User Manual

Silverstack

Silverstack Version 8.5

POMFORT fn

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Getting Started

The Silverstack Main Screen

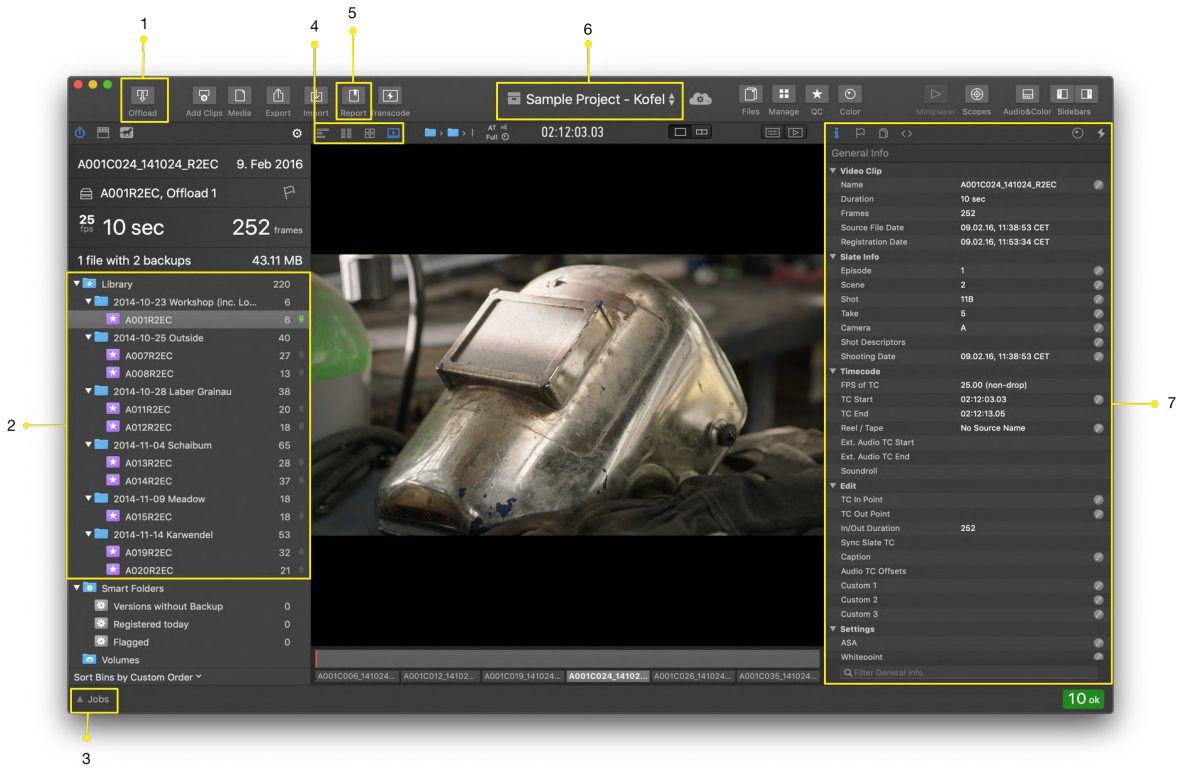
General Introduction

Silverstack:

- **offers secure and reliable data backup** and management of set data files directly on the film set.
- **allows you to perform multiple, verified copies at once.** It logs all copy and backup activities, so that you have a complete overview of your production's source clips.
- **is your digital library.** It allows you to organize, search and filter your media resources like clips and metadata. Silverstack extracts and stores all metadata embedded in clips such as timecode, color information, etc. and makes it available for offline use (without the media at hand).
- **supports native playback for quality control** of camera clips.
- **can export advanced, fully customizable camera reports** that can include multiple thumbnails per clip, all data sizes, clips lists, detailed metadata and more.
- **lets you transfer all relevant information** such as camera metadata, comments, captions, cue points/markers and scene, shot and take names **to post production and editing tools**. Thus all your annotations and quality check information find their way into your existing post-production workflow.

Silverstack is an application running on macOS.

Main Screen



- **1. Offload:** Start a copy/backup/offload process
- **2. Library:** The library outline with folders, bins, clips and documents
- **3. Jobs View:** Open the jobs view to monitor jobs (like transcoding or copy jobs)
- **4. Clips List / Player:** Switch between player and clips list view
- **5. Create Camera Reports:** Export a camera report
- **6. Project Chooser:** Create a new project or switch between projects
- **7. General Info:** Metadata list for the current clip

Offload and Backup

Silverstack supports a secure, multi-destination backup process of any digital file format. The security is guaranteed by industry standard hash formats like for example MD5 and xxHash.

Flexible configuration of backup paths with file metadata, backup templates and a flexible management of verification behavior and job queues, among other features help you with your on-set backup tasks.

See Offload Clips and Backup Clips for more information on copying.

Silverstack can backup to any HDD, SSD and also to LTO via LTFS (XT only,LTFS Backup).

Media Formats with Advanced Camera Support

Generally, Silverstack can handle any file format for secure offload and backup. However, Silverstack provides advanced features for many camera formats to maximize the efficiency of relevant on-set tasks such as quality check, playback and metadata management.

This specific support for a broad range of camera formats is referred to as Advanced Camera Support.

Silverstack detects Broadcast Wave files automatically as audio and brings associated audio files together to create audio clips.

For a detailed list of the supported formats, please take a look at the article Assets in Silverstack. Some advanced RAW formats like e.g. Sony X-OCN are only supported in Silverstack XT.

Clip Library

The Silverstack clip library in the left bar gives you the possibility to organize your ingested assets. Clips are grouped together in Bins (usually one bin per camera card), which can be organized inside folders.

Select a folder or bin and all its files display in the list view in the UI center.

The library outline can be sorted in custom order with drag & drop, or you can have it automatically sorted by name or date.

Select in the “View” Menu if you only want to see files that have been detected as clips or also all other files/documents (see “Show Clips Only” / “Show Clips and Documents”).

Metadata columns can be added and removed to/from the clips list one-by-one. You can also save and manage custom column layouts.

Metadata can be edited for many metadata fields that allow so by double clicking in the clips list table. Multi edit of the same column for multiple clips is possible via the General Info tab of the right bar.

Exchange and Share Clip Libraries

Silverstack offers different possibilities to exchange and merge metadata between multiple workstations. Having several options to share metadata gives you more flexibility in scenarios where different Silverstack libraries are used along the production workflow: on set for fast and secure offloading, near set for metadata handling and in post production houses.

- Share and merge Silverstack Clip Libraries via ShotHub: Sync Clip Library
- Import and Export Silverstack Library Archives: Exchange Library Metadata

Working with Library Assets

The “Media” menu button in the toolbar allows to work with media in the library e.g. for backup or verification.

Export

You can export the information in the library in optimized formats for third party applications via the Export menu in the toolbar.

Transfer of Metadata:

- Avid Media Composer
- Adobe Premiere Pro
- Apple Final Cut Pro X (FCPX)
- Blackmagic DaVinci Resolve

Import

You can import certain file formats to insert or overwrite additional clip metadata in the Silverstack library via the Import menu in the toolbar. The metadata preview wizard allows you to **validate** and adapt the import options.

Jobs

Certain processes in Silverstack run in jobs. In a Silverstack context the word “job” refers to processes that Silverstack controls. Those processes are:

- Offload
- Backup
- Verification
- Transcoding
- Relink
- Upload

You can trigger all of these processes from the Silverstack main window, however after scheduling them they are:

- accessible for monitoring and management in the jobs view.
- running in the background while the app is still usable.

The jobs view is accessible from the button in the lower left corner. You can access all kinds of information for jobs including an ETA (estimated time of arrival), a state (whether they are waiting for execution, are running, finished successfully or failed) and more metadata in the jobs view.

Multiple job queues are available (e.g. for copy and transcoding) that enable a parallel execution of multiple jobs and job types. Job settings can be configured in the “Copy&Jobs” tab of the application preferences.

You can reorder waiting jobs with drag&drop to optimize the order of execution.

If jobs finish they move to the lower part of the jobs view and the right bar reveals details about the job. This can include information about why a job might have failed and also offer actions like e.g. to retry.

Camera Reports

Silverstack can export advanced, customizable camera reports that can serve as a proof or log of all data that has been handled and provide information about metadata.

- Creating Reports

The following types of reports are available:

- Shooting Day Report
- Clips Report
- Thumbnails Report
- Contact Print Report
- Volume Report

Reports can be exported in PDF and HTML format.

Playback (Quality Check)

You can open the player tab in the center of the main window to display the playback view and play clips back. Playback control is possible with common JKL controls, but you can also scrub through clips, zoom in and out, alter the display resolution for RAW clips and more.

- Playback

Silverstack XT comes with HD-SDI output to play out clips in best quality on an HD-SDI monitor. The current clip in the player gets mirrored to the HD-SDI output showing the image in full-screen and 10 bit color depth.

- HD-SDI Output in Silverstack

Functionalities provided within the “Visual Controls” panel help to check the colors, focus and overall quality of your video clip.

You can also configure overlay frame lines over the clips in the playback window, as well as for the SDI output.

- Visual Control Functionalities in Playback Mode

Silverstack offers audio playback of audio data embedded in video clips for preview and quality check.

- Multichannel Audio in Silverstack

You can de-squeeze clips recorded with anamorphic lenses, crop clips as well as flip and rotate clips in the “Processing” section of the General Info (right bar).

- Image transformation

Clip Library

User Interface Overview

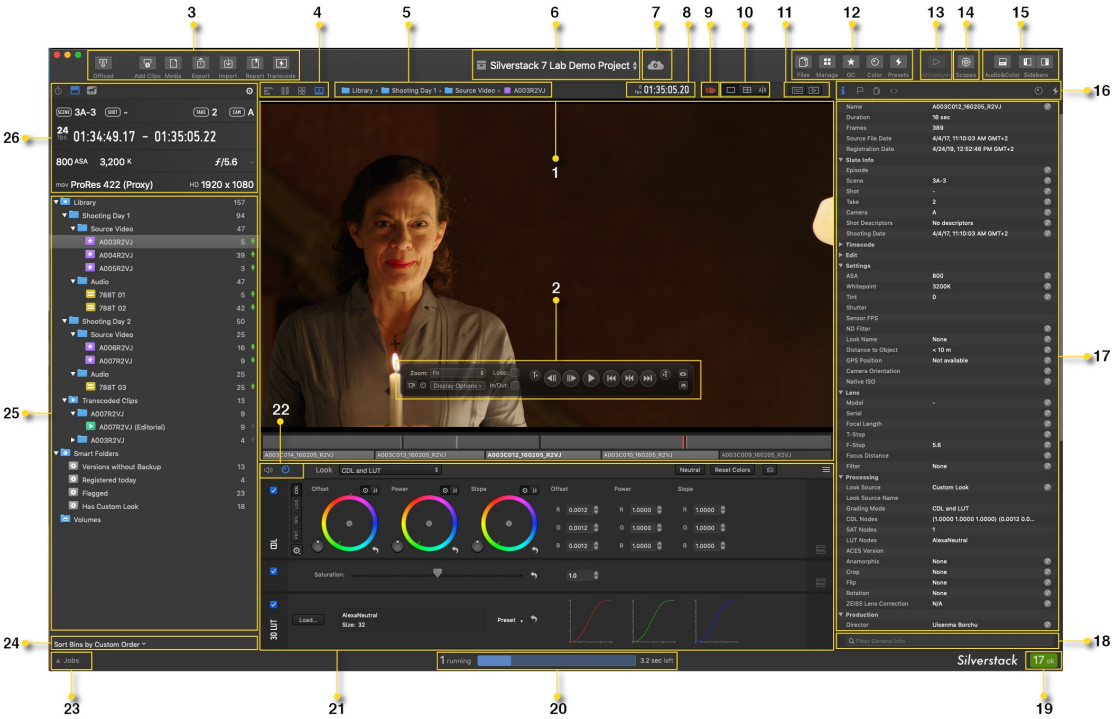


figure 1: User Interface overview

1 Video Preview

2 Playback control

3 Action wizards in Toolbar are Offload, Add Clips, Media, Seal, Export, Import, Report, Transcode:

- **Offload:** Choose a source to offload it in your library.
- **Add Clips:** Add clips to the library without starting a copy job.
- **Media:**
  - **Sync Audio:** Sync video clips with audio files from an external audio recorder.
  - **Extract LTC:** Extract longitudinal timecode from clips in the library.
  - **Relink:** Relink clips in the library to new media resources.
  - **Backup:** Backup clips in the library to new locations.
  - **Backup to LTFS:** Backup clips from the library to an LTO via LTFS.
  - **Verify:** Verify clips in the library.
  - **Seal:** Seal drives for subsequent workflow steps.

- **Export:** Export metadata files to use in editorial and post production.
- **Import:** Import metadata and match it to the clips from different sources.
- **Report:** Create various report types in the Report wizard.
- **Transcode:** Transcode clips to different available formats (create dailies).

4 Switch between View modes like Summary, Table, Collection, Playback.

- **Summary:** shows statistics and details for the selected object in your library.
- **Table view:** useful for sorting and grouping clips by certain criteria. It is also a great way to get an overview of the variousmetadata of a set of clips. Some of the fields are editable and you can jump from field to field by pressing the TAB key. Here you can also load and save custom view presets which are the foundation of your clip reports.
- **Collection view:** it gives you a visual overview over the clips in your library.

- **Playback:** shows the currently selected clip in the video preview and all clips from the active library object in a timeline.

5 Navigation through your Projects, Jobs, Volumes. Folders and Bins with bread crumbs. This feature is specially useful when you hide your library view and clip information view.

6 Project Library selection switcher. It displays the name of the current project.

7 Cloud status. The production information stored in ShotHub cloud projects can be accessed through a web application.

8 Timecode of playhead and current playback speed in fps.

9 External video status and video out settings.

10 Different video preview modes: Single, Grid or Split View.

11 Visual Controls for in depth Image Analysis and Full Screen Player.

12 Work spaces such as Files, Manage, QC, Color and Transcode Config to speed up specific tasks.

13 Miniplayer shows the video preview in a floating window.

14 Video Scopes such as Waveform, Vectorscope, Histogram.

15 Toggle View Controls to hide or show the Library panel, the Grading Controls, Audio Controls panel and the Clip Info panel to have more work space for example on small laptop screens.

16 Toggle between Clip information, User Information, File Resources, Clip Header, RAW development settings (*Silverstack Lab only*), Look Library and Transcoding configurations.

17 Clip information for supported advanced camera formats.

18 Search box to filter file metadata.

19 Successful/Failed jobs count.

20 Progress bar for running copy and transcoding jobs. Shows number of jobs in queue, progress and time left.

21 Grading Controls.

22 Switch between the audio and the grading panel in the lower “Audio&Color” section.

23 Jobs panel: Job or Copy Status, like successful or failed copy jobs, duration and file destination. More information in the article Managing Jobs.

24 Different sorting options for the library.

25 Library Panel

26 Info Display: it provides the most important information of the selected clip and cannot be edited. It contains two different view parameters: one for the Digital Image Technician and another one with relevant information for the Data Wrangler.

Collection View – Icon explanations

figure 3: Collection view: Clip icon

1 Clip Thumbnail (user selectable).
2 Clip name and duration. If the clip has been labeled, this part is colored.
3 Description of the ingest date and time.
4 Icon indicates that clip has audio. Either external, internal or both.
5 Indicates that this clip is marked with a flag and can be searched and filtered for this criterion.
6 Indicates the number of connected storage devices concerning this clip’s storage locations. The number colored in red shows the number of storage locations that miss the source file.

The Clip Library: Bins, Folders, Smart Folders and Volumes

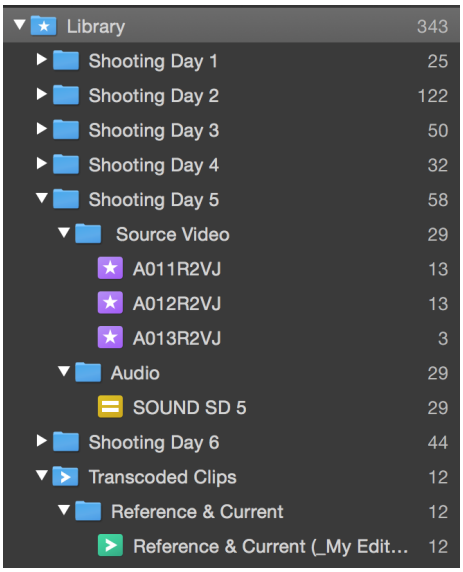


figure 1: The library panel part 1

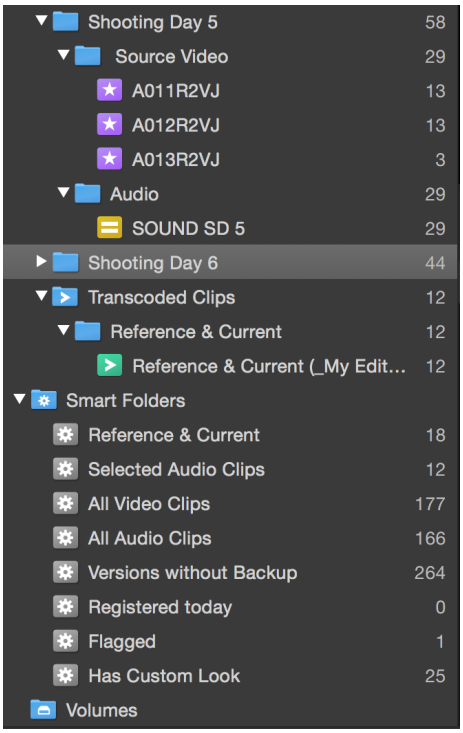


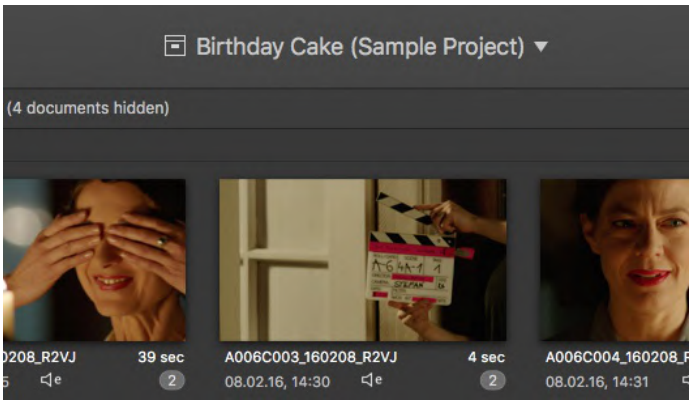
figure 2: The Library panel part 2

The basic building blocks of the Silverstack library are projects, bins and folders. Every project you create in Silverstack contains by default different kinds of *"Smart Folders"* and a *"Volumes"* sub-item. Based on that you can add an unlimited number of folders, bins and smart folders by right-clicking on any item of the project tree.

Project

A "*Project*" groups all information and data of a single project. In Silverstack all clips, jobs, volumes and destinations are assigned to one project. It may additionally contain information like the producer, name of the DIT or a production logo, which you can edit in the Statistics overview of the selected project.

The number behind every element of your project tree indicates the number of versions it contains, whereby duplicates are not counted. The number behind your "*Project*" item indicates the number of versions contained by it, with only counting one version of each referred clip.



Bin

A bin contains clip versions, but no other bins or folders. It is the smallest container unit in Silverstack. Bins are the only element to contain versions directly, folders and projects only group a set of bins.

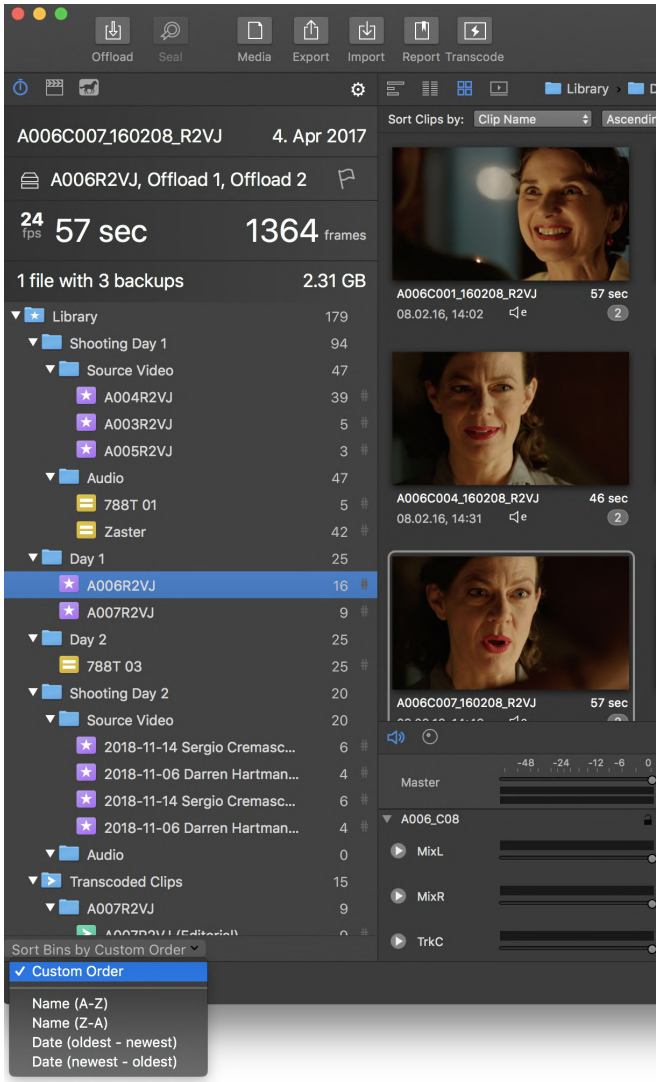
There are two different types of Bins:

- Video Bins: 

- Audio Bins: 

Sorting of Bins & Folders

You can organize the library by dragging and dropping bins and folders in a custom order or selecting a certain criteria to sort them by:



The bin sorting options in detail:

- **Custom Order:** Reflects and stores the custom order the user created with drag & drop.
- **Name (A-Z):** Sorts bins and folders by Name from top to bottom from 0 to Z.
- **Name (Z-A)**: Sorts bins and folders by Name from top to bottom from Z to 0.
- **Date (oldest – newest):** Sorts bins and folders by creation date, oldest date first, newest date last.
- **Date (newest – oldest)**: Sorts bins and folders by creation date, newest date first, oldest date last.

Folders stay on top. Audio bins are automatically sorted separately at the bottom of video bins.

Folder

Folders are used to create logical project structures like shooting days. A folder can contain bins and other folders but not clips directly since clips always have to be enclosed by a bin.

Folder structure can easily be duplicated by choosing **"Duplicate Folder Structure"** from the context menu:

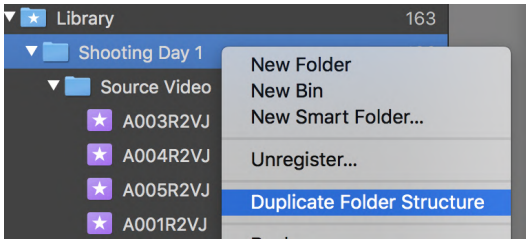


Fig. 3: Duplicating the folder structure of a folder

Smart Folder

Additionally there is an element called *"Smart Folders"* in the Silverstack library, which describes a folder with integrated filtering function. Using smart folders you can find clips with a certain attribute in the dedicated project very easily. The default smart folders filter the library for clips without backups, with a high rating, a flagging or clips that are registered today. For a closer look to the smart folder section go to the Working with smart folders article.

Volumes

By selecting *"Volumes"*, Silverstack outlines all used storage devices and their according information. You can also reveal the files in the finder by clicking the reveal button. Additional information about your volumes can be found in the right sided panel. There you have the possibility to:

- see status of your free disk space
- make comments
- give your hard-drive a playback priority
- get "Last Seen" information: which user was the last one to have a drive connected and when (only when the clip library is synced with ShotHub)

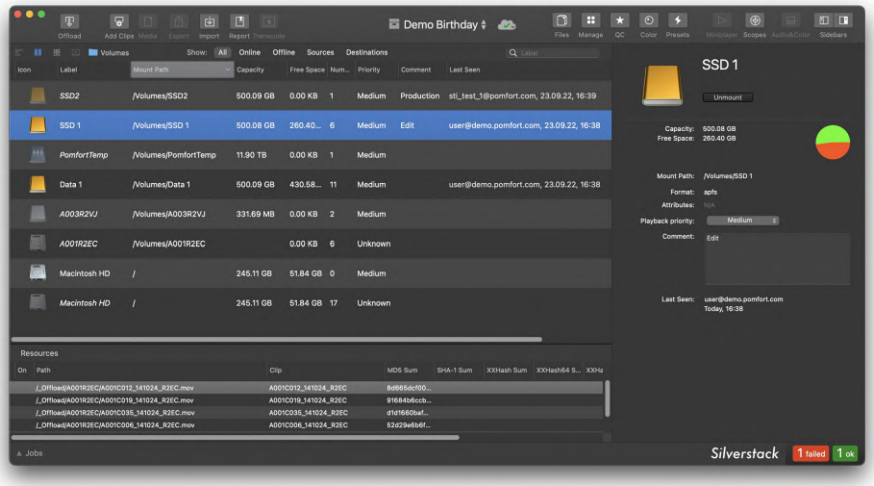


figure 4: The Silverstack "Volumes" window

The Information Panel (Right Sidebar)

The Information Panel displays all the information (metadata) embedded in your clips. It consists mostly of editable and some read-only fields (not editable). You can edit the fields marked with a small «pencil» icon, as well as flags, ratings, labels and cue points.

By editing and adding your own information to the clips you can simplify managing tasks like searching clips, varying the shown clip order or filter the library for clips with a certain attribute, which you can do by using smart folders.

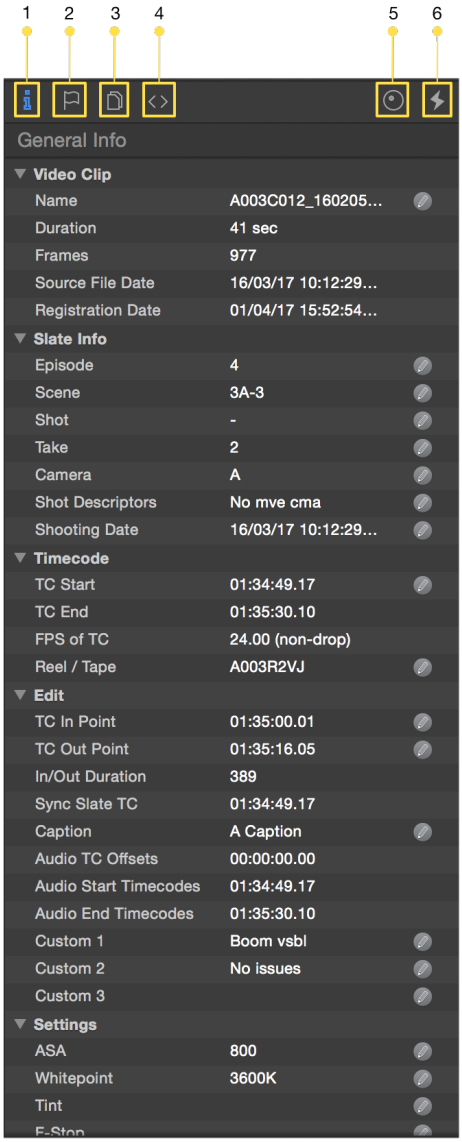


Fig. 1: The information panel

The Tabs

The information panel is subdivided into six tabs: General Info, User, File, Header, Look Library and Transcoding.

***1 General Info* tab:** It encloses the clip information extracted from the metadata like the timecode, exposure, production info, camera and format information. Additionally, there are some tips for a faster metadata editing available in the article Tips & Tricks: Quick metadata editing. You can also apply Image transformations like anamorphic de-squeezing and image flipping. You can edit the fields marked with a small «pencil» icon.

***2 User Info* tab:** It is fully editable. There you can set the camera letter, edit scene shot and take metadata, flag, rate and label the selected clip. Besides, you can add a comment and cue points to it.

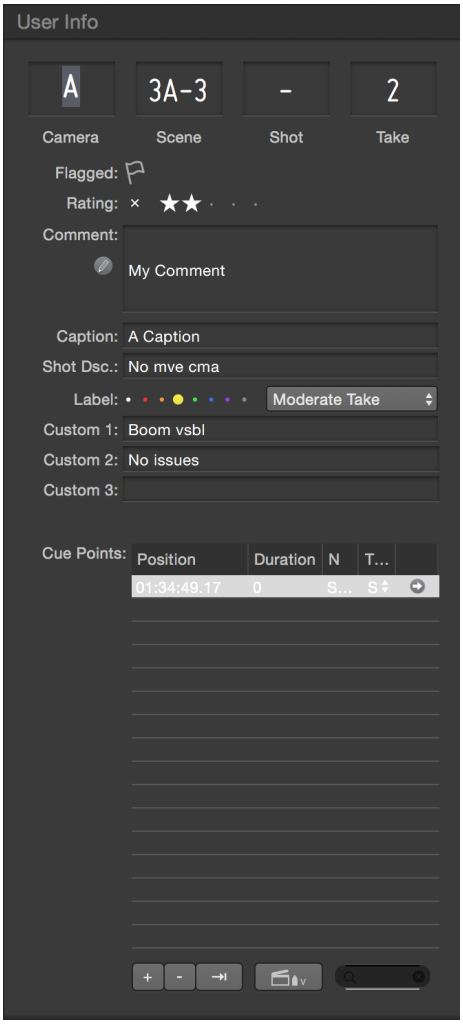


figure 2: User Information panel

***3 File* tab:** The *"File"* tab provides you an overview of all file resources of the selected clip.

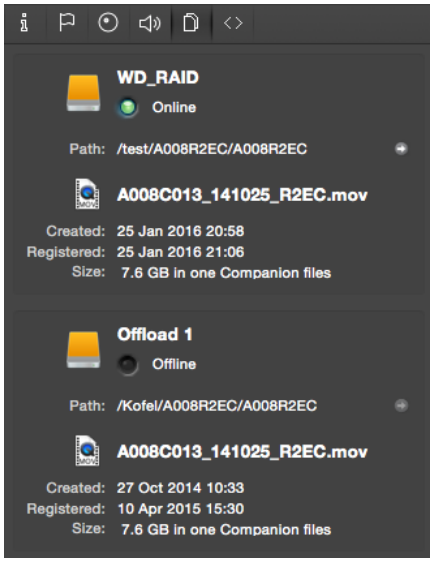


figure 3: the File tab

***4 Header* tab:** The *"Header"* tab contains read-only detailed technical information metadata —in a raw format— of the selected clip.

***5 Look Library* tab:** Silverstack enables you to manage looks within Silverstack in a look library in order to keep a proper overview of all the looks in your project. The look library allows you to store new looks, edit their metadata, apply looks to one or multiple clips, as well as to import looks from LiveGrade. For more information, please check the article [The Silverstack Look Library.]

***6 Transcoding* tab:** Silverstack allows to manage transcoding configurations and their transcoding settings in the Transcoding tab. A transcoding preview of the current image is automatically shown in the player view when the transcoding tab is opened. For more information about the transcoding tab and transcoding in Silverstack please read the article Transcoding in Silverstack.

Assets in Silverstack

Assets in Silverstack can be video clips (e.g., an Alexa or RED media file), audio clips (WAV), sidecar files accompanying clips (for example, XML or RMD files), or any other document such as photos or even a PDF. However, not all media files are recognized as clips by Silverstack. In that case, we are talking about Generic file formats.

Advanced Camera Support

Silverstack provides advanced support for a wide range of camera formats, which maximizes the efficiency of relevant on-set tasks such as playback, metadata management, color grading, quality control, and more.

The supported Advanced Camera Formats are:

- ARRIRAW (.ari and .mxf) **:
  - ARRI Alexa (.ari)
  - ARRI Alexa LF (.ari)
  - ARRI Alexa Mini (.mxf)
  - ARRI Alexa Mini LF (.mxf)
  - ARRI Alexa 35 (.mxf)
  - ARRI Amira (.mxf)
  - ARRI Alexa 65 (.ari)
- CODEX HDE (compressed ARRIRAW) (.arx)**
- CODEX HDE (compressed Alexa 35 ARRIRAW) (.mxf)**[1] [Silverstack XT and Lab only]

[1] Ingesting/offloading Alexa 35 clips through the Codex VFS extracts thumbnails and metadata from the original, uncompressed clips rather than their HDE representation.

- Blackmagic RAW (.braw) **
  - Blackmagic URSA Mini Pro & 4.6K
  - Blackmagic Pocket Cinema Camera 4k/6k
- Canon XF Movies **:
  - Canon C300 MK I & II
  - Canon C500
  - Canon C700
  - Canon C200
  - Canon R5
- Canon XF-HEVC **
  - Canon XF705
- Canon MPEG-4 AVC/H.264 (.mts)**
  - Canon C100
- Canon Cinema RAW Light (.crm):
  - Canon C200 and C200B
  - Canon C500 MKII
- Canon Uncompressed RAW (.rmf) [Silverstack XT and Lab only]:
  - Canon C700 and C700 FF
  - Canon C300 Mk II
- CinemaDNG (.dng):
  - BMCC
  - DJI Inspire and Zenmuse Series [Silverstack XT and Lab only]
  - Bolex D16 **
  - Ikonoskop
  - IndieCam
- Generic Image Sequences:
  - JPG
  - TIFF
  - DPX
- H.264 Quicktime Movies:
  - Canon DSLR **
  - GoPro Hero **
  - Nikon DSLR **
- KineRAW (.krw):
  - Kinefinity TERRA 4K / 5K / 6K
  - Kinefinity KineMINI 4K
  - Kinefinity KineMAX 6K
- Panasonic DNG RAW [Silverstack XT and Lab only]:
  - Panasonic Varicam LT (with Convergent Design Odyssey7Q+)
- Panasonic AVC-Intra **:
  - Panasonic Varicam

- Panasonic V-RAW [Silverstack XT and Lab only]:
  - Panasonic Varicam
- Phantom Cine Vision Research (.cine) [Silverstack XT and Lab only]:
  - Phantom Flex/Flex4K/Miro/VEO/v2640 Onyx
- ProRes Quicktime Movies ** (.mov):
  - AJA KiPro
  - ARRI Alexa / Alexa Mini **
  - ARRI Amira **
  - ARRI Alexa LF **
  - RED cameras **
  - Panasonic Varicam **
  - Atomos Ninja and Samurai
  - Codex Action Cam
  - Convergent Design Odyssey
  - DJI Inspire and Zenmuse Series
- ProRes (.mxf)
  - ARRI Alexa Mini LF
  - Sony Venice
  - Sony Venice 2
- REDCODE ** (.red):
  - Red V-Raptor 8K
  - Red Weapon Monstro 8K VV , Red Weapon Helium 8K S35 , Red Weapon Dragon 6K
  - Red Raven 4.5K
  - Red Komodo
  - Red Scarlet-X , Scarlet Dragon , Scarlet-W 5K
  - Red Epic-X , Epic Dragon , Epic-W 8K
  - Red One , Red One MX

- SONY RAW** [Silverstack XT and Lab only]:
  - Sony F5
  - Sony F55
  - Sony F65
  - Sony Venice
- X-OCN LT**, X-OCN ST**, X-OCN XT ** [Silverstack XT and Lab only]:
  - Sony F5 (with AXS-R7 recorder)
  - Sony F55 (with AXS-R7 recorder)
  - Sony Venice (with AXS-R7 recorder)
  - Sony Venice 2
- XAVC **:
  - Sony F5
  - Sony F55
  - Sony Venice
- XAVC-S **:
  - Sony a7S
  - Sony FX-3

Furthermore Silverstack offers extensive support for broadcast wave (BWF) audio wave files (.wav). Learn more in the article Audio Clips in Silverstack.

** with audio support

Working with Smart Folders

In the Silverstack library you find an element called *"Smart Folders"* below the camera rolls section. Smart folders provide the opportunity to filter all your clips for certain metadata information. Using smart folders you can find clips with a certain attribute in the dedicated project very easily.

The default smart folders filter the library for clips without backups, with a high rating, a flagging or clips that are registered today.

Create a new Smart Folder

You can create Smart Folders with an individually set filter in the *"Add"* wizard menu in the bottom left corner of your Silverstack window. By creating a new Smart Folder the panel you can see in figure 2 will appear.

Name the folder and set the rules by which the Smart Folder will add video clips. You do this by applying filters which you can add and delete by the "+" and "-" buttons (figure 1 #1). For each filter you can choose the kind of metadata information (figure 1 #2), a filter mode (figure 1 #3) and enter specified information (figure 1 #4) for which the video clips will be filtered. Additionally you can decide if any, all or none (figure 1 #5) of this filtering criteria have to be fulfilled by a clip which then will be added to this Smart Folder .

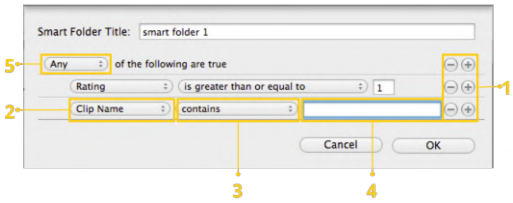


figure 1: Panel for creating a new smart folder in the Silverstack library

Filter attributes

For the below mentioned attributes you have to type characters into the text field (figure 1 #4) to get a result. If you leave the text field empty, no video clips will be filtered out – even if the according attribute field of video clips may be empty.

- Clip Name
- Version
- Comment
- Scene
- Shot
- Take

- Camera
- Reel Name
- File Type
- Codec
- Look Name
- Bin Name

If you want to filter clips for a date, you can select: today, yesterday, one week ago or any specific date.

- Registration Date
- Shooting Date

For the below listed attributes you have to enter a number in the text field (figure 1 #4) for getting a result. If you leave the text field empty, there will be no video clips filtered – even if the according attribute-field of some clips is empty.

- Number of Frames
- Pixel Width
- Pixel Height
- Rating
- ASA
- Number of File Representations
- Number of Cue Points
- Playable
- Missing
- Frames per Second
- F-Stop
- Whitepoint
- Sensor Fps
- Fps of TC
- In/ Out
- In Point
- Out Point
- Flag: You can choose between flagged/ not flagged
- Label: You can choose any of the provided labels.
- Colorspace: With the colorspace attribute you can filter video clips which are recorded in the Rec.709, LogC (with or without Film Style Matrix), Dci P3, Cinestyle, SLog
- Volume Name: all the clips with a copy/backup in the specified volume or volumes will be shown in the smart folder.

Note:

- Besides creating a new smart folder you can edit existing ones by right-clicking on the relevant smart folder and choosing "*Edit…*" from the drop-down menu.
- A nice feature is furthermore the possibility to create a new bin that contains the video clips which are included in the current smart folder. Therefore right-click on the relevant smart folder and choose "*New Bin from Smart Folder*".

Choosing Custom Thumbnail Images

Silverstack offers a flexible way to experience a great asset preview of your projects, bins, folder and camera rolls. We incorporated a feature allowing you to define your own thumbnails to get a better oversight of your shots – scenes – takes and gives you the opportunity to navigate faster inside your library and locate clips with one click.

Usual behavior

By default, Silverstack analyzes the length of a clip and picks the thumbnail image from the middle of the take. You can customize the default behavior in the preference menu. The thumbnail position can be set to "Begin", "Middle" and "End" of a clip. If you want to recreate your thumbnails you can do so by making an asset selection and then click in the "Edit" menu "Recreate Thumbnails". All selected assets thumbnails will be recreated.

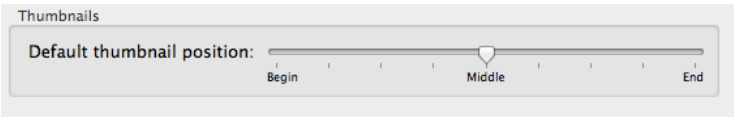


Figure 1 : "Preferences for default thumbnails"

While this is suitable for most occasions, it might happen that the preferences of the clip is by coincidence a black frame, a meaningless moment like blue sky or a frame that is not in focus which won't help you to identify the right take from the table view, collection view or neither in the reports.

Customize your clip thumbnails

To customize your reports or Table/Clip View with a thumbnail that matches your criteria as a DIT simply mark the clip and switch into the Playback View to locate the right frame. From there you can scrub to the desired frame and set your thumbnail via the Main Menu entry in "Edit" – "Set Thumbnail Frame". You can alternatively use the Shortcut **⌘ + T** to set the thumbnail.

Figure 2: "Switch to Playback View"

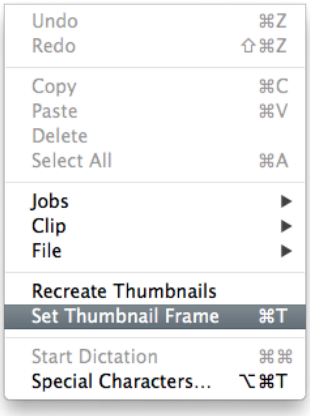


Figure 3: "Main Menu entry"

Note: You can only apply the " Set Thumbnail" feature to Assets that have advanced playback support in Silverstack. You can find more information about assets in this article.

Warning: If you recreate thumbnails with the function in the "Edit" menu all the previous thumbnail images will be erased and replaced with the actual setting of the preference.

The Copy and Verification Process in Silverstack: Verification Behavior

Silverstack and Silverstack Lab differentiate two basic types of verification behavior:

- **Included in Copy Job:**
  - Verification executed file per file
  - *(One Job that copies and verifies [copying file 1, verifying file 1, copying file 2, verifying file 2])*
- **Separate (per Job):**
  - Copy all files first in a distinct job and verify them afterwards in another job
  - *(Copy Job [copying file 1, copying file 2], Verify Job [verifying file 1, verifying file 2]).*

This leads to several improvements for the transparency of the copy and verification process in Silverstack that are outlined in this article.

The Verification Behavior in Detail

Included in Copy Job

The default verification behavior contains reduced options for the user. It is referred to as **"Included in Copy Job"** as the verification process happens file per file.

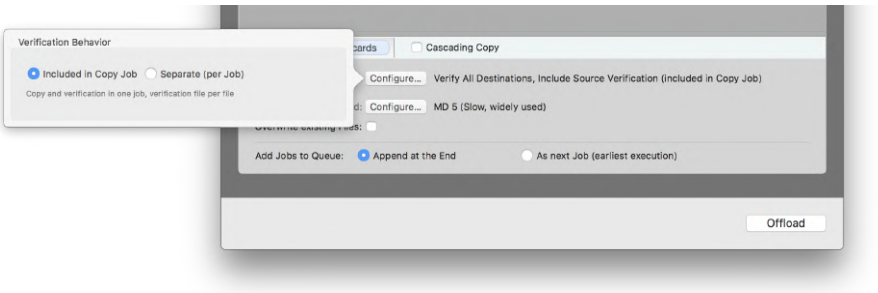


Fig.1: Verification behavior "Included in Copy Job"

It always verifies all destinations and the source ("Verify All Destinations, Include Source Verification"), therefore reduces options and makes sure the highest possible security is maintained.

Here are the facts in an overview:

- **Verification Behavior:** Included in Copy Job
- **Verification Coverage:** All destinations, with source
- **Available Checksum Methods:** xxHash64 (BE), MD 5, SHA 1

Separate (per Job)

The advanced verification behavior "Separate (per Job)" allows to complete the copy of all files first and verify them later. It is referred to as "Separate (per Job)" as it creates a separate copy and verify job.

Using the **"Separate (per Job)"** verification behavior, there are multiple options to choose from for the verification coverage. The verification coverage refers to the extent of verification that is performed.

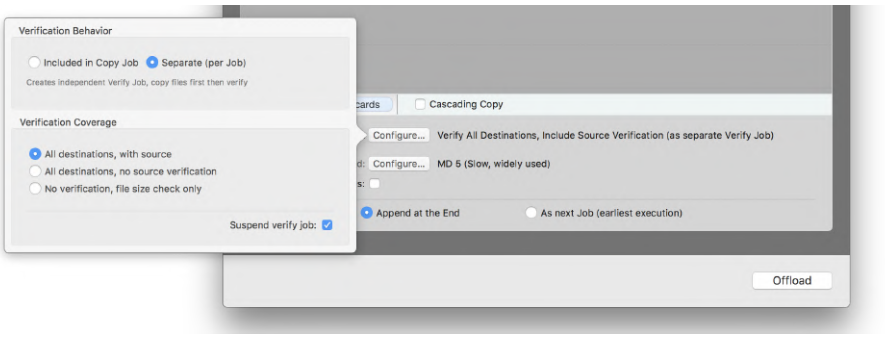


Fig.2: The offload wizard options for the verification coverage when verification behavior "Separate (per Job)" is selected

The following options are provided for the verification coverage (refer to fig. 2):

- **All destinations, with source (default)**
  - ***Abstract:*** *Highest possible security*.
  - The verify job verifies all copy destinations …
  - … and also the copy source.
- **All destinations, no source verification**
  - ***Abstract:*** *Still secure for destinations, but neglects the detection of source problems possible with "Source Verification".*
  - The verify job verifies all copy destinations…
  - but does not verify the copy source.
- **No verification, file size check only**
  - ***Abstract:*** *No security, use with care! Only the size of copied files on destination is checked against the original.*
  - No verify job is created. File size check is performed with copy job.
  - Even if it will not be verified, Silverstack creates a checksum during the copy process that is stored in the library. Checksum Method is fixed to xxHash to avoid limiting copy speed e.g. using MD 5 as checksum method.

Suspend Verify Job

The first two selections for verification coverage have an additional option to suspend the created verify job (see also fig.2). This allows all other offload and copy jobs to be executed before the verification. The verify job suspends automatically once scheduled, and has to be resumed manually by the user.

About Source Verification

Learn more about "Source Verification" in the article Checksum Verification Methods. "Source Verification" or "verifying the source" refers to the process of reading the source once more after the copy process end as part of the verification process. This is done additionally to reading the destinations again to verify their checksums. The intention to do this is to make sure that the checksum still matches the one created during the initial read of the file for the copy process to detect e.g. broken source cards. The verification of the destination remains untouched by this setting.

Cascading Copy

When enabling cascading copy the verification coverage as well as the checksum methods can be selected per run:

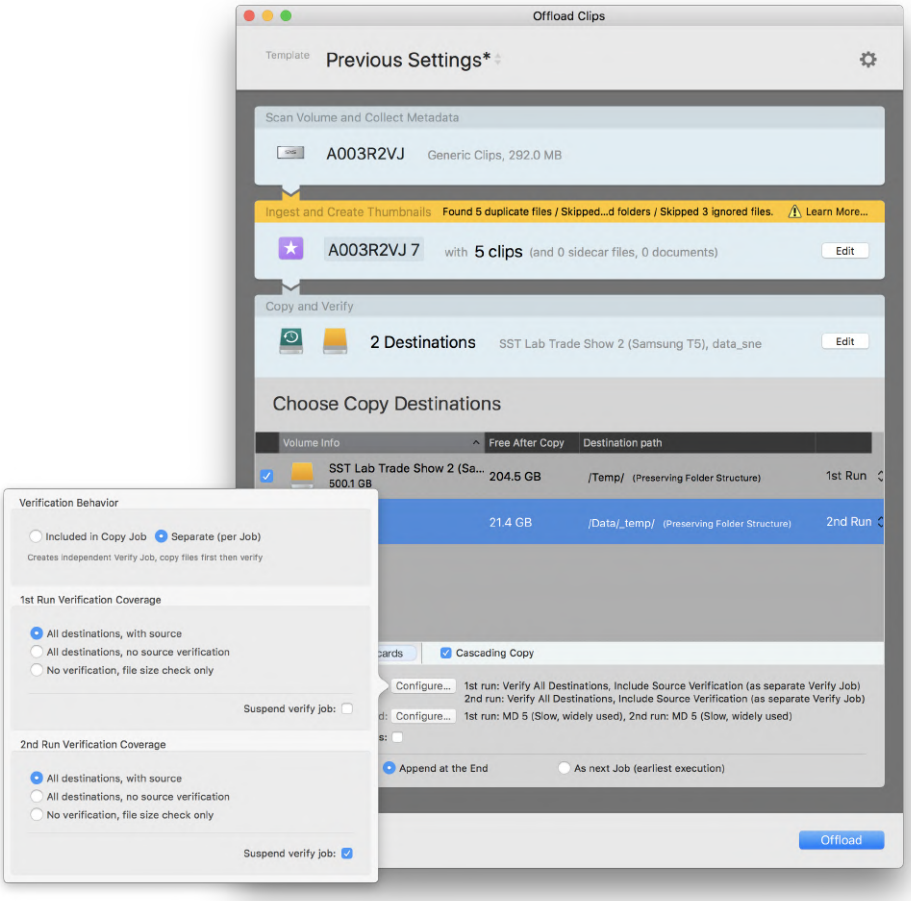


Fig. 3: Selecting the verification coverage for both runs with cascading copy

More information about cascading copy can be found in the article [Cascading Copy](#).

Additional Options

- **Overwrite existing files**: This option allows to overwrite already existing copies on the destination(s).
- **Skip Copy Step**: The option to skip the copy step and only ingest material has been removed in the Offload wizard to clearly separate the copy from the ingest functionality. To ingest material without copying use the **"Add to Library…"** entry in the **"File"** menu.

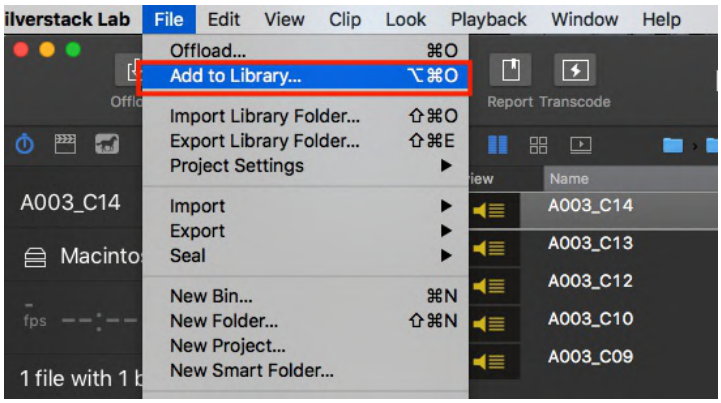


Fig. 4: Using the "Add to Library" option for ingest only

Job Scheduling Control

The Offload wizard allows to schedule jobs in the queue to be executed next, after the running job finishes. The default behavior, to add the job to the queue, will be restored after each copy job, as this is a hit and run choice before starting the jobs.

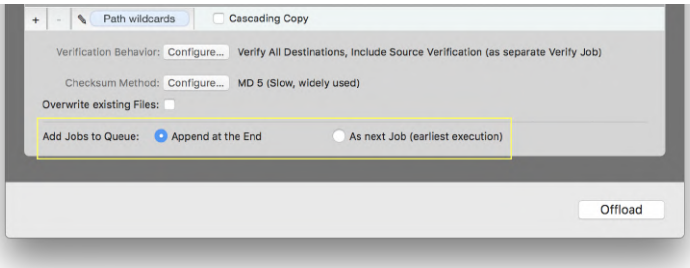


Fig.5: The job scheduling options

Learn more about reordering of jobs with drag & drop in the article Reordering and Suspension of Jobs.

Verification States (for File Resources, Clips and Bins)

Since Silverstack 6.4 file resources (all registered file copies and the source) have a verification state that is displayed in the “File” tab of the right bar.

The verification state helps the user to identify the current verification status of the file resource of a clip. This is especially necessary with the possibility to copy files first and verify them later in a separate job: With verification states it is explicitly identifiable if the resource has been verified.

3 Verification States

A file resource can have 3 different verification states:

- **Verified** (green)
- **Defect** (red)
- **Not Verified** (grey)

Here’s more details about the 3 states and what they mean:

- **Verified:** The hash of the destination file matches the hash created during the initial copy of the file. For source (source file resources) a green verified state means that they passed “Source Verification” (if enabled), which means a second read and hash check of the source and comparison to the the initially created hash.
- **Defect:** The file resource has a different hash than the one created during the initial copy. This can be identified by any type of verification Silverstack performs (e.g. as part of a copy job or with a separate verify job).
- **Not Verified:** The file resource has not been verified. Silverstack did not attempt to do a verification due to settings of the user. This can be the case e.g. for the source file resource when “Source Verification” has been disabled, or for copy destinations when choosing to copy without verification (which we do not recommend).

You can learn more about how the Silverstack copy process works in the following article:

- How does the copy process in Silverstack work?
- The Copy and Verification Process in Silverstack

Verification States in the File Tab

The file resources in the file tab show the verification state per resource and as a summary for the clip:

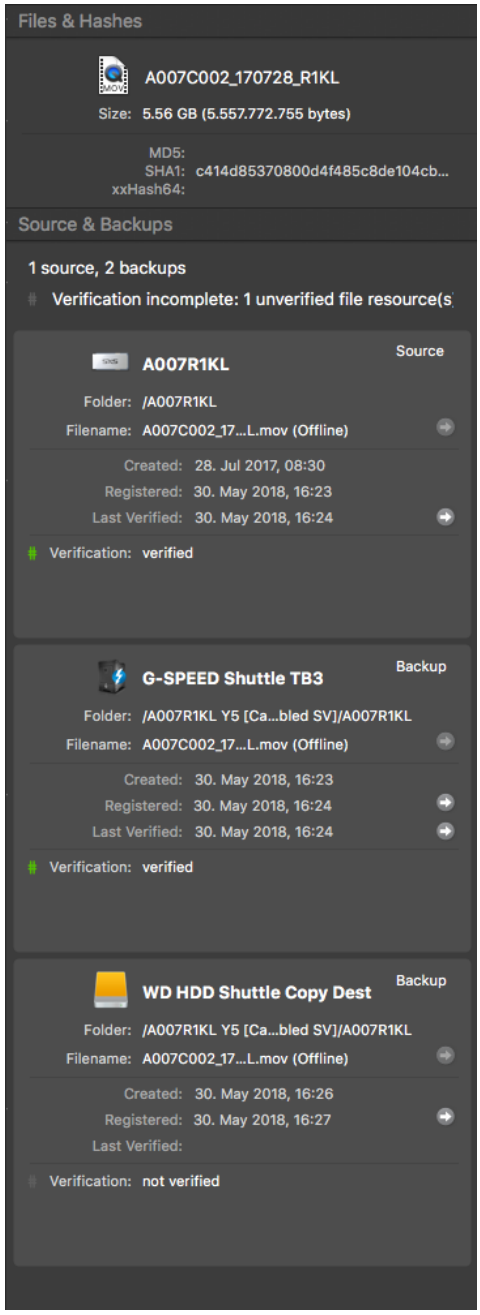


Fig. 1: The file tab with verification indicators

We can see that the clip has 3 file resources:

- Source: Verified
- Backup 1: Verified
- Backup 2: Not Verified

The summary about the clip tells us that the verification is incomplete because at least 1 file resource is not verified. We will take a closer look at this behavior in the next section.

Escalation of Verification States

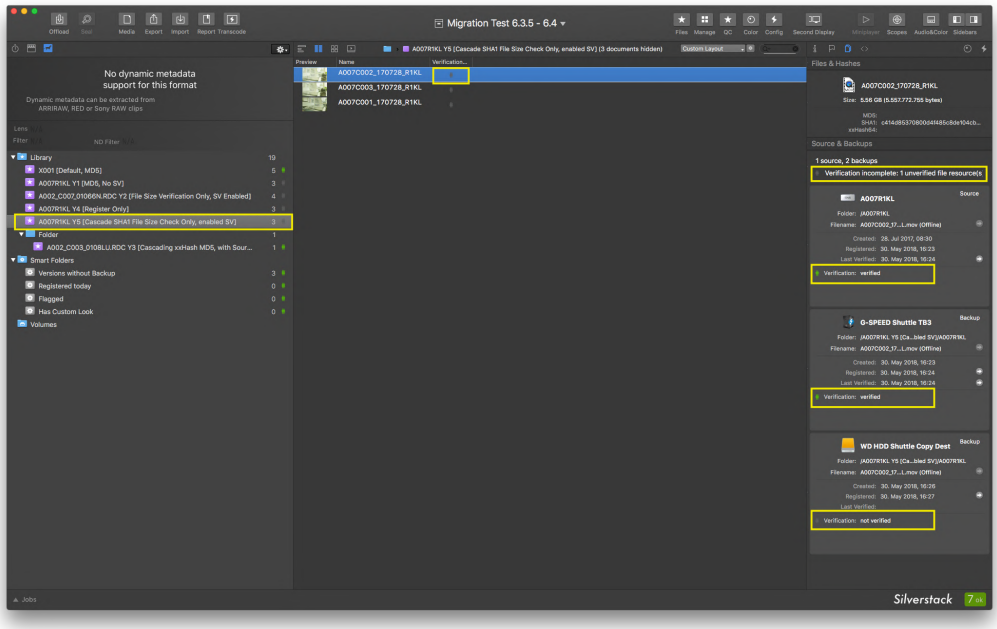


Fig. 2: Tracing the indicators from the bin to the file resource in the file tab

To make the user aware of the verification state of all clips resources already on a bin level, the verification state is escalated from the file resource to the library outline:

As multiple file resources can belong to a clips, a clip is inside a bin, and bins can be grouped in folders that can be ordered in the hierarchy inside the Library outline the following escalation is performed:

- **File Resource** verification state
  - *escalates to…*
- **Clip** verification state
  - *escalates to…*
- **Bin** verification state
  - *escalates to…*
- **Folder** verification state
  - *escalates to…*
- **Library** verification state

There's a clear hierarchy of severity of states that overrule and therefore define the state of the level above:

- **Defect**
  - overrules…
- **Not Verified**
  - overrules…
- **Verified**

Understanding both cascades will help you already identify folders and bins containing problematic clips. Using the verification state column (see fig. 2) you can trace the problem down from the bin to the file resource that might be defect or not verified.

Folders only show the verification state when collapsed to avoid confusion with containing states.

Running Jobs for Bins

Due to their nature, the verification state icons on bin level do not necessarily give meaningful feedback while copy jobs are running for the bin (as running copy jobs naturally lead to a change of the verification state). This is the case because new file resources are registered and verification processes are on the run.

To address this a "Running Jobs" indicator has been introduced. Installed in the library on bin level, it shows in form of a little progress bar and tells the user that this bin currently has jobs running in the background:

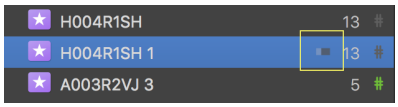


Fig. 3: The Running Jobs indicator in the library outline

Furthermore, the "running jobs" indicator for bins also brings other benefits such as e.g. already seeing on bin level if no job is running anymore for a bin and a report can be created with a steady state of the library.

Migration

Please be aware that library versions of Silverstack prior to the 6.4 update do not include information about verification states. Therefore a migration to 6.4 will place verification states based on the existing job information. You can verify resources based on the existing hash information afterwards at any time.

Also PSLAs (Pomfort Silverstack Library Archives) exported with 6.3 and earlier do not include information about jobs or verification states. Opened with 6.4 or later all file resources will receive an “unverified” state.

Unregister a Project from Silverstack

Unregister an old project

If you have several old projects in your library that you want to remove you can simply unregister them. All the clips/assets that are registered in the library will be removed.

Note: The files that are linked to the assets will stay on the Backup Volumes and will not be removed!

Steps to remove a project:

1. Open up Silverstack

2. Select the Project you want to remove from Project selector within the toolbar.

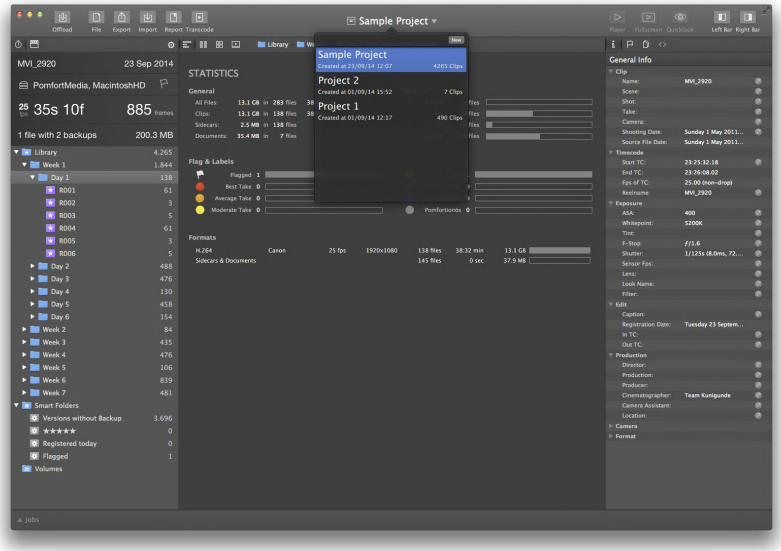


Figure 1: “Select a project from Toolbar”

3. Go to the Main Menu and press “Unregister Current Project”

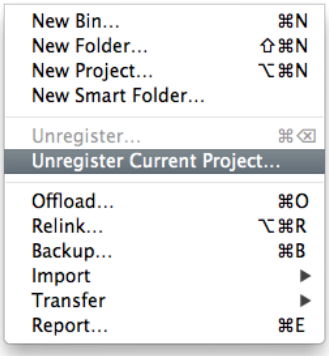


Figure 2: “Unregister Project”

Silverstack will switch automatically to the next project. If there are no other projects within your library, Silverstack will automatically create a new one.

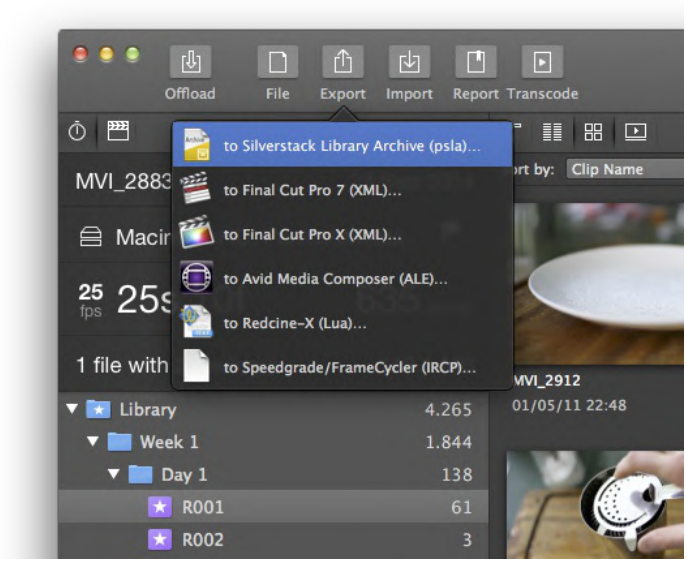
Library Metadata Exchange

Export or import Silverstack Library Archives (psla) from one Silverstack project to another

Metadata exchange between workstations

Exporting library metadata

Whole libraries, folders or bins can be exported using this feature. To start the process, simply select the item from the Library Panel and click on Export>to Silverstack Library Archive (psla)…:



Export menu

The Library Export wizard will appear, letting you select again which library folder to export. In addition, you can add a comment to describe the metadata content of the file.

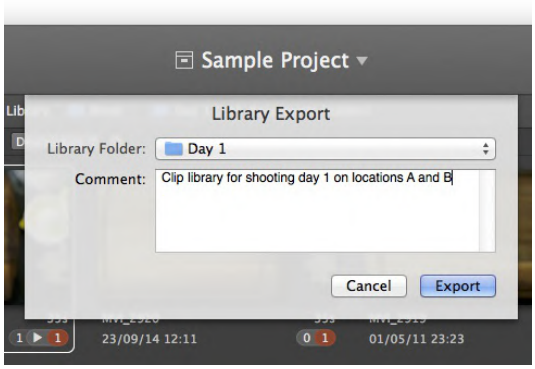


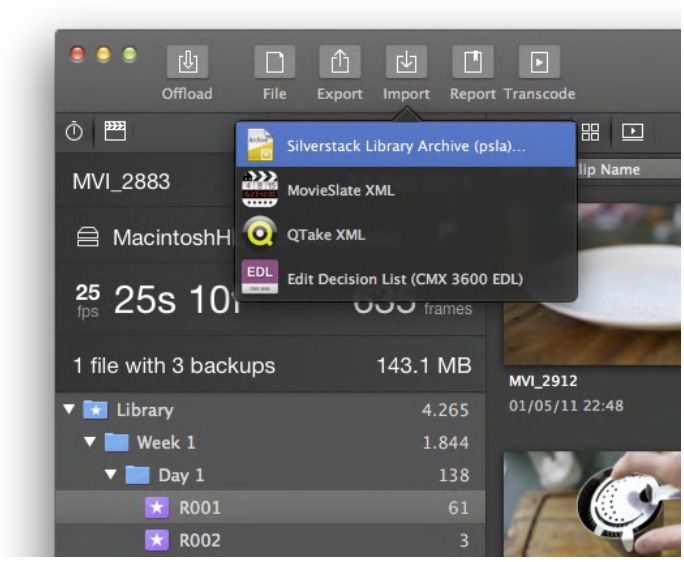
figure 4: library export wizard

After selecting «Export», a destination selection dialogue will be shown. Once the file has been saved, it should look like this:

Silverstack library metadata file

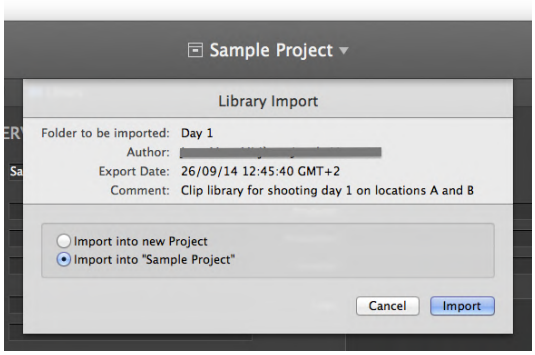
Importing library metadata

In order to import metadata from the previous process into another computer, you can just double click the «Day 1.psla» file. Otherwise you can select Import>Silverstack Library Archive (psla)…:



import menu

Once the file has been selected, the Library Import wizard will appear. Here you can see the name of the foler that is going to be imported, the author, the export date and the comment describing its content. You are able to choose between importing the metadata as a new project or into the current project:



metadata import wizard

Please bear in mind that an active license is needed to use this feature. You will need to migrate the license in case only one license key has been purchased.

Color Controls and Grading Modes

Color correcting clips is possible in the grade control tab of the Audio&Color panel.

Grade controls are separated in grading nodes, a grading node can be understood as one image filter with one or more parameters. A certain set of grading nodes belong to a grading mode. A grading mode is a predefined set of nodes and also helps to work inside certain boundaries concerning the type and order of grading nodes by setting limitations (e.g. CDL and LUT).

Grade Controls

UI with Grading Controls

The grade control tab in Silverstack consists of all controls for manipulating the image filtering :

- **Grading mode selector**: Switch between the different grading modes available on the drop down menu
- **Grade controls with nodes**: Here you find all the nodes for a certain grading mode such as CDL color controls, 3D LUT loading node, saturation etc. Each node can be individually disabled by un-marking the blue check box.
- **Look Source Name**: The name of the currently applied look
- **Look actions**: The look action menu contains actions …
  - **Clear buttons**: Clear either all grading nodes (“Neutral”) or just the creative color manipulation nodes (e.g. CDL node) and not LUTs or tone mapping curves (Reset Colors)
    - Using the «Neutral» button you can reset all settings (color and LUT) to a «neutral» state.
    - Using the «Reset Colors» button you can reset the color settings to a “neutral” state.
  - **Match Looks**
- **Clear buttons**: You can clear either the entire look or just the color manipulation (and not LUTs or tone mapping curves)
  - Using the «Neutral» button you can reset all settings (color and LUT) to a «neutral» state.
  - Using the «Reset Colors» button you can reset the color settings to a “neutral” state.

The **grade controls** consist of the following elements:

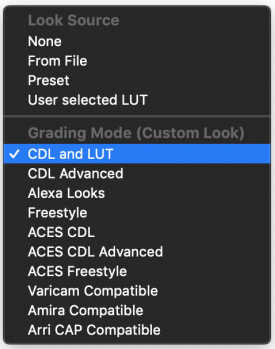
- **Grading node**: Grouping element containing the actual grade controls
- **Node enabling**: Enable or disable the effect of a grading node
- **Edit node structure**: Some grading nodes can have variable grading nodes, you can add and reorder grading nodes in the edit mode.
- **Control panels**: The control panels button and indicator shows the attached grading panel. You can disable / lock the attached grading panel to prevent unwanted changes.
- **Result curve**: The video scopes shows the resulting curves for all enabled grading nodes in the three RGB channels.

Grading Modes

Silverstack supports different grading modes designed for specific camera setups and workflow environments.

The node-based design allows you to disable and reorder individual filter nodes to have greater grading freedom. You can disable a certain node by unchecking the blue check box. Have in mind that the processing order is from «top to bottom» when reordering the nodes.

Each grading mode allows different levels of grade customization, as the compatibility of the grades down the workflow creates some restrictions on how the color information has to be processed. For example, the camera compatible grading modes can have the nodes locked in a certain position to ensure the compatibility of the grade.



The different grading modes to choose from.

The grading modes allowing the greatest level of customization are the Advanced and Freestyle modes.

CDL and LUT

The CDL and LUT grading mode

The CDL and LUT grading mode offers ASC-CDL controls for the use in a wide range of workflows. For clips recorded in Log color spaces, Silverstack allows to **import 3D LUTs** or choose from **3D LUT Presets.**

In order to support workflows that apply CDL in log gamma as well as in video gamma, the **order of LUT and CDL filters can be changed** when using the CDL Advanced grading mode. The CDL and LUT mode can also be used with **Rec.709 clips** without adding a 3D LUT.

The color controls for the CDL and LUT grading mode consist of:

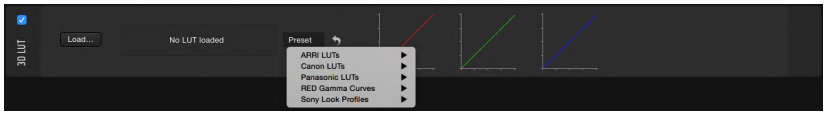
- **ASC-CDL controls** node:
  - RGB **Shadows, Mid-tones and Highlights** color wheels

ASC-CDL color wheels

- **Saturation** slider node

Saturation node

- **Import** of **3D LUT** node: The CDL and LUT grading mode can import 3D LUTs and CDL files and can export ASC-CDL files.
  - **3D LUT Import options** with averaged curve displays for each channel



3D LUT node

CDL Advanced

Allows you to add and reorder multiple nodes on advanced workflows.

Alexa Looks (Deprecated)

This mode is designed to create .xml ALEXA Looks compatible with ARRI ALEXA cameras. More information in the article Using the ALEXA Looks grading mode.

Freestyle

This grading mode has been created to allow complete grading freedom. For this reason, there are some limitations on the available export formats for looks created on this mode.

ACES CDL

A mode adapted to the ACES standard. More information in the article Using the ACES grading mode.

ACES CDL Advanced

A mode adapted to the ACES standard. Allows you to add and reorder multiple nodes on advanced workflows.

ACES Freestyle

This grading mode has been created to allow complete grading freedom inside an ACES pipeline.

Varicam Compatible

This mode is designed to create 3D LUTs and looks compatible with Panasonic Varicam 35 cameras.

Amira Compatible

This mode is designed to create .aml AMIRA Looks compatible with ARRI AMIRA cameras.

ARRI CAP Compatible

This mode is designed to create .aml Looks compatible with ARRI CAP (Camera Access Protocol).

FilmLight BLG Mode

This mode is designed to apply .blg Looks created with Livegrade Studio.

Note: The FilmLight BLG mode is only available when looks were imported via PFL/PFLA from Livegrade, and limited to CDL or Saturation node changes.

Grading Nodes

CDL Node

The CDL node contains a color wheel for Offset, Power and Slope. It can be used to adjust the color on the image.

CDL grading node

ASC-CDL files can be directly loaded and saved to/from the CDL node (supported format: *.cdl). Click the gear button on the left side of the CDL node and select if you want to load or save a CDL.

Please be aware that the ASC-CDL specification always includes a saturation value. When one saturation node is present CDLs will be loaded and saved from/to the present saturation node. When multiple CDL and saturation nodes are present you will be pointed choose the saturation node you want to load the saturation to (indicators A,B,C etc.).

The CDL node has several interaction types with different controls for different interaction styles. The interaction types of one CDL node all work on the same set of CDL values, so changing controls in one interaction type might change control positions also in the other interaction types.

The available interaction types:

CDL interaction type:

CDL node – CDL interaction type

The CDL interaction type allows to manipulate the nine values of the SOP triples (for each color channel R, G, B) of the CDL. The values in the nine text fields are the same values as in an exported ASC-CDL file.

The color wheels have a global control (in the bottom left of each wheel), an indicator around the ring shows if the global control is modified. Changing the wheel control doesn't change the gloabl luma of that control, e.g. the channels are balanced and the global control doesn't change by changing the wheel position.

Lift, Gamma, Gain (LGG) interaction type:

CDL node – LGG interaction type

The LGG interaction type allows to manipulate lift, gamma, and gain (LGG) values as known from other grading systems. These control values are mapped to CDL values in the background. The nine text fields show lift, gamma, and gain values (not ASC-CDL values) – switch back to the CDL interaction type to see the CDL values of a certain setting of LGG values.

Note: Although ASC-CDL doesn't specify limits of its values, some 3rd party software products limit values in their ASC-CDL grade controls. An indicator ("i") on the very right of the grade UI Silverstack indicates that values are out of the range that is commonly accepted.

The color wheels have a global control (in the bottom left of each wheel), an indicator around the ring shows if the global control is modified. Changing the wheel control doesn't change the global luma of that control, e.g. the channels are balanced and the global control doesn't change by changing the wheel position.

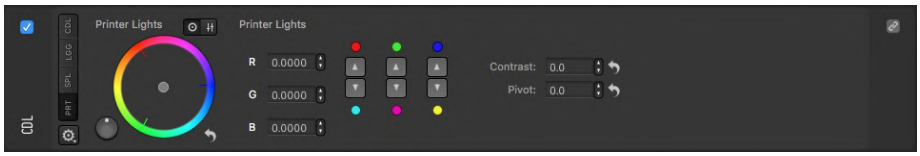
Simplified (SPL) interaction type:

CDL node – SPL interaction type

The SPL interaction type allows to manipulate the values of the CDL filter with the controls Contrast, Stretch, Warmer and Greener.

Increasing the contrast control makes the resulting curve steeper by clipping black and white. Increasing the stretch control increases contrast in the highlights, while decreasing stretch increases contrast in the shadows. Increasing the warmer control gives the image a warmer appearance by giving the shadows a warmer tint while the whites stay unmodified. Increasing the greener control gives the image a greener appearance by giving the shadows a greener tint while the whites stay unmodified.

Printer Lights (PRT) interaction type:



CDL node – PRT interaction type

The PRT interaction type allows to simulate a color correction based on printer lights. Printer lights can be approximated by an offset in camera log encodings. Additional buttons for each color channel allow for changes in fixed steps.

ASC-CDL files can be directly loaded and saved to/from the CDL node (supported format: *.cdl). Click the gear button on the left side of the CDL node and select if you want to load or save a CDL.

Please be aware that the ASC-CDL specification always includes a saturation value. When one saturation node is present CDLs will be loaded and saved from/to the present saturation node. When multiple CDL and saturation nodes are present you will be pointed choose the saturation node you want to load the saturation to (indicators A,B,C etc.).

The size of the color wheels can be adjusted in the Preferences menu. Just choose a size that fits your display resolution.

The CDL node can be controlled by an external hardware grading panel. To have more information on how to use it, please check the following articles:

- Tangent Element setup
- Tangent Wave setup

Saturation Node

Just drag the slider to either side to increase or decrease the saturation on your look.

Saturation node

3D LUT Node

The 3D LUT node is designed to load your own 3D LUTs by pressing the «Load…» button. Alternatively, you can also use one of the available preset 3D LUTs to convert the image to a Rec.709 color space.

3D LUT node

Supported formats for loading into the 3D LUT node are:

- Adobe Speedgrade (.cube; size 32,33, 65)
- Assimilate Scratch (.3dl; size 32)
- Panasonic Varicam (.vlt)
- Autodesk Lustre (.lut)
- Truelight (.cub)

1D LUT Node

The 1D LUT lets you load your own 1D LUT file. Click the **"Load…"** button and select the 1D LUT you want to load to the node.

1D LUT Node

In contrast to the curve node the LUT in the 1D LUT node can not be edited afterwards.

Supported formats are:

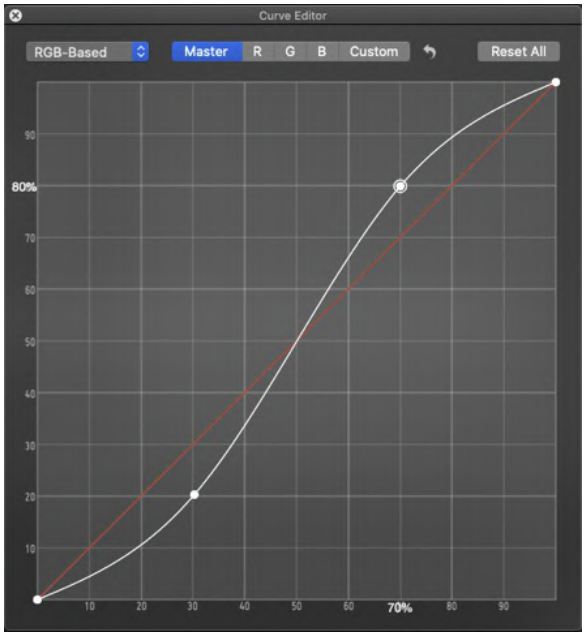
- *.txt
  - channels: 3
  - range: 0.0 … 1023.0 (float)
  - header: "R G B – HDLINK GAMMA TABLE"
  - entries: 1024
  - row example: "221.37 221.37 221.37"
- *.data
  - channels: 4
  - range: 0 … 16383 (integer)
  - entries: 16384
  - row example: 15040,15040,15040,15040
- *.lut
  - channels: 3 (4 columns with leading index (0…65535, R, G, B)
  - range: 0 … 65535 (integer)
  - header: "LUT16"
  - entries: 65536
  - row example: 45490 58366 58366 58366

RGB Curves Node

RGB Curves node

The RGB Curves node lets you apply precise curve adjustments to master RGB values or to individual luma, red, green, blue and/or custom color channels. Click on "Edit" to open the RGB Curves Editor window, which allows you to precisely grade your footage:

- There are two modes to choose from:
  - "RGB-Based" adjusts the selected color channel including its luma and saturation values, while the "Master" curve is a ganged RGB curve influencing the red, green and blue channel at the same time
  - "Luma-Based" adjusts the colors red, green, blue and/or the custom set color without influencing their luma and saturation values, while the "Luma" curve can be adjusted independently
- In the "Custom" color curve you can pick a custom target hue, for adjusting a certain color in your image precisely
- To add a curve point just click on a curve, and in order to modify it's value just drag and drop. You can adjust curve points using the left/right and up/down arrow keys as well.
- To remove a point, select the point and press Backspace.
- When you move your mouse over the curve editor, the graph shows you the value of the exact point where it is. When the mouse pointer is not moving or it is outside of the curve editor window the values of the currently selected curve point are being displayed.



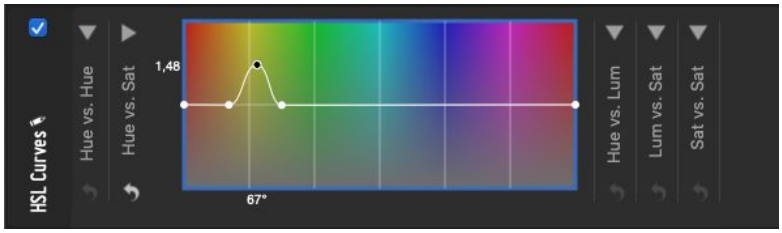
RGB Curves editor window

More information on how to use the editor can be found in the article Using the RGB Curves Editor.

Hue-Sat-Lum Curves node

The Hue-Sat-Lum (HSL) Curves node lets you apply precise secondary curve adjustments based on hue vs. hue, hue vs. saturation, hue vs. luma, luma vs. saturation and saturation vs. saturation values. The associated tabs in the HSL Curves node allow you to precisely grade your footage:

- The graphs on the x-axis in the individual mode windows (Hue vs. Hue, Hue vs. Sat, Hue vs. Lum, Lum vs. Sat, Sat vs. Sat) represent the target values of the associated mode. Added curve points can be dragged to change the values accordingly along x and y-axis.
- To add a curve point just click on a curve, and in order to modify its value just drag and drop. You can adjust curve points using the left/right and up/down arrow keys as well.
- To remove a point, select the point and press Backspace.
- When you move your mouse over the curve window, the graph shows you the value of the exact point where it is. When the mouse pointer is not moving or it is outside of the curve editor window the values of the currently selected curve point are being displayed.

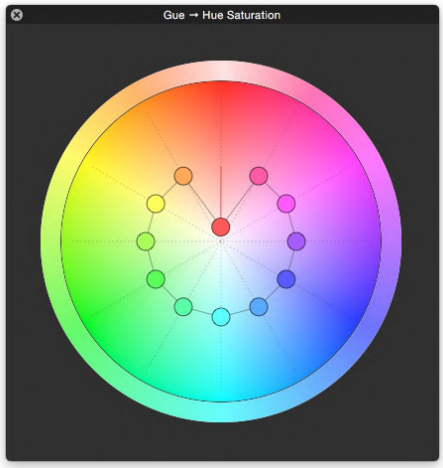


HSL Curves nodes

HHS Node

The HHS node –Hue to Hue and Saturation– is a new kind of node that allows you to map a certain hue on the image and replace it by another color with different hue and saturation. Here is an example where the red has been desaturated, but the other colors remain the same:

The HHS editor allows you to drag and drop the hue circles to another location on the color space to replace the original color with another one.



HHS editor

Knee Curve Node

The Knee Curve node lets you create simple technical curve adjustments with three parameters for “Black (toe)” and “White (knee)”:

- **Limit:** Increases/decreases the limit for white or black on the curve’s y-axis
- **Offset:** Increases/decreases the offset between limit and knee or toe curve point
- **Threshold:** Increases/decreases the x + y coordinates of the knee or toe curve point

figure 14: Knee Curve Node

You can save your curve correction as a 1D LUT (.cube) file (or the inverse 1D LUT) for loading the adjustment in other color grading systems.

Amount Slider

CDL nodes, RGB curve nodes, HSL curve nodes and HHS nodes have an amount slider which allows to fine-tune the effect of the associated grading node. There is an intensity level indicator on the right hand side of the node. When clicking on it, you can adjust the intensity in a popover window, either with a slider or by typing in a value from 0-100%.

Note: The initially set values in CDL nodes remain the same when changing the intensity. When you create a shot, the values of the grade are re-calculated with the applied intensity amount and saved as new resulting values in the shot table.

CDL node with amount slider

Grading Panel Support

Silverstack supports the use of hardware grading panels for the grading functionalities. The following panels are supported:

- Tangent Element Tk
- Tangent Ripple
- Tangent Wave
- Tangent Wave2

Connect the hardware panels to Silverstack to precisely and physically manipulate your grades.

Using the ACES CDL Grading Mode

Silverstack XT and Lab have the capability of reproducing ACES workflows.

All ACES versions support different IDTs (Input Device Transforms) and ODTs (Output Device Transforms). Please, make sure that the ACES version used in Silverstack matches the one used during the post production process for maximum color accuracy.

ACES Grading Modes

Silverstack implements this pipeline in the ACES (Academy Color Encoding System) grading modes. You can see the nodes and controls of the “ACES CDL” grading mode in the screenshot below. On every interaction with the color controls of the ACES grading mode (e.g. change of IDT, modify of ASC-CDL) all transforms are baked together automatically and are applied to the image.

Grading controls in the “ACES CDL” grading mode.

Silverstack also offers the “ACES CDL Advanced” grading mode. This grading mode lets you add multiple grading nodes between the IDT and ODT and LMTs for advanced workflows.

The CDL controls behave the same way as in the CDL Grade mode and can also be exported as usual from a saved grade. ACES grades can also be exported as 3D LUTs, including the CDL values, IDT and ODT.

From ACES version 1.3 you can enable the “Reference Gamut Compress” parameter within the IDT node of ACES grading modes. The ACES Reference Gamut Compression achieves better accuracy with extreme color ranges and replaces the LMT “Blue Light Artifact Fix” that was widely used in previous ACES versions.

The metadata fields “ACES Input Transform”, “ACES Input TransformID”, “ACES Output Transform”, “ACES Output TransformID”, “Reference Gamut Compress” and “LMT Nodes” allow inspecting ACES look metadata in the shot library and communicating relevant info in PDF reports.

Look Modification Transforms (LMTs)

You can add a “LMT” node in Silverstack (in the ACES CDL Advanced grading mode) that supports the official, predefined LMT transforms shipping with the respective ACES version as well as custom 3D LUTs.

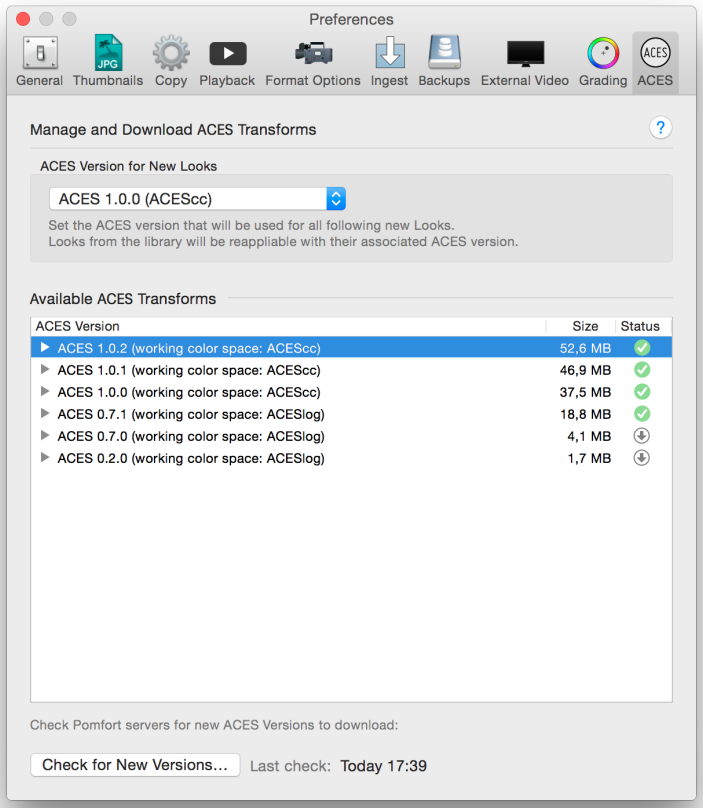
Note: LMTs are specified by the ACES specification as a transform from and to ACES AP-0 (the linear ACES color space). When using 3D LUTs as a way to exchange “LMTs”, these 3D LUTs are usually intended to be applied in a typical grading working color space such as ACEScct (3D LUTs cannot properly represent transforms to be applied in linear color encoding as they would not be able to provide the necessary fidelity in all brightness levels). So in Silverstack, the “LMT” node is applied in the working color space (for instance ACEScct).

Managing ACES Versions

Silverstack supports multiple versions of ACES, ranging from 0.7.1, 1.0, to the latest ACES version 1.3. For compatibility with the post production workflow please choose the right ACES version, as the transforms can be slightly different in different versions, and newer version usually include more and more recent input (IDT) and output (ODT) transforms, including RRT+ODT transforms for HDR in ACES version 1.1 or higher.

Note: Transforms for ACES version 1.3 can be downloaded from Silverstack v8.2 or higher

In the Silverstack preferences you can manage the available ACES versions and transforms:



ACES preference panel

The dropdown lets you select the ACES version for new looks. Every new look will be initialized with the ACES version selected in the dropdown in the preferences.

That means that every look in the library made with an ACES grading mode has an associated ACES version (you can find that version in the**"ACES Mode"** column in the Silverstack library). Saving looks with different ACES versions to the library will make it easy to compare the look of different ACES versions effortlessly.

The icon in the status bar will either signalize an available set of transforms (green checkmark) or a set of transforms that can be downloaded from the servers (download icon with downwards arrow).

Click the button **"Check for New Versions"** at the bottom of the preferences window to see if new ACES versions are available to download from the Pomfort servers.

Available ACES Versions

Different versions of the ACES are available from the application preferences (see also section "Managing ACES Versions") :

- v 1.3.0 (Working Color Space: ACEScct and ACEScc)
- v 1.2.0 (Working Color Space: ACEScct and ACEScc)
- v 1.1.0 (Working Color Space: ACEScct)
- v 1.0.3 (Working Color Space: ACEScc and ACEScct)
- v 1.0.2
- v 1.0.1
- v 1.0.0
- v 0.7.1
- v 0.7.0
- v 0.2.0

ACES grades can also be exported as 3D LUTs, including the CDL values, IDT and ODT.

Exporting ACES-based Looks as AMF

Silverstack can export the current look of a clip using "File > Export > Looks from Clips…" to export looks from all selected clips or stored looks in the look library as AMF files ("ACES Metadata Files", .amf). Currently the export of AMF is limited to the ACES CDL grading mode.

For more information about exporting Looks from the Silverstack Look Library see the article Exporting Looks from Silverstack.

Supported ACES IDT and ODT Transforms

Silverstack offers all officially (in the Academy's repository) available IDT and ODT transforms, as well as a few custom transforms by Pomfort. Please take a look at the available transforms in Silverstack's preferences in the "ACES" tab.

ACES landing page

See http://pomfort.com/workflow/aces/ for an overview of ACES related topics with Pomfort's products.

The Silverstack Look Library

Silverstack enables you to manage looks within Silverstack in a look library in order to keep a proper overview of all the looks in your project. The look library allows to store new looks, edit their metadata, apply looks to one or multiple clips, as well as to import looks from Livegrade.

The Look Tab

The look tab in the right bar of Silverstack is marked with a specific icon:

Click the icon to reach the look tab. The tab itself consists of three sections:

- **Look Library**
- **Looks**
- **Look Details**

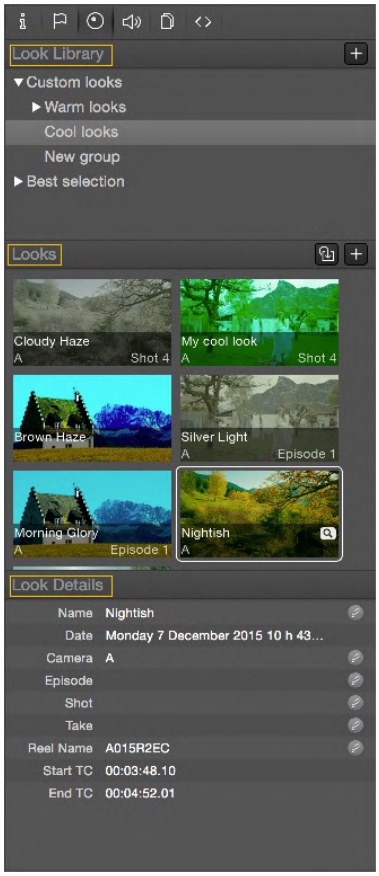


Figure 1: The Silverstack look tab containing the Look Library.

In detail those sections enable you to:

Look Library

- Create new folders by clicking the "+" button on the top right
- Create sub folders by holding "alt" plus clicking the "+" button
- Edit the structure by dragging folders out of or into each other
- Rename folders by selecting and single clicking them or hitting enter

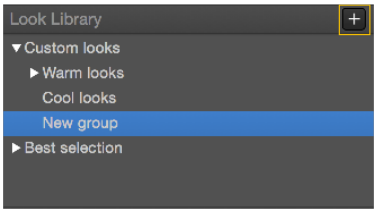


Figure 2: Organize folders containing looks

Looks

- Create a new look by clicking the “+” button on the top right
- Update a look by selecting one and clicking the update button next to the “+” button
- Preview a look by selecting it and clicking plus holding the loupe icon
- Apply a look to the current clip in the player by double-clicking the intended look
- Apply looks to multiple clips by selecting the desired clips and double clicking the intended look
- Move one or multiple Looks to other folders by dragging and dropping it to a different Looks folder in the Look Library*

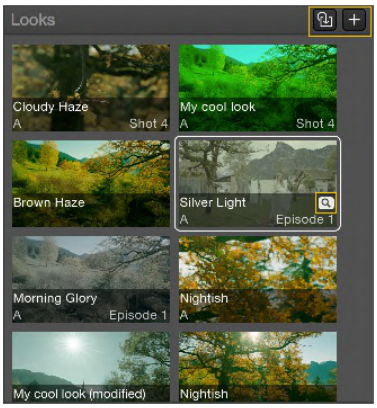


Figure 3: The looks section with highlighted add, update and preview look buttons

The context menu for looks can be reached by right clicking a look. It enables you to:

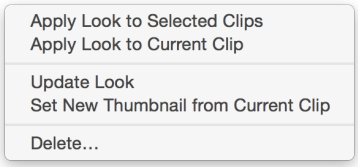


Figure 4: The context menu can be reached with a right click on a look

- Apply a look to the selected clips (one or multiple clips)
- Apply a look only to the current clip shown in the player (even if multiple clips are selected)
- Update the look with the current grade
- Set a new thumbnail from the current clip but leaving the look identical
- Delete one or multiple looks.

To learn how to use the Silverstack grading controls please refer to the article Grading Controls in Silverstack.

Look Details

When importing looks from Livegrade, the information fields in the Look Details receive the values from the look edited in Livegrade. In the Look Details it is possible to:

- Edit the look name
- Edit metadata of the look including Date, Camera, Episode, Shot,Take and Reel Name
- Display Start and End Timecode

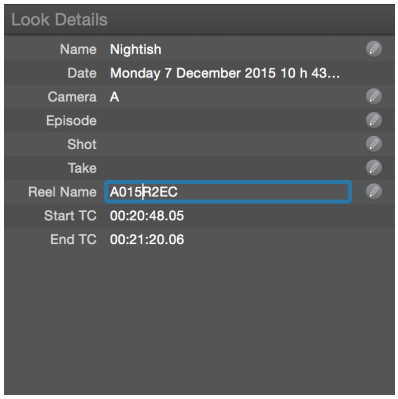


Figure 5: The Look Details section

Importing and Exporting Looks

You can import a look from Livegrade by selecting "**File>Import>Pomfort Looks (pfl)…**" from the main menu. You can learn about the process of transferring looks from Livegrade to Silverstack in the article Importing Looks (from Livegrade).

Read about exporting looks from Silverstack in the article Exporting Looks from Silverstack.

Look Functions in the Main Menu

You can find most of the functions concerning the Look Library in the Main Menu. Go to "**Main Menu>Look**" and choose from the following actions:

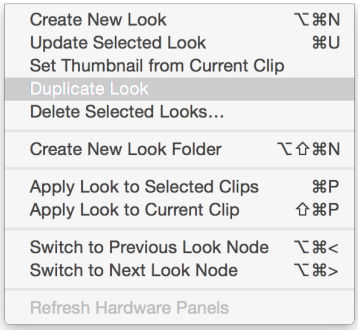


Figure 6: The "Look" section of the Main Menu

- Create a new look
- Update a selected look
- Set the thumbnail from the current clip
- Duplicate Look
- Create a new look folder
- Apply a look to all selected clips
- Apply a look only to the current clip
- Switch to the previous look node (useful for working with grading panels in more advanced grading modes)
- Switch to the next look node (useful for working with grading panels in more advanced grading modes)
- Refreshing hardware panels

Please refer to the shortcuts at the end of the entries for faster access of the functions.

* Please be aware that you have to click and hold the selected look(s) to see the transparent thumbnails pop out to enable the drag & drop function. Trying to move a look while immediately pulling it will leave you with the multi select function of the collection view.

Look Matching

While using **Silverstack together with Livegrade** on set to manage clip data and looks hand in hand, you surely want to combine the created information afterwards.

Silverstack offers a solution to avoid assigning looks to clips manually. You can connect them based on the metadata you already created while generating them.

The looks/shots can be transmitted

- via an exchange file format (.pfla) or
- via Pomfort ShotHub.

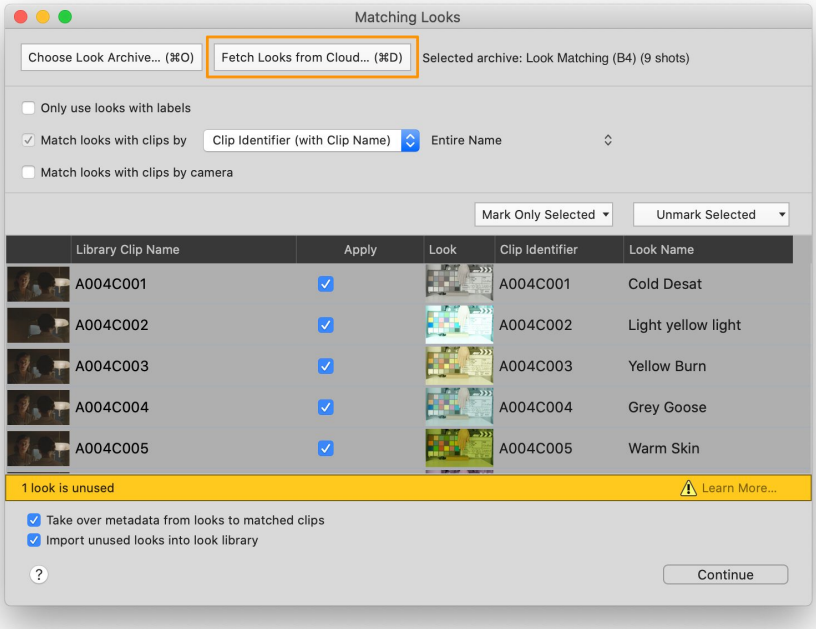
Get Looks via ShotHub

You can retrieve shots from Pomfort ShotHub that have been created and uploaded with Livegrade to match them to clips in Silverstack.

NOTE: If you are not using the same Pomfort account in Livegrade and Silverstack, you need an invitation of the admin to the Shothub project containing the grading information that you want to access for look matching.

The steps to match looks from Livegrade to Clips in Silverstack via ShotHub are:

1. Upload shots from Livegrade to ShotHub (more information please see the article Connecting Livegrade to ShotHub)
2. Log in to ShotHub in Silverstack with your Pomfort Account credentials (more information please see the article Connecting Silverstack to ShotHub)
3. Click the “Match Looks…” button in the color panel toolbar or select “Match Pomfort Looks” from the Import menu in the main toolbar.
4. Click “Fetch Looks from Cloud” and select the bin with shots to be fetched:



5. Match by desired criteria and apply looks (and metadata)

Get Looks via File

It is possible to automatically match a package of looks created with Livegrade Pro to the according clips in Silverstack. A Look Archive (.pfla) containing several different looks can be exported from Livegrade Pro.

This Look Archive can be imported into Silverstack to then match the looks to the according clips based on different metadata.

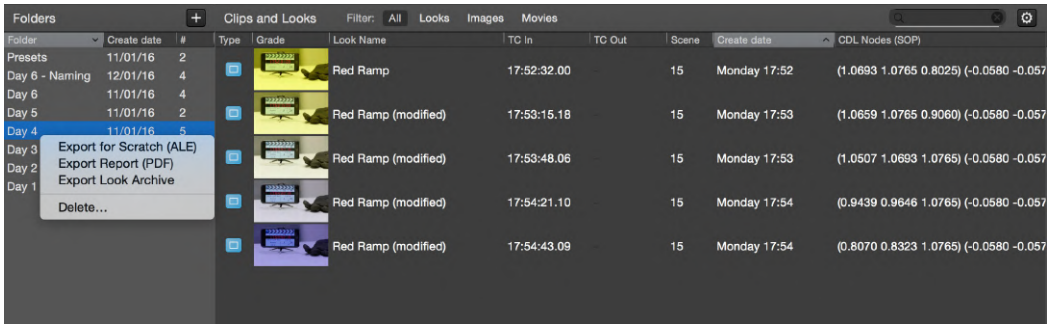
The steps to match looks from Livegrade to Clips in Silverstack via a Pomfort Look Archive File are:

1. Export a Look Archive from Livegrade Pro
2. Import the Look Archive into Silverstack
3. Match by desired criteria and apply looks (and metadata)

1. Export a Look Archive from Livegrade Pro

A Look Archive can contain one or multiple looks along with all the further metadata acquired in Livegrade Pro.

To export a Look Archive put all the desired looks into one folder in the Livegrade Look Library. Perform a right click on that folder and choose “Export Look Archive” from the context menu:

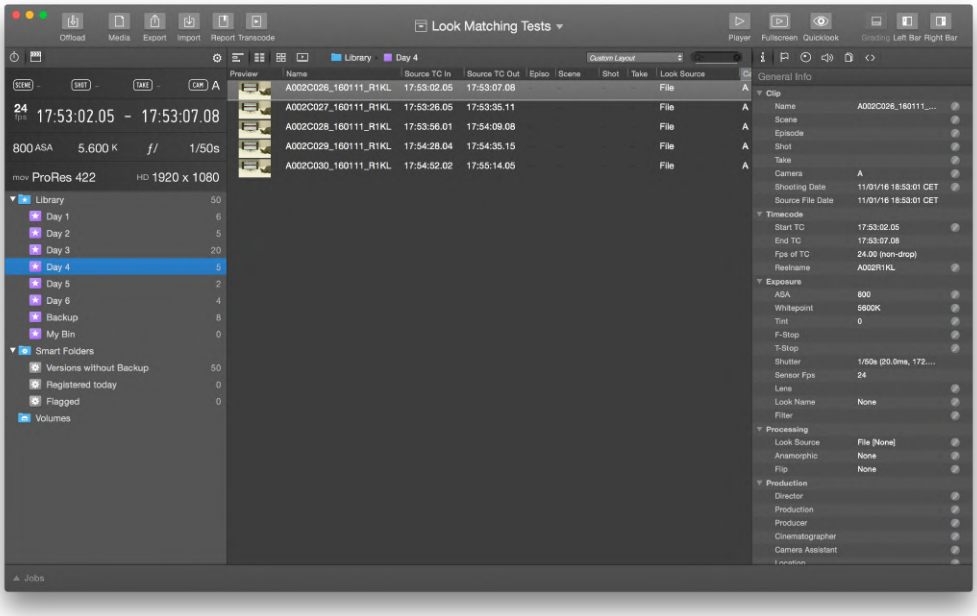


Exporting a Look Archive from LiveGrade Pro

Save the resulting .pfla (Pomfort Look Archive) file to the desired destination.

2. Import a Look Archive into Silverstack

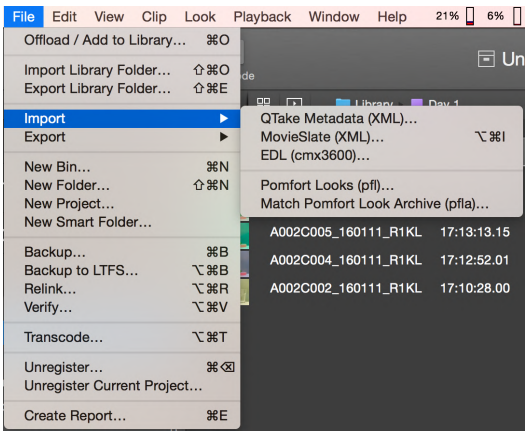
Make sure you ingested all the clips that will get a look into one bin in Silverstack. Learn about offloading media from the article[Parallel Offloading](#).



Bin with clips that should receive matching looks

Make sure to have the according bin selected prior to starting the import.

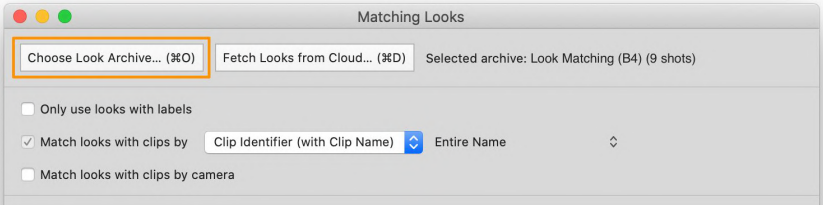
To import a Look Archive into Silverstack go to the Main Menu. Choose**“File > Import > Match Pomfort Look Archive (pfla)”:**



Importing a Look Archive for Matching

3. The Look Matching Wizard

After that a wizard window will open. Select “Choose Look Archive…”.

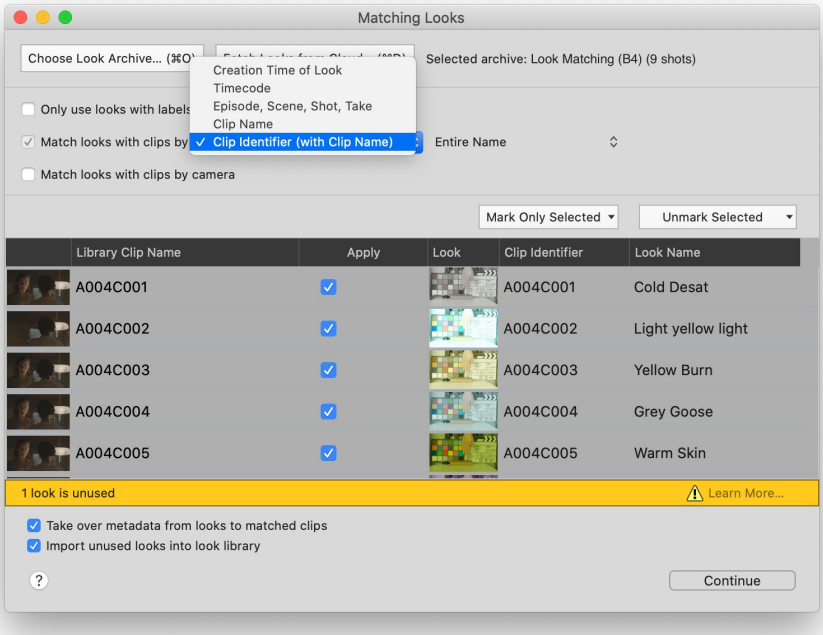


Navigate to the .pfla file you saved from LiveGrade Pro, select it and click “Open”.

4. Match by Desired Criteria and Apply Looks

From this step on the process is identical whether the looks come from a file or via the cloud.

You can choose between different matching criteria:



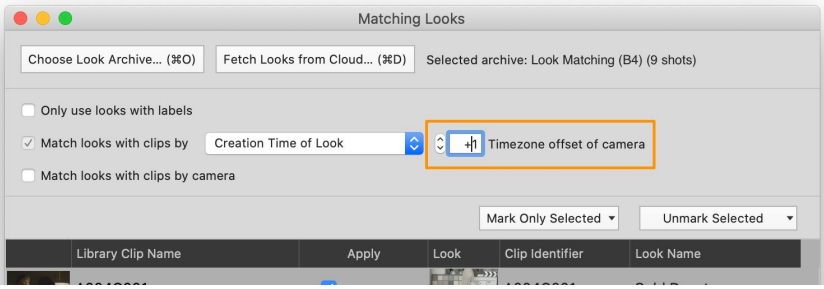
Set the look matching criteria

• Match by Timecode

This criterion will match the looks by timecode. The look will match to a clip if its *TC In* is before or within the range of the *TC* of the clip. Additionally the looks will be applied to all clips that follow until the next look with a subsequent *TC In*. If a new look has a *TC In* that is inside of the *TC range* of a clip (so the look before ends within the clip) the matching wizard will suggest two looks but preselects the latter by default.

• Match by Creation Time of Look

This criterion will match the looks by their creation time. The look will match to a clip if its creation date is before the time range of the clip. It will match to all following clips until a new creation date of a look is found that is placed inside the time range of a clip. Additionally you can shift the timezone if the camera setup was wrong at the time of recording:



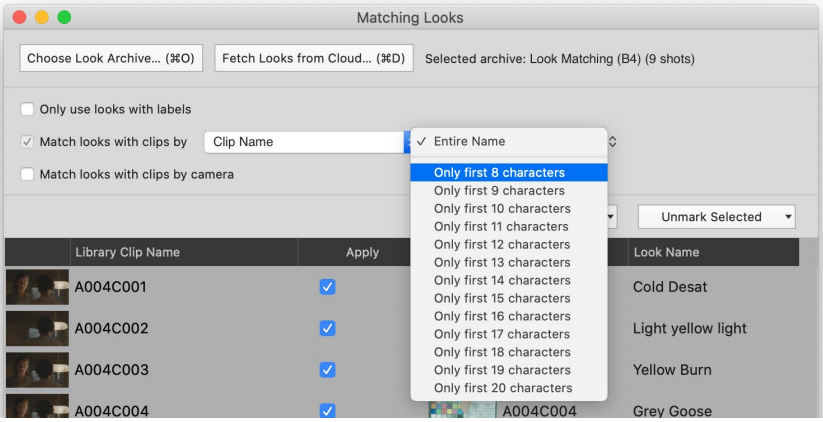
Adapt the timezone offset if needed

• Match by Episode, Scene, Shot, Take

This criterion will match the looks by the episode, scene, shot and take metadata values. The look will match to a clip if the metadata for episode, scene, shot or take is equal.

• Match by Clip Name

This criterion matches the looks by Clip Name. The Clip Name of the look has to be equal to the Clip Name in Silverstack or you can select to only match by the first characters of the Clip Name.



Match only the first 8 characters of the clip names

• Match by Clip Identifier (with Clip Name)

This criterion matches the looks by Clip Identifier. The Clip Identifier of the look has to be equal to the Clip Name in Silverstack or you can select to only match by the first characters of the Clip Name.

Additionally to the three different matching criteria, for each of them you can:

• Match with Camera

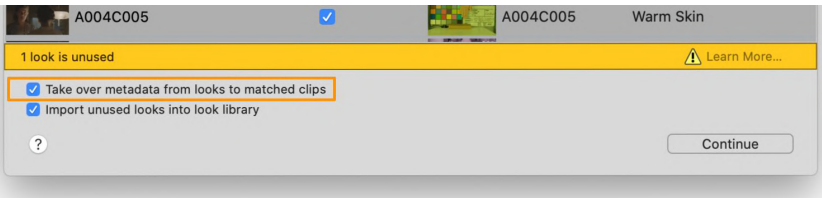
Additionally to the selection of your criterion among the three criteria you can choose if the looks should be matched to the clips by the camera metadata value.

Example:

If you have Camera A and B and match looks by timecode the looks may apply to both of the cameras if they have the same TC. If you then enable the checkbox “Match with camera” the camera value will be considered on top of the TC and will then match the correct looks to the camera specific clips.

Taking Over Metadata from Looks to Matched Clips

The PFLA (Pomfort Look Archive) enables you to take over metadata from the Livegrade Pro looks (from the Shot Library) to the matched clips in Silverstack



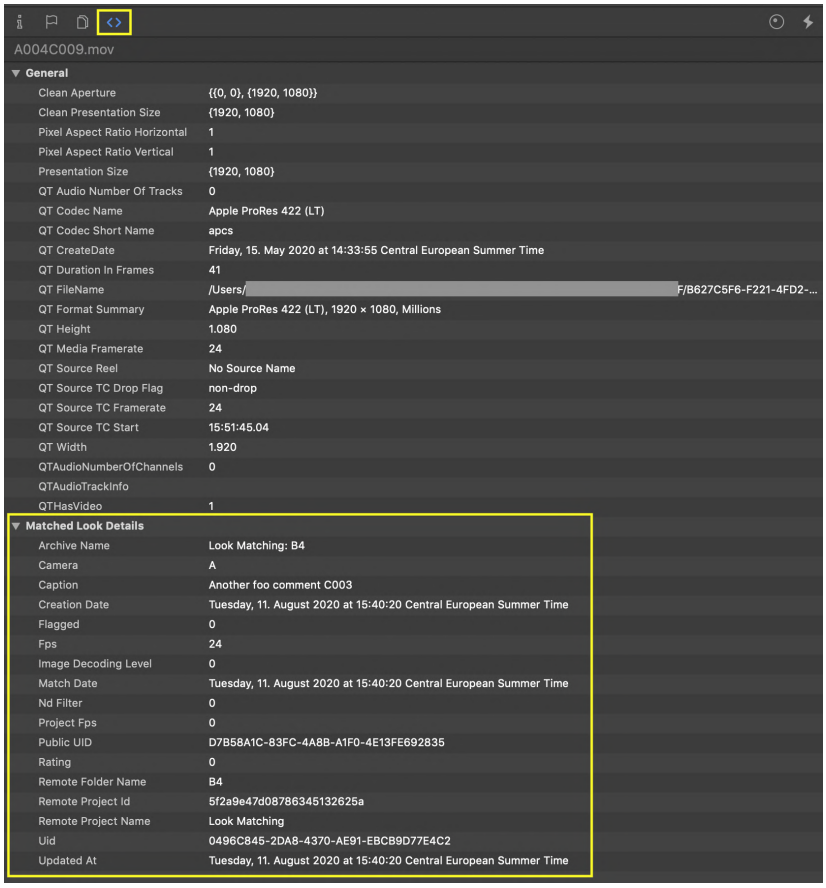
In the lower section, the option to take over metadata from Looks to matched clips is enabled by default via its checkbox. If checked, the “Continue” button will lead you to the next wizard page, where you have several options for importing of the metadata. Also, you can preview the metadata import.

- ***Insert / Update Behavior***: *Insert if empty only* fills metadata in Silverstack if it is not set and prevents metadata to be overwritten. *Overwrite* forces the metadata from the Look in the PFLA to be written in the according Silverstack metadata field.
- ***Import Content***: You can deselect certain metadata categories that you do not want to be imported. The tooltip of the label shows the concrete metadata fields that are included within each category.
  - *Slate Info*: Camera, Season, Episode, Scene, Shot, Take, Reel Name, Int/Ext, Day/Night
  - *User/QC Info*: Flag, Rating, Comment, Caption, Distance to Object, Custom 1-6
  - *Exposure Info*: ASA, Whitepoint, Tint, ND Filter
  - *Lens Info*: Lens Model, Focal Length, T-Stop, Focus Distance, Filter
  - *Production*: Shooting Day, Crew Unit, Location

To learn how to simply transfer looks from LiveGrade to Silverstack please refer to this article Transferring Looks from LiveGrade Pro to Silverstack.

Matched Look Details in Header Tab

More details about the matched look can be found in the header tab of the right bar:



Audio Clips in Silverstack

Silverstack offers advanced support for separately recorded audio files in the Broadcast Wave format (BWF, .wav).

Ingest of Audio Clips

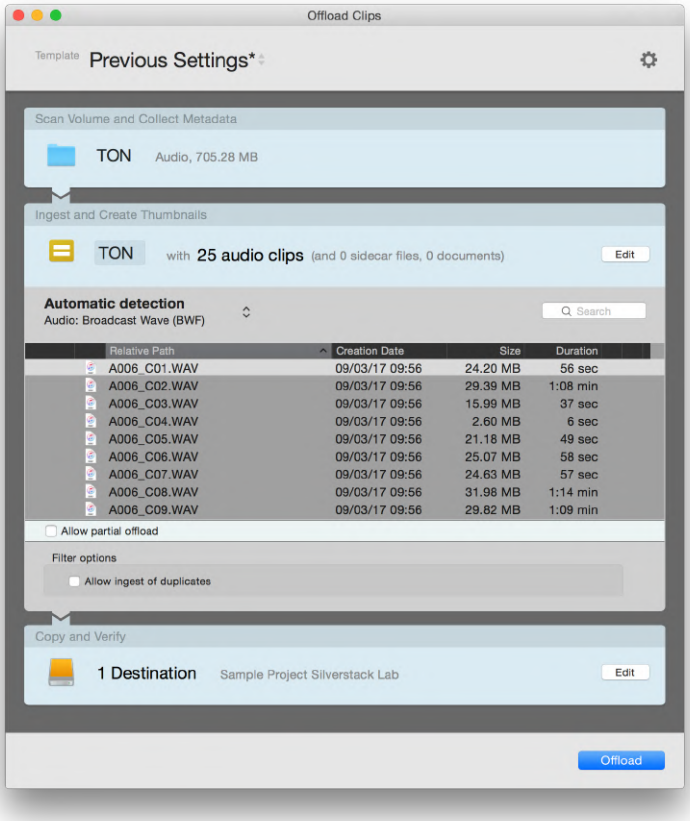


Fig 1: Ingest and copy Broadcast Wave audio files

To ingest audio files into Silverstack click the **"Offload"** button in the upper left corner of the UI and choose the card or folder with the audio files to be offloaded. Audio files can be backed up within the audio wizard just as any other file type. Learn more about it in the article Parallel Offloading.

After starting the offload process Silverstack will register the audio clips in the library:

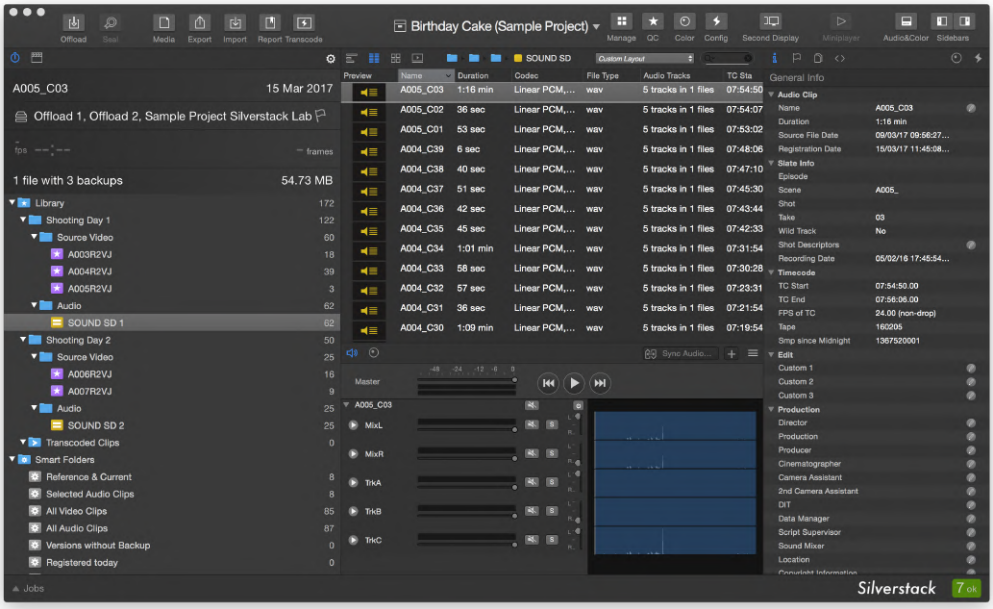


Fig. 2: Audio clips in the Silverstack library

Silverstack will automatically detect .wav files that belong to the same clip and merges them together to an audio clip containing several audio tracks.

By opening the audio panel with the **"Audio&Color"** button in the toolbar all the audio tracks including waveform will be visible for the selected audio clip.

You can play audio clips back by clicking the play button.

The audio panel offers the following controls:

- **Master Volume**: Controls the output signal level of the mix.
- **Audio meters**: Represent the audio signal level during playback. There is a stereo Master meter and additional Channel meters — one for each audio track. The scale on top of the meters indicates the audio level in dB (dBFS). Peaking is represented by a bar in the according color of the peaking level that remains at the maximum position. You can reset the peak bar by clicking on the audio meters.
- **Channel mixers**: The sliders control the signal level for each track. You can mute specific «Left» and «Right» tracks by disabling the check boxes on the right of the channel mixers.
- **Mute button:** Mutes the according audio channel or the complete audio clip section
- **Solo button**: Solos the according audio channel, as long as the button is pressed
- **Pan control:** Sets the panorama to left, middle or right

The audio tracks panel can be opened from the small play button on the left side of the track name. It enables the playback of a single audio channel*:

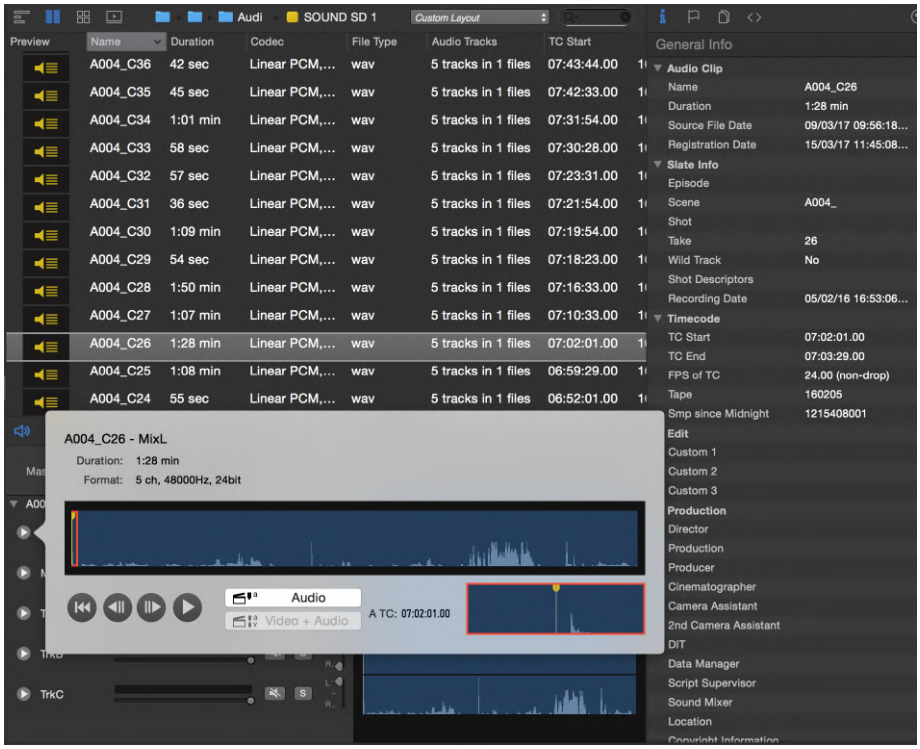


Fig. 3: The audio tracks panel with single audio track playback

Audio Clips Metadata

Audio clips in Silverstack own a special set of metadata that is shown in the General Info tab of the right bar. The following metadata will be pulled from the audio file metadata:

- Scene – Shot – Take
- Wild Track
- Recorder Model
- Recorder Device ID
- Samples since Midnight
- FPS of TC
- TC Start
- TC End
- Tape
- Recording Date
- Audio Track Names

Adding Audio Clips as External Audio to Video Clips

Once ingested audio clips can be added to video clips as external audio either manually (Silverstack XT) or automatically (Silverstack Lab):

- Manual Audio Sync: How to Manually Sync Audio in Silverstack XT and Silverstack Lab
- Automatic Audio Sync: How to Automatically Sync Audio Based on Timecode in Silverstack Lab

*only available in Silverstack XT and Silverstack Lab

How to Manually Sync Audio in Silverstack XT and Silverstack Lab

Silverstack XT and Silverstack Lab offer functionality to manually sync audio clips to video clips.

Basic Principles: Audio Sync with Slate Markers

The process of manually syncing audio in Silverstack is divided into two basic steps: matching the according audio clip to a video clip, and subsequently syncing the audio and video clip at the right position.

The basic idea of the sync at the right position bases on the functionality of **setting slate markers** in the video and audio clip. By setting slate markers the user defines a **sync position in both audio and video to be used to link the audio and video clips**. Silverstack will automatically align the video clip and the according audio clip at the specified positions.

The article will describe in detail how to set the slate markers in the UI of Silverstack to attain a sync at the intended position as well as how to move the sync position if needed.

The counterpart of the manual sync is the automatic sync based on timecode that is available in Silverstack Lab. You can learn more about automatic audio sync in Silverstack Lab in the article "How to Automatically Sync Audio Based on Timecode in Silverstack Lab".

Manual Audio Sync: Step-by-Step

Overview

1. Have all needed assets available in the Silverstack Library (audio and video clips have to be available for playback).
2. Open the video clip you want to manually sync audio in the Silverstack player and go to the frame you want to set the video slate marker (e.g. the frame where the slate visually closes).
3. Open the "Audio&Color" panel in the lower center of the UI and switch to the audio tab (or hit the "QC" UI Layout button in the toolbar).
4. Add the fitting audio clip to the current video clip by clicking the "+" button in the upper right corner of the audio panel
5. Browse to the position of the audio clip you want to set the audio slate marker and hit the "Slate a+v: Video + Audio" button to set the slate in the video and the audio at the current position of the playheads.
6. Click "Add Clip" to add the audio clip as external audio to the video clip and sync at the position of the slate markers.

Please note: You can also set audio and video slate markers independently and in any order.

In Detail

1. Register All Needed Assets in the Silverstack Library

Make sure to have the video clips and their according audio clips registered in the Silverstack Library. Learn about audio clips in Silverstack in the article Audio Clips in Silverstack.

2. Open the Video Clip You Want to Manually Sync Audio With

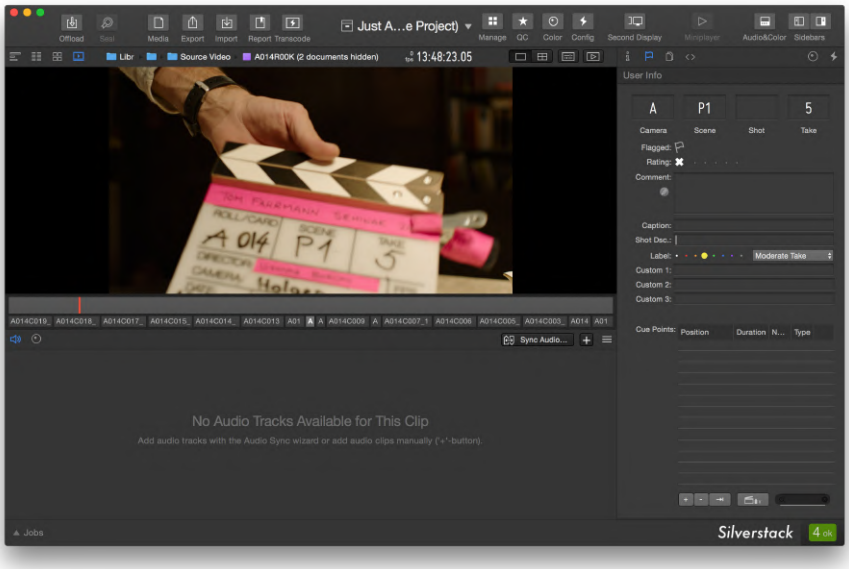


Fig.1: The video clip at the slate position.

Move the video clip to the frame the slate goes down. If no slate is present you can choose any other significant position you want to sync to.

In this example the slate will be set in the next steps together with the audio slate. It is also possible to already set the video slate at this point. Read more about "Relocating Slate Markers" in the according section below.

3. Open The "Audio&Color" Panel in the Lower Center of the UI

The audio panel can be opened by clicking the "**Audio&Color**" button on the right side of the toolbar. Make sure to show the audio panel (see Fig.1).

The right configuration for adding manual audio clips can also be achieved by clicking the **"QC"** UI layout button in the toolbar (you can learn more about UI layouts in the article "UI Layouts: Quick Configurations for the Silverstack User Interface").

4. Hit The "+" Button in the Upper Right Corner of the Audio Panel to Add an Audio Clip

The "+" button in the upper right corner of the audio panel opens a popover that lets you select an audio clip that should be added to the video clip:

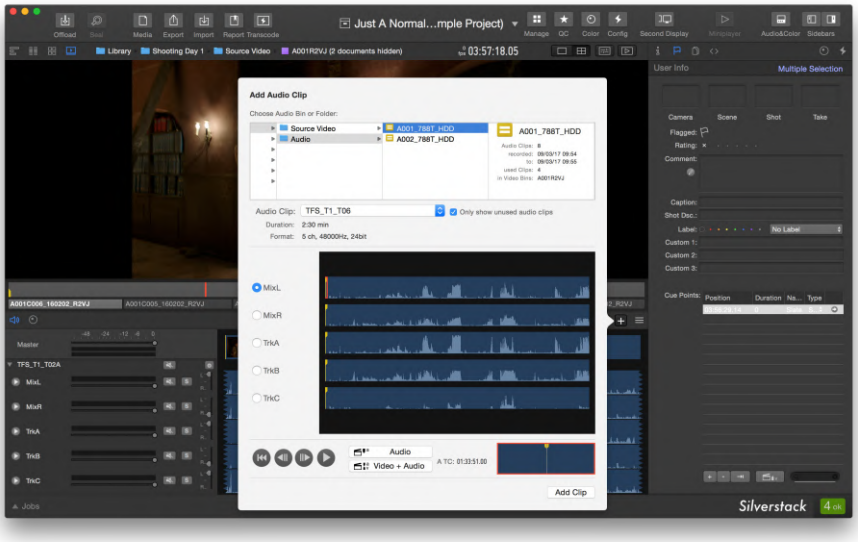


Fig. 2: Choose an audio clip to be added

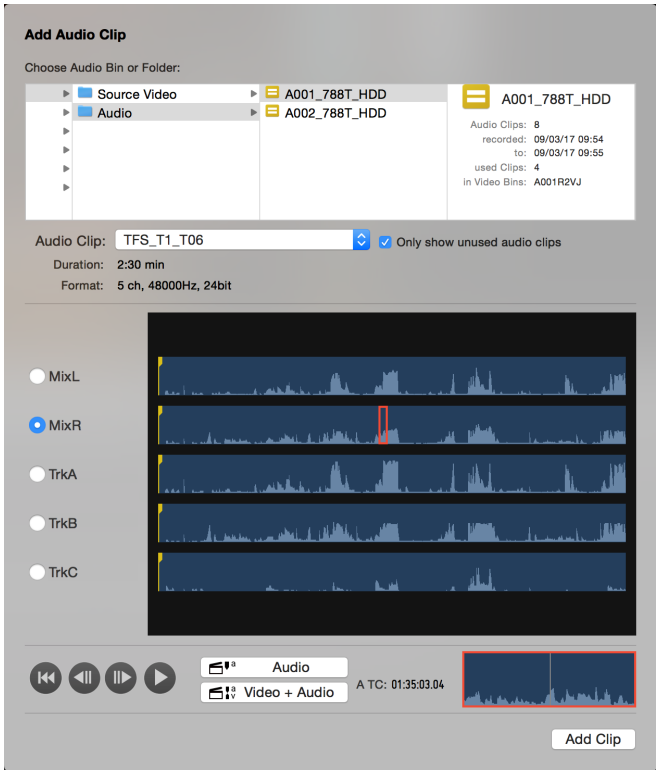


Fig. 3: The "Add Audio Clip" popover in detail

Select the intended audio clip from the **"Audio Clip"** dropdown.

Move the playhead of the audio clips to the position you want to set the audio slate to. Click the button Video + Audio to set both, the audio and the video slate at the positions of the according playheads.

The button Audio will set a slate only in the audio clip.

Please note that a video clip that has an external audio clip assigned to it will in any case contain a slate marker. If the slate marker is not specified it will be set to the current playhead position of the video clip and will accordingly be used as the sync position.

6.Click “Add Clip” to add the audio clip as external audio

Now click **“Add Clip”**. The specified audio clip will now be added to the video clip and all tracks will now be available in the audio panel. The video and audio clip sync at their slate positions.

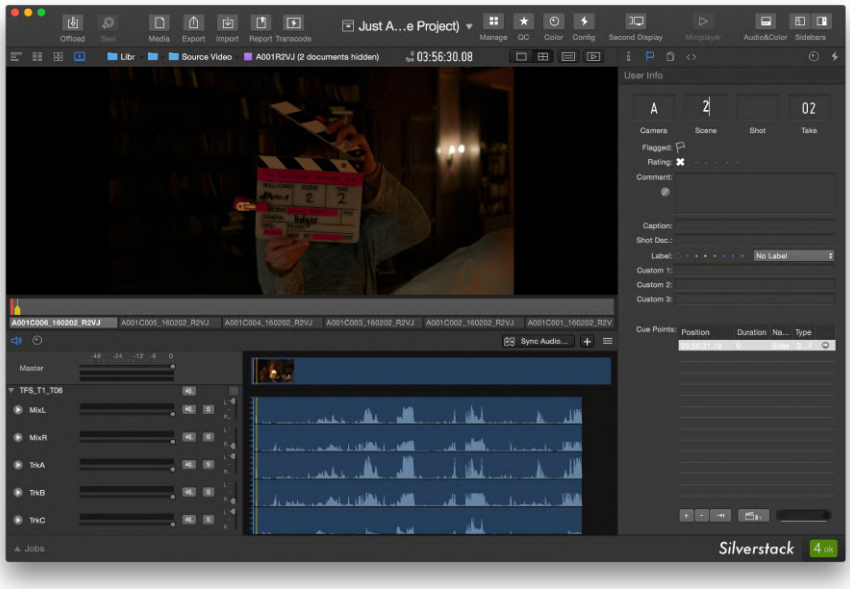


Fig. 4: External audio in the audio panel

Multiple Audio Slate Markers

When adding one audio clip to more than one video clip, it is possible to set an individual audio slate maker position for each video. This allows you to sync each video to different positions on the same audio clip, e.g. if there are individual claps for each camera or if two takes are recorded on the same audio clip.

If you open the “Add Audio Clip” popover for one audio clip that is already synced to another video clip, the first (already set) audio slate marker is automatically restored in this view for your convenience.

Relocating Slate Markers

Audio

You can relocate the audio slate marker for an external audio clip by opening the audio tracks playback panel. That can be done by clicking the play button that can be found on the left of the track name labels in the audio panel:

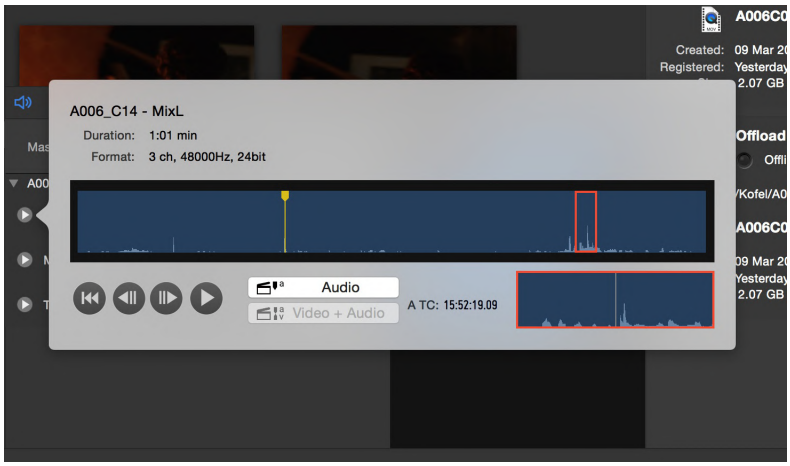


Fig 5: The audio tracks panel to listen to a single audio track

Move the detail indicator (red box) to a new position and click the button Audio to set the audio slate to the position indicated by the playhead in the detail view at the bottom right of the popover.

Video

You can relocate the video slate marker within the cue points section of the User Info tab of the right bar:

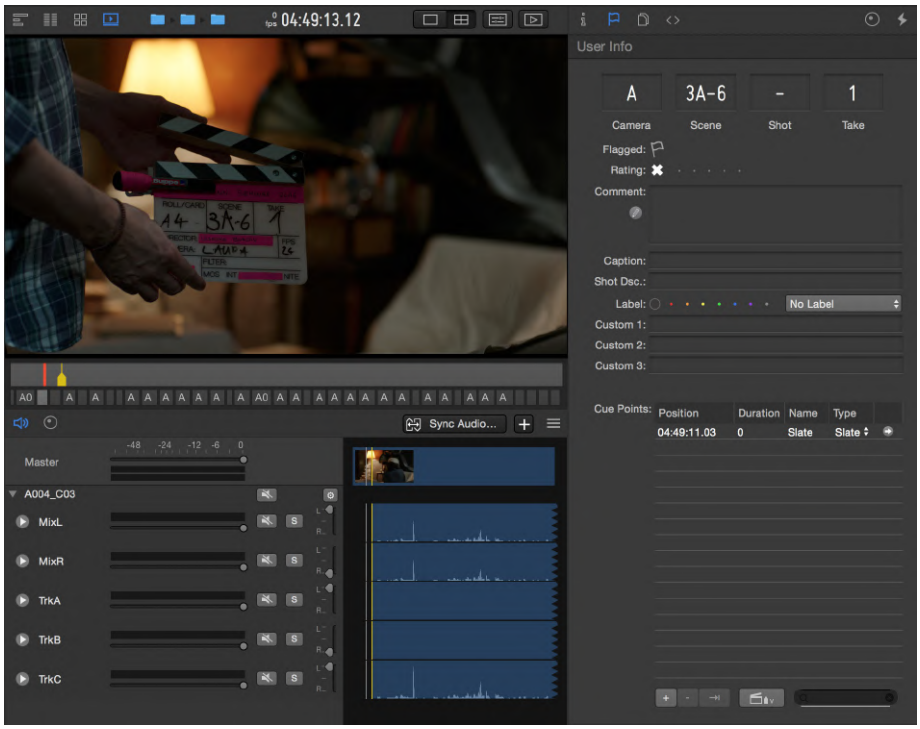


Fig.5: The video slate marker is a special cue point in the cue points section

Move the playhead of the video clip to a new position and click the “set video slate” button in the cue points section of the User Info tab. Alternatively you can use the shortcut **Ctrl + Cmd + Enter** to set the video slate marker at the current position of the playhead.

Please note that the video slate marker is a special kind of cue point. You can remove the video slate marker like removing a cue point. In case of external audio existing you will not be able to remove it as a video clip will with external audio will always have a slate marker. Learn more about cue points from the article Metadata Handling: View, Organize, Add and Filter Clips.

Removing External Audio Clips

External audio clips can be removed by clicking on the gear menu in the header bar of the external audio clip:

Fig. 6: Remove an audio clip from from inside the gear menu

- **Remove:** Removes the audio clip attached to the video clip.
- **Reveal:** Reveals the audio clip in its audio bin
- **Mid/Side:** Select the channels that should be used for mid/side stereophony

Audible Frame Stepping

When stepping through a video clip with audio frame by frame with the arrow keys you will be able to hear audio for every frame.

Transcoding in Silverstack and Silverstack XT

Overview

The transcoding functionalities of Silverstack have been updated with Silverstack 6. The update contains a faster transcoding engine, an updated user interface, more transcoding options and a lot more (details below).

Silverstack separates the configuration of the transcoding settings from the actual starting of a transcoding job:

- The section **“Transcoding Configurations”** will explain how to adjust the settings for your transcoding job.
- The section **“Starting a Transcoding Job”** will explain how to execute a transcoding job.

Transcoding Configurations *

Silverstack XT offers multiple custom transcoding configurations while Silverstack offers one custom transcoding configuration.

The transcoding settings can be found in the transcoding tab of the right bar. Click the transcoding icon to access the transcoding tab:

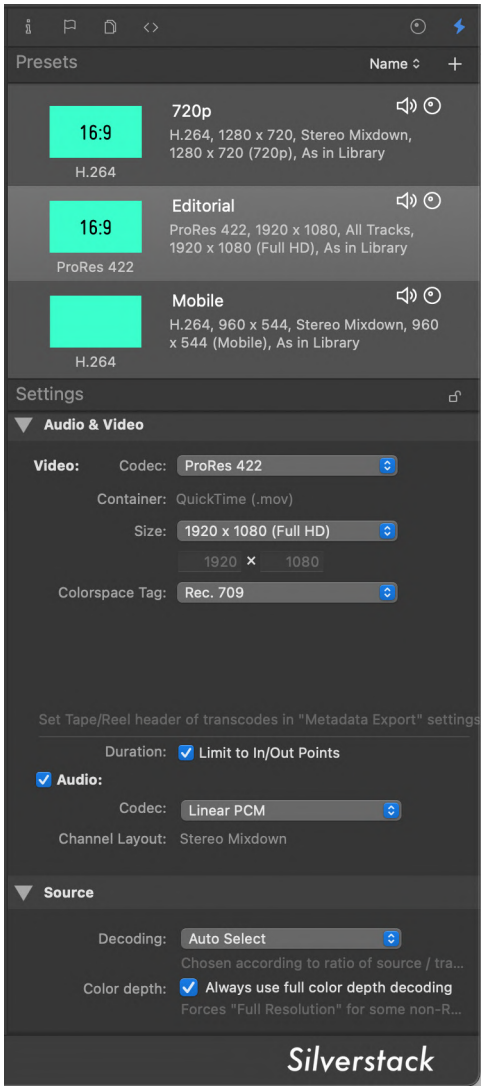


Fig. 1: Configure the transcoding settings in the transcoding tab of the right sidebar

The upper part of the transcoding tab shows the custom transcoding configurations. The lower part shows the detailed settings for the selected configuration. The settings will be applied and stored to the configurations immediately.

Locking Transcoding Configurations

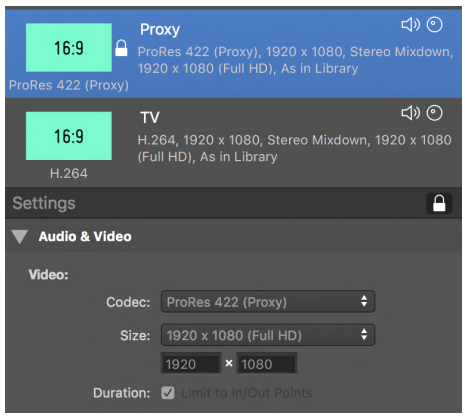


Fig.2: Locking transcoding configurations

Transcoding configurations can be locked to avoid changes to them by clicking the lock icon on the right side of the**"Settings"** header bar. Locked configurations will be shown with a white lock icon in the table*.

Transcoding Settings

Audio & Video

Video

- **Codec**: Select the output codec depending on your requirements. There are different options available (also shown in Fig. 3):
  - H.264 (Quicktime Container)
  - H.265 / HEVC (Quicktime Container, available starting from macOS 10.13)
  - ProRes 4444
  - ProRes 422
  - ProRes 422 (HQ)
  - ProRes 422 (Proxy)

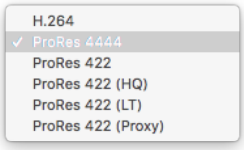


Fig. 3: Available transcoding options

- **Container:** Select the container for the file. The following options are available:
  - **Quicktime (.mov)**: Available for all codecs (ProRes, H.264, HEVC)
  - **MP4 (.MP4):** Available for H.264 and HEVC codecs.

- **Size (for H.264 and ProRes):** This drop down menu allows you to select the final resolution of the transcoded clips:

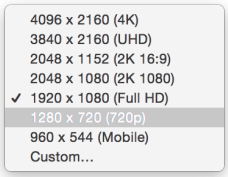


Fig. 4: Available frame sizes

- **H.264 Bitrate Options:**

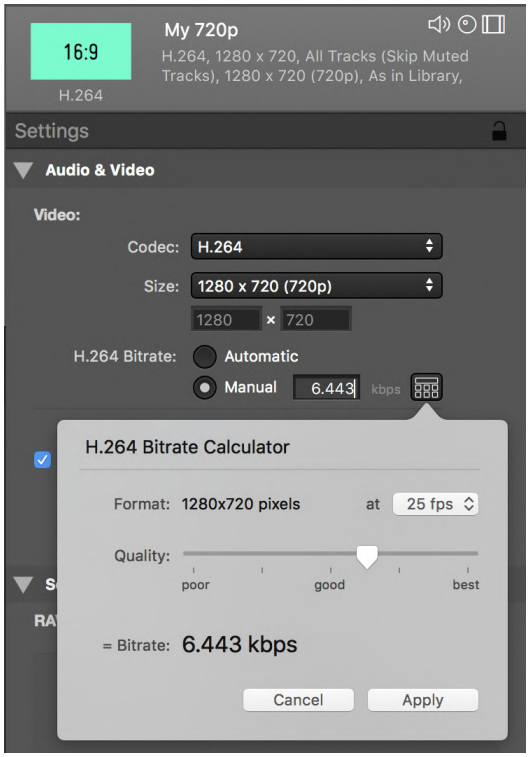


Fig. 4b: The H.264 bitrate calculator

The H.264 manual bitrate options allow you to enter a **specific bitrate in the textfield** or provide help for a **choice of quality in the "H.264 bitrate calculator"** (see fig. 4b).

The bitrate calculator lets you choose the intended quality from **"poor" through "good" to "best"** and calculates the resulting bitrate based on the selected resolution and the intended frame rate.

- **Duration (Limit to In/Out points):** By enabling this option Silverstack only transcodes the part of the clip between the in and out points set in the library.

Audio

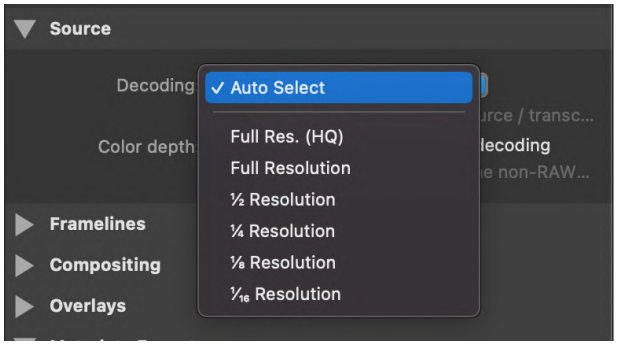
Tick the checkbox to include audio in your transcoded clips.

- **Format:**
  - Linear PCM
  - ACC – Good Quality **
  - ACC – High Quality **

- **Channel Layout:**
  - Stereo Mixdown: The custom audio mix created in the audio panel

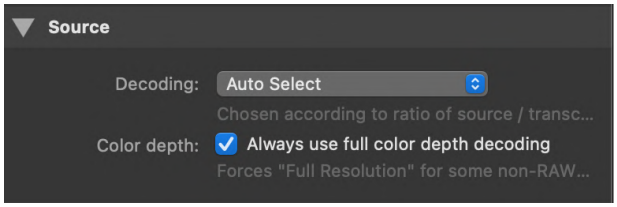
Source

Many source formats allow lower-quality decoding to speed up the decoding process (e.g., ¼ resolution decoding) or extra high-quality modes for the best image quality results. You can **manually** configure your preferred decoding resolution in the transcoding presets' source section. If the preferred decoding resolution is not available for the source format that is to be transcoded, the next best available mode will be used (*e.g., Sony X-OCN does not support the ⅛ res. decoding mode → transcoding will automatically switch to ¼ res. decoding*).



Selection of the preferred decoding resolution

Per default, Silverstack is configured to use the "Auto Select" mode, which **automatically** chooses the preferred decoding resolution for each transcoding task individually, based on the source resolution and the target resolution (*e.g., source resolution 8k, target resolution 2k → automatically chooses "¼ res. decoding" – if supported for source format*). Some non-RAW formats implicitly decrease color bit depth when using lower decoding resolutions. To prevent this behavior, the "Always use full color depth decoding" option automatically forces full resolution decoding in those situations.



"Auto Select" mode and full color depth option

It is possible to check the transcoding quality parameters that were actually used for each transcoding task in the "Task Details" section of the job view.

Compositing

- **Resizing**:
  - **Fitting Strategy:**
    - The *zoom to fit (Adding black bars/Without black bars)* option will adjust the horizontal resolution of the clip to fit in the selected final size.
    - *Zoom to fill* will affect the vertical resolution of the footage to the final size, cropping the sides.
    - *1 to 1* will zoom the footage to 100% in the center of the image to adjust to the final selected size, cropping everything else.

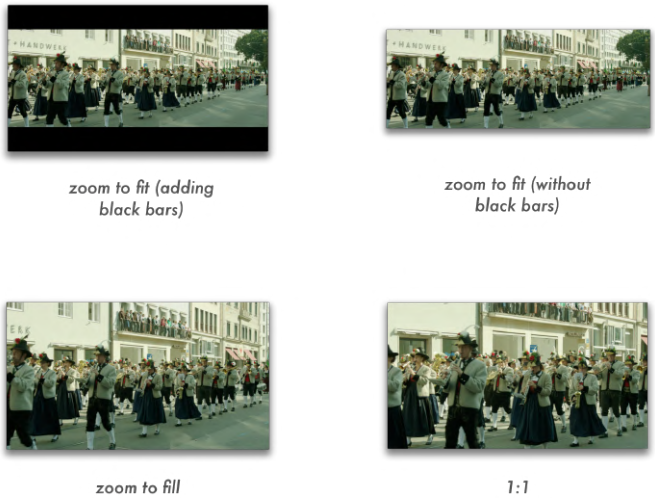


Fig. 5: resizing example results

- **Grading:**
  - **Look Source:** Choose how to manage the color data for the clip:
    - *As set in Library*: enable this setting to include the looks applied to the clip in the Library. For more information on how to apply looks, please check the article [The Silverstack Look Library](#).
    - *None*: Disables the color processing and transcodes the clips unmodified (as recorded).
    - *From file*: Reads the clip metadata and applies the color processing described in the embedded looks. In case there is no look embedded, Silverstack applies the default Log to Rec.709 conversion for the specific format.

Overlays

- **Burn Ins:** Choose from two different options to burn into the transcoded clip:

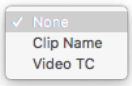


Fig. 6: Burn in options

- **Burn in Parameters:** The following parameters can be adjusted for the burn ins:
  - **Margins:** A horizontal and vertical margin to position the burn ins in the frame.
  - **Font:** Sets the font style for the burn ins.
  - **Font Size:** Sets the font size in pt.
  - **Transparency:** Sets the transparency level for the burn ins.
  - **Text Color:** Sets the text color to **"White"** or **"Black"**
  - **Background:** Sets the background to a **"Box"** shape, adds an **"Outline"** to the text or with **"None"** adds no background.

- **Image Overlay:** Choose an image overlay (.png, .jpg, .tiff) to be burned into the transcoded clips.

- **Image Overlay Parameters:**
  - Size: Sets the size of the image (0 -100 %)
  - Position X: Sets the position in horizontal direction
  - Position Y: Sets the position in vertical direction
  - Transparency: Sets the transparence (0 – 100 %)

The Transcoding Preview

When the transcoding tab in the right bar is showing Silverstack automatically switches to a transcoding preview to be shown in the playback view:

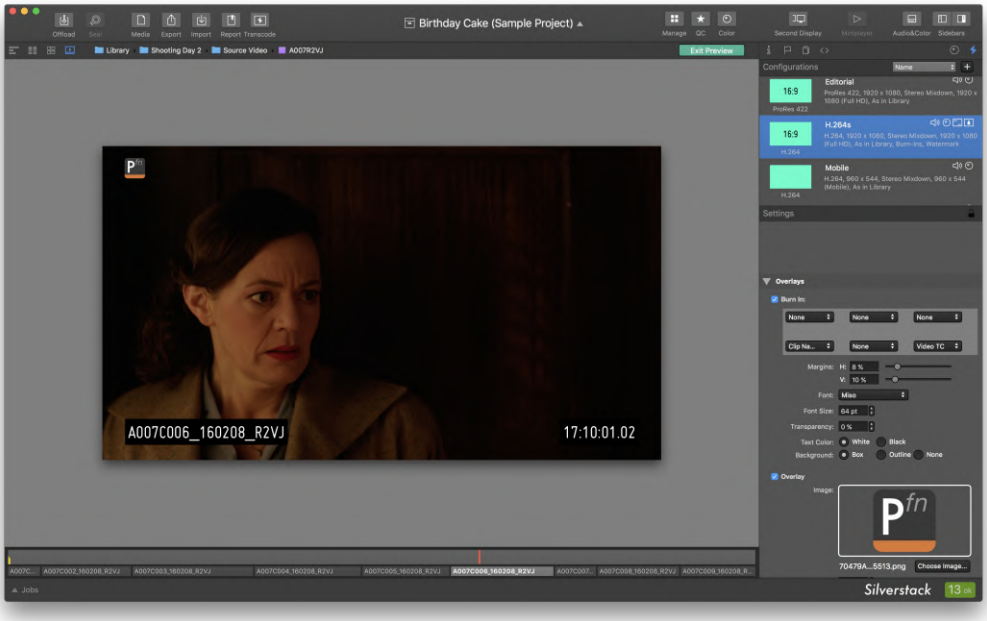
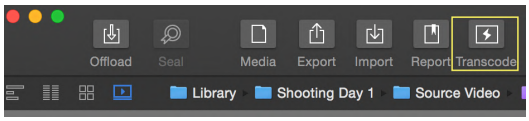


Fig. 7: The transcoding preview

The transcoding preview displays a preview of the transcoding configurations applied to the currently selected clip.

Starting a Transcoding Job



The «Transcode» button

In order to start transcoding the clips, first select a folder or bin in the Library panel. Then click on Transcode to open the wizard. There you will be able to select the clips you want to transcode. Click on continue to select the destination and transcode settings.

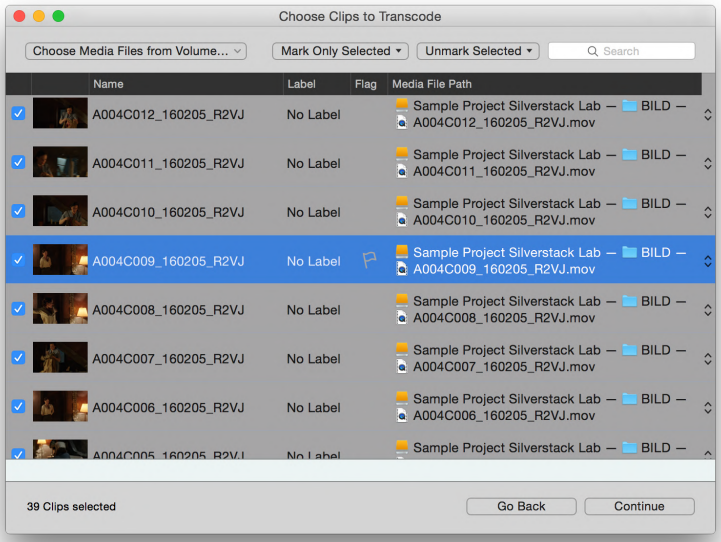


Fig. 8: clip selection wizard

Now you are able to select where the transcoded clips will be stored. You can add and remove destinations by using the «+» and «-» buttons. Alternatively, it's also possible to modify each destination path and path wildcards. You can select from the configurations previously configured in the transcoding configurations tab:

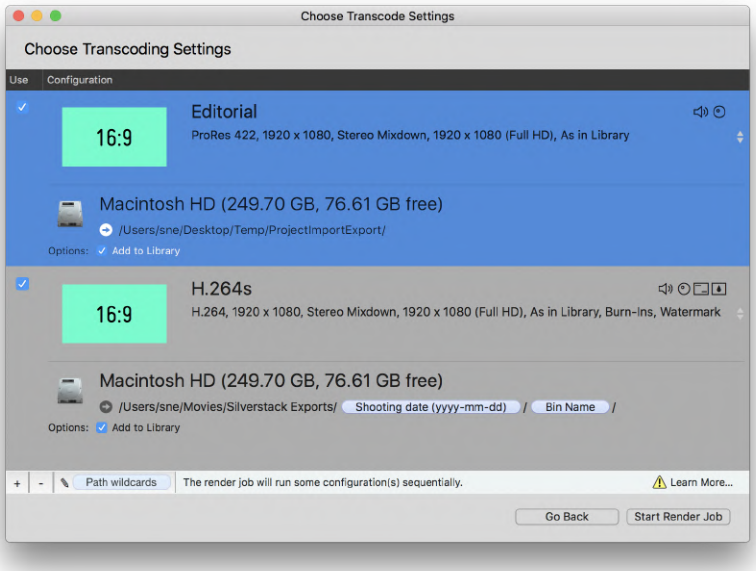


Fig. 9: The transcoding destination step

Click the current configuration to open the list of all available transcoding configurations:

Fig. 10: The transcoding configurations dropdown

When the checkbox “Add to Library” is checked the transcoded clips will automatically be ingested into the Silverstack Library after the transcoding job is done. Transcoding statistics will be available for the clips in the statistics view.

Click **“Start Render Job”** to start the render job. It can then be traced in the jobs panel.

Path Wildcards for Transcode Destinations

Path Wildcards can be used to customize the transcoding path with available metadata. Click the **“Path wildcard”** icon in the status bar (see fig. 13) to access the path wildcards settings for the selected destination:

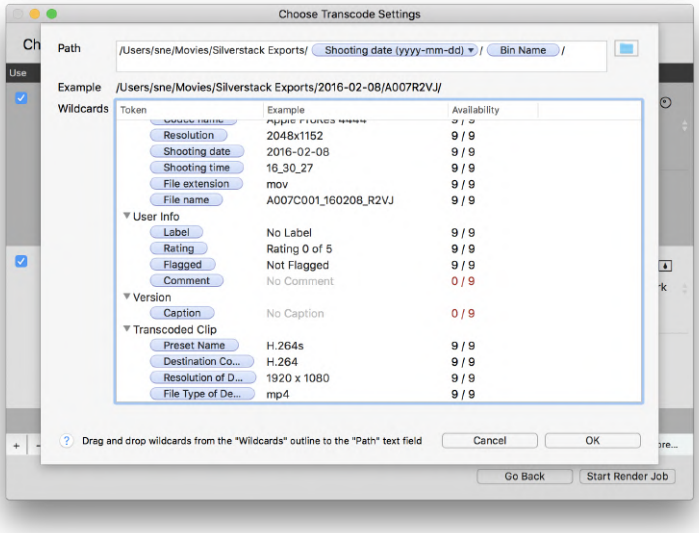


Fig. 11: The path wildcard window

It is also possible to rename the transcoded clips by leaving out the "/" and optionally also adding a file extension. Here's an example:

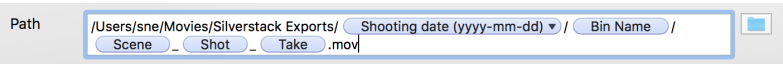


Fig. 12: Path wildcards for transcoding destinations

Hint: It is also possible to copy and paste path wildcards like plain text.

Multi Destination Transcoding*

Silverstack XT is able to transcode to multiple destination formats at a time. In certain cases (see below), the transcoding of the configurations has to be run sequentially. The transcoding wizard will give you a hint if the transcoding will be run in parallel or sequentially:

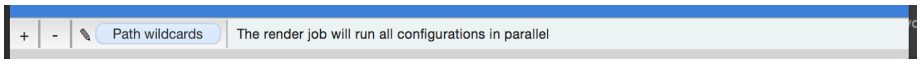


Fig. 13 : The info message about parallel or sequential transcoding

In case of sequential transcoding you can open theWildcards for Transcodes panel to get details about the transcoding order.

The following settings can influence the parallel execution of the transcoding job:

- In/Out Points
- Debayer settings
- Decoding resolution

Make sure to set the above settings to the same value when transcoding to two different configurations to avoid sequential transcoding.

Management of Transcoding and Offload Jobs

Silverstack Lab is generally able to transcode and copy at the same time. Transcoding jobs as well as copy jobs run in the background while the app is still fully accessible.

Optionally you can choose to pause transcoding jobs when offloading and while playing back clips. To do so go to the**"Copy&Jobs"** tab in the Preferences and select the according checkbox **"Automatically Interrupt Transcoding Jobs during Playback and Offload"**:

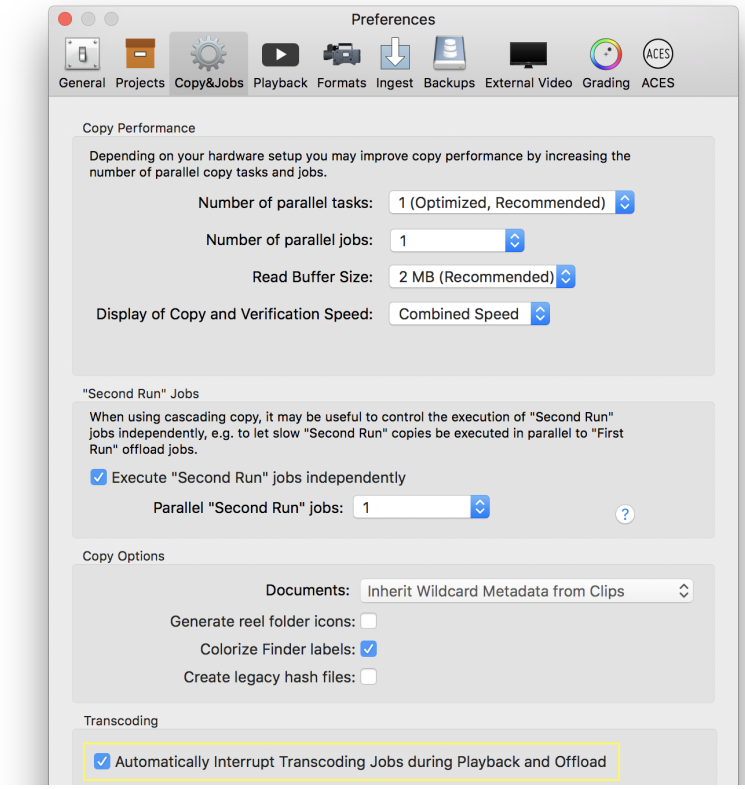


Fig. 14: The “Copy&Jobs” tab in the preferences

Transcoding Functionalities Overview for Silverstack and Silverstack XT

The transcoding functionalities of Silverstack have been updated with version 6. Silverstack and Silverstack XT come with a different set of functionalities concerning Transcoding.

- **Silverstack**
  - Single destination transcoding
  - One custom transcoding preset
  - Timecode and Clip Name burn in options
  - Watermarking
  - Transcoding resolution up to full HD (1920 x 1080)
  - Stereo mixdown audio channel layout for transcoded clip

- **Silverstack XT**
  - Multi destination transcoding
  - Many custom transcoding preset
  - Timecode and Clip Name burn in options
  - Watermarking
  - Transcoding resolutions higher than Full HD (1920 x 1080)
  - Stereo mixdown audio channel layout for transcoded clip
  - Transcoding statistics

* Silverstack XT only

**Only available for ProRes and H.264

UI Layouts: Quick Configurations for the Silverstack User Interface

Silverstack comes with 3 to 4 options * to automatically configure the user interface in a steadily defined way. Like this you will be able to switch to a certain UI configuration that is convenient for a particular task with one click.

Accessing the UI Layouts

The UI Layouts include the following configurations:

- Manage
- QC (Quality Control)
- Color
- Config (Transcoding Configurations) *

The UI Layouts can be configured from the shortcut buttons on the right side of the Silverstack toolbar:

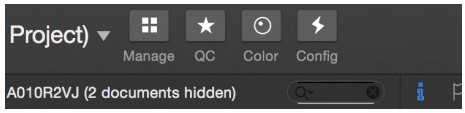


Fig. 1: The UI Layout shortcut buttons in the toolbar

Alternatively the UI Layouts can be accessed from the "**Window**" menu:

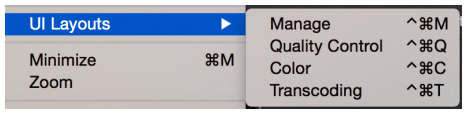


Fig. 2: The UI Layout shortcuts in the "Window" menu

UI Layouts with One Display

- **Manage:** Configures the UI in a convenient way for all kinds of management tasks.
  - Left bar: Shown (Library)
  - Center: Collection View
  - Right bar: General Info
  - Audio & Color panel: Hidden
  - Mini Player: Open

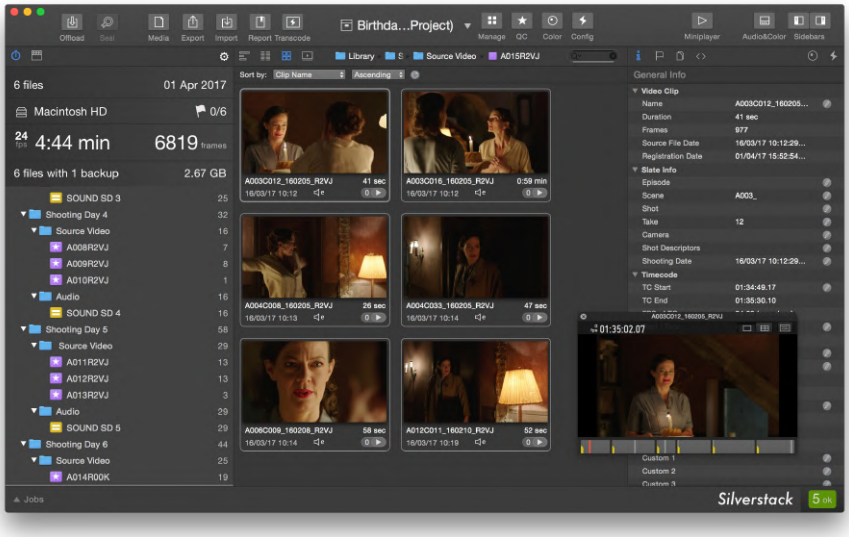


Fig. 3: UI Layout: Manage

- **QC (Quality Control):** Configures the UI in a convenient way for all kinds of quality control tasks.
  - Left bar: Hidden
  - Center: Player
  - Right bar: User Info tab
  - Audio & Color Panel: Audio

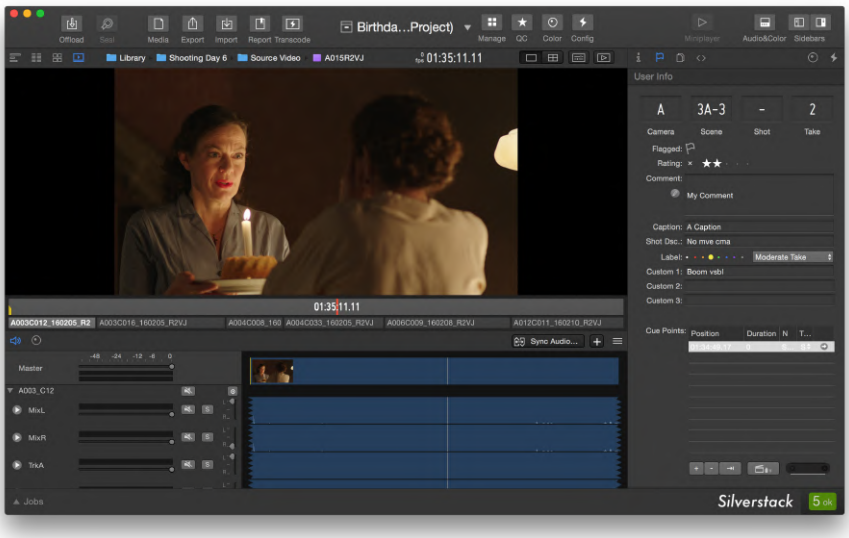


Fig. 4: UI Layout: QC

- **Color:** Configures the UI in a convenient way for color grading.
  - Left bar: Hidden
  - Center: Player
  - Right bar: Look Library
  - Audio & Color Panel: Color

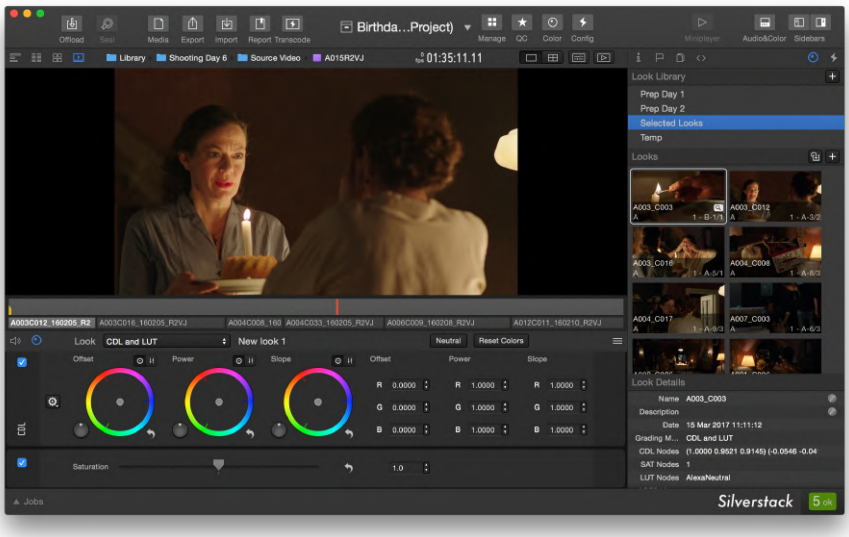


Fig. 5: UI Layout: Color

- **Config (Transcoding Configurations)*:** Configures the UI in a convenient way for adjusting transcoding configurations.
  - Left bar: Hidden
  - Center: Transcoding Preview
  - Right bar: Transcoding configurations
  - Audio & Color Panel: Hidden

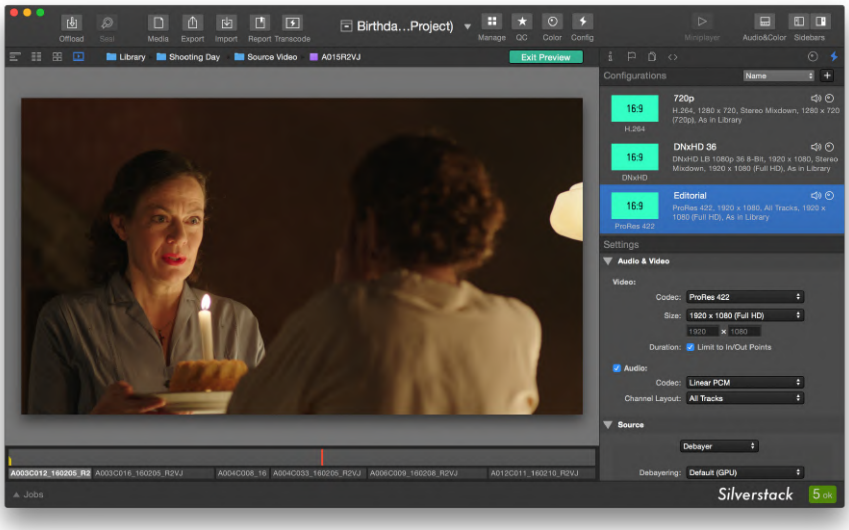


Fig. 6: UI Layout: Config

UI Layouts with Two Displays

The UI Layouts establish different configurations of the user interface when the second display is activated.

Please refer to the article [Second Display: Two Screen Working Environment]() for more information about using a second display for the Silverstack UI.

*UI Layout “Config” (Transcoding Configurations) only available in Silverstack Lab.

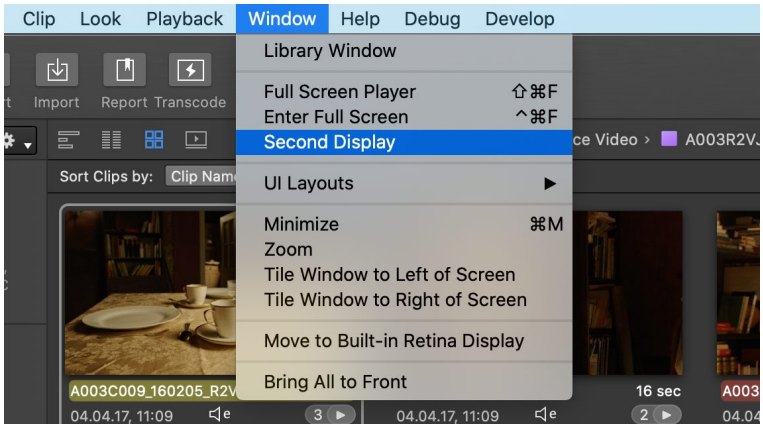
Search Code: ST-UI1

Second Display: Two Screen Working Environment in Silverstack

Silverstack XT and Silverstack Lab offer the possibility to extend the Silverstack user interface to two screens.

Accessing the Second Display

When a second display is attached to your machine, you can show an additional user interface by selecting "**Second Display**" from the **"Window"** menu.



Second Display User Interface Options

The second display opens automatically on the screen that does not hold the Silverstack main window.

There are 3 content options for the second display:

- **List View of clips**

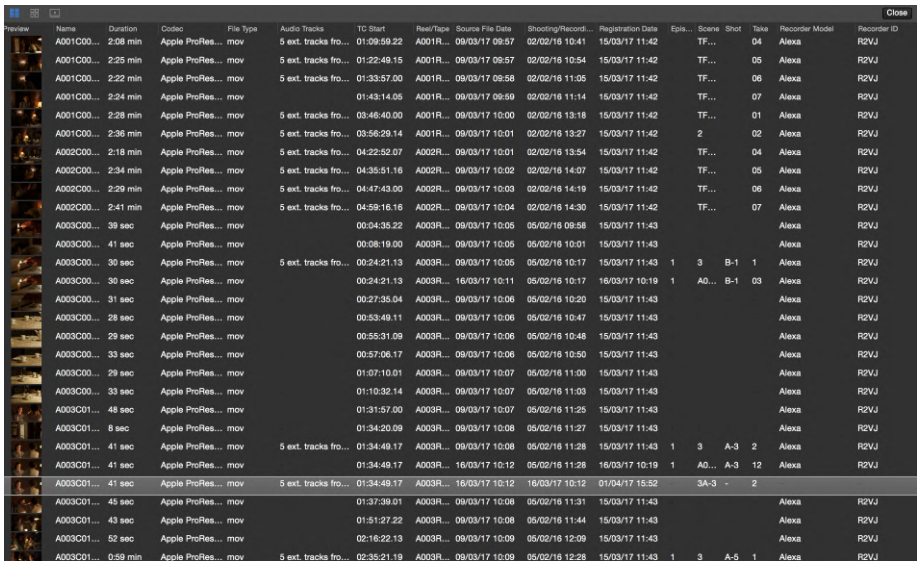


Fig. 2: The List View on the Second Display

- **Collection View of clips**

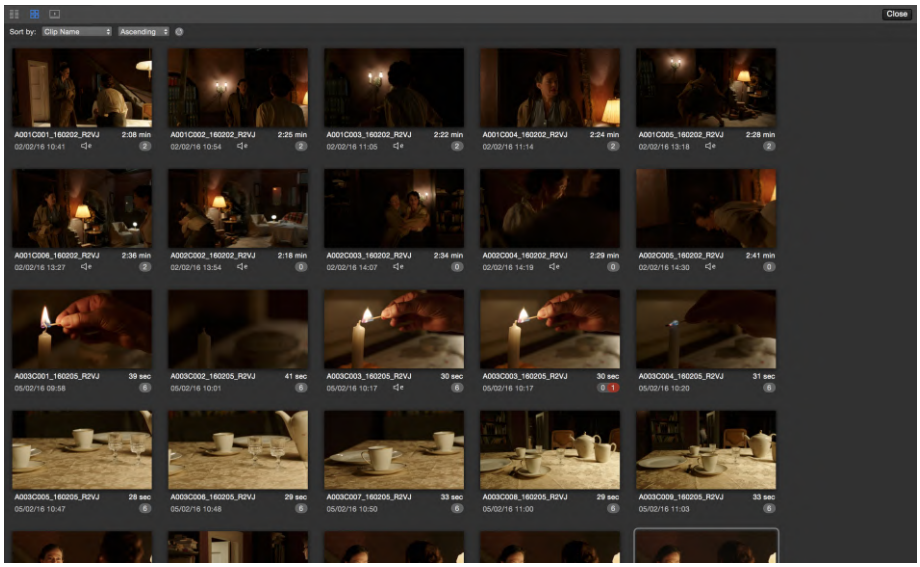


Fig. 3: The Collection View on the Second Display

- **Player View**

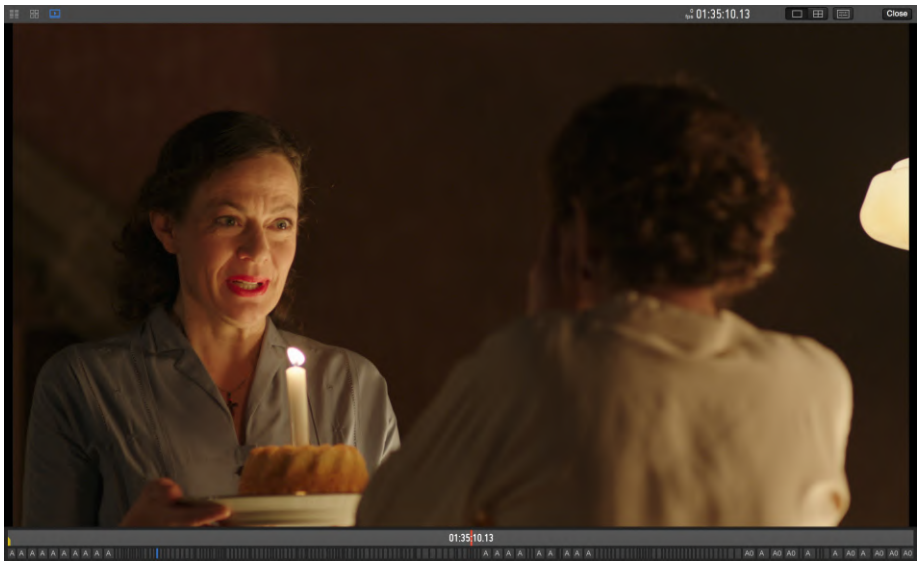


Fig. 4: The Player View on the Second Display

Silverstack automatically adapts the interface to avoid a simultaneous display of the same element (List View, Collection View, Player View) in both the main window and the second screen. When an element is accessed that is already shown in the other display it is automatically flipped with the previously shown element on the first screen.

Transfer of Project Settings

Silverstack allows to export and import project settings to transfer them to new projects or different machines. This can e.g. help to move project settings from established projects to new projects to avoid setting up from scratch. Other use cases involve the transfer of transcoding presets from Silverstack XT or Lab to new projects or other machines.

Which Settings Can Be Transferred ?

The settings transfer involves certain project based settings as well as global settings. Find the settings that can be transferred below.

Project settings:

- Folder Structure
- Smart Folders
- Transcoding Presets
- Copy Job Templates
- Label Names
- Titles for Custom Fields

Global settings:

- Table View Presets
- Format Options

Export and Import of Project Settings

To export or import project settings go to the Silverstack Main Menu and select **"File > Project Settings > Export… / Import…"**:

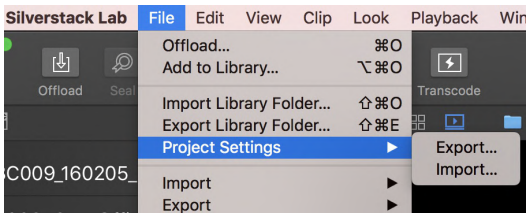


Fig. 1: Export and Import of Project Settings

You can choose the content to be exported after clicking on **"Export…":**

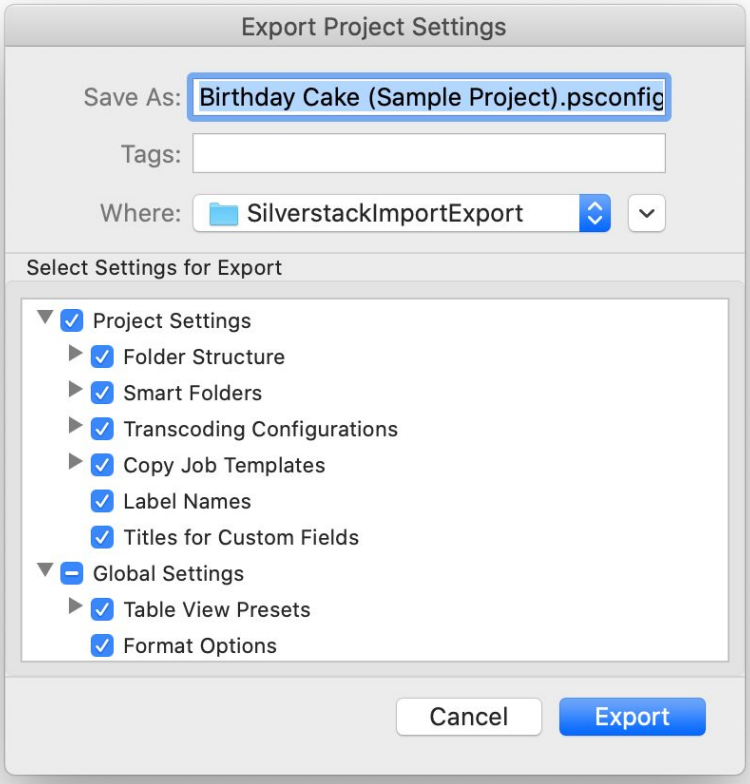


Fig. 2: Export project settings options

Here are the details about the different export options:

Project settings:

- **Folder Structure**: Transfer the folder structure of your Silverstack library to a new project. All top level folders can be selected for the export.
- **Smart Folders**: Transfer your custom smart folders to a new project.
- **Transcoding Presets**: Transfer your custom transcoding presets to a new project*
- **Copy Job Templates**: Transfer your custom copy job templates saved in the offload wizard to a new project.
- **Label Names**: Transfer the custom names for the color labels.
- **Titles for Custom Fields**: Transfer your custom filed titles.

Global settings:

- **Table View Presets**: Transfer your table view presets (of the main table of clips and metadata) to a new project.
- **Format Options**: Transfer the settings of the "Format Options" in the Silverstack preferences to a new project.

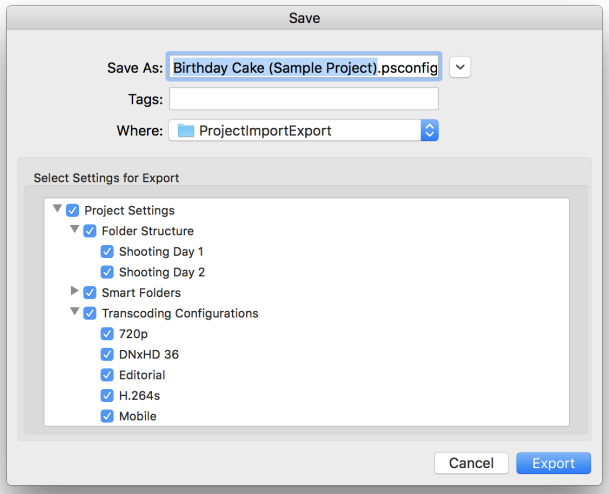


Fig. 3: Example of the project settings export wizard including folders and transcoding presets

Click **"Export"** to save the .psconfig (project settings configurations) file containing the project settings information to the selected destination.

The export and import settings windows are symmetrical hence you can choose which content to write to the .psconfig file as well as which content to import from a .psconfig file.

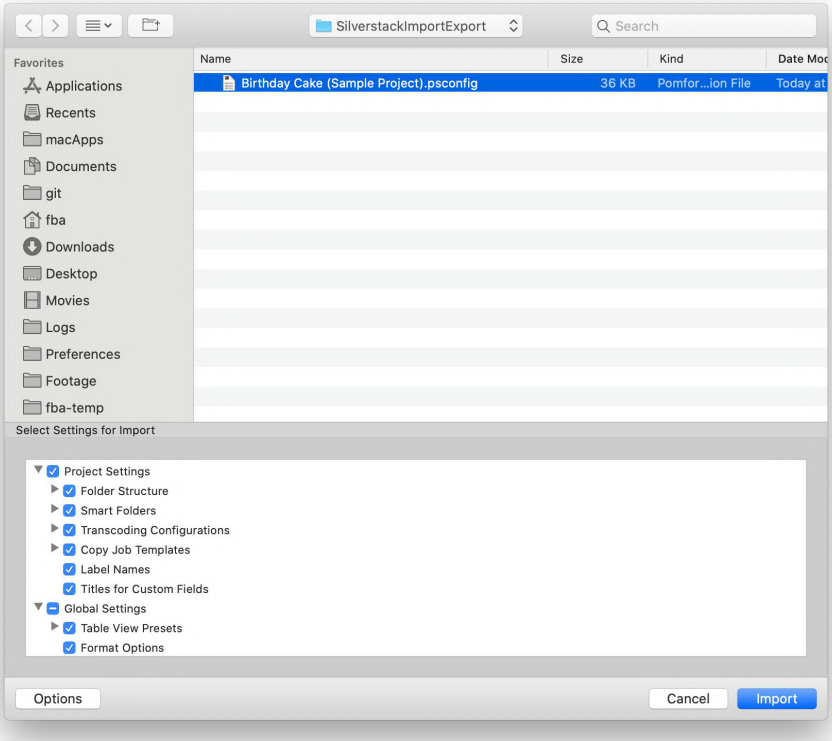


Fig. 4: Example of the project settings import window

Setting a Default Template for New Projects

Additionally to the export and import of project settings you can define a .psconfig file that should be used as a template to create new projects.

First export a project settings file as described above and include all the settings the default template for new projects should contain.

Then go to the Silverstack preferences by choosing **"Silverstack/Silverstack Lab > Preferences..."** in the Main Menu.

In the **"General"** tab of the preferences you can click **"Choose..."** to select the default .psconfig file for new projects:

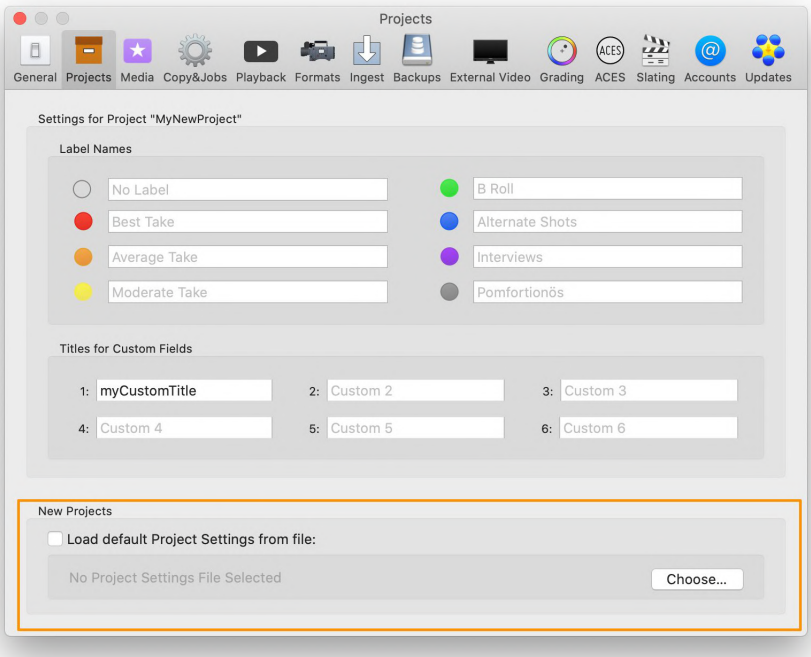


Fig. 5: Choose the .psconfig file the default project settings for new projects should be loaded from.

When you now create a new project in the toolbar or from the **"File"** menu (**"File > New Project..."**) all contents of the selected .psconfig file will be loaded as default for the new project.

Additionally to the manual process of loading the default .psconfig file in the preferences you can copy a .psconfig file named**"defaults.psconfig"** to the library folder to be taken as the default template:

For Silverstack 8: ~/Library/Application Support/Pomfort/Silverstack8

For Silverstack Lab 8: ~/Library/Application Support/Pomfort/SilverstackLab8

Attention: Please be aware that the .psconfig file in this location will overrule the UI settings.

The .psconfig files are generally compatible throughout the different Silverstack versions Silverstack, Silverstack XT and Silverstack Lab. Please be aware though, when importing transcoding presets from Silverstack Lab into Silverstack XT that restrictions due to incompatible features such as e.g. DNx transcoding only available in Silverstack Lab might apply.

*Only available for Silverstack XT and Silverstack Lab as the basic version of Silverstack does not support custom transcoding presets.

Crop Clips

Silverstack allows to crop clips to a custom aspect ratio. Cropping is non-destructive as long a crop setting is not used for transcoding.

Cropping can be set via the "Crop" popover in the General Info tab on the right side of the main window. Learn more about the right sidebar in the article The Information Panel.

Crop Clips to a Custom Aspect Ratio

Go to the **"General Info"** Tab and scroll down to the **"Processing"** section where you can find the **"Crop"** entry.

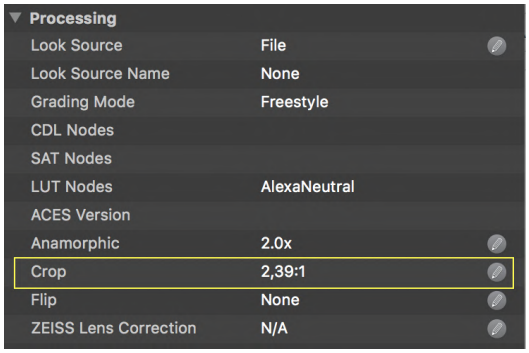


Fig. 1: Crop in the Processing section

Click the little grey button with the pencil to open the popover:

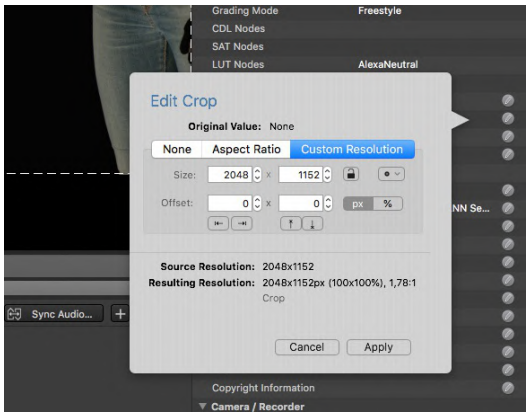


Fig. 2: The Crop popover in the General Info

Crop Options

There are 3 tabs and therefore 2 crop options available:

- Selecting **"None"** and clicking "Apply" will make sure to remove all crop settings from the selected clip.
- Crop to an **Aspect Ratio**
- Crop to a **Custom Resolution**

Crop to an Aspect Ratio

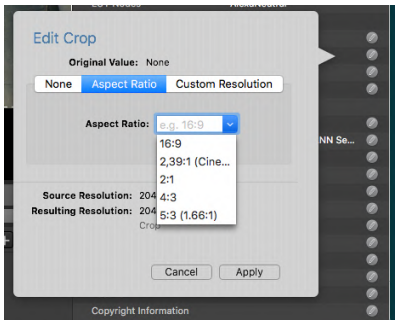


Fig.3

Select the second tab "Aspect Ratio" and enter a custom aspect ratio into the combo box or select one from the list of presets.

The by default available aspect ratios are:

- 4:3
- 16:9
- 1.85:1
- 2.39:1 (Cinemascope)
- 2:1
- 5:3 (1.66:1)

Crop to a Custom Resolution

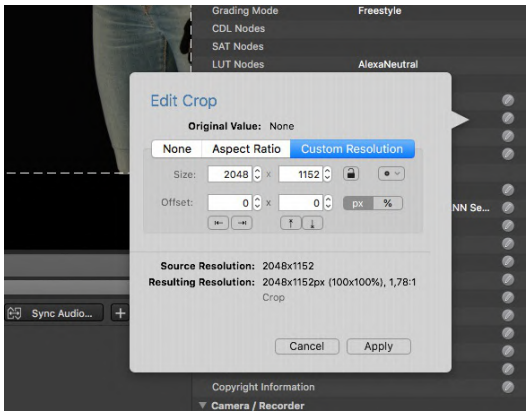


Fig.4

Select the third tab "Custom Resolution".

The following controls are available:

1. **Size:** You can enter a custom pixel resolution to crop to. The specified pixel resolution will be cropped out by default from the center of the image.
2. **Aspect Lock:** You can lock the resolution to a certain ratio when changing horizontal or vertical size.

3. **Recents:** The gear menu shows recently used sizes for a quick selection
4. **Offset:** Specify a horizontal and vertical offset from the center cropped size
5. **Quick Offset Buttons & Re-Center:** The quick offset arrow keys enable a one-click shift of the cropped area to the respective image margins. If an offset is entered the “0” button appears and helps to remove the offset to re-center the cropped area.
6. **px/% Switch:** You can switch between specifying an custom crop resolution in pixels or percentage values.

Click **“Apply”** to crop the current image to the specified crop.

Source and Resulting Resolution

The **“Source Resolution”** and **“Resulting Resolution”** give you information about the original and the resulting image resolution:

- **“Source Resolution”**: Native resolution of the clip. Also displayed in the General Info in the right tab under **“Format -> Resolution”**
- **“Resulting Resolution”**: The cropped and/or desqueezed resolution.
  - The factors relevant for the calculation of the Resulting Resolution are displayed below (e.g. “Desqueeze (2.0) and Crop”).
  - The resulting percentage of the original image is displayed in brackets. The resulting aspect ratio follows.

Please be aware that the decoding resolutions of the player do not affect the calculations of resolutions in the “Crop” popover.

Highlighting of Cropped Area in the Playback View

While setting the crop in the popover the area that will be cropped is highlighted in the playback view and updates live while changing crop settings.

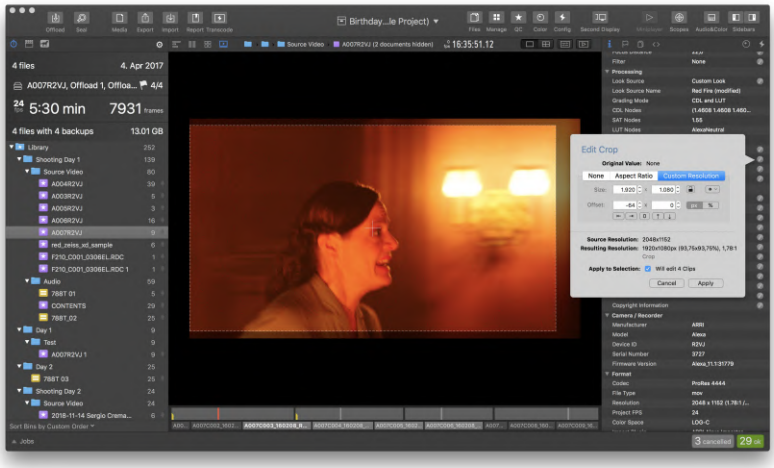


Fig 5: The crop area shows in the image

Apply Crop to Multiple Clips

To apply a crop to two or more clips select multiple clips from the table view and open the “Crop” popover:

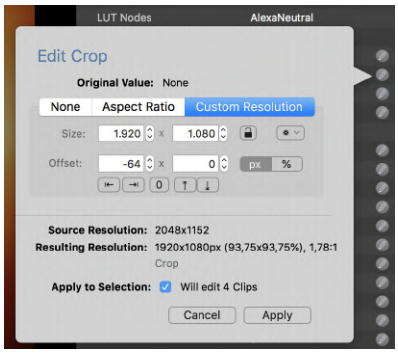


Fig. 6: Multi edit for crop

The number of altered clips is displayed in the popover (see “Will edit 4 Clips” in Fig. 6) . Click **“Apply”** to apply the set crop factor to all selected clips.

Tags: crop, multi edit, multiedit, aspect ratio, custom resolution

Extracting LTC from Internal Audio in Silverstack and Silverstack Lab

Linear (or Longitudinal) timecode (LTC) is an encoding of SMPTE timecode data in an audio signal.

The process of feeding LTC into the audio channel of a camera from external sources (such as timecode devices), is often used for cameras that either cannot handle external TC sync and/or do not provide proper timecode to the recorded clips. It offers the possibility to include such cameras in a workflow that requires synchronous timecode.

The timecode data existing in internal audio tracks of video clips can be extracted in Silverstack and Silverstack Lab to be applied to the metadata of the video clip. This enables subsequent processes that leverage timecode, such as e.g. providing detailed clip metadata for editing, transcoding clips with embedded timecode metadata, creating detailed clip reports or automatic audio sync based on timecode.

How to Extract LTC and Apply it to Clips

To extract LTC in Silverstack first make sure to ingest all clips with LTC into the Silverstack library.

Choose the bin or folder containing the LTC clips and from the **"Media"** button menu in the toolbar choose **"Extract LTC"**:

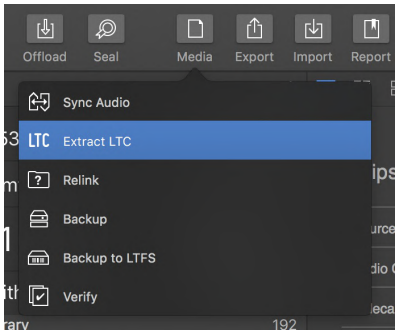


Fig. 1: Extract LTC in the "Media" menu

A wizard window opens that immediately extracts LTC for all selected clips:

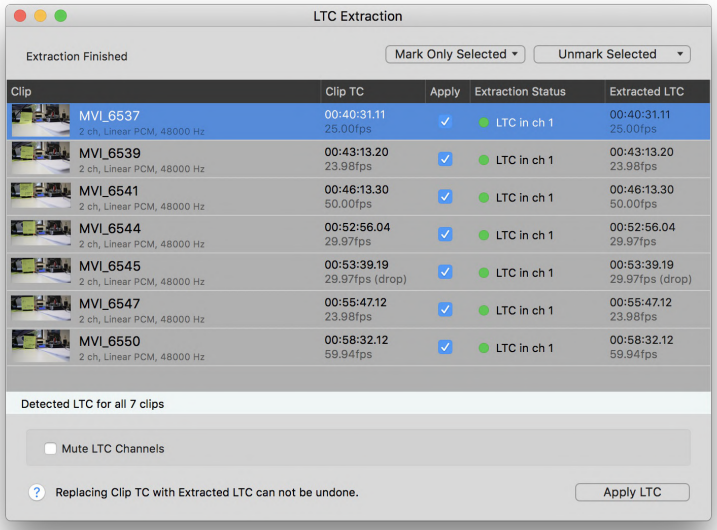


Fig.2: The LTC wizard finished the extraction of LTC for all selected clips

The following information is visible to the user in the wizard:

- Selected clip and audio information
- Original Clip TC
- Extraction status with channel information
- Extracted LTC and fps of LTC info

Silverstack attempts to read the LTC at the beginning of a clip. If no LTC is found the application iterates into the clip's timespan in several steps searching for an LTC in the whole clip. This also indicates that an LTC only has to exist for the beginning of a clip to be read out properly.

By checking the **"Mute LTC Channels"** checkbox you can make sure that after applying the LTC timecode to the clips the channels with LTC will become muted in Silverstack.

Click **"Apply TC"** to replace the Clip TC with the extracted LTC.

Please be aware that the process of applying the extracted LTC to the clip is not reversible and cannot be undone. Once you have taken over the extracted LTC to the clip you cannot go back to the original TC from the clip.

After taking over the extracted LTC to the clips each clips will have the regular**"TC Start"** and **"TC End"** in the General Info metadata on the right and in the table view:

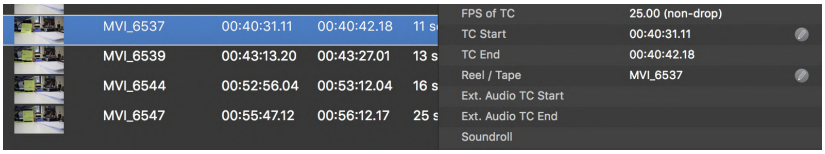


Fig. 3: The extracted LTC now is handled as the regular Clip TC in the Silverstack library

Now the timecode can be used for all subsequent task that involve the need of timecode for clips like e.g. transcoding or automatic audio sync based on timecode.
. Learn more about it in the article How to Automatically Sync Audio based on Timecode in Silverstack Lab.

Error Cases and Troubleshooting when Extracting LTC

When extracting LTC from video clips there are different possible error cases that are displayed in the LTC extraction wizard:

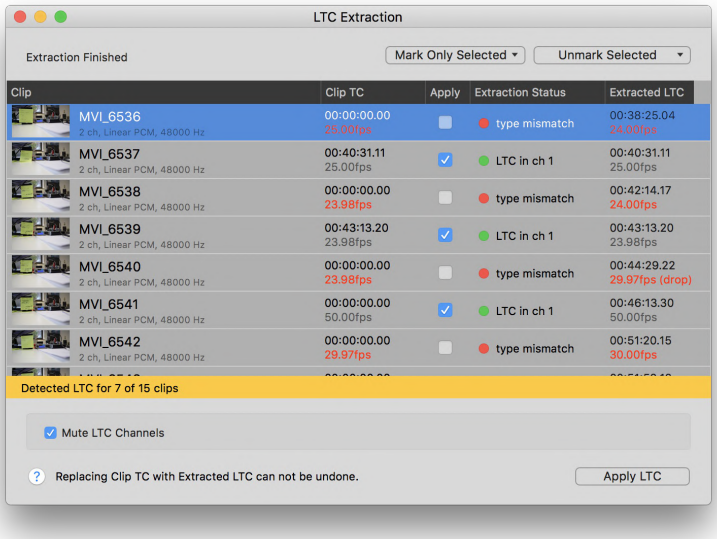


Fig. 4: The LTC extraction wizard with error messages

The **"Extraction Status"** column gives you insights about the following error cases:

- **"No LTC track found"**: No LTC track was found for the clip. Check the clips audio in the audio tab of the **"Audio&Color"** panel.
- **"Type mismatch"**: The fps of the LTC do not fit the LTC of the clip and the clip TC can therefore not be calculated correctly. This could especially become a problem with certain DSLR camera types that display 24fps as user selection in the menu but record in 23.976fps. Make sure clip TC and LTC match for a proper extraction.
- **"Clip offline"**: Clip is offline. Bring clips online to extract LTC.
- **"Extraction error"**: An unknown extraction error occurred.
- **"Clip has no audio"**: The clip has no audio. Check the clips audio in the audio tab of the **"Audio&Color"** panel.

Please be aware that LTC in the audio track does usually not survive compressed codecs such as e.g. MP3.

As the drop flag only affects the way of counting timecode and not its actual speed it is possible to apply drop-frame LTC on non-drop clips and vice versa.

As the bounds of an image frame are not necessarily the bounds of an LTC-audio frame, an error of up to a half frame can accumulate when synchronizing audio to LTC.

Dynamic Metadata

Silverstack XT and Silverstack Lab come with a **"Dynamic Metadata"** panel that allows to extract dynamic metadata for supported clip formats. Dynamic metadata refers to certain metadata information that changes over the time span of a clip (e.g. like TC which can also be considered dynamic). It is stored differently in diverse formats and therefore needs a special process to be accessed.

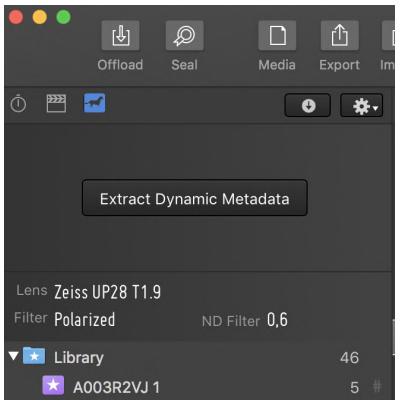


Fig. 1: The dynamic metadata panel in the upper left corner of the Silverstack UI

Supported Clip Formats

The following clip formats are currently supported for the extraction of dynamic metadata in Silverstack XT and Lab:

- ARRIRAW (.ari sequences and in .mxf container)
- ARRI Prores
- REDRAW
- SONY XAVC
- SONY X-OCN
- SONY RAW

Available Dynamic Metadata

The main part of dynamic metadata is dynamic lens metadata:

- Focal Length
- Aperture (T-Stop)
- Focus Distance

For ARRI ProRes and ARRIRAW clips Silverstack XT and Lab also support:

- Camera Tilt
- Camera Roll

How to Extract Dynamic Metadata

Select the third icon displaying a horse in the left sidebar above the library (see fig. 1)

To extract dynamic metadata for the selected clip press the “Extract Dynamic Metadata” button in the middle of the dynamic metadata panel.

You can start the extraction of dynamic metadata for multiple clips by selecting an entry from the gear menu in the toolbar:

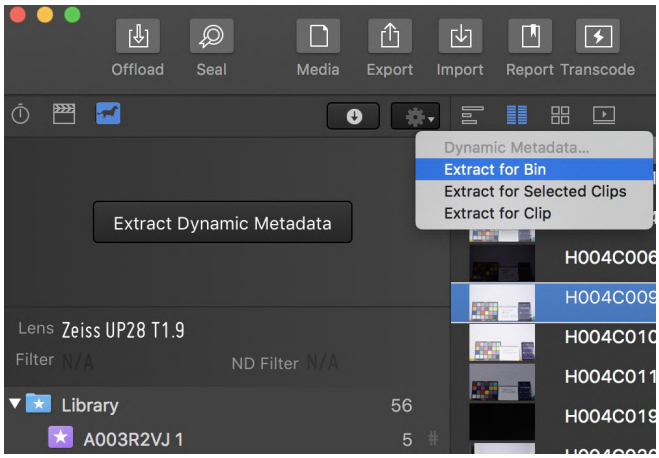


Fig. 2: Extract dynamic metadata for multiple clips

The extraction process for all clips can be monitored in the popover that reveals the current extraction state for every started clip:

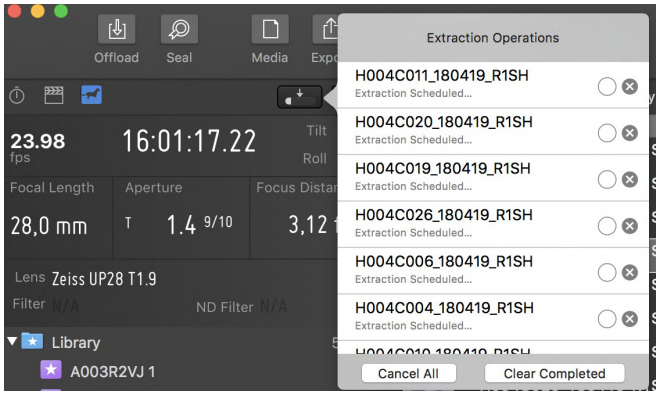


Fig.3: Extracting dynamic metadata from multiple clips

After a successful extraction the dynamic metadata panel reveals the extracted dynamic lens and camera metadata:

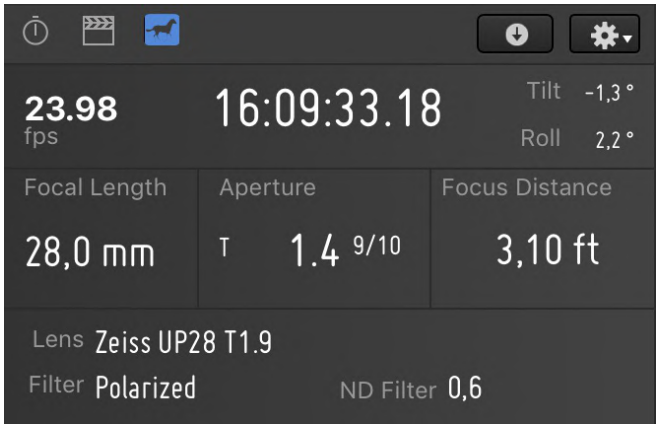


Fig. 4: The dynamic metadata panel with successfully extracted metadata

The metadata can now be inspected during playback or while scrubbing through a clip.

For completeness concerning lens metadata three additional static fields have been added to the lower section of the panel:

- Lens
- Filter
- ND Filter

They mirror data from the library and can also be edited in the General Info of the right sidebar.

Using Extracted Dynamic Metadata for Reports

For clips that support the extraction of dynamic metadata Silverstack extracts the dynamic metadata of the first frame already on ingest. That also allows Silverstack users to benefit from the dynamic metadata functionality and receive lens and other dynamic metadata for the first frame.

The additional lens fields can be exported to clips reports to enhance their information.

Silverstack XT and Silverstack Lab provide an extended functionality to leverage the dynamic metadata for generic clips reporting.

In the “Media” preferences it is possible to make sure that the static representation of the extracted dynamic metadata, that is used for the General info and table view library, follows the thumbnail frame:

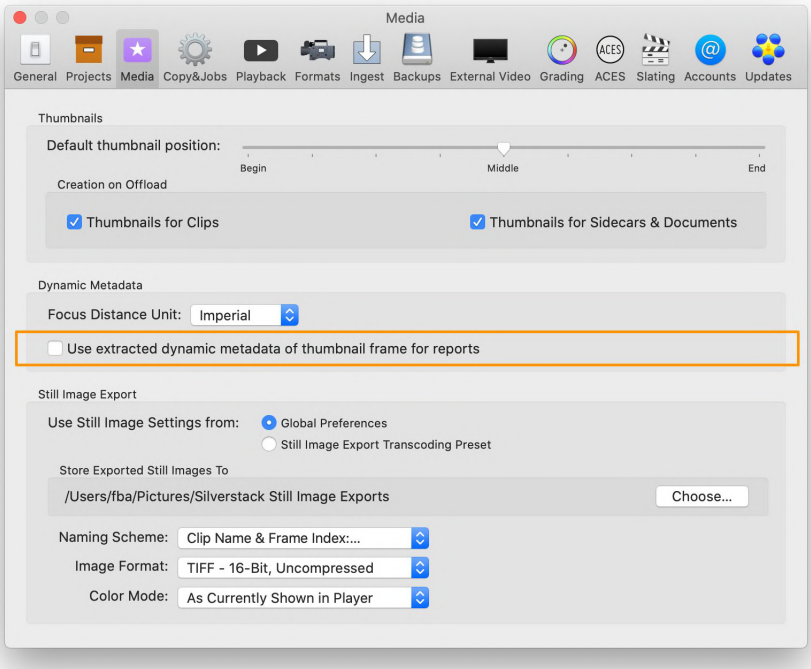


Fig. 5: Using the extracted dynamic metadata of the thumbnail frame for reports

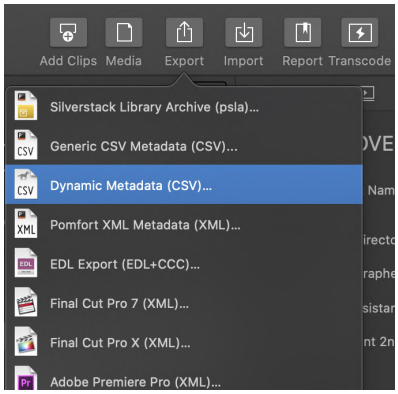
Like this you can make sure that the metadata that is referenced in the reports goes along with the shown thumbnail.

The focus distance unit can also be changed at the same position and allows to choose the display of the focal length in the dynamic metadata panel and the General Info to be imperial (inches/feet) or metric (millimeters/meters).

Export of Dynamic Metadata to a CSV File

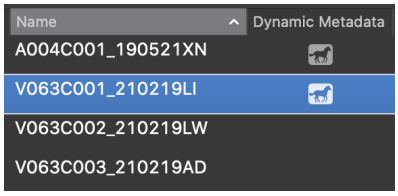
After successfully extracting the dynamic metadata from a clip, you can export the per frame metadata to one csv file per clip.

To trigger the export select the entry “Dynamic Metadata (CSV)…” in the Export menu of the toolbar:



Export dynamic metadata to a CSV file

In the subsequent step only the clips are shown that have successfully extracted metadata. You can check in the table view column “Dynamic Metadata” if a clip has extracted dynamic metadata successfully:



The two clips on top have successfully extracted metadata, the two on the bottom don’t

Here’s an example of a dynamic metadata CSV file where you can also see the available columns:

A004C001_190521XN.csv

Open with Numbers

Timecode	Clip Name	Lens Model	Lens Serial	Focal Length (mm)	Aperture	Focus Distance (ft)	Camera Tilt	Camera Roll	Camera Model
00:01:13:04	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:13:05	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:13:06	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:13:07	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:13:08	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:13:09	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:13:10	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:13:11	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:13:12	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:13:13	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:13:14	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:13:15	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:13:16	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:13:17	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:13:18	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:13:19	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:13:20	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:13:21	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:13:22	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:13:23	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:13:24	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:14:00	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:14:01	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:14:02	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:14:03	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:14:04	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:14:05	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:14:06	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:14:07	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:14:08	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:14:09	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:14:10	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:14:11	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:14:12	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:14:13	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:14:14	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610
00:01:14:15	A004C001_190521XN	Z50081735		25	T 4	5.492			MPC-3610

The unit of the column “Focus Distance” depends on the setting available in the application preferences.

Dynamic Metadata Burn Ins

Silverstack Lab supports the functionality of adding burn ins of dynamic lens data when transcoding clips.

A **“Dynamic Lens Info”** string that contains focal length, aperture and focus distance can be selected from the burn in options to be transcoded to the clips.

Editing Keyboard Shortcuts in Silverstack

There are a variety of keyboard shortcuts available for commands in the main menu of **Silverstack**. Shortcuts can help greatly in boosting your productivity.

Many shortcuts are already predefined. You can also set shortcuts for selected commands that you perform quite often and that do not hold default shortcuts in order to memorize the interaction with Silverstack more easily.

To inspect the exact list of available keyboard shortcuts go to **Silverstack** > **Keyboard Shortcuts…** . This will open the Keyboard Shortcuts Editor (figure 1).

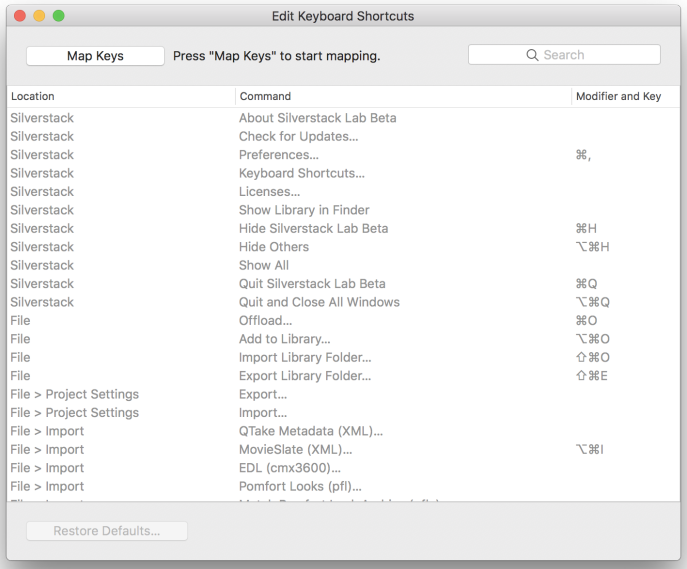


Figure 1: The Keyboard Shortcut Editor

Listing and Searching Keyboard Shortcuts

The keyboard shortcut editor shows a table with a list of all actions in the main menu and their currently set keyboard shortcut. You can search the list by typing into the search bar on top of the table.

Edit Keyboard Shortcuts

To edit a keyboard shortcut:

1. Select "**Map Keys"** to allow changes on the key mapping list.

2. Choose the row with the command.

3. To set or modify a shortcut press the key or keys to use as the new keyboard shortcut. You can use modifiers, numbers, letters and characters individually or in combination.

4. To remove the associated shortcut permanently press ⌫ (delete / backspace) button.

5. Close the **Edit Keyboard Shortcuts** window when you are done.

If you choose a shortcut already assigned to a command, a warning dialog box will be displayed that shows which command already used the chosen shortcut.

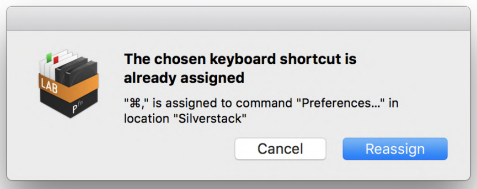


Figure 2: Alert showing used keyboard shortcut

Select "**Cancel**" and choose another key for your current command, or select "**Reassign**" which removes the shortcut from the old command and sets it for the selected command (figure 2).

Restoring Default Keyboard Shortcuts

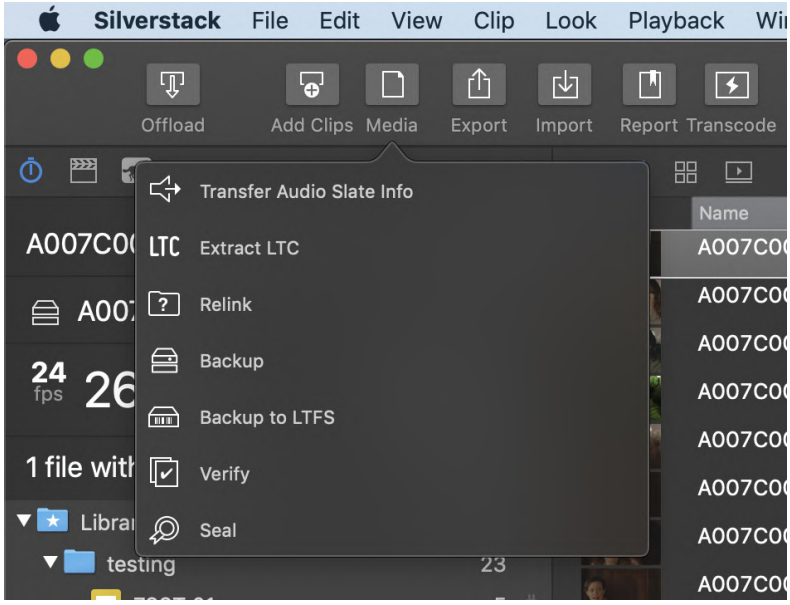
You can reset all keyboard shortcuts to latest version default by clicking "**Restore Defaults…**".

Note : Both of these steps executes an automatic restart.

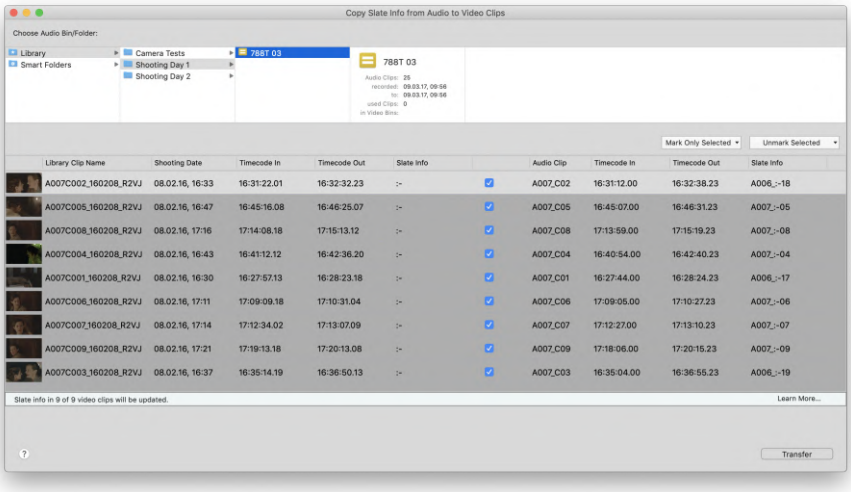
Transfer Slate Info from Audio Clips to Video Clips

Silverstack XT allows to transfer slate information stored in audio clips to the video clip metadata in the library. Similar to the automatic audio sync functionality in Silverstack Lab, associated audio and video clips are detected by a TC match and slate metadata can then be transferred.

To start the process select the video bin/folder in the library you want to transfer slate metadata from the audio clips to, and click the "Transfer Audio Slate Info" entry in the Media menu located in the toolbar:



Select the audio bin you want to transfer slate metadata from in the slate info transfer wizard. It then shows the video clips on the left side of the checkbox in the table, and the matching audio clips on the right side:



Note the “Slate Info” columns in the wizard. The left one shows the current slate info of the video clip, and the right one the slate info of the audio clip that will be transferred (and overwrite the video clip slate info) as soon as you click “Transfer”.

List of Metadata You Can Transfer

The following metadata fields will be transferred in the process:

- Scene
- Shot
- Take

Additionally the following metadata can be detected on ingest and transferred by using certain keyword namings for custom fields (see also[Using Silverstack Custom Field Labels to Read Additional Metadata]):

- Audio notes via naming a custom field “Audio Comment”
- TC Ubits information via naming a custom field “TC UBits” or “UBITS”

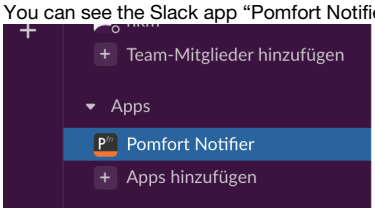
Please note to adapt the custom field name before the ingest of the audio clips to trigger the pull of the right metadata to the field. Comments or info added to audio clips in the library afterwards, will be taken over on transferring slate metadata.

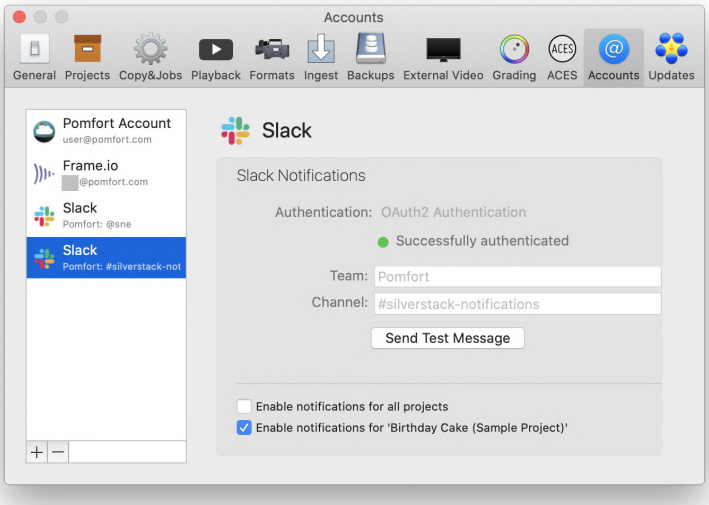
Sending Job Notifications to Slack

Silverstack, Silverstack XT and Silverstack Lab allow to transmit all notifications appearing in the macOS notification center also to a connected Slack channel.

How to Connect Silverstack to Slack

You can connect Silverstack to Slack executing all steps directly in Silverstack:

1. In the application preferences select the “Accounts” tab
2. Via the “+” button on the left side select “Add Slack Notifications…”
3. A browser sheet opens where you can log in to your Slack workspace
    1. Add your workspace
    2. Enter credentials
    3. Select Slack channel or private message conversation to send notifications from Silverstack to
4. You successfully connected your Silverstack project to Slack
    1. You can see the Slack app “Pomfort Notifier” appear in the Slack workspace in the section “Apps”
    2. 



Slack notifications set up in the Silverstack “Accounts” tab of the preferences

Available Actions

- **Send a Test Message**
    - Via the button “Send Test Message” you can send a test text to the connected channel to verify the working connection
    - This action sends the following string: “Test message from Silverstack Lab.”
- **Enable/disable sending permissions globally or per project**
    - You can choose to
        - Enable notifications for all projects
        - Enable notifications for the current project
    - By default only sending for the current project is enabled

Notifications

After a successful connection, all notifications that are appearing on macOS will also be sent to the connected Slack channel. The notification messages to Slack include extended information.

Notifications are available for all job types in Silverstack:

- Offload Jobs
- Copy Jobs
- Transcoding Jobs
- Verify Jobs
- Upload Jobs
- Relink Jobs

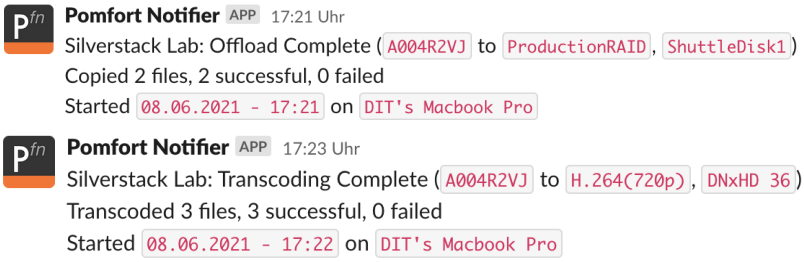
Basic Information (also in macOS notification):

- Application Name
- Job Type
- Complete (successful) / Failed
- File count and successful/failed files

Extend Information (included in message to Slack):

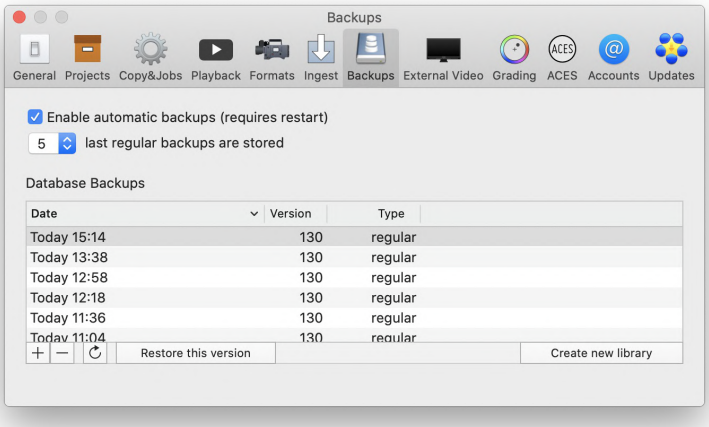
- Source Card name / Folder name
- Destination drive name
- Start date of job
- Machine Name (Host Name)

Here are two examples of messages sent to Slack for an offload and a transcoding job:



Library Backups

Silverstack allows to enable an automatic backup of its library in the “Backups” tab of the application preferences.

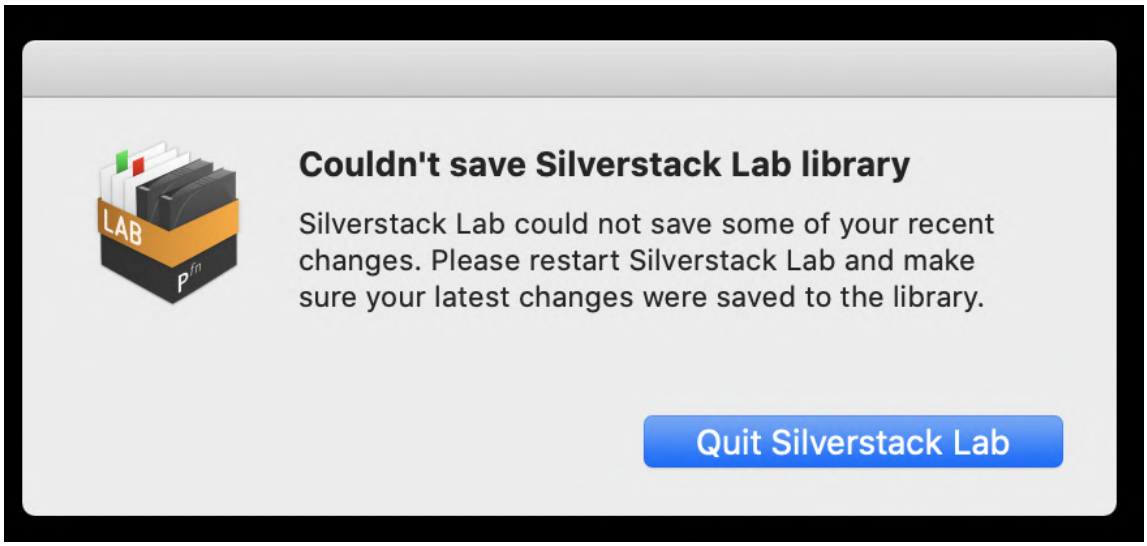


Options

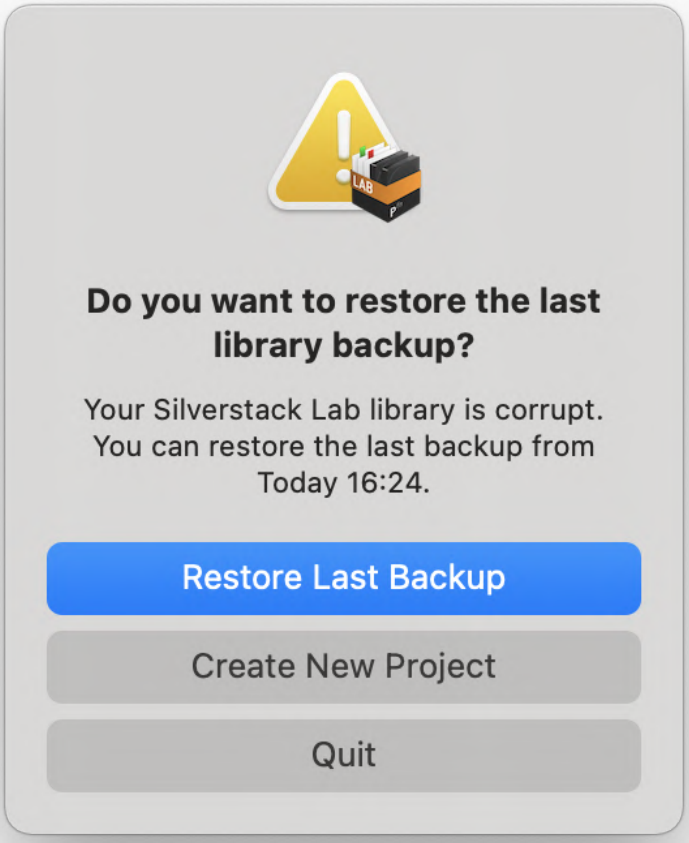
- Select how many last regular backups should be stored
  - 2
  - 5
  - 20
- Available backup types:
  - **regular**: Automatic Backup
  - **manual**: Manual Backup (created with button “+”)
  - **pre restore**: Created automatically before a restore is triggered

Restore a Library Backup

There are situations where your system is not capable any more of correctly saving the latest changes to the Silverstack library database.



This is usually related to a more general system problem. When this case occurs the Silverstack library can become corrupted and Silverstack helps you to restore the latest available backup:



Troubleshooting

If you should have any issues in the process of restoring a library backup please get in touch with support@pomfort.com .

We always recommend to keep a Time Machine backup of your system disk, so you can also always access older backups.

How to Manually Restore a Silverstack Library Backup

The following example is for Silverstack Lab version 7:

1. Quit Silverstack Lab and launch a Finder window.

2. The Library folder is hidden by default. You can open the Library folder in Finder when opening the “Go” menu and holding the “alt” key. You will see an extra entry “Library” in the “Go” menu. Choose this entry and a Finder window will open with the Library folder.

3. Navigate to `~/Library/Application Support/Pomfort/SilverstackLab7/Backup`

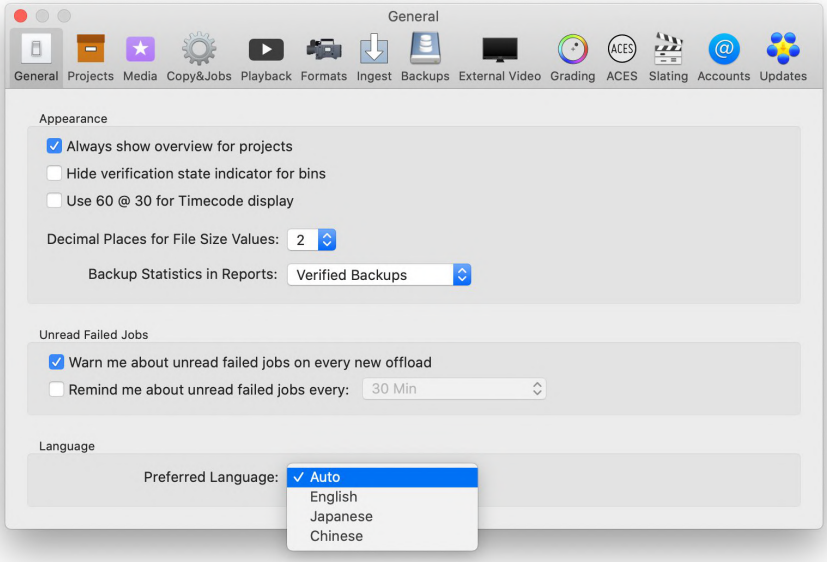
4. Locate the latest library backup file and unzip it.

5. Re-name the extracted file to `Silverstack.psdb`

6. Replace the existing `Silverstack.psdb` in `~/Library/Application Support/Pomfort/Silverstack7` with the backup you just renamed. We highly recommend to keep the original .psdb file.

Localization

Silverstack offers to switch the language of the user interface in the “General” tab of the application preferences.



The following languages are available for Silverstack, Silverstack XT and Silverstack Lab:

- English
- Japanese
- Chinese

In addition you can choose the option:

- Auto

When set to “Auto”, the language is selected according to the language of the operating system.

In order to change the language of the user interface, the software will need to quit and restart.

Offload & Backup

Offload Clips

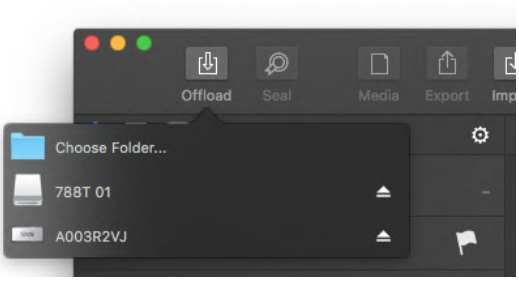
Offloading is the process of adding clips or files to the Silverstack Project Library, while copying them from a camera, field recorder or storage device to one or several backup drives. In order to make it possible you can follow these directions:

Prepare for Offloading

First of all you have to assign clips to a project. By default, clips are offloaded into the project currently selected. You can create a new project by using the project selection menu on the top center of the main UI window.

Additionally, it's possible to select a folder from the library tree on the left panel before starting. This way you will be able to set the folder on which the bin containing the new clips will be placed within the Project Library. That bin will have the same name as the source volume storing the footage. In case the current selection in the library tree is a bin, a new bin will be created as a sibling of the selected one.

Starting the Offload



Offload source selection

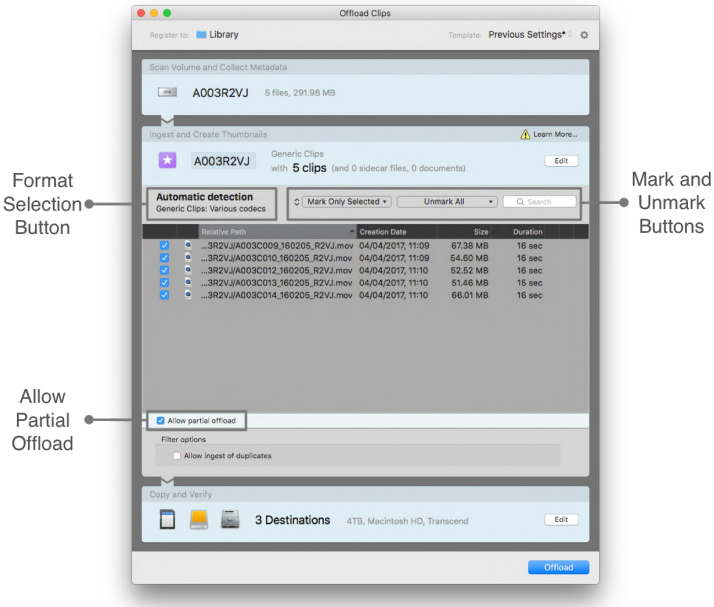
After mounting the storage device containing the clips that you'd like to offload, you have several options to start the offload process:

- Click on the 'Offload' icon on the toolbar and select the volume you'd like to offload from.
- Choose Library > 'Offload' from the Silverstack menu.
- Right click on a folder or bin in the Project Library tree (left panel) and choose 'Offload' from the context menu.
- Drag the folder or card from Finder onto Silverstack's icon in the Dock window.

When using options #2 and #3, a Finder directory browser will open and you'll need to select the volume or folder you'd like to offload from.

Offload Wizard

The 'Offload Wizard' is the popup window that appears after choosing the Offload source. At this stage, Silverstack will try to automatically detect the camera format by scanning the files. After scanning the chosen source drive, all found files will be shown in a table. If, in an exception, Silverstack should not choose the right camera format, you can set the correct format by clicking on the 'format selection button'. The import options for the multiple camera types can be found and edited in the application preferences menu, under the Formats tab.



The Offload Wizard: the 'Ingest and Create Thumbnails' section

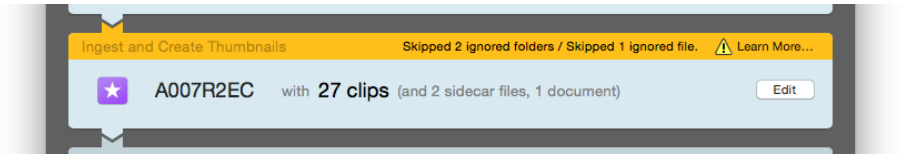
Silverstack by default offloads all the clips and files contained in the scanned device. Additionally, if you just need to offload a subset of clips, you can check the 'Allow partial offload' checkbox. Clips can be marked and unmarked either by using the checkboxes or the 'mark' and 'unmark' buttons by the 'search' field. Therefore either select all clips you'd like to import and then click on 'Mark Only Selected' or select those clips of all already marked that shall not be imported and click on 'Unmark Selected'.

As you can see in the following image, there is a bunch of keyboard shortcuts for marking and unmarking clips to facilitate this task.

'Allow partial offload' mode keyboard shortcuts

Additionally, Silverstack is prospecting for duplicates (clips already existing in the Project Library) when scanning a source drive and prevents them from being offloaded by default. If you need to include duplicates nonetheless, please enable the 'Allow import of duplicates' checkbox.

Sometimes Silverstack will skip some hidden files and empty folders during the copy process, as shown in the image below. If you click on 'Learn More', a popup window will show which files are ignored.



'Skipped Files' warning

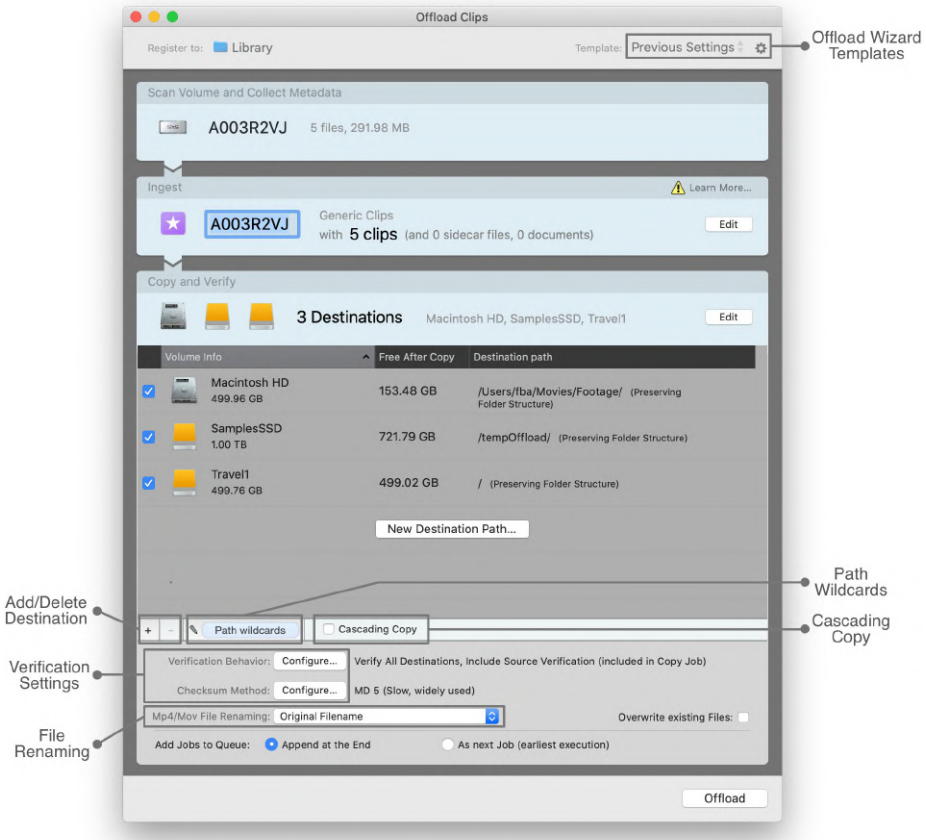
You are able modify this behavior in the application preferences menu, under the 'Ingest' section. In addition to the settings in the Preferences menu, the following files are always ignored:

– Mac OS X resource fork files (starting with ._)

– MHL, MD 5 and SHA 1 files that have been created by Silverstack on previous copy tasks

When you are done with your offload source choice, you can proceed to add the copy destinations.

Setting up the copy destinations



The Offload Wizard: the 'Copy and Verify' section

In this section you are able to choose the destination volumes to which Silverstack will copy the clips and files. To edit the import options, click on the 'Edit' button. The number of volumes that Silverstack can simultaneously offload to is only limited by your hardware.

Adding a new destination is done by pressing on the '+' button on the lower left of the table. Click the '-' button next to it to if you'd like to remove the selected destination drive.

In relation to the additional options under 'Verification Behavior' and 'Checksum Method', you can find a detailed description of each one of those settings in the article The Copy and Verification Process in Silverstack: Verification Behavior.

Silverstack offers the possibility of saving offload wizard templates. These templates can be chosen through the drop down menu on the top right of the Offload Wizard. For more information about the templates, please check the article Offload wizard templates.

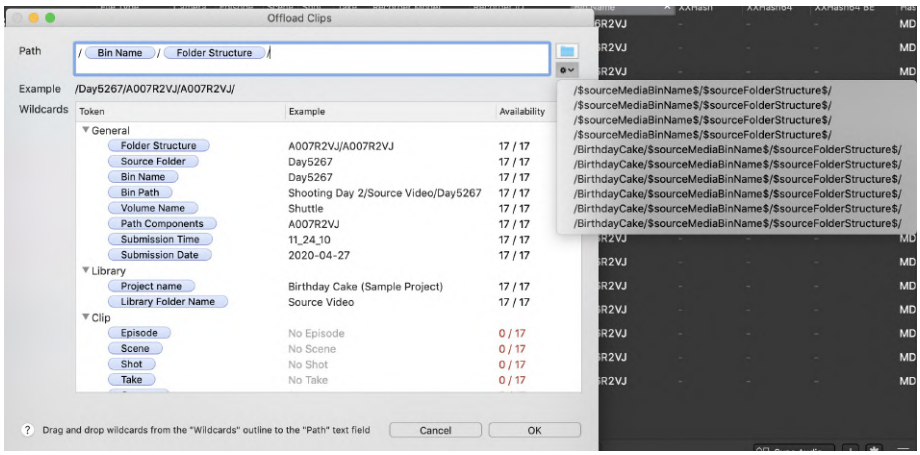
For a detailed description of how the copy and verification process works in a cascading copy scenario (Silverstack XT and Lab), as well as other available settings for this mode, please check the knowledge base article Cascading Copy.

There is also the possibility of using the Path Wildcards feature, which offers users a way to create custom folder structures based on the metadata contained in clips.

A file renaming pattern can be selected to change the original file and clip names of selected camera devices during the offloading process. Check the KB article File Renaming on Offload to get a detailed guide on how to use this feature.

Path Wildcards

In the path wildcards window, the pull down menu button with the gear icon gives you the possibility to choose from recently used wildcards (see screenshot below). To work efficiently with wildcard paths it is also possible to copy and paste a path from the wildcard window including wildcards like regular text to and from a text document.

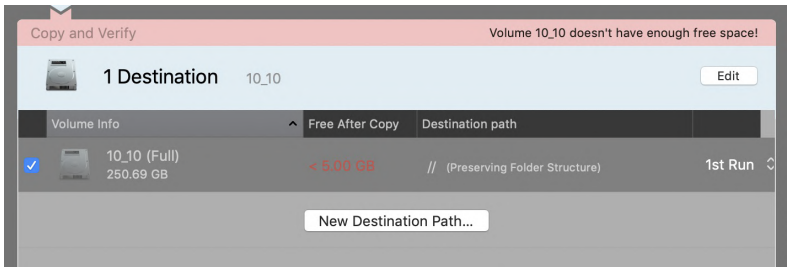


Recently used wildcards options in the pull down menu.

By default the original folder structure of the source is maintained. However keep in mind that you are able to influence that behavior by using path wildcards and can like this also dissolve the original folder structure on the destination.

Disk Full

If the disk is full the copy and verify step of the offload wizard shows if the disk doesn't have enough free space to copy to it. This is shown as below:



Starting the Copy Process

After determining your copy destinations and settings, click on 'Offload' to register the clips to the library. Silverstack will ingest all the metadata from the clips and create thumbnails for them. Once that process is complete, the copy and verification job is going to sart. All the information about the offload process can be supervised in the Jobs panel.

- Note: if you just need to create references to video clips in the Project Library and skip the copy and verification processaltogether, please check the knowledge base article Adding Clips to the Library (Ingest without Copy).

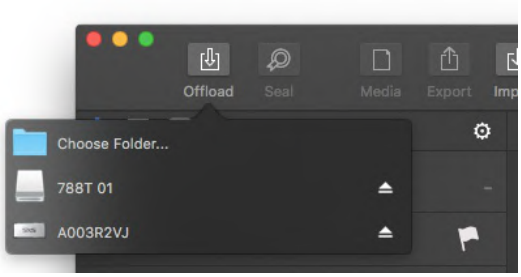
Cascading Copy

Cascading Copy concept setup

The Cascading Copy offloading mode is designed to free up camera media storage as fast as possible. This can become convenient in working environments with small amounts of camera storage devices or in situations with only one docking station and multiple camera storage devices that have to be offloaded.

Silverstack makes it possible in a single job by offloading the camera media first to a very fast destination (called '1st run') and then to the slower backup drives from the first fast destination (the '2nd run') . Once the first run of the process is finished, the source camera media can be unmounted and is ready to be used again while the second run copy&verification takes place.

Starting to offload



Offload source selection

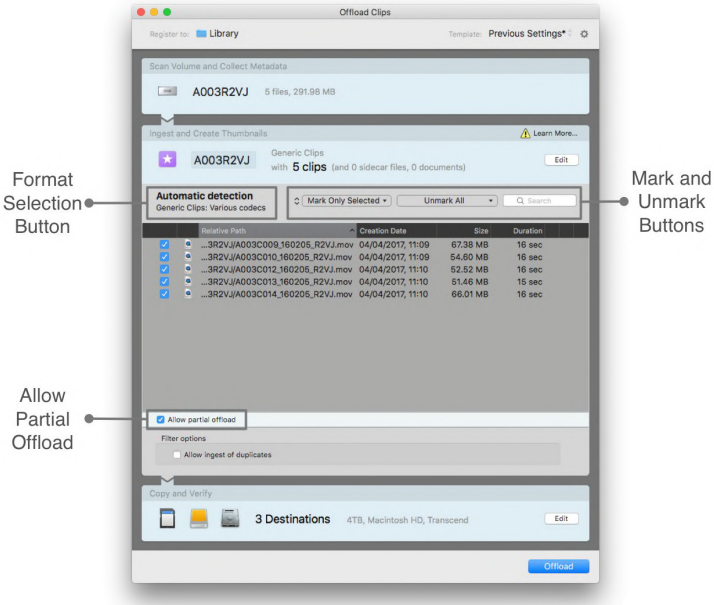
After mounting the storage device containing the clips that you'd like to offload, you have several options to start the offload process:

- Click on the 'Offload' icon on the toolbar and select the volume you'd like to offload from.
- Choose Library > 'Offload' from the Silverstack menu.
- Right click on a folder or bin in the Project Library tree (left panel) and choose 'Offload' from the context menu.
- Drag the folder or card from Finder onto Silverstack's icon in the Dock window.

When using options #2 and #3, a Finder directory browser will open and you'll need to select the volume or folder you'd like to offload from.

Offload Wizard

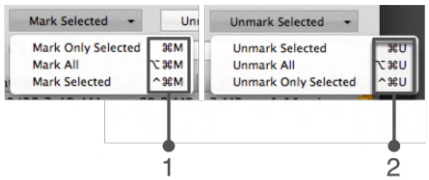
The 'Offload Wizard' is the popup window that appears after choosing the Offload source. At this stage, Silverstack will try to automatically detect the camera format by scanning the files. After scanning the chosen source drive, all found files will be shown in a table. If, in an exception, Silverstack should not choose the right camera format, you can set the correct format by clicking on the 'format selection button'. The import options for the multiple camera types can be found and edited in the application preferences menu, under the Formats tab.



The Offload Wizard: the 'Ingest and Create Thumbnails' section

Silverstack by default offloads all the clips and files contained in the scanned device. Additionally, if you just need to offload a subset of clips, you can check the 'Allow partial offload' checkbox. Clips can be marked and unmarked either by using the checkboxes or the 'mark' and 'unmark' buttons by the 'search' field. Therefore either select all clips you'd like to import and then click on 'Mark Only Selected' or select those clips of all already marked that shall not be imported and click on 'Unmark Selected'.

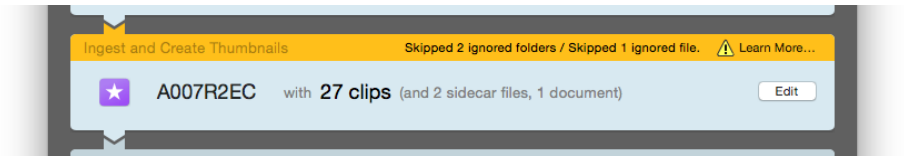
As you can see in the following image, there is a bunch of keyboard shortcuts for marking (#1) and unmarking (#2) clips to facilitate this task.



'Allow partial offload' mode keyboard shortcuts

Additionally, Silverstack is prospecting for duplicates (clips already existing in the Project Library) when scanning a source drive and prevents them from being offloaded by default. If you need to include duplicates nonetheless, please enable the 'Allow import of duplicates' checkbox.

Sometimes Silverstack will skip some hidden files and empty folders during the copy process, as shown in the image below. If you click on 'Learn More', a popup window will show which files are ignored.



'Skipped Files' warning

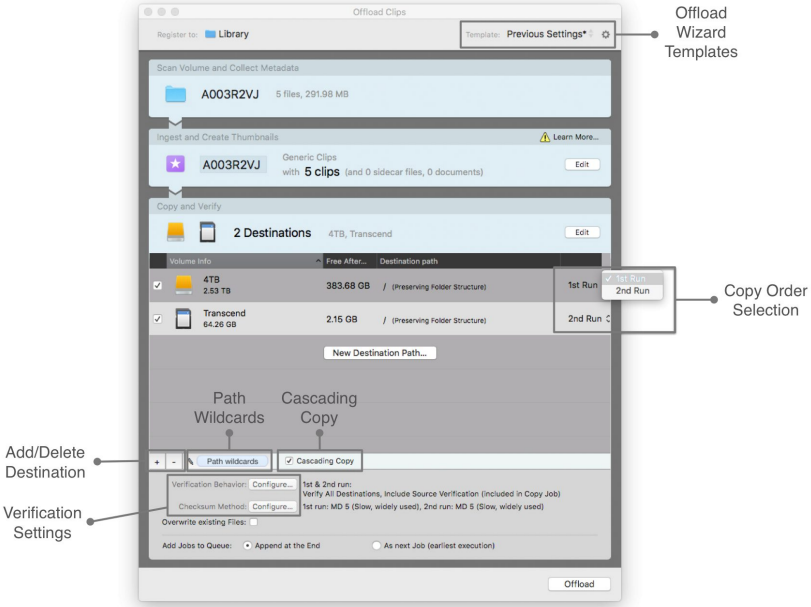
You are able modify this behavior in the application preferences menu, under the 'Ingest' section. In addition to the settings in the Preferences menu, the following files are always ignored:

– Mac OS X resource fork files (starting with ._)

– MHL, MD 5 and SHA 1 files that have been created by Silverstack on previous copy tasks

When you are done with your offload source choice, you can proceed to add the copy destinations.

Setting up the copy destinations



The Offload Wizard: the 'Copy and Verify' section

In this section you are able to choose the destination volumes to which Silverstack will copy the clips and files. To edit the import options, click on the 'Edit' button. The number of volumes that Silverstack can simultaneously offload to is only limited by your hardware.

Adding a new destination is done by pressing on the '+' button on the lower left of the table. Click the '-' button next to it to if you'd like to remove the selected destination drive.

Once all the drives have been added, you can select the order to which you'd like Silverstack to copy the clips to each drive. If '1st Run' is selected, the files will be copied to that drive first. If '2nd Run' is selected, the files will be copied from the 1st Run source drive to the 2nd Run destination drive, while the original source camera media can be unmounted and reused. For a detailed description of how the copy and verification process works in a cascading copy scenario, as well as other available settings for this mode, please check the knowledge base article Cascading Copy Preferences.

In relation to the additional options under 'Verification Behavior' and 'Checksum Method', you can find a detailed description of each one of those settings in the article The Copy and Verification Process in Silverstack: Verification Behavior.

There is also the possibility of using the Path Wildcards feature, which offers users a way to create custom folder structures based on the metadata contained in clips.

Additionally, Silverstack offers the possibility of saving offload wizard templates. These templates can be chosen through the drop down menu on the top right of the Offload Wizard. For more information about the templates, please check the article Offload wizard templates.

Starting the copy process

After determining your copy destinations and settings, click on 'Offload' to register the clips to the library. Silverstack will ingest all the metadata from the clips and create thumbnails for them. Once that process is complete, the copy and verification job is going to sart. All the information about the offload process can be supervised in the Jobs panel.

- Note: if you just need to create references to video clips in the Project Library and skip the copy and verification processaltogether, please check the knowledge base article Adding Clips to the Library (Ingest without Copy).

Related articles:

Parallel offloading

Backup Clips

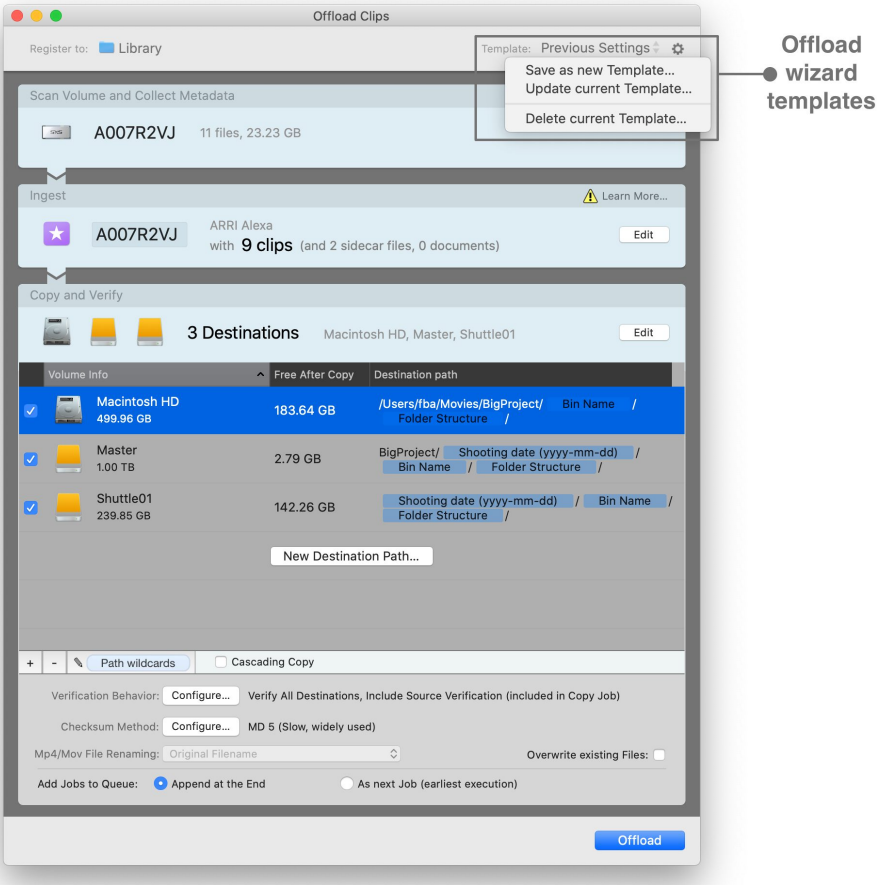
Analyzing and improving data-transfer performance

Checksum verification process

Cascading Copy Preferences

Offload wizard templates

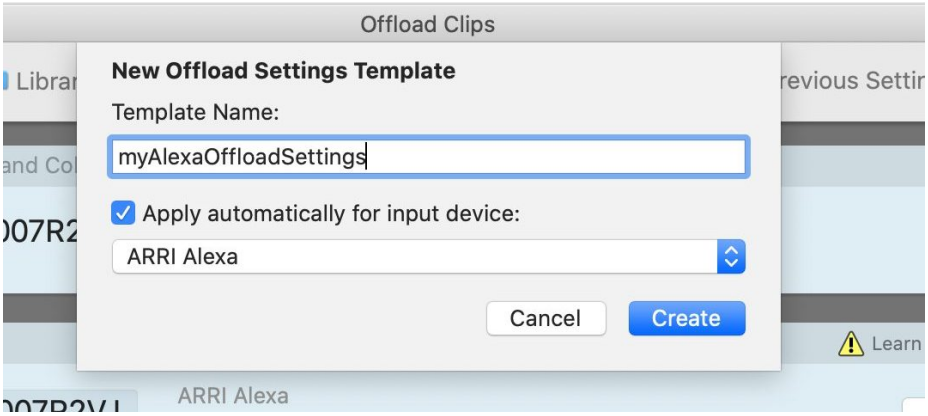
The offload wizard templates feature is designed to speed up the offloading process by **short-cutting** the steps needed to select **different copy destinations and settings**. It allows you to save a series of presets that can be recalled for every offload, either **automatically** triggered by an associated input device **or manually** by selecting it from the list of templates. Templates can contain multiple copy destinations with different path wildcards for each. Also, they can store further offload settings like checksum and verification methods and file renaming patterns.



Manage offload wizard templates in the gear menu on the top right of the wizard

Creating a template

To start the creation of a template, open the offload wizard as usual. Once the wizard appears, you can select the copy destinations and optionally also adjust the checksum and verifications settings, path wildcards, and file renaming patterns. After you have finished setting up the offload, click the 'gear' button on the top right corner and select "Save as new Template…". At this point, a dialogue opens to name the template and optionally also **associate it with an input device**.



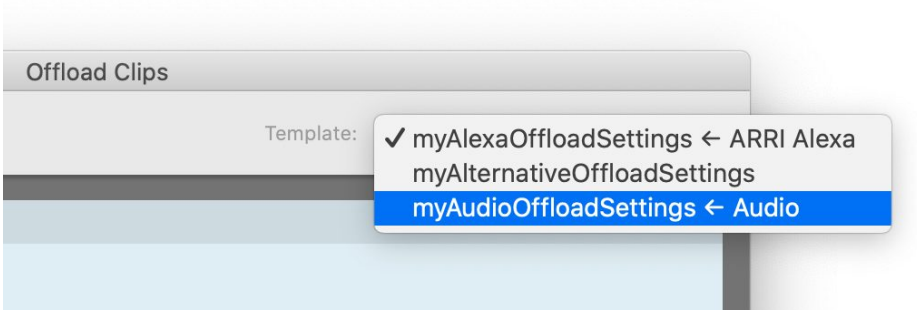
Name a new template and optionally associate it with an input device

Finally, click on "Create" and the template will be saved.

Please Note: You can associate a template to only one input device. If you want more input devices to trigger the same offload settings, you need to save the same settings in multiple templates and associate each with a desired input device.

Applying templates

Once you have created a set of offload wizard templates, you can switch between them**manually** by clicking on the template name. An associated template is **automatically** applied once the offload wizard detects the linked input device or if you select the linked device from the input devices list. Templates show their association with an input device through an arrow symbol (←) in the templates list.



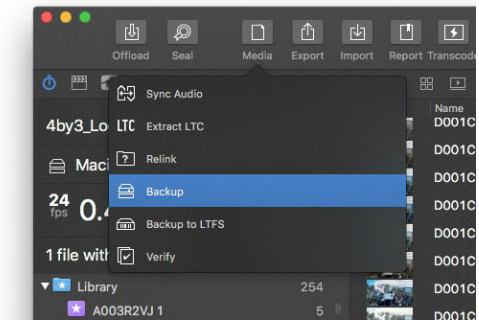
Click on the template name to apply it, associated templates are marked with an arrow

Updating a template

If you need to modify an existing template, you can do so by selecting the new settings. Once a template has been edited, it is marked with an asterisk (like "Template*"). If you want to save these changes, click the 'gear' button on the top right corner and select "Update current Template". Next, a dialogue appears that also allows you to (optionally) rename the template or change the device association. Click "Update", and the changes are saved.

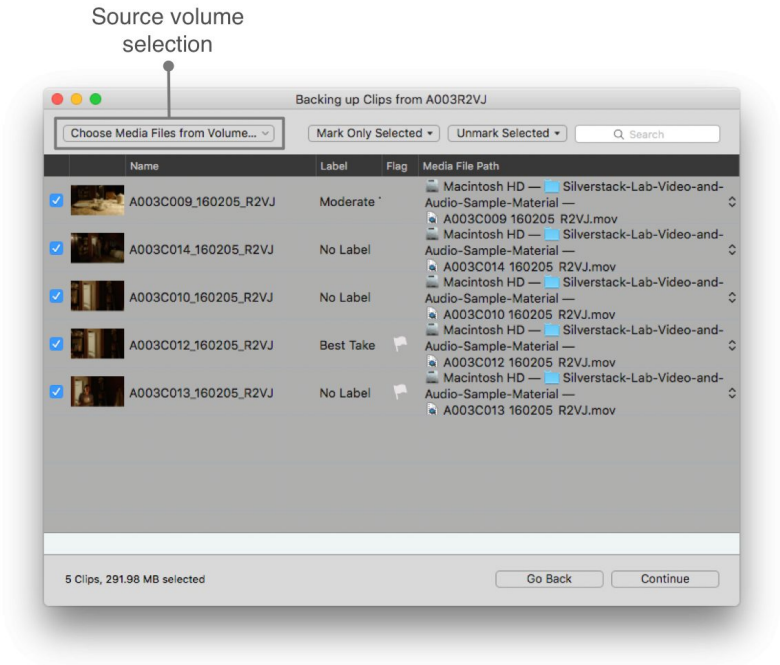
Backup Clips

Silverstack offers the possibility to backup assets that already exist in your Project Library to additional backup drives. In order to start a backup job, just choose the Folder or Bin you'd like to backup from the Project Library panel and then select the 'Backup' command in the 'Media' menu:



Media Menu

Once the 'Backup' command is selected, the Backup Wizard launches:

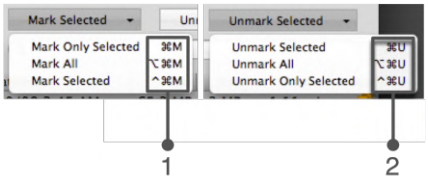


Backup Wizard: Clip Selection

It's possible to choose the copy source volume in case the files have multiple backups registered in the Project Library. Selecting the fastest source volume generally increases the copy performance, depending on your hardware.

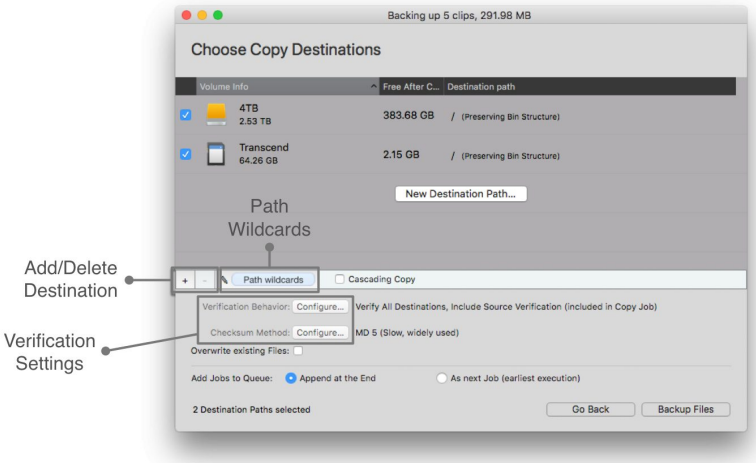
Silverstack by default copies all the clips and files contained in the Folder or Bin you previously selected to backup. If you just need to offload a subset of clips, you can check the 'Allow partial offload' checkbox. Clips can be marked and unmarked either by using the checkboxes or the 'mark' and 'unmark' buttons by the 'search' field. Therefore either select all clips you'd like to import and then click on 'Mark Only Selected' or select those clips of all already marked that shall not be imported and click on 'Unmark Selected'.

As you can see in the following image, there is a bunch of keyboard shortcuts for marking (#1) and unmarking (#2) clips to facilitate this task.



'Mark' and 'Unmark' keyboard shortcuts

Once the source volume and the clips have been selected, you can press on 'continue', which leads to the Copy Destination Selection step:



Backup Wizard: Copy Destination Volumes selection

In this section you are able to choose the destination volumes to which Silverstack will copy the clips and files. To edit the import options, click on the 'Edit' button. The number of volumes that Silverstack can simultaneously offload to is only limited by your hardware.

Adding a new destination is done by pressing on the '+' button on the lower left of the table. Click on the '-' button next to it to if you'd like to remove the selected destination drive.

In relation to the additional options under 'Verification Behavior' and 'Checksum Method', you can find a detailed description of each one of those settings in the article The Copy and Verification Process in Silverstack: Verification Behavior.

There is also the possibility of using the Path Wildcards feature, which offers users a way to create custom folder structures based on the metadata contained in clips.

After determining your copy destinations and settings, click on 'Backup Files' to start the copy process. All the information about the backup process can be supervised in the Jobs panel.

Managing Jobs in the Jobs View

The jobs view in Silverstack can be reached by clicking on "Jobs" in the lower left corner of the main window. The jobs view shows an overview and extended details about every job that can be run in Silverstack.

In a Silverstack context the word "job" refers to copy and transcoding processes that Silverstack controls.

Overview

This article references all aspects of jobs in Silverstack including

- Types
- Queues
- States
- Actions

for and of jobs.

Job Types

The following job types are shown in the jobs view (see column "Job"):

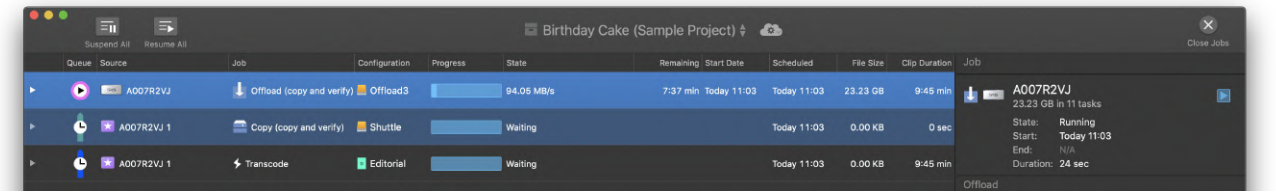
- **Offload (copy and verify):** Runs copy and verification file per file; verification behavior "Included in Copy Job"
- **Offload (copy only):** Runs an unverified offload; verification behavior "Separate (per Job)"
- **Copy:** Backup copy job started from an asset in the library.
- **Verify:** Runs checksum verification for the included tasks.
- **Transcoding:** Clips can be transcoded to other formats via transcoding job.
- **Relink:** Files can be relinked to new locations via a relink job.

Job Queues

There are three job queues that are visualized in the **"Queue"** column with different colors:

- **Primary copy queue** (magenta)
- **Secondary copy queue** (green)
- **Transcoding queue** (blue)

The "**Queue"** column indicates the order of the completion of jobs. Jobs in a queue will be completed from top to bottom. Running jobs are always on top.



Primary (magenta), secondary (green) copy queue and transcoding queue (blue), with the queue column indicating the order of completion.

Primary Copy Queue

Copy jobs are generally scheduled into the main primary copy queue where they will be executed from top to bottom.

You can set the number of parallel jobs for the primary copy queue in the preferences. Please see the article Multiple Simultaneous Copy Jobs in Silverstack for more information about the general copy preferences.

Secondary Copy Queue

The secondary copy queue holds **"Second Run"** jobs from Cascading copy jobs. Learn more about Cascading copy jobs in the article Cascading Copy.

Enabling a separate queue for "Second Run" copy jobs will automatically schedule them into the secondary copy queue. Learn more about the independent execution of "Second Run" copy jobs in the article Cascading Copy Preferences.

Transcoding Queue

The transcoding queue holds all transcoding jobs and will also be executed from top to bottom. Please see the articles Transcoding in Silverstack and Silverstack XT or Transcoding in Silverstack Lab for more information about transcoding.

Tasks of a Job

Each job can be expanded to reveal its tasks (single files to be processed) with the white triangle on the left. Details for each task can be revealed in the right bar by selecting the task in the table.

Job States

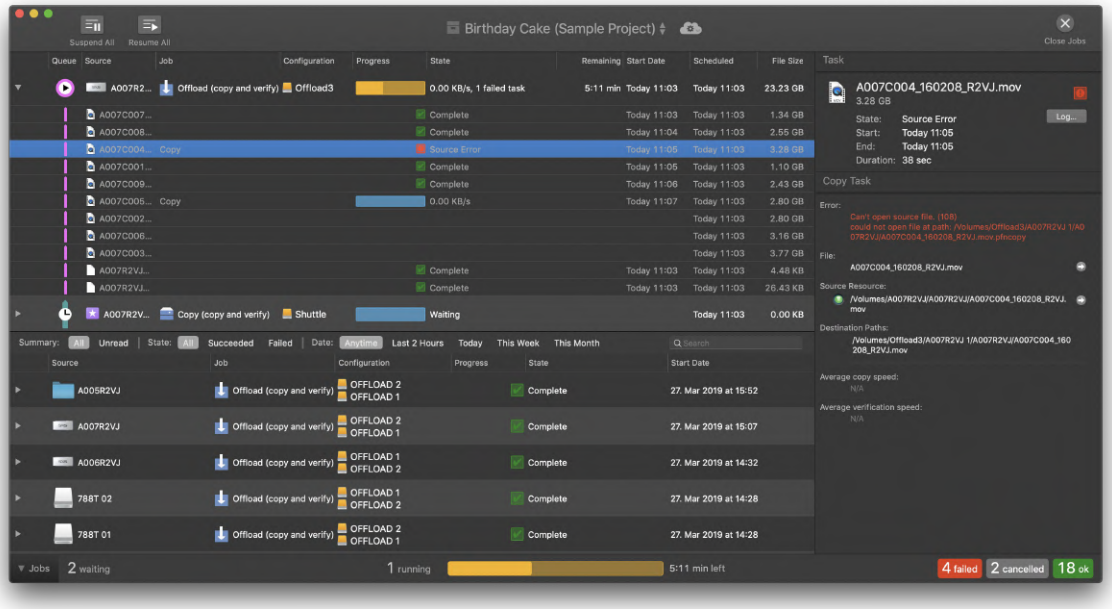
Active Jobs

The most important active job states are

- **Running:** A job is currently executed. "Progress" column shows progress as progress bar.
- **Waiting:** Job waits to be executed.
- **Suspended:** Job has been manually interrupted by user. See more details below in suspend jobs section.

Additionally the following job states exist:

- **Has Failed Tasks (but running):** One or more files of a job failed, but the job is still running



Job with failed tasks, indicated by yellow progress bar.

- **Automatically Interrupted (Transcoding jobs only):** Transcoding jobs can be configured to automatically pause while a copy job is running. See "Transcoding" section in "Copy&Jobs" preferences tab.

Finished Jobs

The **active jobs** are shown in the table in the upper half of the jobs view while the lower half shows the **finished jobs**.

Finished jobs can have the following states (see “State” column):

- Complete
- Failed
- Cancelled

Job Actions

The user can execute certain actions for job. The available actions depend on the job state.

For Active Jobs

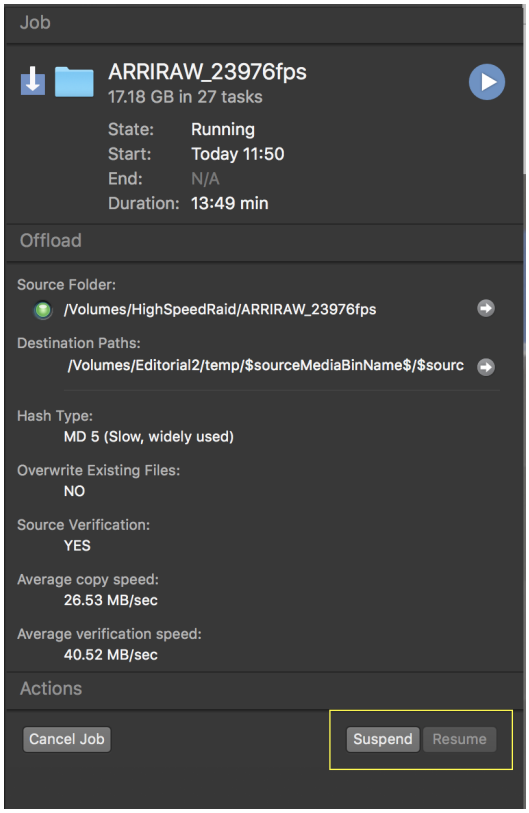
Cancel

- **Cancelling a job** will immediately stop the job and move it to the finished jobs at the lower half of the jobs window.
- The copy progress of the current task/file will be lost, the copy progress of completed tasks/files is preserved.
- Cancelled jobs can be re-queued and will continue the copy process after the last successful task/file.

Suspend

Suspending a job will stop the job after the next task (often being the next file) is finished. This enables the prioritization of an incoming job and avoids loss of copy or transcoding progress.

To suspend a running job select it and click the **“Suspend”** button in the right tab:



The suspend and resume buttons in the right bar of the jobs window

To resume the job again click the **“Resume”** button.

When **suspending a job** the following state transfers will be made:

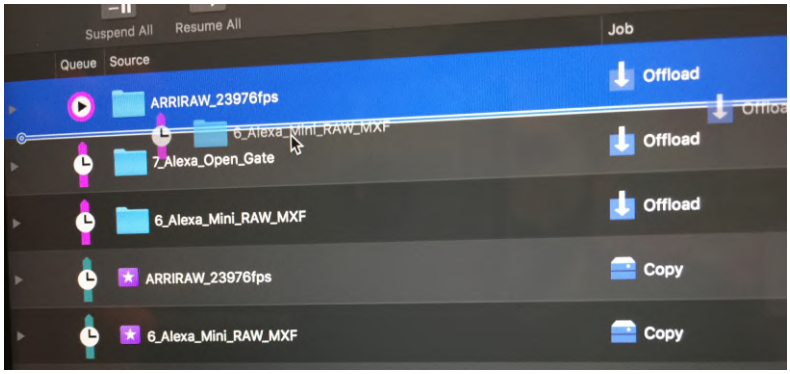
- Running -> Will Suspend -> Suspended
- Waiting -> Suspended

When **resuming a job** it will again be queued with its former priority.

Suspended jobs are still visualized at the bottom of the queue but **will not be executed**.

Reorder

Waiting jobs in a job queue can be reordered with drag and drop. Select a waiting job and pull it over or under any other waiting jobs in the same queue:



Reordering a copy job inside the queue by dragging it to the intended queue position

Please be aware that:

- Jobs cannot be moved between queues
- Suspended jobs cannot be reordered above waiting jobs. They stay at the bottom of the queue and will not be executed until they are resumed.
- Waiting jobs cannot be reordered above running jobs. Suspend running jobs for the next job in the queue to start.

For Finished Jobs

Retry (Failed Jobs)

Failed jobs can be tried one more time by hitting “Retry” in the right bar. Only the failed tasks of a job will be attempted again.

Re-Queue (Cancelled Jobs)

Cancelled jobs can be added to the copy queue of active jobs again (re-queued) to wait for execution.

Create Incomplete MHL file

In the context menu it is possible to create an incomplete MHL (.mhl) file for

- Cancelled jobs
- Failed jobs

An MHL file is written to all copy destinations of the respective job.

Mark as Read / Unread (Hide / Show in Jobs Summary)

In the context menu of a job. Mark jobs as read or unread which shows or hides them in the Jobs Summary. All jobs marked as unread show in the Jobs Summary.

Ingest Clips

In the context menu of a failed transcoding job. Helps to re-ingest successfully completed proxy clips as transcoded clips even if a job failed.

Jobs Summary

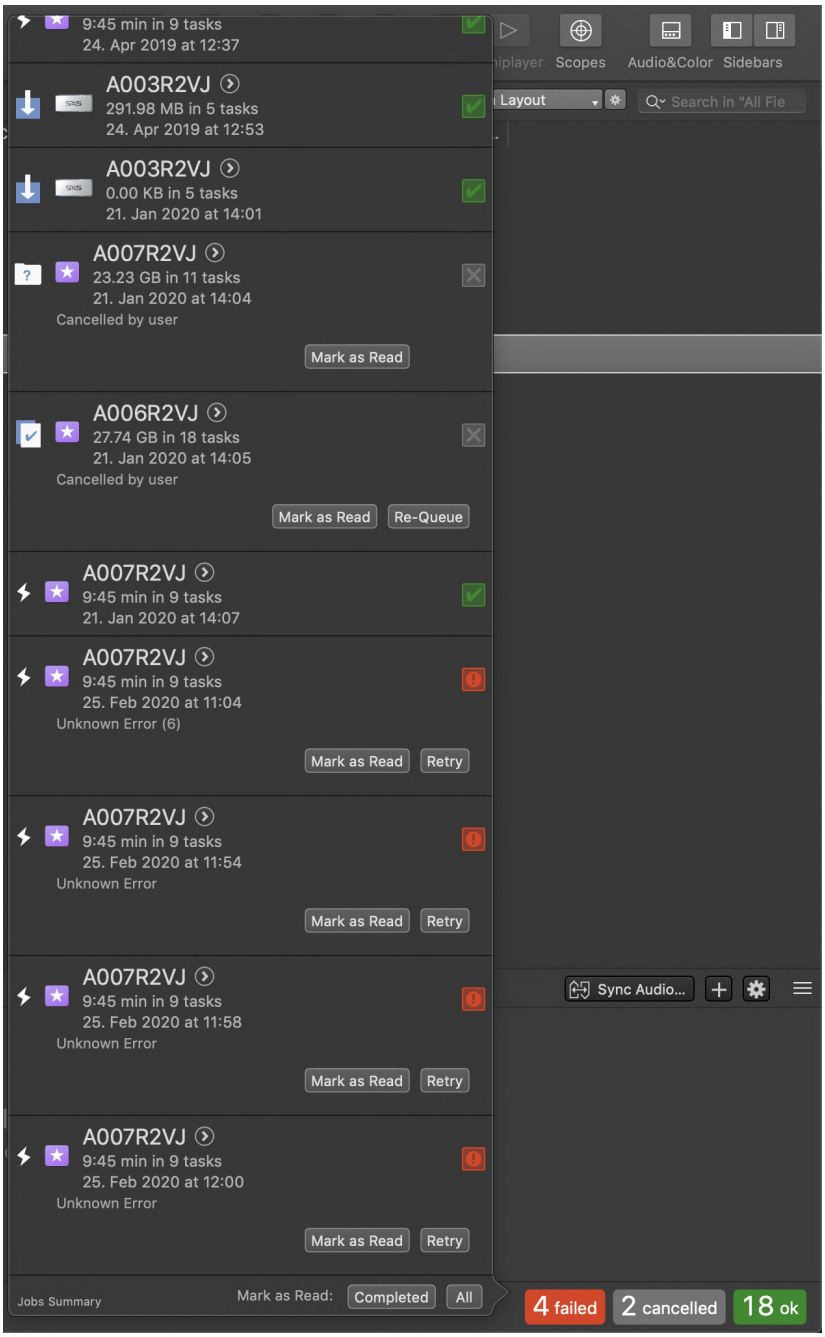
The jobs summary in Silverstack can be opened by clicking on the element located bottom right in the lower toolbar.

It provides an overview of all types of finished jobs in Silverstack directly in the main window, without the need to go to the full jobs view (accessible bottom left through “Jobs”).

It is intended to help the user to keep a condensed overview of all jobs he is taking care of.

The view is grouped by the state of finished jobs and each job state has its delimited element showing the number of such jobs:

- Failed Jobs (red)
- Cancelled Jobs (grey)
- Complete Jobs (green)



The jobs summary accessible in the Silverstack main window.

Mark as Read/Unread

Jobs in the jobs summary can be **marked as read,** which will hide them from the jobs summary. This is intended to have a simple and clear overview for the user about the general status of the jobs he is taking care of and for which jobs he still might have to take action.

All details about the jobs are still accessible in the jobs view. Jobs can be marked as unread again in the context menu (right click) of a job in the jobs view, which will show them again in the jobs summary.

More actions include:

- **Mark as Read:**
  - **Completed:** Marks all successfully completed (ok) jobs as read and hides them from the summary
  - **All:** Marks all jobs (independent of their state) as read and hides them from the summary
- **Reveal:** The icon besides the job name (>) allows to reveal the job in the jobs summary

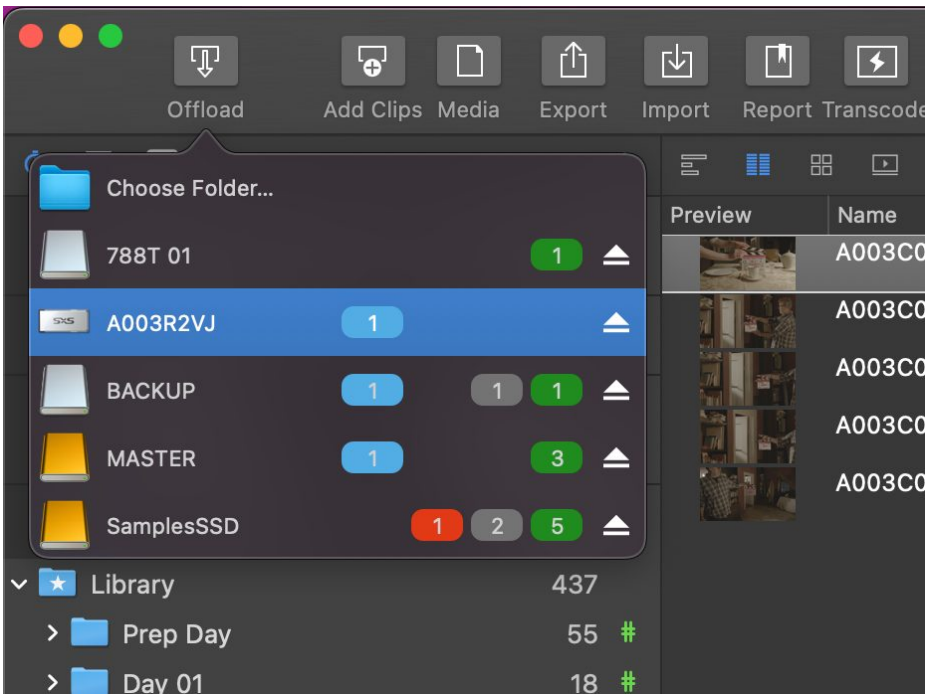
Additionally, you can execute actions for the jobs directly from the jobs summary. Please see the article Managing Jobs in the Jobs View for more general information about actions for jobs.

Job Summary per Volume

With many jobs running from and to various volumes, it is helpful to have a condensed overview of the job status**per volume**, for example, to identify which volumes are “ready” and can be ejected and passed on. You can activate an enhancement of the offload menu that displays the count of related jobs per volume:

- running/queued: blue
- failed: red
- canceled: grey
- completed successfully: green

To avoid distraction from irrelevant information, **Jobs marked as read are not shown** in this overview.



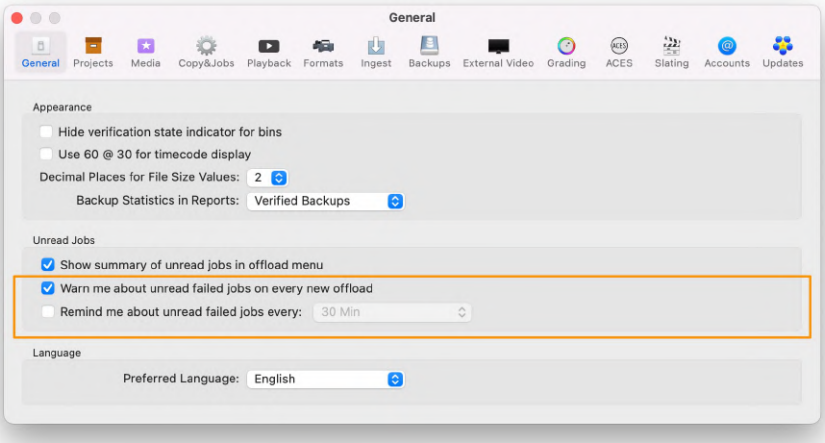
Offload menu with job summary

You can activate the enhancement of the offload menu in the “General” tab of the application preferences (see the following screenshot).

Unread Failed Jobs Warnings and Reminders

Silverstack by default reminds you of unread failed jobs (jobs with errors that didn’t complete successfully and show in the jobs summary) on every new offload, not to miss taking care of jobs that failed successful completion. This behavior can be turned off in the “General” tab of the preferences by unchecking:

- “Warn me about unread failed jobs on every new offload”



Unread failed jobs warnings and reminders in the “General” preferences.

Additionally, you can set a reminder notification that reappears within a certain time interval to remind you about unread failed jobs:

- “Remind me about unread failed jobs every:”
  - 10 min
  - 20 min
  - 30 min
  - 1 h
  - 2 h

Use of path wildcards

Silverstack offers you a very flexible folder renaming feature, which allows you to create a custom folder structure on your offload and backup destinations.

For every copy destination you can define individual folder structure options. If you start a copy process to different destinations, you can have different folder structures on every destination. Or you just can create a clone of your source material.

There are a variety of software tools in the postproduction process which require a specific folder structure. To simplify the organization of the clips related to the different folder structure requirements, Silverstack offers this useful feature that automatically helps you to structure the files.

To determine the names of folders you can add a various set of metadata placeholders – called wildcards – that will be replaced by the actual values of each clip during copy.

This means that Silverstack is able to automatically save your clips in a specific, individually determined folder structure. So for example your files can be stored in folders according to their submission date and carry the project name and submission time in their file names.

Wildcards can be added in the destination selection step (figure 1) of the “Offload” and “Backup” wizard. Therefore you first need to choose a drive and a folder (figure 1 #1).

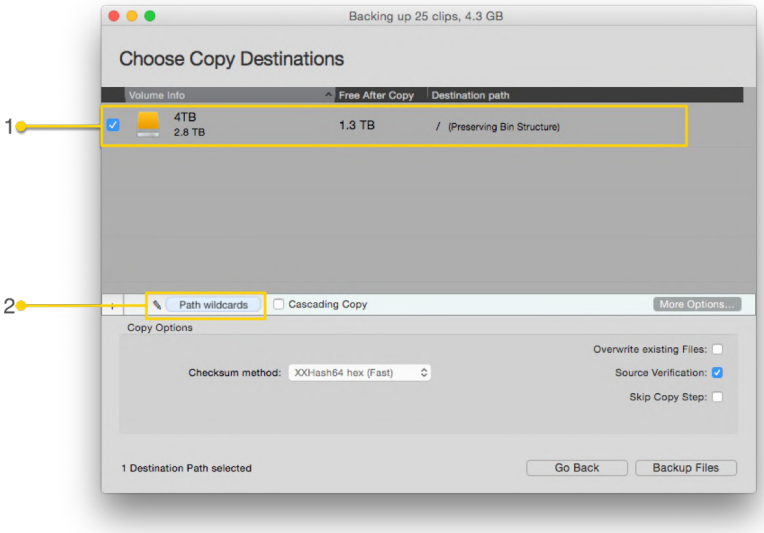
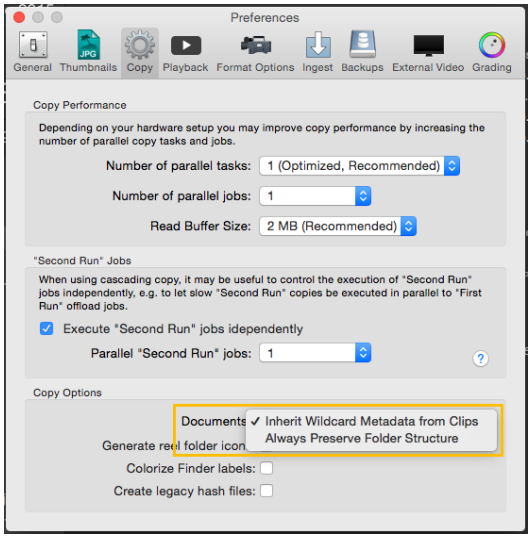


figure 1: the Backup wizard. Choosing the destination path.

Document Wildcard Handling

You are able to decide if you want to preserve the original folder structure for the non-clip files or create your custom structure inheriting the metadata from the clips, having this way all the sidecar documents with their parent clips. By default, Silverstack will inherit metadata from clips. To choose between this two options, go to Preferences > Copy and choose your Document Wildcard Handling as *“Inherit metadata from clips”* or *“Always preserve folder structure”*:



Document wildcard handling

It is important to have in mind that when selecting the *"Always preserve folder structure"* option, all files not considered as clips by Silverstack (such as: non fully supported camera formats, image file sequences, sidecar documents, PDFs…) will be copied in the same path of the clips. All documents will preserve the same folder structure of the original medium – that means all clips are in the folders you have created.

Now, to make use of the helpful feature of wildcards, click on "Path wildcards" (figure 1 #2) and the wildcards wizard opens…

Important – Need to know

- Make sure that the path you have determined by choosing a drive and folder (figure 1 #1-3) is not changed or deleted unintentionally in the editable path field of the wildcard wizard (figure 2 #1). Just add wildcards to the already existing path components.
- In the path field you have to separate the single wildcard tokens by a slash ("/") if they are supposed to mark a folder structure. Separate them with a dash ("-") to combine different wildcards for one folder level.
- Filenames should contain some wildcards in order to make them unique. Silverstack checks the uniqueness of all created file paths and warns you if necessary.

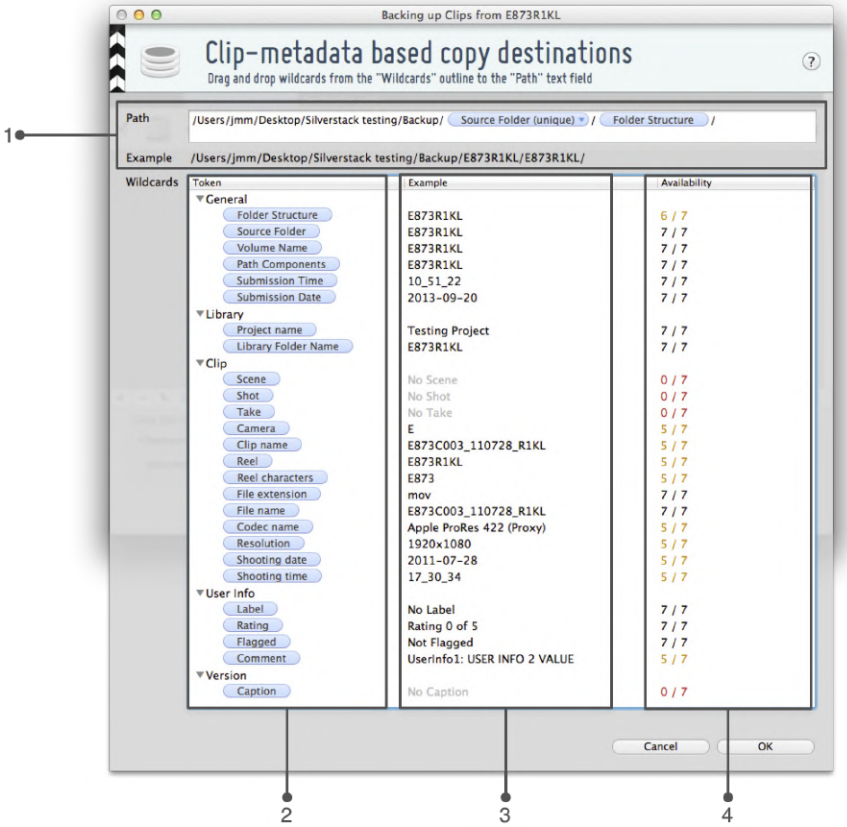


figure 2: wildcard wizard

Path textfield and example label

The wildcard wizard (figure 2) at the top shows the full destination path (figure 2 #1) which is editable. You can either type path components in the text field directly or drag and drop wildcards there from the list below. Beneath the text field you can see an example of the pathname including wildcards using one of the clips you are going to copy.

Wildcard table

All available metadata fields are shown in the wildcard list. So you can name your files and folders according to information as submission date and time, project name, various clip information and others.

The tokens (figure 2 #2) can be drag&dropped into the path field (figure 2 #1). The next column (figure 2 #3) contains an example of every token as it will be seen in the final path- or filename. The third column (figure 2 #4) tells you how many of the previously selected files contain this metadata information.

Multi-optional wildcards

Some wildcards like the submission time (figure 3) offer several options. You can choose between those by clicking on the small triangle.

- For submission and shooting time you can choose between the formats: HH_MM_SS and HH_MM
- For submission and shooting date you can choose between the formats: yyyy-mm-dd, yy-mm-dd, yymmdd, yyyymmdd
- For the *path components* wildcard you can choose the amount of path components of the source folder structure of the clip – this information will be include in the path of the newly generated folder structure. So if you choose “3”, the last three levels of the folder structure of the original clip are included in the new clip’s path.
- For reel characters it is possible to choose parts of the reel name as wildcards. You either can select the first or if applicable the last characters of the reel name.

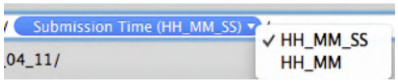


figure 3: Wildcard wizard: wildcard with several options

Configure folder structures for Netflix production assets

Uploading Files to Amazon AWS/S3

With Silverstack XT and Lab you can upload clips to an AWS S3 Bucket, or other service that implements the S3 API.

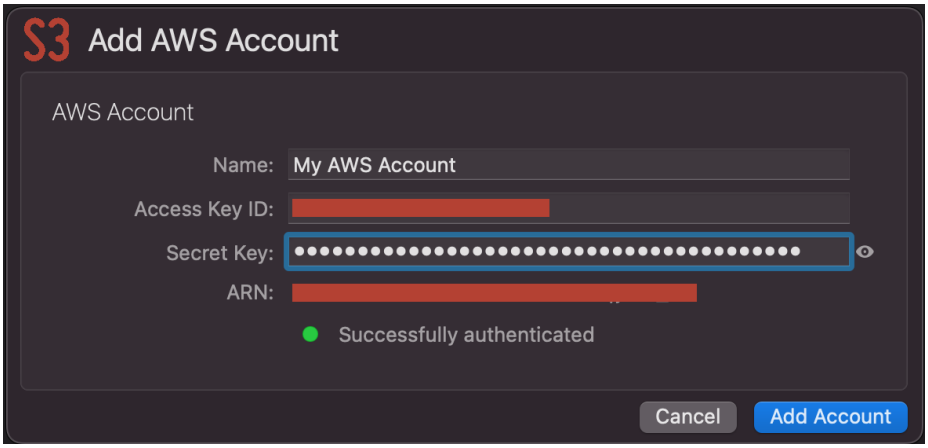
Starting the Upload Process and Entering Account Information

In Silverstack’s library choose the bin or folder that contains the clips for upload.

Open the Media menu in the toolbar and choose “Upload Clips to AWS S3 Bucket…”

If no AWS account is configured in Silverstack yet, enter your

- “Access Key ID” and
- “Secret Key” of your AWS account.
- You can also enter an additional (human-readable) name to better identify that account.



Add an AWS account to Silverstack

You can configure additional AWS accounts and manage accounts in the “Accounts” panel of the application’s Preferences.

Choosing File Locations

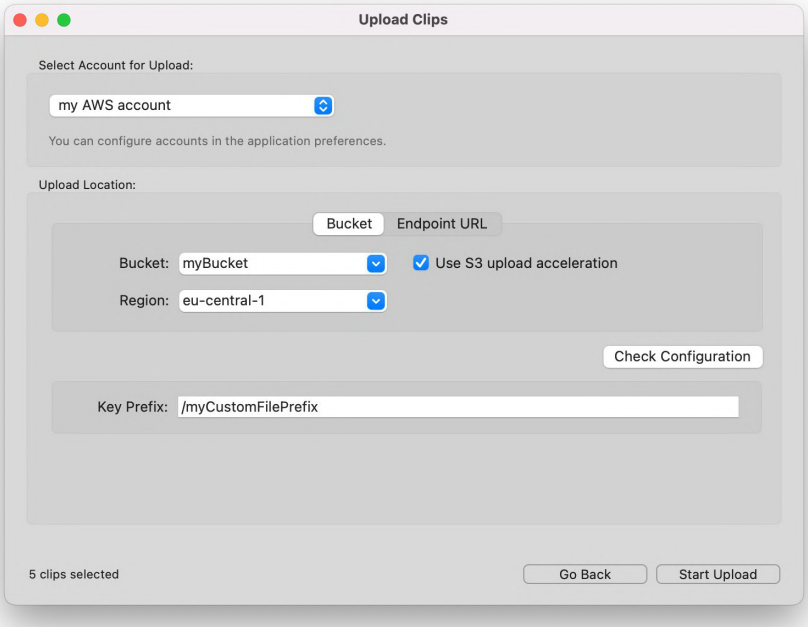
In the first step of the upload wizard you can choose which clips will be uploaded and from which volumes the files shall be read.

Configuring the AWS S3 Destination

In the second step of the upload wizard you configure the bucket or endpoint location.

If more than one AWS S3 account is configured in Silverstack you can choose the account to be used.

You can either specify the location by bucket or with an endpoint URL.



Configure the upload

For the bucket you choose

- the bucket name (either from a list or entered manually),
- the region (from a list or entered manually), and
- if S3 upload acceleration should be used for the bucket.

For an endpoint URL you choose

- the endpoint URL (entered manually), and
- the region (from a list or entered manually).

You can set a key prefix for each uploaded file. This prefix will be prepended before the folder information and filename of each file. The key prefix can thus be used to define a custom “root folder” of the uploaded files within the bucket.

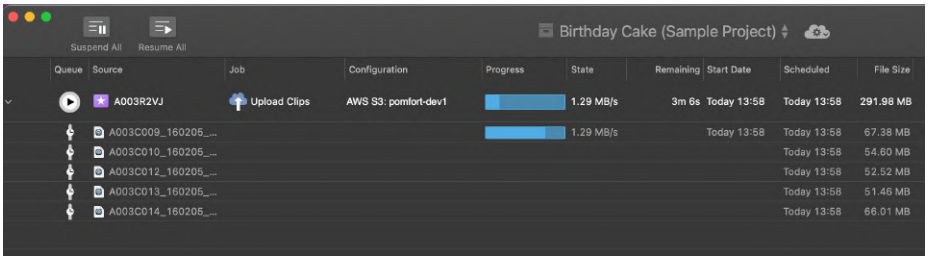
Testing the Configuration

By clicking on the “Check Configuration” button the connection is tested as configured. A result panel will be presented that displays the result status of the checks.

Starting the Upload Job

Click “Start Upload” to start the upload job.

You can review the status of upload jobs in the bottom bar, and in Silverstack’s jobs panel.



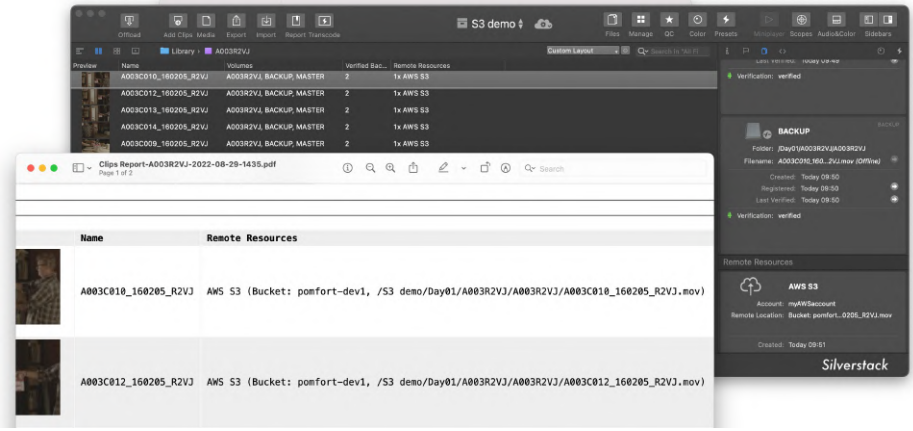
Track the upload

S3 Metadata

For retrieving Silverstack's clip metadata, the upload process adds a ShotID and a ShotID link as S3 metadata to each file. See the article[ShotID as Clip Identifier] for more information about ShotIDs.

Reporting

A reference to the upload location is stored as remote resource in the resources panel. The information can also be added to reports.



S3 Remote Resources

LTFS backup

LTFS backup concept

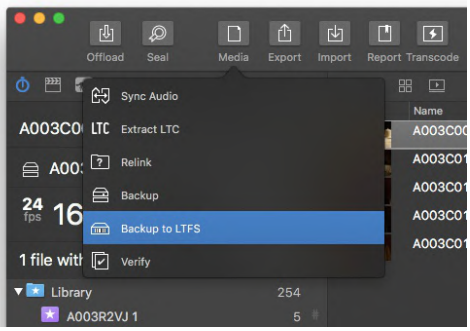
Silverstack offers a feature to specifically backup to LTO tapes. Due to the nature of their hardware, LTO tapes need a different copy and verification process than other kinds of drives. The process used by Silverstack is to first copy all the files, then rewind the tape and perform the verification step afterwards. This way only one tape rewinding step is needed for each backup job.

Additionally, Silverstack supports any kind of LTO drive that creates an LTFS file system on macOS. Generally if the LTO drive can be accessed in Finder, it can be used by Silverstack. Have in mind that tape formatting has to be previously performed in the LTO drive utility before starting the backup process.

No data capacity information is offered for LTO tapes. For this reason, it is recommended to manually check that the backup size does not exceed the tape capacity to prevent failed backup jobs. Only copy jobs to a single LTO tape are currently supported.

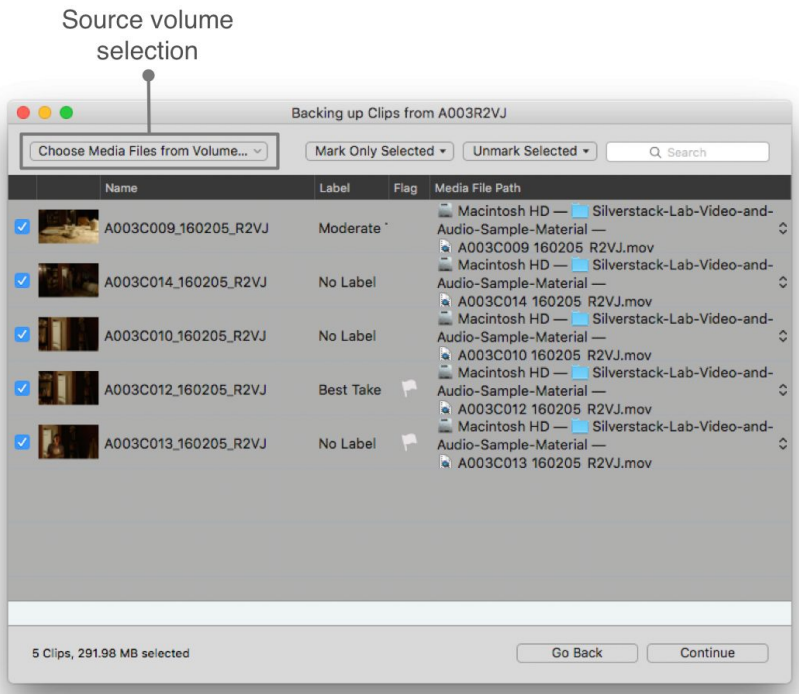
Starting the backup process

In order to start a backup job to an LTFS drive, just select the 'Backup to LTFS' command in the 'Media' menu:



Media Menu

Once the 'Backup to LTFS' command is selected, the Backup Wizard launches:

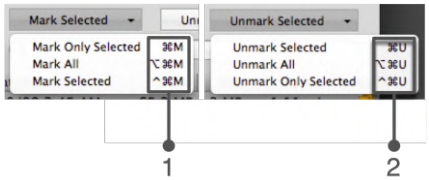


Backup Wizard: Clip Selection

It's possible to choose the copy source volume in case the files have multiple backups registered in the Project Library. Selecting the fastest source volume generally increases the copy performance, depending on your hardware.

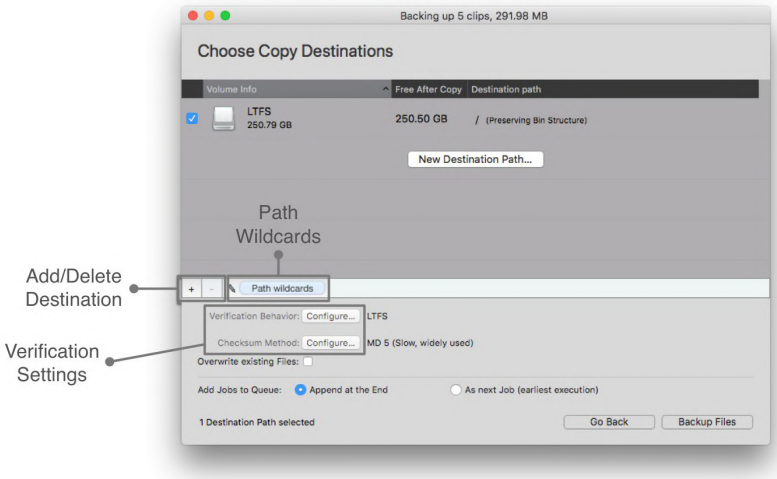
Silverstack by default copies all the clips and files contained in the Folder or Bin you previously selected to backup. If you just need to offload a subset of clips, you can check the 'Allow partial offload' checkbox. Clips can be marked and unmarked either by using the checkboxes or the 'mark' and 'unmark' buttons by the 'search' field. Therefore either select all clips you'd like to import and then click on 'Mark Only Selected' or select those clips of all already marked that shall not be imported and click on 'Unmark Selected'.

As you can see in the following image, there is a bunch of keyboard shortcuts for marking (#1) and unmarking (#2) clips to facilitate this task.



'Mark' and 'Unmark' keyboard shortcuts

Once the source volume and the clips have been selected, you can press on 'continue', which leads to the Copy Destination Selection step.Add the LTFS drive to the destinations by pressing the + button:



LTFS Backup Wizard: destination selection

In relation to the additional options under 'Verification Behavior' and 'Checksum Method', you can find a detailed description of each one of those settings in the article The Copy and Verification Process in Silverstack: Verification Behavior.

There is also the possibility of using the Path Wildcards feature, which offers users a way to create custom folder structures based on the metadata contained in clips.

After determining your copy destinations and settings, click on 'Backup Files' to start the copy process. All the information about the backup process can be supervised in the Jobs panel.

In order to keep track of the clips copied to a certain tape, it's possible to generate a Volumes Report. For more information on how to generate these reports in multiple formats, please check the article Creating Reports.

Backup Data to SONY Optical Disk Archive

Silverstack offers the functionality of backing up data to SONY's Optical Disk Archive technology. You can use the backup function of Silverstack to write assets to the SONY ODA (Optical Disk Archive). Take a look at the article Backup Clips to learn more about the backup function.

It is also possible to use the Silverstack Offload functionality to directly copy data to an ODA.

Silverstack will automatically detect if the backup will be made to a SONY ODA and will therefore adapt its settings to optimize the copy process.

Important Aspects While Backing Up to SONY ODA

You have to avoid certain letters in file and folder names that will cause problems while backing up to the ODA. The next table represents the list of invalid characters:

Table 4 – 1 Invalid Characters

Code	Character
U+0000 – U+001F	
U+0022	"
U+002A	*
U+002F	/
U+003A	:
U+003C	<
U+003E	>
U+003F	?
U+005C	\
U+007C	|
U+007F	(DEL)

Fig.2: List of invalid characters for backing up to Sony ODA.

Do not use the "Backup to LTFS" function to backup to a SONY ODA. There are certain constraints based on that particular backup function that e.g. will make it impossible to read clips quickly from the ODA again after backing them up. Stick with the regular Backup functionality in Silverstack when working with ODAs.

Analyzing and improving data-transfer performance

Data transfer performance can be a very important issue in time-pressing environments such as scenarios of on-set data wrangling.

For a general list of factors that influence the speed of data-transfers such as

- **storage technology**,
- **RAID technology**, and
- **interfaces**

please refer to the document "Factors for data-transfer performance".

How to analyze your setup for bottle necks

Every system is only as fast as the slowest component. So for example attaching a brand new, ultra-fast SSD to a computer via USB2 is no improvement in performance over a 5 year old HDD – the USB2 interface is the limiting factor. The following list helps you to find the bottleneck and to tune your setup for higher performance. Sometimes just using different connections (lots of devices have multiple, different connection ports) or replacing one component already can heavily improve the performance of an entire data-transfer system.

When for example copying data from e.g. a SxS card to an external RAID and a USB3 drive with Silverstack, a lot of components are involved – and the slowest one is slowing down the overall performance and thus all the other components.

In this example we can identify three data storage devices that are each consist of several components:

- SxS card
  - the SxS card itself
  - the card reader for the SxS card
- RAID system
  - the interface to the RAID system
  - the RAID system and its configuration
  - the drives in the RAID system
- External drive
  - the interface to the external drive
  - the drive itself

1. Measure the maximum performance of each device

You can determine the speed of a device by measuring the read and write speed to that device individually and independently. On the Mac you can either use tools like Blackmagic Disk Speed Test or use command line tools such as "dd".

Note:

Please note that the operating system caches disk access in RAM. So if you write a small file to disk it is still in the cache and a directly following read test will retrieve that file directly from RAM, so that the disk is not used at all in your test! So make sure that your test files are large enough (e.g. larger than RAM). As a good measure you can always use "Activity Monitor" that comes with OSX to monitor drive usage and performance (use the "Disk Activity" tab). For example when accidentally retrieving data from cache during a test you will detect that as zero activity on the drives in Activity Monitor.

Comparing the performance values of the different devices, you now know the slowest device. This device will slow down the entire data transfer, so maybe you can improve that first.

2. Observe the overall performance during the copy process

Now find out if the expected performance can be observed during a real life test. Start a copy process to multiple destinations in Silverstack and use Activity Monitor as your instrument for measuring performance.

In Activity Monitor you will see the current overall performance. So if you let Silverstack copy the contents of a SxS card to two drives simultaneously, you should see a write performance that is twice as high as the read performance during copy. After copying a verify-phase follows that reads the files from the two destinations and the source again. So you should see a very high, combined overall read performance.

In our example take the read- or half of the write-performance value during copy and use this value as your current reference copy performance. Compare it to the measured performance value of each device. It should be around the speed of the slowest device. If the reference performance value is much lower than the speed of your slowest device, there might be problems with daisy chaining.

3. Analyze the slowest device

If the speed of your slowest device (and thus the observed reference copy performance) is much slower than the speed of the other devices it might be worth improving that.

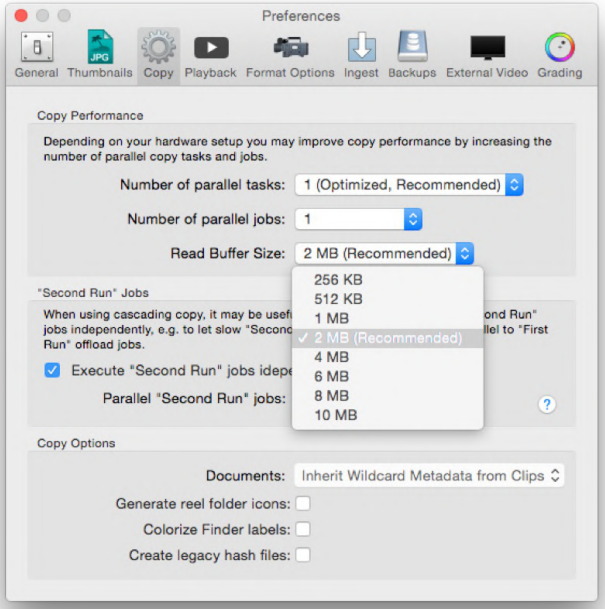
- Determine the speed of the drive by estimating the theoretical performance of the used drives by technology (HDD, SSD, RAID).
- Determine the theoretical speed of the interface.

You can now relate these values to your measured values for the entire device. If you experience completely odd values, maybe something is configured wrong (attaching a USB3 drive to a USB2-only port) or a component is faulty.

If the interface is the limiting factor, maybe you can change that by switching the enclosure with a better interface. Maybe there is a card reader with a faster interface available. If the drive is the limiting factor, find out if the drive is exchangeable with a similar or newer drive with better performance.

Modifying the read buffer size settings

The read buffer size settings use «2MB, recommended» as default. However, increasing the read buffer size might help when copying to software raids on OS X. Decreasing below the 2MB recommended value is usually not advised. The 2MB size recommendation is only illustrative. The optimal size depends on your specific setup and format combination.



Preferences Menu: read buffer size

Adding Clips to the Library (Ingest without Copy)

There is a fast solution to create references to video clips in the Project Library in Silverstack. Instead of copying clips to another storage device, you can select to just ingest them. This process allows a faster way to have the clips in the Project Library for subsequent tasks such as backup, LTFS backup, quality check or metadata editing.

In order to add the clips, simply select "**File > Add to Library…**" or use the keyboard shortcut ⌥⌘O:

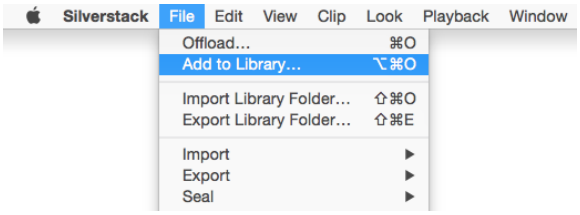


Fig. 1: File menu

After selecting the folder containing the clips, the ingest wizard opens:

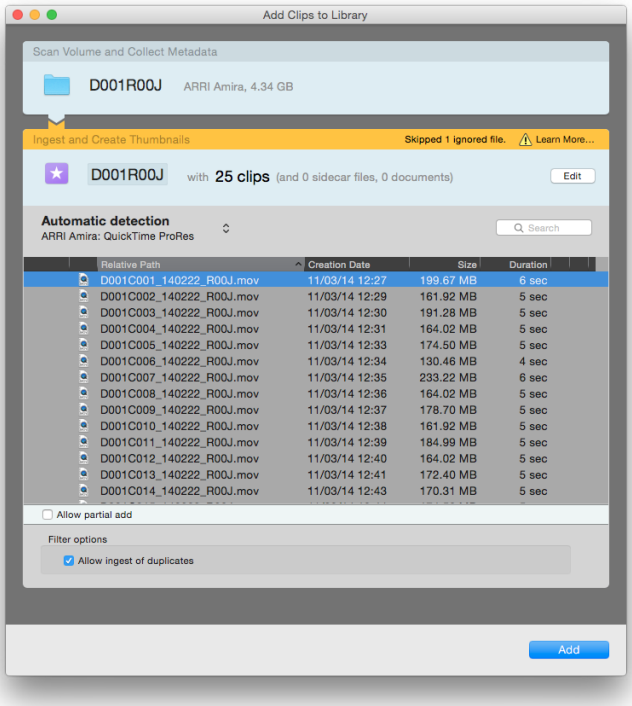


Fig 2: Ingest wizard

The ingest wizard allows you to check which clips are being ingested before proceeding. Once you click on «Add», Silverstack starts creating the references for the clips in the Project Library by reading the metadata and creating the thumbnails. After the thumbnail creation is finished, the clips will be available in the library to start working with them:

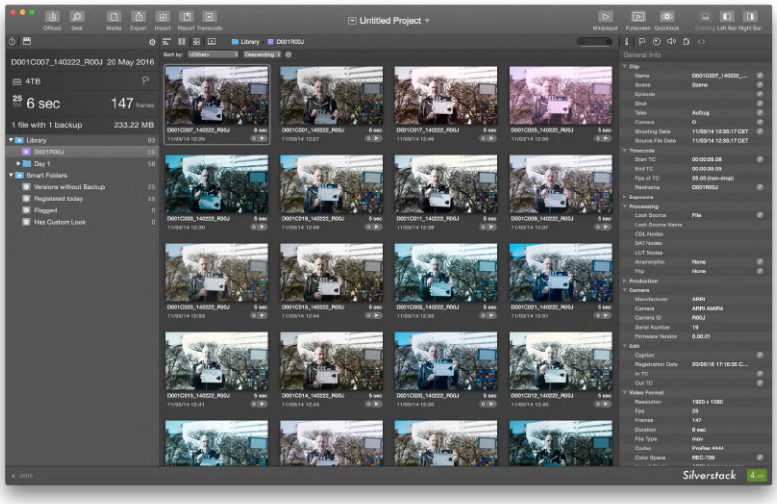


fig. 3: Project Library

Drag & Drop Clips

Alternatively, you can also ingest clips by drag and dropping the containing folder into the Silverstack dock icon or the Silverstack Library Folder. When using this functionality for the first time an alert will ask you what you want to do:

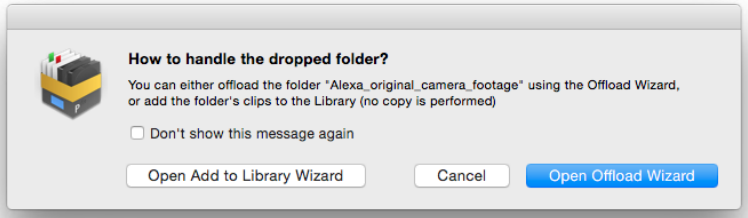


Fig. 5: Ingest warning message

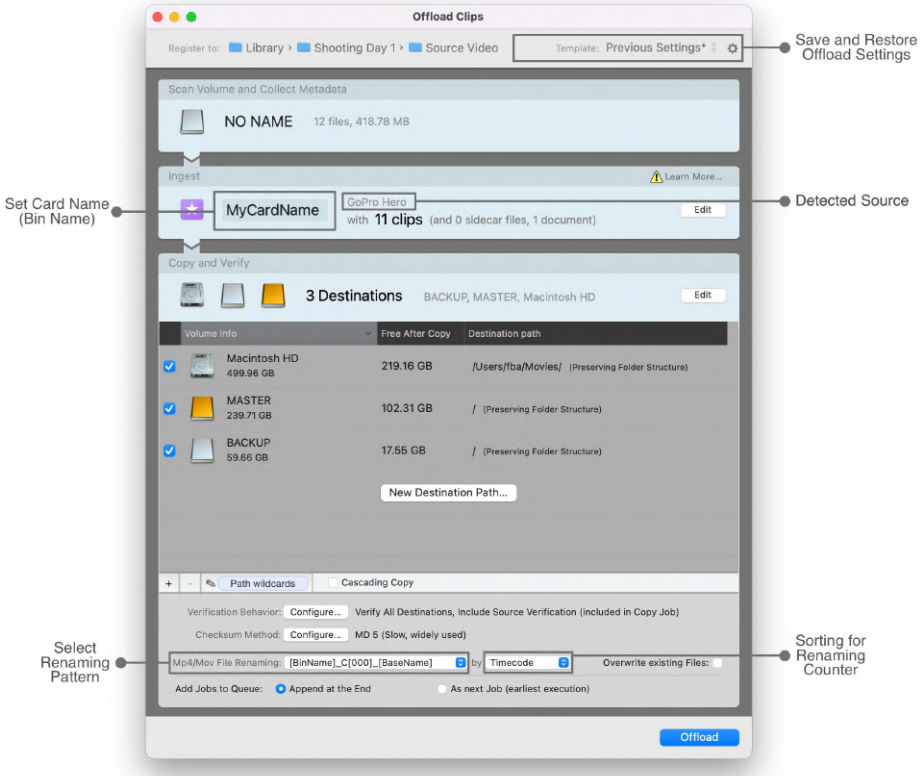
If your intention is to only register the clips, please select the option «Open Add to Library Wizard». The process is the same as previously described. Otherwise, select «Open Offload Wizard» if you decide to copy the media to backup drives in addition to registering the clips in the Project Library.

In case you enable the checkbox «Don't show this message again», Silverstack will always use the selected option in the future.

File renaming on offload

Some camera types come with file naming mechanisms that can result in same filenames on different cards. It can be hard to manage these clips with identical filenames.

Silverstack has an option to **rename files** of selected camera devices by applying a renaming **pattern** during the offloading process. Using this feature leads to **consistent naming** of files on your **offload destinations** and **consistent clip and reel names** in Silverstack's **library** and **reports** throughout the project.



File Renaming: Related settings in the Offload Wizard

How to use file renaming on offload

1. Set a name for the card that you are offloading. This name will be used:
   - as bin name in Silverstack's library
   - as reel name in the clips' metadata
   - as part of the new filenames
   - *Optional: as part of your offload destination path (see KB: Offload Clips → Setting up the copy destinations)*
2. Select a pattern to create new filenames. The new filenames will be used:
   - as clip names in Silverstack's library and in reports
   - as filenames in all offload destinations
3. *Optional: Save your offload settings in a template*
4. Start Offload

Note: If necessary, the original filename of a clip can still be found in the right side bar (File tab → Source).

Predefined Patterns

You can choose one of the following patterns to apply new filenames to your offload:

- Original Filename *(no changes to original filenames, feature deactivated)*
- [BinName]_[0000]_[BaseName]
- [BinName]_C[000]_[BaseName]
- [BinName]_[BaseName]_[ShootingDate]
- [BinName]_[0000]_[BaseName]_[ShootingDate]
- [BinName]_C[000]_[BaseName]_[ShootingDate]

These **placeholders** will be translated into the new filenames:

- [0000]: File index counter with 4 digits *(guarantees unique filenames if source holds files with same name in multiple folders)*
- C[000]: File index counter with 3 digits and “C”-prefix
- [BaseName]: Original filename without extension
- [BinName]: Card name as specified in wizard
- [ShootingDate]: From clip metadata in format *yyyy-mm-dd*

When selecting a pattern that includes a **file index counter**, you have the option to **sort** clips by *name*, *timecode* or *creation date* to make sure the counter reflects the shooting order of your clips.

Supported Cameras and File Formats

Silverstack automatically tries to identify the camera format of the files before offloading. To protect you from unintentionally renaming files from camera systems that provide proper naming out of the box, the feature is **only enabled** for these camera formats:

- GoPro Hero
- Nikon DSLR
- Sony A7s
- Canon DSLR
- “Generic Clips”

If another camera format is detected (e.g. *ARRI Alexa*), the renaming pattern is reset to *Original Filename* and the selection button is disabled.

At the moment, only files with extension **.mp4** and **.mov** are supported for renaming. If the offload source does not contain any supported file format for renaming, the renaming pattern is reset to *Original Filename* and the selection button is disabled.

Workflow Considerations

If you use **different camera devices** in your production, where one device enables the renaming feature while the other one disables it (e.g. *GoPro Hero* and *ARRI Alexa*) **the selected renaming pattern can be lost** between offloads of these devices.

When starting the Offload Wizard, the previous offload settings are restored (including the renaming pattern). However, if the camera format of the current offload **does not enable** the renaming feature, the pattern is **automatically reset** to *Original Filename*, thus the selected renaming pattern of the previous offload **is lost**. Changes to previous settings are visualised with an asterisk (*), that is appended to the template name on the top right.

For using the renaming feature in productions with **differing camera models**, we **recommend to create templates for each device** (e.g. *MyGoProOffloadSettings* and *MyAlexaOffloadSettings*) and load the appropriate template before the offload is started.

Use Silverstack’s clip library for EDL conform

EDL files usually represent a timeline from editing systems such as Avid Media Composer and thus contain an ordered list of clips represented by timecode data and optional reel and clip information.

You can use an EDL in the CMX 3600 standard to consolidate clips from Silverstack’s Library in a new Bin. From there you can for example copy all required clips from the EDL to a separate hard drive.

Use Case

As an example we assume that the editor used five clips which we now need to transfer to a VFX facility. Instead of shipping several hard drives with all the source footage, or manually searching them in huge folder structures, you can automatically collect them by using the EDL import feature in Silverstack.

Silverstack matches the timecode from the EDL with the source timecode of clips in the Library and creates a new Bin with the matched clips. From there it is easy to backup the clips to a single destination via the backup function.

Step By Step

We will describe briefly a typical workflow with Avid Media Composer 6.5.

1. Choose your timeline in AVID Media Composer
2. Then in the MainMenu press Output > EDL . The Avid EDL Manager will open as seen in figure 1
3. Press the “Get Sequence” Button to load the timeline
4. Make sure that the EDL settings are CMX3600 like in figure 2
5. Click in the MainMenu File > Save As… and export the file to your Desktop

   Silverstack Part

6. Open up Silverstack and choose the corresponding project.
7. Press the “Import” Button in the Main Bar and choose the “Edit Decision List” option
8. Choose the EDL file from the Desktop
9. If not set automatically, make sure that you choose the same frame rate like in the metadata of your clips like in figure 3
10. Silverstack will match the clips and add them to a new Bin.

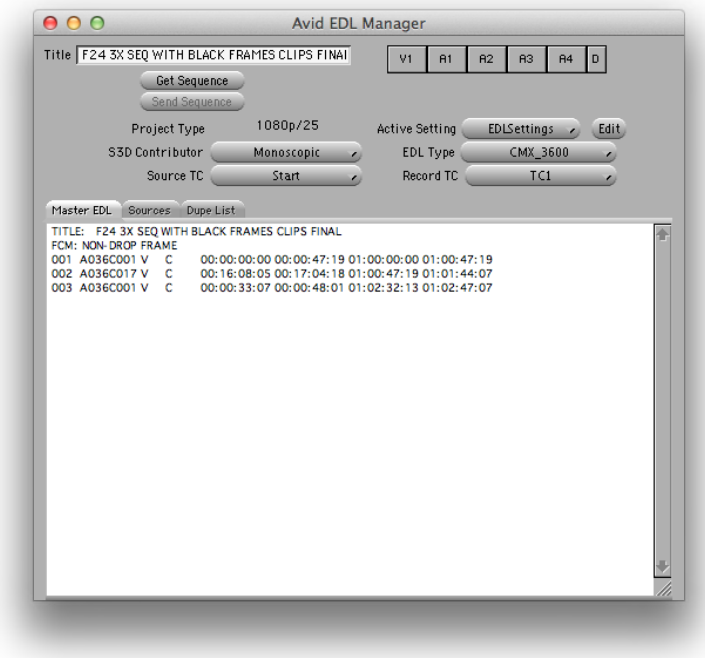


Figure 1: Avid EDL Manager

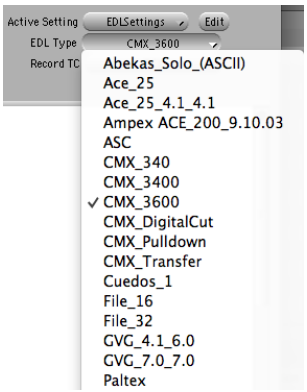


Figure 2: EDL Setting in the EDL Manager

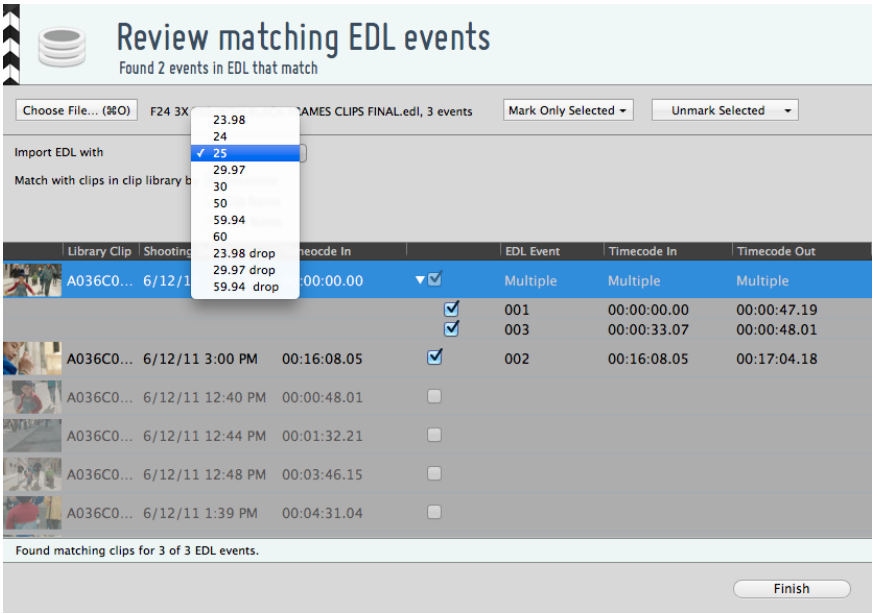


Figure 3: Import wizard for EDLs in Silverstack

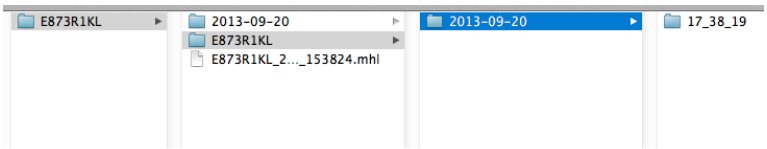
This feature is available in Silverstack 3.1 and newer.

MHL Checksum Verification

Classic MHL

During offloads and Backups, Silverstack compares byte by byte the source file with all of its backup copies to ensure that no file has been corrupted during the copy process. If the verification process result is positive, Silverstack is configured per default to create a hash manifest file in the main folder of each backup destination. A hash manifest contains (among other information) the path and checksum of each copied file and serves as a seal of file integrity of all copied files and folders. It allows to to ensure completeness and consistency of a backup at a later point manually or with third party applications. You can find more information about hash manifests in our blog article "Completeness of Data with Manifest Files".

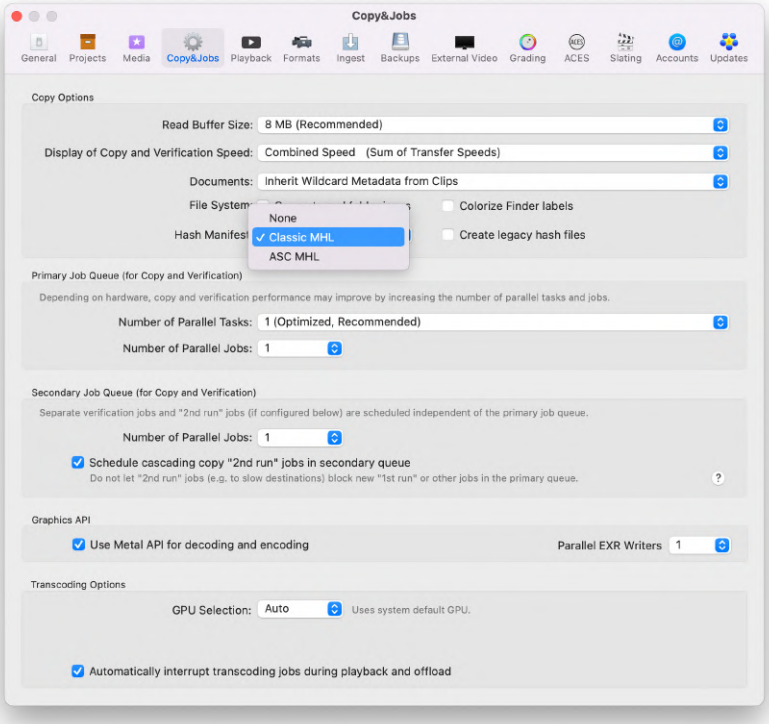
The default hash manifest in Silverstack is the **Media Hash List** (Classic MHL). For more information about the MHL project, you can visit its website at http://mediahashlist.org.



The MHL file is created in the root folder of each backup path

ASC MHL

Silverstack 8.4 introduces support for the new ASC MHL standard. Among other useful additions, this standard allows to create and continue histories of hash manifests for many generations of file backups. For more information, please check the ASC MHL One-Sheet page. A command line tool is available via the ASC MHL GitHub repository. You can choose your preferred manifest type in the "Copy&Job" preferences.



Choose a hash manifest in the Copy&Job preferences

Offloading media

During offload of files without existing ASC MHL history on the source volume (i.e., when offloading camera cards), a new history is created on the destination volume.

If an ASC MHL history is already on the source volume, the history is continued on the destination volume. There are some cases where an existing history cannot be continued (for example, if the hash formats of the existing history and the offload settings don't match). In this case the fallback behavior is to start a new history on the destination.

Backing up media

During backup of already ingested material, Silverstack generally continues any existing history. Again there are some cases (for example, if clips from different cards / histories are backed up) when existing histories cannot be continued. In this case the fallback behavior is to start a new history on the destination.

Additional Features

- Silverstack indicates in the offload wizards if the source volume contains an existing ASC MHL history, checks if any files are missing and if a compatible checksum method is selected for offloading
- Cascading copy creates a first generation on the first run's destionation and an additional second generation on the second run's destination.
- There is always an option to create a new ASC MHL history on offload and backup.
- You can choose in Silverstack's preferences if ASC MHL histories or the classic MHL manifests shall be created.
- The job detail view shows which manifest format ("ASC MHL" or the previous Classic "MHL") has been created, and allows to reveal the manifest file in Finder.

Current limitations

- If during offload an existing history has a different hash format than the selected hash format in the wizard, a new history will be created without warning.
- Silverstack is currently not creating directory hashes.
- Currently there is no option to create ASC MHL collections and packing lists ("flattened" manifests).

Sealing Volumes

This feature was introduced before the new ASC MHL standard was developed. ASC MHL covers many of the use cases that Sealing was initially intended for.

Since version 5.2 Silverstack is able to "seal" volumes to ensure consistency and completeness even after multiple following copy generations. Learn more about the sealing functionality in Silverstack and the verification of seals and checksums with Pomfort SealVerify from the articles Sealing Drives in Silverstack and Verifying Sealed Drives in Pomfort SealVerify.

Sealing Drives in Silverstack

The sealing functionality allows Silverstack to make a full inventory list of a drive. This is important, not only to assure that the content of a drive is identical to the source material but also to make sure that the content on a drive is complete and reflects the intention of the sender. By sealing drives as well as directories the whole content becomes registered to notice any change inside the folder in the future. The sealing process enables you to use the free tool Pomfort SealVerify to verify the consistency and completeness of a drive at any generation later without having access to the original media.

Silverstack allows you to seal volumes as well as folders. For simplicity reasons we may only refer to “sealed volumes” or “sealed drives” below but want to make clear that the same procedure will work for sealed folders.

Please note: *This feature was introduced before the new ASC MHL standard was developed. ASC MHL covers many of the use cases that Sealing was intended for.*

What Does the Sealing Do ?

The sealing procedure bases upon the existing and widely used MHL technology and extends its functionalities. During the sealing process Silverstack writes a .pfsl file on the drive which we refer to as the “Seal”. This seal keeps all content information together and ensures that every change to the seal itself or any referenced information can be detected at any time. The free application Pomfort SealVerify can be used to easily verify the integrity of a sealed drive.

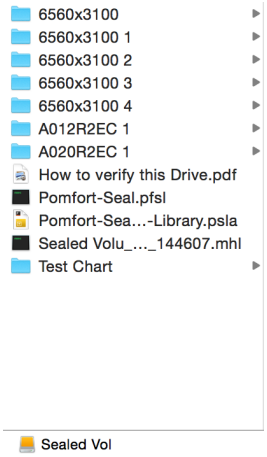


Fig. 1: Finder screenshot showing the contents of a sealed drive

To learn more about the Pomfort Seal please visit the article Understanding the Pomfort Seal.

How to Seal a Drive or Folder

Please note: *Sealing is not compatible with the latest hash algorithms introduced with Silverstack 8.4. Please do not use XXH3, C4ID, or XXH128 if you intend to use Sealing.*

To **seal a drive** click on the “Seal” button in the Silverstack task bar and choose the drive you want to seal:

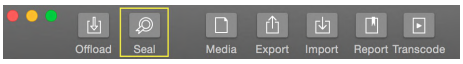


Fig. 2: The Silverstack header bar with the “Seal” button

The sealing wizard opens up and will guide you through the sealing process

To **seal a folder** go to the main menu and choose **“File > Seal > Folder…”**.

[fig. 3 Main Menu File Seal Folder]

After choosing the intended folder the sealing wizard will guide you through the process.

The list shows all attached volumes that have been used as a destination in the current project. The button may be disabled if no such volume is attached.

Providing the Seal Info

In the first step of the sealing wizard you can enter the information that will afterwards be present in the Seal Info:

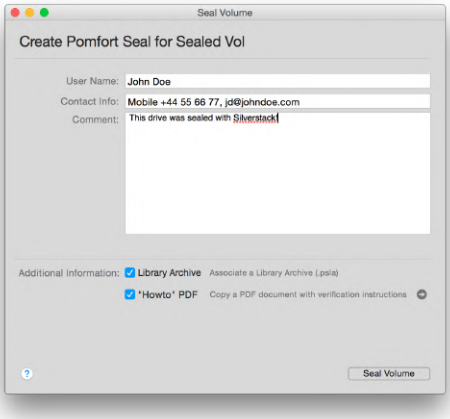


Fig. 3: The first step of the sealing process.

With the two checkboxes you can choose to:

- Put a Sealed Library Archive on the sealed drive. Learn more about Sealed Library Archives from the article Importing Sealed Library Archives in Silverstack XT.
- Put a “How To Verify This Drive”-PDF on the drive. It contains information for the receiver of the sealed volume and explains how they will be able to verify the drive.

Additionally you can can enter information that will be transmitted along with the Seal Info and will e.g. be readable by Pomfort SealVerify or when Importing a Sealed Library Archive in Silverstack XT.

The Seal Info contains the following information:

- Name of the person who sealed the drive or folder
- Contact info like e.g. phone number or email address etc.
- Time
- UUID
- Comment
- Silverstack Version
- Host
- Username
- Operation System

Enter the information accurately to make sure the receiver of a sealed drive will be able to receive extensive information and can contact you in case of a problem.

The Sealing Procedure

The sealing procedure consists of several individual tasks. While some of them are self-explanatory others need detailed attention:

Lost and Found Items

Silverstack scans the drive for files that have not been copied with Silverstack and therefore are not referenced in any MHL file. Those files are collected and ingested into an automatically generated folder called “Lost and Found” inside the Silverstack library. Like this, the files will also be registered within an MHL file that will be placed on the drive.

Please note that the “Lost and Found” items will be referenced by file size only. It is recommended to copy all content with Silverstack to obtain maximum security with checksum verification.

Library Export

After as successful sealing process the Silverstack library will contain the complete content of the sealed drive or directory. The library export option will place a Silverstack library file (.psla) on the drive. By using the library import option in Silverstack XT, an identical Silverstack library containing the complete and verified content of a drive can be guaranteed. The verification of the content can be handled by the free application **Pomfort SealVerify**.

Verifying a Seal

Seals can be verified and checked for integrity with the free application **Pomfort SealVerify**. Please visit the KnowledgeBase section about Pomfort SealVerify for more information or download here.

If you are looking for a way to import sealed drives in Silverstack XT please refer to the article Importing Sealed Library Archives in Silverstack XT.

The Seal Info Panel for Sealed Volumes

You can open the seal info for a sealed volume from the Volumes panel. In the left bar of the Silverstack main window scroll the library down until you arrive at the **“Volumes”** entry. In the right bar you will then be able to open the Seal Info by clicking on the button “Seal Info” on the side of the volume showing the seal:

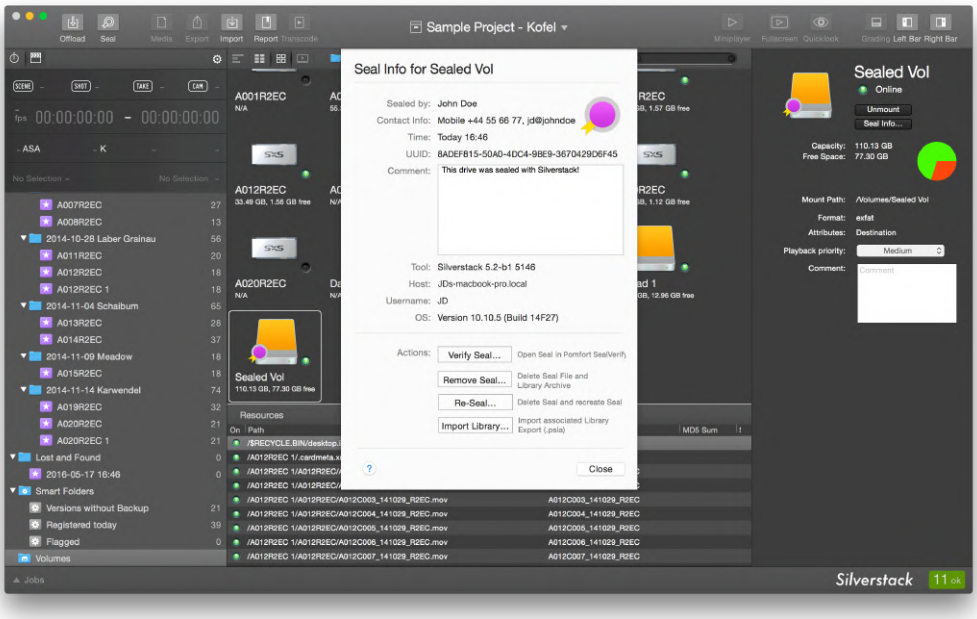


Fig. 4: The Silverstack volumes panel with the Seal Info.

From there **several actions** can be taken:

- **Verify Seal:** When you have Pomfort Seal Verify installed you will be able to verify the integrity of the seal. Click the button to open the drive in [Pomfort SealVerify](#).
- **Remove Seal:** You can delete the Pomfort Seal file and the Seal Library Archive.
- **Re-Seal:** Delete the seal and recreate a new one with your own seal information.
- **Import Library:** Import the associated Sealed Library Archive (.psla) that populates a Silverstack Library containing the complete content of the sealed drive or folder.

Or click **"Close"** to leave the seal information again.

Importing Sealed Library Archives in Silverstack XT

The import of sealed Library Archives enables you to populate a content complete Silverstack Library into a new Silverstack XT project that includes*all* assets of the sealed drive or folder. You can benefit from that process by including a Library Archive export when sealing a drive in Silverstack. Additionally the free tool **Pomfort SealVerify** enables you to perform a completeness and consistency check of the present content. Learn about the process of sealing drives with Silverstack from the article [Sealing Drives in Silverstack](#).

Importing a Sealed Library Archive

Open Silverstack. In the Main Menu go to **"File > Import > Sealed Library Archive…"**:

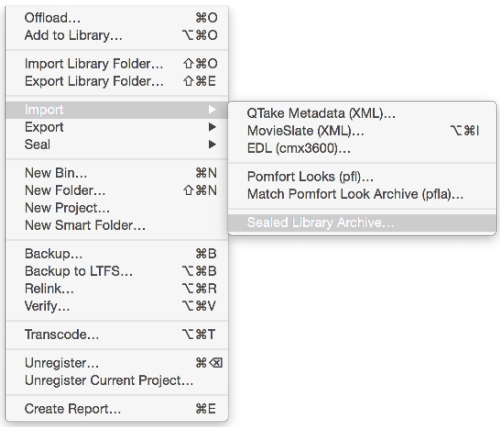


Fig. 1: Choose Import > Sealed Library Archive to import a Sealed Library Archive

In the open dialog that appears select the sealed folder that contains the Sealed Library Archive along with the Pomfort Seal you want to import .

After clicking "Open" the Seal Information panel opens up:

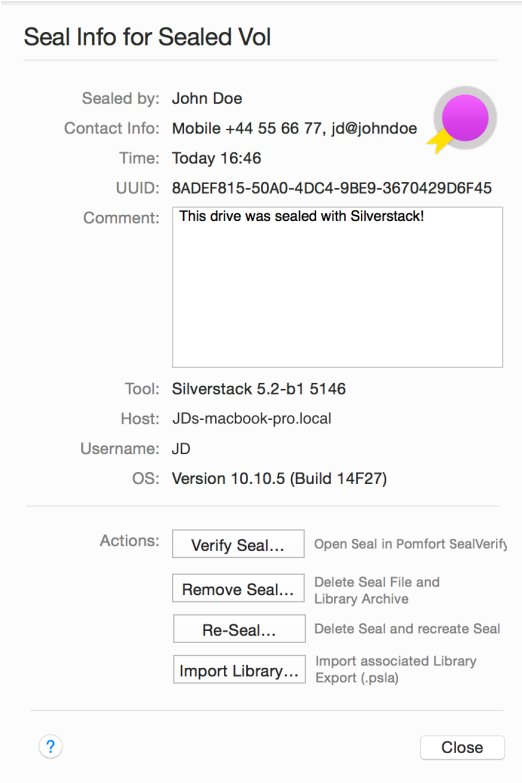


Fig. 2: The Seal Info for the opened volume

The seal information comes from the person who sealed the drive in Silverstack.

Several Actions can be taken from here:

- **Verify Seal:** When you have Pomfort SealVerify installed you will be able to verify the integrity of the seal. Click the button to open the drive in **Pomfort SealVerify**.
- **Remove Seal:** You can delete the Pomfort Seal file and the Sealed Library Archive.
- **Re-Seal:** Delete the seal and recreate a new one with your own seal information.
- **Import Library:** Import the associated Sealed Library Archive (.psla) that populates a Silverstack Library containing the complete content of the sealed drive or folder.

Click the button **"Import Library"** to start importing the Sealed Library Archive.

The standard library import wizard will guide you through the process of importing the library:

Learn more about this process from the article **Library Metadata Exchange**.

Sealed Library Archive vs. Library Archive

The Sealed Library Archive basically is a Silverstack Library Archive with additional benefits. As it can only be created in the process of sealing a drive or folder with Silverstack the library will always contain the complete content of the sealed volume. Additionally **Pomfort SealVerify** can verify the content of the library to assure consistency with the original data.

Understanding the Pomfort Seal

This article will help you understand the intention and background of the Pomfort Seal.

The Pomfort Seal

The Pomfort Seal complements the widely used and production-proven MHL standard for checksums and can only be produced by Silverstack. During the sealing process, Silverstack creates a seal file (.pfsl) that references all MHL files on the drive. An additional MHL file will be created for all data that was detected on the drive but was not copied onto it with Silverstack. The Pomfort Seal holds all this information together and is even secured against altering the seal itself. Any kind of change of the data on the drive will break the seal and will therefore be detected by Pomfort SealVerify.

Please note that the term of "sealing" has nothing to do with encryption of the data on a drive. The Pomfort Seal does not limit the access to your data. The sealing process aims for integrity, consistency and completeness of data. The term "sealing" is not used in a way that implies a "blocking" or "locking" of data.

Sealed vs Unsealed

The following table will show you the advantages of a drive sealed with Silverstack:

	consistency	***consistency + completeness***
MHL only ***(misc. copy tools)***	YES	NO
MHL + Pomfort Seal ***(Pomfort Silverstack)***	YES	YES

MHL files (or other hash files such as .md5 files) basically carry hash values and filenames. With this information, you can verify the consistency of files without access to the original source files. The appropriate tools can determine if the contents of the files mentioned in the MHL file still have the same content as at the time when the hash values have been created. The MHL files are usually created during a copy process.

For a drive with multiple folders copied with multiple copy processes (for examples on a film set, where multiple camera cards are copied to the same travel drive), you cannot verify if one entire folder together with its MHL file is missing. This means with MHL files alone you can verify consistency of single files, but not the completeness of an entire drive.

To solve this problem , the Pomfort Seal contains a list of all MHL files on a drive. With this information, a missing MHL file can detected very easily. This means that the Pomfort Seal together with the MHL files allows to verify consistency as well as completeness of a travel drive.

The sealing process in Pomfort Silverstack also searches for files on the drive that haven't been listed in MHL files yet. This ensures, that the Pomfort Seal together with the MHL files cover the entire content of the sealed drive.

Pomfort SealVerify is the free one-button process to verify the Pomfort Seal and the listed MHL files. This way a reliable copy chain can be built where both, consistency and completeness of media data can be verified at any time.

Quality Check

Playback

The Silverstack playback view allows to play movie clips back. Please refer to the “Playback” menu in Silverstack for a list of available functionality and shortcuts.

Playback Modes

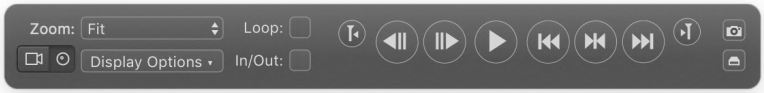
Silverstack has two playback modes that can be permanently set in the “Playback” menu:

- **Absolute Time Playback:** *Real time playback -> Audio enabled*
  - **Description:** This playback mode attempts to play the clip in real time (1s in the clip will be displayed in 1s realtime). This might lead to frame drops if performance of the machine or I/O might not allow real time playback. Playing back in real time is necessary to enable audio playback.
- **Every Frame Playback:** *Play every frame -> Audio disabled*
  - **Description:** This playback mode makes sure that every frame of the clip will be displayed. This might lead to a non real time display and therefore audio playback is not possible in this playback mode.

When using JKL playback controls Silverstack automatically enables Every Frame Playback and therefore disables audio.

Playback Controls

Playback HUD



The playback HUD (Head Up Display)

The playback HUD enables the following functionality:

- **Zoom:** Select a zoom setting for the current clip
- **Loop:** Enable loop playback for the selected clips in a timeline
- **Display with Look:** Allows to toggle between display of the clip with look or with original color
- **Display Options:** Select decoding resolution for playback (and debayer options for certain formats)
- **In/Out:** Makes playback respect in and out points
- **Set In-Point:** Set in point at current playhead position
- **Frame backward:** Step one frame backward
- **Frame forward:** Step one frame forward
- **Play:** Play the clip back
- **Jump to Clip Start and Previous Clip:** Moves playhead to the first frame of the clip and if playhead is on the first frame to the previous clip
- **Jump to Middle of Clip:** Sets playhead to the middle of the clip
- **Jump to Clip End:** Sets playhead to the last frame of the clip
- **Export Still Image:** Exports a still image, see also in main menu “Clip > Export Still Image”
- **File Playback Info:** Shows the current location of the clip used for playback

JKL Controls

Playback can be controlled with J, K and L keys in a manner typical to many for example editing applications. It allows for faster playback, slower playback, reverse playback and frame stepping also known as Playback, Shuttle and Jog:

- **Playback** : Press L to play forward, K to stop and J to play reverse (“Play Reverse (Faster)”; “Play Forward (Faster)”; “Stop”)
- **Shuttle Play**: Pressing the keys L or J two or multiple times increases the playback speed by factors 2x up to 64x
- **Jog**: Holding K and pressing L or J allows users to frame-step through a clip forwards (L) and backwards (J) (“Next frame”, “Previous frame”)

The following more specific functionality is available in conjunction with JKL:

- **Fast Reverse:** Plays in reverse with same speed as currently playing forward
- **Fast Forward:** Plays forward with same speed as currently playing backward
- **Play Slower:** Slows down playback below 1x speed

Frame Stepping

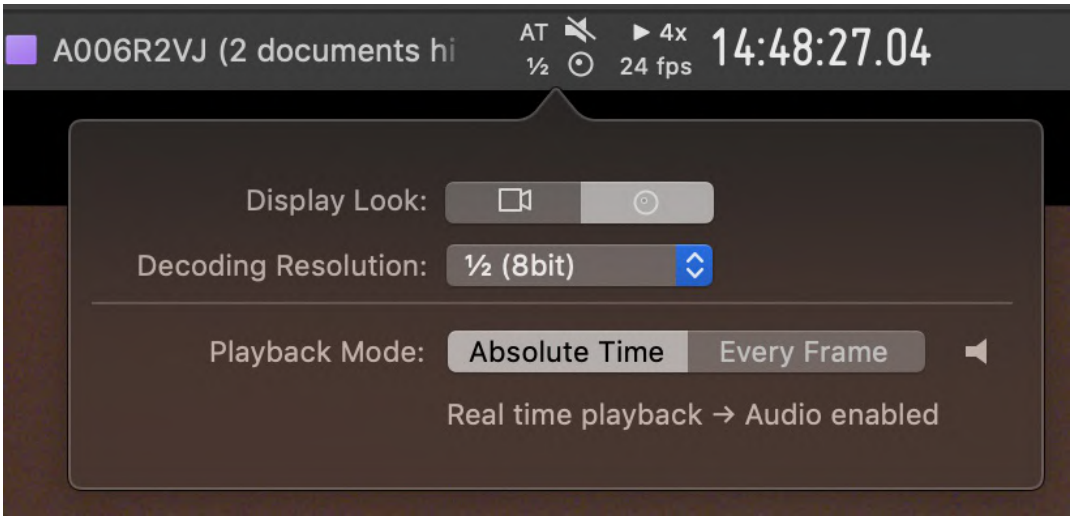
Additionally to JKL, frame stepping is also available with the arrow keys. There are additional option keys to enable larger steps:

- **Step 5 frames:** Shift + ->/<-
- **Step 2 seconds:** Shift + Ctrl + ->/<-

Playback Indicators

Player Toolbar

The player toolbar contains different elements to inform about the current status of the clip.



Player Toolbar

The following indicators are displayed in the toolbar (from left to right, top to bottom):

- **AT/EF:** Playback Mode, Absolute Time (AT) or Every Frame (EF) playback
- **Audio Enabled/Disabled:** Speaker symbol indicates if audio playback is currently enabled or disabled
- **Playback direction and speed:** The play symbol indicated the playback direction, the number (1x / 2x / …/64x) indicates the playback speed
- **Full / ½ / etc. :** Indicates current decoding resolution
- **Camera Original / Look:** Indicates if camera original color is displayed or look is applied
- **FPS:** Show the current playback speed in frames per second
- **Timecode:** Current timecode of clip

The following controls are available in the popover:

- **Display Look:** Allows to toggle between display of the clip with look or with original color (see also playback HUD)
- **Decoding Resolution**: Select decoding resolution for playback (and debayer options for certain formats; see also playback HUD)
- **Playback Mode:** Switch between Absolute Time and Every Frame Playback Mode; more details see above please

HD-SDI Output in Silverstack

This article is outdated

Silverstack XT and Lab already also support 4k SDI output with:

- Blackmagic 4k cards and
- AJA Kona 5 cards (requires **8k** firmware installed)

Silverstack XT and Silverstack Lab come with HD-SDI output to play out ingested clips in best quality for QC on an HD-SDI broadcast monitor. The current clip in the player gets mirrored to the HD-SDI output showing the image in full-screen and 10 bit color depth.

Supported Devices

To enable the HD-SDI output you need one of the following devices:

- AJA T-TAP
- AJA KONA series
- AJA Io series
- Blackmagic Design Ultrastudio Products
- Blackmagic Design Mini Monitor
- Blackmagic Design Decklink Cards

Attach the according interface to your Mac (Thunderbolt or PCIe) and connect the HD-SDI output of the device to the selected destination.

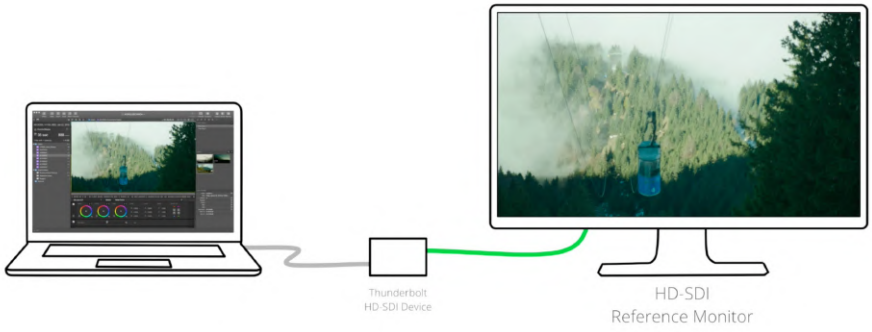


Figure 1: Schematic presentation of a Silverstack XT HD-SDI setup

Drivers

In order to use the supported devices you have to install all drivers and necessary software provided by the the manufacturer.

For Blackmagic Design devices that is the **"Desktop Video"** software you can download in their support area.

For AJA Devices that are the **"AJA hardware drivers"** included in the latest **"AJA software installers"** also available in their support area.

External Video Preferences

As soon as the HD-SDI device is connected, Silverstack XT requests permission to use it for playback. In case you decide to activate the SDI playback later, you can enable it through **"Preferences>External Video"**. You can disable the use of the device from the same menu in case another application demands its use (i.e. parallel use of the hardware with other software). If you have multiple output devices attached, you can select which one to use by choosing it in the drop down menu:

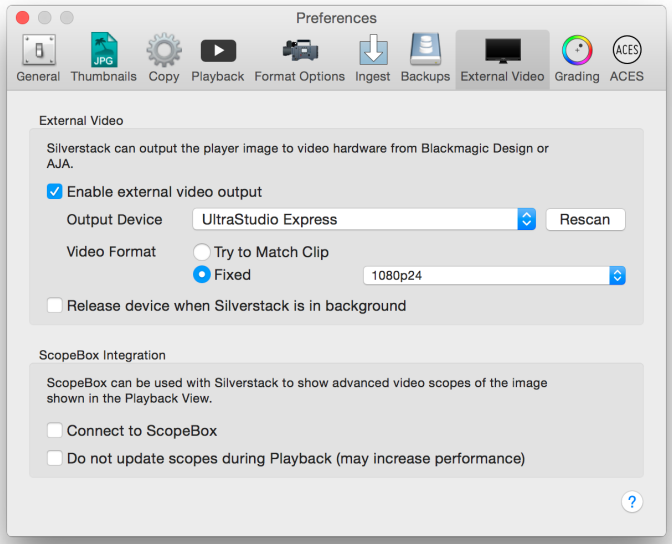


Figure 2: External Video settings

For the **"Video Format"** you will be able to choose from two settings:

- **Try to Match Clip:** This setting will try to match the output format of the SDI to the settings of the clips. Silverstack will try to keep the frame rate and fall back to HD if the resolution is not supported. If the frame rate is not supported it will fall back to 1080p25. In detail this means:
  - **Frame rate supported / resolution not supported:** Silverstack will keep the frame rate. The resolution will fall back to a 1920 x 1080 (HD).
  - **Frame rate not supported / resolution supported:** Silverstack will fall back to 1080p25.
- **Fixed :** This setting will let you choose the output format manually.

Additionally you can choose to release the device when Silverstack XT is in background by enabling the checkbox **"Release device when Silverstack is in background"**. By default it will be kept even if Silverstack XT is in background.

Please be aware that the support of SDI formats depends on the compatibility of the attached hardware device that the implementation in Silverstack bases on.

The HD-SDI Indicator

As soon as you enable the external video output in the preferences a little indicator in the toolbar of the Silverstack XT media player will give you hints on the status of the HD-SDI output:

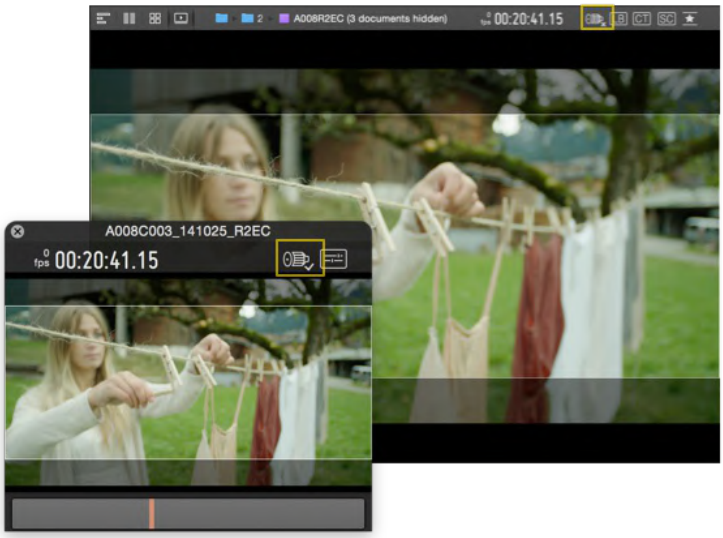


Figure 3: The HD-SDI indicator will show up in the toolbar of the media player and theMiniplayer.

There are 3 statuses possible:

1. HD-SDI output enabled and working:

Figure 4: HD-SDI Indicator showing a working HD-SDI output.

Click on the indicator to reach theExternal video out settings with the settings for the HD-SDI output.

2. HD-SDI output enabled but no device attached:

Figure 5: HD-SDI indicator showing that no device is attached

Click on the indicator to reach theExternal video preferences to set up your attached device.

3. HD-SDI output has problems

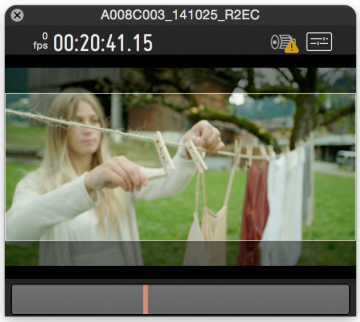


Figure 6: HD-SDI indicator notifying about problems with the attached device

Click on the indicator to see details about the problem.

A usual case causing this status of the indicator would be another application that tries to use the same HD-SDI device as Silverstack XT. Deactivate the background use in the preferences of the application trying to use the same devices as Silverstack XT to avoid the problem.

Playback Modes

You can choose between **two** playback modes:

- **Absolute Time Playback:** Tries to play back footage in sync with audio. Silverstack XT will skip frames to stay in sync with audio when video processing or I/O is too slow.
- **Every Frame Playback:** Aims to play back frame exact which leads to loosing audio. Silverstack XT will play back frame exact even if that leads to non-realtime playback.

To select the desired mode go to **"Playback"** in the main menu of LiveGrade and select the according entry right at the top:

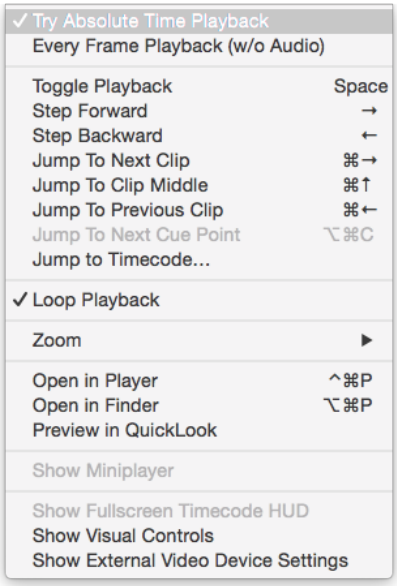


figure 7: Select playback mode from the main menu

Image processing

There are different options when it comes to display the clips through the SDI device. You can modify these settings on the External Video Out window.

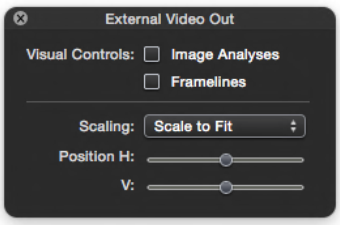


figure 8: External Video Out settings window

These are the available settings:

- Visual Controls: enable/disable the «Image Analyses» like False Color and Exposure Range, as well as Framelines. Learn more about frame lines from the article Frame Lines in the Playback View.

- Scaling and Position:
  - Scale to fit: fills the output display with the image to compensate for a difference in the resolution.
  - 1:1 Pixels: displays the image in full resolution, which can crop the image id the output display has less resolution than the source.

Supported Frame Rates and Resolutions

Supported frame rates and resolutions are:

- 720p50
- 720p59.98
- 1080p23.98
- 1080p24
- 1080p25
- 1080p29.97
- 1080p30

Silverstack XT has a fallback resolution (1920 x 1080 HD) and frame rate (25p) that is executed when the desired resolution and frame rate is not supported by your hardware device. That means if either frame rate or resolution is not a native SDI format the SDI output will fall back to 1080p25.

Interlaced formats are currently not supported.

HD-SDI Features and Quality Characteristics

Color Reproduction	HD video matrix and gamma (ITU-R BT.709; ITU-R BT.1886)
Timing	Sync to next available video frame rates (see Supported Frame Rates and Resolutions and Playback Modes)
Code Values	10-bit legal range YCbCr output (internal 16-bit RGB processing)
Embedded Audio	Not supported
Metadata Output	Not supported

The Miniplayer

Additionally, you can enable the Miniplayer from the same menu, which enables to monitor the same image sent through the SDI output on the computer display, at the same time as you navigate across the Project Library.

When the HD-SDI Output is enabled it will automatically open the Miniplayer to keep the HD-SDI output though you switched to the list or table view etc. As soon as you close the Miniplayer the HD-SDI output will be disabled.

You can reopen the Miniplayer manually from the Main Menu. Go to **"Playback > Show Miniplayer"** to open it up again. You can also open it from the Miniplayer symbol in the header bar on the right.

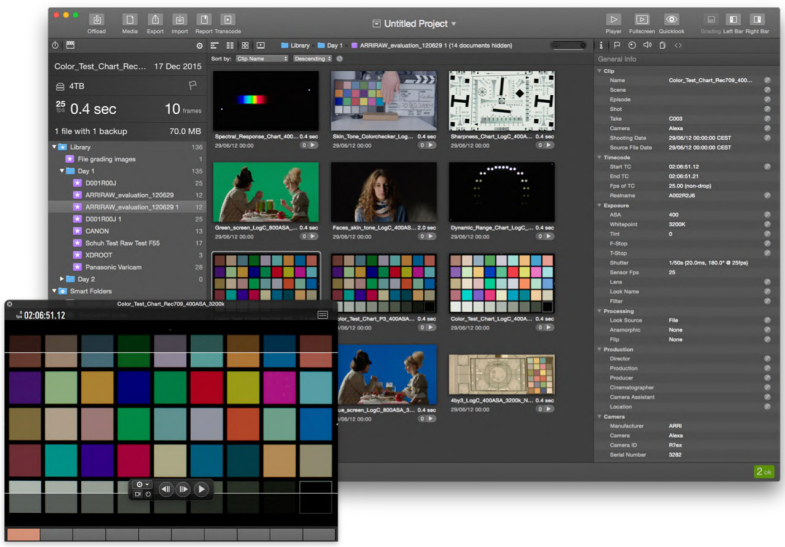


figure 9: the Miniplayer

Multichannel Audio in Silverstack

Silverstack offers audio playback of audio data embedded in video clips for preview and quality check. Audio can also be transcoded in dailies and for the editorial department including a stereo mixdown or with the original audio tracks. The clips with embedded audio can be played back with sound and can be transcoded for the editorial department including all the audio tracks.

Silverstack supports audio features for these camera formats:

- Alexa ProRes
- Alexa SXT ARRIRAW (.ari)
- Amira ProRes
- Canon C300
- H264 from DSLRs (like e.g. Canon EOS 5D Mark II)
- Sony F55 XAVC
- Sony X-OCN
- Digital Bolex Cinema DNG
- Various Red Camera models (.r3d movies)

The audio settings per clip are grouped in the “Audio” tab. There you can modify the sound settings for each clip while in Playback mode:

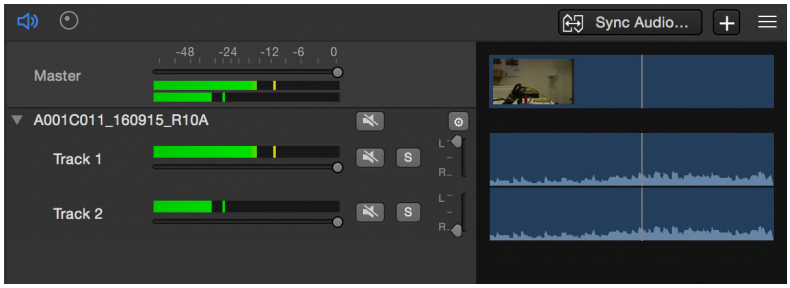


Fig. 1: Audio panel with audio tracks from ARRI Alexa SXT ARRIRAW (.ari)

The audio panel offers the following controls:

- **Master Volume**: controls the output signal level of the mix.
- **Audio meters**: represent the audio signal level during playback. There is a stereo Master meter and additional Channel meters — one for each audio track. The scale on top of the meters indicates the audio level in dB (dBFS). Peaking is represented by a bar in the according color of the peaking level that remains at the maximum position. You can reset the peak bar by clicking on the audio meters.
- **Channel mixers**: the sliders control the signal level for each track. You can mute specific «Left» and «Right» tracks by disabling the check boxes on the right of the channel mixers.
- **Mute button:** Mutes the according audio channel
- **Solo button**: Solos the according audio channel
- **Pan control:** Sets the panorama to left, middle or right

Basic Color Control in Silverstack

Each clip has a “Look Source” that defines its color processing (see General Info tab, right bar).

Available look source options are:

- **None:** No color processing applied, clip shows no look.
- **From File**: Clips from certain cameras contain look metadata (e.g. ARRI Alexa clips) that can be applied directly from file metadata. In case there is no look embedded, Silverstack applies the default Log to Rec.709 conversion for the specific format.
- **Preset**: Select a LUT transform from the available LUT presets integrated in Silverstack Lab.
- **User-defined LUT:** Load a custom LUT to be applied to the clip.
- ————————————
- ***Custom Look:*** Create a custom look with node based grade controls.

This feature allows users to display “Log” clips in a different color space by applying preset LUTs, user predefined custom 3D LUTs or color metadata (looks) embedded in clips (for selected formats[1]).

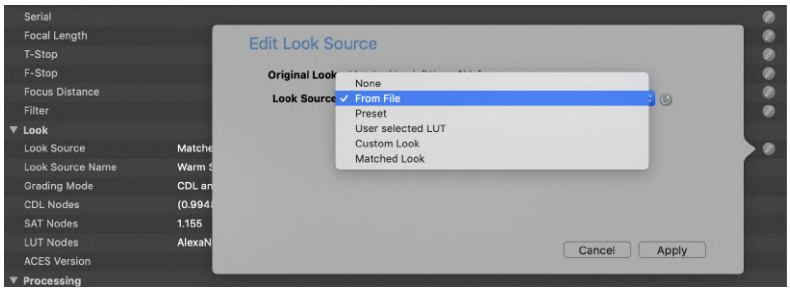
The color processing enables you to create thumbnails, playback and transcode the clips with a look applied.

The default look source on ingest for certain clip types can be set in the format preferences (see section “Setting the Look Source for the Ingest of Clips”)

Editing the Look Source in the General Information Tab

It’s possible to modify the color processing of a certain clip or group of clips by setting a different Look Source in the General Information metadata tab, in the “Look” section.

In order to edit the Look Source of multiple clips, just select them from the library, click on the «edit» button and select an option from the list. Once you click on «Apply» all the selected clips will have the same Look Source.



Setting a Custom Look for Multiple Clips

From the Look Source selection you can choose the processing **"Custom Look"** to enable a custom look for a clip. Select multiple clips and select the processing to enable it for all of them.

In the Silverstack player view you will then see the grade controls being opened up. You can learn more about the grading controls and the look library from the articles Grading Controls in Silverstack and The Silverstack Look Library.

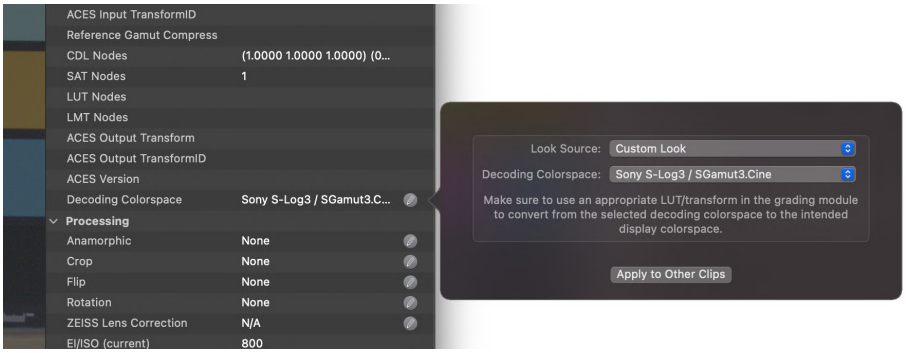
Decoding Color Space (only available in Silverstack XT)

Some RAW formats allow selecting the decoding color space and gamma. This specifies the result of the manufacturers' SDK RAW development and is the working color space for Silverstack Lab's grading module. The decoding color space and gamma can only be specified when switching to Silverstack Lab's "Custom Look", "Preset", or "User selected LUT" modes. Currently, these options are available:

- ARRIRAW (Mini LF): *LogC3/AWG3* or *LogC4/AWG4*
- Sony X-OCN: *S-Log3/SGamut3* or *S-Log3/SGamut3.Cine*
- Canon RAW: *Log 2/Cinema Gamut, Log 3/Cinema Gamut, Log 2/Rec. 709 or Log 3/Rec. 709*
- DJI CinemaDNG: Rec. 709/Rec. 709, sRGB/sRGB, DJI D-Log/Rec. 709

Please note that changing the decoding color space requires manually selecting an appropriate transformation LUT in the grading module. *(E.g., changing the decoding color space of an Alexa Mini LF clip from LogC3 to LogC4 requires manually changing the LUT node to "LogC4 → Rec.709")*

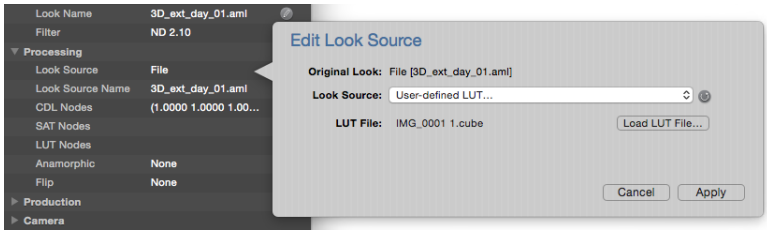
The "Apply to Other Clips" button allows transferring of this configuration to all clips of the same format in the current selection.



Select the decoding color space in the general info

How to Apply and Manage Custom LUTs

One of the features related with the look control in Silverstack is the ability to apply custom LUTs to one or multiple clips. Users can load custom 3D LUTs generated by other software applications – such as LiveGrade Pro. When a custom LUT is used, Silverstack displays the thumbnails and playback with that look applied. Transcoding of the clips with that LUT is also possible.



Custom LUTs loading

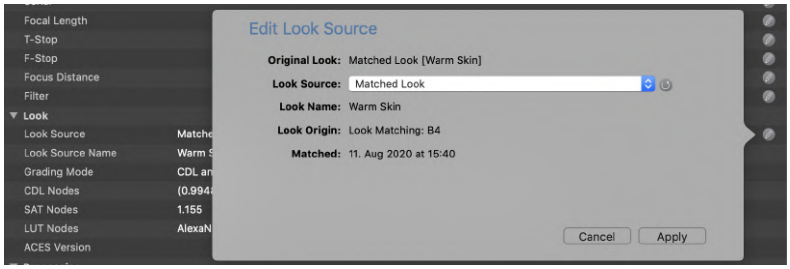
The supported 3D LUT formats are:

- .cube (32x32x32, 33x33x33 and 65x65x65)
- .3dl (32x32x32)

In order to load them, just select the Look Source to be «User-defined LUT…» and click on the «Load LUT File…». Then navigate through Finder to the LUT file, select it and choose «Open». Finally, click on «Apply» in the Edit Source pop up to apply the LUT to the clip.

Look Source “Matched Look”

When looks from Livegrade have been matched to clips via Look Matching a new look source is available named “Matched Look”.

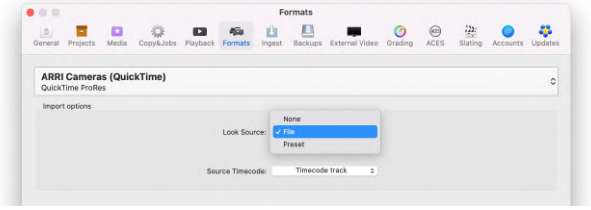


You can start and customize the matched look by pressing “Edit Look…” in the color panel. You can always return to the matched look by setting the look source back to Matched Look.

Setting the Look Source for the Ingest of Clips

The color processing can take place automatically when ingesting the clips by reading their metadata or using a preset LUT. In addition, the look applied can be modified or disabled for each clip individually.

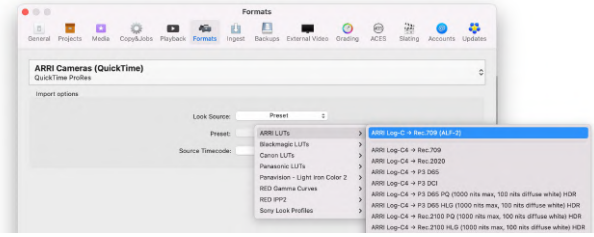
In order to automatically apply a look to the clips while being ingested, you have to go to the «Format Options» section on the «Preferences» menu:



Format preferences

Each format allows you to define a different color processing. You can choose the format using the «Format Selector». Once the desired format is selected you can set the Look Source as:

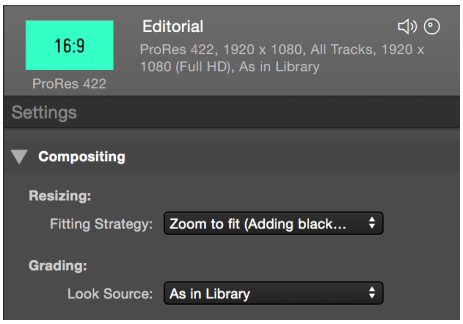
- **None**: Disables the color processing and displays the clips and thumbnails unmodified (as recorded).
- **File**: Reads the clip’s metadata and applies the color processing described in the embedded looks. In case there is no look embedded, Silverstack applies the default Log to Rec.709 conversion for the specific format.
- **Preset**: with this option you can choose the color processing used from a list of preset LUTs:



Setting the Look for Transcoding

While transcoding clips you can choose the look the clips will be transcoded with. You can change the settings for the Look source in the transcoding tab in the right bar (see figure 5):

- **As set in Library (“As in Library”)**: Applies the look that is currently selected for the specific clip in the Library. In case you need to transcode the clips with a custom look applied, this is the right option.
- **No Look (“None”)**: Transcodes the clips with no look applied (as they were recorded, with no color processing in the camera acquisition color space).
- **Look from File (“From File”)**: Reads the clip’s metadata and applies the color processing described in the embedded looks. In case there is no look embedded, Silverstack applies the default Log to Rec.709 conversion for the specific format.



Choose the look settings for transcoding

[1] The selected formats with Look Metadata reading are Alexa ProRes, ARRIRAW, Amira ProRes, RED Raw and Panasonic Varicam 35. If no look metadata is embedded in the file, a default log-to-video conversion is chosen for the specific format (e.g. XAVC with S-Log).

Visual Control Functionalities in the Playback Mode

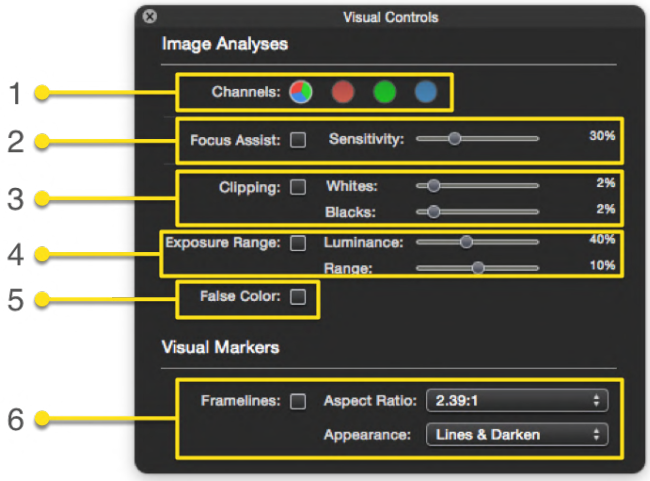


figure 1: visual controls in Silverstack

With the functionalities provided within the “Visual Controls” panel you can check the colors and quality of your video clip:

1. ***Channels:*** By selecting one of the three RGB-channels Silverstack shows the distribution of this color in the image of the video clip.
2. ***Focus Assist:*** The focus assist helps you to detect if your image is in focus by detecting the edges of the image. You can set the sensitivity.
3. ***Clipping:*** With the clipping functionality you can check which areas of your image clip are either in the whites or blacks.
4. ***Exposure Range:*** This option allows you to detect different ranged areas of luminance in your image.
5. ***False Color:*** You can use this option and active false color. The represented values can be found in figure 2
6. ***Framelines:*** add frame lines to visualize the clips with a different aspect ratio. More information in the article Frame Lines in the Playback View.

Color	Level	Description
red	99 – 100%	White clipping
yellow	97 – 99%	Just below white clipping/white shoulder
pink	52 – 56%	One stop over medium gray (Caucasian skin)
green	38 – 42%	18% neutral gray
blue	2.5 – 4.0%	Just above black clipping/black slope
purple	0 – 2.5%	Black clipping

Figure 2 “Values for clipping”

Note: You can change the unit for clipping and range in the application preferences.

Video Preview playback control

The Silverstack playback controls allow you to control the video preview with standard video controls (figure 3 #1) and the possibility to set IN- and OUT-points (#2) as well as to loop the video and zoom into it (#3). To show the original Log gamma instead to the Rec.709 conversion, select the #4 check box.

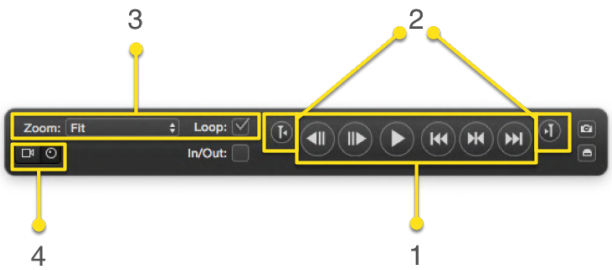


figure 3: standard playback controls

For video files in the Red format and ARRIRAW sequences you have additional functionality to change the playback resolution (figure 4 #1): You can select various resolutions, choosing between full, 1/2, 1/4 and 1/8.

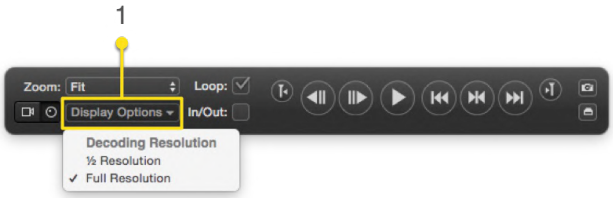


figure 4: playback controls for any video with multiple resolutions available

100% Zoom for Retina Displays

Silverstack is optimized to work with the **"Default"** settings for Apple retina displays which you can find under **"System Preferences > Displays"**. Choosing this setting, Silverstack will **map 1 media pixel to 1 physical pixel** of the display.

This setting is best suited for visual image analysis such as focus or sharpness.

Professional Video Scopes for Silverstack with ScopeBox

You can use ScopeBox by Divergent Media for software-based waveform and video scopes for Silverstack's player. ScopeBox offers a variety of waveform monitors and video scopes that enable image analysis and color control of the clip assets of your Silverstack library.

You can receive information about how to download, setup and license ScopeBox software on Divergent Media's Website. To use the integration of Silverstack in ScopeBox you have to run version 3.5 or later of the ScopeBox application.

Connecting Silverstack and ScopeBox via ScopeLink

Silverstack sends the current image of the player directly to the ScopeBox application by DivergentMedia's ScopeLink technology.To enable ScopeLink open the ScopeBox application.

Click in the upper left area of the ScopeBox main window to set a new source. Choose **"Add ScopeLink Source > Pomfort Silverstack"** from the context menu:

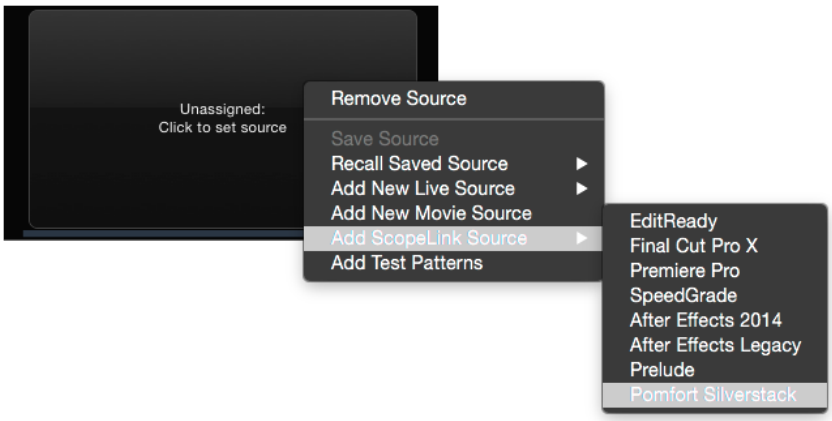


Figure 1: Add Pomfort's Silverstack as a source.

After that the source should show a pending image:

Figure 2: ScopeBox waiting for the Silverstack connection.

Now open Silverstack. Open a clip in the media player.

Make sure that in the preferences of Silverstack under **"External Video"** the checkbox **"Connect to ScopeBox"** is enabled. You reach the preferences from the Main Menu by choosing **"Silverstack > Preferences..."**:

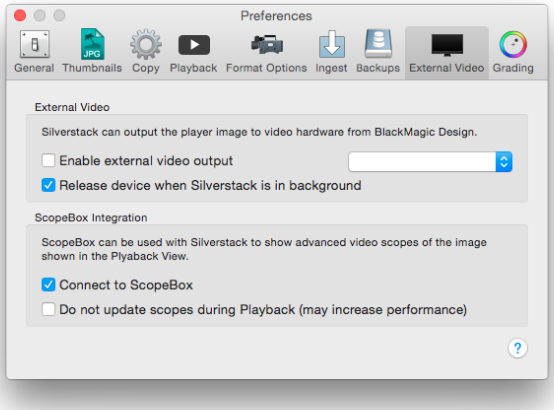


Figure 4: ScopeBox Preference in the External Video tab

There you can also choose if you want to update the frames in ScopeBox during playback in Silverstack. Checking this box may increase performance, but Silverstack only updates Scopebox when being paused.

When you switch to ScopeBox you should then see the default view including an image preview of the image showing in Silverstack:

Figure 3: The ScopeBox UI with a preview of the Silverstack clip and scopes.

Because of Silverstack's internal RGB processing, signals from of YCbCr based clips sent to ScopeBox via ScopeLink don't contain code values outside the legal range (even if they might be present in the source files).

Tags: waveform, vectorscope, histogram, rgb parade

Frame Lines in the Playback View

It is usual to record footage with an aspect ratio different to the one used in the final product, which makes the quality checking of the clips a bit more challenging. For this reason, Silverstack offers the possibility to overlay frame lines over the clips in the playback window, as well as for the SDI output.

The frame lines can be activated through the «Visual Controls» menu. You can open the visual controls from the **Main Menu**. Choose **“Playback>Show Visual Controls”**:

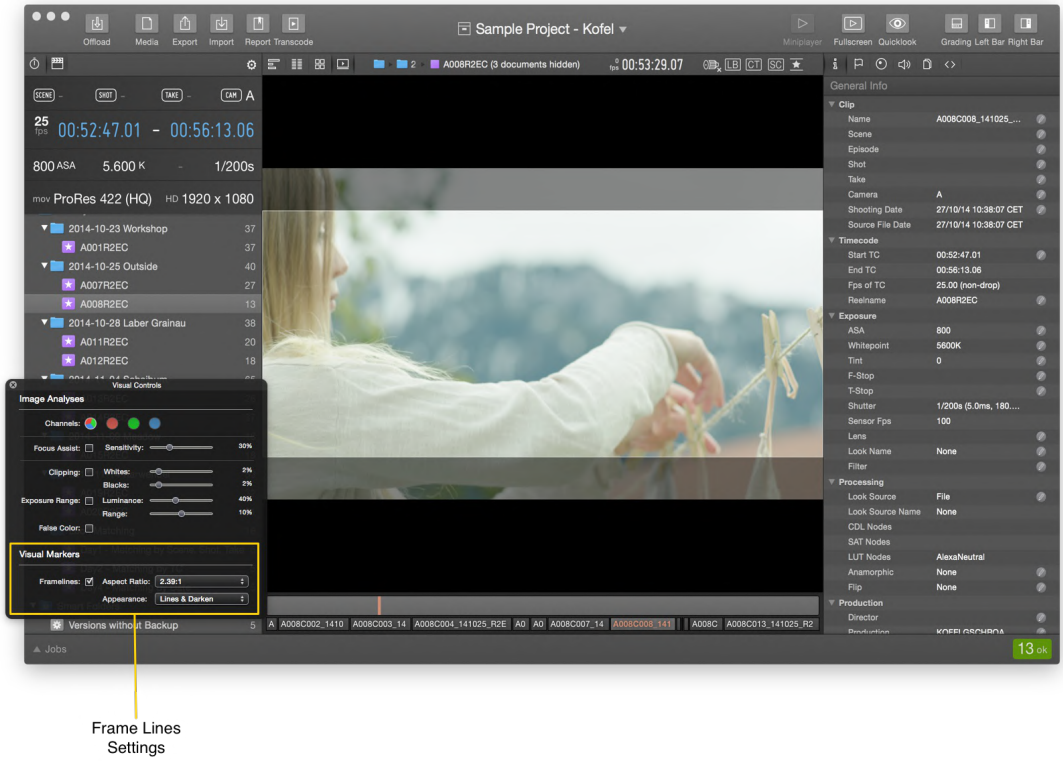


figure 1: frame lines settings

Once in the Visual Controls window you can activate the frame lines with the checkbox. You can then select the aspect ratio and appearance of the frame lines:

figure 2: aspect ration an appearance settings

You can enter a custom aspect ratio to apply it as frame lines. All entered **aspect ratios will be saved** in the dropdown and sorted in alphabetical order:

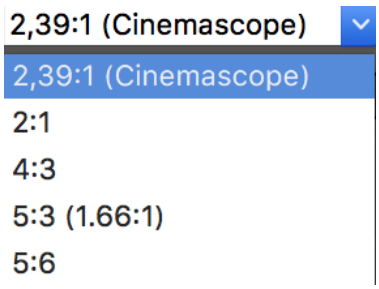


figure 3: The list of custom aspect ratios

Comments to the aspect ratios can be added in brackets after the aspect ratio (see example “2,39:1 (Cinemascope)”).

The list of aspect ratios is shared between all three places in Silverstack Lab where aspect ratios can be set: In the Visual Controls for framing assistance , in Crop, and in the transcoding configurations.

Frames lines are available for normal playback and SDI output. For more information about how to setup the SDI output in Silverstack, please refer to the article HD-SDI output in Silverstack.

Image transformation

The ability to de-squeeze footage recorded with anamorphic lenses and image flipping is available in Silverstack. This features are helpful to check the quality of the clips without distortions. Image transformations will be also applied if you decide to transcode the clips.

Anamorphic de-squeezing

figure 1: Anamorphic transformation

The de-squeezing option can be applied to a single or multiple clips in the Clip Info tab (⌘1) from the right panel. Scroll down to Processing info and an Anamorphic option will be shown. Click on the edit button and a panel will pop up as in figure 2. The available settings are 1.3x and 2.0x distortion, select the one that suites your needs and click on apply. The image will appear without distortions now.

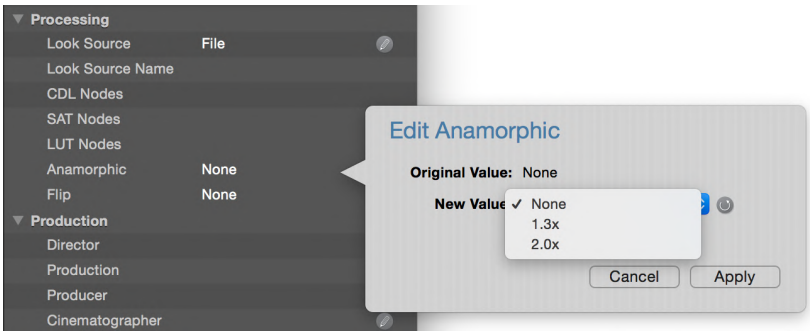


figure 2: de-squeeze settings

Image flipping

Some production workflows demand the use of mirrors, such as 3D productions. When the moment of quality check arrives, Silverstack offers the ability to flip the image vertically, horizontally or both at the same time as shown in figure 3. This feature can also be applied to multiple clips at a time.

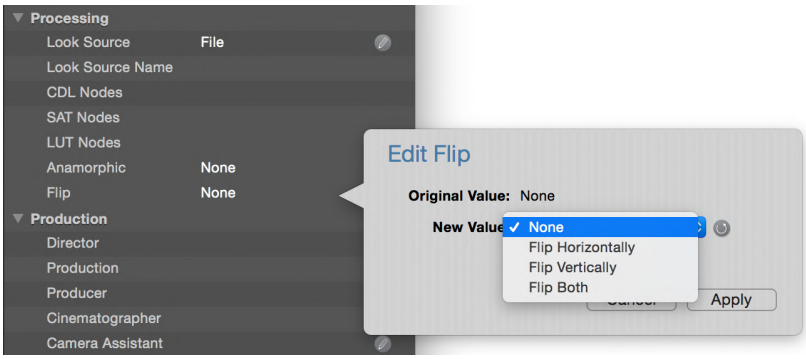
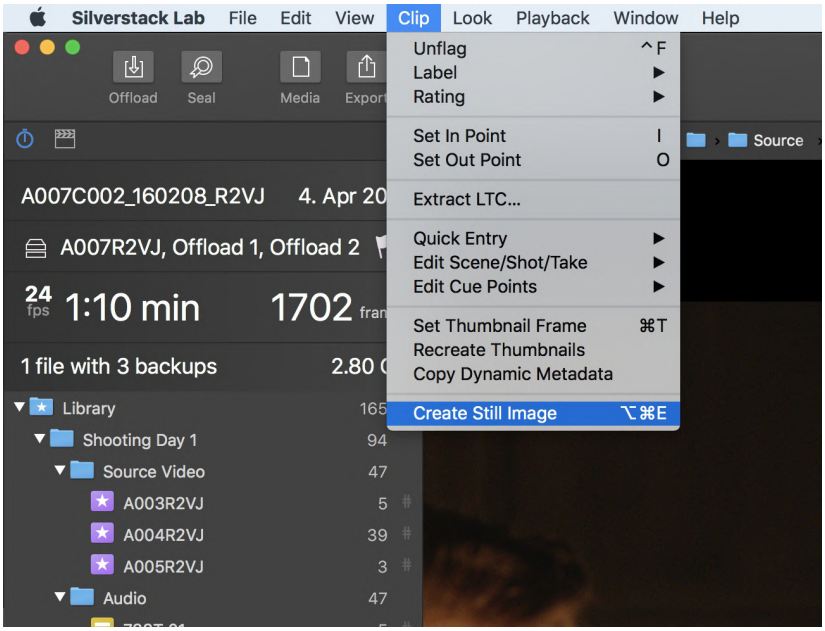


figure 3: image flipping settings

Tags: desqueeze, anamorph, anamorphic

Still Image Export

In order to export a still from a clip, simply move the playhead to the desired frame within the clip and select “Clip > Create Still Image” from the main menu as shown in here:



Clip menu: Still Image Export

Batch Export of Still Images for Multiple Clips

Additionally, Silverstack can export multiple still images at once. That's possible by either selecting multiple clips in the timeline from the Playback View or within the Table or Collection Views.

Depending on the context in the software, the still frame position used is different:

- **Playback and Timeline View:** Silverstack exports the **Current frame** in the playhead of each selected clip (indicated by the timeline ruler).
- **Table & Collection View:** Silverstack exports the same **Thumbnail image** displayed in the Table and Collection View.

  Note: Have in mind that it's possible to set the position for the creation of thumbnail images through the Preferences menu. That is going to allow the export of still images based on the same position while the **Table & Collection View** is active. Learn more about setting the position for the creation of thumbnail images in the article Choosing Custom Thumbnail Images.

Still Image Export Settings

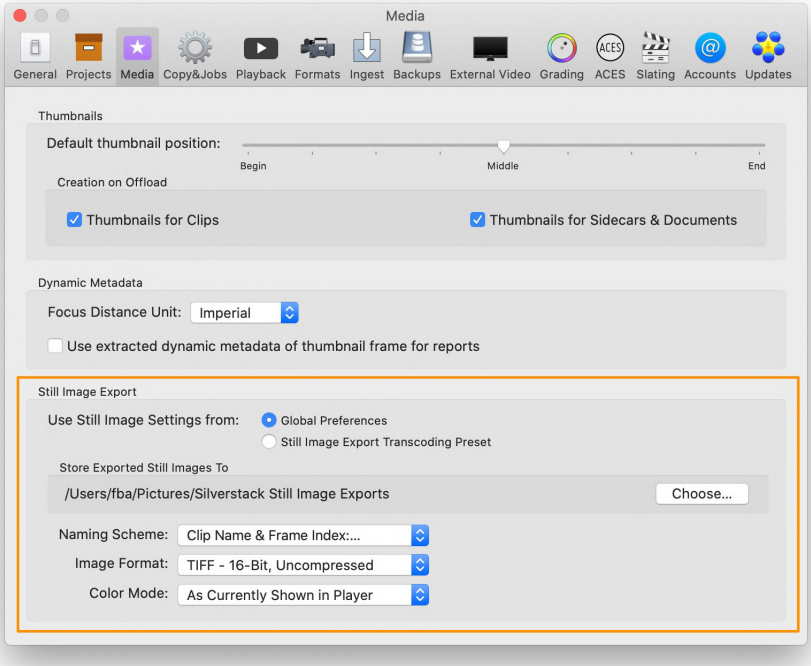
Global Preferences vs. Still Image Export Preset

Silverstack offers two methods for exporting still images:

- 1. Using the still image settings from the **Global Preferences** (default)
- 2. Using the still image settings from the **Still Image Export Transcoding Preset** (Silverstack XT only)

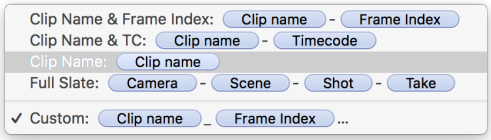
1. Using the Settings from the Global Preferences

There are multiple settings and formats available for the still image export feature in the Preferences menu, under the Media tab:

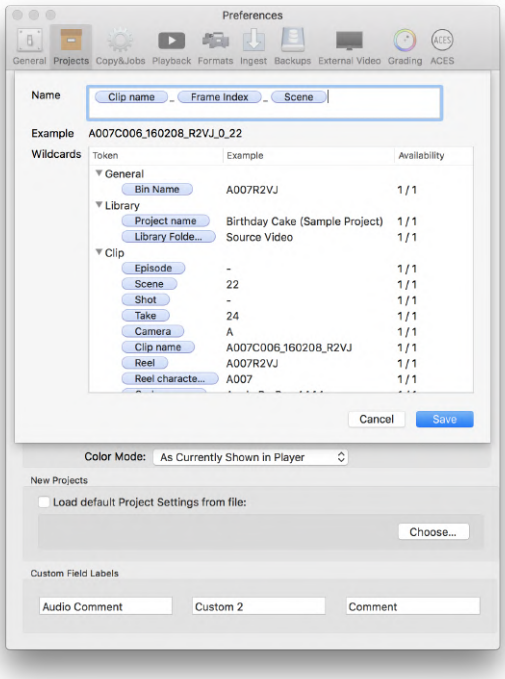


The following options and actions are available:

- **Store Exported Still Images To:** Choose the directory to store your still grabs on your system by clicking the “Choose…” button.
- **Naming Scheme:** With the naming scheme you can define the naming for the exported still image files.



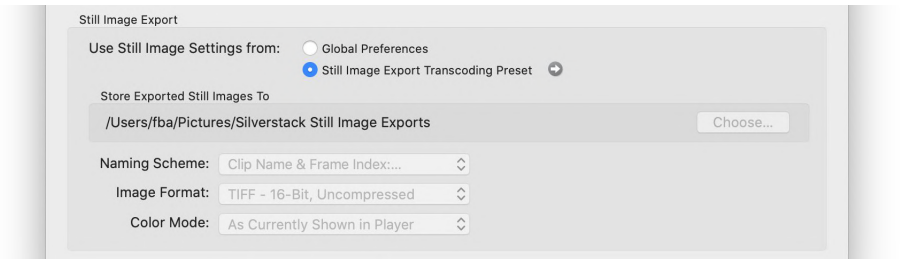
  - There are multiple preset options available:
  - In addition, the “Custom:” option allows users to build a file name based on the metadata of the clip the still is exported from. By clicking “Customize…” you can open the metadata wildcards panel and choose from the available wildcards to build a custom file name scheme:



- **Image Format:** The available image formats for exporting frames are:
  - JPEG – 8-Bit, 90% Quality
  - TIFF – 8-Bit, Uncompressed
  - TIFF – 16-Bit, Uncompressed
- **Color Mode:** The different color modes are:
  - As currently shown in player
  - Original color
  - Both: Exports two images with both of the above settings – one as shown in player and the other with the original color.

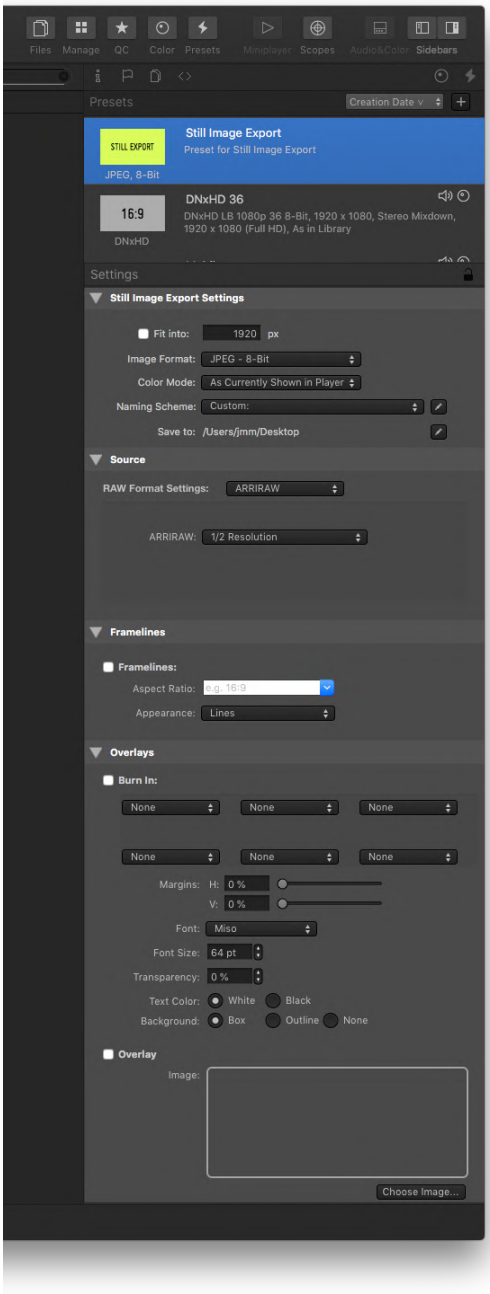
2. Using the Settings from the Still Image Export Transcoding Preset

In order to activate that mode, users have to select the option 'Use the still image settings from:**Still Image Export Transcoding Preset**':



Media Menu: Still image export settings

Once that setting is enabled, the '**Still Image Export**' preset is going to appear in the Presets panel of the Transcoding Configuration menu:



Transcoding Configuration Menu: Still Image Export Transcoding Preset

Volume playback priority

High data rate video playback is very hardware demanding. As Silverstack offers a multiple destination backup option, your valuable clips will be stored in different volumes. Different types of volumes may have variant interface connections. To increase playback performance in Silverstack it is possible to select the playback priority.

To accomplish that you will have to go to the *Volumes* tab, select the volume you want to set its playback priority and adjust it on the right panel (figure 1 #1).

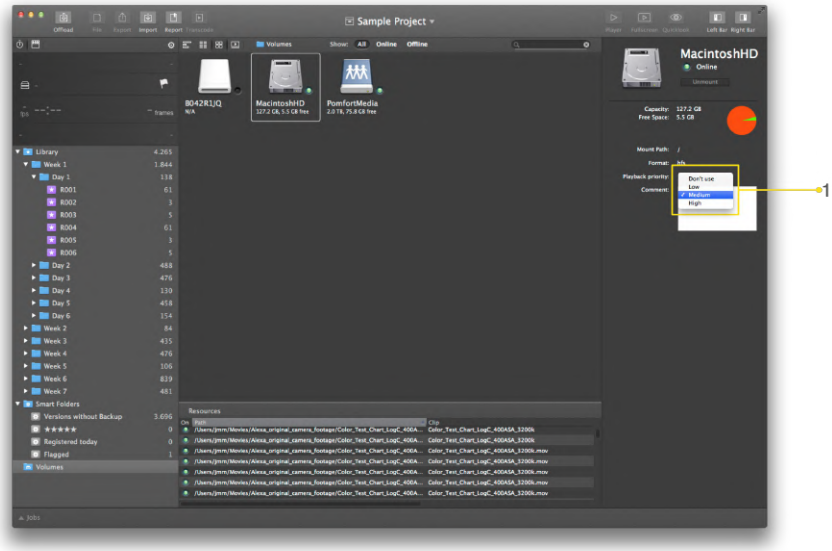


figure 1: playback priority

If your main playback volume is offline, Silverstack will automatically select another volume in the order of your playback priority . **If no priority is selected, Silverstack will randomly select the playback source volume.**

Quick Look Features

In Silverstack you are able to preview all of your Assets that are natively supported by the Quick Look feature of MacOSX and offloaded/registered to your library. This is especially useful if you would like to review those Assets which don't have advanced camera support. Assets like any PDF document or image (i.e. a screenplay, storyboard, etc.)

There are also some situations where it can be handy to preview advanced camera support Assets. We will briefly review some different scenarios that might be useful on the film set.

General

Quick Look lets you browse files — photos, Pages documents, Keynote presentations, QuickTime movies, Microsoft Word and Excel files — without having to launch an application or leave Silverstack.

Assets that are fully supported in Silverstack are playable via the regular playback function in the Playback view, in addition to the Quick Look feature.

You can access the Quick Look feature from by going to the Main Menu: **"Playback > Preview in QuickLook".** To improve your workflow you can also use the keyboard shortcut command **"Alt + Cmd + L"**.

Case 1: Review supported Assets

The Quick Look feature helps you to review an Asset without changing into the Playback view. This could be especially useful when you are reviewing shots in a camera roll with the director but still want to give him a glimpse overview (via thumbnails in the collection view) of the camera roll of the entire shooting today.

Or if you would like to review the take with recorded scratch sound from the camera. If the recorded scene includes audio it will automatically playback with the Quick Look feature.

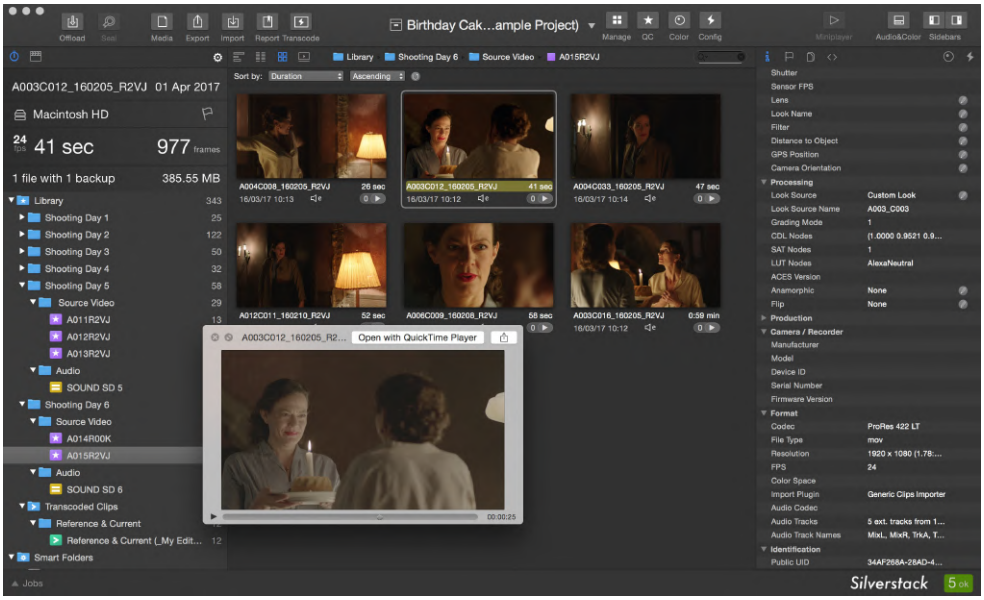


Figure 3: “Collection View with Quick Look”

Case 2: Review Assets without extended camera support

With the use of 3rd party software it is possible to preview footage and Assets that are not natively supported by Silverstack neither with MacOSX. These can be for example formats like XDCAM HD with help of tool mxf4Mac Import plugin and Final Cut Pro.

Also some other 3rd plugins are out there. Please review this article to have a list of possible 3rd plugins.

Case 3: Review Storyboards, Images, Sounds and PDFs

You can also give the director or the camera man the ability to review storyboards (like in figure 4.) or listen to some audio files that you offloaded from the sound department.

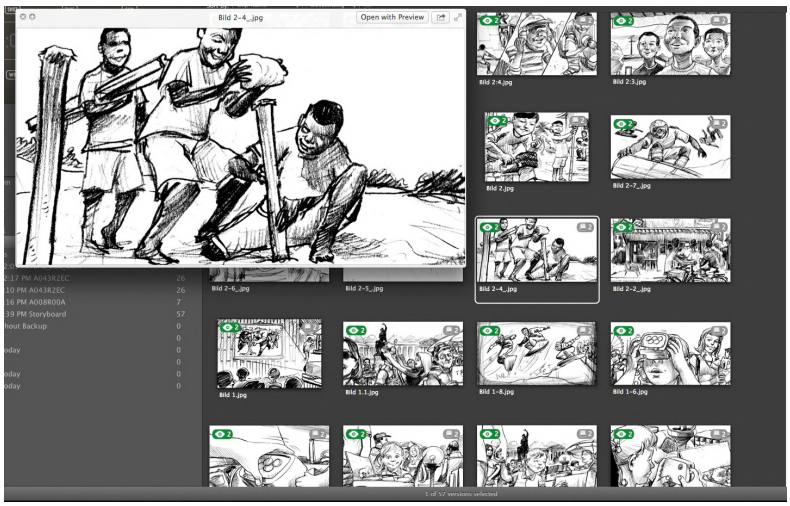


Figure 3 : “Quick Look Storyboard”

Case 4: Review multiple Assets (non consecutive)

With the Quick Look option you can also quickly watch a selection of takes from your camera roll. This is useful when you have many takes in one roll. You are still able to stay within your current view like in figure 3 but you are able to watch multiple clips and discuss those with the script continuity, the director or camera man and simple change clips with back and forward arrow within the Quick Look window.

To make a non consecutively selection in the Collection-View (like in figure 3)you simple need to press the command key. If you like to make consecutive selection you simple press the Shift key. These simple command also applies for the Table-View.

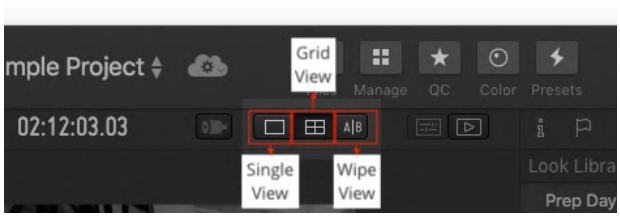
Grid and Wipe View in the Player

While all Silverstack versions offer the single view playback mode, Silverstack XT and Silverstack Lab include the **Grid View** and Silverstack Lab the **Wipe View** modes:

- The **Grid View** mode allows to display **multiple clips side-by-side.**
- The **Wipe View** mode lets you share the playback window between 2 clips, activating an **adjustable splitting slider** in the image.

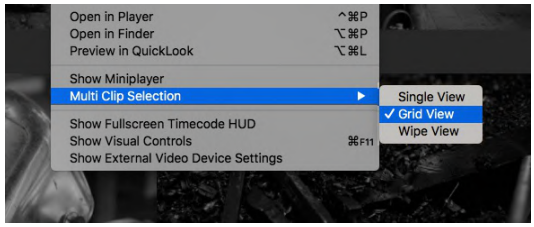
Both modes can be active **in the Silverstack Player** and on the **HD-SDI output**.

The Grid View and Wipe View modes can be accessed from the view controls in the header bar of the Playback UI:



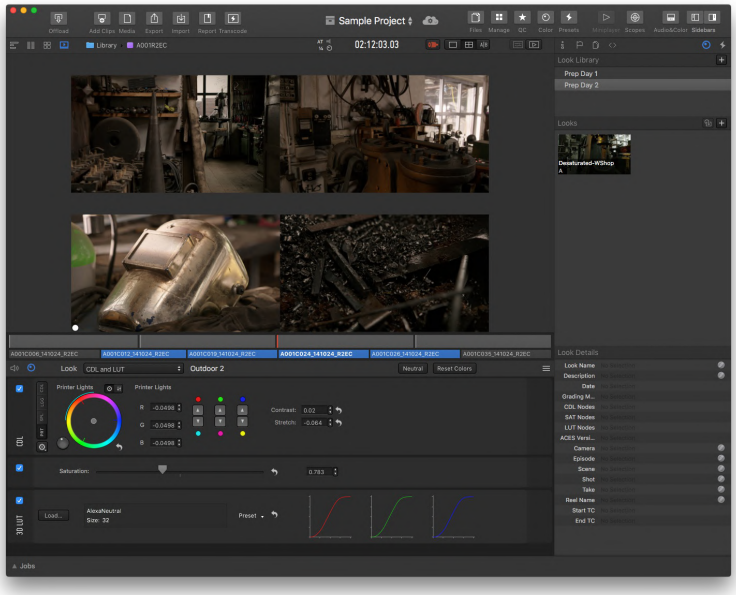
View selection menu

Alternatively, you choose the different view modes from the 'Playback' Main Menu bar:



Playback Menu: Multi Clip Selection

The Grid View Mode



Grid View playback mode

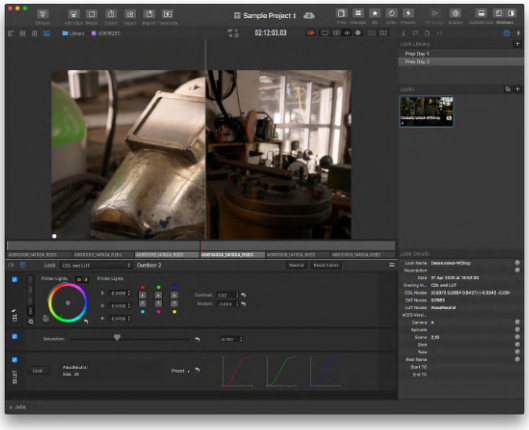
After accessing the Grid View you have to select multiple clips in the timeline to show them in the grid. This can be done with the usual macOS modifier keys for multiple and continuous selection. Hold *shift* while clicking to select a range of clips and *cmd* to select and deselect single clips.

Timeline with three selected clips

The timeline in the previous screenshot shows a selection of three clips. The first clip (A006C009_160208_R2VJ) in bold white font is the primary current clip. Editing metadata and adjusting the grade will affect the current clip only. It's also marked in the image with a little white dot in the lower left corner.

The current clip part of a selection can be changed by **clicking on another clip of the selection or by clicking on the image in the player**. To deselect clips from the selection, just hold the *cmd* key while clicking. Click a non selected clip to dissolve the selection.

The Wipe View Mode



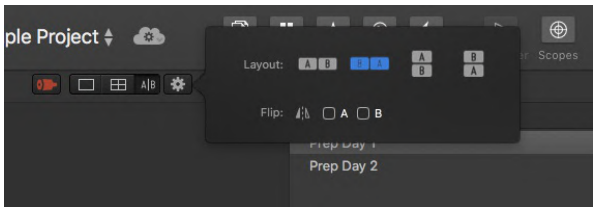
Wipe View mode in the Player

The Wipe View playback mode enables users to accurately compare **2 clips** side-by-side with the help of a slider. You can move the image splitter (e.g. shown in “Left – Right” mode) by dragging it over the clips in the player.

In order to access the Wipe View, you have to select 2 clips in the timeline. This can be done with the usual macOS modifier keys for multiple and continuous selection: Hold *shift* while clicking to select a range of 2 clips and *cmd* to select and deselect single clips.

Settings

There’s the possibility to switch the **layout of the clips**, as well as flipping them, through the gear button in the view controls:



Wipe View Layout menu

In the reference options you can choose which compositing mode should be used for displaying the clips. Options are:

- Left – Right
- Right – Left
- Top – Bottom
- Bottom – Top
- Flip (mirror vertically) the image for improved arrangement

The order of clips depends on the order in the timeline. “A” always refers to the first/left clip in the selection from left to right, “B” always to the last/right clip in the selection.

Lightweight Copy of Looks

The Grid View and Wipe View playback modes can be useful to reference and compare grades. Therefore it can be handy to easily copy grades. By using the Look library in the right bar looks can be easily created and applied to one or multiple clips. All necessary functionality can be found in the “Look” menu of the Silverstack Main Menu:

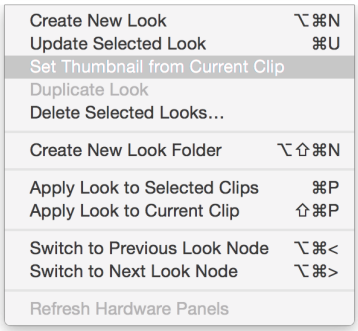


Fig. 5: The “Look” menu with functionality to create and apply looks

Learn more about the Silverstack Look Library in the article [The Silverstack Look Library](#).

Grid View Functionality per Silverstack Product Version

The Grid View functionality differs for different Silverstack versions:

- **Silverstack:** No Grid View available.
- **Silverstack XT:** Grid View limited to 2 clips.
- **Silverstack Lab:** Grid View limited to 12 clips (only due to performance reasons).

Wipe View Functionality per Silverstack Product Version

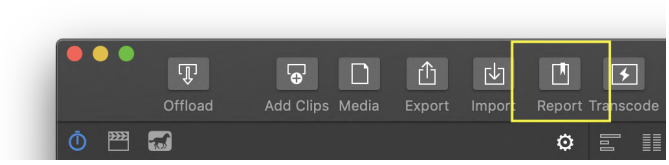
The wipe view is only available in Silverstack Lab.

Creating Reports

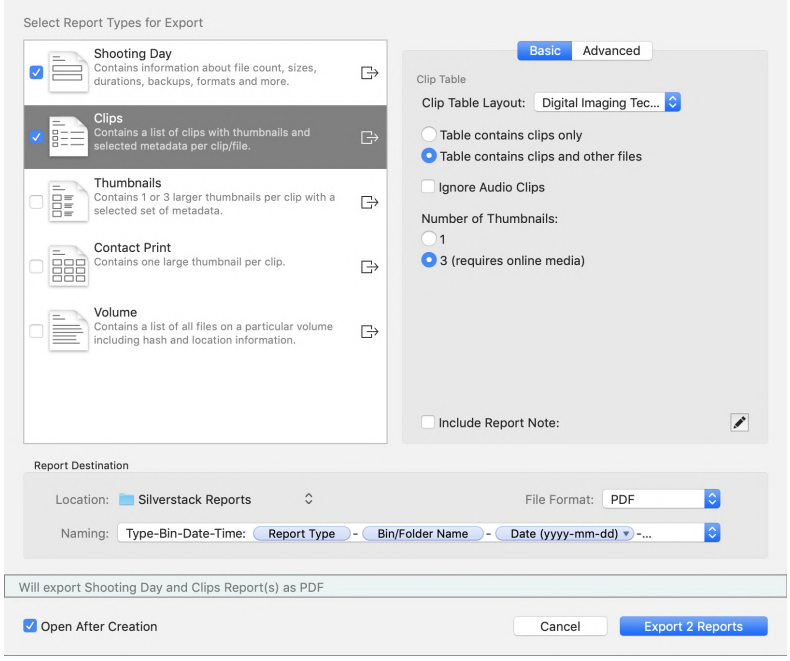
Creating Reports

A crucial feature in Silverstack is the **report creation** functionality. For this reason, Silverstack offers a flexible and powerful reporting center, offering users the opportunity to share clip information and thumbnails in a well-arranged and accessible PDF document. Reports can include all the metadata needed to document camera media traveling to different professionals involved in many stages across the production workflow.

Therefore, in order to export a report, choose a project, folder or bin from the Silverstack library and open the**Report Wizard** from the button in the toolbar:



The Report Wizard



Different Report Types

Silverstack offers you the possibility to export different types of reports. Each one of them is designed for a different professional involved in the production process. Additionally, it's possible to customize what kind of information is shown in the reports (more information on that within the each report type article).

The different types of reports are:

- Shooting Day Report
- Clips Report
- Thumbnails Report
- Contact Print Report
- Volume Report

Report Destination

Location

Adjust the location the reports are exported to.

File Format

By default all reports are created in PDF format. You can change the report file format to HTML in the "File Format:" pop-up menu.

Since Silverstack version 7 the CSV report has moved to the "Export" menu you can also open from the toolbar.

Naming

Adjust the naming for the reports and set it to custom to use metadata path wildcards for customized naming. See the section “Report Naming Scheme” at the end of this article for more information.

Open After Creation

By default the created report will open after they have been exported automatically in the Preview macOS application. You can prevent that by disabling the checkbox in the lower left corner of the wizard.

Production Logo

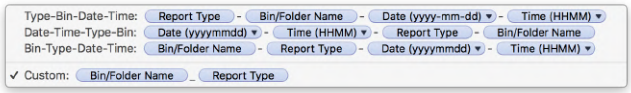
The production logo that has been added in the Project Overview will automatically be included at the top right of all reports.

We recommend using logos that have a width of 130px. The containers carrying the logo in the reports are limited to that width but are not limited in height.

Report Naming Scheme

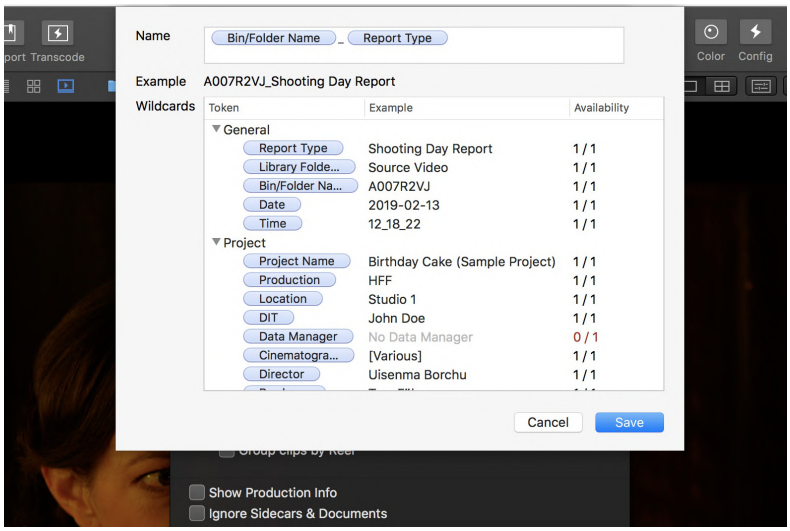
When saving reports the naming scheme option help to select a meaningful naming based on your project context.

There are preset options available for the naming of the reports:



Report naming scheme preset options

In addition to the presets the “Custom:” option allows to build a file name based on available metadata. By clicking “Customize…” you can open the metadata wildcards panel and choose from the available wildcards to build a custom file naming scheme:



Available wildcards for naming the report

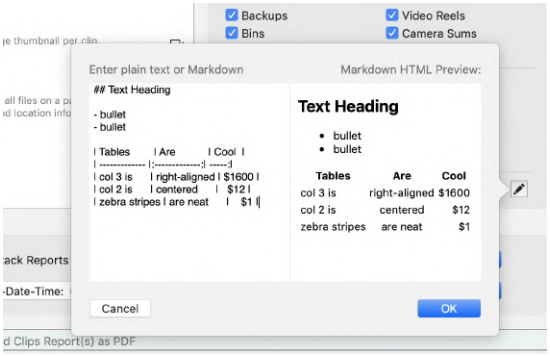
Export Multiple Report Types Simultaneously

It is possible to export multiple report types simultaneously by enabling the checkboxes on the left besides the entries per report report type. To customize a report type select it from the table and adjust the according settings that are revealed on the right. By default a Shooting Day and a Clips Report are created.

The quick export icon on the right of each report type table element lets you quickly export a single report for preview.

Include Report Note

Each report type allows to include a general report note. Enable the “Include Report Note” checkbox and add your custom report note. Report notes support Markdown language.



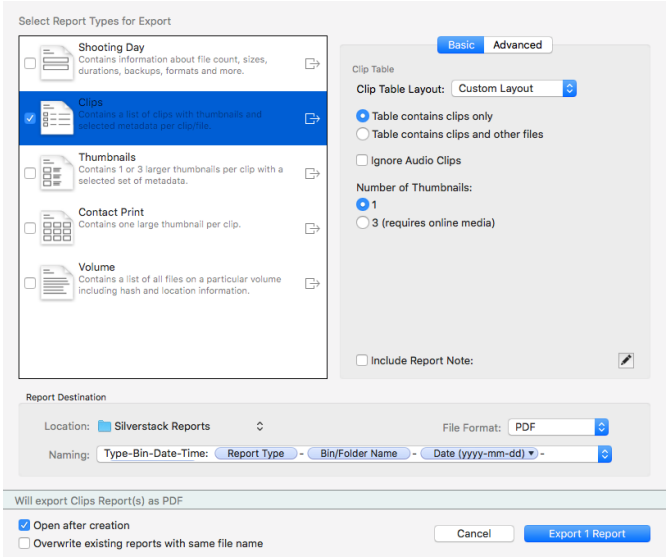
Related articles:

[Customizing Clip Reports]

[Choosing custom thumbnail images]

Customising Clip Reports

The *Clips Report* is the most customizable type of report. Silverstack offers a flexible and powerful reporting center, allowing users to customize Clips Reports made for production and post-production workflows. These reports include thumbnails and metadata in a well-arranged and accessible PDF document. Reports include all the metadata needed to document camera media traveling to different professionals involved in many stages across the production workflow.

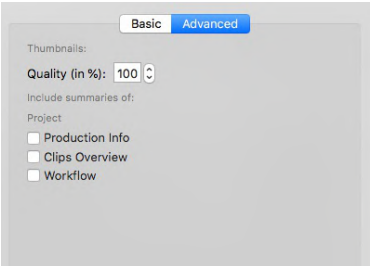


Reporting Center – Customizing Clips Reports

Basic Options

- Clip Table Layout
- Table content: Clips only or clips and other files. Sidecar documents can be included in the report
    - Ignore Audio Clips
- Number of Thumbnails: 1 or 3 (see section “Three Thumbnails per Clip”)

Advanced Options



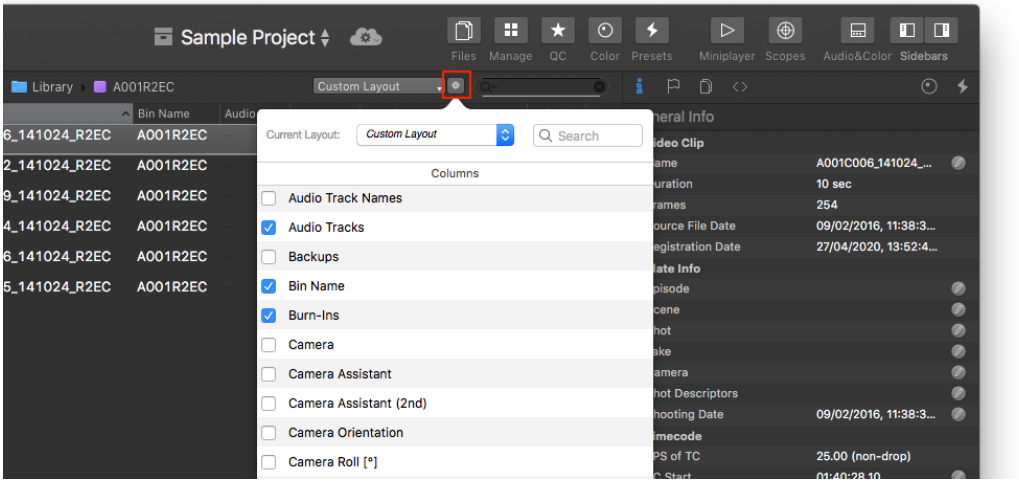
Reporting Center – Clips Reports: Advanced menu

- Thumbnail Quality in %: setting to adjust the compression ratio of the images with its resulting data reduction.
- You can include the following summaries:
  - Project
    - Production Info
    - Clips Overview
    - Workflow

Clip Table Layout Customization: Metadata Columns

Users can apply their own Table View column layouts to customize the information needed in Clips Reports.

In order to create a Custom Layout for the Table View, users can select the small gear button and check/uncheck the metadata columns according to their workflow needs:



Clips Reports – Customizing the table view for a Clips Report

Once the layout contains the required columns and those are sorted correctly, it can be saved thorugh the 'Save…' menu:

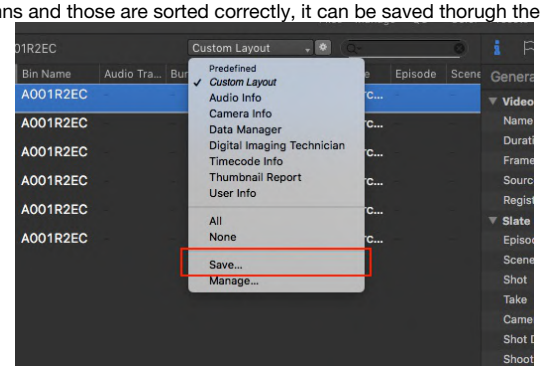
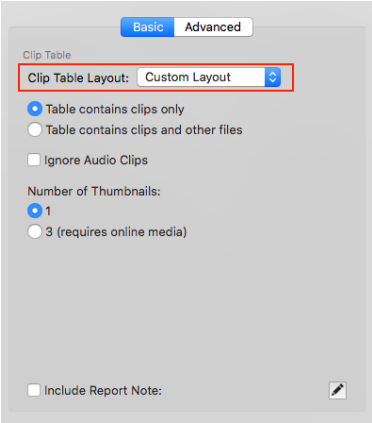


Table View layout – Clips Reports customization

Finally, proceed to the report center to create a Clips Report and choose the 'Custom Layout' as the Clip Table Layout. The resulting Clips Report will contain that exact layout:



Reporting Center – Clips Reports: Basic

Thumbnails in Clips Reports

Users can customize the thumbnails shown in their reports to get a better preview of the footage. Silverstack by default creates one thumbnail for each ingested clip that is saved in the library. This thumbnail is used for referencing clips in the Clips, Thumbnails and Contact Print Reports. As shown in the previous screenshots, it's possible to choose between 1 and 3 thumbnails for each clip in the report.

How To

When selecting the Clips or Thumbnails Report in the report wizard you can choose as **"Number of Thumbnails:"**:

- 1
- 3 (requires online media)

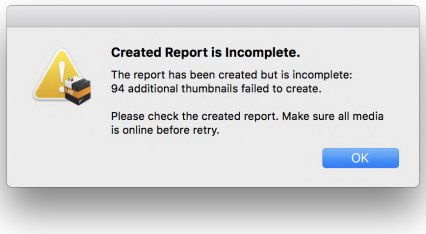
During the export process Silverstack creates two thumbnails for the first and the last frame of the clip in addition to the custom thumbnail. In contrast to a single thumbnail Clips Report that accesses the custom thumbnail, the **three thumbnails Clips Report requires online media** for the ad hoc creation of the additional thumbnails.

Position of Thumbnails

The position for the creation of the additional thumbnails can be influenced by setting in and out points for a clip. The position of the custom thumbnail can be set in the Preferences menu. Additionally, thumbnail creation on ingest can be deactivated in the Preferences. For more information on how to select thumbnails, please refer to the article Choosing custom thumbnail images.

'Additional Thumbnails Failed to Create' Warning

If the thumbnail creation process fails it can have different reasons. One common, simple reason is offline media. If the report fails the following alert will be shown:



The alert when something went wrong with the creation of additional thumbnails.

Please be aware that if no custom thumbnails have been created the custom thumbnail will show a placeholder icon in the reports. **Always take a look at your report to ensure its content.**

Hiding Thumbnails in Clips Reports

Alternatively, it's possible to completely hide or skip thumbnails in Clips Reports. In order to accomplish that, just remove the 'Preview' column from the Table View custom layout:

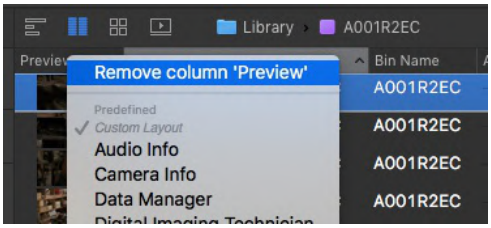
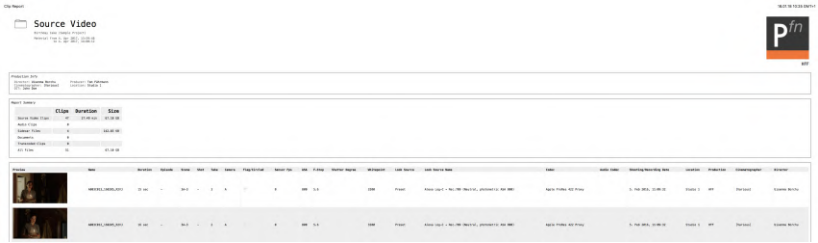
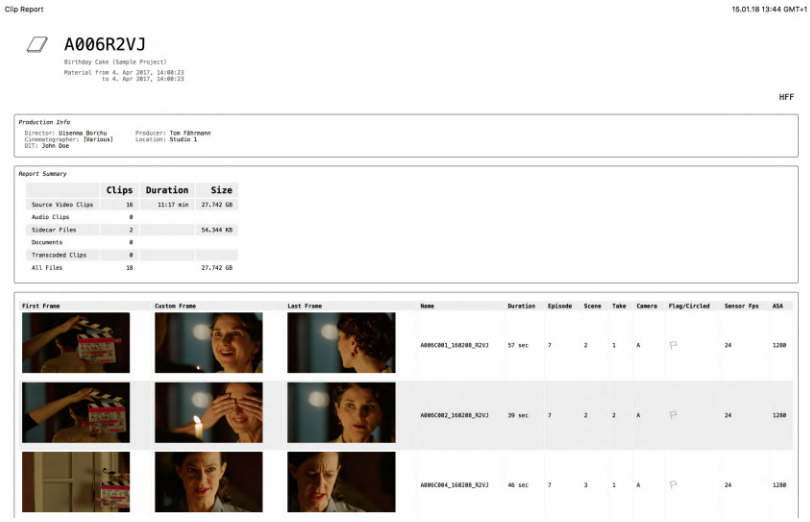


Table View – Removing the 'Preview' column

Example of a Clips Report



Example of a Clips Report – click to get a closer look



Example of a Clips report with three thumbnails

For more information about this topic, please check the article Creating Reports.

Metadata Handling

Metadata Handling: View, Organize, Add, and Filter Clips

The clip library is the core of Silverstack. It easily enables you to inspect all the metadata of your clips and let you organize all your clips by these metadata. During offload and backup all clips and files plus their file copies are registered in the Silverstack's clip library. Over time using Silverstack in your production you always have access to these clip metadata which refer to your project based media files. During all organizing and editing tasks Silverstack never modifies the data of the original and their backups but saves all changes separately.

We will give you a short overview about how to modify and add metadata in the clip library:

Enter Metadata

Metadata (metacontent) is defined as data providing information about one or more aspects of your clips, for example such as:

- Timecode
- Resolution
- Sensor
- Frame Rate
- Take, Shot, Scene
- Reel name

A lot of clip metadata like resolution, reelname, or exposure is already added to your clips by the camera and is therefore not editable. Non-technical metadata like scene/shot/take information however can be edited but is not stored within the original video files. Instead Silverstack saves this editable information and links it to the corresponding clip file. You can add a lot of this supplementary metadata very easily in Silverstack.

You can edit metadata in the Silverstack Information panel, in the "*General*" (figure 1 #1) and "*User*" tab (figure 1 #2). Information edited in the "*General*" tab can be applied to several selected clips. For doing so, click on the small pen symbol (figure 1 #3) right to the metadata field. Make your desired changes and enter the information by clicking "*Apply*".

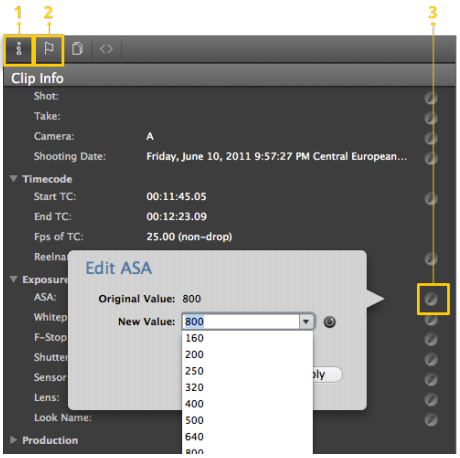


figure 1: Information panel

Metadata like slate information, comments, ratings, flaggings etc. can be edited in the "*User*" partition (figure 2) and affect exclusively the currently active clip.

- Slate Info: Enter Scene/Shot/Take information, use the arrow keys to increase or decrease a value.
- Flag: By flagging a clip (figure 2 #1) you brand it with a flag symbol which can be interpreted individually.
- Rating: You can rate each clip (figure 2 #2) by assigning a range of zero to five stars to it.
- Comment: Save important information regarding a clip by commenting (figure 2 #3) it.
- Label: Each clip can be labelled (figure 2 #4) and thus be categorized. Each label in the drop-down menu can be edited in the application preferences. You get there pretty fast by clicking on "*Edit..*" in the drop-down menu as you can see in figure 2 #5.

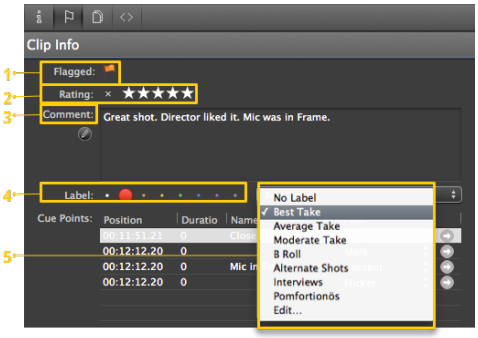


figure 2: Information panel – "User" section

- Cue Points: The cue points table (figure 3) shows all set markers for this clip (#1). For a better overview of your markers, within a clip you can assign each marker to one of a set of predefined categories (#2) and also search for them (#4). You can add new markers, delete existing and jump to the next by the buttons in the lower left corner (#3).

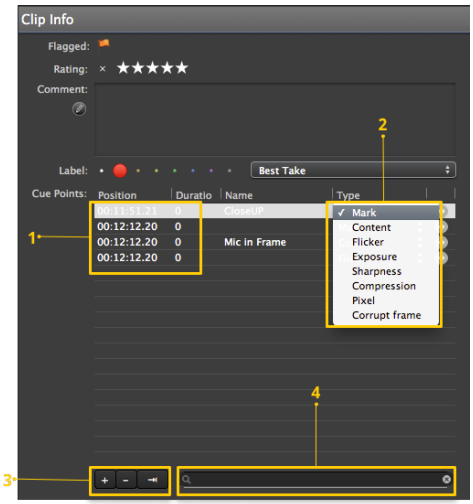


figure 3: Information panel – “User” section: Cue points

Using the Clip Information View

To inspect, edit, and add metadata you can use the information view shown in the right sidebar.

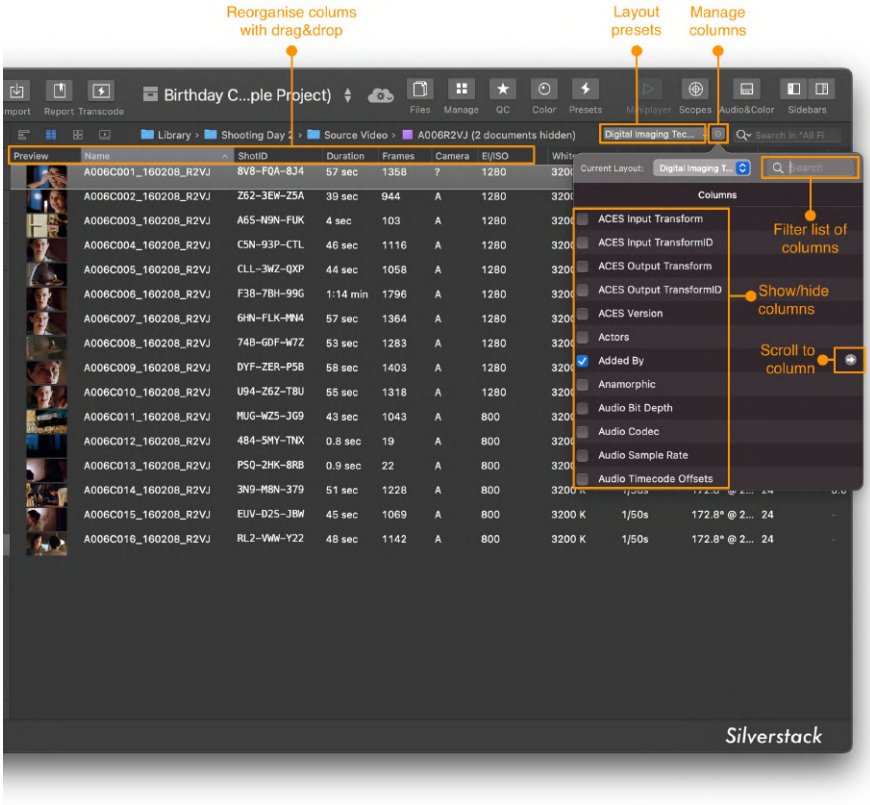
The Information view provides several subviews:

- General Info – Overview of the clip’s metadata
- User Info – Additional metadata like slate information, ratings, comments, and cue-points
- File Info – List of file resources, showing the different disk the clip was copied to
- Header Info – Detailed information of all metadata extracted from the clip

Using the table view

Silverstack’s clip table view is a great way to get an overview of the various metadata of a set of clips. Some of the fields are editable and you can jump from field to field by pressing the TAB key.

Custom table layouts can be saved and restored. You can re-arrange columns by dragging their table headers. Clicking the gear button reveals a user interface with a list of all available columns. Via the checkbox, each column can shown or hidden. The arrow button which appears only near activated columns, allows to automatically scroll the main window to a position where the specific column is in the visible area.



Manage the table layout

Using the Quick Entry panels

In the playback view the *"Quick Entry"* panels allow you to easily set metadata for the current clip via keyboard shortcuts in a very fast way. Here is an overview of the available commands:

1. Rating ⇧+⌘+A
2. Comment ⇧+⌘+S
3. Label ⇧+⌘+D
4. Scene/Shot/Take ⇧+⌘+T (figure 4)

You can also trigger the panels from the Silverstack menu: *Edit* > *Clip* > *Quick Entry*

Quick Entry panel for Scene/Shot/Take information

Filter By Metadata

The more metadata you have added to your library the better you can use it to organize your clips using some metadata attributes.

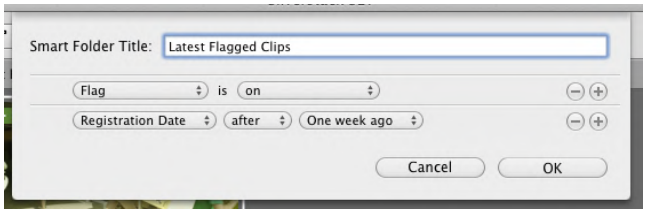
Search

You can query all metadata fields by using the search field in the upper right of Silverstack . To search for cue points use the search field at the bottom of the "*User*" tab within the information panel (figure 3 #4).

Smart folders

Smart folders are folders that show all clips that match some criteria. Silverstack creates some smart folders by default like *"Registered today"* a folder that contains all clips that were added to the library today.

To create your own smart folders, just click on the "+" button in the lower left and choose *"Add Smart Folder"*.



Adding a smart folder showing the flagged clips of the last week

You can now specify the criteria a clip has to fulfill in order to be added to the smart folder. If you are adding more than one filter option, you have to choose if the clip has to fulfill only one or all of it. The example above show a simple smart folder showing all the clips that are flagged and that were registered during the last week.

Export Metadata

To really leverage your metadata you might want to export the information for usage in other tools of your digital cinema workflow, Silverstack provides the following export options:

- Reports – Create a report that contains an overview on all clips and save it as pdf/html.
- CSV, XML – Create files that you can import in spreadsheet applications like Excel or Numbers. Or write your own scripts to process the data.
- Transfer to Final Cut Pro – Get your clips and the metadata into Final Cut Pro 7 and X.
- Transfer to AVID Media Composer – Get clips and metadata into AVID using ALE files

For further information about the Silverstack "*Transfer*" function go to the respective article Transfer.

Note: Not every transfer format can carry the same amount of information. That is why metadata workflows differ from format to format and thus from tool to tool.

Import Metadata

You can import certain metadata file formats from 3rd party applications to get additional clip metadata in the Silverstack library via the Import menu in the toolbar. Additionally, you can take over metadata when syncing audio clips or when matching looks created in Livegrade.
Further information how to choose and validate imported metadata is provided in the article Preview Metadata Before Importing.

Tips & Tricks: Quick metadata editing

The clip library is the core of Silverstack. With this guide we would like to give you some tips to speed up the metadata editing process. During offload and backup all clips and files are registered in the library and metadata can be added while still copying the files.

Here are some features that might improve your metadata workflow in Silverstack:

1. Batch metadata editing

Silverstack offers the possibility to add metadata to multiple clips at a time. Simply select the different clips in the table and list view and click the edit button from the metadata field on the right panel (figure 1 #1). Make sure to check the «Apply to selection» check box (figure 1 #2) to modify all the selected clips.

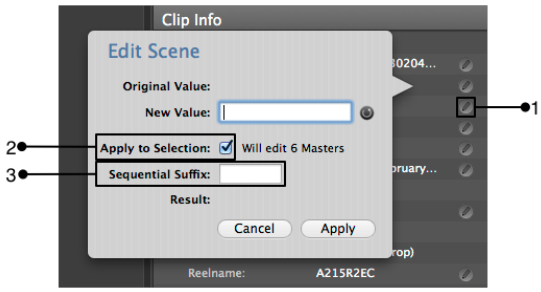


figure 1: Batch metadata entry and sequential suffix

2. Sequential suffix

Silverstack lets you add a sequential suffix to certain clip metadata fields:

- Clip name
- Scene
- Shot
- Take
- Reel name
- Lens
- Look name
- Filter

To use this feature, simply write the fixed element of the name in the «New value» and the starting value of the sequence (integer number, letter) in the «Sequential suffix» box (figure 1 #3). For example enter: New Value: “Reel” and Sequential Suffix: “1” and the result is “Reel1”, “Reel2”, “Reel3”, etc.

3. Quick Entry

In the Playback View the «Quick Entry» panels allow you to easily set metadata for the current clip via keyboard shortcuts in a very fast way. Here is an overview of the available commands:

- Rating ⇧+⌘+A
- Comment ⇧+⌘+S
- Label ⇧+⌘+D
- Scene/Shot/Take ⇧+⌘+T

figure 2: Quick Entry panels for Scene/Shot/Take information

You can also trigger the panels from the Silverstack menu: Edit > Clip > Quick Entry

4. Keyboard shortcuts

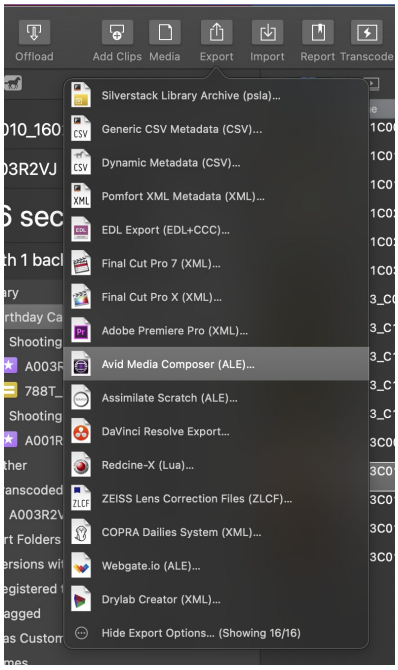
Silverstack’s metadata related keyboard shortcuts:

⇧⌘ = Increase rating
⌘ – Decrease rating
^ 0 Clear
^ 1 Set rating to 1
^ 2 Set rating to 2
^ 3 Set rating to 3
^ 4 Set rating to 4
^ 5 Set rating to 5
^A Increase scene
^Z Decrease scene
^S Increase shot
^X Decrease shot
^D Increase take
^C Decrease take
⌥⌘ + Increase label
⌥⌘ – Decrease label
⌥⌘ 0 No Label
⌥⌘ 1 Best Take
⌥⌘ 2 Average Take
⌥⌘ 3 Moderate Take
⌥⌘ 4 B Roll
⌥⌘ 5 Alternate Shots
⌥⌘ 6 Interviews
⌥⌘ 7 Pomfortionös

Transfer metadata to FCP 7, FCP X, AVID Media Composer, and Adobe Premiere

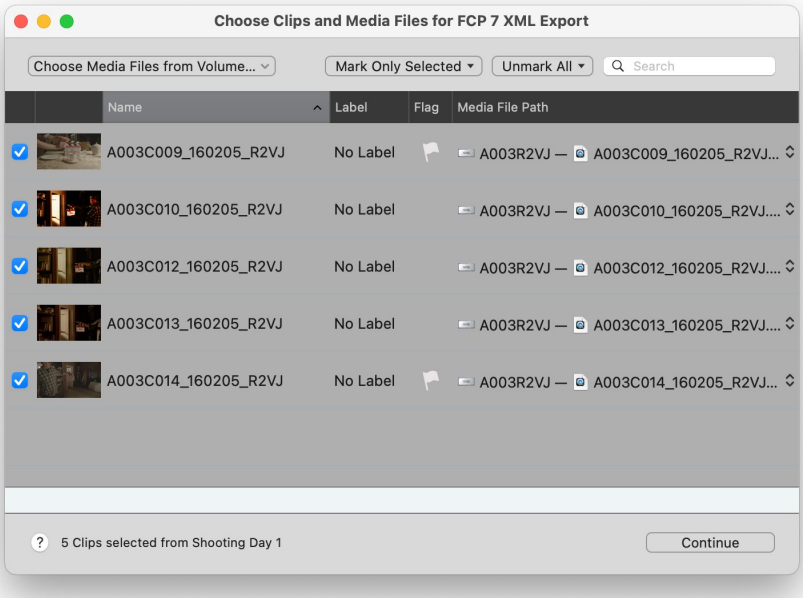
To process your clips in other Tools like Avid Media Composer, FinalCut or Adobe Premiere you can use transfer wizards.

Navigate to the level in your project tree that contains the clips you want to transfer and click “Export” in the actions bar. Now choose the desired program to transfer your clips and corresponding clip metadata.

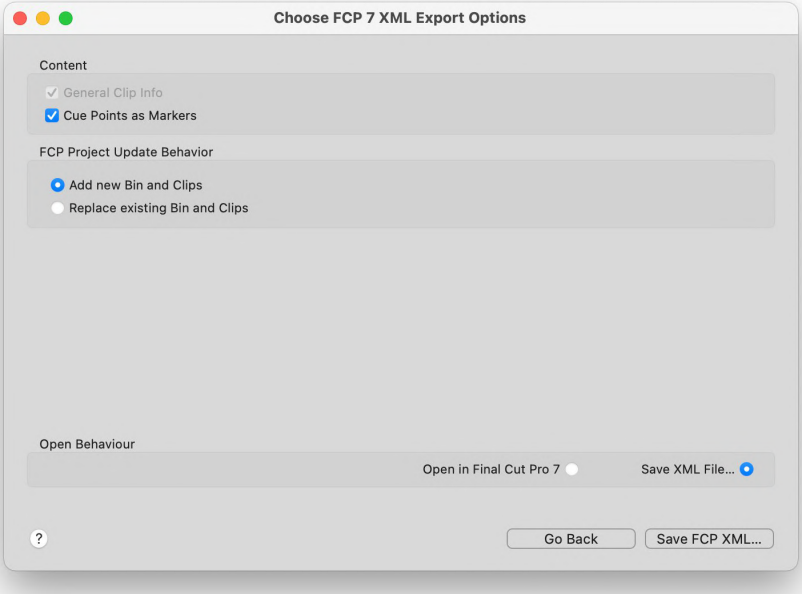


Silverstack Export Options

After you have selected the proper program a corresponding “Export” wizard opens up.



Choose the clips and then specify the export options



In the transfer process Silverstack transfers the edited information relating to the particular clip along with a link to its original clip's storage location. It never overwrites the original clip's metadata.

If you want to transfer your clips to Final Cut Pro X, you find a short explanation of the menu items affecting the metadata in the *Export*" dialog in the article Transfer metadata to FCP X.
There is another article for transferring metadata into Avid Media Composer and one for Adobe Premiere.

If you want to export only metadata of one or several clips as a pdf/ cvs/ xml/ html, Silverstack provides you the "*Creating Reports*" function for that case.

Transferring Metadata to Final Cut Pro X

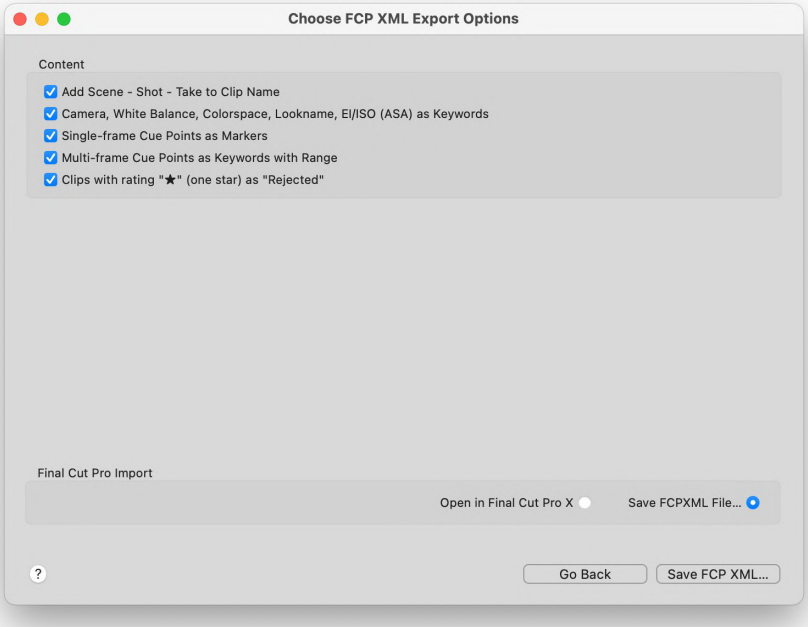
Silverstack offers to export clips to Final Cut Pro X, including clip metadata and additional information.

Export FCPXML from Silverstack

Select the desired bin or multiple bins or folders from the Silverstack Library to export to Final Cut Pro X. Choose **"Export to > Final Cut Pro X"** via right click or use the **"Export"** button in the title bar of Silverstack to select **"Final Cut Pro X"**.

The will open a window where you can select or deselect clips from the bin that should be exported, followed by a dialog with export options:

- Scene, shot, and take name can be added to the name of the clip in Final Cut Pro X
- Camera, White Balance, Colorspace, Lookname, EI/ISO (ASA) as keywords
- Single-frame cue points from Silverstack are mapped to markers in Final Cut Pro X
- Multi-frame cue points from Silverstack are mapped to a clip range marked with a keyword in Final Cut Pro X
- Clips with rating "★" (one star) in Silverstack are marked as rejected in Final Cut Pro X.



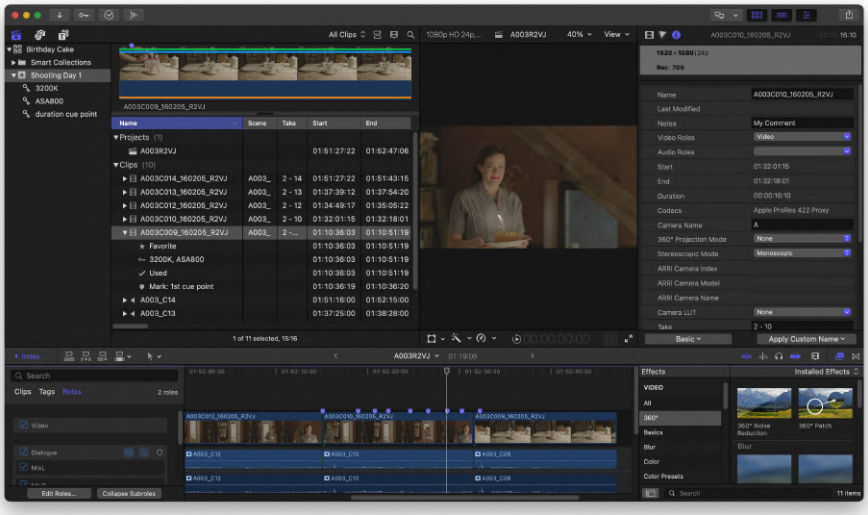
The transfer via Final Cut Pro XML files (.fcpxml) always includes:

- Clip metadata for reel, scene, shot and camera name (if set in Silverstack)
- Clips marked as flagged in Silverstack are marked entirely as favorites in Final Cut Pro X
- “Comments” of clips will be taken over as “Notes” in Final Cut Pro X

You can either immediately open the selected clips in Final Cut Pro X or save them first as Final Cut Pro XML files.

Import FCPXML into Final Cut Pro X

When importing the XML file in Final Cut Pro X, a new event is created with one project for each bin accompanied by the source video and audio clips. Please note that audio clips are only exported via FCP XML if they were synced to video in Silverstack before.



Handling Metadata: View, Organize, Add and Filter Clips

Transfer

Search Code: ST-FC1

Transfer Clips to DaVinci Resolve Including Clip and Color Metadata

Silverstack offers a solution to export clips to DaVinci Resolve including clip metadata as well as ASC-CDL color metadata. Additionally it is possible to set up Resolve with the according LUTs to reflect the exact node based color processing done in Silverstack.

How to Transfer Clips from Silverstack to a DaVinci Resolve Timeline

For transferring a bin from Silverstack to a Resolve timeline, including clip and color metadata, these steps are necessary:

1. Export FCPXML as well as additional clip and color metadata from Silverstack
2. Import FCPXML into DaVinci Resolve
3. Use the CSV import function in DaVinci Resolve to add clip metadata
4. Use the Colortrace function in Resolve to add ASC-CDL color data

Export FCPXML and Additional Clip and Color Metadata from Silverstack

To export to Resolve select the desired bin from the Silverstack Library. Either perform a secondary (right) click on the bin and select **"Export to > Davinci Resolve Export"** or from the **"Export"** button in the title bar of Silverstack choose **"DaVinci Resolve Export"**.

You will be presented with a window where you can select or deselect clips from the bin that should be exported:

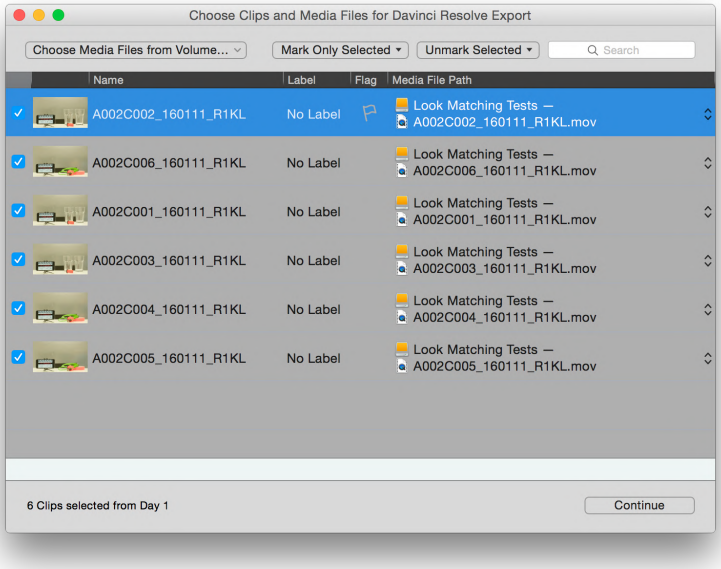


Figure 1: Choose clips and media files for Davinci Resolve export

After making your selection click **"Continue"**.

A further dialog window opens up:

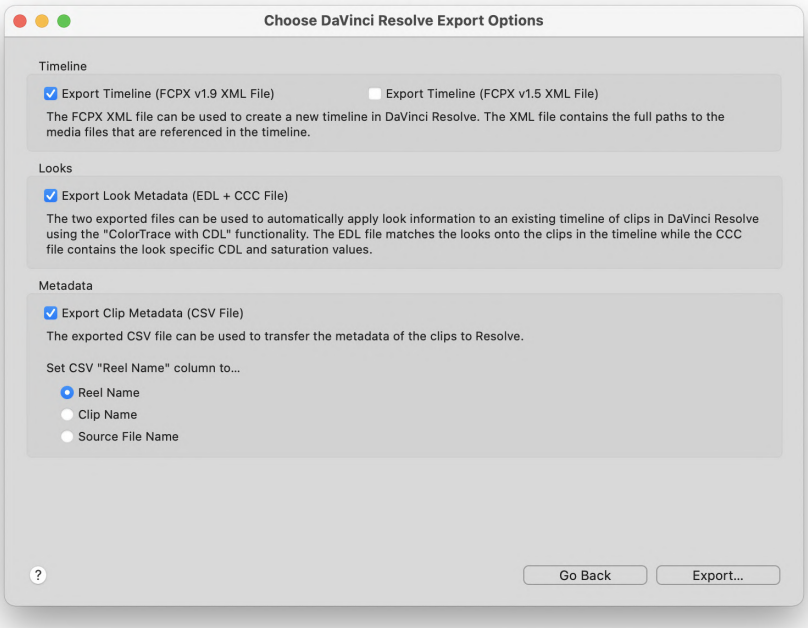


Figure 2: Davinci Resolve export options

It lets you choose from three export options :

- **Timeline (.fcpxml):** This export item is responsible for creating the timeline and populating the clips in Resolve.
- **Color metadata/Looks (.edl and .ccc):** These export items are responsible for adding the color metadata (ASC-CDL settings) to the clips in Resolve (via Colortrace functionality).
- **Clip metadata (.csv):** This export item is responsible for adding the clip metadata to the clips in Resolve. It includes the option to configure data set in column "Reel Name" (Reel Name, Clip Name or Source File Name).

To result with a **timeline, clip and color metadata** activate all three checkboxes and click **"Export…"**. Select the desired destination for the files. The FCPXML, EDL, CCC and CSV file will be put in the same directory automatically.

Import FCPXML into DaVinci Resolve

Open up DaVinci Resolve and create a new project.

From the Main Menu choose **"File > Import > Timeline…"**. Navigate to the path where you saved the FCPXML from Silverstack select it and click open.

You will be presented with an option window for loading XMLs:

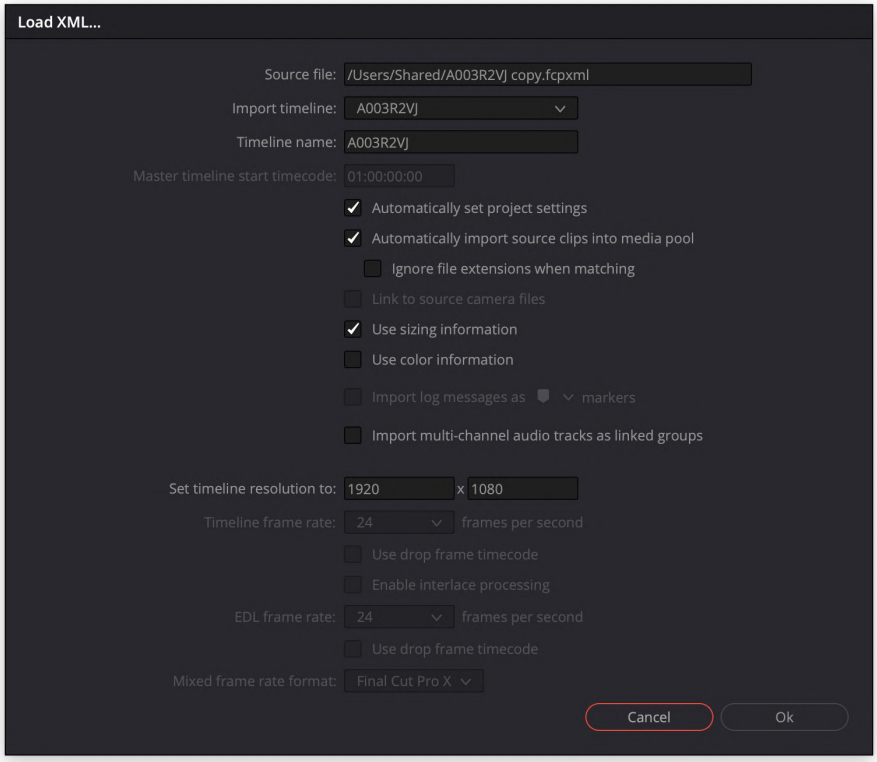


Figure 3: Preferences for loading an XML in DaVince Resolve

Check to have the checkbox **"Automatically set project settings"** enabled which should be the case by default. That makes sure all settings will be adapted to match the clips from the FCPXML.

Click **"Ok"**.

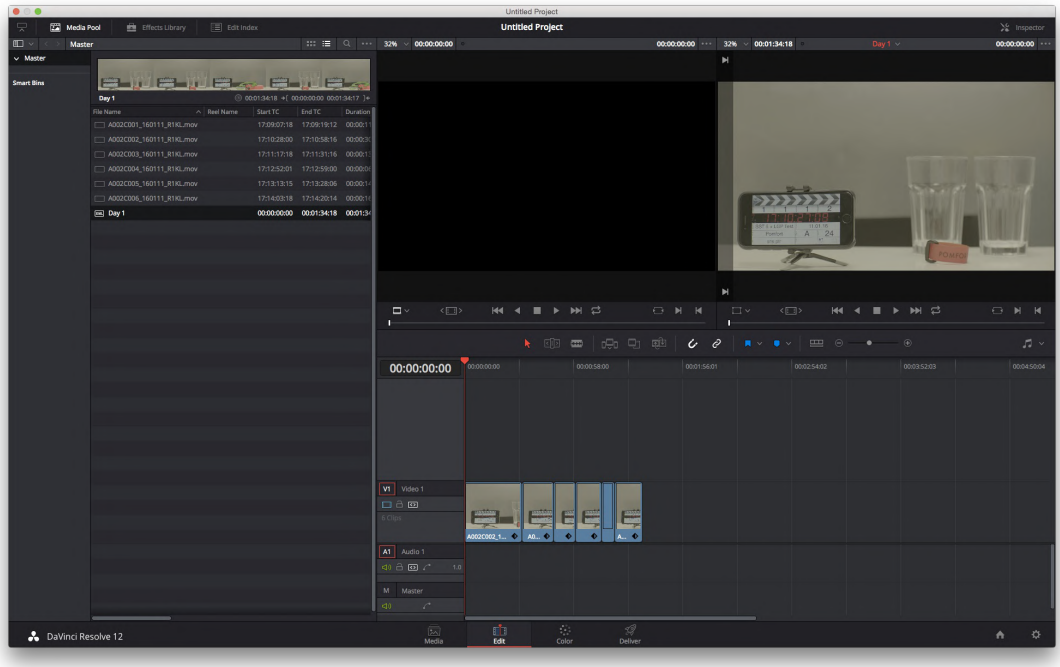


Figure 4: The main window of Resolve with the imported timeline

You should be presented with the **"Edit"** tab in Resolve that shows the Media Pool on the left and a timeline containing all the clips from the Silverstack bin you formerly exported.

How to Add Clip Metadata to the Clips in the Timeline

This process will only work in Resolve 12.5 or later.

Go to the **"Edit"** tab in Resolve. From the Main Menu choose **"File > Import metadata to… > Media Pool":**

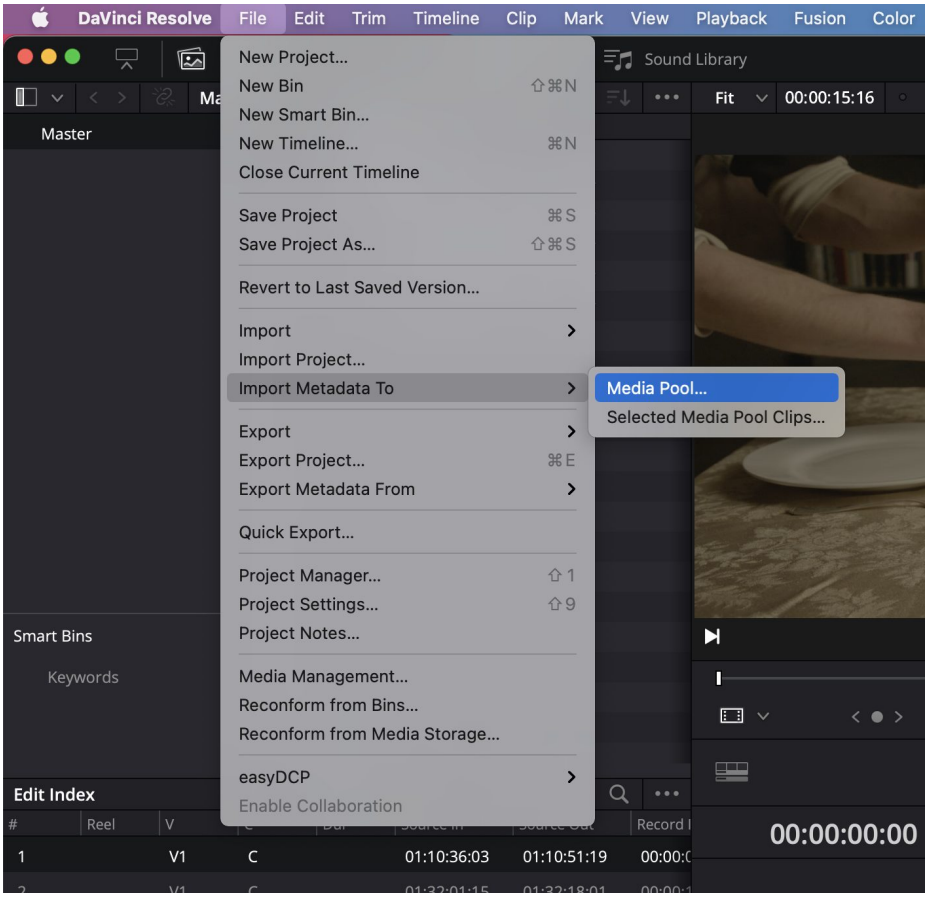


Figure 5: Import metadata from the csv

In the following opening dialog choose the .csv file that you exported from Silverstack and click open.

A metadata import window will follow:

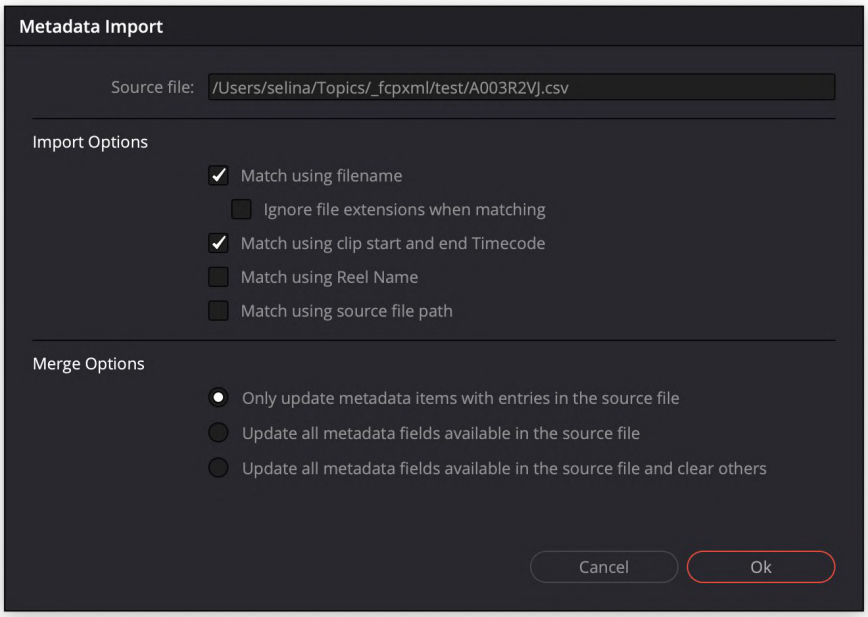


Figure 6: Metadata import options

Choose a meaningful combination of Import Options and Merge Options for your use case. Hit **"Ok"**.

All matching clips in the bin should now have received the new metadata. Select a clip and check the metadata section on the right side of the Resolve window for the results.

The FCPXML will already transfer a basic set of metadata. The additional metadata that can be transferred from Silverstack via the .csv file is in detail :

- Camera ID [Camera #]
- Scene [Scene]
- Shot [Shot]
- Take [Take]
- Episode [Episode Name]
- Label [Clip Color]
- Flagged [Good Take]
- Comment [Comments]
- Caption [Description]
- Custom 1 [Lens Notes]
- Custom 2 [Audio Notes]
- Custom 3 [VFX Notes]
- Tags [Keywords]
- Shot Descriptors [Shot Type]
- Cue Points [Reviewers Notes]
- Shutter [Shutter]
- ASA/ISO [ISO]
- White Balance [White Point (Kelvin)]
- Tint [White Balance Tint]
- LUT Nodes [LUT Used]
- CDL SOP [CDL SOP]
- CDL SAT [CDL SAT]
- Director [Director]
- Cinematographer [DOP]
- Production [Production Name]
- Producer [Producer]
- Camera Assistant [Camera Assistant]
- 2nd Camera Assistant [2nd Asst]
- Data Manager [Data Wrangler]
- DIT [Digital Technician]
- Script Supervisor [Script Supervisor]
- Sound Mixer [Sound Mixer]
- Location [Location]
- Shooting Day [Shoot Day]
- Lens Model [Lens Type]
- Lens Serial [Lens Number]
- T-Stop [Camera Aperture]
- Focus Distance [Distance]
- Filter [Filter]
- ND Filter [ND Filter]
- Color Space [Color Space Notes]
- Camera Orientation [Angle]
- Camera Model [Camera Type]

- Camera Manufacturer [Camera Manufacturer]
- Camera Serial [Camera Serial #]
- Camera Firmware Version [Camera Firmware]
- External Audio Clips [Audio Media]
- Soundroll [Sound Roll #]
- TC Start (Ext Audio) [Audio Start TC]
- TC End (Ext Audio) [Audio End TC]
- External Audio Track Names (multiples in column “Audio Track Names”) [Track 1 to Track 8]

The labels in the brackets reflect the naming of the Resolve metadata fields the Silverstack metadata is mapped to.

Setting the Reel Name

To attain a proper match of the CDL values per clip you have to make sure that the Reel Names of the clips and the Reel Names in the Silverstack EDL match.

In the Project Settings go to **“General Options”** and inside of that to **“Conform Options”**. Make sure to check **“Assist using reel names from the:”** checkbox:

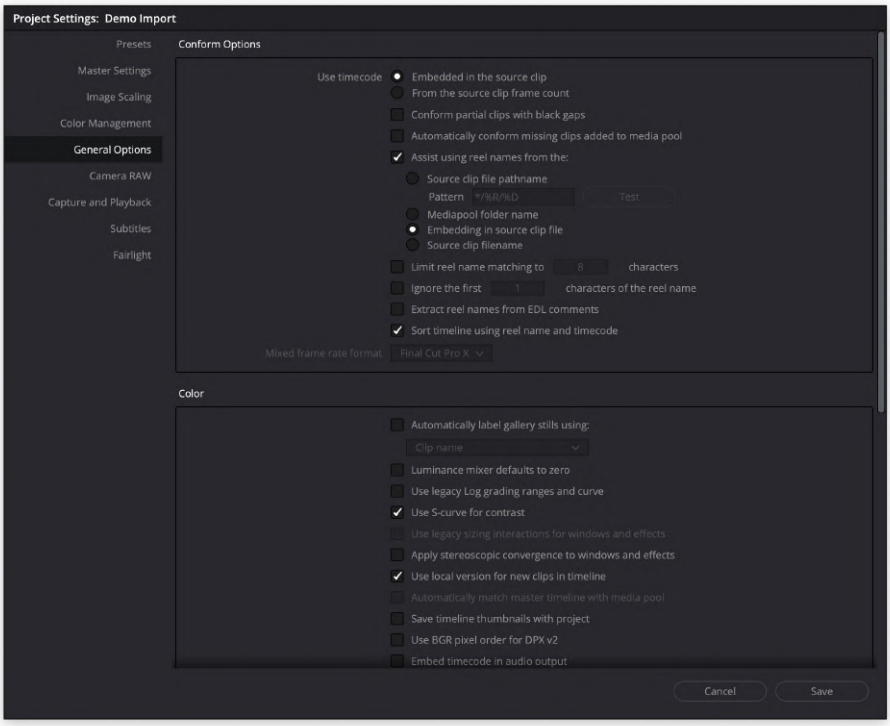


Figure 7: Set the Project Settings Conform Options for the right reel name handling for Color Trace matching

Based on your clip types as well as path structure and clip file names the settings that match your workflow could differ.

Selecting **“Embedding in Source clip file”** as an option should work for QT ProRes and ARRIRAW workflows.

Search the DaVinci Resolve manual for **“extraction pattern operators”** to learn how to use extraction patterns to pull reel names from your media paths.

Please be aware that the ColorTrace matching wizard will also give you the opportunity to**“Ignore Reel Names”** (see also Fig. 9) .

How to Add Color Metadata to the Clips in the Timeline

Use the Colortrace Function to add ASC-CDL color metadata.

After creating the timeline you will be able to add the color information.

Select the timeline from the media pool. It should be marked with a little XML indicator on its lefthand side. Perform a secondary (right) click on it and choose **“Timelines > ColorTrace > ColorTrace from CDL”** from the context menu:

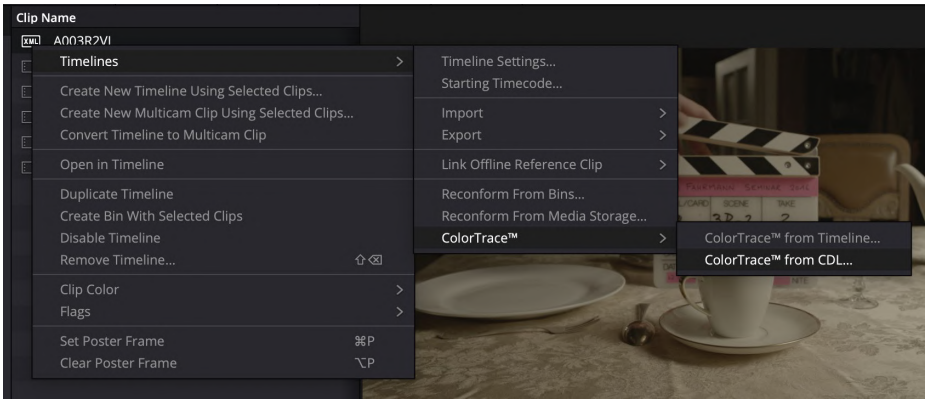


Figure 8: Select ColorTrace from CDL

You will be presented with an open dialog where you will first have to choose the exported EDL file. Right after that you will have to choose the exported CCC file.

After opening both of them you will be presented with the ColorTrace option window:

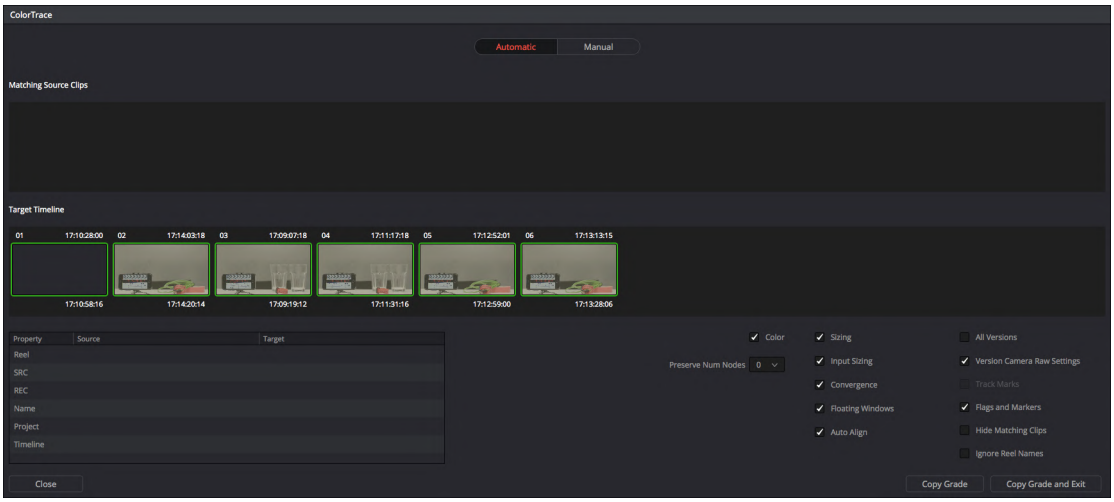


Figure 9: The ColorTrace option window

If all the clips have green borders everything matches fine. Click**“Copy Grade and Exit”** to copy the according grades to the clips. This is important as you can also “Copy Grade and Exit” without applying any look if all of the clips are marked with a red border.

You can check the “Ignore Reel Names” box to make sure that the Reel Name is not taken into account. Please see the section about setting the Reel Name above to be able to handle multiple reels in parallel with distinct Reel Names.

Switching to the Color tab presents you with the clips that now have the ASC-CDL color metadata from Silverstack added:

Figure 10: Switch to the color tab to see the clips with added color metadata

Transfer Color Metadata to Assimilate Scratch

You can export an .ale from Silverstack to transfer ASC-CDL color metadata to Assimilate Scratch. Assimilate Scratch matches the according CDL values to the loaded clips and translates them into looks.

Exporting an ALE from Silverstack Including ASC-CDL Color Information

To export an .ale file from Silverstack go to the header bar and choose**“Export”** :

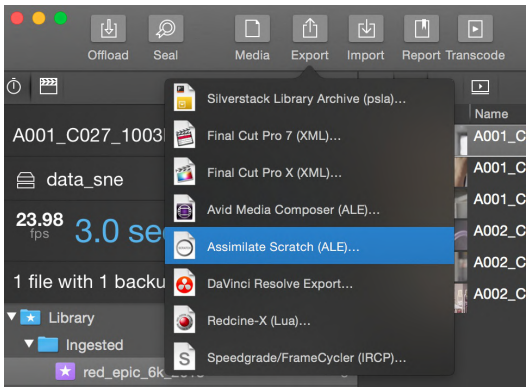


Fig.1: Choose Assimilate Scratch from the Export options.

Choose “**Assimilate Scratch (ALE)**” and a wizard window will open:

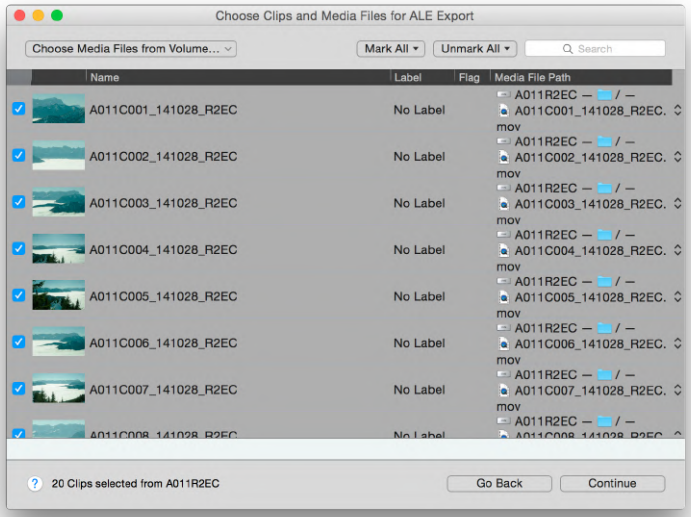


Fig. 2: Choose the clip you want to export in the ale.

Select the clips you want to export and click **"Continue"**.

In the next window choose your configuration:

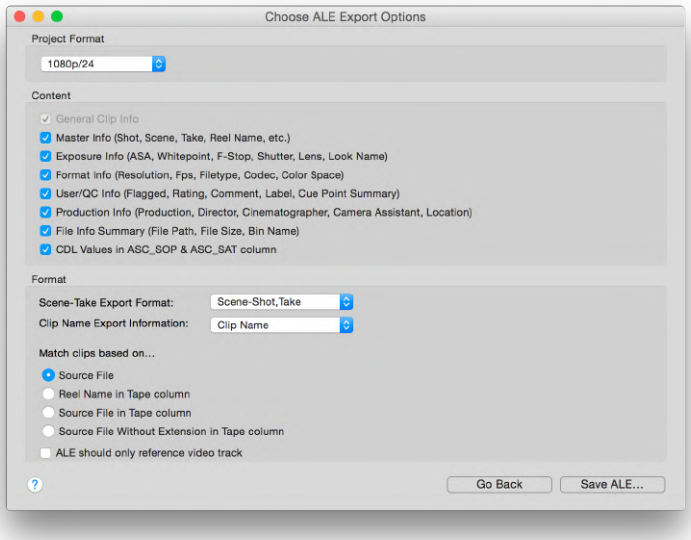


Fig. 3: Choose the ALE export options

Make sure the **"CDL Values in ASC-SOP & ASC-SAT column"** checkbox is checked to transfer color data to Assimilate Scratch.

Click **"Save ALE..."** to save the .ale file to the intended destination.

Importing an ALE in Assimilate Scratch and Matching Color Metadata

To import .ale files that contain color information in Scratch you have to follow 4 consecutive steps:

1. Import the clips into Scratch that you want to apply color information to.
2. Import the .ale file.
3. Check settings for matching and import.
4. Go to the clip view and find the ASC-CDL values affect the clips accordingly.

Let's break the steps down into detail:

Importing the Clips

Click the "Load Clips" button from the lower left side of the interface:

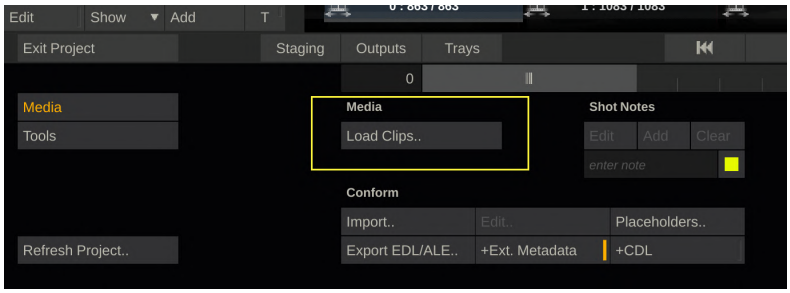


Fig.4: Click the Load Clips button to add clips to Scratch.

Choose the clips you exported the ALE for to add them to the Scratch project:

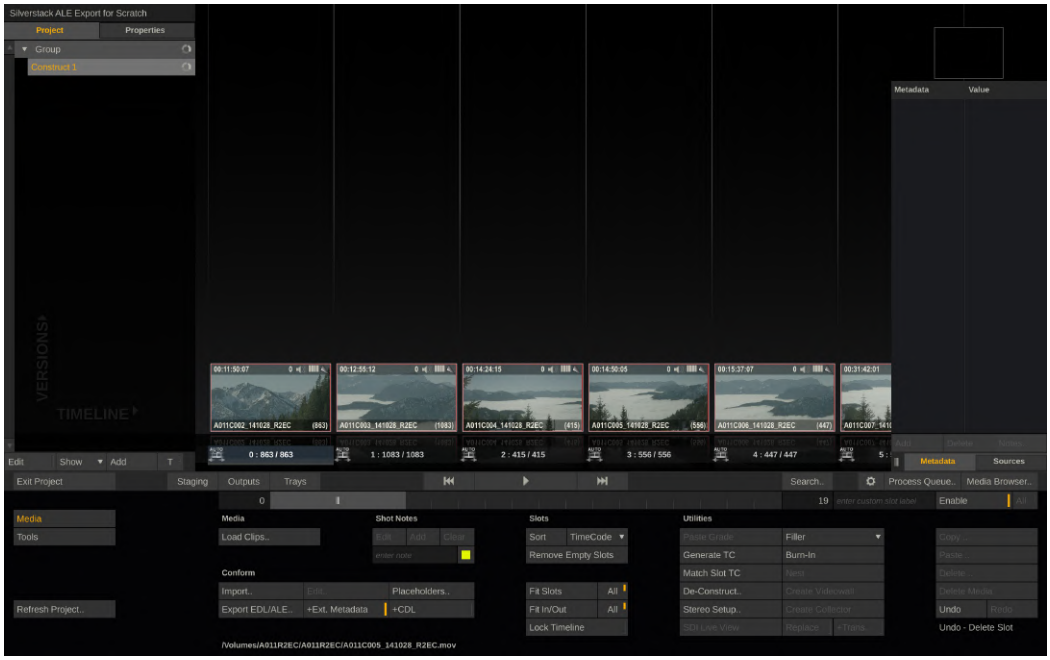


Fig. 5: Clips have been added to the project

Importing the ALE File

Go to the "**Conform**" section which you will find slightly below the "Load Clips" button you just used. Click the "**Import**" button to open the ALE:

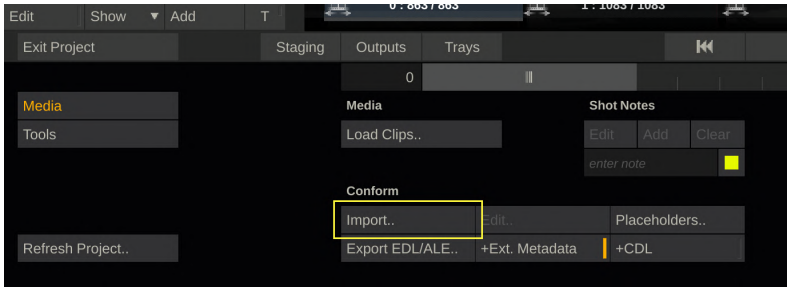


Fig. 6 : Choose "Import" from the conform options

Navigate to the exported ALE and click "**Open**".

Check Settings for Matching and Import

You will see the matching user interface where now the ALE data will be matched to the clips:

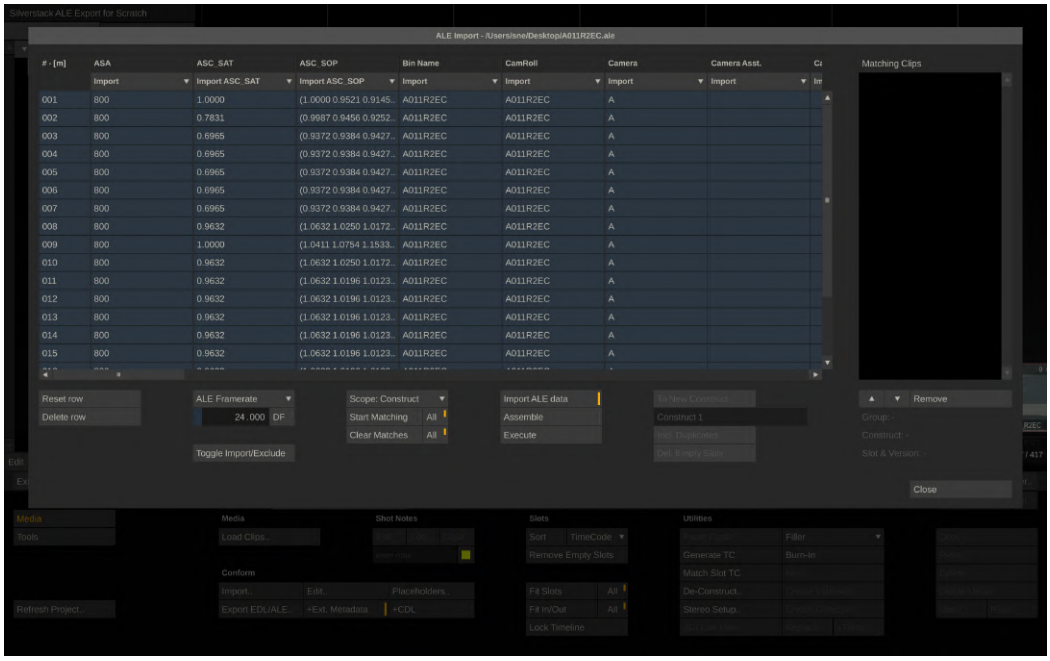


Fig. 7: The ale matching user interface.

At the top of the the columns from the .ale you can select the action that should be performed for each column. Make sure you have the **'ASC-SOP"** and "**ASC-SAT**" columns set to "**Import**". Matching on TC or File Name will be easiest so make sure to that at least one of those columns, or any other you want to match based on, is set to **"Match on…"**. You can make that selection from the drop down on top of every column.

Click "**Start Matching**" to match the metadata (including the ASC-CDL data) to the clips according to your settings.

While then selecting the different rows in the ALE you will see the clips the data will be matched to in the right bar of the wizard.

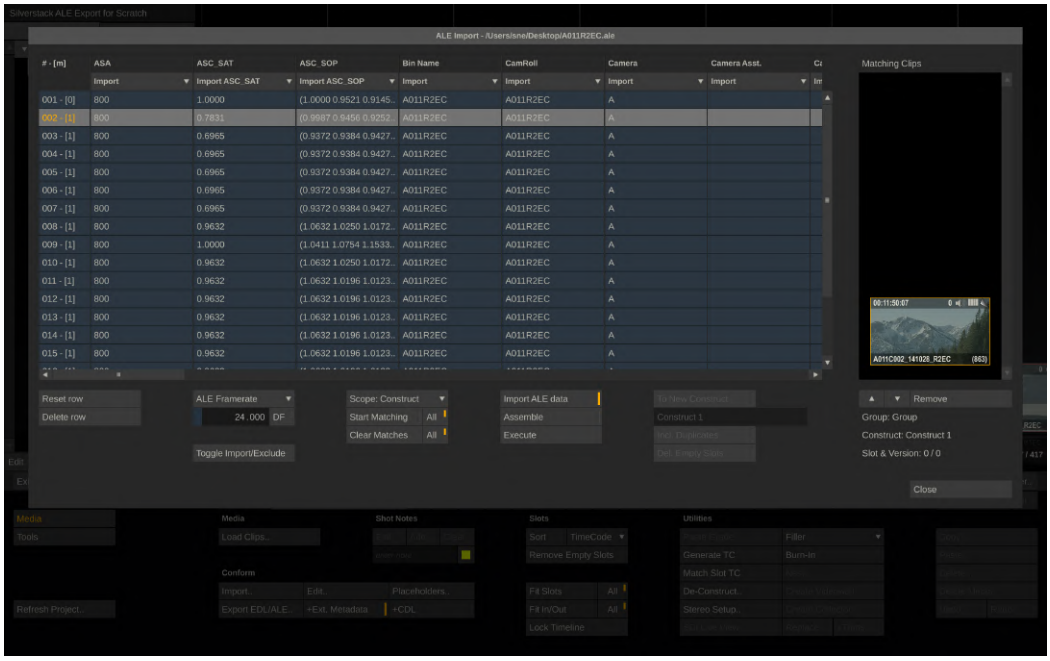


Fig. 8: The metadata has been connected to the clips.

Click "**Execute**" when you are happy with the match and want the metadata to be taken over to the clips.

Go to the Clip View and Find the ASC-CDL Values Affect the Clips Accordingly

Double click a clip to reach the clip detail view:

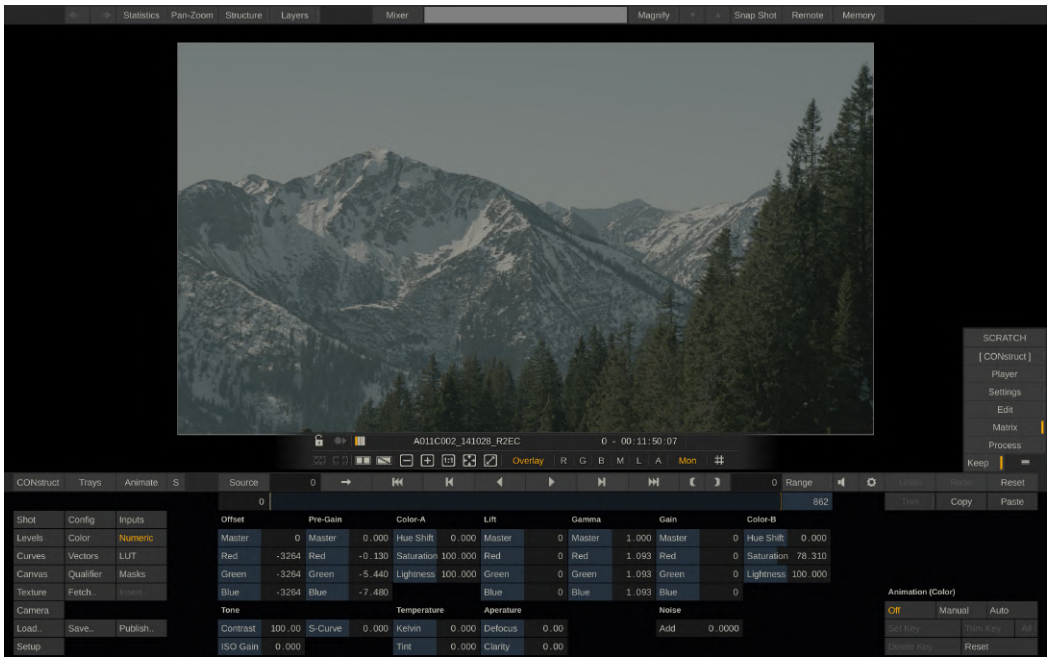


Fig. 9: The detailed view of the clip in Scratch

Select "**Matrix**" from the display options on the right side and '**Numeric**" from the panel on the left side. You will then see how the color settings have been affected by the imported ASC-CDL data.

If working in Assimilate Scratch on a PC monitor you have to set the right gamma to match the look of the clips to the perception inside Silverstack. Go to the Assimilate Scratch global settings to change the gamma if needed. Please be aware of the ColorSync settings in Silverstack as well (read about the setting in the article Using Silverstack's Full Screen Mode).

Maintaining Grades and Clip Metadata Throughout Production

The use of Pomfort's LiveGrade and Silverstack in combination with Assimilate Scratch allows for an integrated workflow that involves the preservation of clip and grade metadata throughout the process.

Looks generated with LiveGrade can easily be matched to the clips inside Silverstack. This workflow is also described in the article Look Matching.

Silverstack can then export an ALE that contains information about the LUT in the grade for each clip. By using the LUT files along with the ASC-CDL data and the automatic matching process inside Assimilate Scratch, unique grades can easily be transferred for each individual clip.

Transferring Metadata to Avid Media Composer

To transfer clips and their corresponding metadata information from Silverstack to Avid Media Composer the following two steps have to be performed:

- Create an Avid Log Exchange (ALE) file containing the metadata of the relevant clips in Silverstack
- The information from the ALE file has to be merged with available master clips in the Avid Media Composer.

Creation of an ALE file in Silverstack

1. Generating an ALE file can be done via the "Export" menu in Silverstack. Select the bin which contains the relevant clips, click on the "Export" button in the toolbar of the Silverstack window and choose "*Avid Media Composer (ALE)*".

2. Thereon select the clips you want to transfer in the wizard that opens up.

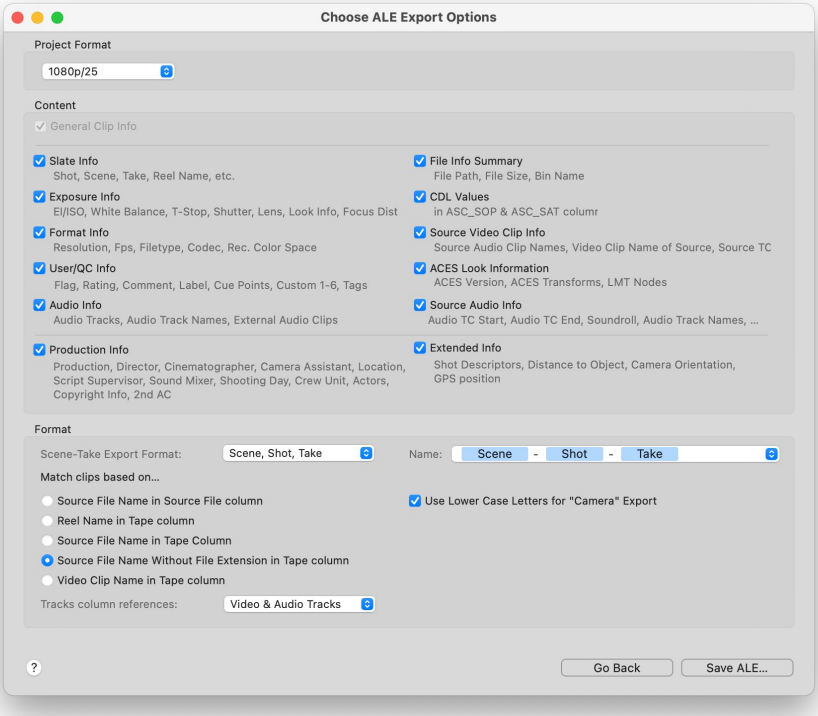
3. In the following you have to select the ALE export options including: (see screenshot of options below).

- Choose Project Format
- Select additional detailed information in this section.
- Set format of Scene-Take Export and Name
- Check if you prefer lower case letters for "Camera"

4. The metadata is transferred to the Avid Media Composer via the ALE file and is only there matched with the clips. The matching can be performed according to following metadata information:

- Source File Name in Source File Column
- Reel Name in Tape Column
- Source File Name in Tape Column
- Source File Name without File Extension in Tape Column
- Video Clip Name in Tape Column

5. Click on "*Save ALE…*".



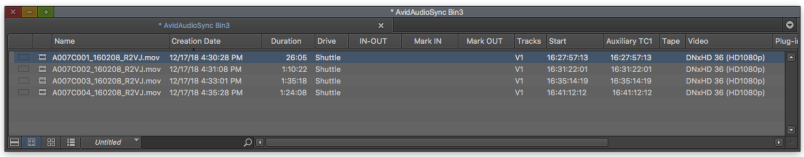
The ALE export options.

Merging information from the ALE file with master clips

1. After having created the ALE file go to the Avid Media Composer and import the clips if not done so far. They should thereon be available as master clips.
2. Select the bin in the Avid Media Composer which contains the relevant clips.
3. Select those clips and choose *"Input > Import Media…"* from the context menu in the bin.
4. Open the "Options", then click on "Options…" navigate to the Shot Log tab and select *"Merge events with known master clips"*.
5. Navigate to the ALE file you created before and click *"Open"*.

Avid Media Composer now matches master clips and metadata information from the ALE file according to their timecode and the criteria you selected during the transfer process within Silverstack .

The information from the ALE file is attached within additional columns in the bin table as in figure 2. Some of the columns are already known by the Avid Media Composer, all unknown information will be added as custom columns.



Avid Media Composer: Extended metadata after the ALE import

If you cannot see any custom columns, perform the following steps:

1. Close and re-open the bin
2. Right-click in the free space of the bin window and click on "*Choose columns…*" in the context menu.
3. Then select and unselect columns, the custom columns from the imported ALE file you will find at the end of the list.

Transfer Color Metadata to AVID Media Composer

To learn about the basic process of transferring metadata to AVID please refer to the article Transferring Metadata to Avid Media Composer. The article will help you through the process of matching metadata from an ALE file generated from Silverstack to master clips in Avid.

Adding Color Metadata to the ALE Export

When exporting your ALE file from Silverstack make sure you have the checkbox **"CDL Values in ASC-SOP & ASC-SAT column"** checked:

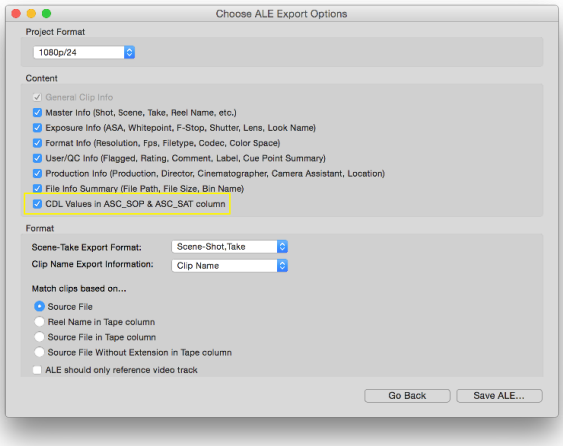


Figure 1: Include the CDL Values in the according columns of the ale file.

After the values are included in the ALE file perform the same steps as pointed out in the article Transferring Metadata to Avid Media Composer. The result will be clips that have the CDL values from Silverstack in the ASC_SAT and ASC_SOP metadata columns in AVID Media Composer.

Transforming the Color Metadata Information into Looks in AVID

We will now use the color metadata information from the ASC_SAT and ASC_SOP column to apply them to the clips.

Select all clips in the bin you merged the metadata with. Perform a right click on the film reel icon on the left of an arbitrary clip:

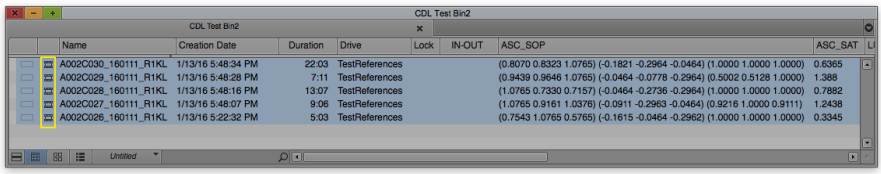


Figure 2: The bin with selected clips and the reel icons marked.

From the context menu choose **"Source Settings".** You will see the following window:

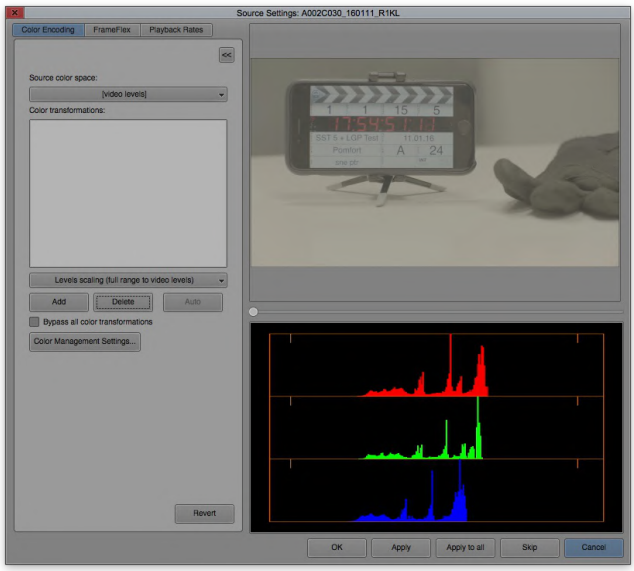


Figure 3: The Source Settings with the Color Encosing tab selected.

Make sure to have the tab **"Color Encoding"** selected at the top left of the window. Click the dropdown indicator in the menu where it says **"Levels scaling (full range to video levels)"** below the **"Color transformations"** list.

You will see a list of transformations to choose from:

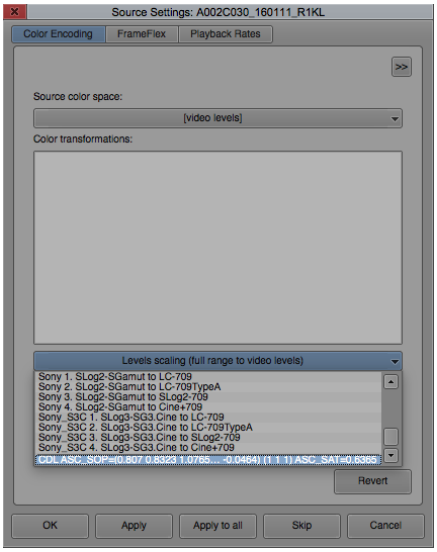


Figure 4: Choose the CDL ASC_SOP and ASC_SAT values from the bottom of the dropdown list.

Scroll down to the bottom of the list and select the **“CDL ASC_SOP ASC_SAT”** entry. Click **“Add”** right below and it will appear in the “Color transformations” list:

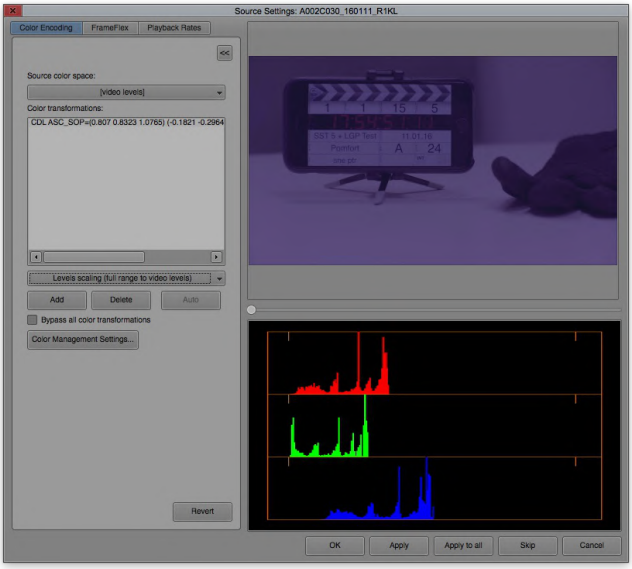


Figure 5 : The Source Settings with CDL values in the Color transformation list.

Now click **“Apply to All”** on the bottom of the window to apply the according CDL values to every clip. Click**“OK”** to leave the wizard. Every clip will now receive the look that is generated from its associated values in the ASC_SAT and ASC_SOP columns.

Adding a 3D LUT to the Color Processing

To add a 3D LUT again select all the clips you want to apply a LUT to. Perform a right click on the film reel icon on the left of an arbitrary clip and from the context menu choose **“Source Settings”**.

Instead of choosing “CDL ASC_SOP ASC_SAT” from the dropdown **select the desired LUT** and click “Add” to put it into the “Color transformations” list above:

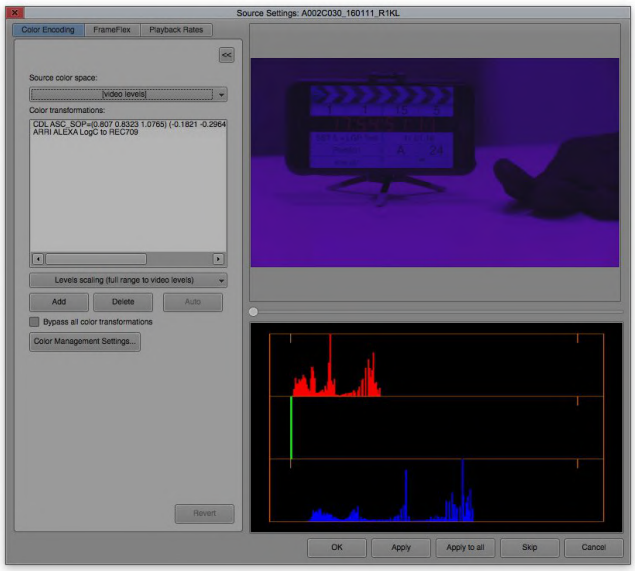


Figure 6: The source settings with CDL and LUT in the right order in the Color transformations list

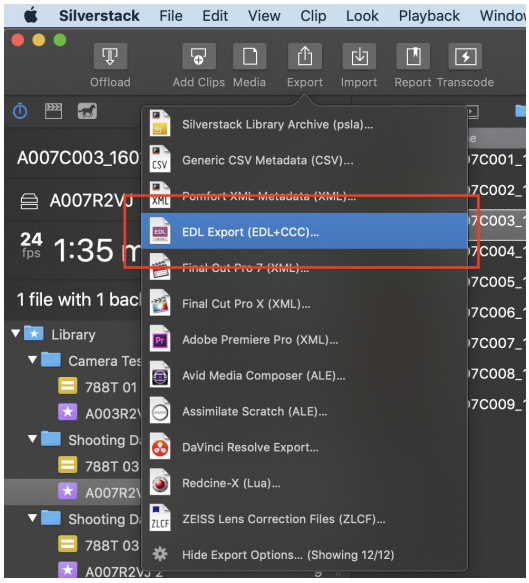
Make sure that the CDL entry is on top of the LUT entry in the list. They will be applied in order from top to bottom as in the nodes in Silverstack.

Now click **"Apply to All"** to add the LUT to all the selected clips. Then click **"OK"** to leave the wizard. The clips will now all have and additional LUT added to the CDL processing.

EDL Export

Silverstack allows to export an EDL ("edit decision list") file in the CMX 3600 standard. ASC-CDL information from the library can be included either directly inside the file or via an additional .ccc ("color correction collection") file that is referenced in the .edl file. The EDL file can be used for different purposes in consecutive production steps.

To export an EDL for specific clips, select a folder or bin in the library and click the "EDL Export…" entry shown in the Export menu of the toolbar:



After selecting the clips to be included in the file in the source selection step you have two options available for the EDL export:

- Export EDL with Embedded Look Metadata (EDL File only)
  - This option exports a single EDL file (.edl) that included the associated CDL values from the library directly in the file.

Here's an example screenshot of the file :

```
14
15  004  A007C004_160208_R2VJ V     C        16:41:12:12 16:42:36:19 00:02:07:12 00:03:31:20
16  *ASC_SOP (0.912989 1.044982 0.810629)(0.028798 -0.014821 0.062012)(1.183196 0.933810 1.116230)
17  *ASC_SAT 0.877196
18
```

- Export EDL with References to Look MEtadata in CCC File (EDL + CCC File)
  - This option exports an EDL file with references to CDL values exported into a separate but linked CCC ("color correction collection") file.

Here's an example screenshot of the files:

- EDL:

```
11
12  004  A007R2VJ V     C        16:41:12:12 16:42:36:19 00:02:07:12 00:03:31:20
13  *ASC_CC_XML cc00004
14
```

- CCC:

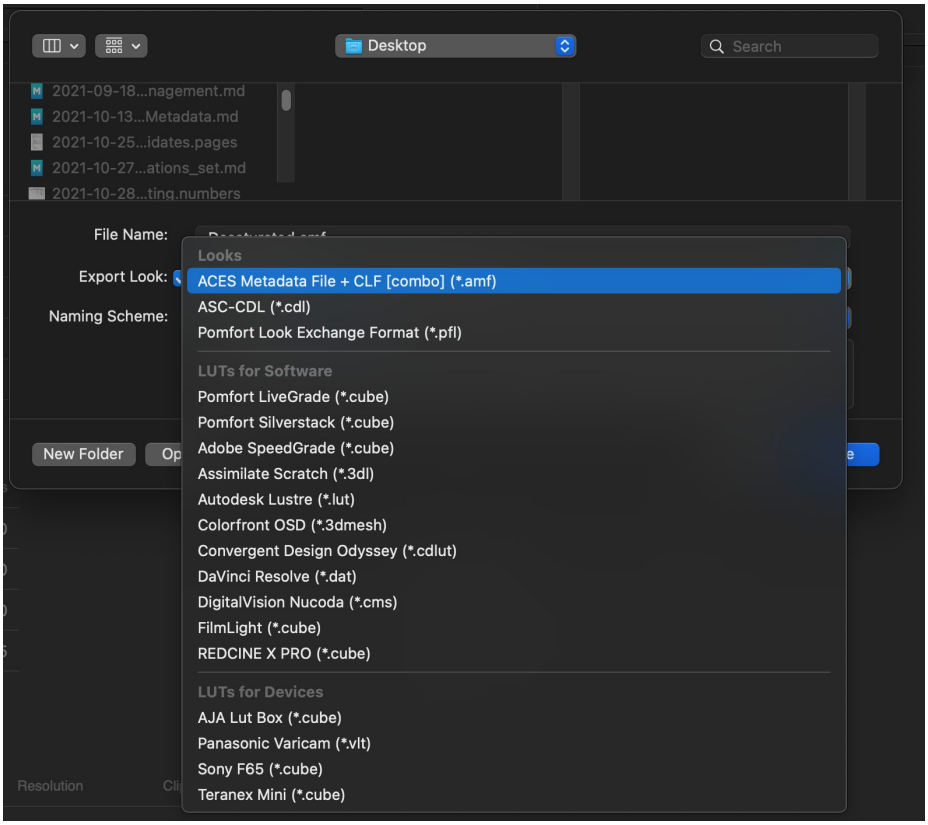
```
26      <ColorCorrection id="cc00004">
27          <SOPNode>
28              <Slope>0.9130 1.0450 0.8106</Slope> <Offset>0.0288 -0.0148 0.0620</Offset> <Power>1.1832 0.9338 1.1162</Power>
29          </SOPNode>
30          <SatNode>
31              <Saturation>0.8772</Saturation>
32          </SatNode>
33      </ColorCorrection>
```

Exporting Looks from Silverstack

There are two ways to export looks from a Silverstack project. It is possible to export AMFs, CDLs, and 3D LUTs from selected clips in the library or from the Silverstack Look Library. To learn more about the Silverstack Look Library, please refer to the article [The Silverstack Look Library](#).

Looks from Clips

The export option "Looks from Clips" can be accessed from the "Export" button in the toolbar or via File -> Export -> Looks from Clips. As soon as one or multiple clips in the library are selected both options will point to a save dialog to choose from different formats for the export:



The export window with the different export options.

You can choose between three categories to export your look:

- Looks
- LUTs for Software
- LUTs for Devices

Looks include:

- ACES Metadata File (.amf for Grading Mode "ACES CDL")
- ACES Metadata File + CLF [combo] (.amf + .clf for Grading Mode "ACES CDL Advanced")
- ASC-CDL (.cdl, for all grading modes where possible)
- ASC-CDL + 3D LUT [combo] (.cdl + .cube file)
- Pomfort Look Exchange Format (.pfl, for Look Exchange with LiveGrade Pro)
- Alexa Look (.xml, for ARRI Alexa compatible look export)
- Amira Look (.aml, for ARRI Amira compatible look export)

LUTs for Software include:

- Pomfort LiveGrade (33x33x33, RGB order, .cube file)
- Pomfort Silverstack (33x33x33, RGB order, .cube file)
- Adobe Speedgrade (32x32x32 3D LUT, .cube file)
- Assimilate Scratch (32x32x32 .3dl file)

- Autodesk Lustre (33x33x33 .lut file)
- Colorfront OSD (17x17x17 .3dmesh file)
- Convergent Design Odyssey (17x17x17 .cdlut file)
- DaVinci Resolve (33x33x33 3D LUT, .dat file)
- DigitalVision Nucoda (17x17x17 .cms file)
- Filmlight Baselight (32x32x32 .cube file)
- REDCINE X PRO (33x33x33, rgb order .cube file)

LUTs for Devices include:

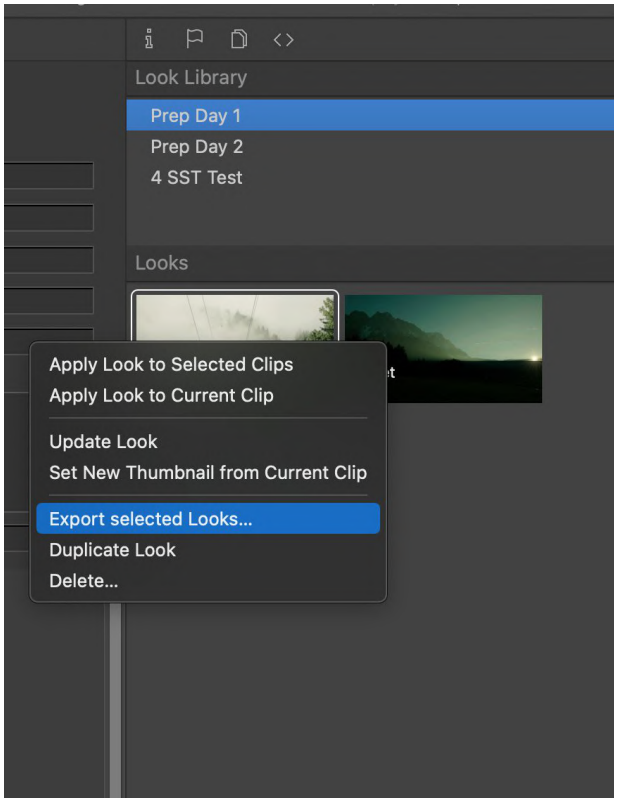
- BlackmagicDesign HDLink Legal to Legal (17x17x17 .cube file)
- BlackmagicDesign HDLink Extended to Extended (17x17x17 .cube file)
- AJA Lut box (17x17x17 .cube file)
- Panasonic Varicam (17x17x17, rgb order .vlt file)
- Teranex Mini (. cube file)

Choose **the desired look format**, a naming scheme, and the intended directory, and hit **"Save."** You can then use the exported look in the intended destination software or device.

NOTE: If you decide to export looks as AMFs (ACES Metadata File), you can create an ALE that references the clips to the exported AMFs.

Looks from the Look Library

To export the desired information, choose one or more looks at in the Silverstack Look Library. Perform a secondary click (right-click) on one of the selected looks, and from the context menu, choose **"Export selected Looks"**:



Select one or multiple looks for export and with a secondary click open the context menu.

The export window described in the section above ("Looks from Clips") is opened to select the name, file type, and naming scheme for the exported looks.

Exporting Look Archives from Silverstack

You can export complete folders with looks directly from the Silverstack Look Library into a **Look Archive (.pfla)**. To do that select one or multiple folders from the Silverstack Look Library. Then, perform a secondary click (right click) and select **"Export selected Folders as Look Archive"** from the context menu:

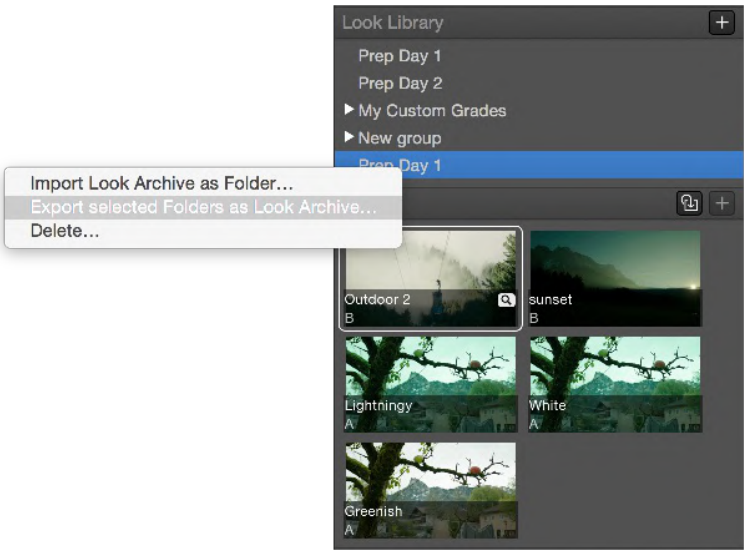


Figure 3: Exporting a Look Archive from a folder in the Silverstack Look Library.

In the following wizard, select the directory you want to save to and click **"Save"**. The .pfla file will then be available for further use from that directory.

To learn how to import a Look Archive please refer to the article Importing Looks (from LiveGrade).

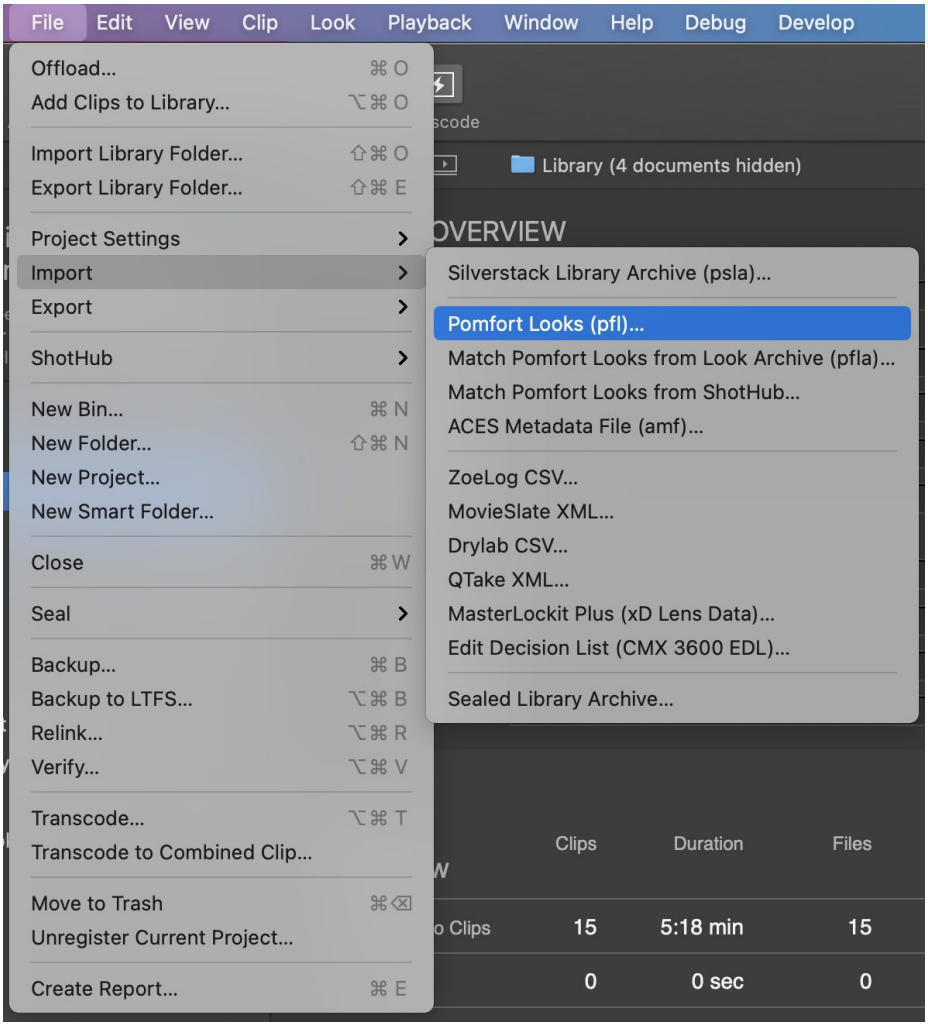
Importing Looks (from LiveGrade)

Silverstack's Look Library and grading controls enable you to **receive looks from LiveGrade** or **ACES Metadata Files (AMF)** created with other applications. More information about creating and managing looks in LiveGrade can be found in the articles Grading Modes in LiveGrade and Create Clips, Stills and Looks.

Importing a Look into Silverstack

Choose the Button "Import" or fo to the Main Menu and select

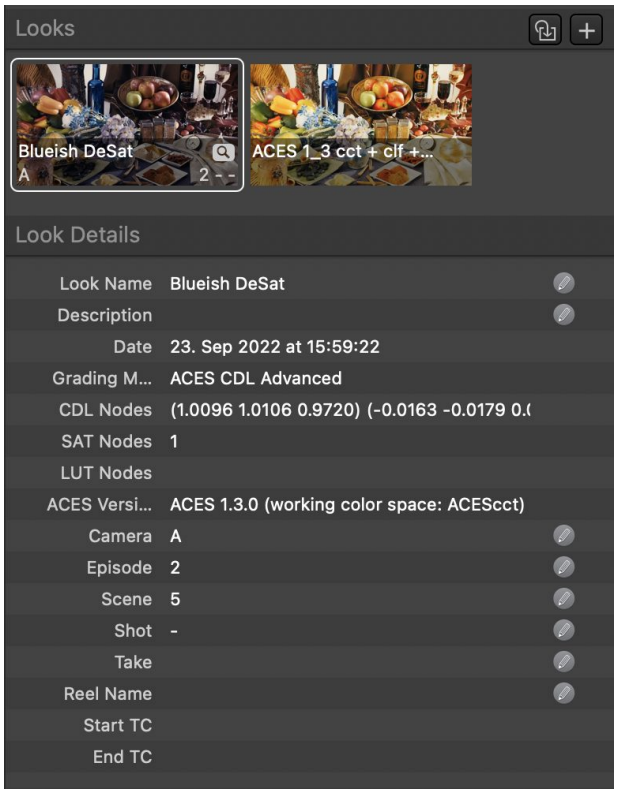
- "**File>Import>Pomfort Looks (pfl)...**" for looks exported from Livegrade
- "**File>Import>ACES Metadata File (amf)...**" for looks exported as ACES Metadata File (AMF) from other applications



Import Look File into Silverstack

An open dialog shows up. Navigate to the looks that should be import and select one or multiple files.

Make sure that Silverstack's Look Library in the right info bar is shown (for example toggle the right bar from the toolbar). Learn how to use the Look Library in Silverstack from the article The Silverstack Look Library. Go to the Look tab:



Look Library showing details of the imported look

The imported looks will appear in the “Looks” section containing:

- Thumbnail
- Look name
- Grading Mode
- Additional Metadata

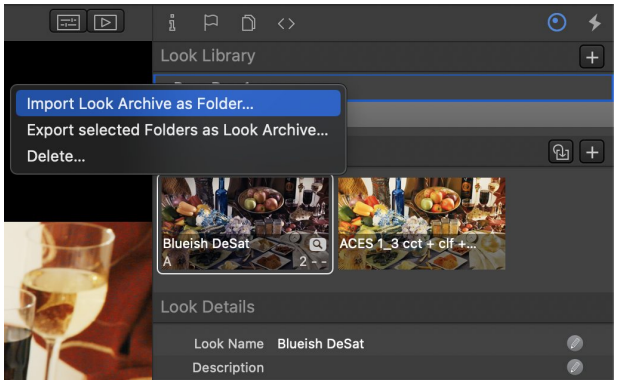
Looks imported **from Pomfort Looks (pfl):** The settings of the grading nodes reflect those of the look in LiveGrade. After applying the look to the desired clip you will be able to modify it in Silverstack from the point where you left off in LiveGrade.

Looks imported **from ACES Metadata File (amf):** AMFs are XML-based format specified by ACES for interchanging the entire setup of an ACES pipeline. Therefore the look created in the look library includes IDT, LMT and ODT, ACES version information, ASC-CDL values and the working color space for the ASC-CDL and the LMT. If the ACES Metadata File is referring to a CLF file (Common LUT Format), the CLF file is loaded into the LMT node.

To learn more about the grade controls in Silverstack please refer to the article Grading Controls in Silverstack.

Importing a Look Archive from Livegrade into Silverstack

Go to the looks tab in the Right Bar of Silverstack. In the Look Library perform a secondary click (right click)



Importing a Look Archive as a folder.

Select the desired .pfla (Pomfort Look Archive) file and click. The Looks from the Archive will then be available in the newly created folders in the Silverstack Look Library.

Import metadata via MovieSlate

Introduction

When importing metadata via MovieSlate XML you can use various methods to match the clips coming from MovieSlate with your offloaded Assets:

- Timecode
- File Name
- Creation Date

Timecode Mode

This mode is pretty straight forward, it will compare the timecode of your assets and look for the corresponding values in the imported MovieSlate file. If the timecode of MovieSlate is synced with the camera each asset automatically matches with a clip from the MovieSlate XML. Matching by timecode also offers the possibility to automatically set the in-point to the slate frame.

File Name Mode

The File Name mode works literally and compares the exact filenames of your offloaded assets with the clips from the imported MovieSlate XML. Even the smallest disparity will force Silverstack not to match the Assets with the MovieSlate metadata.

Creation Date

This mode matches the creation date of your assets with the creation date of your MovieSlate clip metadata. This mode is working with approximation. You have a “Tolerance” slider which can help you to adjust the time difference between the camera and MovieSlate clock. You have a range from 1sec up to two minutes. This method is fuzzy and a high tolerance can lead to misinterpretations.

Further articles:

Step-by-Step Tutorial: How to import via Filename Mode

Step-by-Step Tutorial: How to import via Timecode & Creation Date Mode

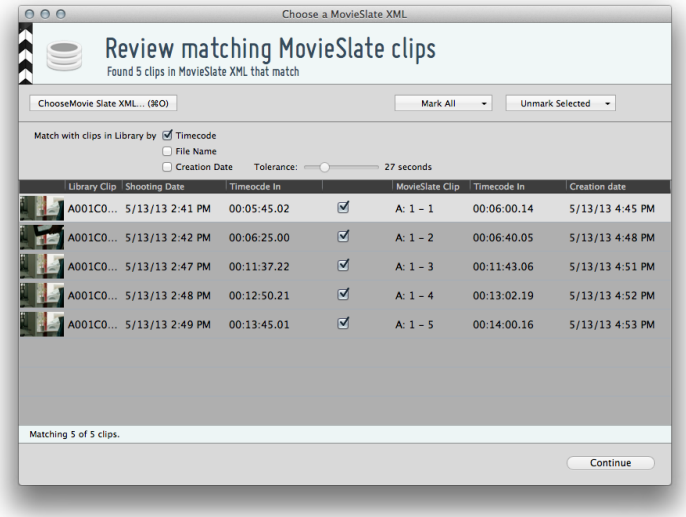


Figure 1: “Movie Slate Import Wizard, showing 5 matched clips”

Import and Match Metadata from Drylab Set Report 3

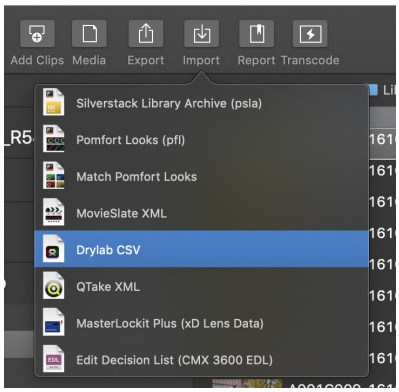
Drylab Set Report 3 app can export a .CSV file that can be imported into Silverstack to match to clips and add metadata captured in Set Report to the Silverstack library.

- Consult Drylab documentation for export of CSV from Set Report
- Matching Options
- Metadata Import Options & Mapping

Import a CSV File from Drylab Set Report 3 into Silverstack

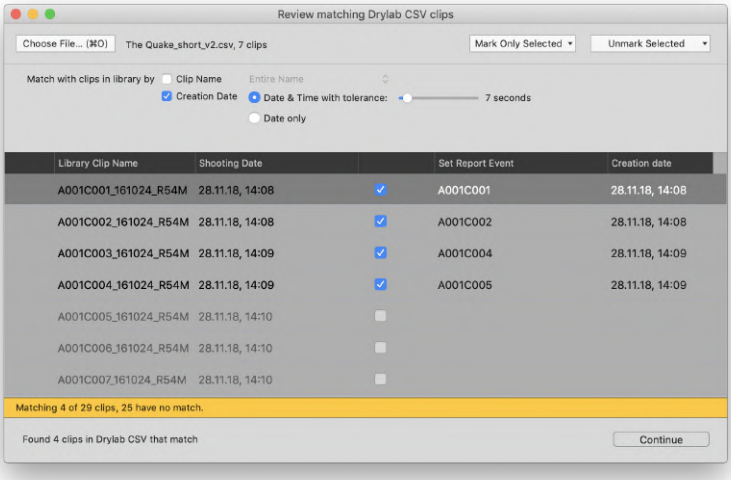
First select the folder or bin in the library that you want to import metadata for.

Then, in the “Import” menu button in the toolbar select the option Drylab CSV:



When the Finder dialog points you to select a file, choose the CSV file exported from Drylab SetReport and select “Open”.

Matching Options



There are two options to match the events in the CSV to the clips in the library:

- by **Clip Name**
- by **Creation Date**

Matching by Clip Name

Enabling the Clip Name option, looks for a match between the “filenameBase” column in the CSV and the Video Clip Name (Library Clip Name) in the Silverstack library.

Options

The pop up menu on the right side of the checkbox offers the option to take only a certain amount of characters of the clip names into account for matching.

Matching by Creation Date (Time of Day)

Enabling the Creation Date option, looks for a match between the “createdAt” column in the CSV and the Shooting/Recording Date (Library Clip Name) in the Silverstack library.

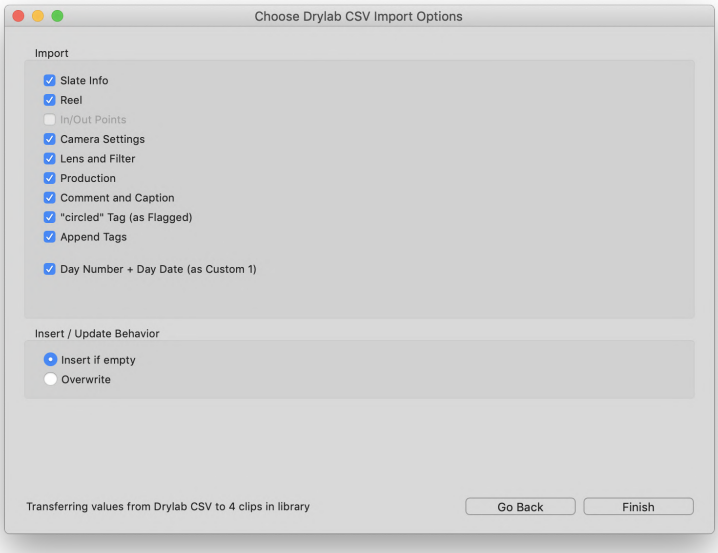
Options

- **Date&Time with tolerance:** You can adjust a slider to set the desired tolerance for the matching by Creation Date
- **Date only:** Matches the clips by the date only and neglects the time part of the timestamp

The matches are displayed in the table of clips with a blue checkbox. The left side shows the Silverstack library clip name event and the right side the event from the Set Report csv.

As soon as you obtained a proper matching, click “Continue”.

Metadata Import Options & Mapping



Import Section: In this step you can select or unselect the metadata that should be imported from the CSV to the Silverstack library.

Insert/Update Behavior: Choose if you only want to insert new metadata if a fields is empty or you want to force an overwrite.

The following import sections are available:

- Slate Info
- Reel
- Camera Settings
- Lens and Filter
- Production
- Comment and Caption
- “circled” Tag (as Flagged)
- Append Tags
- Day Number + Day Date (as Custom 1)

Mapping

This is the list of importable metadata from the CSV and to which fields it maps in the Silverstack library (sorted by Silvertack metadata section):

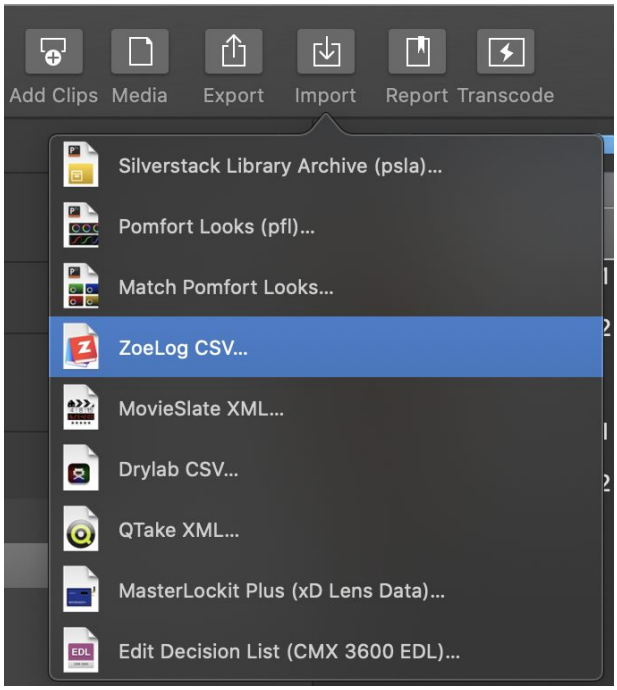
Drylab CSV Field	**Silverstack Section**	**Field**
cameraLetter	Slate Info	Camera
episodes	Slate Info	Episode
scenes	Slate Info	Scene
shot	Slate Info	Shot
take	Slate Info	Take
reel	Reel	Reel / Tape
tStop	Camera Settings	T-Stop
distanceToObject	Camera Settings	Distance To Object
iso	Camera Settings	ISO
colorTemperature	Camera Settings	White Balance
pan	Camera Settings	Camera Orientation
tilt	Camera Settings	Tilt
latitude	Camera Settings	GPS Position
longitude	Camera Settings	GPS Position
cameraName	Camera Settings	Model
filters	Lens and Filter	Filter
lens	Lens and Filter	Model
ac	Production	Camera Assistant
ac2	Production	Camera Assistant 2nd
dop	Production	Cinematographer
dataWrangler	Production	Data Manager
director	Production	Director
dit	Production	DIT
producer	Production	Producer
scriptSupervisor	Production	Script Supervisor
soundMixer	Production	Sound Mixer
shotNotes	Comment and Caption	Comment
cameraTakeNotes	Comment and Caption	Comment
tags	“circled” Tag (as Flagged)	Flagged
tags	Append Tags	Tags
dayDate	Day Number + Day Date (as Custom 1)	Custom 1
dayNumber	Day Number + Day Date (as Custom 1)	Custom 1

Import Metadata from ZoeLog

For transferring metadata captured in ZoeLog to Silverstack, a CSV can be exported from the ZoeLog app, imported into Silverstack, and matched to clips in the Silverstack library.

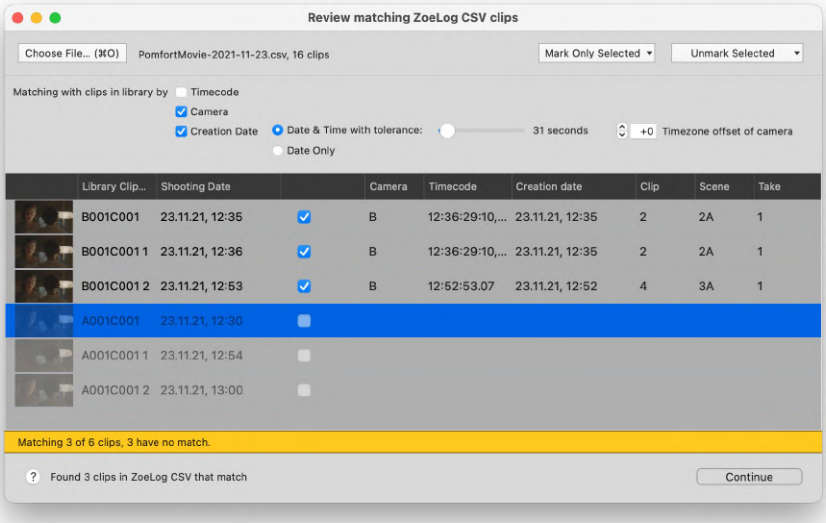
Import a CSV File from ZoeLog into Silverstack

First, select the folder or bin in the library that you want to import metadata for. Then, select the option “ZoeLog CSV…” in the “Import” menu in the toolbar:



A file selection dialogue appears. Select the CSV file exported from ZoeLog and click “Open”.

Matching Options



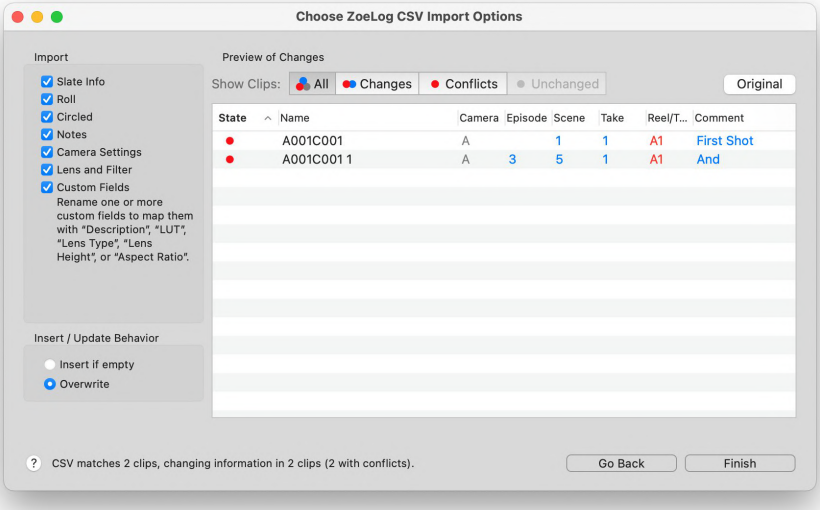
These options can be combined to match the events from the CSV to the clips in the library:

- by **Timecode** matches the “timecode” column from the CSV with the timecode of the clip in the Silverstack library. If there are multiple timecode entries in the CSV, all entries are used for matching with the timecode of a clip.
- by **Camera** looks for a match between the “camera” column in the CSV and “camera” in the Silverstack library.
- by **Creation Date (Time of Day)** matches the “Origin Date” column in the CSV with the “Shooting/Recording Date” of the clips in the Silverstack library refined by these options:
  - **Date&Time with tolerance:** You can adjust a slider to set the desired tolerance for the matching by Creation Date.
  - **Timezone offset of camera:** You can set an offset up to 23hours to compensate time offsets between the CSV and the clip metadata for the matching by Creation Date.
  - **Date only:** Matches the clips by the date only and neglects the time part of the timestamp.

The matches are displayed in the table of clips with a blue checkbox. The left side shows the Silverstack library clip name event and the right side the event from the Set Report csv.

As soon as you obtained a proper matching, click “Continue”.

Metadata Import Options & Mapping



Import Section: In this step you can select or unselect the metadata that should be imported from the CSV to the Silverstack library.

Insert/Update Behavior: Choose if you only want to insert new metadata if a field is empty or you want to force an overwrite.

The following import sections are available:

- Slate Info
- Roll
- Circled
- Notes and Descriptions
- Camera Settings
- Lens and Filter
- Custom Fields
  Rename any custom field in the user preferences to “Description”, “Lens Height”, “Lens Type”, “LUT” and “Aspect Ratio” in the preferences in order to map these fields with the corresponding values.

Mapping

This is the list of importable metadata from the CSV and to which fields it maps in the Silverstack library (sorted by Silvertack metadata section):

ZoeLog CSV Field	**Silverstack Section**	**Field**
Camera	Slate Info	Camera
Episode	Slate Info	Episode
Scene	Slate Info	Scene
Take	Slate Info	Take
Roll	Reel	Reel / Tape
Circled	Circled	Flagged
Notes	Notes	Comment
ISO	Camera Settings	EI/ISO
Color Temp	Camera Settings	White Balance
Shutter	Camera Settings	Shutter Angle
Tilt	Camera Settings	Camera Orientation
Lens	Lens and Filter	Lens Model
Stop	Lens and Filter	T-Stop
Filters	Lens and Filter	Filter
Focus	Lens and Filter	Focus Distance
Description	Custom Fields	Custom
Lens Height	Custom Fields	Custom
Lens Type	Custom Fields	Custom
LUT	Custom Fields	Custom
Aspect Ratio	Custom Fields	Custom

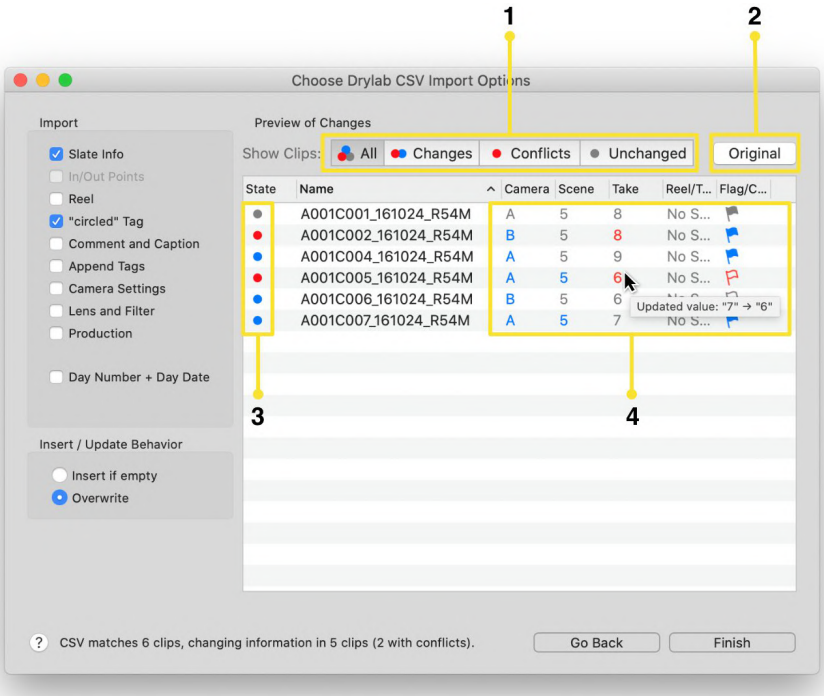
Preview Metadata Before Importing

Silverstack supports importing metadata from other on-set applications, such as *ZoeLog, Movieslate*, *Drylab*, *QTake* or *Pomfort Livegrade*. These import wizards are complemented by a **preview window**, that allows you to **check the impact** of the imported metadata files and adapt the import options – **before applying the import to your library**.

Import Preview Window

Each import wizard consist of two steps:

- First Step: Select the file to import and match with the clips in your library
- Second Step: Select what metadata fields you want to take over. **New: Preview Window in this step**



Import Options Step With Metadata Preview Window

1. *Show Clips* filter buttons: Filter the preview table
   - *Unchanged* – show only clips that are not changed by the import
   - *Conflicts* – show only clips with metadata that is overwritten by import
   - *Changes* – show clips with metadata that is overwritten by import *or* that get additional metadata
   - *All* – show all clips that were matched in the previous wizard step
2. *Original* button: Toggle display of values in table to show value after/before import
3. Clip state indicator:
   - *Grey* – no changes to metadata of this clip
   - *Red* – metadata in this clip is overwritten
   - *Blue* – new Metadata is added to this clip (but no metadata overwritten)
4. Preview of metadata fields after import
   - *Grey* – value not changed
   - *Red* – original value is overwritten
   - *Blue* – value is added (no original value)
   - Hover values with cursor to see tooltip with additional information

Changes to the Import Options and the Insert/Update Behaviour (on the left side of this wizard step) are displayed instantly in the preview window.

For further details about the import wizards, please check the KB articles

- Look Matching
- Import Metadata from ZoeLog
- Import Metadata via Movieslate
- Import and Match Metadata From Drylab Set Report
- Import Metadata from QTake

Transferring Clips and Metadata to Adobe Premiere Pro

Silverstack can create an .xml file compatible with Adobe Premiere Pro to transfer clips and clip metadata to the editing tool.

Exporting an Adobe Premiere Pro XML from Silverstack

The export option can be accessed from the “Export” button in the toolbar:

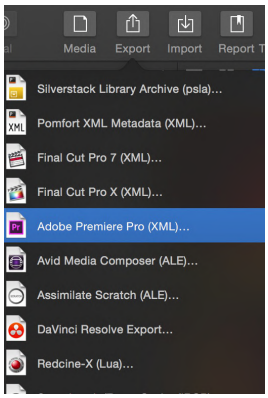


Fig. 1: The export menu

After the source selection step you can define content and format options for the exported XML:

Fig. 2: Content and format option for the XML export

- **Content:**
  - **General Clip Info:** Contains the basic information needed to transfer clips (file paths, etc.)
  - **Master Info:** Contains Scene Shot Take info as well as the Reel Name.
    - Scene in Silverstack maps to “Scene” column in Premiere Pro
    - Shot and Take in Silverstack map to the “Shot” column in Premiere Pro in the format “Shot – Take”
  - **User/QC Info:** Contains flag/circled info as well as Comments (maps to “Description” column in Premiere Pro)
  - **General clip settings as Master Comment 1:** Maps general clip settings (e.g. InformationSensorFps, ShutterAngle, WhiteBalance, ExposureIndexAsa, ColorGamma) to the Master Comment 1 column in Premiere Pro
  - **Tags as Master Comment 2:** Maps the tags in Silverstack to the master comments 2 in Premiere Pro.
  - **Custom 1, 2 as Master Comment 3,4 :** Maps the custom comment fields 1 and 2 in Silverstack to the master comments 3 and 4 in Premiere Pro
  - **Labels as Clip Colors:** Maps the labels in Silverstack to clip colors in Premiere Pro
  - **Audio Info:** Takes over the Source Audio Clip Names column and the # of Source Audio Tracks Info to Clip Comment A and Clip Comment B in Premiere.
  - **Cue Points as Markers:** Maps the cue points in Silverstack to the markers in Adobe Premiere Pro.

- **Format:**
  - Sets the Reel Name to
    - **Reel Name:** Sets the Reel Name of the XML as specified in the Silverstack “Reel Name” metadata field
    - **Source File Name:** Sets the Reel Name of the XML to the source file name of the clip in Silverstack (e.g. A003C012_160205_R2VJ.mov)
    - **Source File Name Without Extension:** Sets the Reel Name of the XML to the source file name without extension (e.g. A003C012_160205_R2VJ)
    - **Video Clip Name:** Sets the Reel Name of the XML as specified in the Silverstack “Name” metadata field (e.g. A003C012_160205_R2VJ)

In Premiere Pro the Reel Name of the XML will be taken over to the Tape Name column.

After defining the settings click **“Save XML…”** to export the Adobe Premiere Pro XML.

Creating Synced Sequences in Premiere with Audio Sync Information from Silverstack XT or Silverstack Lab

Overview and Use Cases

Silverstack can provide information about external audio clips that have been synced to Adobe Premiere to create synced sequences with correctly aligned video and audio tracks.

This feature helps e.g. to implement workflows where audio clips are not available before transcoding and are synced to the transcoded clips at the end of the day. Right after automatic audio sync the xml with audio sync information can be exported and provides synced sequences without transcoding again.

Another use case could be bringing camera native ProRes files into edit with synced audio from Silverstack.

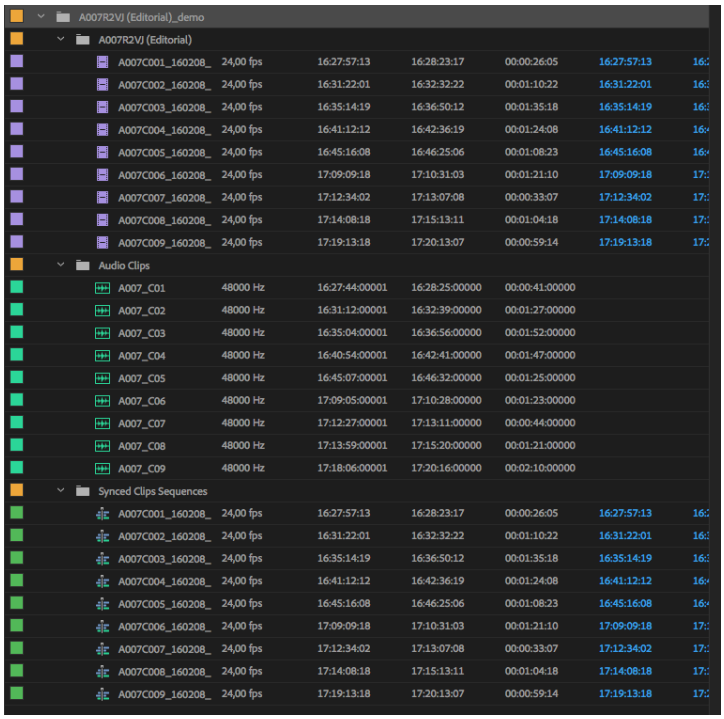
How To

After syncing external audio clips with the video clips open the Premiere Export:

Fig. 3: The Audio option in the Adobe Premiere XML Export

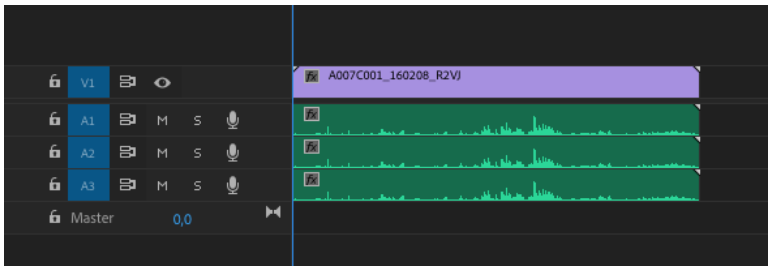
Make sure to mark the checkbox **“Include audio synced sequences and referenced audio** clips”. This will equip the XML with the necessary information.

After opening the XML in Premiere Pro you will obtain the following folders:



- One folder that contains all the video clips (e.g. A007R2VJ (Editorial), see fig. 4)
- One folder that contains all the audio clips synced with the video clips ("Audio Clips" in fig. 4)
- One folder that contains the **"Synced Clips Sequences"**

The **"Synced Clips Sequences"** are Adobe Premiere Pro editing sequences that have the audio in sync position to the clips:



They can now be used for editing.

To learn more about audio sync with external audio clips in Silverstack Lab and Silverstack XT please take a look at the articlesHow To Automatically Sync Audio Based on Timecode in Silverstack Lab and How to Manually Sync Audio in Silverstack XT and Silverstack Lab.

Mention the "special setting" for editing ?

How to Open an XML in Premiere Pro

After saving the XML from Silverstack you can go ahead and open the XML file in Premiere Pro.

Open Premiere Pro. Go to the **"File"** menu and choose **"Open Project…**". Choose the previously exported XML file and click **"Open".**

The XML will import as a bin with all exported clips in Premiere:

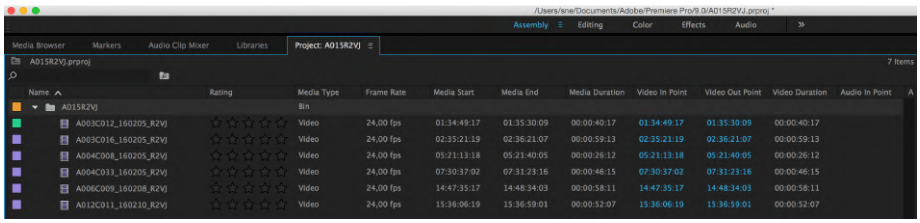


Fig. 4: The imported XML folder in Premiere Pro

ZEISS CP.3 XD Lens Correction: Workflow Overview

The CP.3 eXtended data (CP.3 XD) lenses by ZEISS provide extended metadata for digitally correcting images concerning optical shading and distortion deviations. Pomfort's applications LiveGrade Pro and Silverstack provide functionality to leverage this extended metadata for **on-set preview (LiveGrade Pro)** and **data management (Silverstack)**.

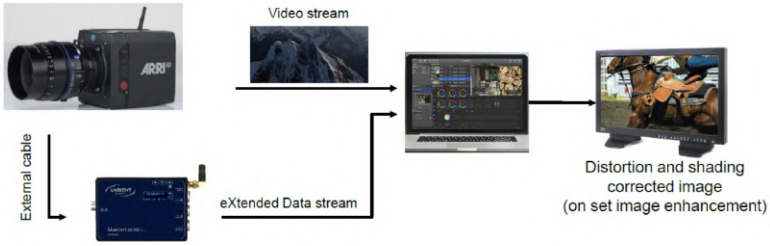
Use of eXtended Data in LiveGrade Pro and Silverstack XT / Silverstack Lab

The ZEISS eXtended data can be used for:

- **On-set preview** with **LiveGrade Pro**
- **Extraction of recorded lens data** and consolidation with clips in **Silverstack XT and Silverstack Lab**

The schematic overviews give you an idea of the on-set preview and lens data extraction use cases:

On-Set Preview of Lens Correction with LiveGrade Pro



LiveGrade Pro is able to receive realtime lens correction information from a ZEISS CP.3 XD lens that is connected to an Ambient MasterLockit Plus.

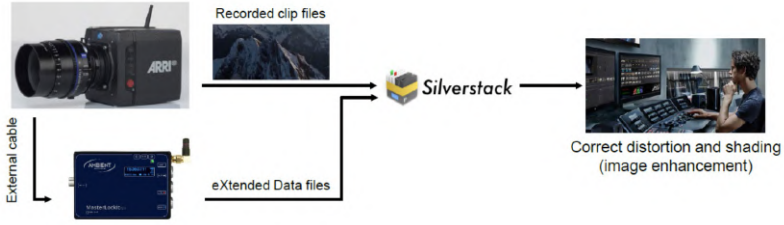
Functionality

The live signal of the camera is connected to a hardware capture device that is connected via Thunderbolt to the Mac running LiveGrade Pro in order to receive a live image in the application. Read the articles HD-SDI Setup for LiveGrade as well as SDI Recording and Framegrabs for more information about live image capturing in LiveGrade.

LiveGrade Pro connects via Wifi or a tethered network connection to the MasterLockit Plus that receives live lens correction data from the ZEISS CP.3 XD lens. The live lens correction data can be applied to the captured live signal from the camera.

Learn more about the process in LiveGrade Pro in the article ZEISS CP.3 XD Lens Correction in LiveGrade Pro that offers a detailed description of the features.

Extraction and Display of Recorded Lens Data in Silverstack



Silverstack XT and Silverstack Lab allow to import, display and export lens correction data from ZEISS CP.3 XD lenses.

Functionality

The lens correction data is recorded in the MasterLockit Plus. Clips offloaded in Silverstack hold timecode information that matches the recorded lens data from the CP.3 XD lens. Silverstack can connect to the MasterLockit Plus via Wifi or a tethered network connection to receive the recorded lens data and to consolidate it with the clips in the Silverstack database. After that step, the lens correction can be reviewed in the Silverstack player.

Furthermore the correction data can be exported into ZLCFs (ZEISS Lens Correction Files) for consecutive production steps as e.g. the use in the **"ZEISS Lens Correction"** plugins ZEISS provides for third party applications.

Learn more about the process in Silverstack in the article ZEISS CP.3 XD Lens Correction in Silverstack that offers a detailed description of the functionalities.

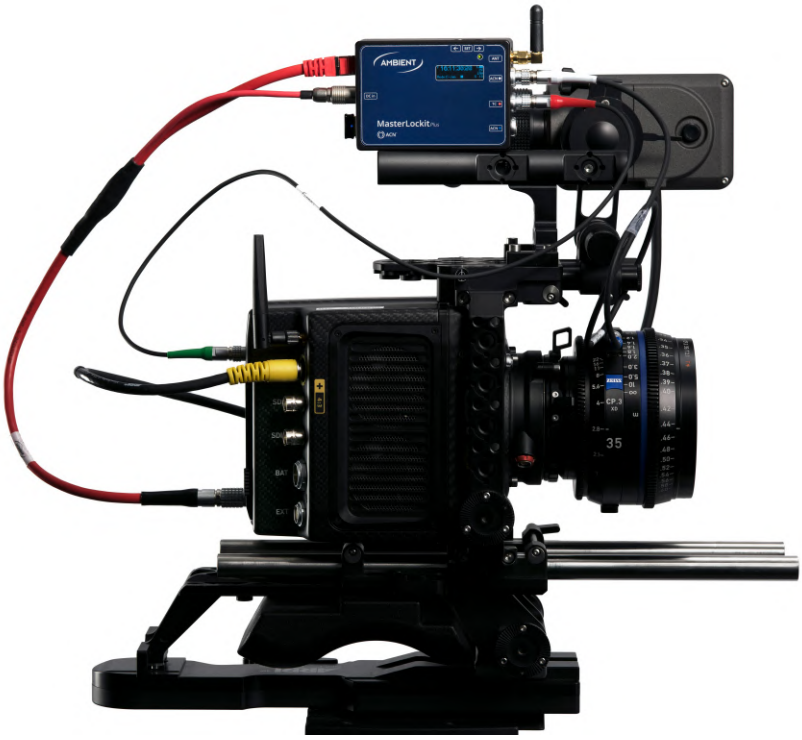
Hardware Overview

ZEISS eXtended data can be recorded via an external LEMO compatible plug onto an Ambient MasterLockit Plus:

Recording ZEISS eXtended Data via external LEMO®* compatible plug

** LEMO is a registered trademark of INTERLEMO HOLDING S.A.*

Exemplary Setup Using an ARRI Alexa Mini



1. Connect the ZEISS CP.3 XD lens via the metadata cable to the grey ACN port of the MasterLockit Plus
2. Connect the timecode cable from the TC port of the MasterLockit Plus to the TC port of the camera

Hardware Components for LiveGrade Pro Workflow

The following hardware components are involved:

- ZEISS CP.3 XD lens
- Camera
- Ambient MasterLockit Plus
- Cables
  - Lens data cable
  - Power cables
  - Metadata cables
  - Timecode cables
- Apple Mac / Macbook (Pro)
- Blackmagic Design UltraStudio Mini Recorder or similar recording device
  - Thunderbolt cable
  - HDMI or SDI cable
- Software
  - Pomfort LiveGrade Pro

Hardware Components for Silverstack Workflow

The following hardware components are involved:

- ZEISS CP.3 XD lens
- Camera
- Ambient MasterLockit Plus
- Cables
  - Lens data cable
  - Power cables
  - Metadata cables
  - Timecode cables
- Apple Mac / Macbook (Pro)
- Software
  - Pomfort Silverstack XT or Silverstack Lab

Additional Information

What is eXtended Data?

ZEISS eXtended Data is a newly developed lens data technology. It is based on the Cooke /i technology and extends the functionality with additional information about the lens characteristics such as distortion and shading. The characteristics are calculated in real time for every focal point and effective T-stop. The lens data are transferred either directly to camera through 4-pin Cooke /i interface (PL mount) and / or to any supported equipment via external cable.

ZEISS CP.3 XD Lens Correction in Silverstack

Silverstack XT and Silverstack Lab allow to import, display and export dynamic lens correction data from ZEISS CP.3 XD lenses. In particular this involves shading and distortion correction of the recorded image.

Overview

The following steps can be executed in Silverstack:

- **Import lens correction data** directly from Ambient Master Lockit Plus to consolidate it with the according clips in the library.
- **Display and review shading and distortion correction** via the ZEISS lens correction panel in Silverstack.
- **Export .ZLCF lens correction files** to transport lens correction data to consecutive applications
  - More info about ZLCF plugins and supported applications on the ZEISS Website.

To learn more about the general workflow please visit the article ZEISS CP.3 XD Lens Correction: Workflow Overview.

Prior to importing lens correction data, clips have been recorded in the camera with the MasterLockit Plus attached to camera and lens.

Import Lens Correction Data from Ambient Master Lockit Plus

The lens correction data saved in the MasterLockit Plus holds a timecode relation to the clips recorded in the camera. The lens correction data be pulled via a network connection from the MasterLockit Plus and then be consolidated with the clips via timecode

1. Offload the clips that have been recorded with lens correction data into the Silverstack Library
2. Open the Import wizard through the **"Import"** button in the toolbar:

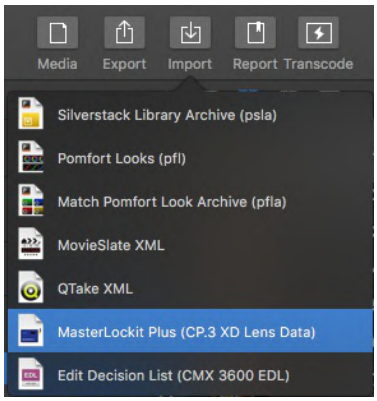


Fig. 1: Choose MasterLockit Plus (CP.3XD Lens Data) from the Import menu

3. The lens data import wizard opens. Enter the MasterLockit Plus IP Address to the **"Master Lockit Address"** address field to connect to the Master Lockit Plus. After a successful connection the lens data events have been connected to the clips:

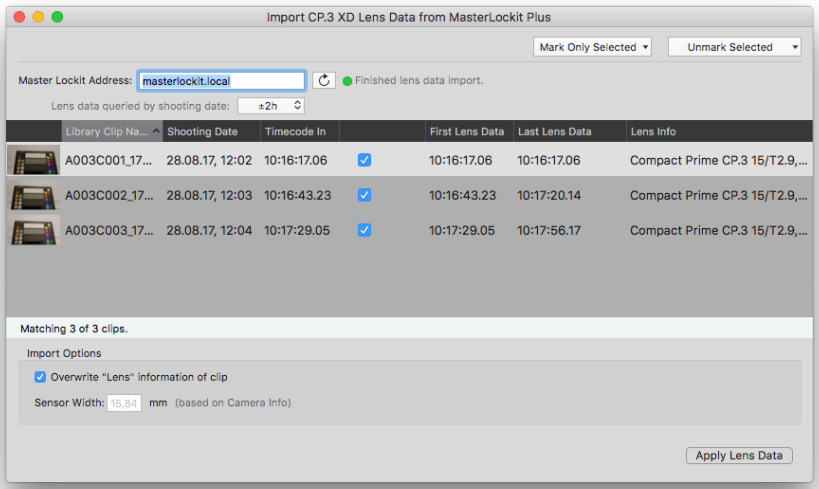


Fig.2: The lens data import wizard

Be aware that only clips that do not hold lens correction data will be displayed in the import wizard. Learn how to remove lens correction data in the sections below.

4. Options:
   - **Lens data queried by shooting date:** The lens correction data saved in the MasterLockit Plus will be queried for a certain time range around the shooting date of the clips. You can set a wider time frame for the query with this dropdown. By setting the time and date of the camera correctly you can initially make sure that the shooting date and time of the clips matches the timestamp of the lens correction data.
   - **Import Options**
     - **Overwrite "Lens" information of clip**: The lens info coming from the MasterLockit Plus can be taken over to the **"Lens"** metadata field in Silverstack.
     - **Sensor width**: The sensor width is required to be able to display the lens corrections. Silverstack can determine (look up) the sensor width based on the following metadata of the clips (displayed as columns in the clips table):
       - Camera manufacturer
       - Camera model
       - Sensor model
       - Format description (only in cases where the above does not provide a unique sensor width)
       - ResolutionThere are **cases when an automatic detection is not possible** (most probable caused by the lack of metadata of the clips). In this case you have to specify the sensor width manually to be applied to all clips where an automatic determination was not possible.
         You can change the sensor width later in the General Info (right sidebar) under "ZEISS Lens Correction" (see details below).
5. To take over the lens correction data to the clips click the **"Apply Lens Data"** button.

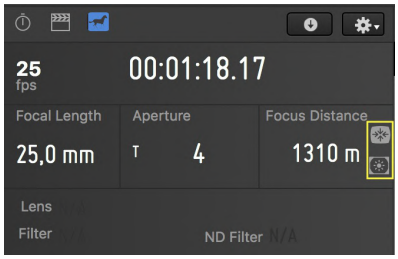
Extract Lens Correction Data from Clips

There are cameras that are capable of including the xD lens correction data directly in their recorded clips. Currently the following formats and cameras support the integration of eXtended Data in the recorded clips:

- REDRAW clips from RED DSMC2 cameras (firmware version 7.1 and above)
- X-OCN from SONY Venice cameras (firmware version 4.0 and above)

To extract the eXtended Data from the video clips you have to use the generic dynamic metadata extraction functionality. Learn more about how to extract dynamic metadata in Silverstack XT and Lab in the article Dynamic Metadata.

If eXtended Data is present in the clips, it will automatically be extracted along with the dynamic metadata. Please see the screenshot below for indicators if distortion and shading metadata is present, marked with a yellow rectangle.



The indicators on the right show if shading and/or distortion data are available.

Display and Review Shading and Distortion Correction

The clips now hold lens correction data. The **"ZEISS Lens Correction"** entry in the General Info shows the enabled correction data:

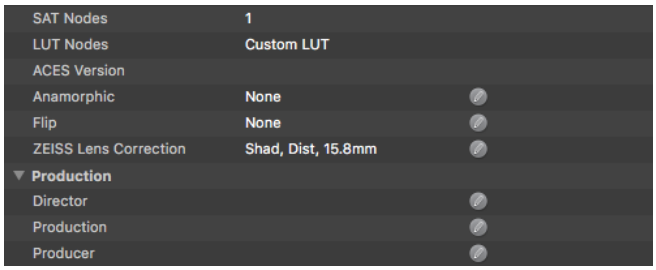


Fig. 3: ZEISS Lens Correction entry in the General Info

Click the pen icon to open the ZEISS lens correction popover:

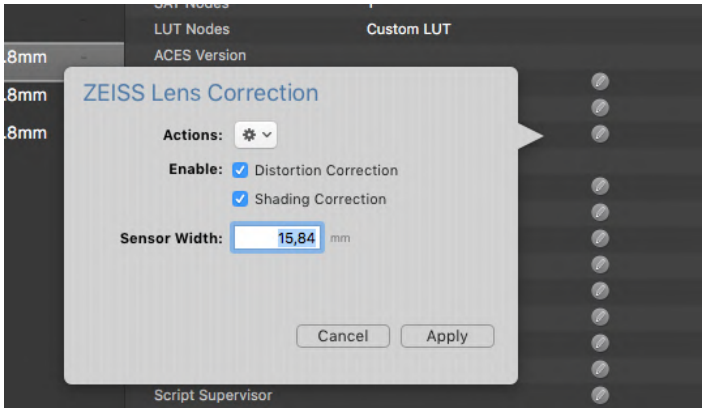


Fig.4: The ZEISS Lens Correction Popover in the General Info

- The ZEISS Lens Correction Popover in the General info allows for
  - two different **“Actions”**:
    - removal of lens data (for single and multiple clips)
    - import of ZLCF file (only if no lens correction data is available for the clip)
  - multi edit of shading and distortion correction activation
  - multi edit of sensor width

The ZEISS lens correction panel can be opened from the **“Look”** section of the main menu:

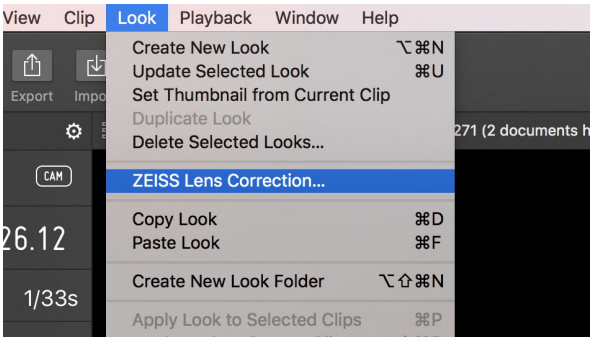


Fig.5: Open the ZEISS lens correction panel

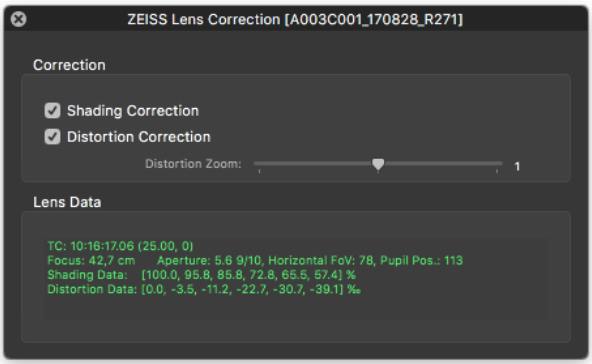
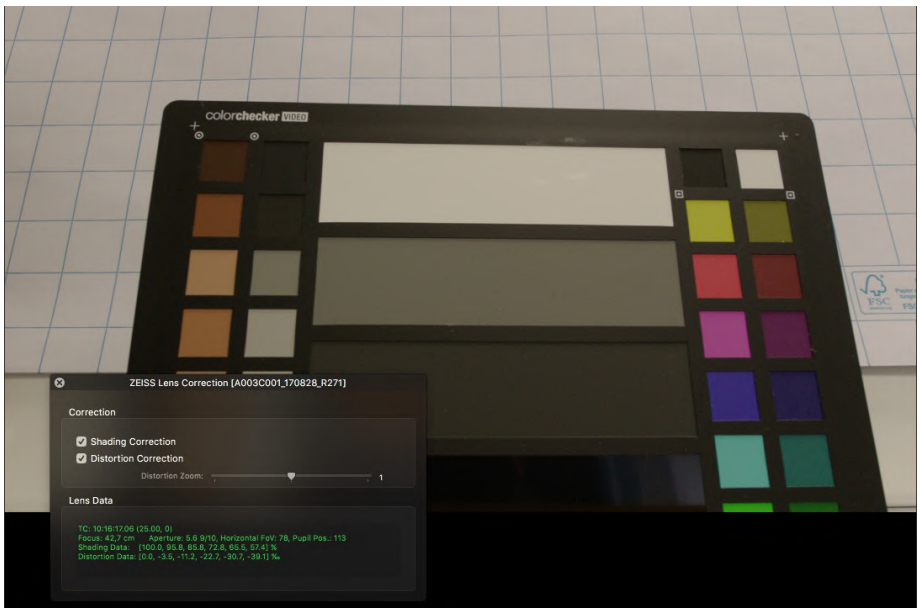


Fig. 6: The ZEISS lens correction panel

- The ZEISS Lens Correction panel allows for
  - separate activation and deactivation of shading and distortion correction for display in player
  - entry of distortion zoom factor
  - dynamic lens data review per clip

The lens correction data will be displayed in the Silverstack player:



To export the status of the lens correction data into a clips report please activate the**“ZEISS Lens Correction”** column in the table view:

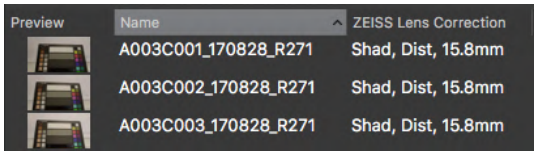


Fig. 8: The ZEISS lens correction column in the clips table view

Export ZEISS Lens Correction Files

The acquired lens correction data can now be exported per clip for consecutive productions steps. To open the export wizard go to the **"Export"** button menu in the toolbar and select the **"ZEISS Lens Correction Files (ZLCF)"** entry from the list:

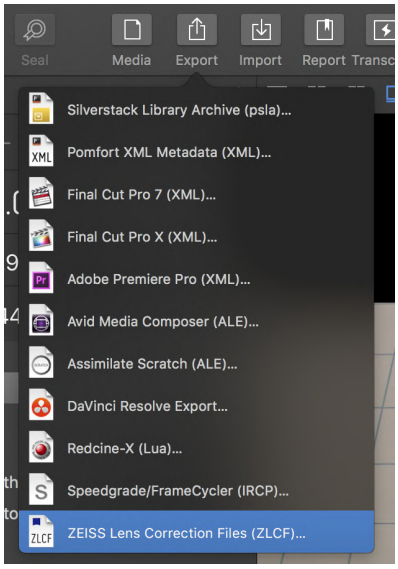


Fig. 9: Open the ZLCF export wizard

This opens the ZLCF export wizard:

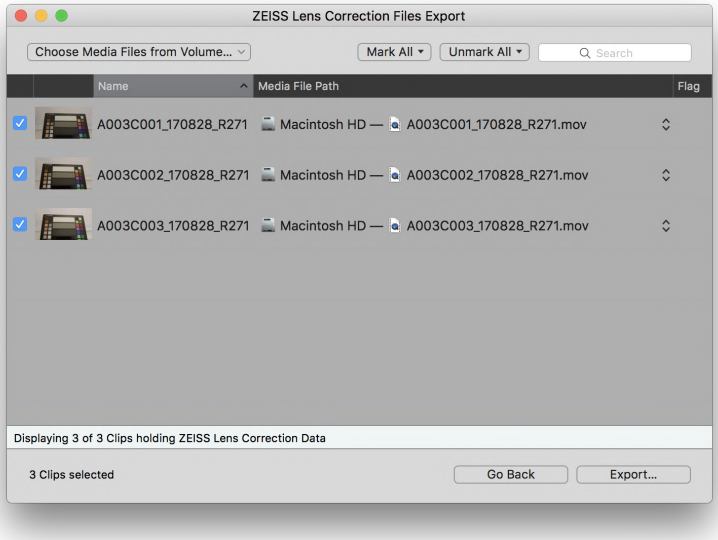


Fig. 10: The ZLCF export wizard

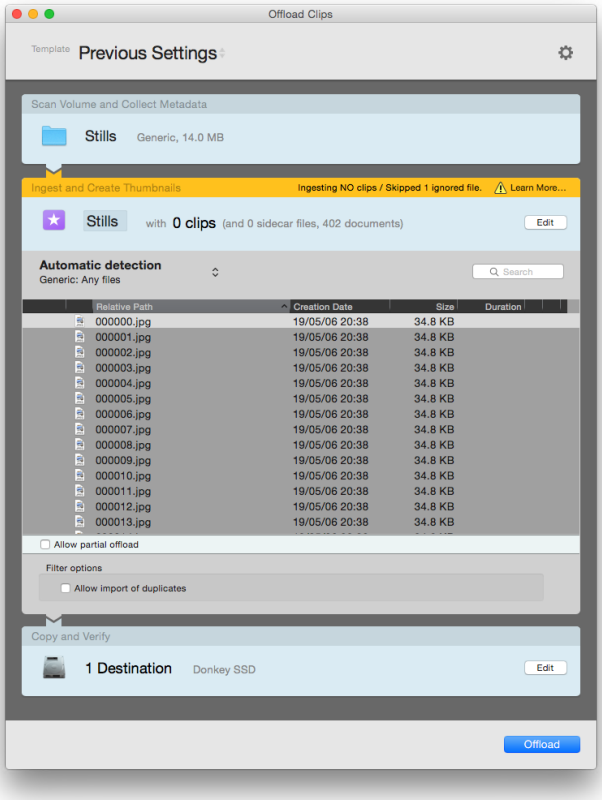
Please be aware that the wizard only shows clips that hold lens correction data. All others will not be shown and are reflected in the status line at the bottom.

Per clip one .zlcf (ZEISS lens correction file) will be exported. After clicking **"Export..."** the wizard points you to select a folder for the zlcf files to be placed.

Camera Formats

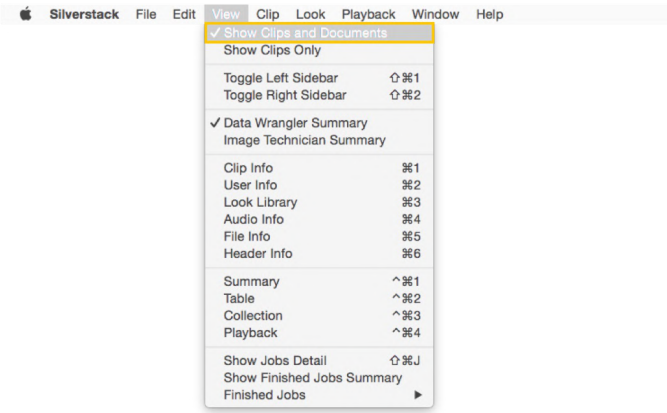
Generic file formats

Offloading all kinds of assets is possible with Silverstack's proven copy features, which offer secured backups with checksum verification. The Offload wizard scans the source folder and automatically selects the «Generic Copy» mode when non-supported files are detected. Not all media files are recognized as playable Clips by Silverstack, besides the supported advanced media formats that can be found in the article Assets in Silverstack.



Offloading wizard

You will get a yellow notification reading «Ingesting NO clips» in the offload wizard in case Silverstack didn't recognize the scanned files as a supported advanced camera format. However, you can go ahead and proceed to offload and check sum the files. Once the process is finished, the files will be registered in the Library, where you can continue to work with them. Just make sure to enable «Show Clips and Documents» in the View menu:



View menu

ARRI ALEXA and AMIRA Looks in Silverstack

Silverstack can playback and transcode ProRes clips recorded with ARRI ALEXA and AMIRA cameras with the looks applied on set. This feature lets DITs check the Log-C footage in real time with the final look and feel without the need of transcoding.

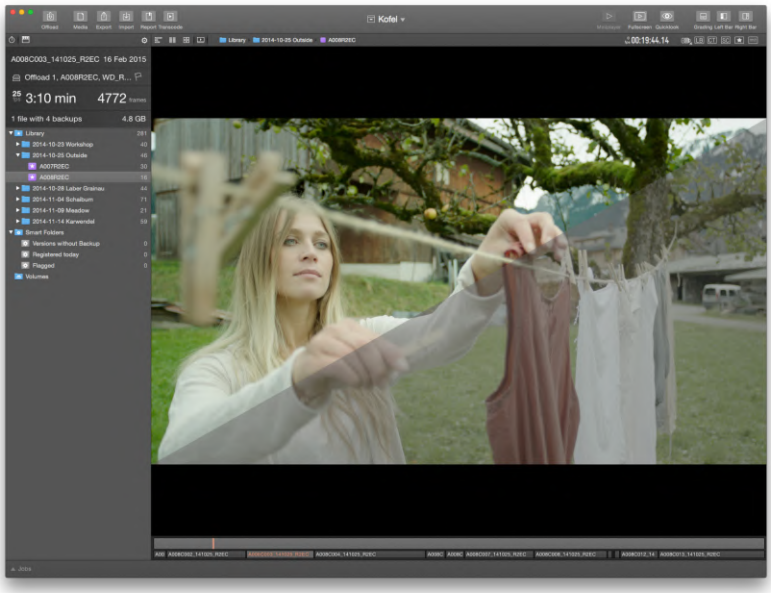


figure 1: AMIRA look application on and off

In order to use this functionality, ALEXA Looks and AMIRA Looks have to be applied in the camera before recording. Then the camera will write color metadata into the QuickTime ProRes clips. Once the clips have been added to the library, Silverstack will read this metadata from the file and apply the color changes along with the standard Rec.709 conversion by default. After the clips have been checked for quality, Silverstack will let you transcode them to a lighter codec with the same look applied.

This feature is active by default, but it can be disabled through Silverstack's Preferences menu, by setting the «Look Sorce» to None:

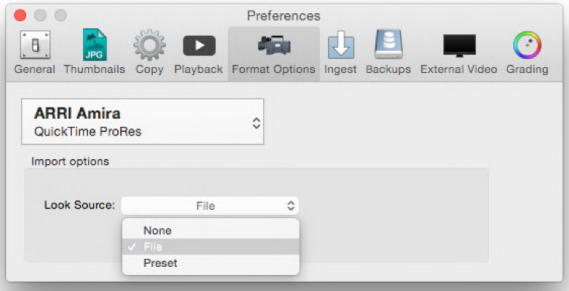


figure 2: visual controls preferences menu

Even if the look application is disabled, the footage can be displayed with the standard Log-C to Rec.709 conversion if you select «Preset» and choose one of the Alexa or Amira LUTs.

ShotHub Integration

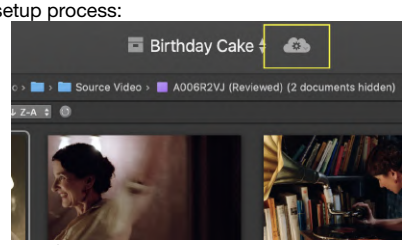
Connecting Silverstack to ShotHub

Sync the local Silverstack clip library with ShotHub

Make sure you are working with Silverstack *or* Silverstack Lab version 8.0 or higher *with the Silverstack Library Sync Feature. Please note: You can use the Library Sync Feature across several computers with Silverstack OR Silverstack Lab, that means there is no need to have Silverstack Lab installed on all computers.*

Follow the steps below to make your clip library available online and merge clip metadata and file information bi-directionallly with connectedSilverstack desktop applications.

1. Click the cloud button in the toolbar to start the setup process:



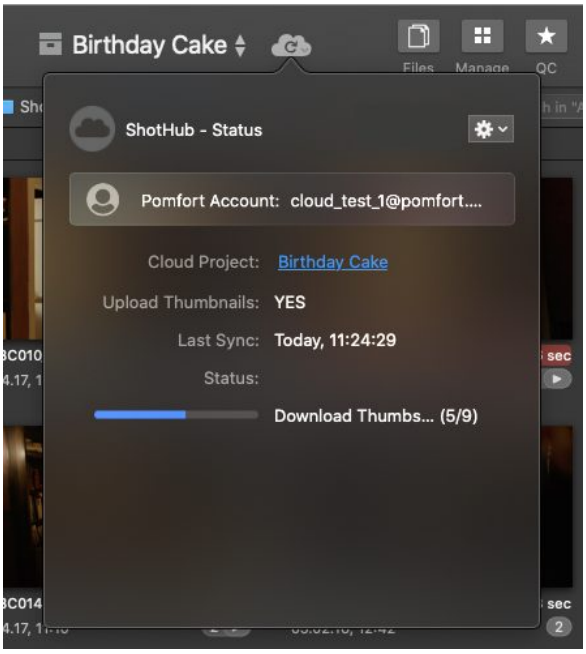
2. In the first step, you **sign in to ShotHub** with your Pomfort Account credentials to connect your project with ShotHub.
3. Optional: Select your Pomfort Account if you use more than one Pomfort Account (which can managed in the application preferences)
4. In the next step, **select a ShotHub team and choose the Silverstack cloud project** that you want your current local Silverstack project to appear in. You have two options:
   - Create a **new cloud project** and give it a custom name in the “Project Name:” text field (cloud project names are forced to be unique).
   - Merge the Silverstack library with an existing Silverstack cloud project, which you can choose from the “Cloud Project:” pop-up button.
5. In the last step, you choose the sync options. Select if you want to**upload thumbnails** with the metadata library.
6. Click “Start Sync” to start the sync process of your local library to a Silverstack cloud project in ShotHub.

Sync the clip library of another Silverstack application with the cloud project

Generally, there are two ways to sync another library with an existing cloud project in ShotHub. You can either**create a new local clip library** by adding a synced library from ShotHub or you can **merge the local clip library** with the cloud project. More details of both ways can be found in this article: Sync Clip Library

SHOTHUB PROJECT STATUS AND SYNC OPTIONS

After the setup is completed successfully, you can monitor the ShotHub project status in the popover that shows from the cloud button in the toolbar (see screenshot below).



The cloud button indicates the following sync status or ongoing sync processes:

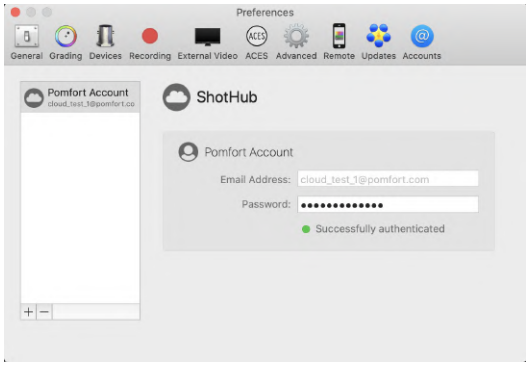
- **...** new library data, changes, or thumbnails in the synced libraries are available to be synced
- ↺ sync is in progress, new library data, changes, or thumbnails are synced
- ✓ project is synced completely
- **x** project is disconnected from cloud project or temporarily taken offline
- **!** sync error (for example, if you are not connected to the internet or the cloud project was deleted)
- ⚙ project is not connected to ShotHub (library is not uploaded or disconnected from ShotHub)

The elements displayed in the popover are the following:

- **Gear menu button:** Provides access to the following functionalities:
  - **Take the project offline temporarily**. This temporarily prevents new library data from being uploaded to the cloud project.
  - **Take the project online.** Restarts uploading new library data to the cloud project if taken offline before.
  - **Sync Changes Now.** Trigger the sync process manually.
  - **Disconnect the project from ShotHub.** This will disconnect the local project and the cloud project permanently. By default you can sync your library again to the existing cloud project by setting up the sync process again.
- **Pomfort Account:** This shows the Pomfort Account that is used to sign into ShotHub for this project.
- **Cloud Project:** The name of the Silverstack cloud project that the local Silverstack project is connected with. You can click the link to the cloud project to open it directly in your default web browser.
- **Include Thumbnails:** Shows YES if thumbnails are also synced and NO if they are not synced. You can change this setting by disconnecting the project and setting it up again.
- **Last Sync:** Time and date of the previous complete sync.
- **Progress bars:** When changes are made to the library or the cloud project, there are two progress bars. One for the sync of library metadata and one for respective thumbnails.

ACCOUNTS TAB IN THE PREFERENCES

Your Pomfort Account(s) can be managed in the Accounts tab of the application preferences. Configured accounts show up in the connection dialog when starting the upload of a new project and can also be edited in the keychain.



Clip Library Sync

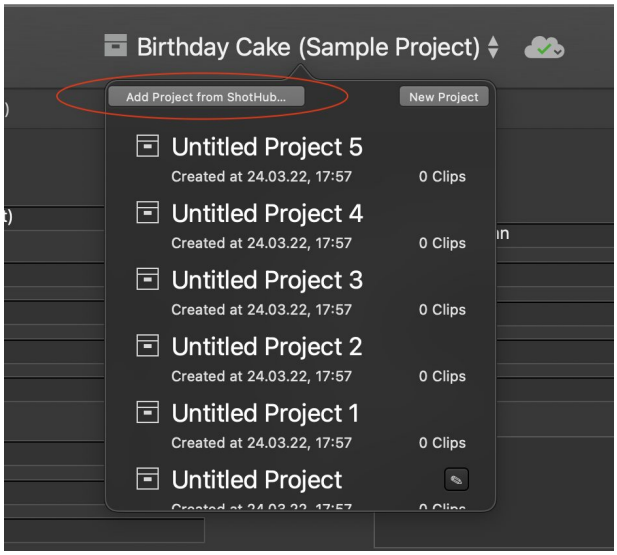
Share the clip library of Silverstack via ShotHub to keep clip metadata and file information synced across computers.

In order to use the clip library sync feature a Silverstack cloud project should be created first. You can eithersync a project from Silverstack with ShotHub or create a new project on the ShotHub web page.

Then, there are generally two ways to connect another Silverstack application to the synced cloud project.**Create a new Silverstack project (1)** by syncing the clip library from a Silverstack cloud project or **merge the local clip library (2)** with a Silverstack cloud project. For both ways, make sure that you have added your Pomfort Account in the application preferences to be able to access the Silverstack cloud project.

(1) Create a new local Silverstack project means that connecting the Silverstack desktop application with a ShotHub project creates a new local project that is “synced”. Further changes in the clip library are bi-directionally synced with the cloud project and connected Silverstack applications.

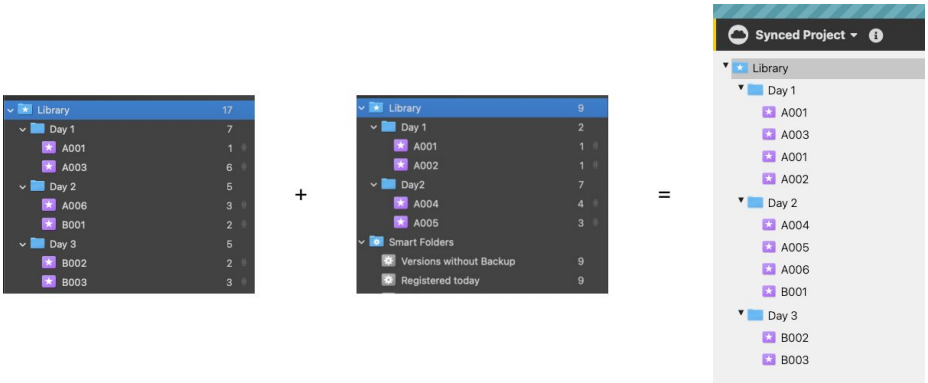
1. Click the “Sync from ShotHub” button in the Project Chooser (next to the button “New Project”)
2. Choose your account or sign in to ShotHub with your Pomfort Account credentials (for first usage only)
3. **Choose the Silverstack cloud project** that you want to sync with to create a new Silverstack project
4. Click “Start Sync” to start the sync process of your local library with the selected ShotHub project.



Create new local Silverstack project from ShotHub

(2) Merge local clip libraries means that you can merge a local Silverstack library with one cloud project, which makes especially sense when you started two Silverstack projects independently. That way, folders with the same name in both local libraries are merged (e.g. “Shooting Day 1”) into the synced clip library, bins are **never** merged, even if they have the same name.

1. Click the cloud button in the toolbar
2. Choose your account or sign in to ShotHub with your Pomfort Account credentials (for first usage only)
3. **Choose the Silverstack cloud project** that you want your current local Silverstack project to appear in
4. Click “Start Sync” to start the sync process of your local library to a Silverstack cloud project in ShotHub.



Local Silverstack clip libraries merged into one Silverstack cloud project

NOTE: If you are not using the same Pomfort Account on the other device or want to authorize other persons to sync with your project, you should invite them as project admins or project members to your ShotHub cloud project. Learn more about Managing Project Members here.

Clip Library Sync Details

Syncing your Silverstack library via ShotHub to other instances of Silverstack includes:

- Complete library with all folders and bins
- All clips, sidecars and documents
- General Info with metadata
- User Info with slate and rating information
  Note: Sync option works per metadata entry, that way you can edit slate info and comments on two computers simultaneously
- File Info with overview of file resources and link to clip in ShotHub
- Summary showing statistics and details
- Relation of source and transcoded clips
- Look info and grading information
  Note: Sync option works per look including all grading nodes
- Thumbnails (if enabled for initial cloud project)
- Project Settings: Labels and Custom Field Labels
- Cue points
- Synced audio clips
- Audio Panel adjustments

Metadata created in synced projects

- ShotID and ShotID link: Clip Identifier to retrieve a clip in ShotHub or Silverstack
- Added By: Metadata field to indicate the Pomfort account that was used to sync a clip with ShotHub. In Silverstack “Added By” is available as column in the clips table, as filter or smart folder criteria and shown in the file tab. When accessing the cloud project in ShotHub “Added By” is also available as column or search filter.

Related articles:
Exchange Library Metadata: Import and Export Silverstack Library Archives

Search Code: SH-CL1

ShotID as clip identifier

The ShotID is a short code to reference clips across multiple work places and make their metadata easily accessible.

ShotID to Share Clip Metadata

The ShotID is an identifier, created for each clip individually when added to the Silverstack library. It consists of 9 characters in a unified format, that is easy to read and pass along, e.g. *A1C-D2F-G3H*.

When the library is uploaded to ShotHub, typing-in the ShotID into ShotHub’s search field reveals **a detail overview page with all available clip information**. Wrapped as ShotID link (e.g. *shotid.net/A1C-D2F-G3H*) in emails or text messages, all of the clip’s information it is just one click away.

Precondition to access clip information via ShotID link is that you are a member of the ShotHub project. Learn more: Manage Members and Invitations

ShotID in Silverstack

Just like other metadata fields, the ShotID is displayed in Silverstack’s clips table and in the general info tab of the right sidebar. It can be included with its link in PDF reports as well as in CSV- and ALE-exports. When the clip’s information is uploaded to ShotHub, a *Remote Resource* shows up in the file tab, that lists the name of the connected cloud project, the ShotID and offers buttons to copy or open the ShotID link.
In transcodes, the ShotID can be burned-in as text or QR-code link to reference it’s source clip information in the corresponding ShotHub cloud project.

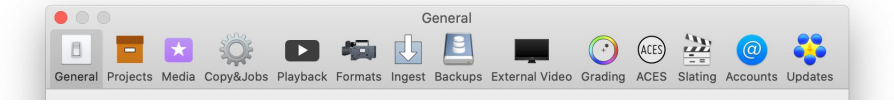
Troubleshooting

Application Preferences

Many general settings for Silverstack can be changed within the Application preferences and by doing so, working with Silverstack may become even easier to fit your workflow.

You get to the preferences menu by selecting *'Preferences…'* in the *"Silverstack "* menu. The window that opens up contains following sections which will be described detailed in this article:

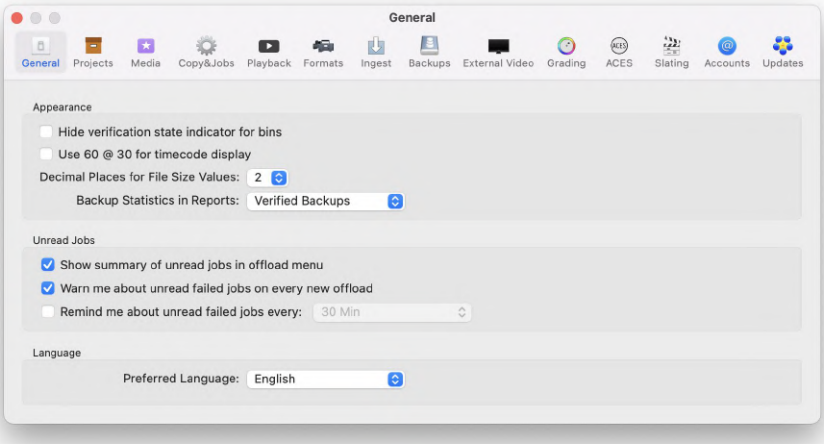
- General
- Projects
- Media
- Copy&Jobs
- Playback
- Formats
- Ingest
- Backups
- External Video
- Grading
- ACES
- Slating
- Accounts
- Updates



Silverstack's preferences overview

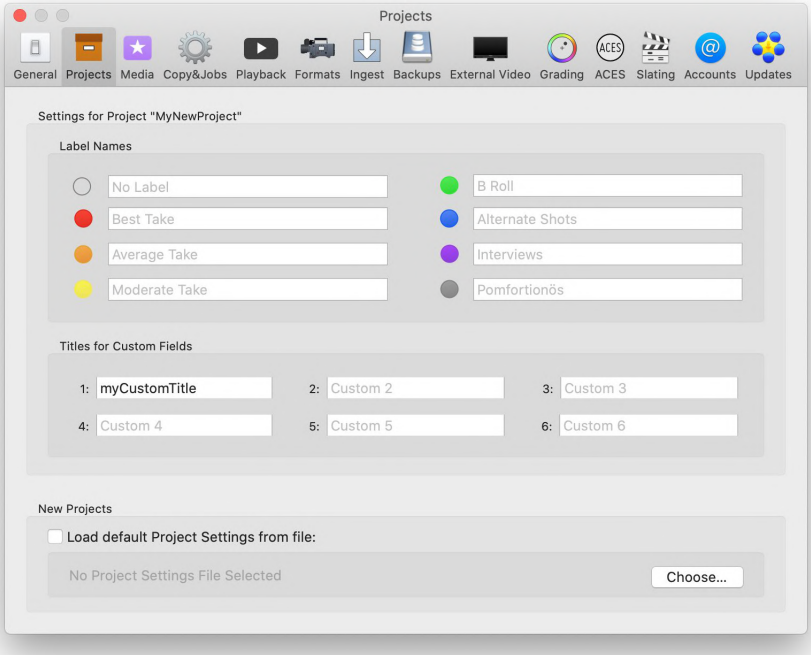
General

Make decisions about appearance topics here.



General preferences

Projects



Projects references

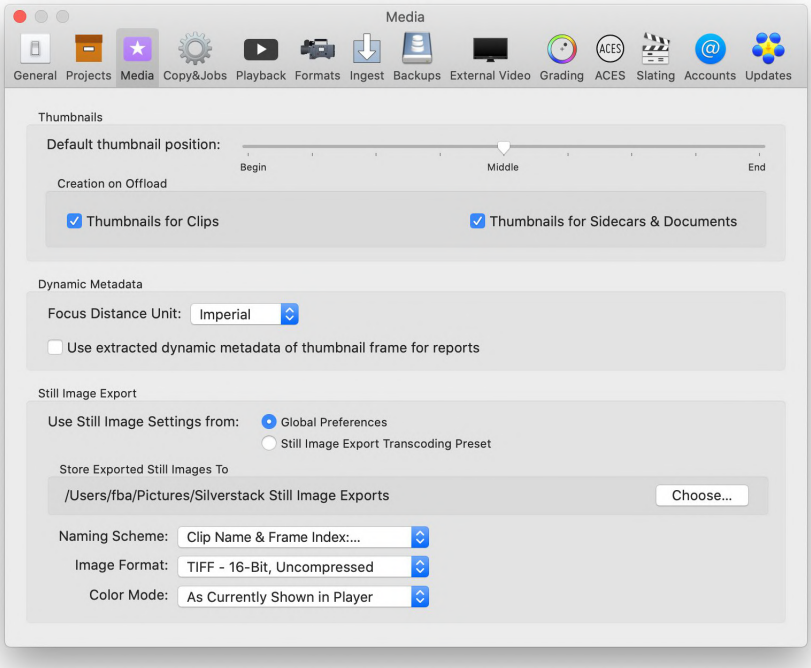
This section contains settings that are applied to new projects or a specifically set for the active project. Switch the active project to see another project's settings.

Project preferences

- You can set custom names for the color labels
- You can set titles for the custom fields for the active project (see KB article: Using Silverstack Custom Field Titles to Read Additional Metadata)
- Also, you can choose to apply a custom configuration to all newly created projects (see KB article: Transfer of Project Settings)

Media

In the "*Media*" section you can set options for the creation of thumbnails and still frames as well as the use of dynamic metadata.

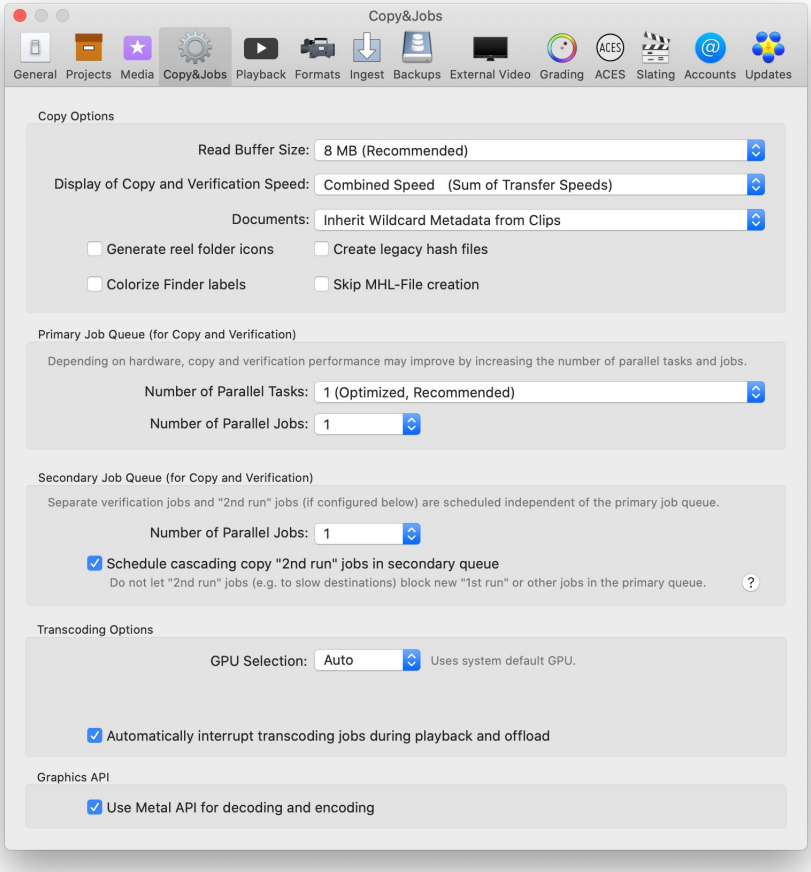


Media preferences

You can choose the position in the clip from which the thumbnails are taken (see article Choosing Custom Thumbnail Images). In addition, you can disable the thumbnail creation on Offload jobs to speed up the process and create them afterwards from the «Edit» menu. It's also possible to export still frames from clips either with the Original Color, as shown in player or the two images at once. The process is described in the article Still image export.

Copy&Jobs

Here you can define all the settings related to the copy process and other jobs.



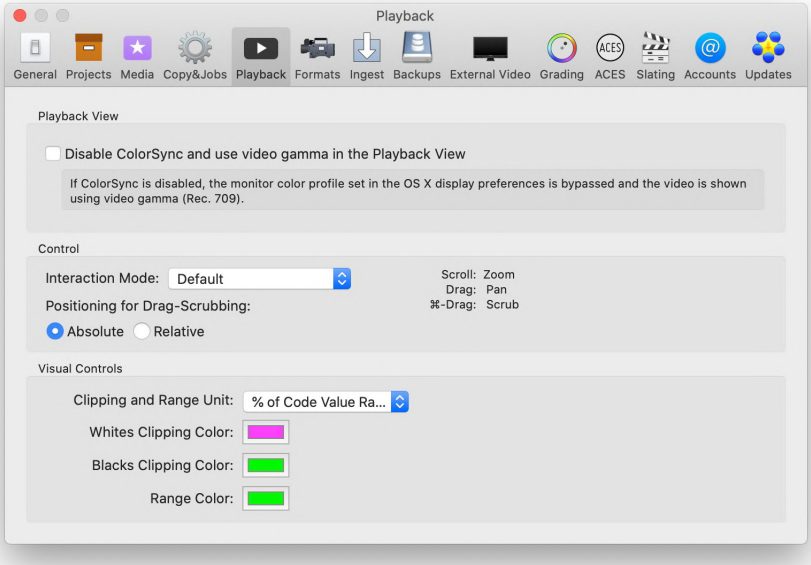
Copy & Jobs preferences

Playback

Here you can edit some settings for playback Besides setting the color in which black- and white-clipping regions of a video image are indicated, you can also set the range color and clipping and range unit.

In addition, it's possible to disable the automatic application of ALEXA and AMIRA Looks used while recording. This way the footage will be displayed with the default Log-C to Rec.709 instead of the look.

In the "*Playback*" tab you can also select on which display the Playback Mode will be shown if you have more than one screen connected to your computer.



Playback preferences

Formats

Within this section you can change settings regarding different cameras you may use for importing video clips. You can set those attributes for following cameras/recorders: AJA KiPro and Atomos, ARRI Alexa, Sony F5/F55/F65 XAVC, Canon C300, GoPro Hero and Nikon, R3D and Canon DSLR.

The options that are available for defining the timecode are mostly the same for the different cameras. They are useful if you need a different timecode source than the one you got from your camera. So instead of the camera's timecode track you can use the Quicktime header create date or file create date. Most times this option is only necessary for the Canon DSLR and GoPRO Hero, not so much for the ARRI Alexa and AJA KiPro.

AJA KiPro and Atomos

- You can set the Look source which will be preselected for the ingested material. Learn more about this feature in the article Basic Color Control in Silverstack.
- Furthermore you can let Silverstack extract informations about scene and take from the filenames by selecting the according checkbox.
- For the AJA KiPro Silverstack provides the opportunity to use the Alpha Append character of a clips name to assign the clip accordingly to a camera.

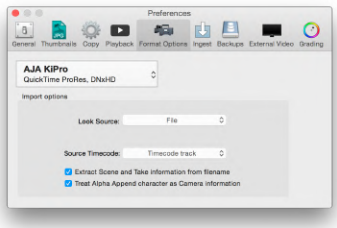


figure 6: format options for AJA KiPro

ARRI Alexa

- You can set the Look source which will be preselected for the ingested material. Learn more about this feature in the article Basic Color Control in Silverstack.
- Silverstack provides the option to generate the timecode with different modes.

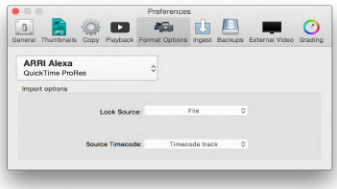


figure 7: format options for ARRI Alexa

Canon c300

- You can set the Look source which will be preselected for the ingested material. Learn more about this feature in the article Basic Color Control in Silverstack.

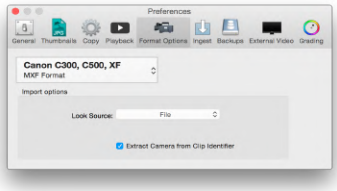


figure 8: format options for Canon C300

Canon DSLR

- You can set the Look source which will be preselected for the ingested material. Learn more about this feature in the article Basic Color Control in Silverstack.
- The source timecode can be defined by the Thumbnail Image file, the Quicktime header create date and the file create date.
- By selecting the according checkbox Silverstack will also copy any THM sidecar files from your Canon camera.

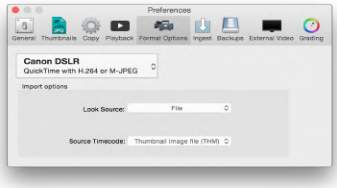


figure 9: format options for Canon DSLR

GoPro Hero and Nikon

- For any GoPro Hero and Nikon camera you can set only the option which defines the source timecode either to Quicktime header create date or file create date.
- You can set the Look source which will be preselected for the ingested material. Learn more about this feature in the article Basic Color Control in Silverstack.

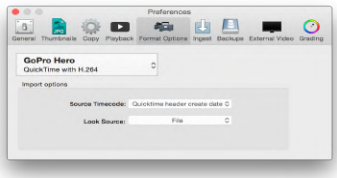


figure 10: format options for GoPro Hero

R3D

- You can set the Look source which will be preselected for the ingested material. Learn more about this feature in the article Basic Color Control in Silverstack.
- The source timecode can be defined as absolute timecode, edge timecode, file create date or by user preference.
- Reel name generation mode.
- Use a Red Rocket card if available.

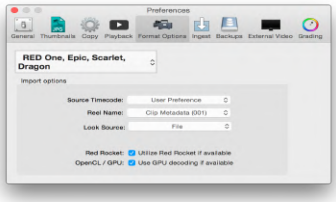
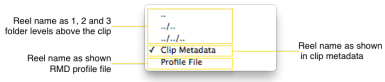


figure 11: format preferences for R3D clips



RED Reel Name options

F5/F55/F65 XAVC

- You can set the Look source which will be preselected for the ingested material. Learn more about this feature in the article Basic Color Control in Silverstack.

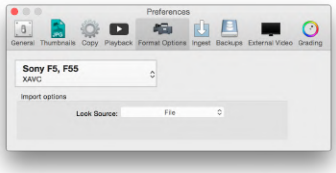


figure 12: format preferences for Sony F5/F55/F65 XAVC clips

Generic File Sequence

- Silverstack allows to import JPEG, TIFF and DPX image sequences as clips. You can Set the default playback speed in the Import Options menu:

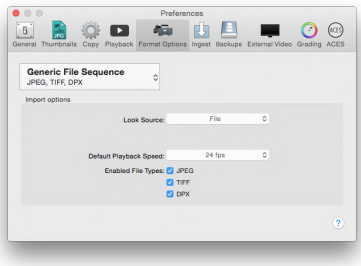
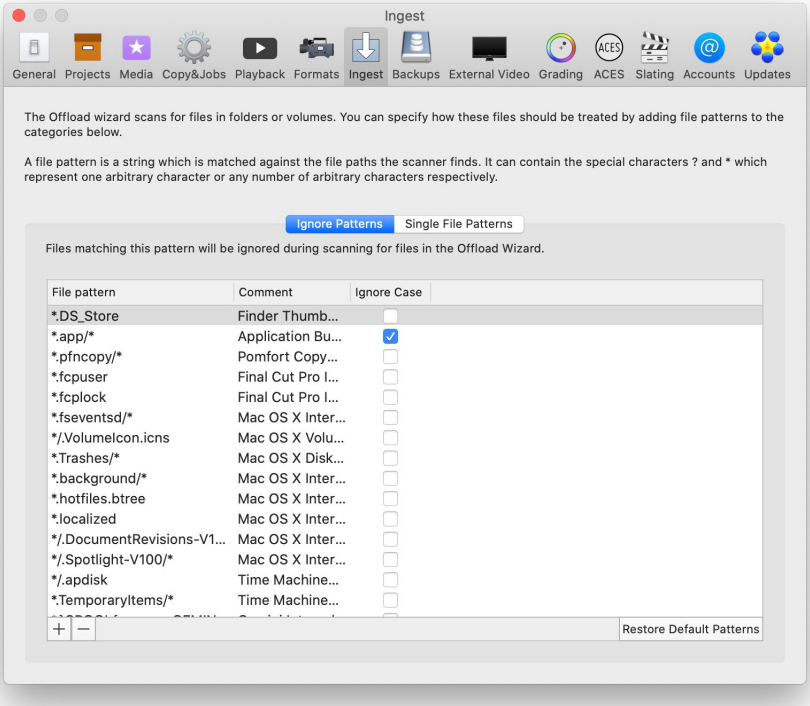


figure 12.1: Generic File Sequence preferences

Ingest

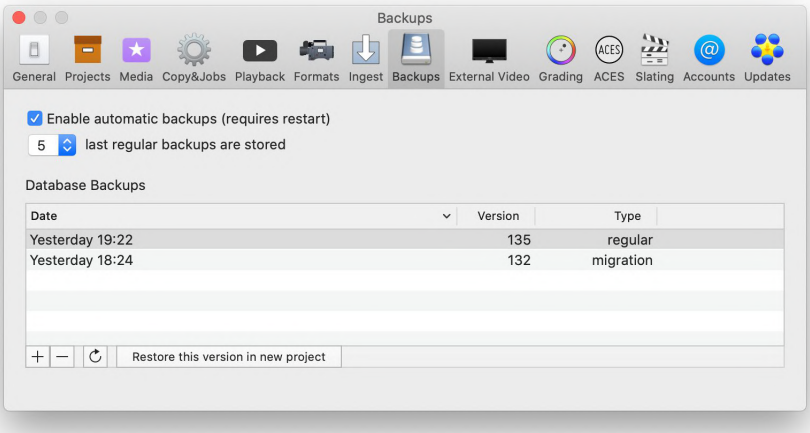
Silverstack scans the volumes from which you want to offload. In this tab you can select what kind of files or patterns should be ignored in the ingest process. You can add or delete different file types and patterns.



Ingest preferences

Backups

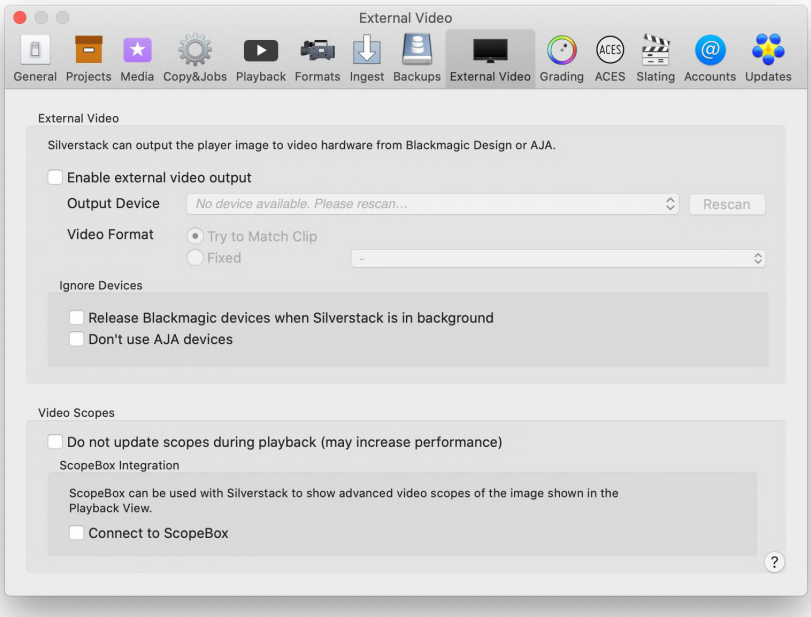
Here you can create and restore database backups of your current and past Silverstack states.



Library Backup preferences

External Video

Here you can choose the settings for the external video output.



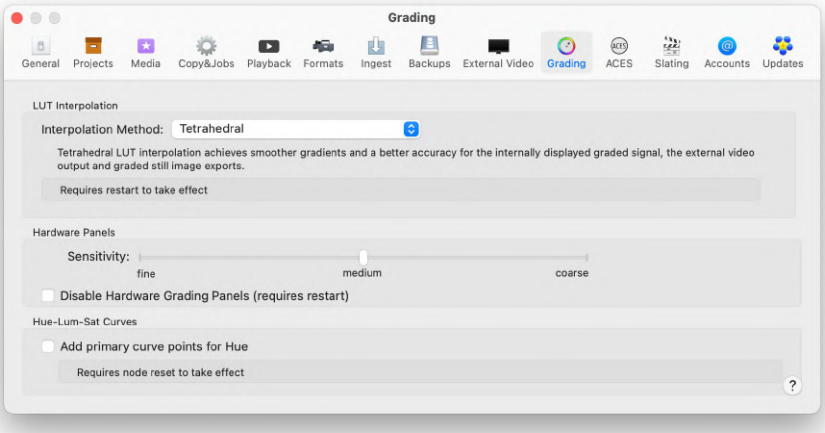
External Video preferences

Silverstack comes with the option to output an HD-SDI signal via compliant hardware. Learn more about it in the article[HD-SDI output in Silverstack](#).

You can use ScopeBox by Divergent Media for software-based waveform and[video scopes for Silverstack's player](#).

Grading

These are the settings for the grading functionalities in Silverstack.

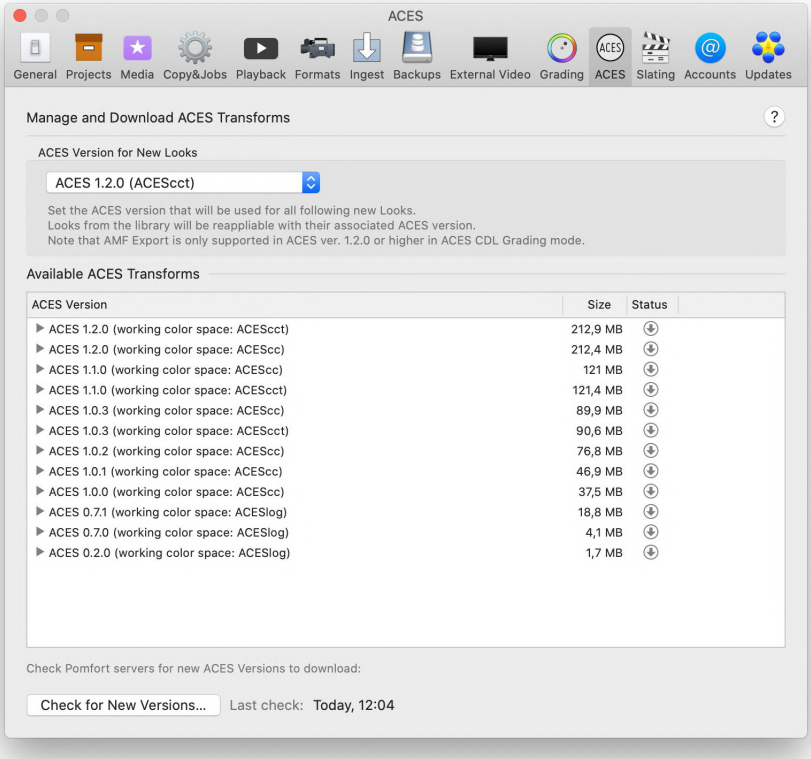


Grading preferences

Silverstack comes with grading functionalities and an integrated look library. Learn more about it from the articles[Grading Controls in Silverstack](#) and [The Silverstack Look Library](#).

ACES

These are the settings for the ACES grading mode functionalities in Silverstack:



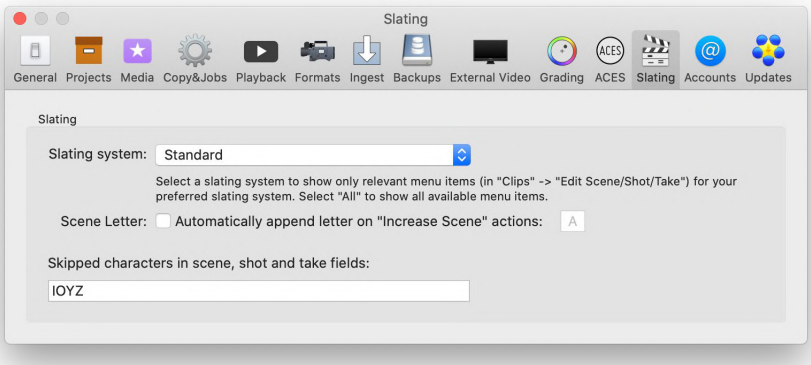
ACES grading mode preferences

Slating

- **Slating System:** Choose a “Slating System” to show only relevant menu items within the “Edit Scene/Shot/Take” menu for your preferred slating system:
  - “Standard” lets you work with continuous slating with scene / shot / take fields (e.g., Scene “56” / Shot “4” / Take “2”)
  - “American” lets you work with American slating with scene / take fields (e.g., Scene “56C” / Take “2”)
  - “All” lets you see all available menu items for full flexibility
- **Scene Letter:** The “Scene Letter” checkbox allows you to enable/disable the behavior to append a letter on “Increase Scene” actions automatically (e.g., increment “5” to “5A”). “Scene Letter “is enabled automatically when switching to the “American” slating system and disabled when switching to the “Standard” slating system.

Note: Incrementing letters in the scene/shot/take fields use the overflow system (e.g., “Z” to “AA”, etc.)

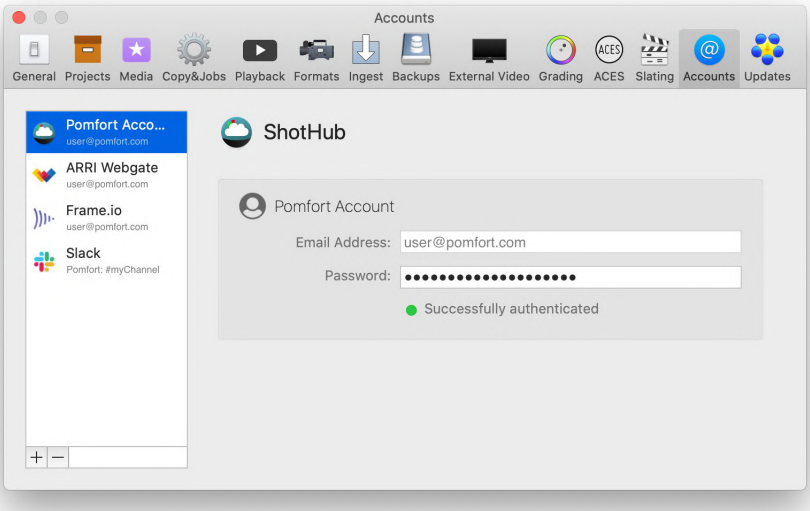
- **Skipped Characters:** You can also define specific characters to be skipped when incrementing letters in the scene/shot/take fields.



Slating preferences

Accounts

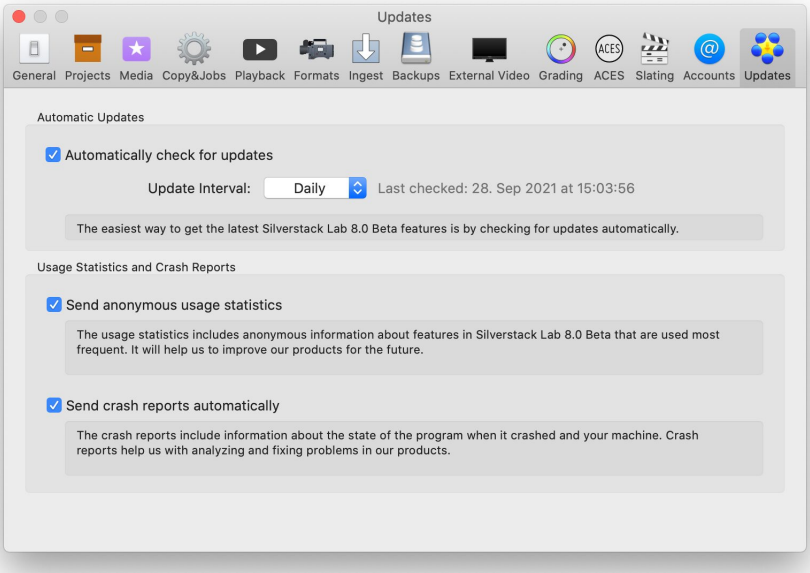
You can manage the accounts to upload or share your library via ShotHub, for direct dailies upload via Webgate.io or Frame.io and for sending job notifications to Slack here.



Accounts preferences

Updates

These are the settings for automatic updates, usage statistics and crash reports.



Update preferences

Operating Systems and Requirements

Our software Silverstack requires an Apple Mac machine with macOS 10.15 or higher operating system. Since we are using the latest of macOS technologies, we are not planning to support earlier versions of macOS, neither will we port Silverstack to another operating system in the near future.

So to run Silverstack you need an Intel Mac with**macOS 10.15** or higher (such as any current Mac available in the MacStore).

You can find a list of supported formats in the article Assets in Silverstack. All formats with no specific detection will be handled as generic files. Please see the article Generic File Formats for more information.

For a realtime playback of your offloaded video files the usage of a fast hard drive as a SSD card is recommended.

If you have further question about supported hardware please let us know. If you would like to know more aboutdata performance click here. You might be interested in this article for improving your performance.

Deprecated Operating Systems

Silverstack still works on the following macOS operating systems but a deprecation warning shows that support for those operating systems will likely to be removed soon:

- *currently no deprecated macOS for latest Silverstack version*

Reset Silverstack's Library and Preferences

In the unusual event of Silverstack not being able to launch, you might have to consider resetting the preferences and/or deleting Silverstack's library.

Warning: This can't be undone, deleting the library will delete all custom metadata, clip references and thumbnails. The actual clips won't be deleted.

Deleting Silverstack's preferences

- Quit Silverstack
- Create a copy/backup of the following file **matching your Silverstack version** (optional):
  Silverstack 8: `~/Library/Preferences/com.pomfort.Silverstack8.plist`
  Silverstack Lab 8: `~/Library/Preferences/com.pomfort.SilverstackLab8.plist`
  Silverstack 7: `~/Library/Preferences/com.pomfort.Silverstack7.plist`
  Silverstack Lab 7: `~/Library/Preferences/com.pomfort.SilverstackLab7.plist`
- Open up the Terminal application (type terminal in your spotlight or navigate within the Utilities folder of your application folder)
- Type the following command in your terminal window **matching your Silverstack version:**
  Silverstack 8: `defaults delete com.pomfort.Silverstack8`
  Silverstack Lab 8: `defaults delete com.pomfort.SilverstackLab8`
  Silverstack 7: `defaults delete com.pomfort.Silverstack7`
  Silverstack Lab 7: `defaults delete com.pomfort.SilverstackLab7`
- Start Silverstack

Deleting Silverstack's library

- Quit Silverstack
- Rename the folder **matching your Silverstack version** in your home directory:
  Silverstack 8: `~/Library/Application Support/Pomfort/Silverstack8`
  Silverstack Lab 8: `~/Library/Application Support/Pomfort/SilverstackLab8`
  Silverstack 7: `~/Library/Application Support/Pomfort/Silverstack7`
  Silverstack Lab 7: `~/Library/Application Support/Pomfort/SilverstackLab7`

  The Library folder is hidden by default. You can open the Library folder in Finder when opening the "Go" menu and holding the "alt" key. You will see an extra entry "Library" in the "Go" menu. Choose this entry and a Finder window will open with the Library folder.

- Start Silverstack again, it will automatically create a new library.

Now Silverstack should start as usual with a fresh library. If you still experience issues, please contact our support team.

How do I migrate a license from one computer to another?

You can move a license of a Pomfort product from one computer to another. This may be useful if you move from an older Mac to a new model.

There are two activities involved:

- Unregistering the license from the old computer and
- registering the license on the new computer.

Please note, that you need an internet connection for the following steps.

1. Unregistering the license from the old computer

You now have to perform the following steps:

- Open the License Panel by choosing "Licenses…" from the application menu.
- Click on "Deactivate License".

The Pomfort application will stop working on this machine and the license is free to use on another machine.

By logging into your Pomfort Account you can make sure that the deactivation of your license was successful. The license should now be shown as "Inactive".

2. Registering the license on the new computer

Let's assume you already have the application installed on your new computer.

You now have to perform the following steps:

- Open the program, the License Panel will appear. If not, choose "Licenses…" from the application menu.
- Click on "Add License…" and insert the license key you received after purchase.

In your Pomfort Account your license will now be shown as "Activated" with the name of the computer that your license is activated on.

Migrate a Silverstack project from one computer to another

Sometimes it's necessary to migrate an entire project from one computer to another – maybe even during a project. It's not that difficult – this article shows how this can be accomplished.

There are two activities involved:

- Migrating the license
- Migrating the Library

Migrating the License

Migrating the license is straight forward, it can be done in Silverstack . You need an internet connection and follow the steps described in the Tips & Tricks document "Migrate a Silverstack license".

Migrating the Library

Migrating the project with all it's information is basically moving the Library's database, the thumbnails and the application's preferences to the new computer.

If you want to migrate your Silverstack 7 projects to Silverstack 8 please learn how to do that from the article"How to Manually Migrate Silverstack 7 Projects to Silverstack or Silverstack Lab 8"

In order to transfer files from one computer to another please have an external hard drive or a large USB stick at hand or establish a network connection with file sharing between the two computers.

Silverstack 8

If you are using Silverstack 8, you have to perform the following steps to migrate all thumbnails and the Library database:

- In Finder on your old computer navigate to `~/Library/Application Support/Pomfort` in your home directory.
- Copy the folder `Silverstack8` and all of its contents to the same destination on the new computer.

You have to perform the following steps to migrate the application's preferences files:

- In Finder on your old computer navigate to `~/Library/Preferences` in your home directory.
- Copy the file `com.pomfort.Silverstack8.plist` to the same destination on the new computer.

Silverstack 7

If you are using Silverstack 7, you have to perform the following steps to migrate all thumbnails and the Library database:

- In Finder on your old computer navigate to `~/Library/Application Support/Pomfort` in your home directory.
- Copy the folder `Silverstack7` and all of its contents to the same destination on the new computer.

You have to perform the following steps to migrate the application's preferences files:

- In Finder on your old computer navigate to `~/Library/Preferences` in your home directory.
- Copy the file `com.pomfort.Silverstack7.plist` to the same destination on the new computer.

If you are using Silverstack Lab 7, you have to perform the following steps to migrate all thumbnails and the Library database:

- In Finder on your old computer navigate to `~/Library/Application Support/Pomfort` in your home directory.
- Copy the folder `SilverstackLab7` and all of its contents to the same destination on the new computer.

You have to perform the following steps to migrate the application's preferences files:

- In Finder on your old computer navigate to `~/Library/Preferences` in your home directory.
- Copy the file `com.pomfort.SilverstackLab7.plist` to the same destination on the new computer.

NOTE: Since OS X Lion the Library folder in your home directory is hidden. In Finder use Command-Shift-G (⌘⇧G) and enter`~/Library` to open the folder.

You can also use the Library Metadata Exchange feature present in Silverstack XT.

Silverstack 6

If you are using Silverstack 6, you have to perform the following steps to migrate all thumbnails and the Library database:

- In Finder on your old computer navigate to `~/Library/Application Support/Pomfort` in your home directory.
- Copy the folder `Silverstack6` and all of its contents to the same destination on the new computer.

You have to perform the following steps to migrate the application's preferences files:

- In Finder on your old computer navigate to `~/Library/Preferences` in your home directory.
- Copy the file `com.pomfort.Silverstack6.plist` to the same destination on the new computer.

If you are using Silverstack Lab 6, you have to perform the following steps to migrate all thumbnails and the Library database:

- In Finder on your old computer navigate to `~/Library/Application Support/Pomfort` in your home directory.
- Copy the folder `SilverstackLab6` and all of its contents to the same destination on the new computer.

You have to perform the following steps to migrate the application's preferences files:

- In Finder on your old computer navigate to `~/Library/Preferences` in your home directory.
- Copy the file `com.pomfort.SilverstackLab6.plist` to the same destination on the new computer.

NOTE: Since OS X Lion the Library folder in your home directory is hidden. In Finder use Command-Shift-G (⌘⇧G) and enter `~/Library` to open the folder.

You can also use the Library Metadata Exchange feature present in Silverstack XT.

Silverstack 5

If you are using Silverstack 5, you have to perform the following steps to migrate all thumbnails and the Library database:

- In Finder on your old computer navigate to `~/Library/Application Support/Pomfort` in your home directory.
- Copy the folder `Silverstack5` and all of its contents to the same destination on the new computer.

You have to perform the following steps to migrate the application's preferences files:

- In Finder on your old computer navigate to `~/Library/Preferences` in your home directory.
- Copy the file `com.pomfort.Silverstack5.plist` to the same destination on the new computer.

NOTE: Since OS X Lion the Library folder in your home directory is hidden. In Finder use Command-Shift-G (⌘⇧G) and enter `~/Library` to open the folder.

You can also use the Library Metadata Exchange feature present in Silverstack XT.

Silverstack 4

If you are using Silverstack 4, you have to perform the following steps to migrate all thumbnails and the Library database:

- In Finder on your old computer navigate to `~/Library/Application Support/Pomfort` in your home directory.
- Copy the folder `Silverstack4` and all of its contents to the same destination on the new computer.

You have to perform the following steps to migrate the application's preferences files:

- In Finder on your old computer navigate to `~/Library/Preferences` in your home directory.
- Copy the file `com.pomfort.Silverstack4.plist` to the same destination on the new computer.

NOTE: Since OS X Lion the Library folder in your home directory is hidden. In Finder use Command-Shift-G (⌘⇧G) and enter `~/Library` to open the folder.

You can also use the Library Metadata Exchange feature present in Silverstack XT.

Silverstack 3

If you are using Silverstack 3, you have to perform the following steps to migrate all thumbnails and the Library database:

- In Finder on your old computer navigate to `~/Library/Application Support/Pomfort` in your home directory.
- Copy the folder `Silverstack3` and all of its contents to the same destination on the new computer.

You have to perform the following steps to migrate the application's preferences files:

- In Finder on your old computer navigate to `~/Library/Preferences` in your home directory.
- Copy the file `com.pomfort.Silverstack3.plist` to the same destination on the new computer.

NOTE: Since OS X Lion the Library folder in your home directory is hidden. In Finder use Command-Shift-G (⌘⇧G) and enter `~/Library` to open the folder.

Silverstack 2

If you are using Silverstack 2.2, you have to perform the following steps to migrate all thumbnails and the Library database:

- In Finder on your old computer navigate to `~/Library/Application Support/Pomfort` in your home directory.
- Copy the folder `SilverstackMaster` and all of its contents to the same destination on the new computer.

You have to perform the following steps to migrate the application's preferences files:

- In Finder on your old computer navigate to `~/Library/Preferences` in your home directory.
- Copy the file `com.pomfort.SilverstackMaster.plist` to the same destination on the new computer.

NOTE: Since OS X Lion the Library folder in your home directory is hidden. In Finder use Command-Shift-G (⌘⇧G) and enter `~/Library` to open the folder.

How to Manually Migrate Silverstack 6 Projects to Silverstack 7 or Silverstack 7 Projects to Silverstack 8

If you are a user of Silverstack 6 you might want to migrate your projects to Silverstack 7 or Silverstack Lab 7. There is an easy process to perform this migration.

The instructions in this article can also be used for manually migrating Silverstack 7 to Silverstack 8 projects. Just replace the library path numbers with the according version numbers.

Locating the Library Folders

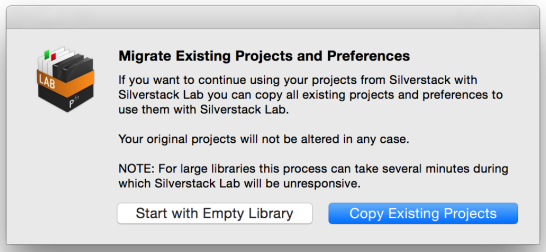
Silverstack 7, Silverstack Lab 7 and Silverstack 6, have different library folders that contain the projects. You will find them at the following paths on your Mac:

- *~/Library/Application Support/Pomfort/Silverstack7*
- *~/Library/Application Support/Pomfort/SilverstackLab7*
- *~/Library/Application Support/Pomfort/Silverstack6*

You can also navigate to the folders from the Main Menu of Silverstack 6 or 7 or Lab 7. Select**"Silverstack>Show Library in Finder"** in the main menu bar at the top of the screen. This will open the project folder an bring you to the Silverstack.psdb file of your currently opened project. From there you can go two directories backwards to find yourself at the directory of the Silverstack library folders.

Migrating the Library

1. Close Silverstack 7 / Silverstack Lab 7
2. Rename the "Silverstack7" or "SilverstackLab7" folder in the directory */Users/[yourUser]/Library/Application Support/Pomfort/* to **"Silverstack7_old"/"SilverstackLab7_old"** (you will need that folder to keep new projects)
3. Open Silverstack 7 / Silverstack Lab 7
4. Just like when you started Silverstack 7 / Silverstack Lab 7 from scratch the first time you will be asked if you want to migrate your libraries from version 6 or want to start clean:



6. Choose **"Copy Existing Projects"** to migrate your Silverstack 6 libraries.

7. The library migration assistant will keep you updated on the process and tell you when the migration has finished:

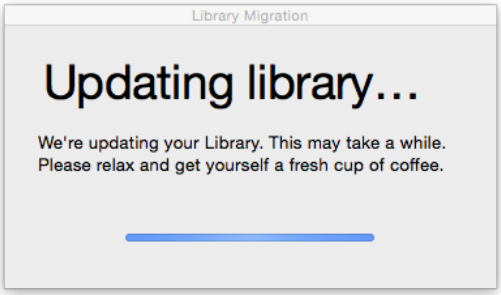


Figure 2: The library migration assistant

8. You can now use Silverstack 7 / Silverstack Lab 7 with your projects from Silverstack 6.

Please note that for large libraries the process can take several minutes. During that time Silverstack will become unresponsive. Leave the system running and the migration process will come to a solid finish.

Keeping Projects from Before the Migration

If you want to keep projects you created in Silverstack 6 before the migration process you can do that by copying the project folders:

1. Close Silverstack.
2. Go to the previously renamed **"Silverstack7_old"/"SilverstackLab7_old"** folder.
3. Select the projects you want to take over to your migrated Silverstack 7 / Silverstack Lab 7 library (projects folder usually are named like "Project-1F342874AF90")
4. Copy them to the Silverstack7 / SilverstackLab7 folder that was automatically created during the migration.
5. Start Silverstack 7 / Silverstack Lab 7

You will then have all your migrated and the previously created projects in Silverstack 6 together at one place.

If you want you can then delete the **"Silverstack7_old"/"SilverstackLab7_old"** folder because now your current Silverstack 7 / Silverstack Lab 7 library contains all your projects from Silverstack 6 and 7 respectively Silverstack Lab 7.

Incompatible Silverstack or Silverstack Lab Library Version

The Silverstack and Silverstack Lab library versions advance over time across software releases. This is a natural process when a software application advances but inevitably leads to incompatible library version when opening projects with outdated versions of Silverstack/Silverstack Lab.

We always recommend to use the latest version of Silverstack/Silverstack Lab which can be downloaded on the Pomfort Downloads page. Like this you avoid the situation this article takes care of.

Migration and Library Version States

The term "Library Version" basically refers to the state of the Silverstack database and which information it can currently store.

When updating Silverstack to a newer version the existing library is migrated to the latest version. That process establishes compatibility of the existing library with the new library version.
You can learn more about the migration of libraries in the article "How to manually migrate Silverstack 5 projects to Silverstack 6 or Silverstack Lab 6"

After the migration your library is in a later/newer state and therefore not compatible anymore with older versions of Silverstack. If you are forced by any circumstance to move back to an outdated library version of Silverstack, you can restore a backup that has automatically been created during the migration process.

Restoring a Library Backup

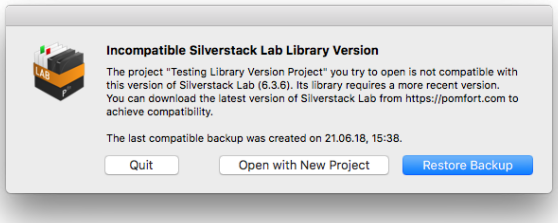


Fig. 1: The "Incompatibly Silverstack Lab Library Version" Alert, applies also to Silverstack

When you open a project that has been created with a later version of Silverstack in an older version the alert from Fig. 1 shows.

At this point you have three options that you can choose from with the buttons:

- **Restore Backup:** Silverstack automatically offers the possibility to restore the last state for which a backup was created that is compatible with the opened version of Silverstack. Backups are automatically created during migration. Automatic backups can be enabled in the Silverstack preferences' **"Backups"** tab as well as manually triggered.
- **Open with New Project:** To be able to access Silverstack even though the particular project can't be opened, you can create a new project to start with. You can again change to other projects from within the application then.
- **Quit:** You can quit the application to open the project again with a later version of Silverstack that is compatible with the library version.

In the very rare case that no backup is available you see the following alert that indicates that there is no compatible backup and therefore gives less options:

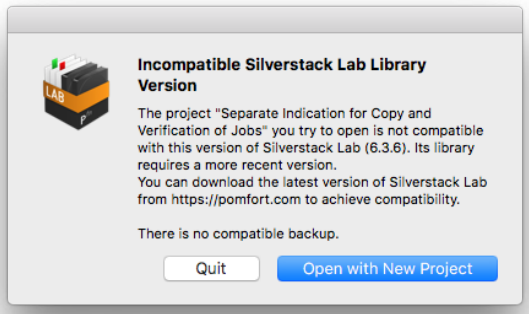


Fig.2: The alert in case there is no available backup that can be restored

Why does Silverstack tell me my license is already activated?

Each Silverstack license key can be activated on one computer at a time. If an error message appears when you try to activate your license on a new computer please check if the license has been properly deactivated from the original computer.

You can do this check by logging into your Pomfort Account. The license status needs to be shown as "Inactive" for you to activate the license on another computer. If this is not the case, please deactivate your license from the computer that it's shown as "in use on".

Find more information about the Pomfort Account here.

How do I install a license for all users of a Mac?

You can register Silverstack and Livegrade once on one machine and afterwards make the license available to all users.

After the activation just move the files in “~/Library/Application Support/Pomfort/Licenses” to “/Library/Application Support/Pomfort/Licenses” (You will have to create the folders Pomfort/Licenses).

Please Note: Since OS X Lion the Library folder in your home directory is hidden. In Finder use Command-Shift-G (⌘⇧G) and enter ~/Library to open the folder.

When restarting the application it will load the licenses from the system disk and every user should be able to use it. With that solution multiple users of this machine can use the Pomfort product license.

Sample Project and Sample Footage

Silverstack, Silverstack XT, and Silverstack Lab enable you to easily download a sample project and sample footage via the main menu. The sample project and according sample footage are a simple way of receiving a fully working sample project easily and quickly to evaluate Silverstack.

From the “Help” menu of the Silverstack main menu you can select:

- Download Sample Project: This will directly download a sample project that can give you an impression of how a project library could look in Silverstack.
- Download Sample Footage: This will download sample footage in a .dmg that can be mounted and then directly used for first experiences with clips in Silverstack.