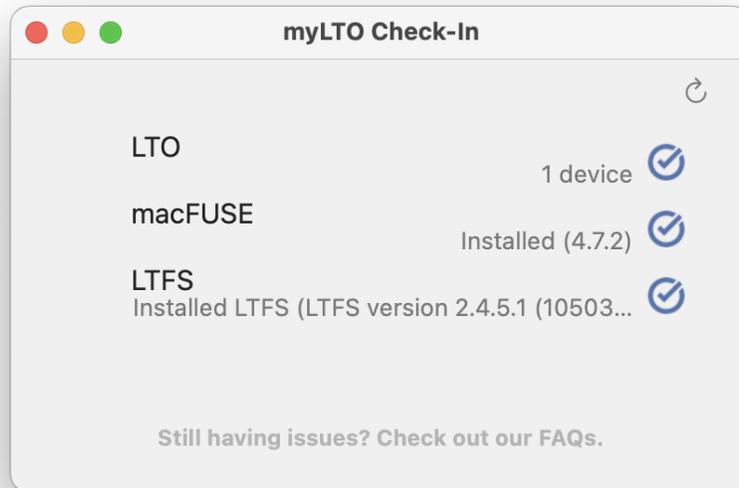
myLTO Check-in verifies the three necessary components needed to work with your tape; an LTO deck, macFUSE, and an LTFS library. If all components are installed and working correctly, a blue checkmark will appear to the right of each one. A yellow caution sign indicates that there may be something wrong and the component requires action before you can begin using your LTO device.

The **LTO** component check makes sure there is a compatible LTO deck and tape connected to your device. This component may show as a **Yellow Caution Sign** if there is no tape inserted or the tape has been ejected.

The **macFUSE** component check makes sure it is downloaded and installed properly. macFUSE is a required software package that must be downloaded in order to begin using your LTO deck. It is available for download [here](#).

TIP: If macFUSE is installed, but a yellow caution sign still appears, select it and enter your Mac password. This will allow myLTO to load in its kernel extension.

The **LTFS** component check ensures the LTFS Library has been installed to your computer and is accessible. If an LTFS installation cannot be detected, this component will show a **Yellow Caution Sign**. Clicking on the caution sign will

open a window which will permit you to download an LTFS build directly from Imagine Products' website.

LTFS Download

To download LTFS from Imagine Products, click on the button corresponding to the manufacturer of your LTO drive. Once the download is complete, run the supplied ICU and LTFS installer packages then restart your machine. If you are unsure of your drive type, this information can be found in your System Report at Hardware->SAS.

IBM

HP

Quantum

Cancel
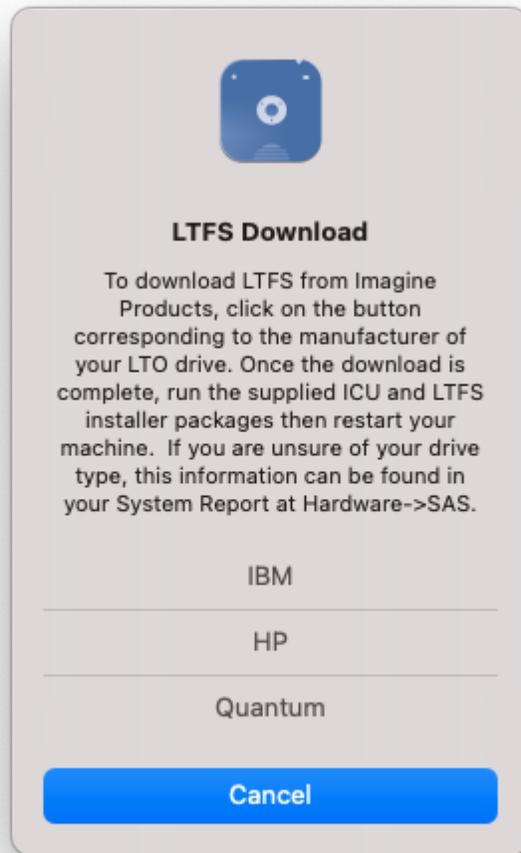
Our website hosts LTFS builds which are compatible with most IBM, HP, and Quantum drives. Most LTO decks contain drives manufactured by one of these three companies. If you are not sure what type of drive your LTO deck contains, this information can be found in your System Report's **SAS** section if your deck is connected, powered on, and has the correct drivers installed. This information can also be found by consulting the deck's user manual or from the website of your deck's manufacturer.

Disclaimer: The supplied LTFS builds are not guaranteed to work with every LTO drive. If none of the downloaded LTFS builds work correctly with your deck, it is recommended you contact your deck manufacturer directly to receive the appropriate LTFS build.

For additional instructions on installing LTFS, please view our FAQ.

Formatting a Brand New Tape

Brand new LTO tapes are provided in an unformatted state. Due to this, myLTO will be unable to detect when the tape has been inserted into your deck. However, we have made the process of formatting an inserted tape so that it can be detected extremely easy.

First, simply insert your tape into your deck.

Next, select your deck from the drives list on the left hand side to pull up the **Tape** and **Deck Options**.

From this window, select the button next to the tape outline marked **Check for Tape**. Wait for a few seconds and a pop-up will appear underneath this button that will say **New tape? Click here to format**.
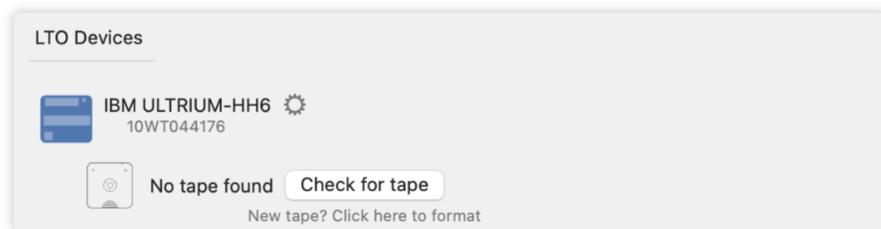
Selecting this text will have a pop-up appear asking you if you would like to format your tape. Selecting to format your tape will bring up the following screen...

Please reference the section marked **Formatting** for detailed information on this pop-up.

If this option is not working with your new tape, mount your tape using a **Force Mount** and then select **Format** from the **Tape Controls**.

Tape Index and Caching

The latest myLTO update allows for an **Index** to be loaded upon connecting a drive and a tape, which shows the complete contents of your tape. This index offers various benefits, including the ability to browse your tape's contents without causing it to spin, which saves time and extends both your deck and your tape's lifespan.

This index can be accessed in two separate ways. The first is by selecting the drop-down arrow to the left of your tape icon in the left hand side of the main view.
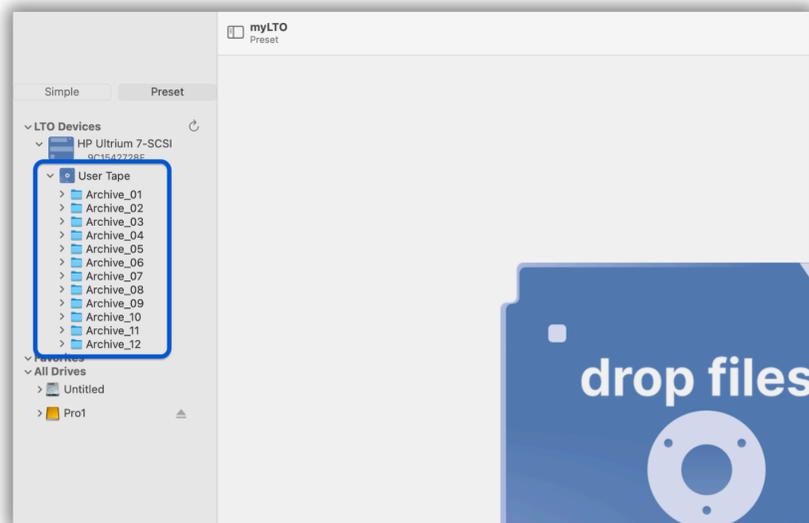
The second way is by selecting either the deck or the tape icon in the same area, bringing up the **Device Details View**, along with your tape's index.
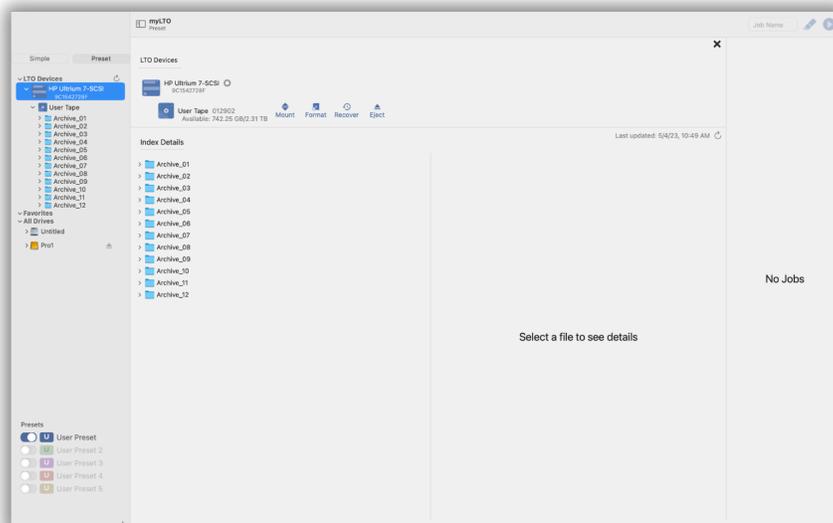
The index also allows you to find files and drag them into the queue for retrieval. With **Optimized Retrieval**, myLTO can retrieve all selected files in one clean pass, further prolonging the life of both your deck and tape as well as providing a notable speed boost.

However, the index does not automatically update when new folders/files are added to your tape. To refresh the index, you must first unmount your tape, and then click the refresh button in the **Device Details View**.
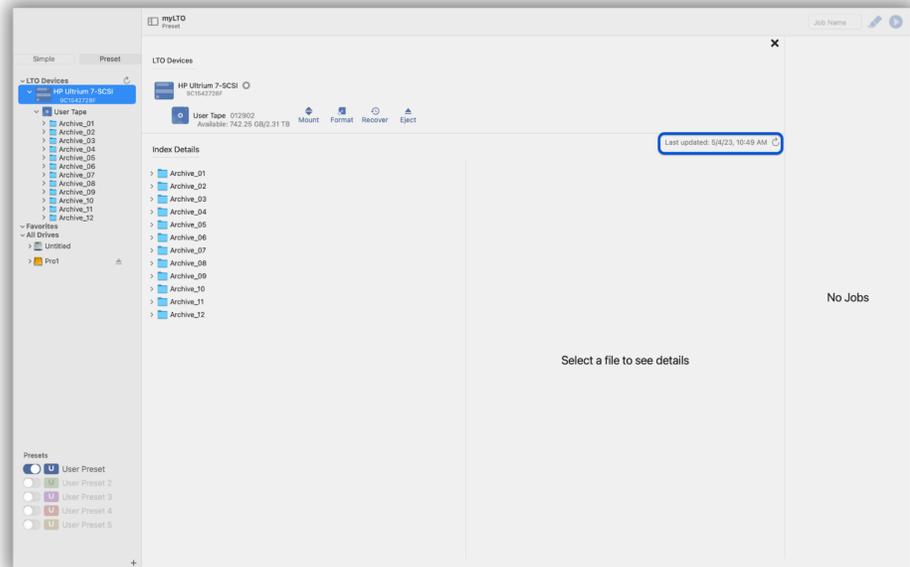
After your index has been loaded once, it will then be **Cached**. This allows myLTO to quickly load in the index without spinning your tape.

Your tape's index cache will be saved as long as the tape has not been written to by any other software. If this occurs, your tape's index will need to be loaded again.

myLTO will warn you when the current index is out of sync and needs to be gathered again. This warning will appear in the same location as the last updated time and date.

TIP: Even if your index is out of sync you can continue to use it, it will simply be missing the newest entries that you wrote to it.

Tape Index Report Creation

In myLTO it is possible to generate a TXT file detailing the full contents of the selected tape. Such reports are useful when you need to share the details regarding past archives with others or for your own personal records.
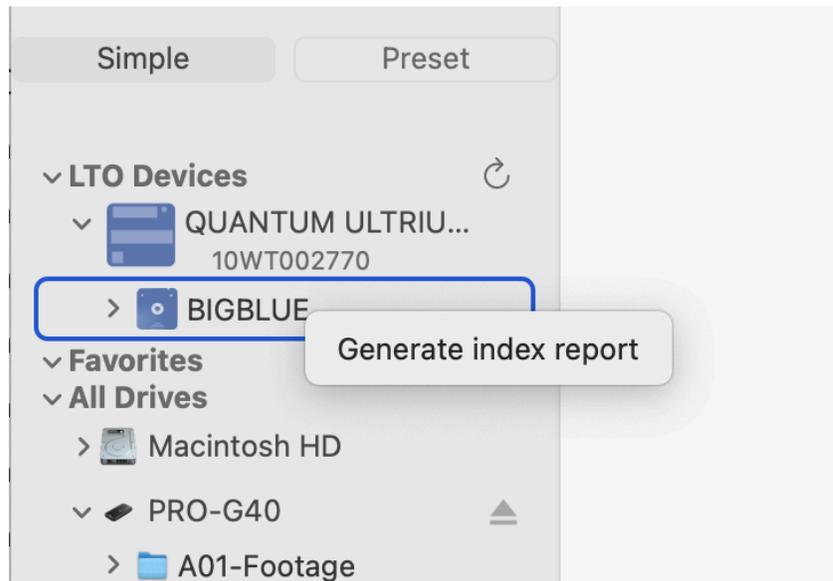
To generate a Tape Index Report, *Right-click* on your LTO tape and click the pop-up that appears, *Generate index report*.

After doing so, Finder will open allowing you to select the report destination.

Once your report has been generated, open the location selected in Finder to view it.

General LTO Options

Located in the top menu bar under the **LTO Option**, are three options that will help facilitate your tape use.
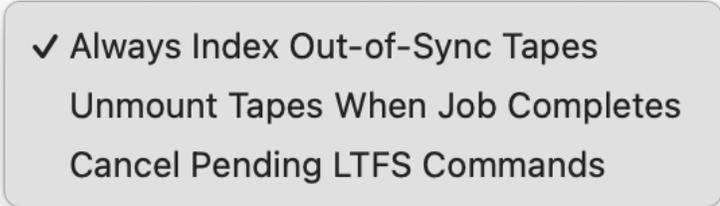
✓ Always Index Out-of-Sync Tapes

Unmount Tapes When Job Completes

Cancel Pending LTFS Commands

The first of these options is **Always Index Out-of-Sync Tapes**. A pop-up allowing you to choose this option will appear the first time a tape that has not been seen by myLTO is inserted into your deck.

Selecting this option will allow myLTO to automatically index your tape when it finds that the current generation loaded, and the generation your tape is actually on, do not match.

The second option, **Unmount LTO Tapes When Job Completes,** will automatically unmount your tapes after all jobs in the queue are done reading and writing.

This option is automatically checked by default. This is because myLTO will automatically mount your tape upon job start. Leaving this option checked will lead to a more streamlined and automated archiving process.

TIP: Using this option in tandem with the Eject Tape on Unmount option found in the Advanced Deck Setting will allow you to start multiple jobs and have your tape eject upon their completion.

The final option, **Cancel Pending LTFS Commands**, allows you to cancel mount operations that are taking an excessive amount of time.

Deck Controls

With the LTO drive connected to your computer, select the device from the side menu to the left, titled **LTO Devices.**

To the right of this list is a **Refresh** button. This button is used to load in your LTO deck and tape when connecting them to your computer.

TIP: If your deck or tape are not appearing even after they have been plugged in, use this button to refresh the view and they should show up.
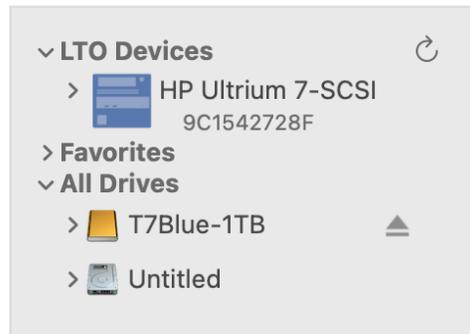
There are two parts to the deck control area. The top half is a list of all the controls for the selected deck. Each deck representation will contain information about your **Deck, Tape, Advanced Deck Settings**, and **Deck Commands.**
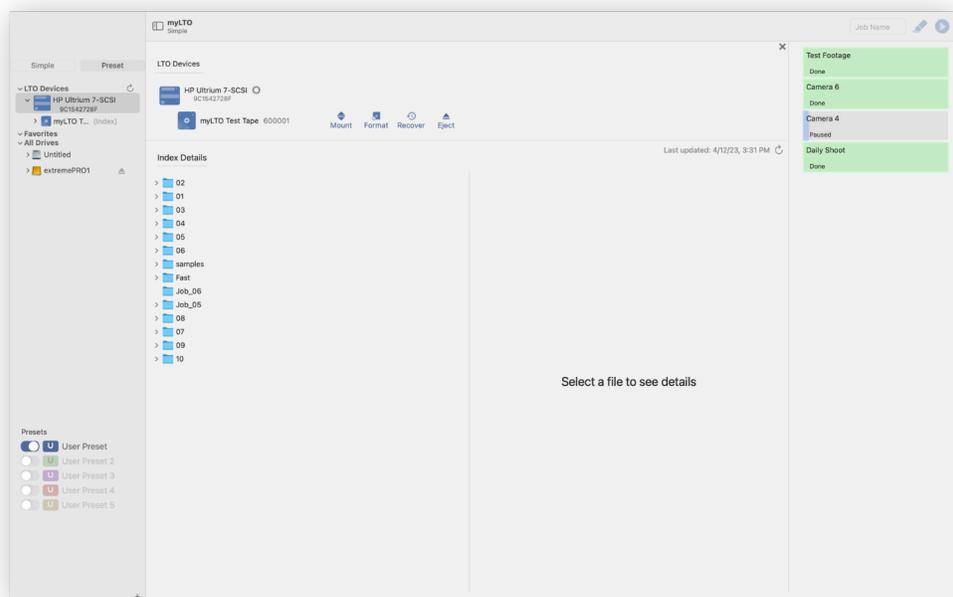
In this view, information about your **Deck** will be available, including the deck manufacturer, model, and serial number. To access the **Advanced Deck Settings**, select the gear icon next to the deck's model.

Additionally, if your **Tape** is loaded in the deck it will include information about the manufacturer, its tape label, and its serial number. If a tape is not loaded, this section will contain a gray tape with the message, "No Tape Found." To the left of your tape's label, the **Deck Commands** are available. A detailed explanation of each will be given soon.

Advanced Deck Settings

The **Advanced Deck Settings** section is where you will be able to edit both **LTFS Options** and **Mount Options.** To access these options, navigate to the **Deck Control** screen and select the **Gear Icon** to the right of your tape's model and name.
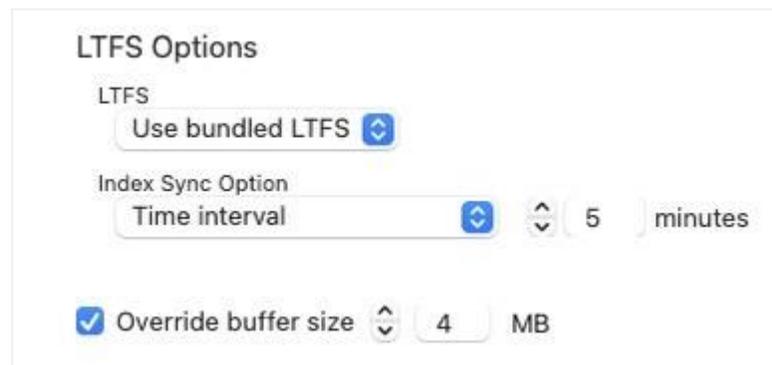
The top section, titled **LTFS Options**, gives you control over a number of different options. First, select the **LTFS** that you would like to use. This option will default to the built-in bundled LTFS.

However, if you have installed a **custom LTFS** you can browse to the location on your local machine where it is installed, usually **/usr/local/bin**. This location must contain an LTFS executable or an alias to an LTFS executable for it to be a valid selection.

You can use the LTFS executable at the specified location to perform LTFS operations. If you are not sure where the LTFS executable is installed, you can click the "..." button on the right of this row to open a file picker, which will allow you to choose the LTFS executable.
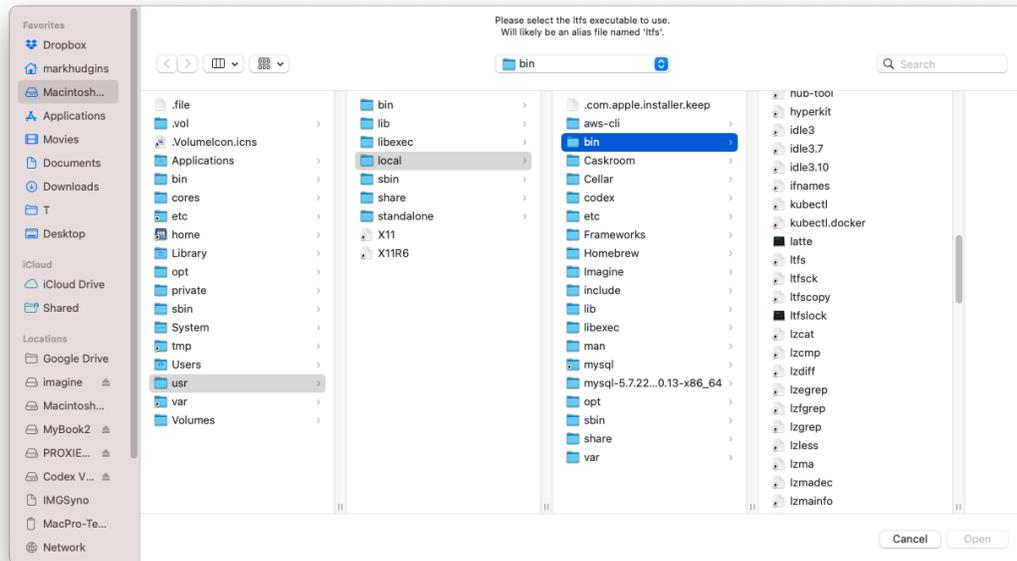
The LTFS executable is often an alias to an actual LTFS installation. If this is the case, once **Open** is selected, the alias location will be resolved to the actual location.

TIP: If an issue ever arises with the selected location, it is recommended to reset this path to the location /usr/local/bin/ltfs.

The second option, **Index Sync Options**, allows you to select how often the tape index will be saved in memory and added to the tape before it is unmounted. If this process becomes out of sync there is the potential for data loss. From the dropdown menu, users have multiple options on how to handle it.

On Unmount will only save the tape index after you have finished working with your tape and unmounted it.

TIP: While this is the fastest option, it is also the most risky. If something were to go wrong while writing to tape, you could possibly lose all of the data from this session.

Time Interval is the LTFS manufacturer recommended option and allows you to save the tape index at custom intervals ranging from every minute to every 30 minutes.

TIP: the more often you save the tape index, the longer the replication will take.

File Close will save the index after every file write. However, it is important to note that this can result in significant overhead if syncing occurs too frequently. If only a few large files are being written, the additional overhead may be minimal. However, if many files are being written, the overhead can be very significant.

The final option is the LTFS section is titled **Override Buffer Size**. This option allows you to specify the size of the 'chunks' being both written and read.

NOTE: This setting can be used when attempting to optimize your archive and retrieval speed. It also helps to prevent 'shoe-shining', which can extend the life of your tape.

Directly underneath the LTFS Options are two sections detailing the mount **Standard Mount Options** and **Advanced Mount Options**. These options give you numerous ways to customize your set-up.

Mount Location allows you to select the destination that your deck will be mounted when the mount command is issued. If the tape is currently mounted, it will give the file system path to the mouth location. By default, myLTO mounts

decks to the tmp folder to help ensure minimal overhead and lingering mount-related file system items.

Mount Name lets you choose how you would like to name your deck. Options include naming it after your Tape Barcode, Tape Serial Number, or a custom naming convention.

Mount Type allows you to choose from three different ways to mount your tape. Options include; **Standard Mount**, **Fast Mount**, and **Force Mount**.

TIP: In myLTO a background mount cannot be used with a set-up involving Quantum LTFS, macFUSE 4.8, and macOS 14.

Standard Mount will mount your tape whilst performing some very minor recovery routines. While these routines could fix some issues, they will also increase the time it takes to mount your tape.

Fast Mount can help you avoid overhead when first mounting your tape. Selecting this option will skip the error checking routine that Standard Mount would perform, saving time.

Force Mount will allow you to perform tape actions, even if a tape can not be detected. This mount type should be used if your tape is having issues and is not appearing in myLTO.

TIP: Force Mount can also be used to format a brand new tape that is not appearing in myLTO.

Eject on Unmount is a handy option to kick the tape from the LTO drive when you're finished, as Dismounting and Ejecting are two different commands.

TIP: To Eject the tape manually, be sure to first **Dismount** it through the software. Then press the **Eject** button on the tape drive for a second and wait for the tape to expel from the drive.

Read-only Mount allows you to command the tape to mount in read-only mode, which will prevent new items from being written to the tape. This corresponds to the mount command's **-o ro** option.

Mount in Background allows you to choose between either a **Foreground** or a **Background** mount. While a background mount is the default LTFS, a foreground mount may be used in some situations.

Disable Multithreading corresponds to the macFUSE **-s** option.

Prevent Page Caching bypasses the macOS page cache for both read and write operations and corresponds to the **LTFS** command's **-o direct_io** option.

Suppress Non-critical Logs is the final option and disables all non-critical LTFS messages. It corresponds to the **LTFS** command's **-o quiet** command.

Tape Commands

Below you will find a detailed explanation of each of the Tape Commands available for working with your tape.
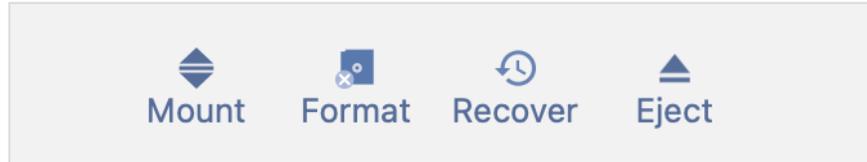
Mount LTO

A tape can be mounted by pressing the **Mount** button on the deck representation in the deck list. When the mount command is issued, a pinwheel will appear next to the LTO Devices indicating the mount is in progress and information about the mount will be displayed in the LTFS logs.

Once the tape is almost finished mounting, you may be prompted by the os to allow myLTO to access certain locations. If prompted, please select **OK**

TIP: To avoid these pop-ups give myLTO Full Disk Access in System Settings
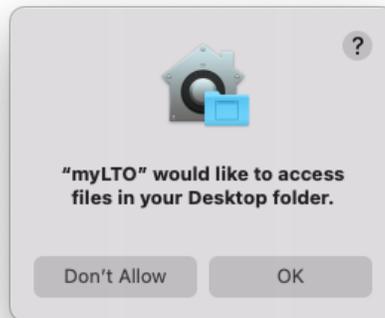
TIP: If the mount was successful, the device representation will gray out most options and only permit the **Unmount** command.

Once the tape is mounted, there will not be a representation of the mounted drive in the **All Drives List**. This is because navigating the drive like a standard mounted volume is not recommended. If you would like to view the drive mounted in Finder, you can do so by right clicking the drive and selecting **Show in Finder.**

Format Tapes

Ultrium LTO tapes are supplied in an unformatted state. The first time you load a

tape in the deck myLTO will detect whether the tape is properly formatted for LTFS use. This option can also be used to wipe and reformat a tape. Selecting this icon will open a confirmation screen. To proceed with the mount, press the **Continue** button.
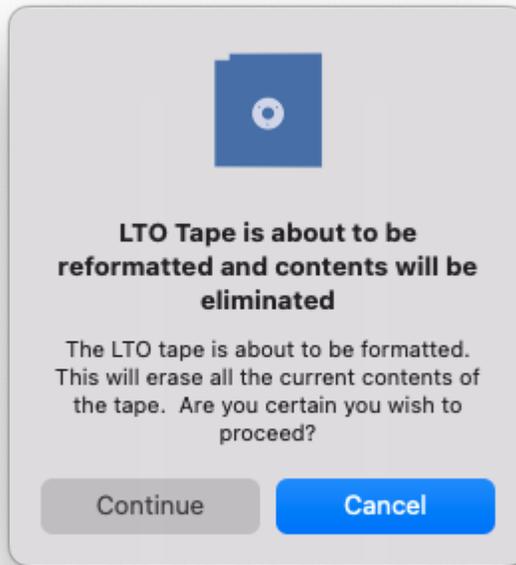
Pressing **Continue** will open a panel which allows you to specify the information to be applied to the tape during formatting.

The first option, **Tape Label,** allows you to set a custom name for your tape to easily identify it in the future.

CAUTION! Tape Labels cannot contain any special characters (e.g. ~, #, $, \, /, *, etc).

The next option, **Barcode**, allows you to set your tape's barcode to a custom 6 character combination. This code must only contain numbers and capital letters and can only be set when formatting the tape.
TIP: For best organization, we recommend using a consistent simple serial

number for your tapes. As your library of archives grows, this will facilitate sequential shelving and finding the correct tape when retrieving files.

A unique Tape UUID is assigned by the drive during formatting. This is an un-editable field and is for systems to be able to positively identify the tape.

The final option, **Use Compression**, allows you to define if your files should be compressed on entry. For best performance in archiving video files, leave this option unchecked. Compressed mode will impede write speeds and will not increase tape capacity unless the files you're backing up are compressible (e.g. text files).

Recover LTO

If an error occurs in your LTO tape, you can attempt a recovery to try and save the data on the tape. Click **Recover** to open another window with the recovery options.

When the window appears the first option, **Run Check** will determine if recovery is needed. In some cases this option will fix the issue and no actions will be needed.
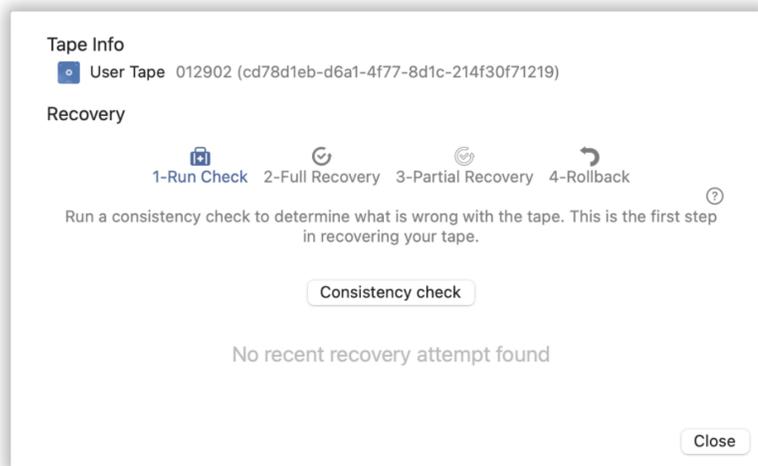
If recovery is needed there are three **Recovery Methods** available, the first is titled **Full Recovery**. This option will attempt to recover your missing data from the tape by gathering any written data that has not yet been synced and adding it into the index.
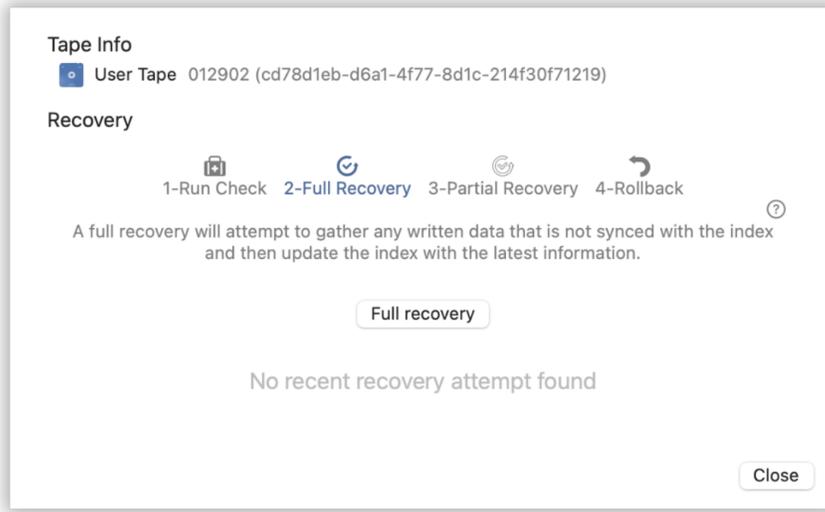
The second option, **Partial Recovery**, will try to rectify the tape's issues by discarding any changes to the data blocks that the tape's index does not have information about. This may result in data that was written since the last tape index sync being lost.
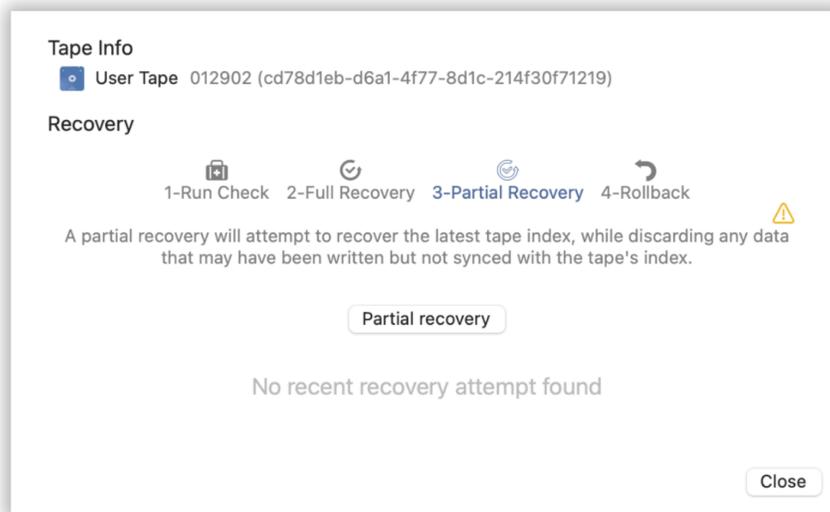
The final recovery method, titled **Rollback**, allows the user to select a previous generation of LTFS. The tape will then revert back to the specified generation.
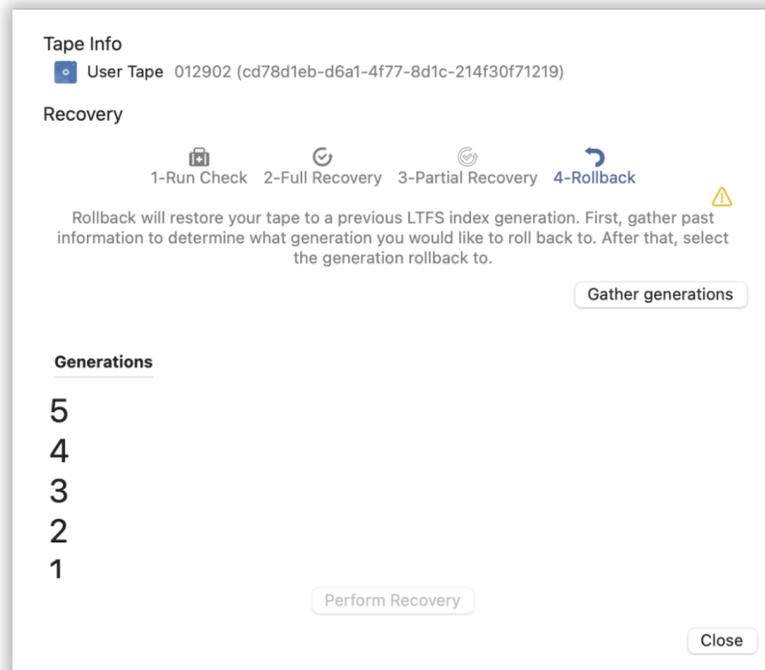
CAUTION: Rolling back to a prior generation will result in the loss of data for all generations which came after the rollback generation.

Before a rollback can occur, the previous generations need to be determined. These can be found by selecting the button marked **Gather Generations**. Once the button is pressed the index generations will begin to populate the view. After the index to which you would like to rollback has been generated, you can select the button marked **Stop**.

After finding the desired generation, select it, and then click **Perform Recovery.**

TIP: This option should be considered a last resort. It is recommended that you select the most recent generation when rolling back to minimize the amount of data lost.

Eject LTO

The **Eject** option will physically eject your Tape from your LTO deck. This option should only be selected when you are finished using your tape.

NOTE: This eject option differs from the one seen on the left hand side of your screen in your list of drives. The eject icon located in the drives list will unmount your drives from the file system.

Unmount LTO

Unmounting the LTO drive disconnects it from the operating system's file system. This command does not eject the tape, however, it does include final updates to the tape's index so please be patient after selecting this option.

If you've enabled the **Eject on Dismount** option, the tape should be expelled from the LTO drive once the unmounting has completed.

To manually eject the tape, depress the **Eject** button on the tape drive for a second.

If a tape fails to eject, pressing and holding the eject button on the deck for 15 seconds will invoke the deck's force ejection routines. Take caution, however, as force ejecting a tape can have the potential for data loss if the tape is actively working on a data IO operation.

Settings

This section will help you enable **myLTO** settings to perform in the manner you want when archiving files to tape.

If this is your first time starting myLTO, you will need to check a few default settings.

To access your settings, locate the **myLTO** option in the menu bar at the top of your screen and select **Settings** from the drop down menu.
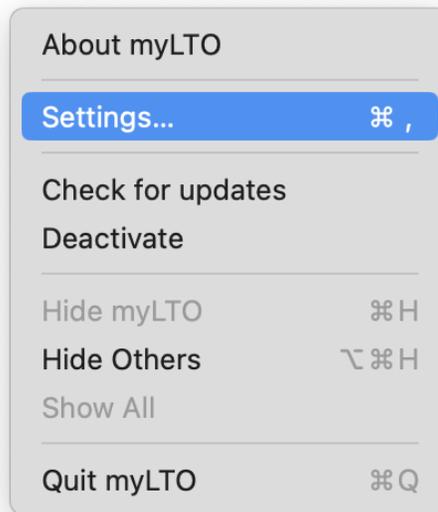
From here you can access all your settings, **Basic Options, Notification Options, Report Options,** and **Advanced Options.**

The most frequently changed settings are grouped in the **Basic Options** menu, the left-most option on the toolbar.

Basic Options

Click the '**Basic Options**' button on the application toolbar to choose the queue options, job sequence, and verification types.

Queue Options

Under **Queue Options**, choose how processing will be initiated.

The first option allows you to select what occurs **When copying entire drives**. This feature lets you choose between **Include folder with drive name**, which ensures volume names are included as the top folder name in the copies, or **Drive contents only**, which simply ignores that and copies the contents only.

Select **Automatically add drives to the Preset Queue** to immediately begin processing when any new removable drive is detected. In other words, in this mode myLTO will ignore already attached drives and mounted volumes, but when a new drive is sensed it will begin processing that one.

CAUTION! Do not plug in an external hard disk while in Automatic mode unless you intend to archive its entire contents!

Check the box to immediately **Begin job upon entry to Preset Queue** if you prefer copying to start without manually pressing the **Begin** button on the main window.

TIP: With this option enabled, to automate **Simple Mode** add the **To** destination(s) first then drag in the **From** items.

Job statuses are shown on the right side of the screen. You may click on any job status to open its details in the center area of the application, or enable **Automatically open details when job begins** to open it every time you start a new job.

Always show preset preview window causes a pop-up when starting a job in Preset mode. This window will also open if you are missing information, regardless of your preferences.

NOTE: An error will be indicated in the status and the progress will turn **RED**. If you've chosen not to cancel on errors (unchecked this option) the job will finish what it can and all reports, including checksum text files, will include Error Warnings (e.g. "Completed with Errors").

You have the choice of displaying estimated **Time Remaining** or **Time Elapsed** in the job progress status. The Time Remaining option will estimate how long overall copying and verification may take and then count down the displayed time. Estimated time is continuously updated depending on output location

performance.

Job Sequence

The job sequence options are designed to give you more control over source drive(s) use.
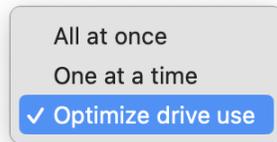
Let myLTO determine the most optimized manner to copy files, or instruct it to perform the jobs in the sequence they were added to the queue.

All at once means any queued jobs are all started at the same time when you click Begin. This option should rarely be used—it is intended primarily for copies between drives, not to an LTO tape.

One at a time simply performs the jobs in the queue in the order in which they were added.

Optimize drive use allows the application to determine the most efficient use of both source and destinations to prevent thrashing and ordering of activities at each.

Verification Options

myLTO offers a number of verification types to choose from. Checksum type verifications (such as XXHash, MD5 & SHA) use algorithms that calculate a binary value for the bytes of a file. The idea of checksums is to also identify any misplaced or changed position bytes in which case a file size may match but a checksum would not.

TIP: xxHash3-64 and **xxHash-128** are newer checksum methods that employ near RAM speeds for processing. They can speed up verification to near read access and significantly improve throughput for RAW and other media with large quantities of files.
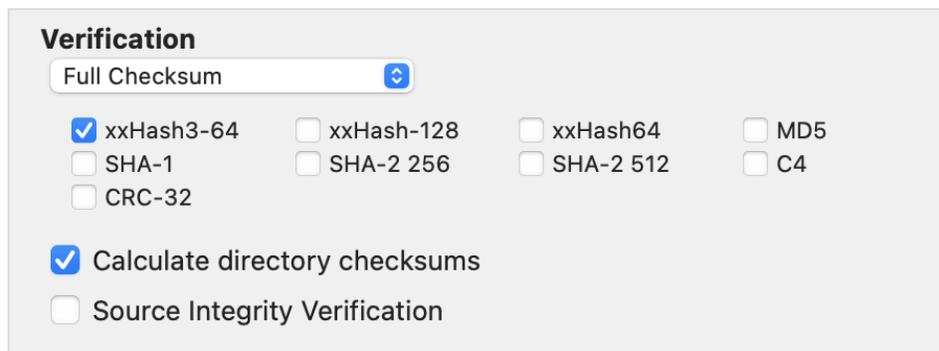
NOTE: Full Checksum verification is a redundant operation for LTO drives since they have built-in byte-to-byte checking during the write process. With checksum verification enabled, at the end of the tape write processes myLTO will read back each file from the tape to compare its checksum to that of the source files. For this reason the default/recommended setting is a less intensive verification option called **File Size - Source Checksum**. This verification relies on the operating system's report that the files made it to the output destinations correctly and each match the source file size. A third option, titled **File Size Only,** compares the file size of the source to the copy and is faster than the checksum options.

You can also obtain an XXHash checksum from the source for reporting purposes and downstream file checking. This is the default setting for Simple Mode copies.

Calculate directory checksums allows you to specify that a checksum value be calculated for entire directories (folders) of files. This type value is a handy way to compare large quantities of data sets without having to drill down to the individual file level. Currently this option is only added to ASCMHL, PDF, and TXT reports.

TIP: Enable Media Hash Lists (MHLs) under Report Preferences to Seal output copies. MHL files contain checksum file path information that allow analysis of copied files in downstream workflows to track any changes and determine that the contents still match originals.

Sometimes media card readers overheat, begin to fail, or the cabling is intermittent or faulty. The **Source Integrity Verification** option instructs myLTO to read the source a second time at the end of the backup session to ensure what it was initially given to copy has not changed.

Hardware failures may be detected in this manner because a matching checksum is not likely if anything is intermittent or changing. This option adds more time to read the source again, but is a strong insurance against corrupt incoming files. This option is only available when **Full Checksum** is selected.

Notification Preferences

myLTO features several automated notifications to inform you about progress. Select the **@** icon titled **Notifications** from the toolbar to open the notification options.

Check the box to **Enable Desktop Notifications**. You may also choose sound alerts for completion and errors.

TIP: With sound options off, enabling **Desktop Notifications** will present a pop up notice of activity even when the application is minimized.

myLTO can also send job status information via email or SMS text.

NOTE: An Imagine Cloud account and up to date software are required. You must have an active (unexpired) **Update Plan** associated with your myLTO license to utilize E-mail and SMS features. Notifications are only available for use on macOS 10.15 and newer. This feature is not available on macOS 10.14 and earlier.
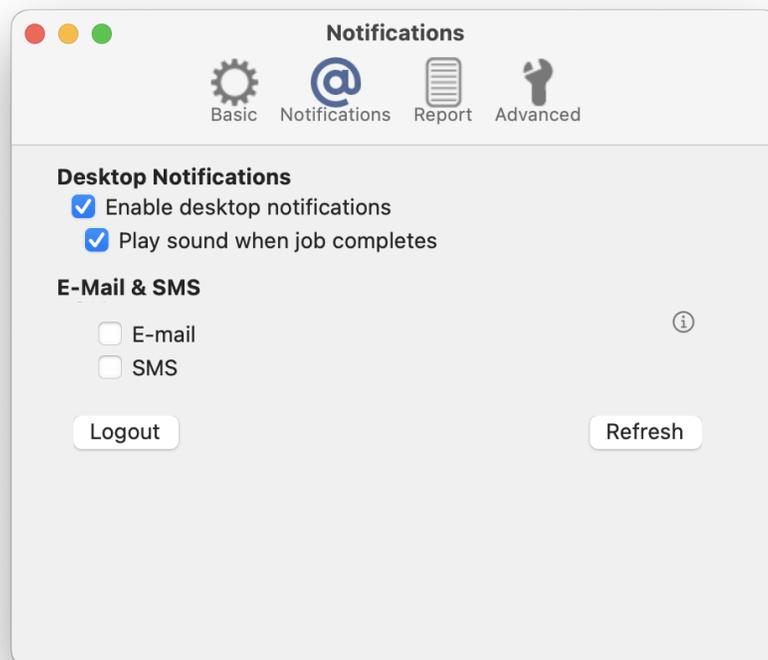
To set this up you must first link the application to your **Imagine Products** account. You can sign in using **Apple, Google,** or by using your email and password.

Next, choose whether to send notifications by email, text, or both. With email you may also choose to include reports. The email field will automatically

populate the email associated with your Imagine Products account.

To set up **SMS Texting** select the profile icon from the right side of the panel. Along with setting up SMS notifications, you can also edit your **Nickname, First Name,** and **Last Name.** To send texts, type in your phone number and select **Verify Number** then enter the received code into the box and click OK. You MUST validate before using this option.

If the job session fails or contains errors, you'll receive notice of these as well as successful completion messages.

Report Preferences

Reports can be an important bookkeeping tool and can even be used for simple offline search indices. Click the **Report Options** button to choose from a number of of options.
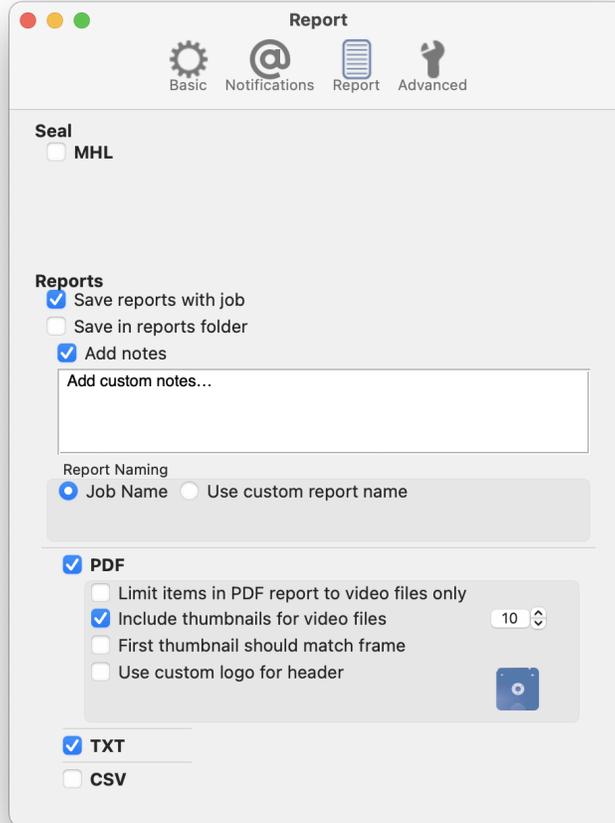
Seal

myLTO can output two different types of checksum verification files, also known as **Seals**. The default is the new American Society of Cinematographers (**ASC**) industry standard Media Hash List (**ASCMHL**).

ASCMHL files adhere to the organization's formatting and naming standards (see www.mediahashlist.org/mhl-specification). These XML lists contain relative paths to data files and folders, and their original checksum values. These are always saved with output copies inside the Destination location(s).

MHL V1 style seals place the XML file as a 'sidecar' (outside of the referenced folder of files) or embedded in the sealed directory. This older MHL form is less robust than ASCMHL, but may still be in use or required by your clients.

With either of these type files, you can check the integrity of data files at any time to ensure they still match the originals.

Seal Location Specification gives two options for customizing the locations being sealed with either MHL seal type. **Seal output folders** will generate a single seal for all of the items at each offload location. For example, if multiple items are offloaded to a single folder called "OffloadDestination" a single seal

will be generated for "OffloadDestination", regardless of the number of items offloaded. **Seal root items** will generate an individual seal for each item being offloaded. For example, if multiple directories are being offloaded a seal will be generated for each directory at the offload destination.

NOTE: MHL seals will only contain information pertaining to items involved in the offload process. Existing items at the offload location and reports generated and saved to the offload location will not be included in the seal information

Reports

myLTO offers several standard report formats including **PDF**, **Text** and **CSV** types. PDF is a Portable Document Format used by Adobe Acrobat readers. The Text type is a simple human readable form, while **CSV** (comma separated values) is a format that's readily compatible with spreadsheets.

When you select a report type it will automatically be generated without further prompting after archiving has finished.
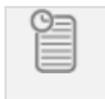
TIP: You may manually generate reports from the **History** list (see next section of this manual).

Report Location

Save reports with job places in a Report Folder in the root of the Job Destination on the tape.
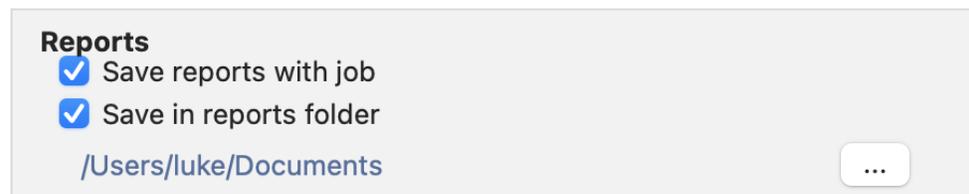
Save in reports folder allows you to browse to an existing location on your computer or attached drives to save all your reports together.

TIP: For LTO tapes it's recommended to only save to a reports folder on your computer for convenient reference.

Notes

You may automatically **Add notes** to your reports.

For example, this might be contact information, project details, etc. The notes will appear in each report at the bottom of the header information.

Report Naming

Choose how to name the reports. They can be labeled automatically by the **Job Name**, or you can type in a **Custom** name.
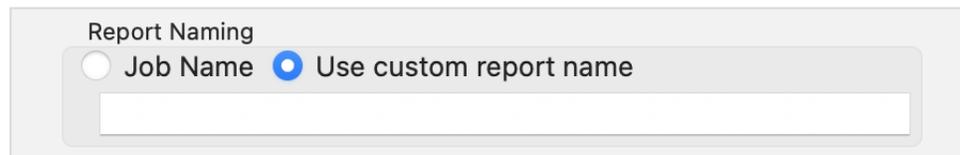
PDF Formatting

myLTO is "video aware" and can extract file metadata and thumbnails for over 20 different camera/video formats including MOV, MXF, MTS, MPEG, DPX, ARI, AVI and more.
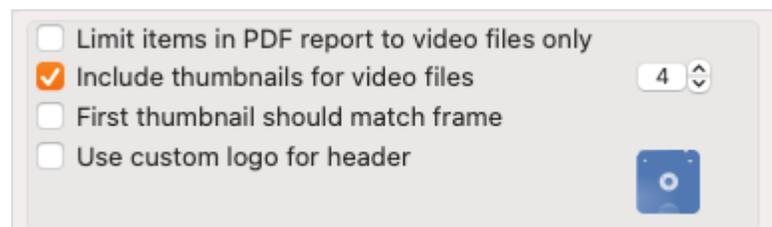
With PDF report type enabled, choose to include information about all files or select **Video files only**.

All Files means the report may have thumbs and metadata for video files and also textual information about non-video files that were copied.

Thumbnails for videos are optional. Choose up to 10 sampled video frames to be included. The thumbs are sampled based on percentages within the clip.

Normally the first thumb would be grabbed a few frames inside the clip to avoid potential black or useless frames. However, you can select the option **First thumbnail should match frame** for situations such as clapboards, etc.

NOTE: Image sequence files such as RAW will be treated as if they're one

continuous clip and sampled accordingly.

Customize PDF Header

PDFs may include your own company logo if desired.

To replace the myLTO logo with yours, they must be PNG, JPG, TIF, GIF or BMP and 128x128 pixels. Larger files will be resized appropriately. Non-square files may be cropped or stretched to fit.

Enable the option titled **Use custom logo for header** and browse to the image file you want to use.

TIP: To remove the header image, simply replace it with another. Or, you can **Restore** preferences factory defaults under **Advanced Preferences**.

Advanced Preferences

Click the **Advanced Options** icon to open the panel. Settings here are generally ones that are changed infrequently.
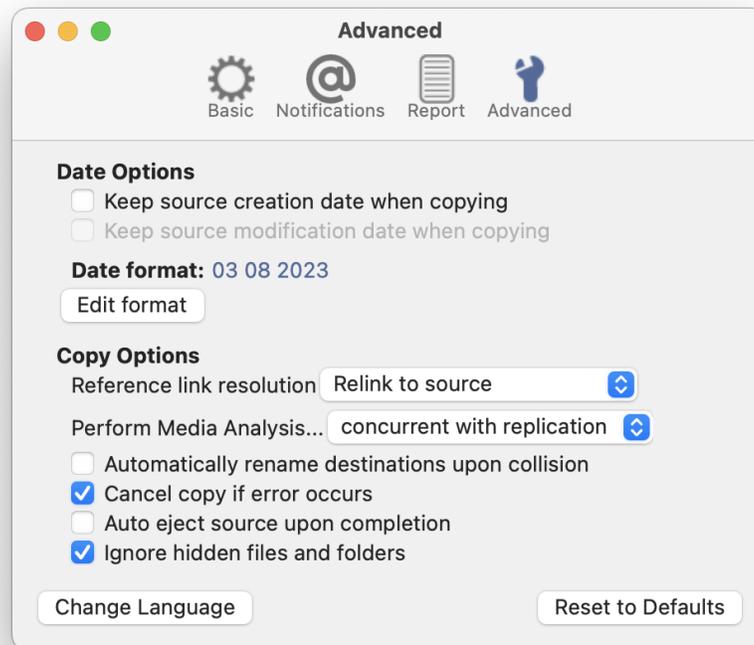
Date Options

Files copied from external devices or cards usually incorporate the date the file was copied to the output destination, rather than original file information.

You may choose to **Keep source creation date when copying** and/or **Keep source modification date when copying**.

These options instruct **myLTO** to override the system default of today's date (when the copy was performed) with those gathered from the source file information.

NOTE: Not all cameras apply Volume Date information to files or cards! Please check the card information in Finder before using either of these options.

Date Format

Click **Edit format** to change the style used in **Reports** and **Notifications**.

Date format: 03 08 2023
Edit format

The preview is shown at the top of the dialog.

Select from one of the popular **Common Formats**.

Alternatively, design your own format by dragging the items (month, day, year etc.) to the top area. You may also type in separators such as colons and commas.
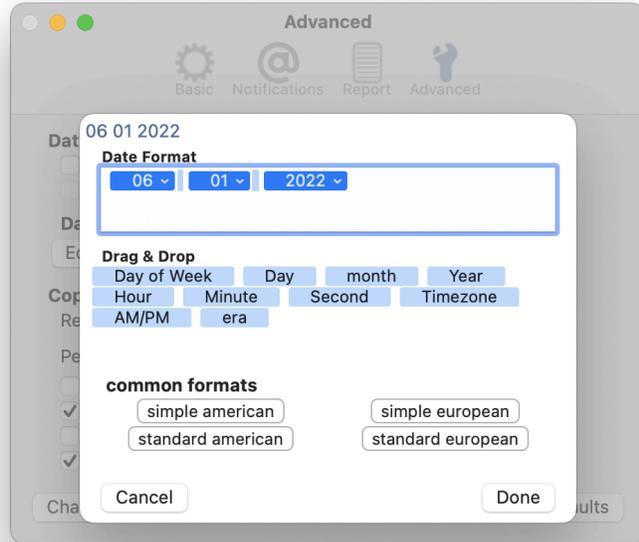
To remove an item simply select it and press the Delete button on your keyboard.

Copy Options

Symbolic Links (**B-reference links**) are files containing path information such as references to other media files, etc. Often s**ymbolic links** are "**absolute paths**" which means when copied, they're no longer valid (because they're not relative paths).

While it's unlikely your data will contain such files, you can instruct myLTO how to handle these type files should they be encountered.
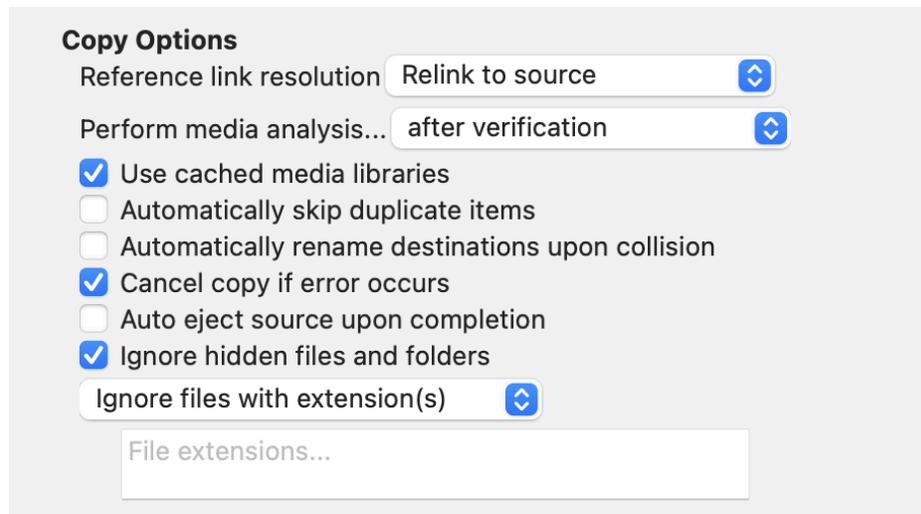
Relink to Source recreates the link after the copy is complete to point back to the original source.

NOTE: Links to any drives that were not copied will break if the drives lose connection to each other.

Due to changes within the reference file, verification of it is skipped because the resulting link file contents are no longer the same as the original link file.

Relink to replicated source means that if the original item was part of the copy, this option will recreate a link to the newly copied item. If the item is not part of the copy, then the original link file will be copied.

Due to changes within the reference file, verification of it is skipped because the resulting link file contents are no longer the same as the original link file.

Copy original should be used to find the linked file or directory and copy it instead of the link.

Copy original link should be used to copy the reference link "as is" without any changes/resolution.

While the copied and original link files will be byte equivalent, there is no checking of links contained therein (so some references may be broken).

Perform Media Analysis

Media analysis is the extraction of video file metadata and thumbnail generation. There are three options available when performing it, Concurrent with Replication, Concurrent with Verification, or After Verification. To ensure a quick replication and verification time a user would want to select the last of these options. However, the fastest option overall is to analyze it concurrently with replication.

Use Cached Media Libraries

Selected by default, this option allows the user to select whether or not to cache media libraries into RAM when performing media analysis for the fastest possible result. However, since media analysis utilizes multiple third party SDKs, it is possible to experience performance degradation and memory bloating after continued use of the same in-memory libraries.

If you are experiencing media issues with media analysis, we recommend unchecking this option. When this option is unchecked, each media analysis operation will utilize freshly loaded media libraries and remove them from RAM once the analysis is complete. While this option is slower, it can be more reliable if media analysis is failing while using the Cached Media Libraries.

Automatically Skip Duplicate Files

When Automatically Skip Duplicate Items is enabled, users can direct ShotPut Pro to automatically detect duplicate files between the copy source(s) and destination(s) based on matching criteria, and if they are found, it will skip them during the copy. This can speed up your offload, increase organization, and prevent unnecessary duplication. A file will be considered a duplicate under the following circumstances:

- A file already exists at the specified output path at each destination
- The modification dates for the source and existing output paths are equal
- The byte sizes for the source and existing output paths are equal

If the modification dates or sizes of the output file paths differ from that of the source, the outputs will not be considered duplicates and the actions taken will depend on the selections made in the app Settings.

NOTE: When this setting is enabled, ASC MHL seals will only produce partial results as items in the original source(s) that are being copied may not be copied to the destination(s) due to them already existing there.

NOTE: PDF and TXT reports will include a section which enumerates skipped file paths.

You will notice that when Automatically skip duplicate items is enabled certain settings are turned on and locked. This is because detection of duplicates relies on the information these settings provide. These settings include Keep source creation date when copying and Keep source modification date when copying. To turn these settings off, first disable Automatically skip duplicate items.

If every file in an attempted copy is deemed a duplicate, the job will be canceled.

Name Collision Resolution

If you're copying multiple items to the same destination (output location), naming conflicts potentially exist. You can instruct myLTO to **Automatically rename destinations upon collision**. This option retains the same named items and differentiates with an extension (e.g. -2, -3, -4).

With this option **OFF**, you'll be warned whenever duplicates are found.

TIP: Avoid the potential for file/folder name collisions altogether by using unique folder naming schemes in **Preset** copy mode.

Cancel copy if error occurs

Enable this option to immediately terminate the copy processes should a failure

happen.

When not enabled, you will just be alerted that an error occurred, but copying will be retried multiple times until it skips and continues with the remainder of the copies.

NOTE: An error during the copy process will be indicated in the status and the progress will turn **RED**. If you've chosen not to cancel on errors (unchecked this option), the copy will finish what it can and all reports, including checksum text files, will include **Error Warnings**.

If this option is not selected, the offload will be halted and resolution options will be displayed to the user. The user will have a predefined number of minutes to select an option on how to continue before the job will automatically retry to copy or verify the erred file.

Auto Eject Source

You can save time by letting the software **Auto eject source upon completion** from the Desktop. This simply makes it ready to unplug from your computer (it does not physically eject cards from readers).

NOTE: This option may not eject until Reports are complete.

Ignore Hidden Files and Folders

File systems can contain hidden files and folders. The function of these files vary from important os system files to simple indexing files used to make Spotlight function more efficiently. For media offloads, it is often desirable not to include these items since they often have no relevance to the integrity of the offload. This is why ignoring these files is **on by default**.

NOTE: Currently Spotlight's ".DS_Store" files are ignored regardless of the option selection as copying these files can cause problems with verification.

Copy/Ignore by File Extension

Users can direct ShotPut Pro to Ignore by File Extension during the copy process, meaning any file with the extension the user specified in the input box will not be copied during the replication process. If offload sources frequently contain unwanted files, enabling this setting will prevent these files from being copied to the output destinations

Inversely, you can use the dropdown arrow to change the settings to Only Copy by File Extension. This means only files with the file extension(s) specified in the box below this setting will be copied during the replication process.

To utilize either of these functions, simply begin typing the desired file extensions in the box below. After each file extension either click Enter or type a Space to confirm the extension.

**NOTE:** PDF and TXT reports will include a section which enumerates ignored file paths.

CAUTION: When this setting is enabled, source files will be omitted from the replication process and will likely be permanently lost when the source drives are reformatted and reused.

If the specified file extensions omit every file in an attempted copy, the job will be canceled.

Change Language

myLTO now has localization for certain languages. Click the **Change Language** button to open macOS System Preferences.

Under the General tab you can change your preferred language for the computer.
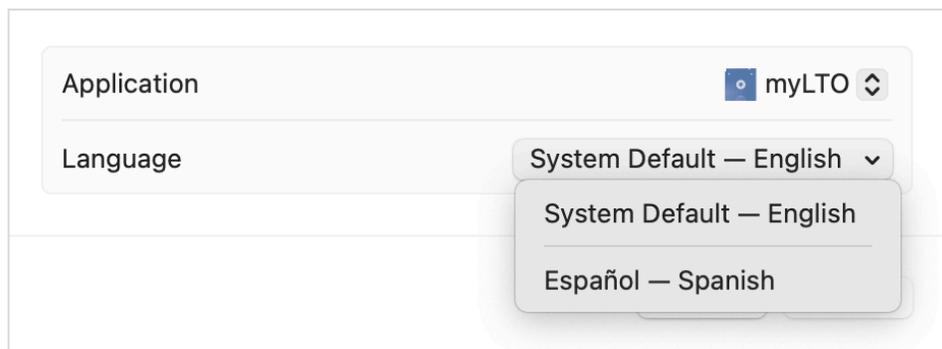
Click the **Apps** tab to choose myLTO. Select from System Default or other supported languages in the drop down menu.

Reset to Defaults

Click the **Reset to Defaults** button to change all Preferences back to default values.

Reset to Defaults

CAUTION! Reset applies to **ALL** Preferences, not just Advanced settings. Be sure to review **Basic**, **Notifications** and **Reports Preferences** after using this function.

TIP: To set a dark appearance, use the Operating System's General Preference to switch to 'Dark Mode.'
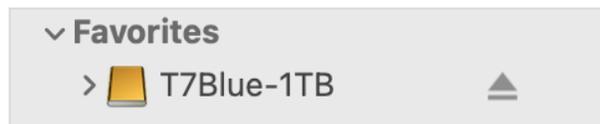
Copy

myLTO has two different copy modes.

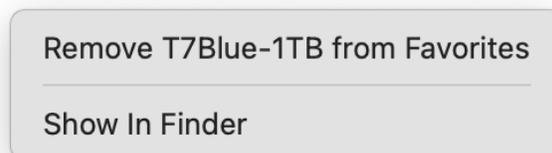Use **Simple mode** to easily copy from one location onto an LTO tape without creating new output folders.

Simple mode will copy the source contents into the specified destination folders. In this mode, there is no need to create copy content folders manually ahead of time.

Simply drag-and-drop files or entire volumes to be copied into the queue area, and let myLTO do the rest.
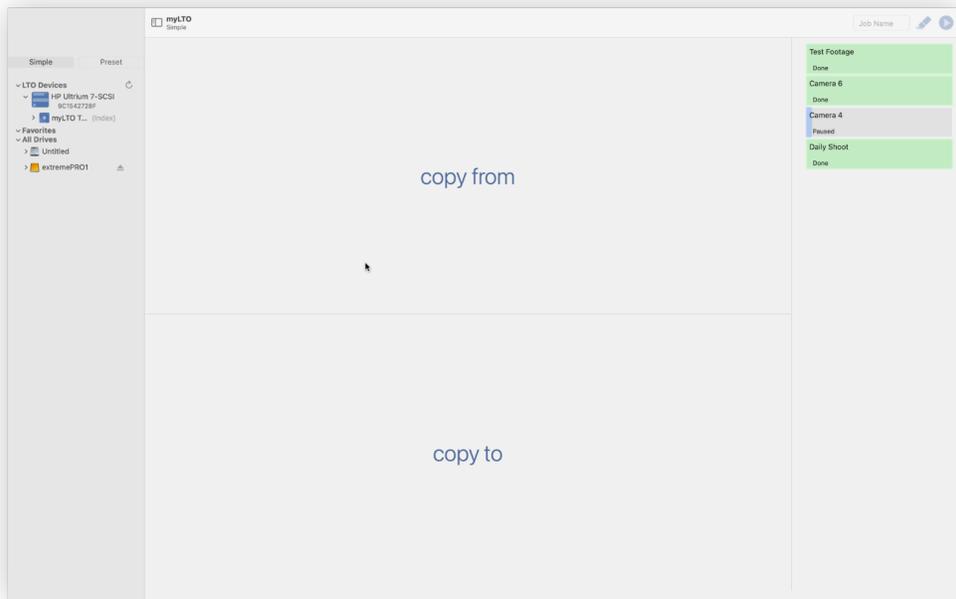
Favorites are handy quick links to often-used locations.

To add, **Right-Click** on an item in the **All Drives** list and choose **Add to Favorites**, or drag the volume below the Favorites heading.

Simple Mode

Use **Simple mode** to easily copy from one location to another without creating new output folders.

Simply drag files, folders or entire volumes from the left attached volumes list into the top **Copy From** queue area. Likewise drag output destinations (e.g. the mounted LTO tape) into the **Copy To** area. You may queue multiple 'From' and 'To' items.

Press the **Begin** button (upper right) to start the copy process.

TIP: In Basic Preferences, enable **Begin job upon entry to the queue** if you prefer copying to start without manually pressing the **Begin** button on the main window.

To automate discovery and copy of removable volumes, select **Automatically add drives to sources queue** in Basic Preferences. Then drag destination(s) into the **Copy To** area before mounting a new volume.

Even though you're not creating new folders, file copies in this mode are treated as jobs too. You can type in a **Job Name** and save **Reports** and checksum files for any items copied in this manner.

**TIP:** To remove an item in the queue highlight it then press the **Delete** key.

To clear entire queues, click the **Clear Queue** button in the upper right, or right-click in the queue area and select **Clear All Items**.

Preset Mode
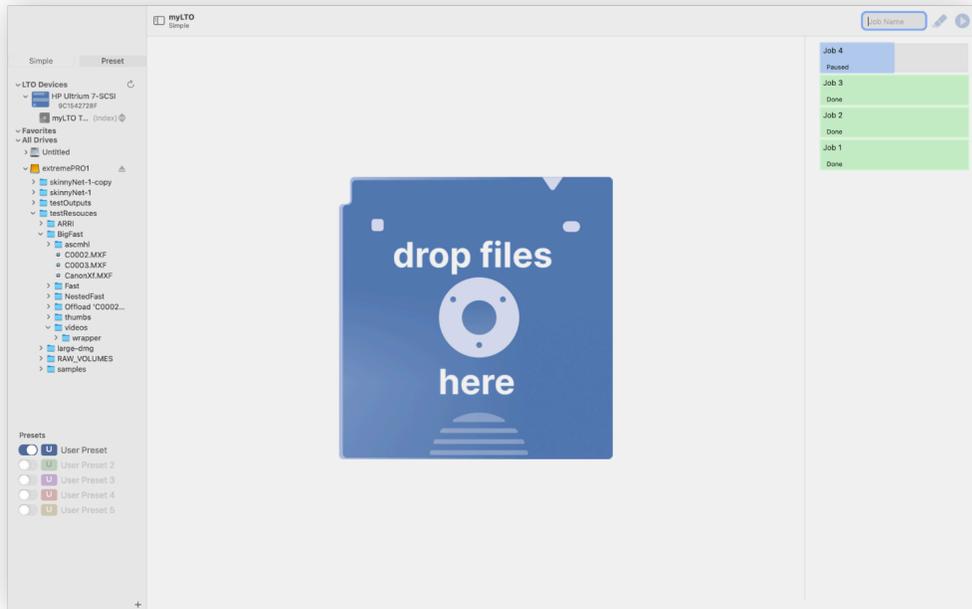
To use **Preset mode**, you'll need to set the locations where you'd like copies to be placed (e.g. the LTO tape) and how you'd like those folders named. In myLTO these are organized by **Presets**.
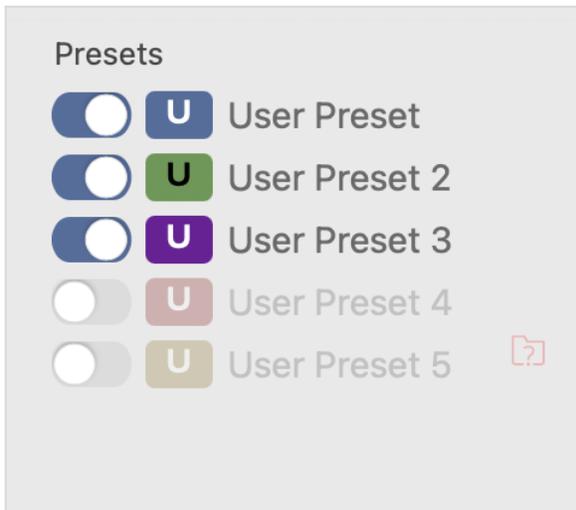
Create your own presets and turn them **ON** or **OFF** by the slider to the left of the name.

Click the **Plus [+]** button or **Right-Click** anywhere in the list to **Create a Preset**.

To **Delete** a **Preset**, **Right-Click** on it and choose **Remove**, or highlight it and click the keyboard delete button.

TIP: To easily duplicate complicated naming schemes, select **Copy** to make a copy of the selected preset. Then, just change settings in it to make it unique.

Presets may be **Imported** and **Exported** between computers and users for convenience and consistency.

Presets may be sorted by '**Name**' and whether they're **Activated** (enabled).

Edit Preset

To create a new **Preset**, select Preset mode, then right-click anywhere in the Presets list. You may also import presets from other instances of myLTO from this menu. To edit an existing preset, simply select it in the Presets list to open the edit dialog window.

Type in a name in the **Preset Name** box. Presets may be color coded for more distinction or grouping. Click the color box to open a color wheel dialog.
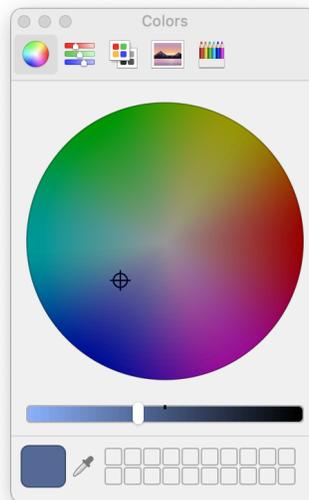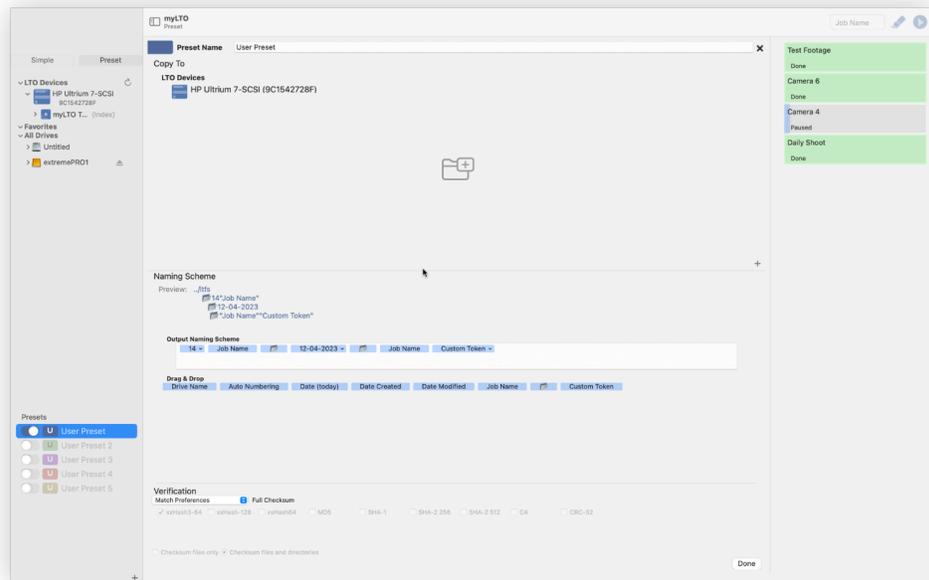

Output Destinations

A **Preset** can be set to copy to one or more locations at the same time.
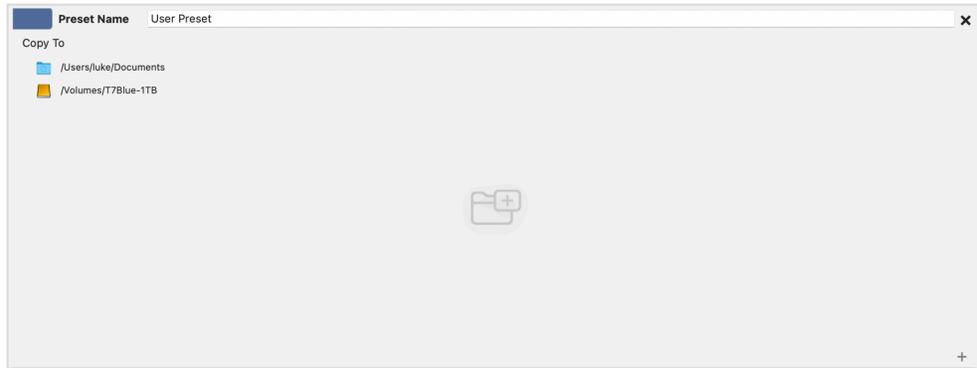
To add an LTO drive to a preset, drag either the tape or deck representation from the **LTO Devices** list in the left-hand view to the **Copy To** section of the preset. Once this representation is dropped, the device will be added as a preset destination

To remove an LTO device from a preset, simply click on the device's representation in the **Copy To** section of the preset and press the **delete** key.

To add a non-LTO output path, click the **Plus [+]** button below the list to **Add** a root folder or drive where you would like sub-folders to be created.

To remove a destination, right-click and select **Remove selection**, or just select it and press the keyboard Delete button.

TIP: Avoid long path names (those approaching 100 characters or more) since these may exceed the Operating System limits with the addition of the card's volume name, subfolders and file names within.

Naming Scheme

To create your naming scheme for output folders, double-click in the scheme design area to open the editor. (You may need to increase your application window size to expose all the options.)


Drag & Drop the naming items into the Output Naming Scheme box. You may move them around at any time. To create a sub-folder structure, drag the folder icon into your naming scheme, and then type in the name of it.

You also have the option to type in text. A new autocomplete feature allows you to begin typing the name of tokens to add them in. Keep in mind this feature only works if a token is directly before the autocomplete text.

A preview of the structure is shown. Sub-folders are shown indented beneath their parent folder.

NOTE: Invalid path characters are not allowed in the volume name (e.g. colon ":", "/", etc.).

Custom Token is a special naming field. When one is included in your naming structure, the application will prompt for user input at initiation of a copy job. This type field is a handy way to prompt for input to group output copies such as Project Name, etc.
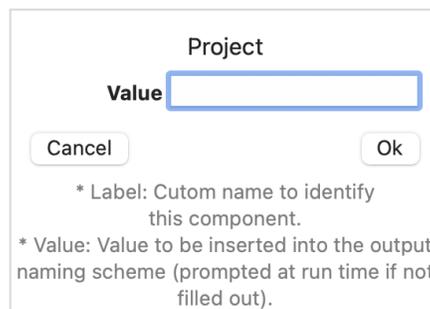
TIP: Click anywhere in the dialog to refresh the naming convention **Preview**. This will show you the name of the folder myLTO is going to create at the output destination(s). In the case of any time-stamped convention, a placeholder of the

49

current time/date will appear in the preview.

myLTO will not automatically overwrite existing folders, so the naming—whether typed in or automatic—should be unique. If the same name is accidentally chosen, myLTO will prompt for user action.

Today's Date, **Date Drive Created**, and **Date Drive Modified** selections name the copy folder based on the date/time information. These can be useful ways to ensure unique labels as well as organizing your cards based on when they were shot (provided that the card contains this information).

NOTE: Not all cards have Volume Date information. Should this happen, the software will attempt to acquire date information from folders and files within.

Verification

You may override global verification preferences to customize individual presets.
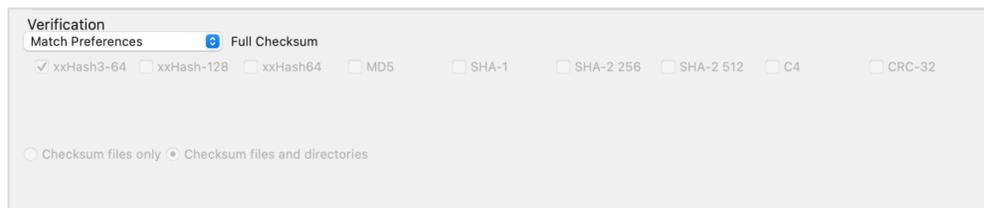
Refer to the **Verification Preferences** section of this guide for detailed information about the various checksum types and options.
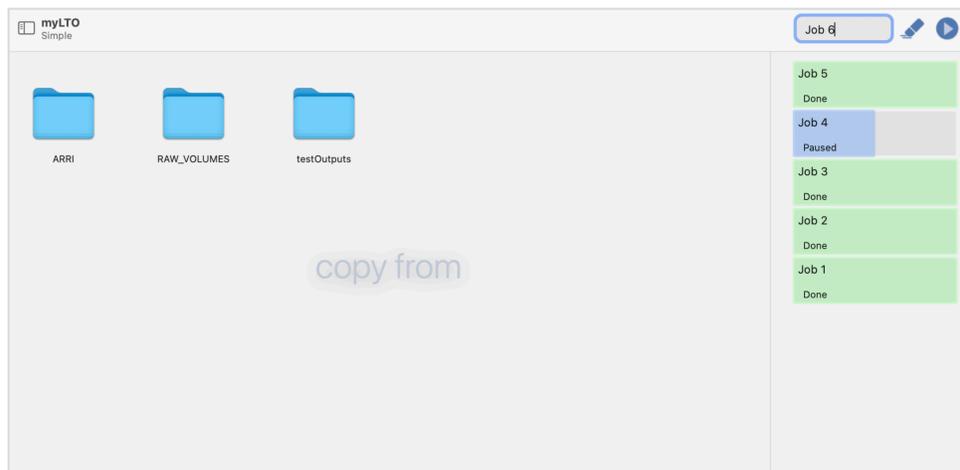
Copying Using Presets

Once you've enabled the desired **Preset**(s), just drag & drop the items you want to backup into the queue (center part of the screen).

NOTE: For easy identification, only item names are shown without their full file paths.

Type in the **Job Name** if desired, and then click the **Begin** button on the toolbar to start copying.

If you don't assign a **Job Name**, myLTO will default to the name of the item or volume being copied. If multiple items are included in a single job, they will be named based off of the source files.

myLTO offers rich details about any mounted volume. You can **Get Info** by right-clicking on the volume and selecting **Show Details**.
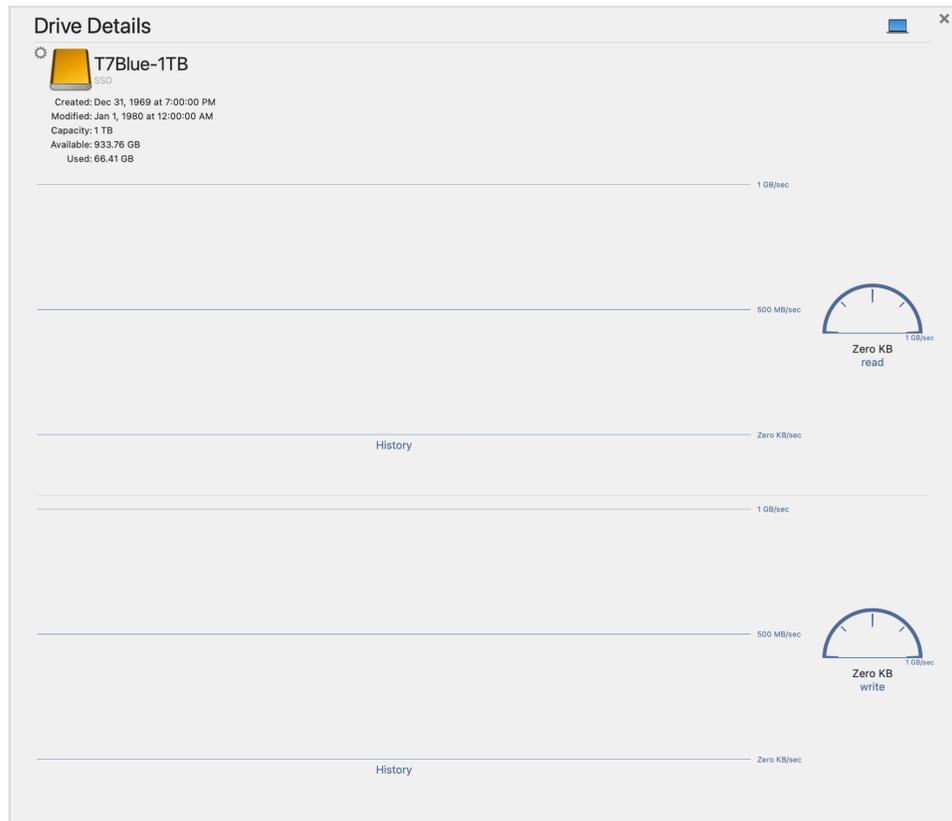
Likewise, myLTO offers detailed information about jobs in progress or completed. Progress status is indicated by both color and text, and displays the estimated time remaining.

Detailed information is displayed in the center area about the various stages of the job.

If a PDF type report is being created, its preview will display below the progress details. Click the **Browse** button to the left of the report name to open its location in Finder.

Right-Click on the progress bar for more options such as **Cancel**, **Pause**, **Resume**, and **Clear**.

Right-Click on the status to **Pause** or **Resume**. If you choose to **Pause** a job, the copy process will be suspended at a logical point (when the current file being copied is finished).

Jobs may **Resume** at a later time. You can also use Resume to finish a job that has been interrupted unexpectedly such as a cable pulled, etc.

Retrieving from an LTO Tape

Retrieving data from an LTO tape is one of the most critical functions of any archival software. If not done in an optimal manner, retrieval can take significantly more time than is necessary and cause unnecessary wear and tear to the tape and the deck. Fortunately myLTO has been engineered to use index-based tape information to properly order the retrieval of every item in the retrieval list.
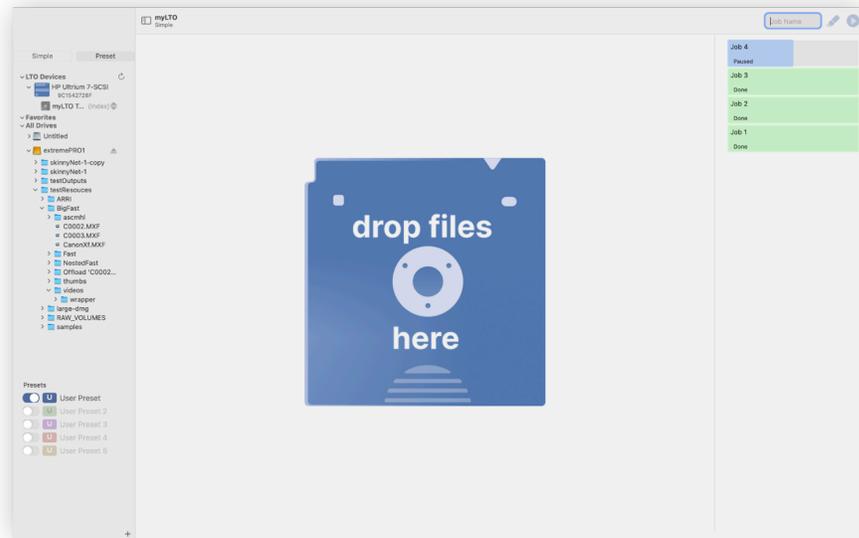
To retrieve items from a tape, expand the tape's representation in the left-hand devices view and browse for the desired items to retrieve.
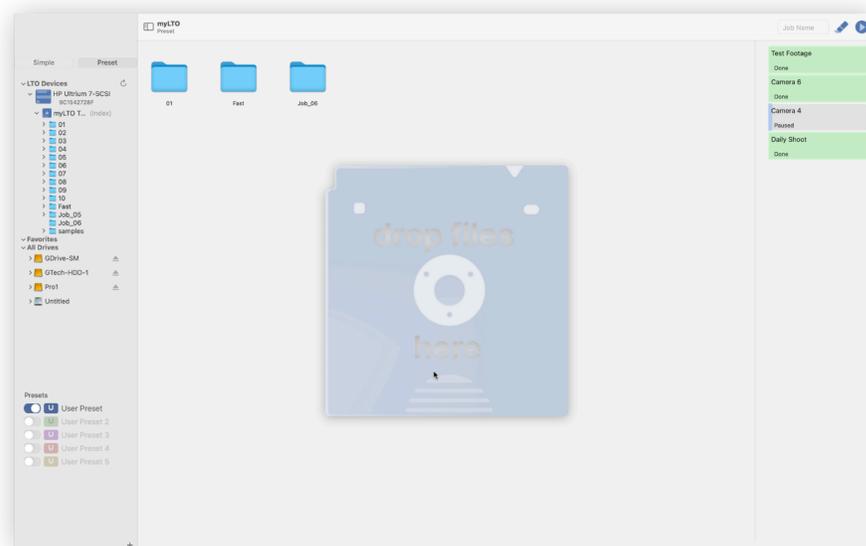
Once an item to retrieve has been located, simply drag it into the **Drop files here** section of the interface. Continue to do this until all the desired items have been added. To begin the retrieval process, click the **Start** button in the top right corner of the interface

Job History

myLTO saves a history of your jobs within the **Application Support** area of your user profile on the computer. This information and any video thumbnails sampled are saved for use in reports.
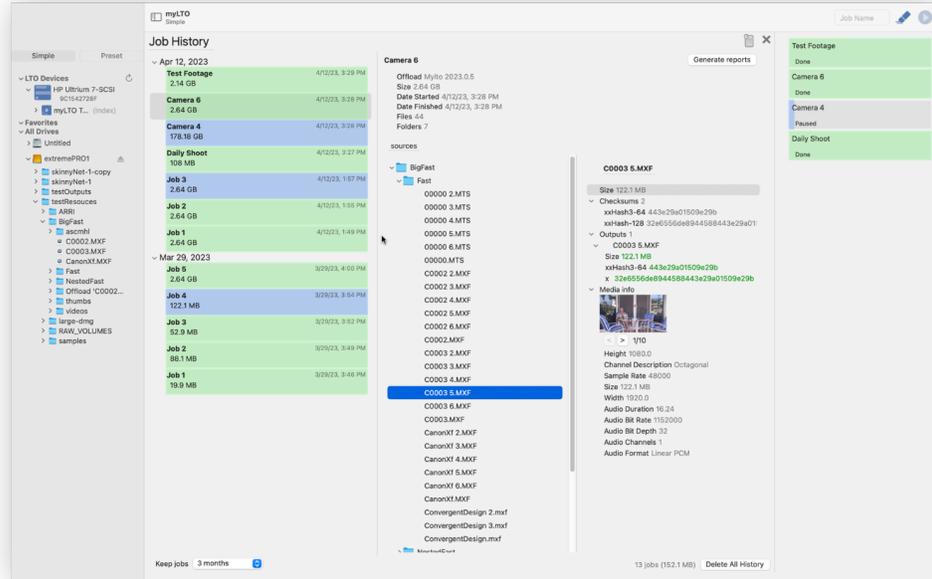
myLTO keeps a pool of recent jobs so you can manually generate reports at a later time. Set the maximum number of saved jobs history to zero if you do not want to keep any locally.

**NOTE: Delete History** has no bearing upon reports that have already been saved elsewhere. It simply reclaims used storage space on your computer's hard disk.

The history list includes the job identifier, date/time stamp, status and indication if video thumbnails were sampled during the process.

NOTE: PDFs can contain thumbnails only if the preference to collect them was selected during the job.

Aggregate Reporting

Aggregate Reporting is a new feature that can be accessed through the **Job History** page. To use this feature, select a date from the list of completed jobs on the left side of your screen. Additionally, select a custom range using **Shift+Click** or a custom set by using **Command+Click**.
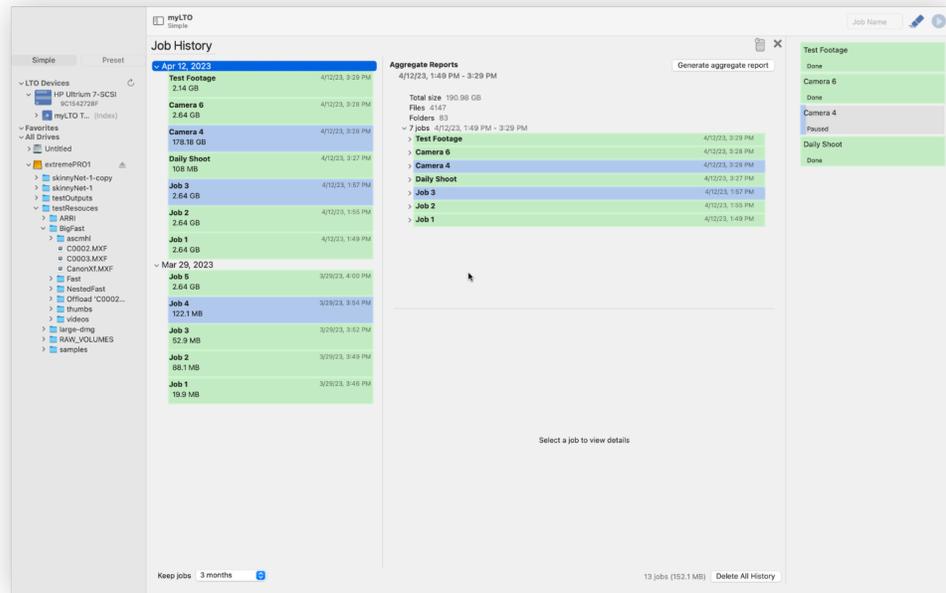

Upon selecting a day or range of jobs, the aggregate information appears in the upper panel to the right of your list of completed jobs. Information given includes the range of time in which the jobs were run, the total size of all files, the total number of folders, and the total number of jobs.

Selecting a single job from the list located directly beneath the aggregate information opens a panel at the bottom of the screen allowing you to view the folders and files included in that job.

Selecting a single file opens a panel to the right allowing you to view additional metadata information and thumbnail images.

Select the button **Generate Aggregate Report** in the top right corner to generate an aggregate report over the entire range of jobs selected. Upon doing so, a pop-up menu will appear allowing you to set a name and select the types of reports you would like to generate.
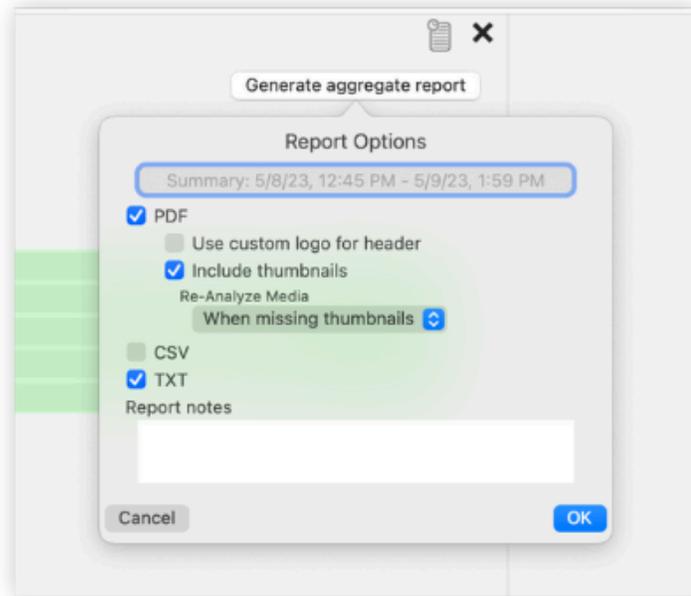
The name will default to **Summary Report (time range during which the jobs were run)**.

Report options include **PDF** (optional thumbnails), **CSV**, or **TXT**. This is also where you can re-run media analysis.

For example, if you did not include thumbnail images in your PDF report when you initially ran your job, or perhaps you did choose to include them, but some returned corrupted, you can select PDF report from this list, and then choose **Include Thumbnails**.

After checking this box an additional pop-up will appear asking you to define when you want to **Re-analyze the Media**.

Selecting **Always** will collect new metadata and thumbnail images no matter what.

TIP: This is the option you would choose if you had previously selected to include thumbnails, but some were corrupted or appeared incorrectly.

When Missing Thumbnails will only rerun the media analysis if there are no thumbnails found in the initial job.

TIP: This is the option you would select if you did not include thumbnails in your

initial job or even if you didn't originally generate any reports at all.

The last option is to **Never Re-run Media Analysis**. Using this option will create a PDF report but will only use known metadata information and thumbnails that were gathered the first time.

Another option in this view is to select whether or not you would like to use a custom logo in the header in place of the myLTO logo. If this option is selected it will use the custom logo you have chosen in the **Reports** portion of the **General Settings**.

Finally, aside from including CSV or TXT reports, is the **Report Notes** section. Here you can choose to include additional information in the report header such as Production info, DIT details, the project name etc…

After you have chosen your options, selected **OK**, and set the destination, you can view your report's progress by clicking the **Report Icon**.

Selecting the **Eye Icon**, will bring up the location the report was sent to. From here you can open and view your report.

Appendix A – Installation

This section details the initial required steps before using myLTO for Macintosh. Included in this section are instructions on installing the program, system requirements and registration. Skip this section if a registered copy of myLTO is already installed on your system.

Installing the Software

Download the installer to your computer and double click to run. You may be asked for the administration password for the computer. Save the folder of items to a temporary location on your computer such as Desktop. Refer to the README file inside for further instructions.

Since some of the components are subject to independent EULAs (end user license agreements), apart from Imagine Products' EULA, you'll be prompted to accept the terms of each.

The myLTO installer items folder will include:

- README.rtf
- myLTO application
- ICU Framework
- LTFS drivers (selected by Mfr. - HP, IBM, MagStor, mLogic, Quantum, etc.)
- ARCSAS driver (for MagStor decks)

Choose the LTO make and model carefully. You may be directed to acquire LTFS drivers from manufacturer's websites.

Place the myLTO application into the '**Applications**' folder (or wherever you wish to install it). You may be asked for the administration password for the computer.

Once the components are installed you'll be prompted to **allow restarting of the computer to fully activate the macOS modifications**.

The application will periodically check for newer versions, but you can manually check at any time by clicking the '**Check for Updates**' link under the application menu.

CAUTION! DO NOT EXTERNALLY INSTALL ANY OTHER LTO CONTROL SOFTWARE OR DRIVERS. Always update drivers using only myLTO installers to assure compatibility with the application and your system.

System Requirements

The minimum **Macintosh** configuration is:

- macOS 10.15+
- 4 GB RAM
- 16 GB free disk space

Activation

myLTO activation requires web access to our server to register the software for use. When you purchased the application, a myLTO seat was added to your account on our website. Upon first launch, the software will attempt to connect to our server and prompt for you to activate.

TIP: Activation information is stored on the system level independent of user preferences, so multiple profiles on the same computer may access the application as long as you install under the **ADMIN** user profile for your computer.

Just enter your account email and password for fast, easy activation, or enter the license number.

If you don't have an Internet connection on the target computer perform a manual activation. You may use a QR code reader app on your smart phone to quickly go to the appropriate page on our activation site to receive the manual activation code, or use the link provided to type in the computer ID.

myLTO is a single user license. If you're upgrading to a new computer or need to transfer the software, be sure to 'Deactivate' from the 'Application menu', just above 'Quit'.

How to Register

If you've purchased from our webstore, you're already registered in our system. If you purchased from a reseller or other method, the reseller or Imagine can transfer ownership to you. You must have an account on our website to run the software and receive customer support.

Upgrades are released from time to time and the only way you'll get these is to be registered.

We may also send you periodic electronic news. Generally, we only notify of new products and trade shows, commentary and stories of interest from other users just like you. Let us know what you're up to (publishing your stories is an inexpensive way to network within the production community).

Follow us on Social Media for timely and helpful information. On Twitter:
@imagineproduct

Appendix B - Troubleshooting

Throughout the program, reminders and error checks help to anticipate trouble spots in the program while preventing inadvertent data loss. If a message appears that is unclear, check the Help topics or refer to the appropriate section of this guide for further explanation.

Frequently Asked Questions

I Can't Activate!

Automatic myLTO activation requires web access to our server to register the software for use. When you purchased the application, a myLTO seat was added to your account on our website. Upon first launch, the software will attempt to connect to our server and prompt us to activate.

Use your email and account password, or the assigned license number to activate. If you don't have an Internet connection on the target computer perform a manual activation. You may use a QR code reader app on your smart phone to quickly go to the appropriate page on our activation site to receive the manual activation code, or use the link provided to type in the computer ID.

myLTO is a single user license. If you're upgrading to a new computer, or need to transfer the software, be sure to '**Deactivate**' from the '**Application menu**', just above '**Quit**'.

When transferring the software, always download the most recent version of the software onto the new computer and activate it normally.

The software asks for activation each time it is launched. Check your Gatekeeper selections (Computer Settings/Security) to allow full installation of the software. You may need Administrative privileges to allow activation information to be saved for your profile.

Technical Support

This product was designed to be easy to use and we want you to feel at home as you navigate through it. This guide should address the most often asked questions along the way. However, should you need support the specialists at Imagine can provide answers quickly and in terminology that you can understand.

Contacting Imagine Products

Visit Imagine's Web site to fill out a problem report **http://www.imagineproducts.com/** for fast, free service.

Updated news and patches will be available on the page, as well as Frequently Asked Questions under the Support tab on our site.

Alternatively you may email support @ imagineproducts.com

Check for Updates

From the '**Application**' menu, select '**Check For Updates**' to manually check now for any updates, or to configure how often the application should check automatically whether a newer version of the software exists.

Diagnostic Logs

Should you experience crashes or other system problems you may be asked to supply us with the '**Diagnostic**' logs. You'll find them here, under the '**Help**' menu.

Index