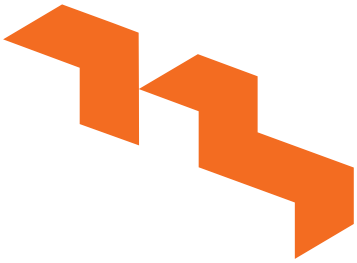


FF Transcode User Manual

FILMFABRIEK

TABLE OF CONTENTS

INTRODUCTION

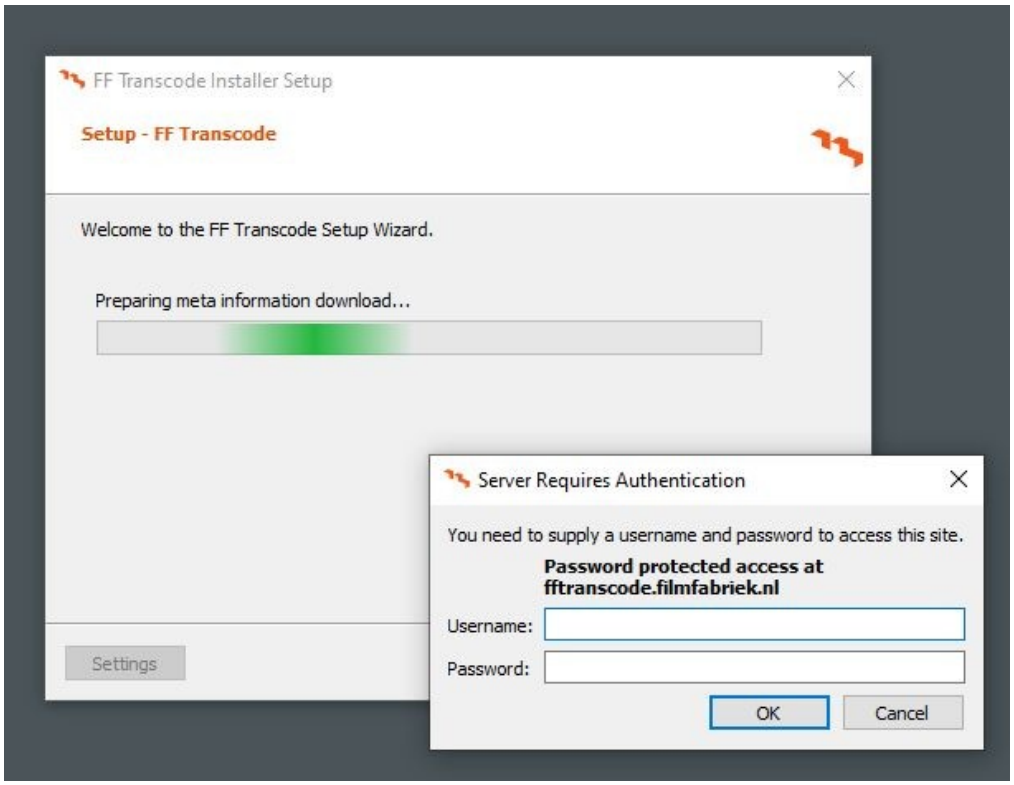
FF Transcode is a program for easy post processing of the files produced by your Filmfabriek film scanner. It allows you to convert (“transcode”) your images, video, and sounds to different commonly used codecs and file formats.
The integrated audio synchronisation functionality also allows you to sync the soundtrack of a film on the images with a precision of a millisecond.

INSTALLATION INSTRUCTIONS

If you have been provided with a pre-installed version, you can skip this chapter.

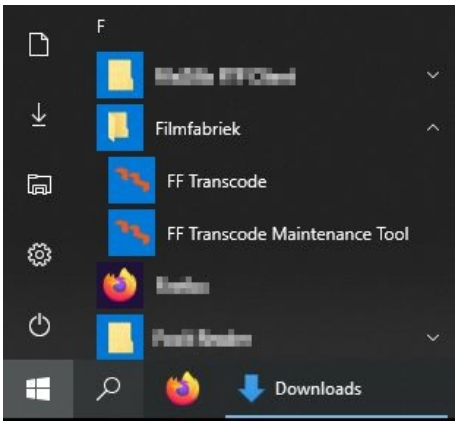
In order to install the software yourself, you need to have your Filmfabriek customer account login and password as well as the FF Transcode Installer.

Run the installer by double-clicking the “FF Transcode Installer.exe” file.
You will need to provide your Filmfabriek customer credentials to install the program. These credentials will be saved and used for future updates of the software, you should not need to enter them again.



Once this is done, simply follow the installer instructions.

FF Transcode is now installed, along with its Maintenance tool (see Update and Maintenance instructions). You can find shortcuts in the Windows Start Menu and on the Desktop.



FFMPEG

As explained at the end of the installation procedure, FF Transcode uses a set of tools called FFmpeg and you now need to install it on your system.
Go to http://www.ffmpeg.org and click “Download”.
Follow the links for the Windows 64-bit executables files and download the latest “stable” or “release” build (if you are offered to choose between “static” or “dynamic”, choose “static”).
The procedure to find the right version sometimes changes on the FFmpeg website, but if you don’t know what to choose you will find detailed and up-to-date instructions on our support page, in the “Software” category.

You should now have a zip (or 7z[1]) file in your Download folder.
Extract it by right-clicking on it and selecting “Extract all...”. Choose the destination folder you prefer. It doesn’t matter where you copy the files but you will need to remember where they are to set up FF Transcode the first time you run it (see Setup).
We advise choosing “C:\Program Files\FFmpeg” for clarity.

That’s it, you are ready to use FF Transcode.

1 https://www.7-zip.org

UPDATE AND MAINTENANCE INSTRUCTIONS

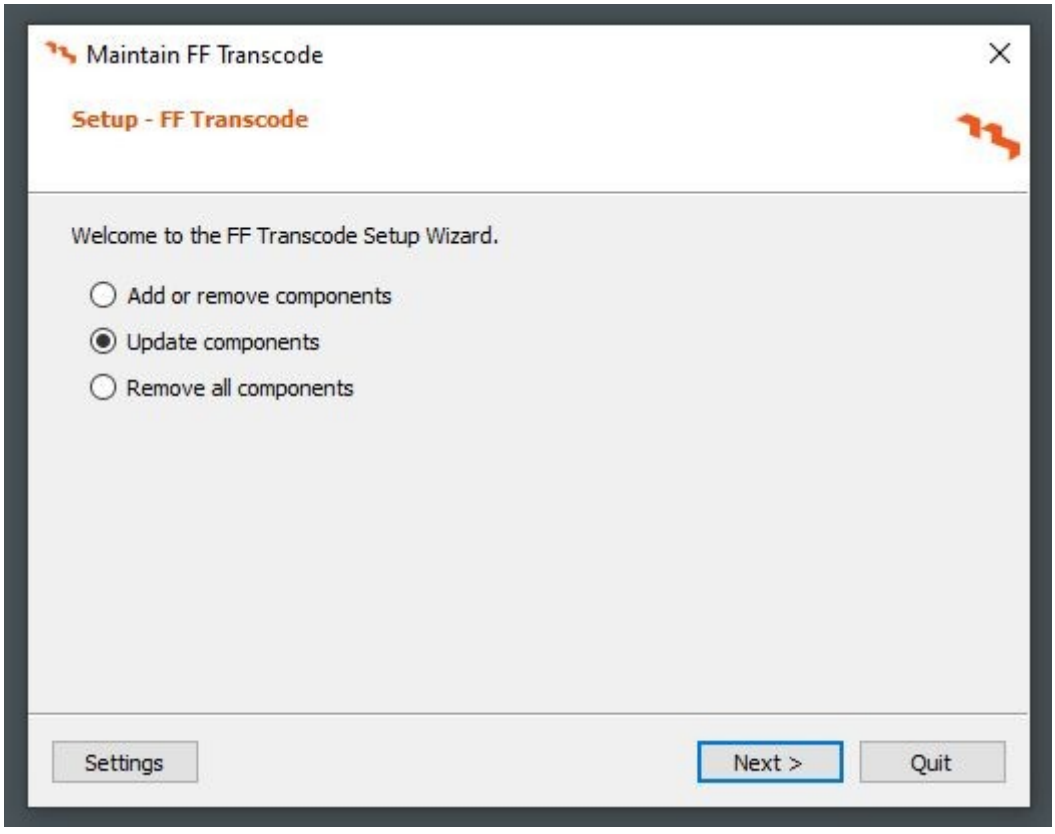
UPDATING FF TRANSCODE

Every time FF Transcode is started, it will check if updates are available and let you know if this is the case.
You can also manually check for updates from the “About” window in the application (see Overview).
If updates are available, they can be installed using the Maintenance tool.
It is advised to first close all running instances of FF Transcode before starting the update.

MAINTENANCE TOOL

You can run the FF Transcode Maintenance tool from the shortcut in the Windows Start Menu.

The Maintenance tool allows you to update the application, select which components you want to use, or remove the application from your system.
Currently, the only optional component is the user manual (this document), that can be integrated in the installation and opened from the “About “window. All other components are required for the program to run.

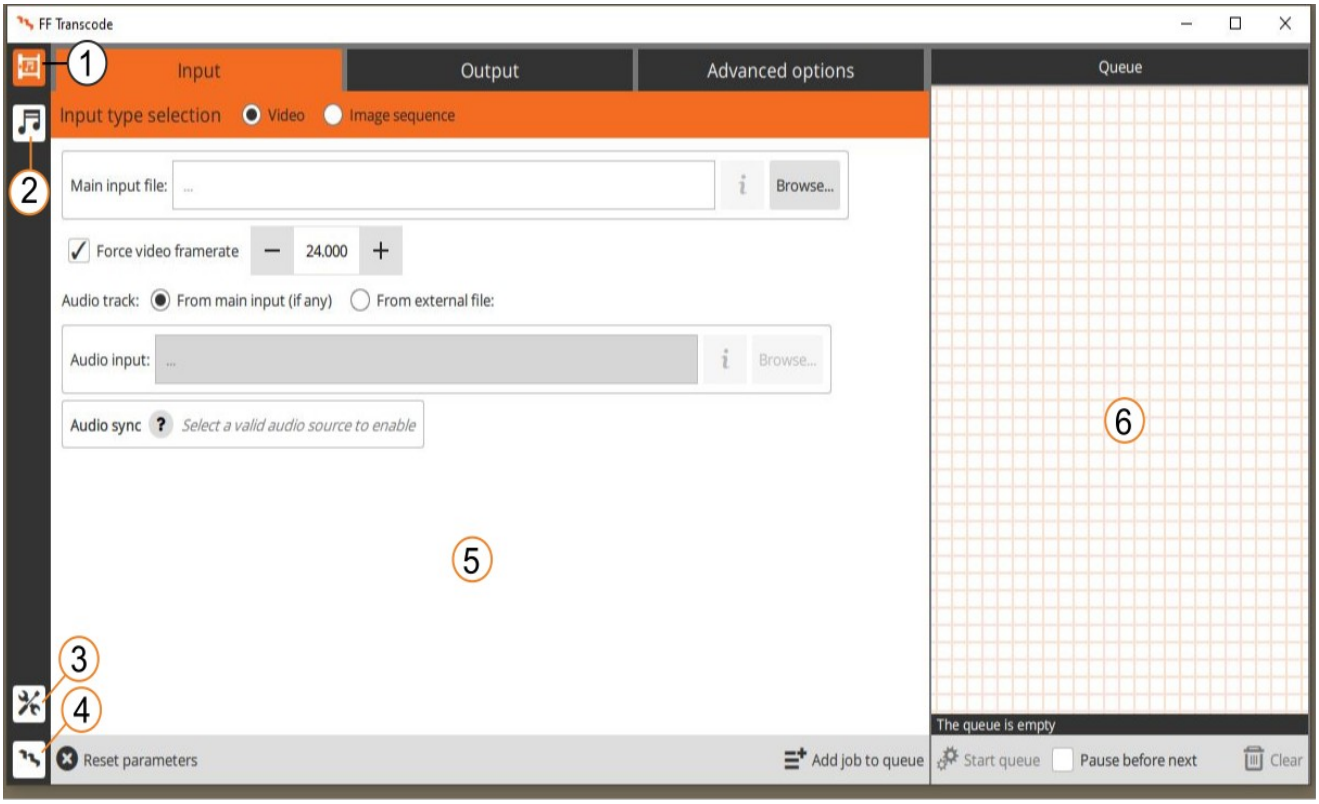


USING FF TRANSCODE

OVERVIEW

On the left menu bar, you will find buttons to toggle between modes (“full mode” (**1**) or “audio only mode” (**2**)), as well as buttons to open the “About” window (**3**) and the Settings (**4**).

The main part of the application is divided in the Job canvas (**5**) where you will prepare the tasks you want to execute, and the Queue (**6**), where all the jobs are listed and their progress displayed.
The canvas is different for the two modes, refer to the sections below for details (Preparing a transcoding job in “full mode” and Preparing a transcoding job in “Audio only mode”).



Overview in full mode

SETUP

If you have not installed FFmpeg already, see FFmpeg for instructions.

In order to use FF Transcode, you need to configure where it can find the FFmpeg executables (FFmpeg itself, and FFprobe which will be used to retrieve media information).
This must only be done once.
To do so, go to the Settings by clicking on the Settings icon (see figure above) and select the “FFmpeg binary folder”. This folder is the “bin” folder of your FFmpeg installation (if you copied the FFmpeg folder in “C:\Program Files\FFmpeg\” the path will be “C:\Program Files\FFmpeg*ffmpeg-version*\bin\”).
If the selection is successful (it succeeded in finding the required executables), the respective paths of FFmpeg and FFprobe will be displayed and a green “check” mark is shown.

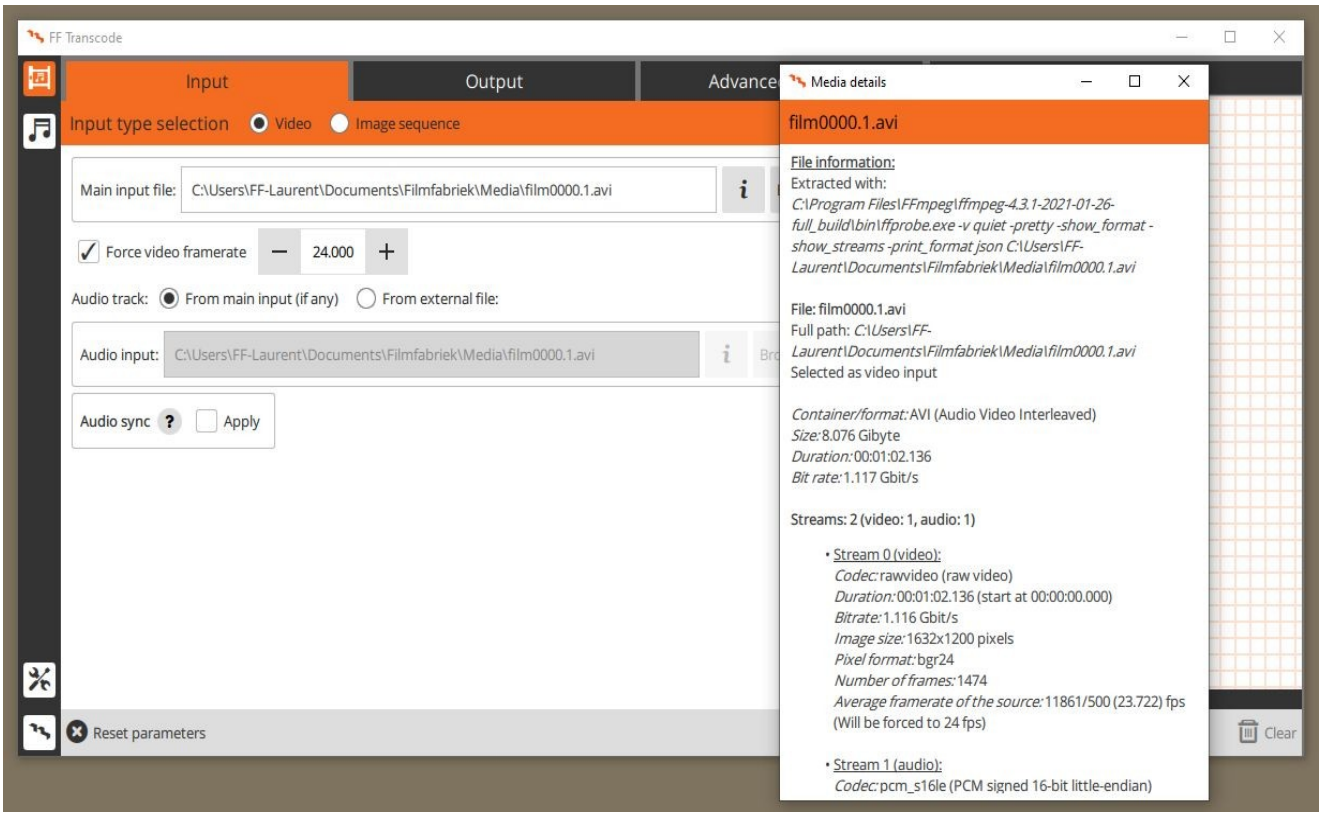
The icon on the right indicates if your FFmpeg version and your computer hardware support Nvidia GPU-accelerated encoding. If it is green, you will have access to extra (faster) encoders in your codec options.

PREPARING A TRANSCODING JOB IN “FULL MODE”

First choose your input media (at the minimum an image source: a video file or an image sequence) then configure the output you desire. When you have prepared your transcoding job, you can add it to the Queue to have it processed.

Video input

Set the “**Input selection**” to “Video”.
Select your **main input file**. This will be the image source for your output.
You can access media information by clicking on the information icon, the “File details” window will appear.
If the selected file is not a valid source for images, an error message will appear.

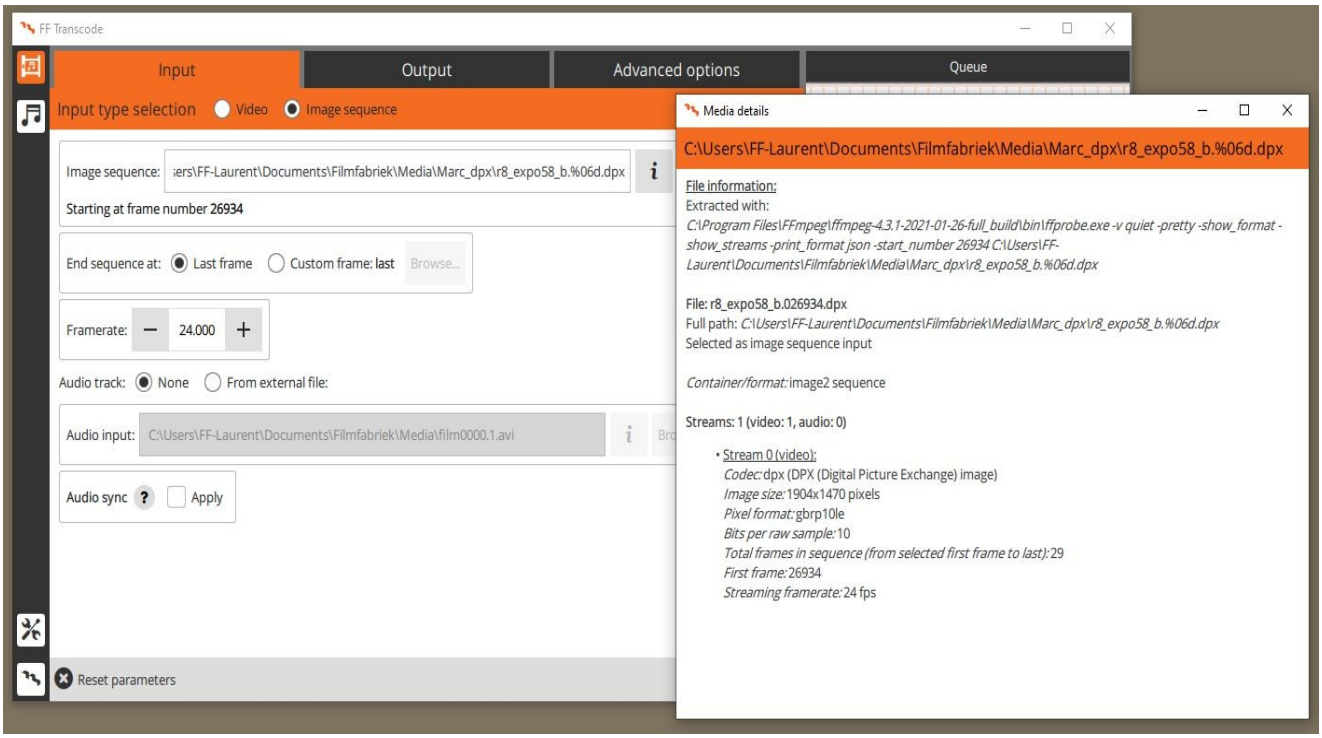


You can optionally choose to force a given **framerate** for your image source, it is recommanded! This ensures your output will have exactly the desired playback speed (in some cases, videos produced by the scanner have an approximated framerate due to small variations of speed during scanning, 18 FPS can for instance be approximated to 17.999 FPS).
Note that your source images won’t be manipulated by this option, there won’t be any dropped frames or interpolated images. Only the frames present in your video source will be used, they will be displayed at the chosen framerate.

Image sequence input

Set the “**Input selection**” to “Image sequence”.
Select your image sequence by choosing the **first frame** from the sequence that you will want to use (it does not have to be the first frame recorded).
If the selected file is not recognized as part of an image sequence, an error message will appear.

You can access media information by clicking on the information icon, the “Sequence details” window will appear.



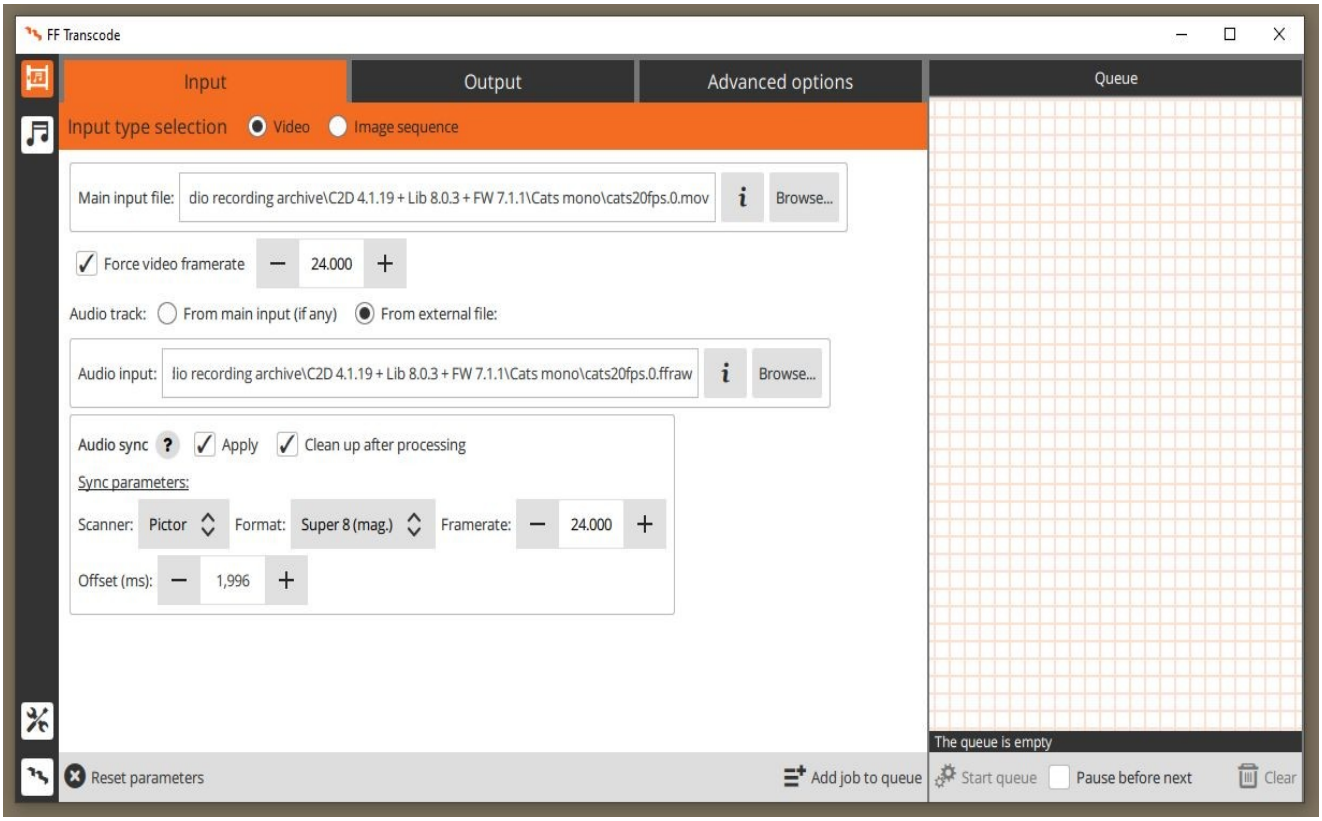
You can optionally select a custom **last frame**. By default, the sequence will be treated until the last frame.

For image sequences, a **framerate** must be specified. The is the rate at which the images will be displayed in the output video.

Audio input

By default, for a video input, its first audio track will be selected as audio source for your output.
If there is no audio track in the video input, audio will simply be ignored for the output.
For an image sequence, the default is not to use audio at all.

For both types of inputs, an **external file** can be used as audio source. Any media containing an audio track can be selected (even a video file).
Again, the information icon will show you media details and an error will warn you if the selected file does not contain a valid audio track.

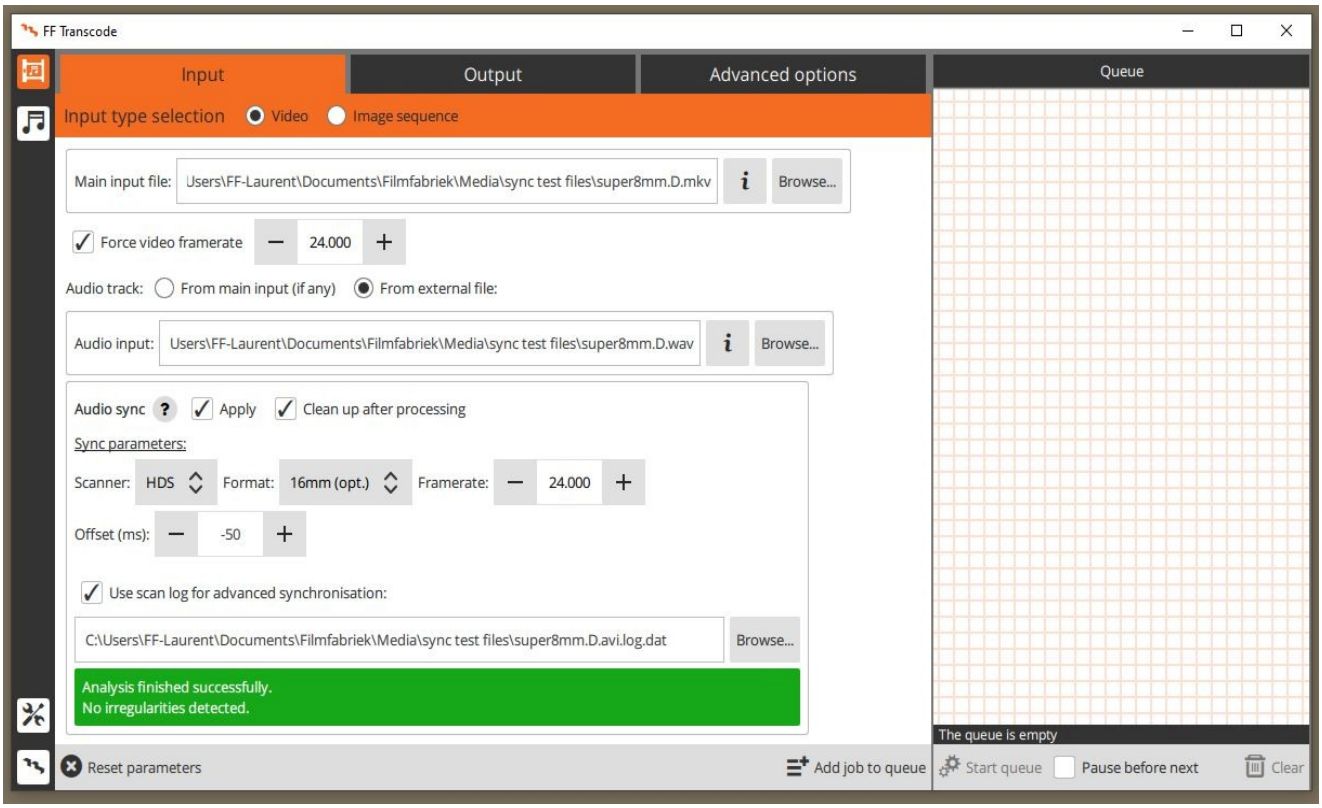


Audio synchronisation

Audio tracks recorded by the scanners need to be synchronised on the images using precise data produced during the scan in order to take into account the scanning speed and the audio offset of the film.
The synchronisation process can be done as a step in the transcoding job or separately (see Preparing a transcoding job in “Audio only mode”).

Please note that in order for the synchronisation to work properly, the scan must have been made in optimal conditions, that is at a constant speed, not too fast for the computer, and with no other tasks running in Windows at the same time. Using the computer for other work while scanning can cause irregularities in the recording of frames and audio that the capture software cannot control.
Also note that if the target framerate is very different from the scanning speed, the synced audio may be of lower quality. When scanning with audio, it is advised to work in real time, or close to it, and certainly not faster.
Also note that synchronising a very short audio clip (5 seconds or less) is not possible.

In your input configuration, select a valid audio source and click on “**Apply audio sync**”.
You will then be offered extra options. Note that they are the same if your main input is a video or an image sequence and if your audio source is a track from the video or an external file.



Select the parameters corresponding to the film you scanned and the scanner you used (**scanner**, **format** and **framerate** – this is the desired framerate, not the framerate at which the scanner ran) so that the correct **offset** can be computed. It is done automatically, but you can adjust it manually if needed. The offset is based on the length of the film between the gate of the scanner and the soundhead, considering the frame is aligned in the centre of the gate. The computed offset will not be perfect if it is not the case and you may need to tweak it.
Note that you will need to force the same video framerate to be sure that the synchronized audio matches the video.

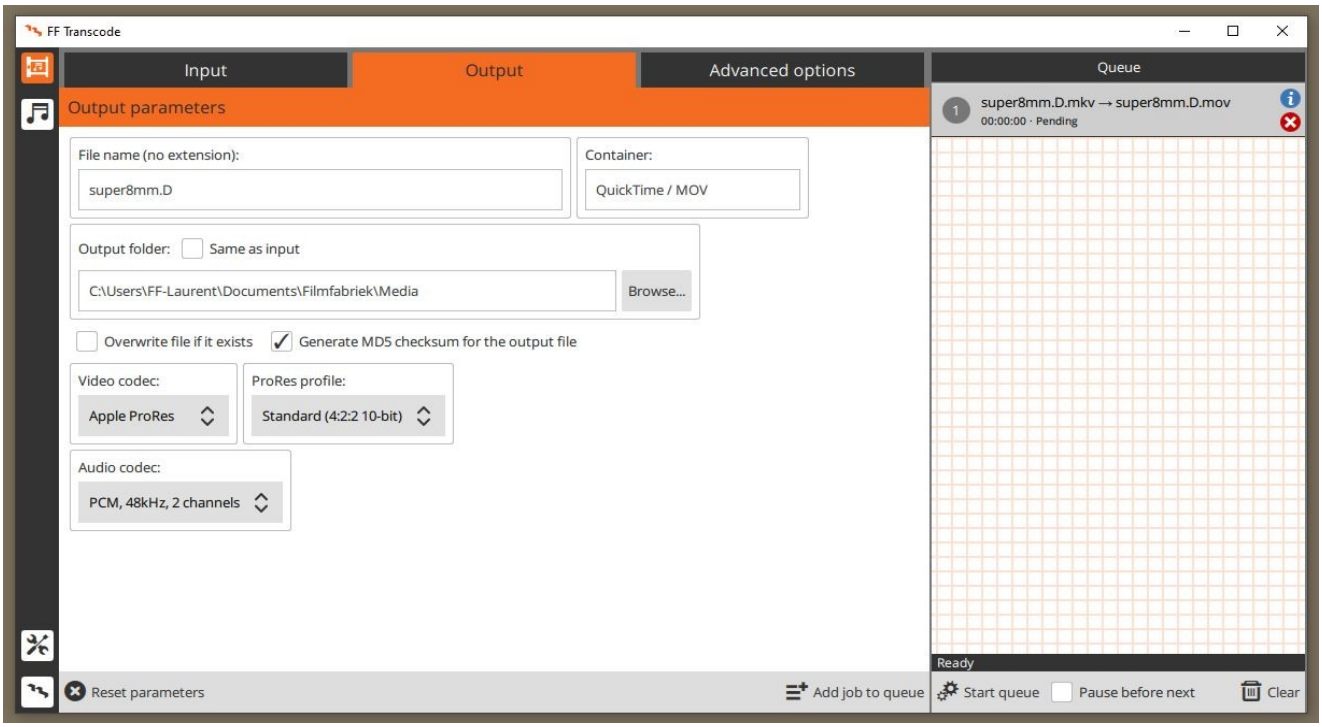
For **advanced synchronisation**, select the **log** produced by the scanner. This is the file with the ".log.dat" extension that has been saved next to your video or image sequence.
Make sure to select the right log file as it contains information specific to the scan.
The log is analysed and the analysis result will be shown. If the analysis detects some irregularities, an information message will be displayed. FF Transcode will try to synchronise the soundtrack based on the information it receives. If there are too many irregularities, the outcome cannot be guaranteed, the synchronisation will only be as good as the input data allows.
A warning in red will appear if the log file cannot be read.

Note that the advanced synchronisation option is only available for the HDS scans as the Pictor scans are always processed in such a way.
Audio sync for HDS scans without the advanced sync option are actually a simple offsetting to match the begin of the video.

If you have successfully selected an audio track, the log, and set the parameters, the audio sync process will be done as part of the transcoding job, using the synchronised audio track as audio source for your output file.

Output

In the Output tab, you can configure the options of the file that will be produced by the transcoding job.
Simply give it a **name**, a **destination folder** and choose **video** and **audio codecs**.
Additionally, you can generate a **MD5 checksum** of the output file for easy integrity check if you need to archive or transfer your file afterwards.



Currently, the following codecs/options are supported:

Video codecs
Apple ProRes (4 different profiles), 10-bit, Quicktime MOV container
H.264 / AVC, 8-bit, MPEG-4 / MP4 or Matroska MKV container
H.265 / HVEC, 8-bit, MPEG-4 / MP4 or Matroska MKV container
FFV1 (lossless), Matroska MKV container
RAW video, 8-bit, AVI container

Audio codecs
PCM, 48kHz, stereo
AAC, 48kHz, stereo
Same as source
No audio

Note that not all media players can play all types of files. FFV1 for instance, is not widely supported. For H265 you may need to use a recent version of a player such as VLC (http://www.videolan.org/vlc).

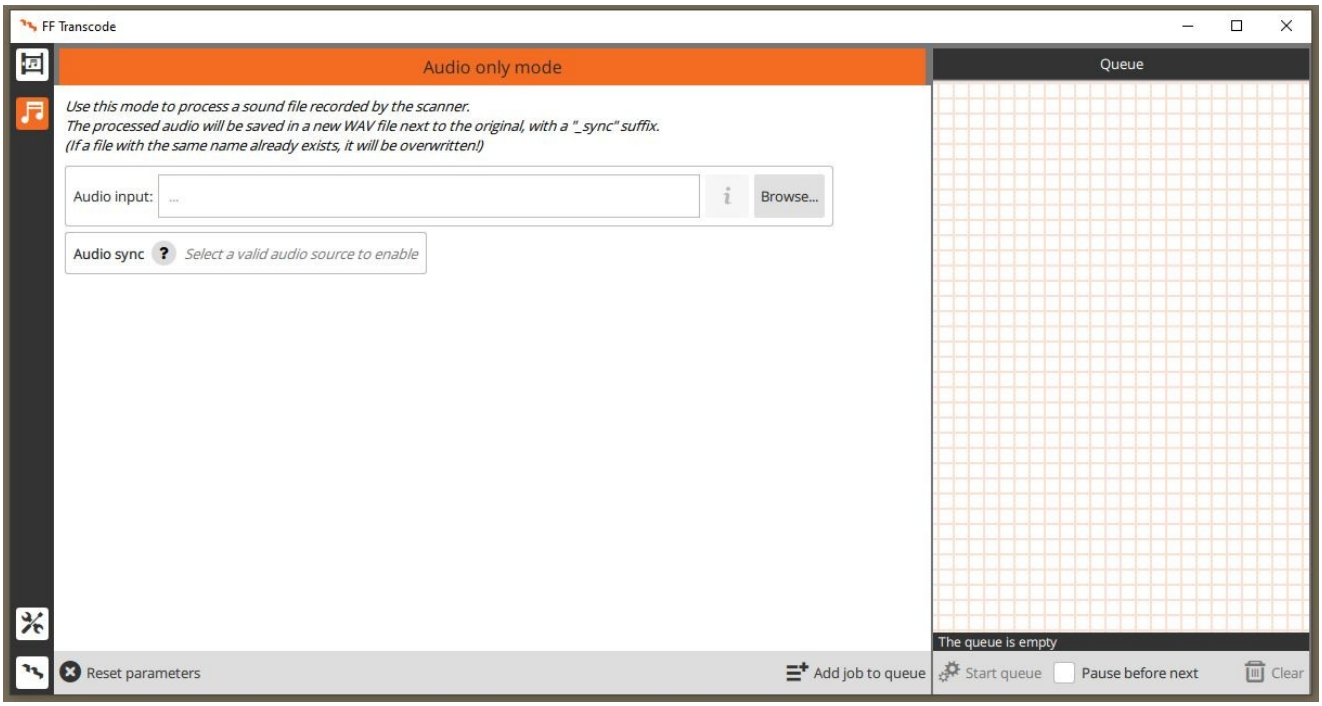
If your hardware allows it (that is if you have a supported Nvidia graphics card, extra codec options will be available for fast H.264 or H.265 encoding.

Advanced options

Advanced users can pass FFmpeg options to the transcoding task.
Note that in some cases extra options can conflict with default values.

PREPARING A TRANSCODING JOB IN “AUDIO ONLY MODE”

The “audio only mode” allows you to process a single audio file to apply the synchronisation without requiring a full transcoding with a video input.
It will simply process the audio input according to the given parameters and create another audio file next to the original.
See Audio synchronisation for details.

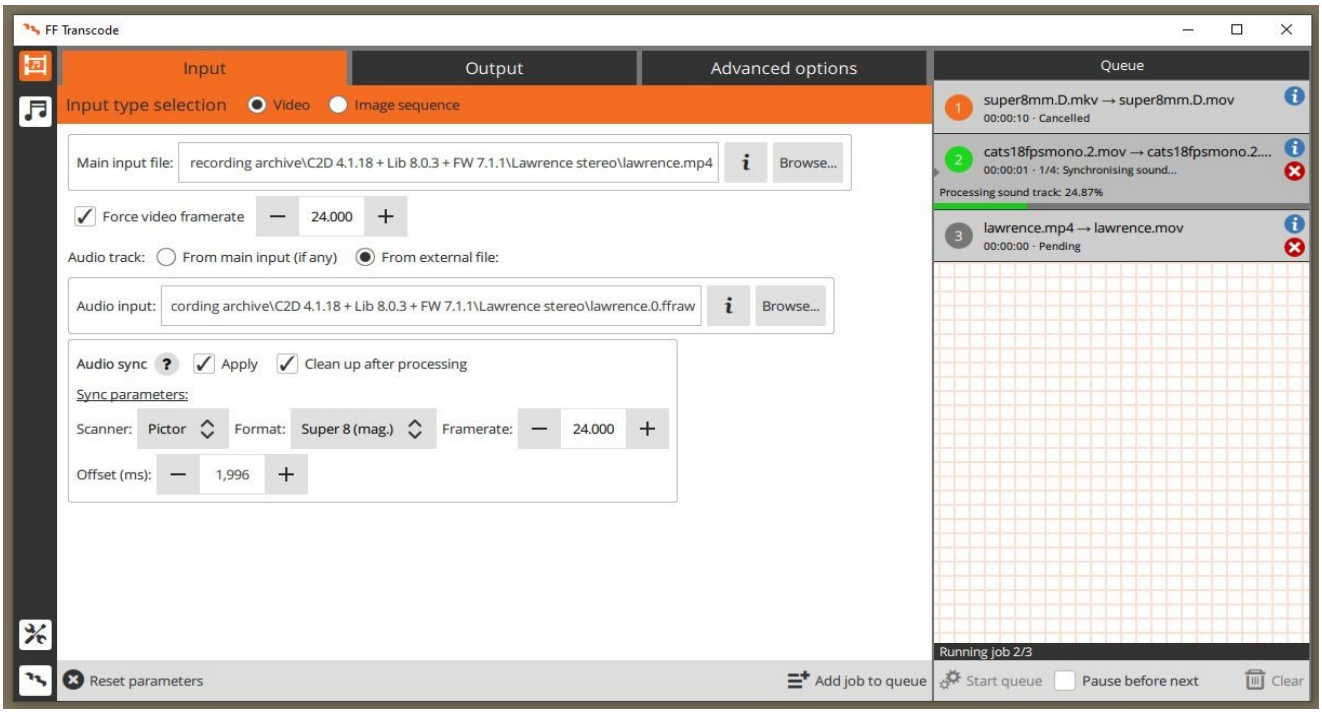


Job Queue

When a job is configured, click on "**Add job to queue**".
You can prepare jobs in batches and add them all to the queue so that they will be processed one after the other.
You can keep on adding jobs to the queue while it is running. Likewise, you can remove individual jobs from the queue as long as they haven't been started, by clicking on the red "cross" icon.
The queue can be cleared of all jobs by clicking on "**Clear**".

Details of a job can be shown by clicking on the small information icon. More information will be shown when the job is running or finished.

Note that processing a job will use the resources of your system as much as possible. Therefore, only one job is processed at a time and we recommand only using one instance of FF Transcode and to avoid using the computer for heavy tasks while FF Transcode is running.



Processing the queue

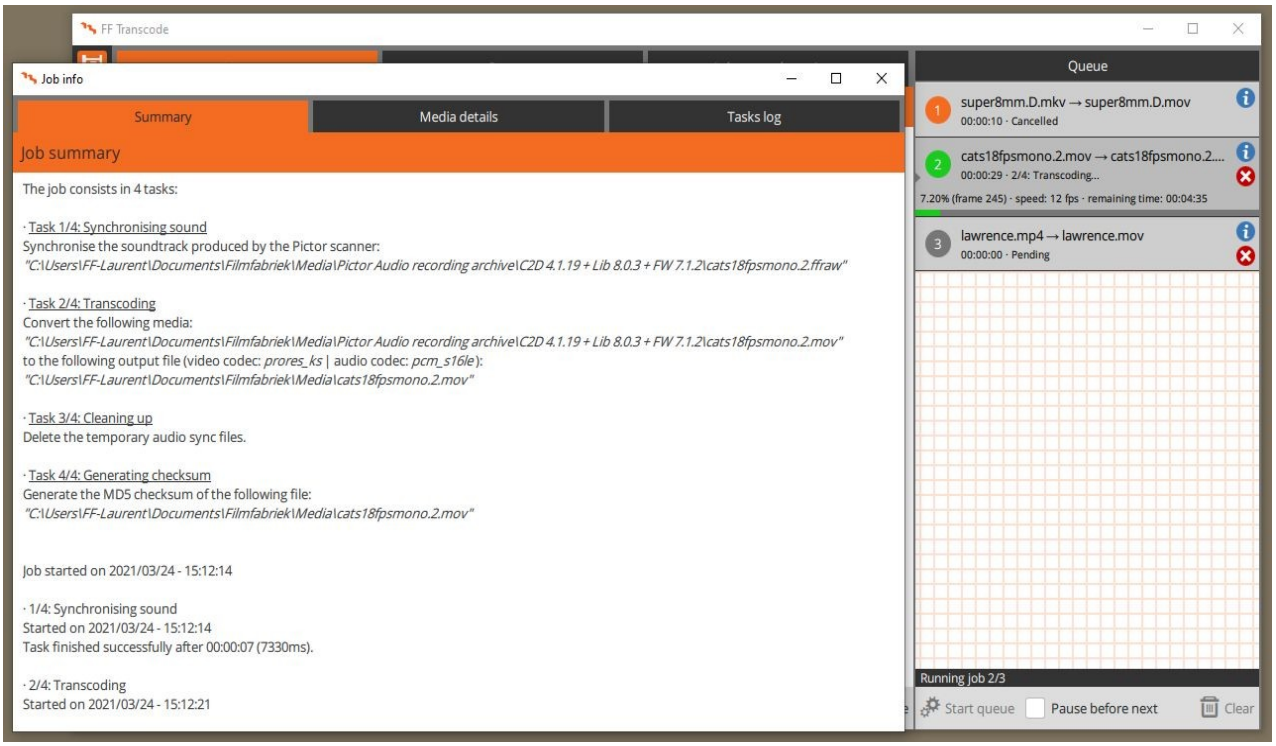
When you want to start processing the prepared jobs, simply click on "**Start queue**".
To stop and **cancel** a running job, click on its red "cross" icon.
A running job cannot be paused (only cancelled) but you may want to pause the processing after the current job has finished (or has been cancelled) by ticking the "**Pause before next**" box.
If the box is not ticked, all jobs will be processed, one after another.

Running job

When a job is currently running, its progress is shown in the queue and details are written in the "Job info" window. A running job has a blinking green status indicator.

A finished job can have the following status:
- Successfully completed (green)
- Cancelled by the user (orange)
- Finished with an error (red)

Information on the success or failure of a job can be retrieved from its “Job info” window.



SUPPORT AND SPECIFIC REQUIREMENTS

You can reach us at support@filmfabriek.nl

If you need to contact us for support, please always specify which version of FF Transcode you are using (it can be found in the “About” window) and which version of FFmpeg you have installed.

If you want to give us feedback on your usage of FF Transcode or have specific requirements, you can also get in touch with us at the same address.