

## Hawkeye Post-processing

This manual contains the instructions for Hawkeye video post-processing. Refer to the Hawkeye User Manual for instructions on how to set up the Hawkeye scanner and how to obtain the sequence of TIFF images.

<https://github.com/vintagefilmography/Hawkeye>

## Video Fred

Get avisynth running first:

[http://avisynth.nl/index.php/Main\\_Page](http://avisynth.nl/index.php/Main_Page)

Do a simple script as per the instructions and make sure that works.

Then you can use VirtualDub2:

<https://sourceforge.net/projects/vdfiltermod/>

Virtualdub can read avisynth scripts. Essentially you just drag and drop the script into Virtualdub2 main window.

You can try that with your script that you wrote in the first step.

OK, now that you have scan images in a folder, you can open up the first image in Virtualdub2 by using the open drop down command.

VirtualDub2 will create the video from your sequence. Set the proper frame rate and compression. Use raw for now.

Save the video.

Close the video but keep VirtualDub2 running.

Install VideoFred scripts from:

<https://forum.doom9.org/showthread.php?t=144271>

Then update the VideoFred Option4 script with your video path (see more details on this in the next chapter)

Drag the updated script into VirtualDub2.

Set the compression as required.

Save the video if no more post-processing is required.

If DaVinci Resolve is planned to be used, then export the video as a sequence of Tiff images.

## Create Working with Fred's scripts

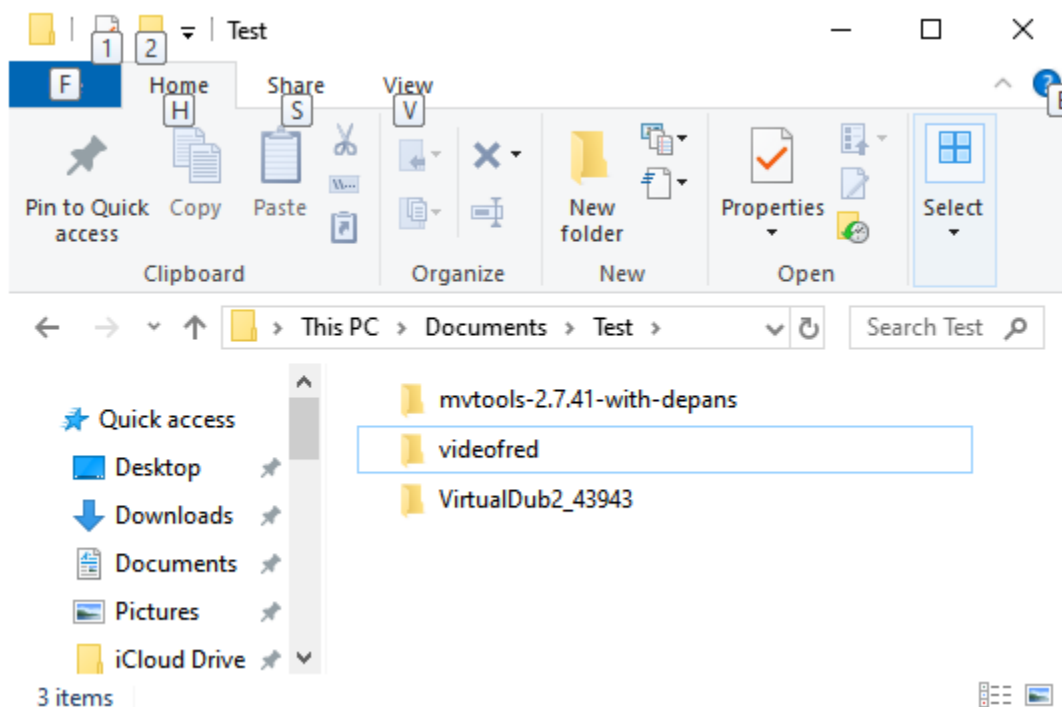
Download the zip file:

<https://drive.google.com/open?id=1ICS4yfdq11s3UVfLaKwdj7SDPLWskHyt>

Extract the zip in your download files folder. You will see Postprocess folder there once the unzip is done.

Move the Postprocess folder somewhere into a work directory on your machine.

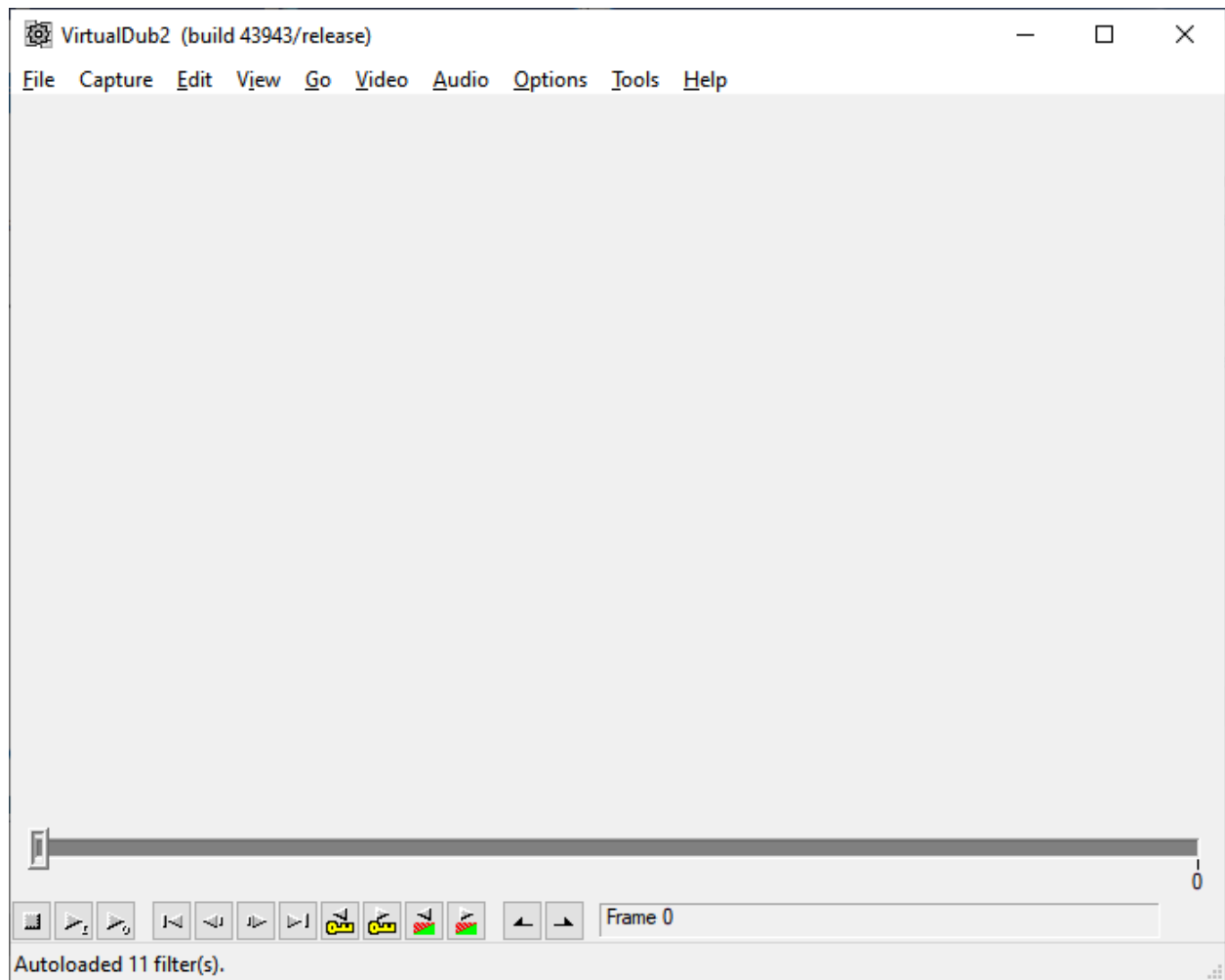
Open up the Postprocess folder. Should see the following directories there:



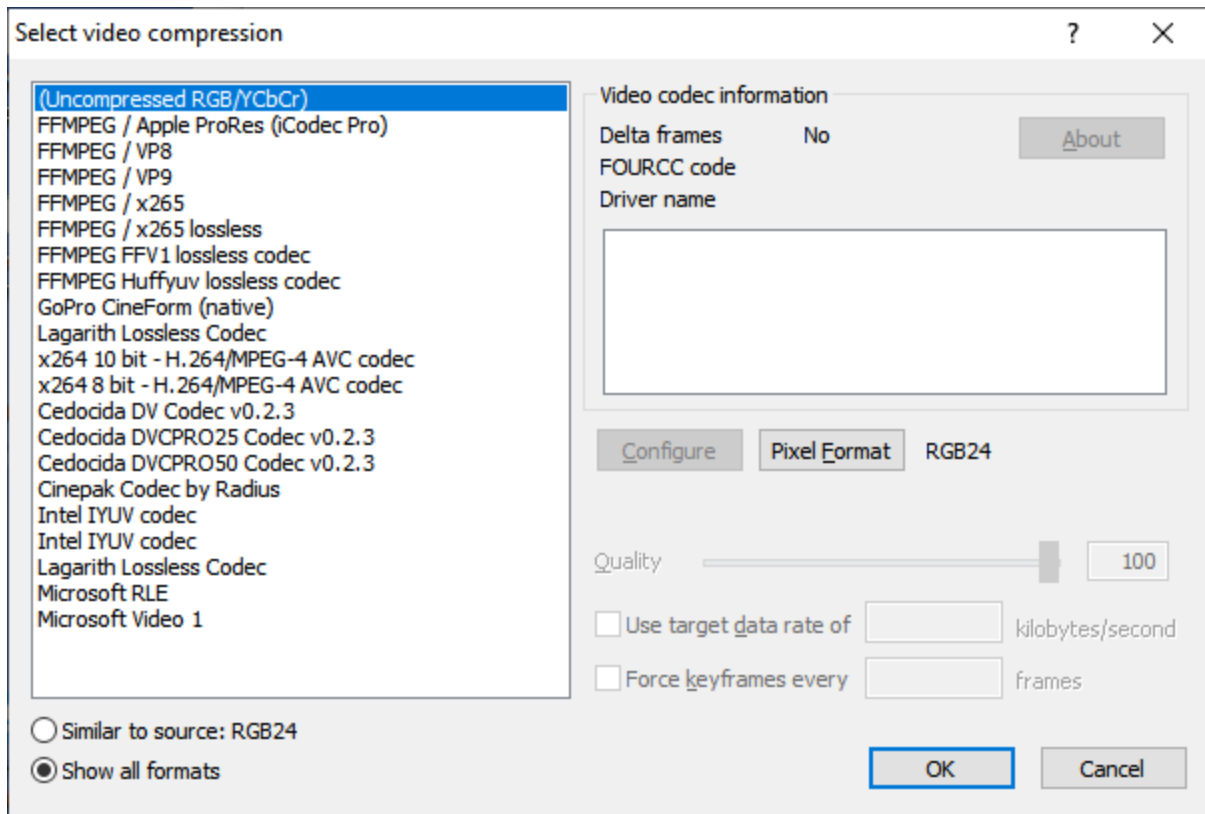
Go into VirtualDub2\_43943

Double click on VirtualDub.exe.

VirtualDub2 will open.

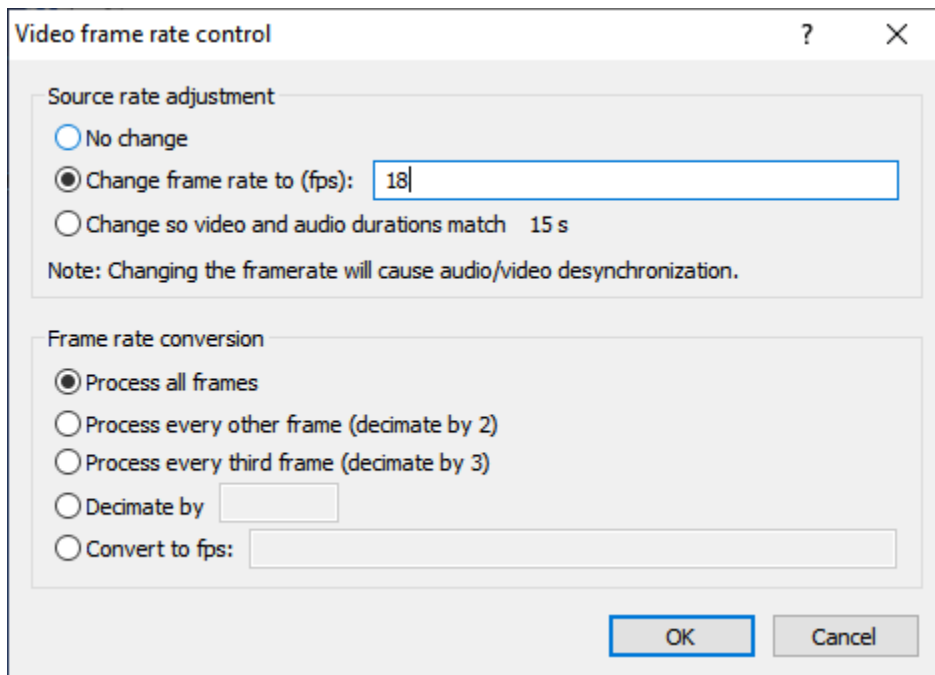


Click on the video tab and compression.



Make sure that Uncompressed is selected. Click OK.

Click on Video tab and then frame rate.



Set frame rate as required. I use 18 fls.

Click OK.

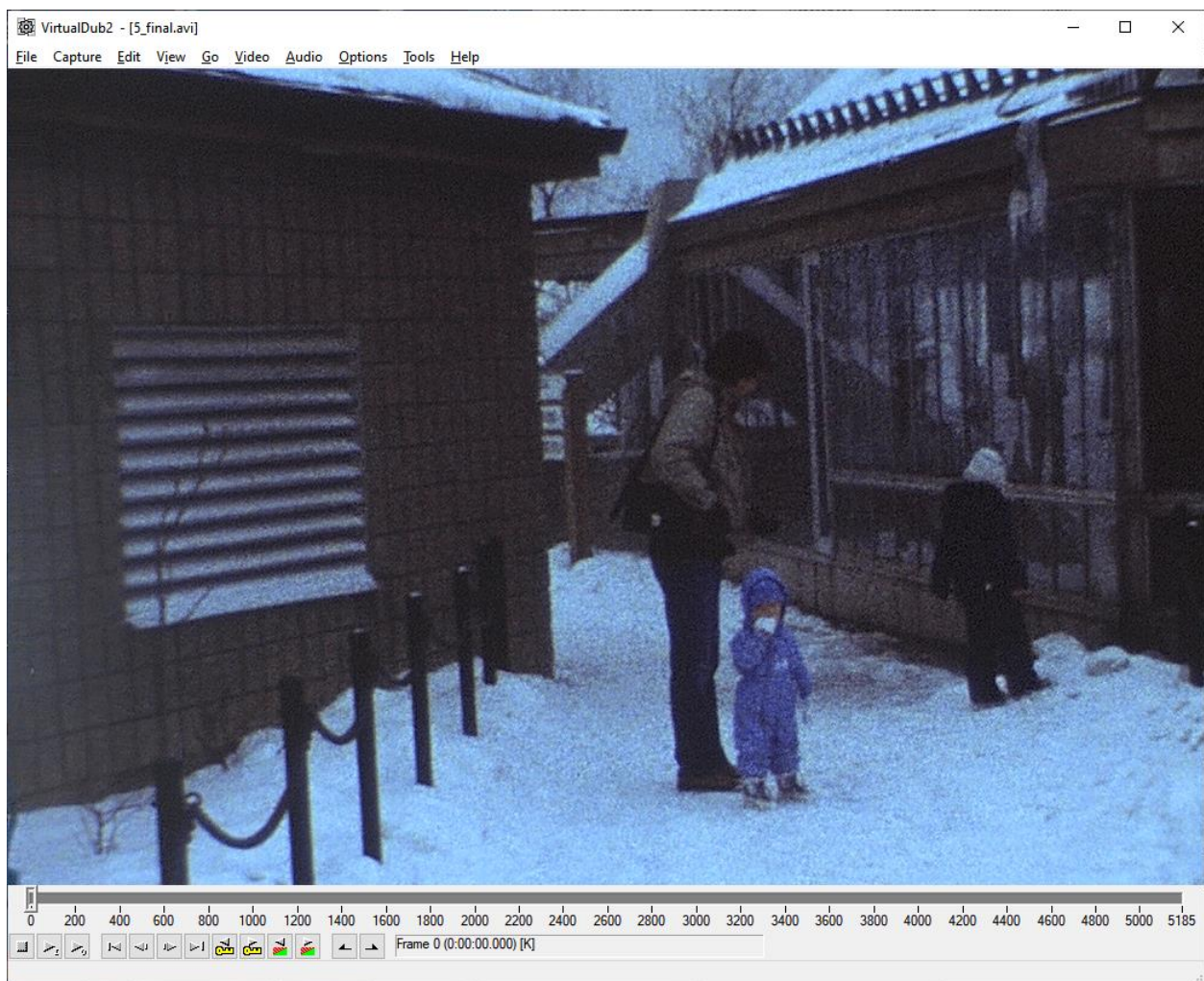
Next create a raw video from tiff images.

In VirtualDub click on File then

Open Video File

Open the first picture in the tiff series of pictures.

VirtualDub will create a video automatically from the series. Make sure that you have consecutive numbers in the series.



Then just save the file into you work directory and call it something something raw.

This is a raw unprocessed file. It is large and you can play it in VirtualDub or some other player but it will be choppy.

Next, close the file in VirtualDub by clicking File and then Close video file. Do not exit VirtualDub. Leave it there.

Now, go into the following directory:

Postprocess\videofred\20)Film\_Restoring\_vs\_06\_2012\scripts

Open up option4.avs file with a text editor (notepad is fine).

You have to change only one thing there:

```
# 8mm film restoration script by videoFred.
# www.super-8.be
# info@super-8.be

# version 01.A with frame interpolation
# release date: june 20, 2012
#=====

# august 2010: added removerdirtMC() as suggested by John Meyer
# october 2010: auto sharpening parameters

# march 2011: new autolevels.dll by Jim Battle
# www.thebattles.net/video/autolevels.html

# june 2012: improved stabilisation

#=====

# cleaning, degrading, resizing, stabilizing, sharpening, auto-levels and auto-white balance.
#=====

#film= "C:\Users\stan\Documents\8mm_video_transfer\Wolverine\Videos\Hawkeye\test11.avi"
# source clip, you must specify the full path here
#film= "D:\Hawkeye\video\canada_raw.avi" # source clip, you must specify the full path here
#film= "C:\Users\stan\Documents\8mm_video_transfer\stan_8mm\4a.avi"

film= "E:\Hawkeye\canada\12_raw.avi"
```

Change the path to the raw file that you just saved whether it is on your local drive or external drive.

Save the avs file.

Now, go back to the WirtualDub program and click on File and then Open Video Fle and point to the avs file that you just saved. Or just drag and drop the file into VirtualDub2.



In a few seconds VirtualDub will display the video.



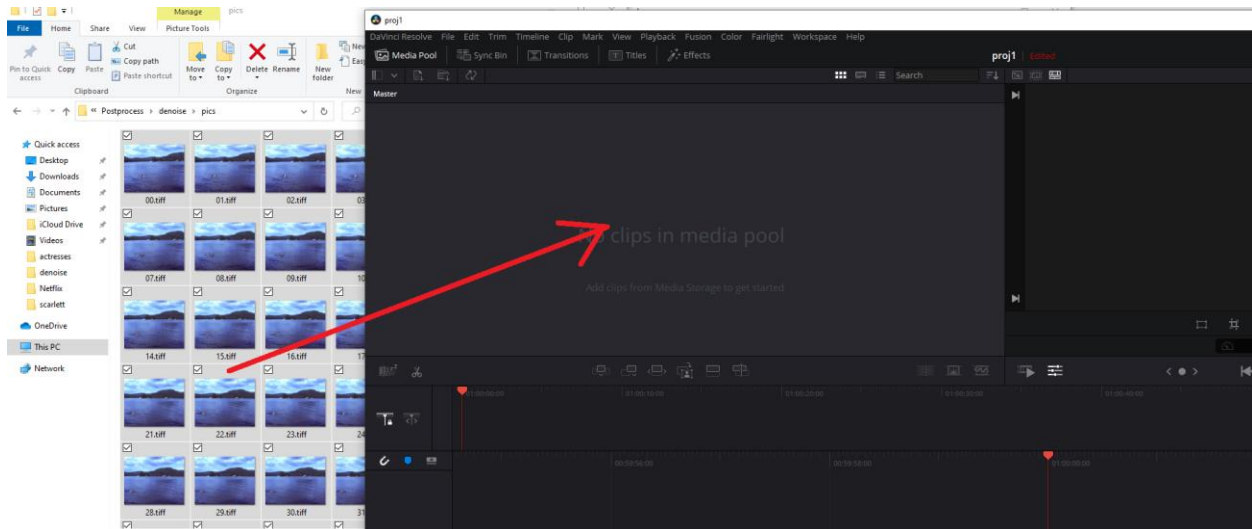
Then just save the video.

## DaVinci Resolve

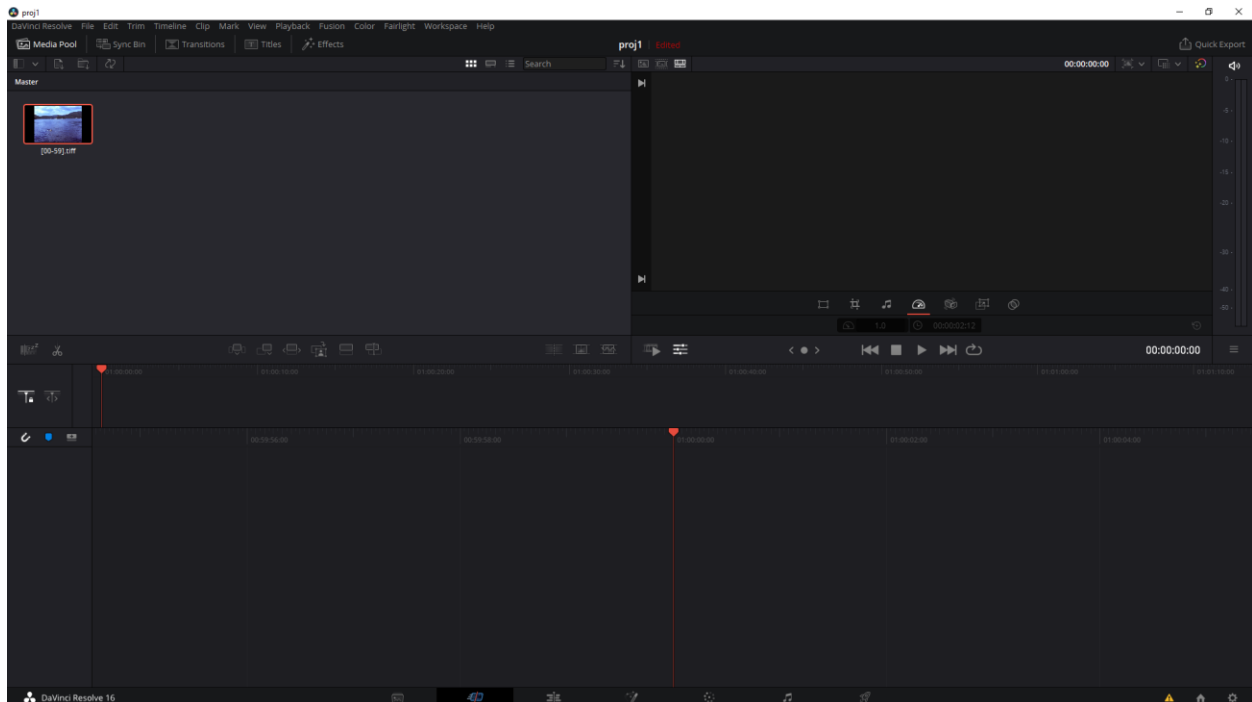
### Slow Motion (for interpolation without speed change see next chapter)

Save the VirtualDub2 video as a sequence of tiff images first.

Select all images and drag them into the media window of DR (DaVinci Resolve).



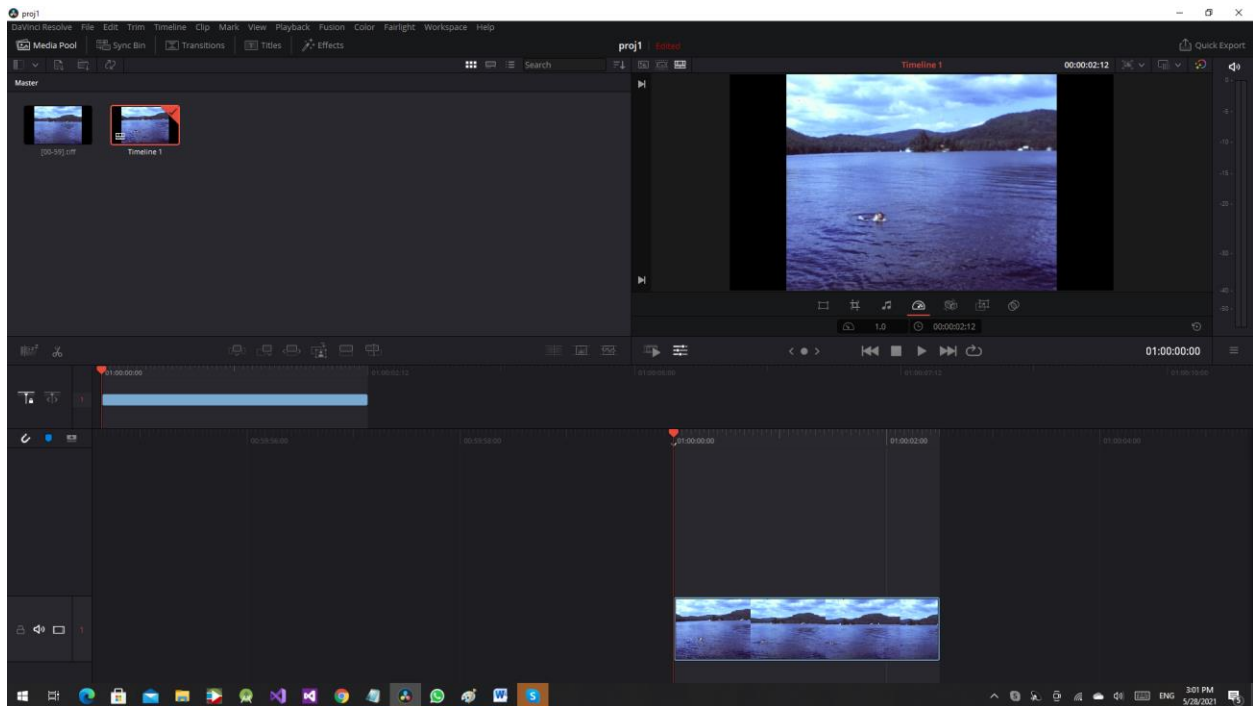
You will get the images shown as a clip in the media window.



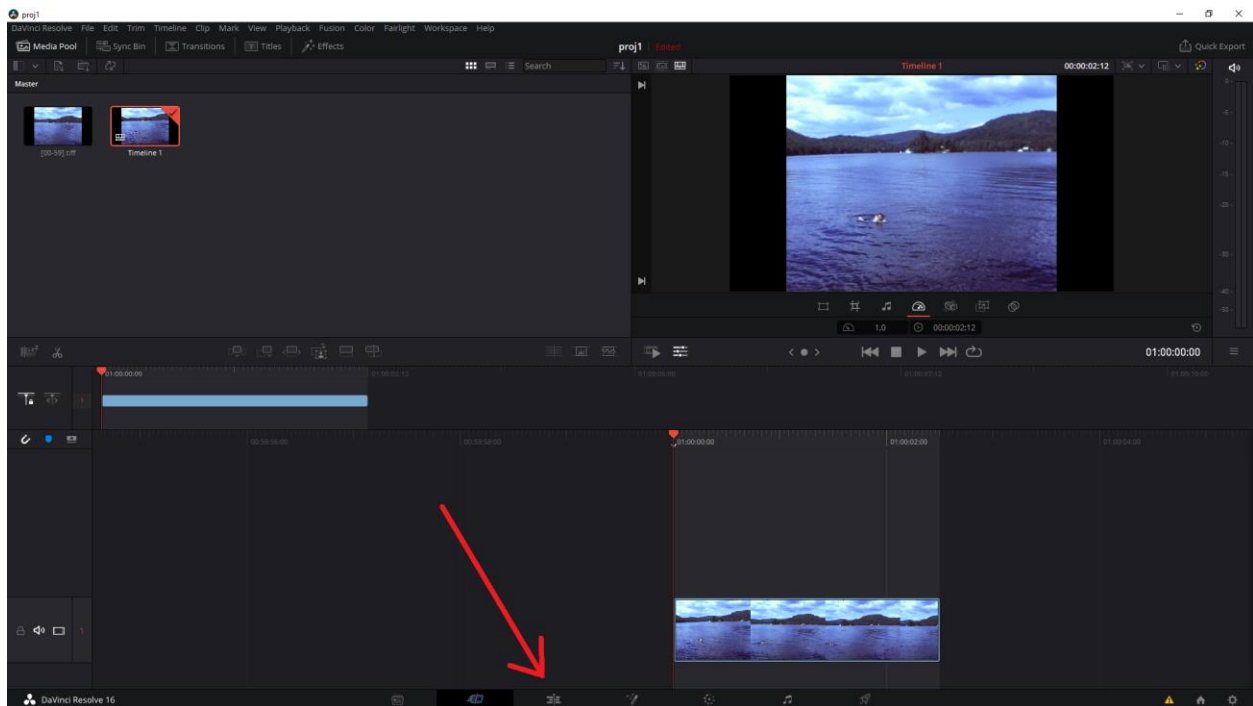
Right click on the clip, select the clip attributes and set the frame rate if necessary but you can leave it as is since the frame rate change can be done later.



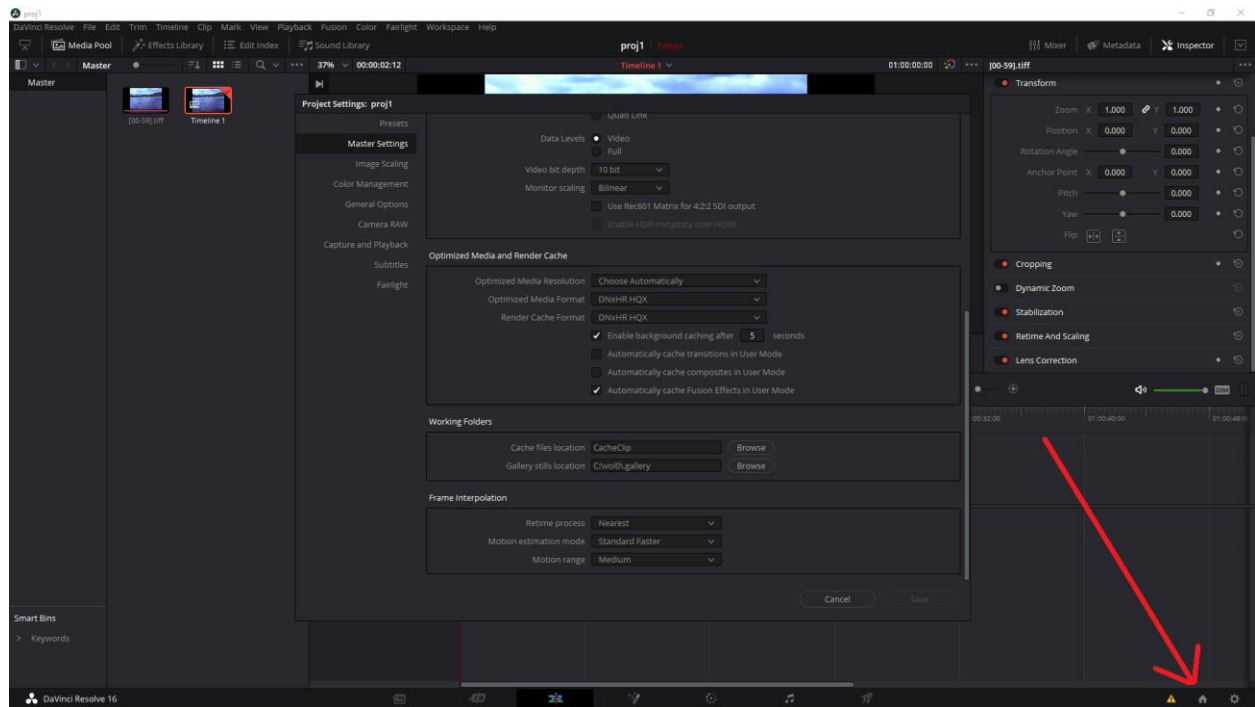
Right click on the clip and create the timeline from it.



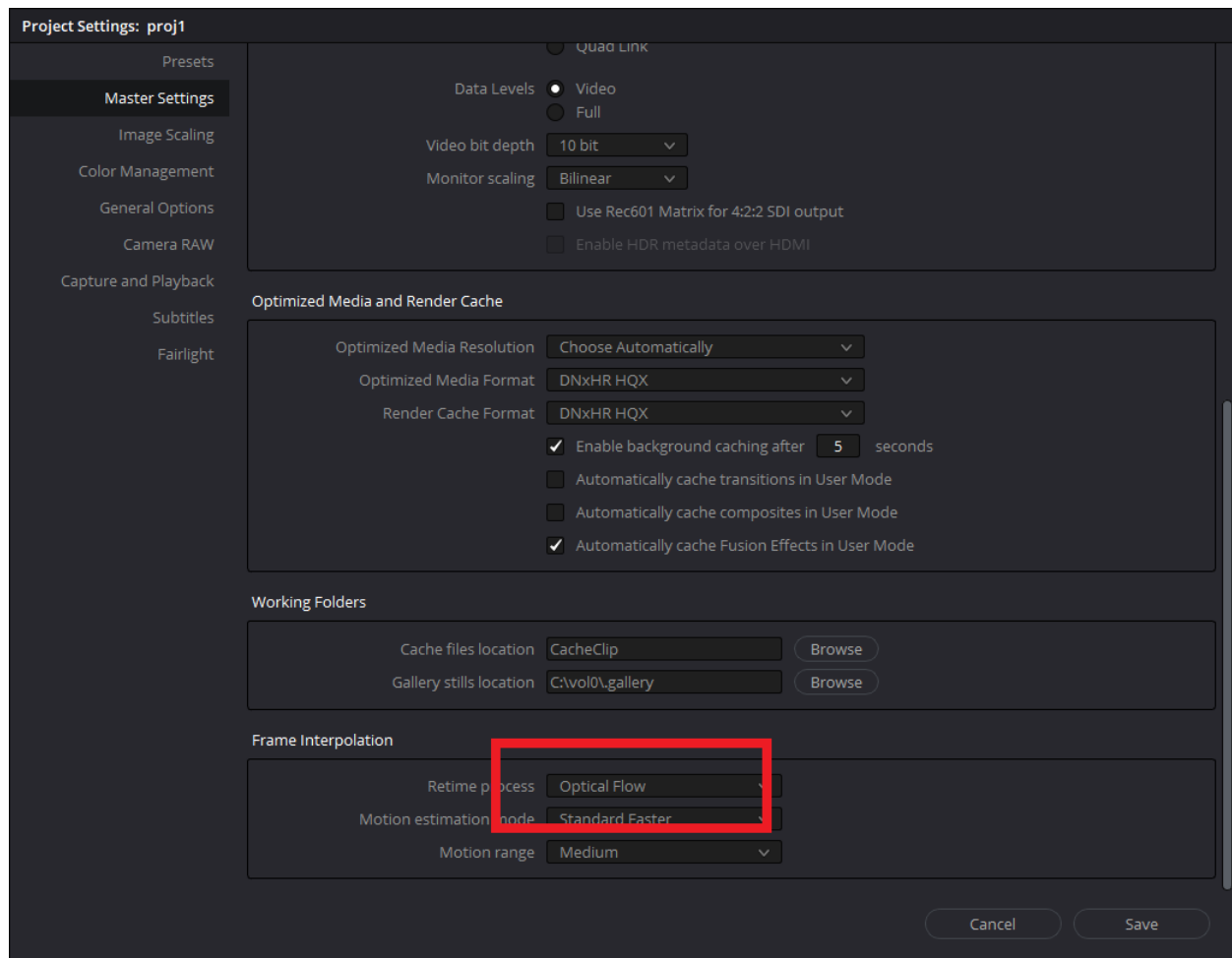
Switch to Edit Mode.



Click on project settings

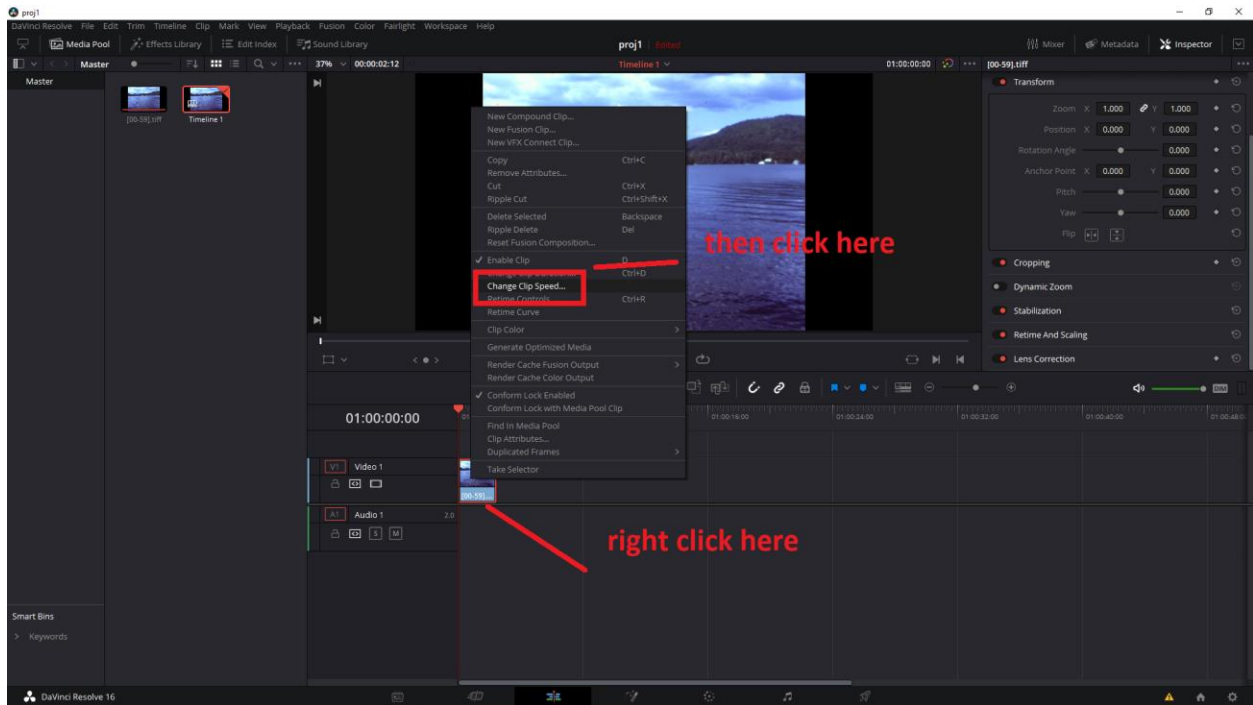


Scroll the settings all the way down and change the retime process to optical flow (more info available here <https://www.youtube.com/watch?v=m5cO3ZTfSr4> ).

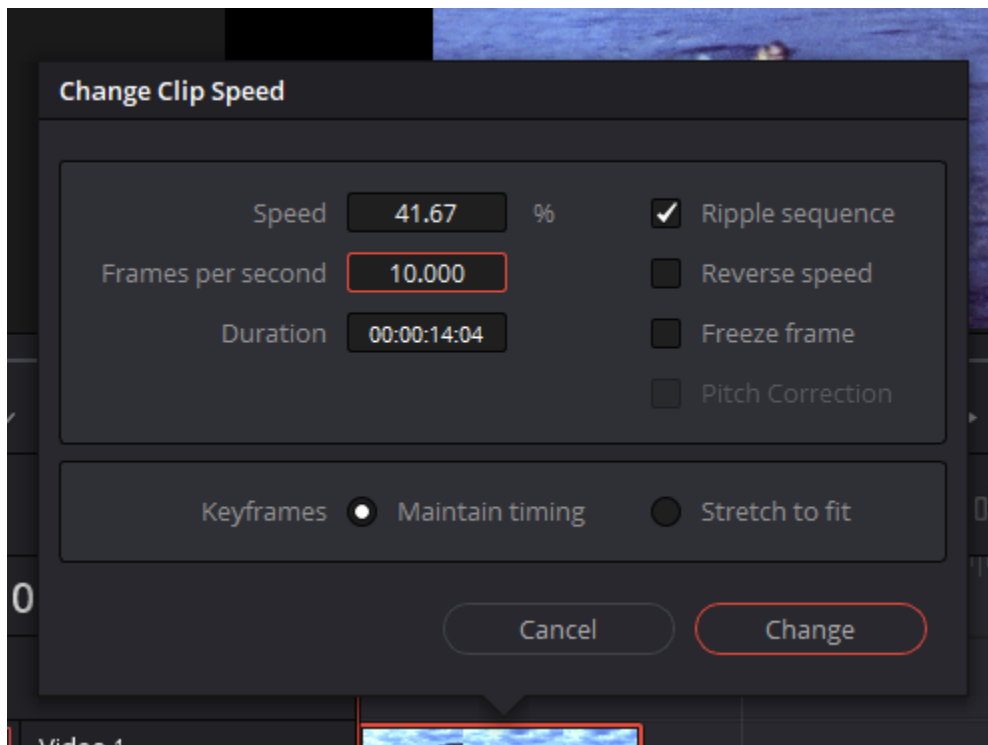


Save the settings.

Now, right click on the clip and change the speed to whatever FPS needed.

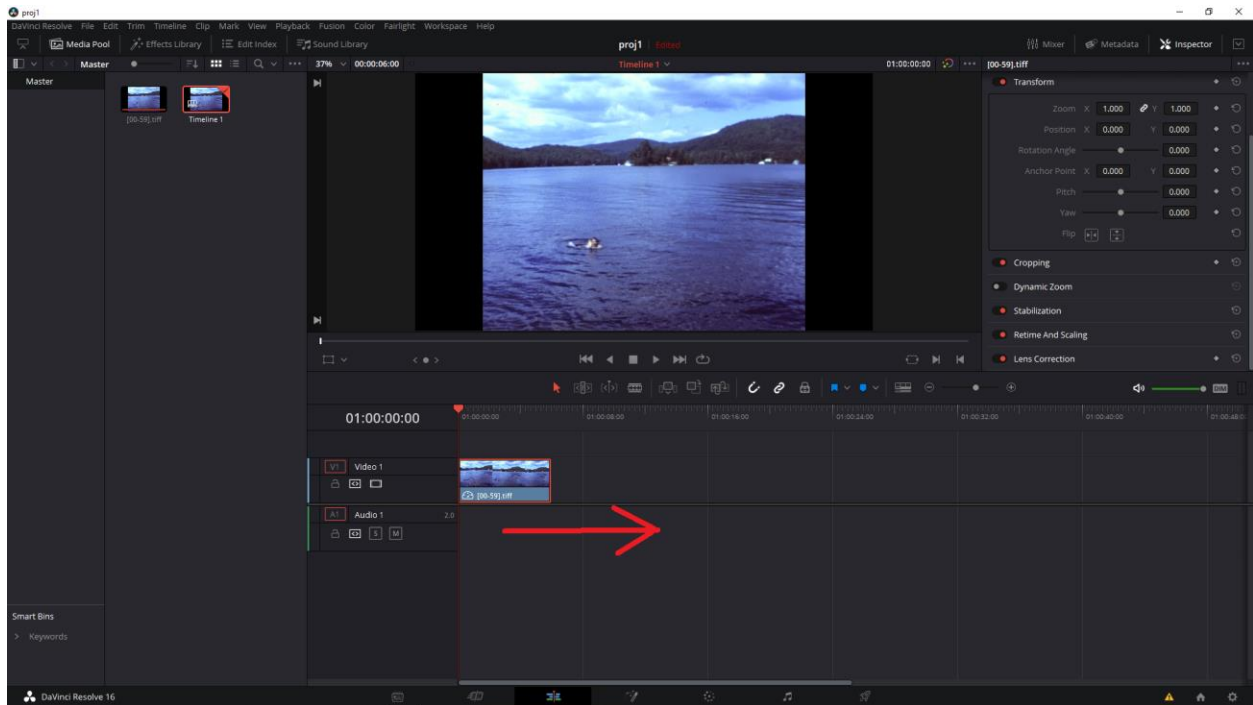


Change the FPS to whatever required.

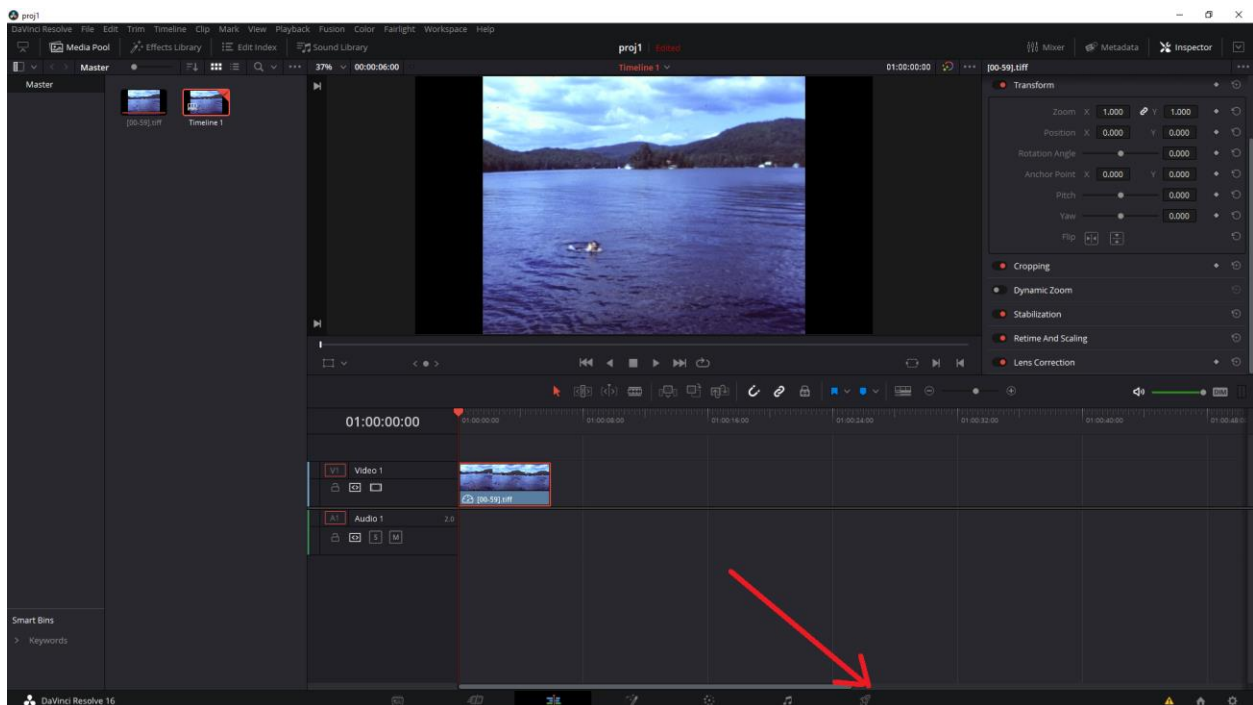


Make sure that Ripple sequence is checked off. If not the clip duration will not change and the clip will be truncated.

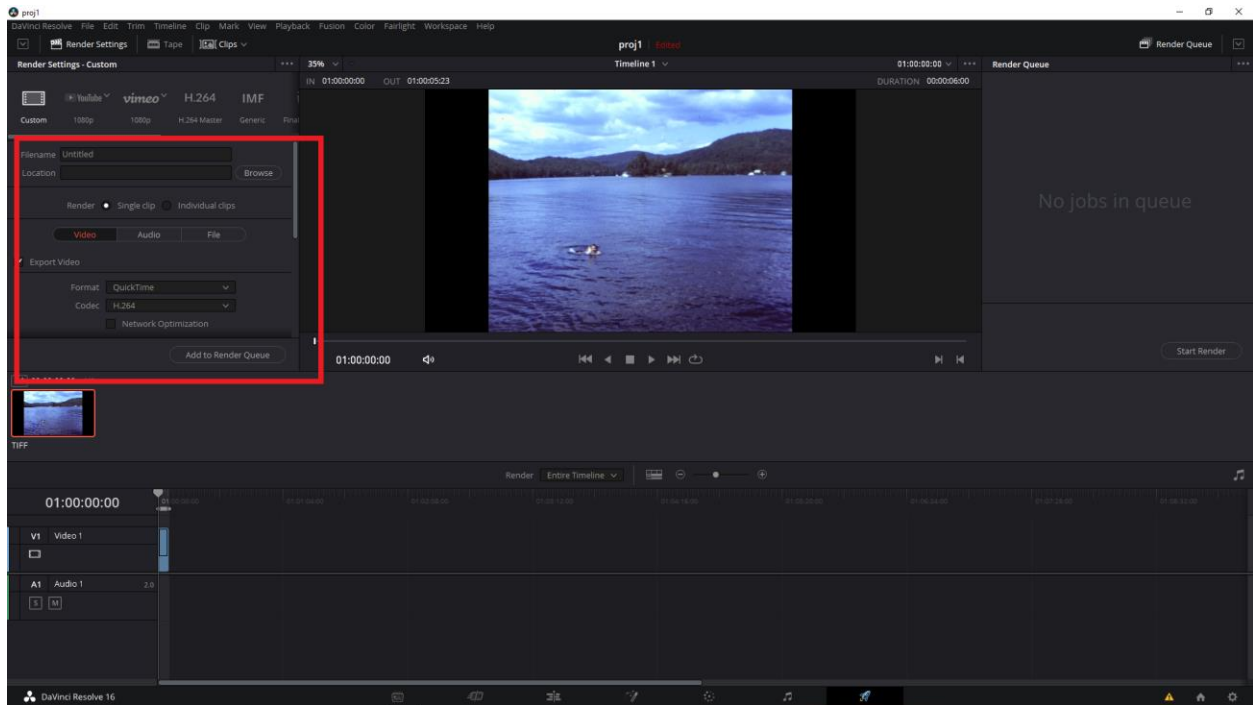
Click on the change button. Note the clip duration change in the timeline window.



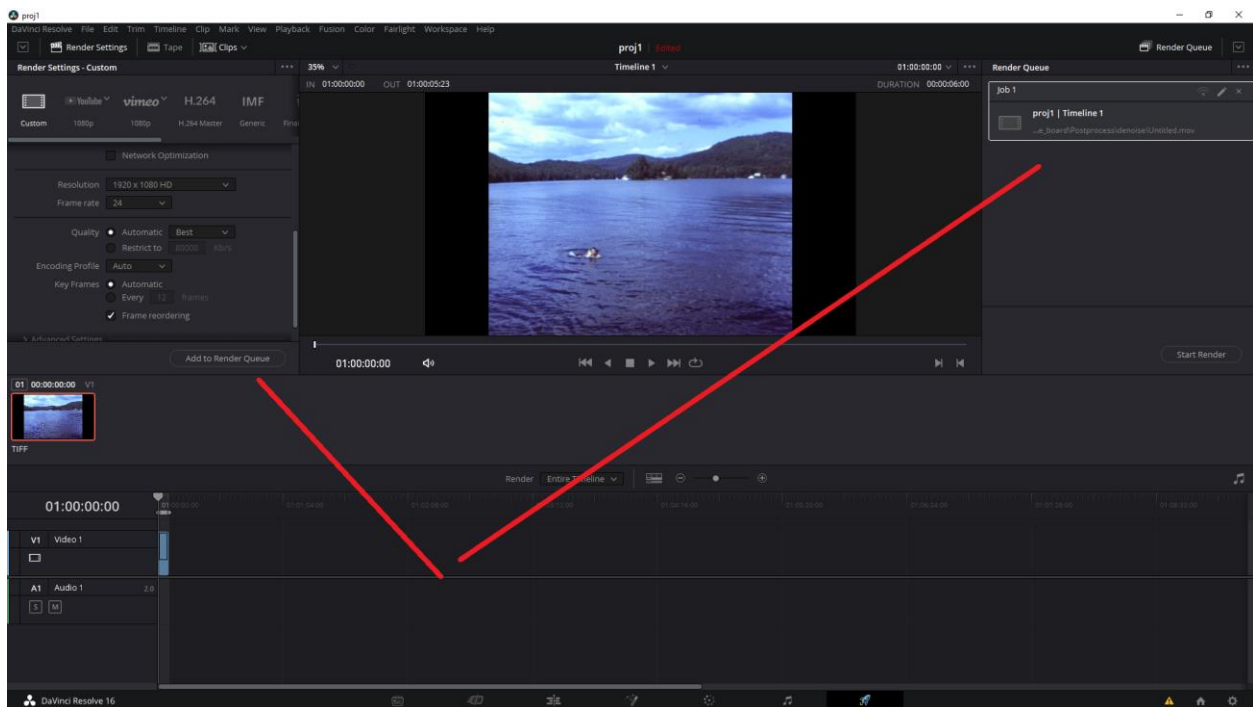
Once done, complete other changes as necessary and then export the video by switching to deliver mode.



Change the video format to whatever you like.

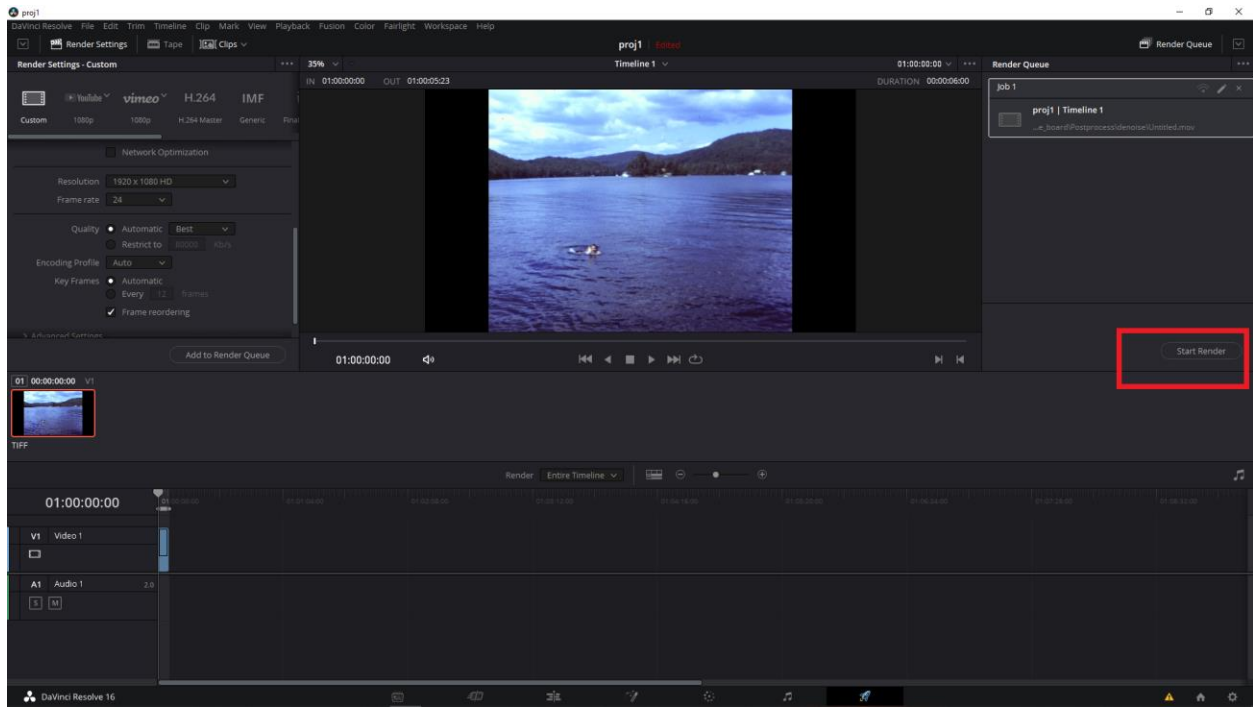


Add to render queue



And then start render.





## Interpolation without Speed Change

The above instructions were for interpolated frames that result in smooth slow motion speed. In many cases however we want to interpolate the frames but want to maintain the original speed.

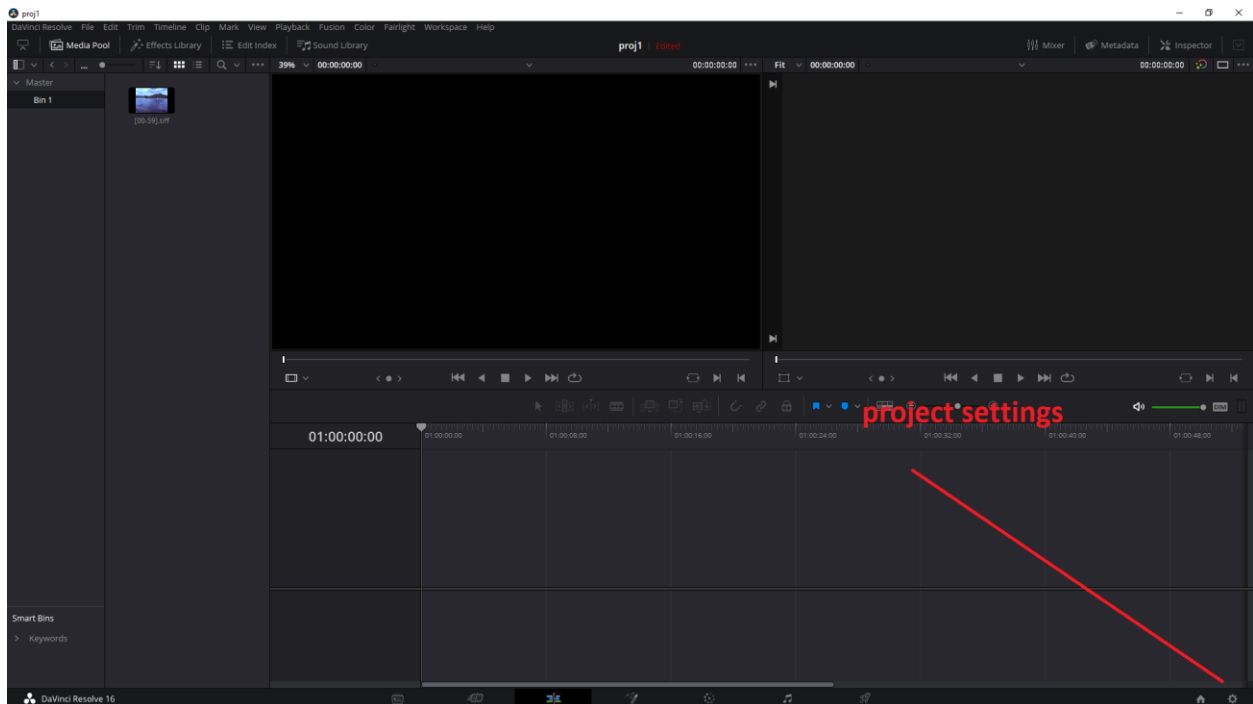
In order to do that just follow the above instructions but do the following changes.

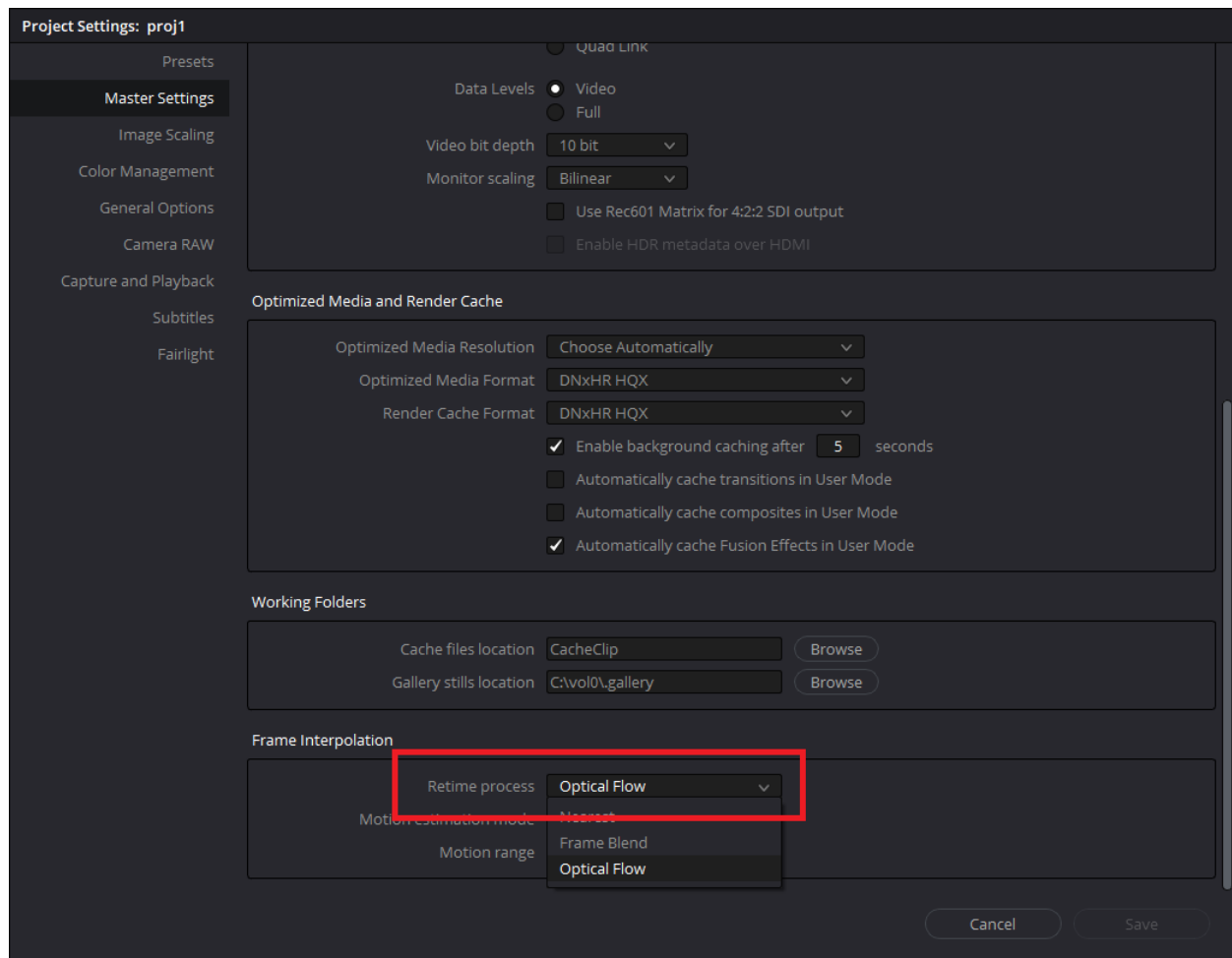
1. Make sure your project settings are set to optical flow for retiming.
2. Before creating the timeline set the clip attributes FPS to 60 FPS.
3. Create new timeline
4. Using the above procedure change timeline speed to 24 FPS or whatever final speed you need

The rest is the same as the above procedure.

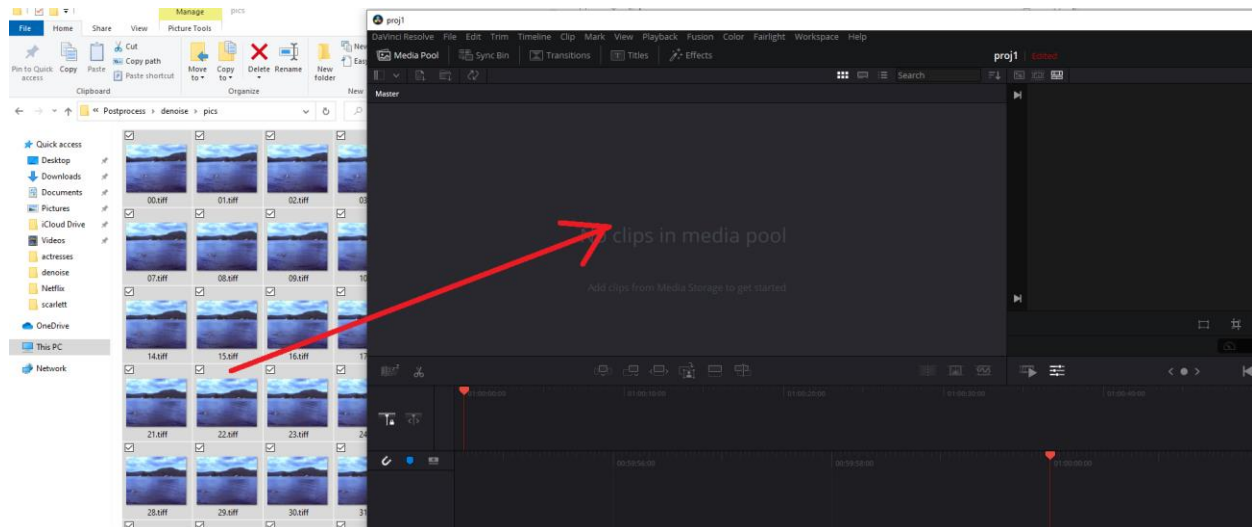
Here are the details.

Project settings optical flow selection.

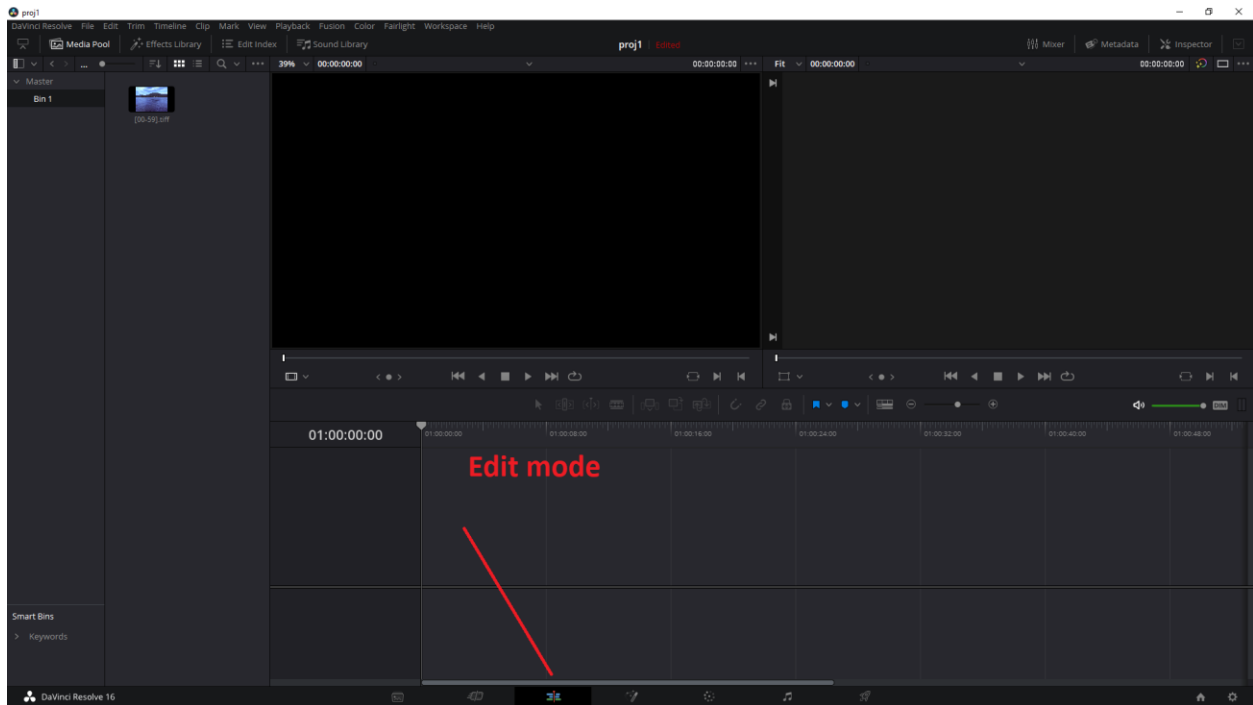




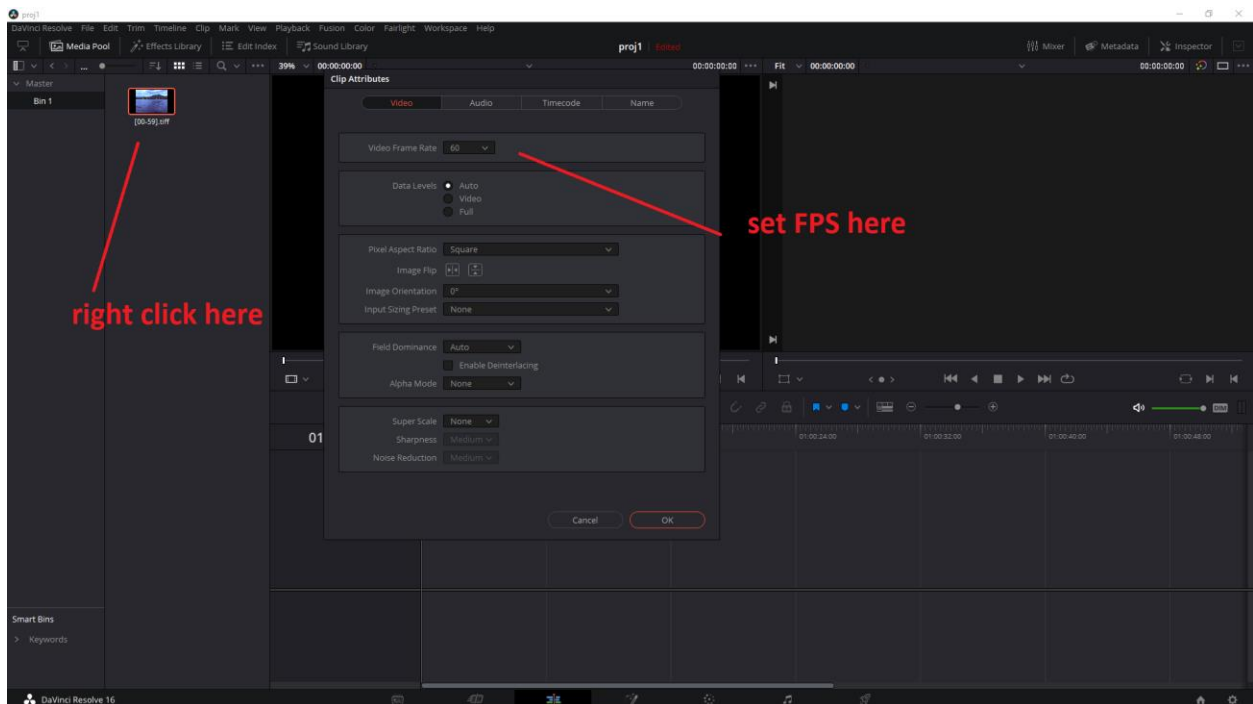
Drag the images into the media window. Make sure all images are selected.



Switch to edit mode if not already there.



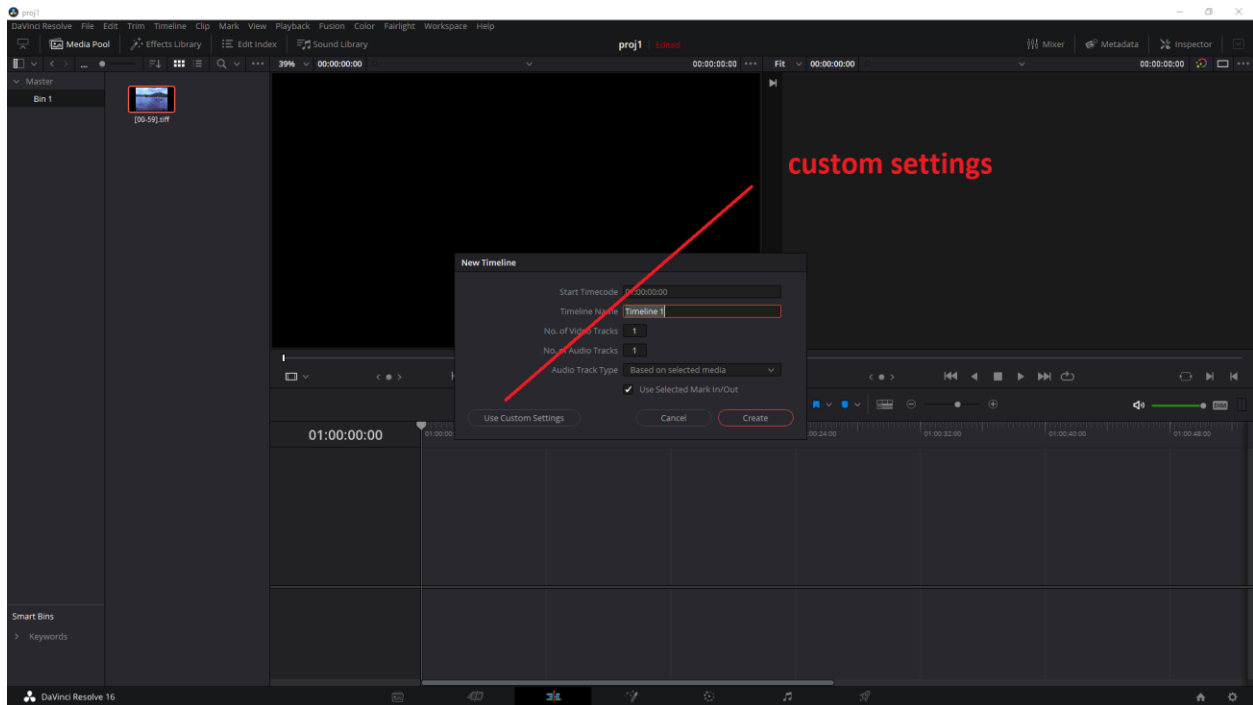
Right click on the images file in the media window and select clip attributes. Set clip FPS to 60 or whatever interpolation rate you prefer.



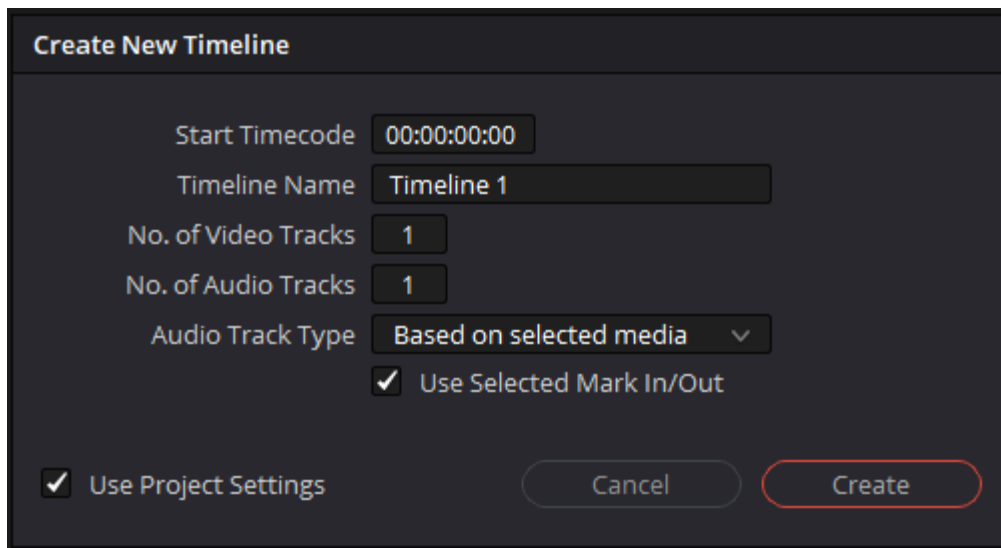
Click on OK.

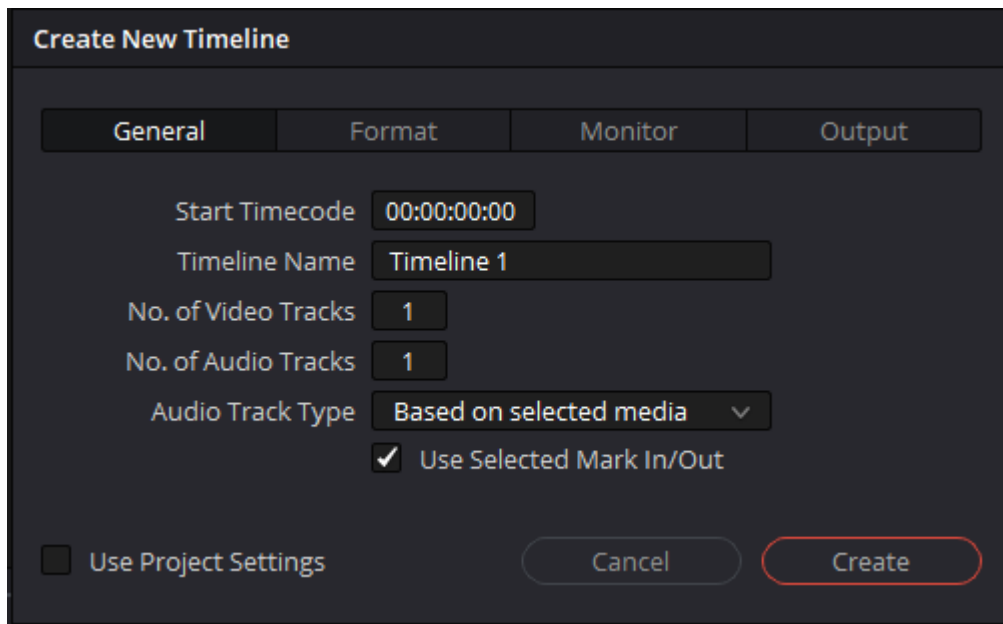
Right click on the clip again and create the timeline. The timeline create window pops up.

Click on custom settings.

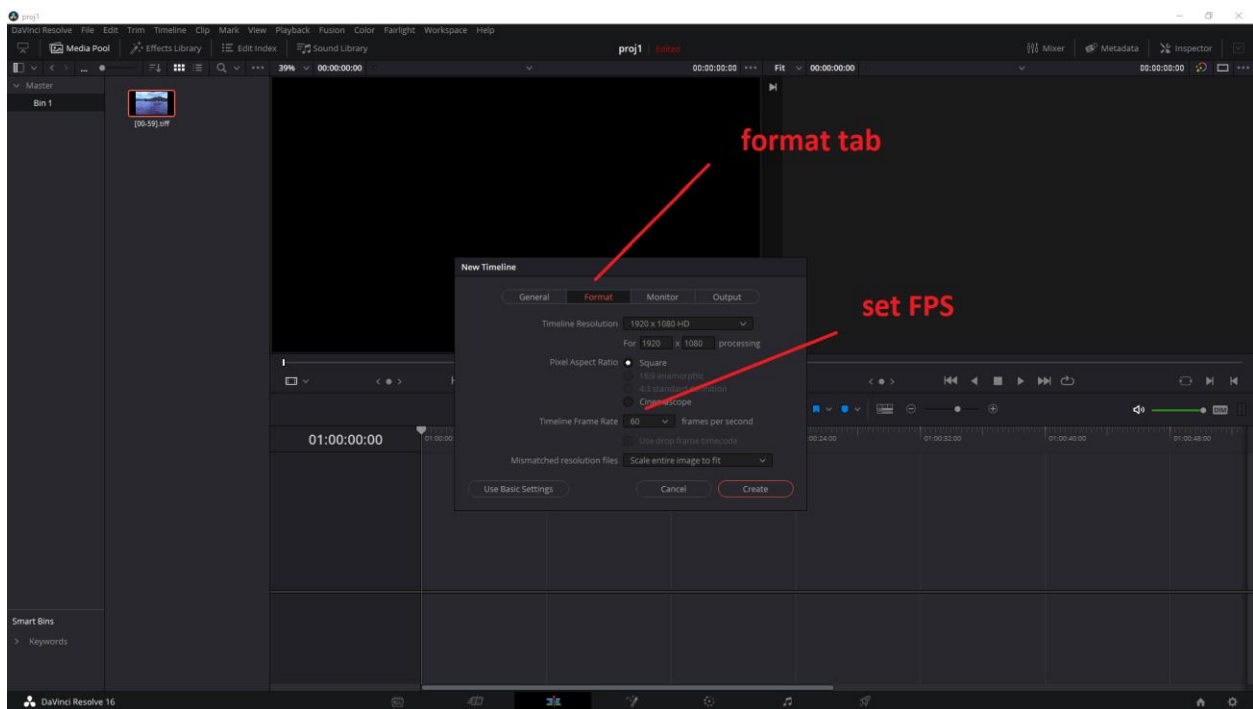


It is to be noted that in version 17.2 of DaVinci the timeline popup window is a bit different. It does not have custom settings but it has a button to use the Project Settings. Make sure that button is not checked off.





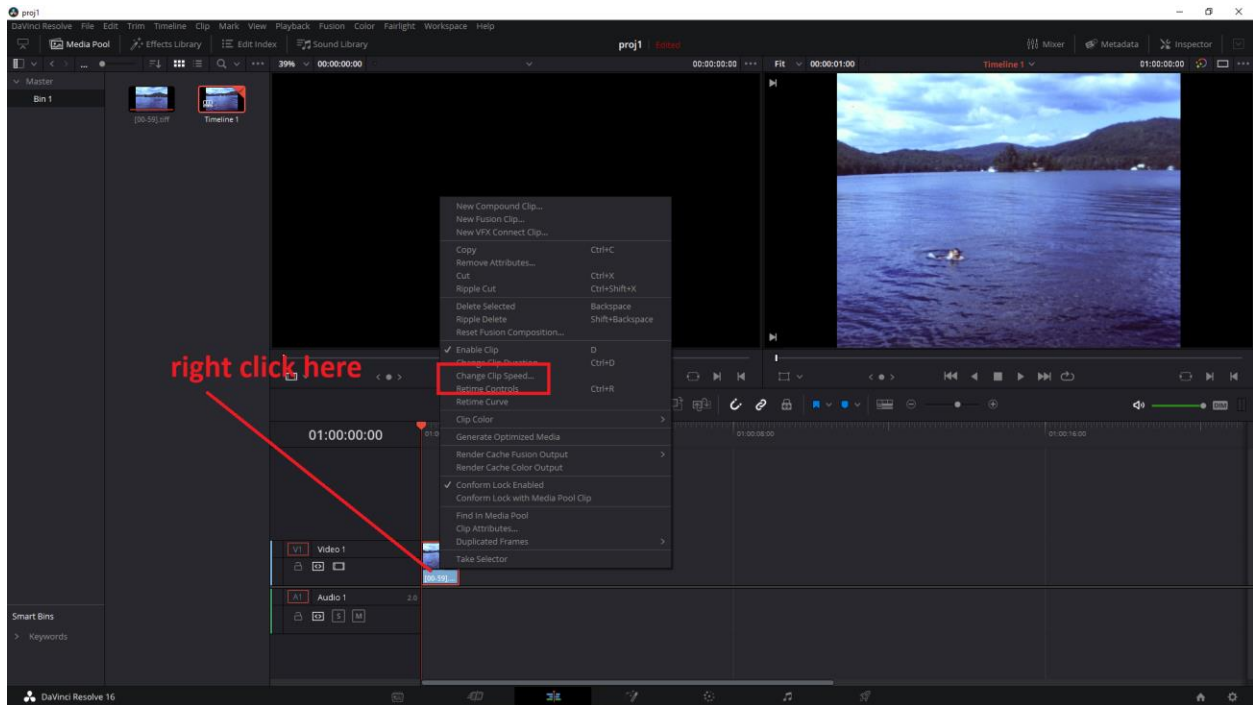
Select Format tab and set the desired interpolation FPS.



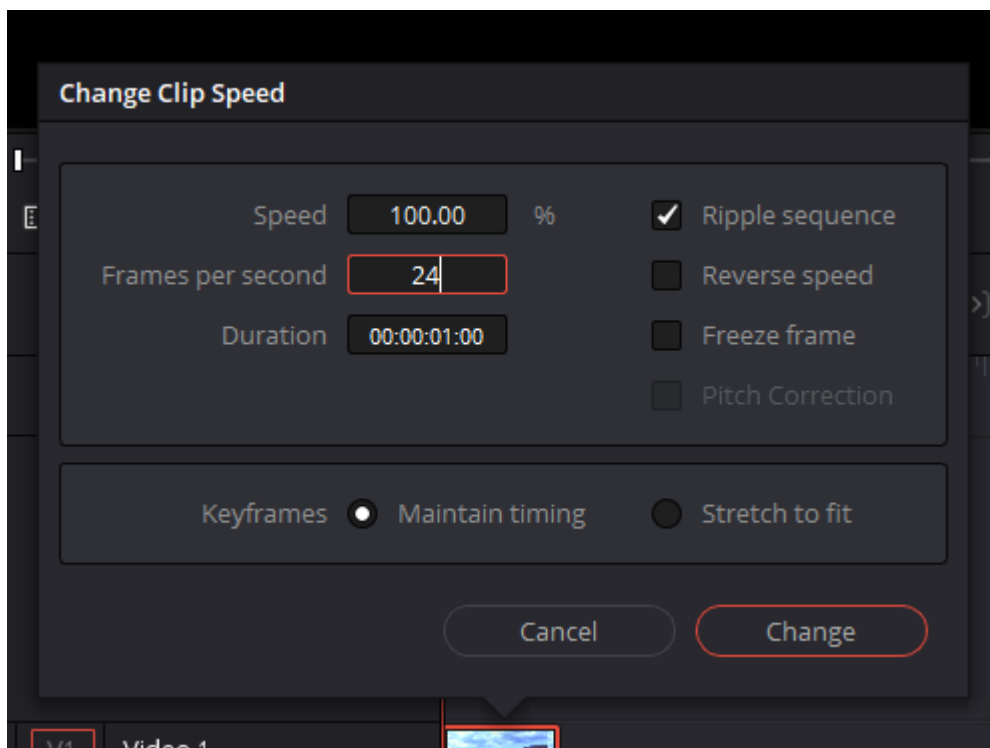
The new timeline will show up in the timeline window.

Right click on the timeline in the timeline window and select Change clip speed.





Change clip speed back to normal speed i.e. 24 or 18 FPS or whatever the original speed was. You can also go lower if slow motion is preferred. Make sure Ripple sequence is checked off.

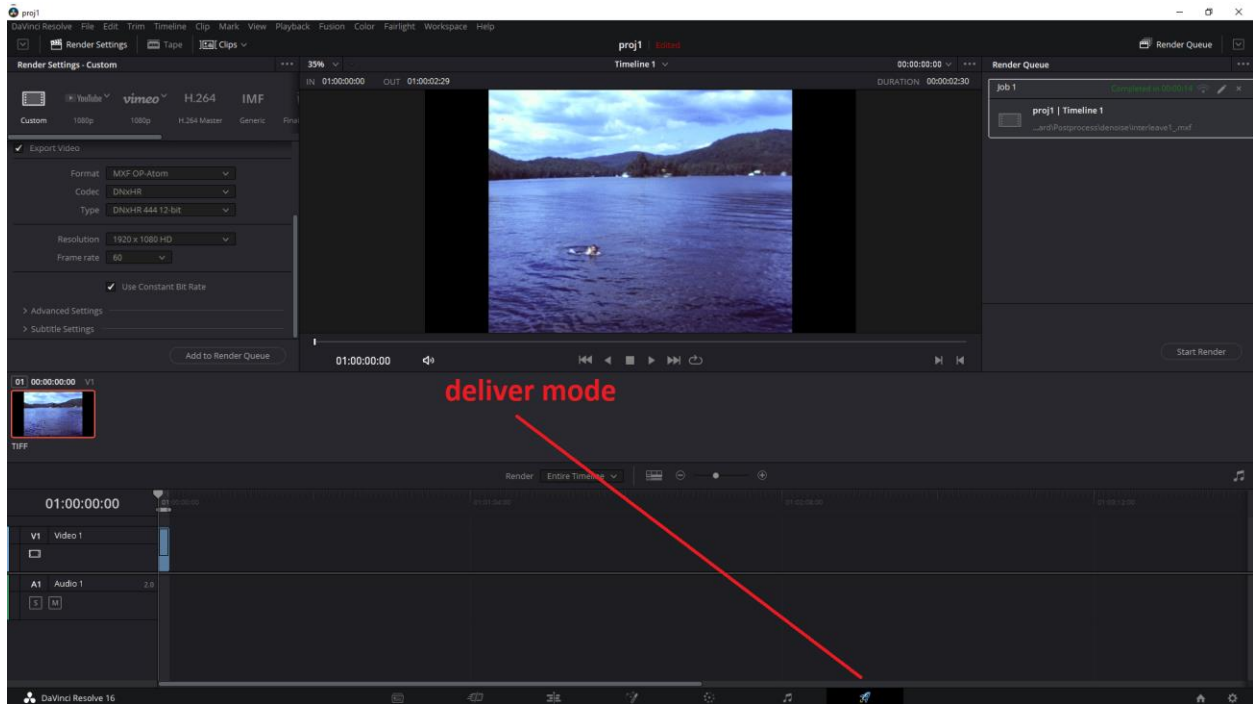


Note the clip stretching out after the speed change. If it does not then make sure that Ripple sequence is checked off.

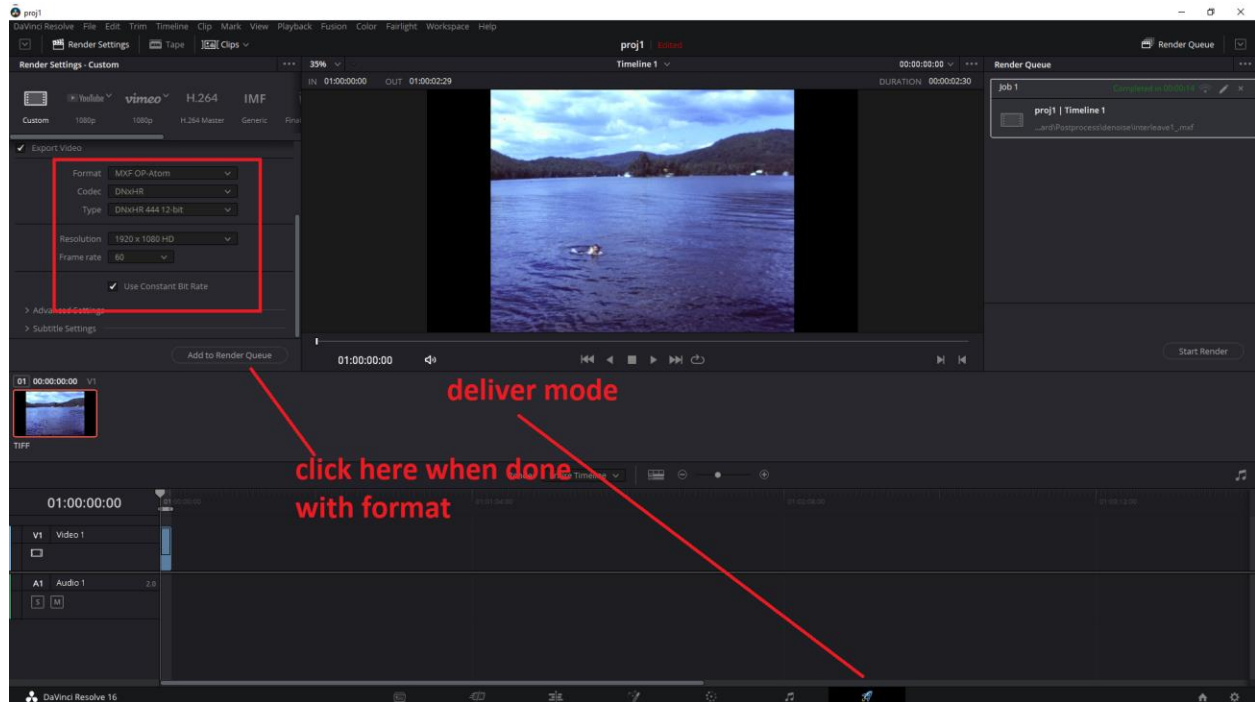
At that is basically it. You can test run the clip to make sure that additional frames got added by stepping through the video (left, right arrows).

The next step is to render and save the video.

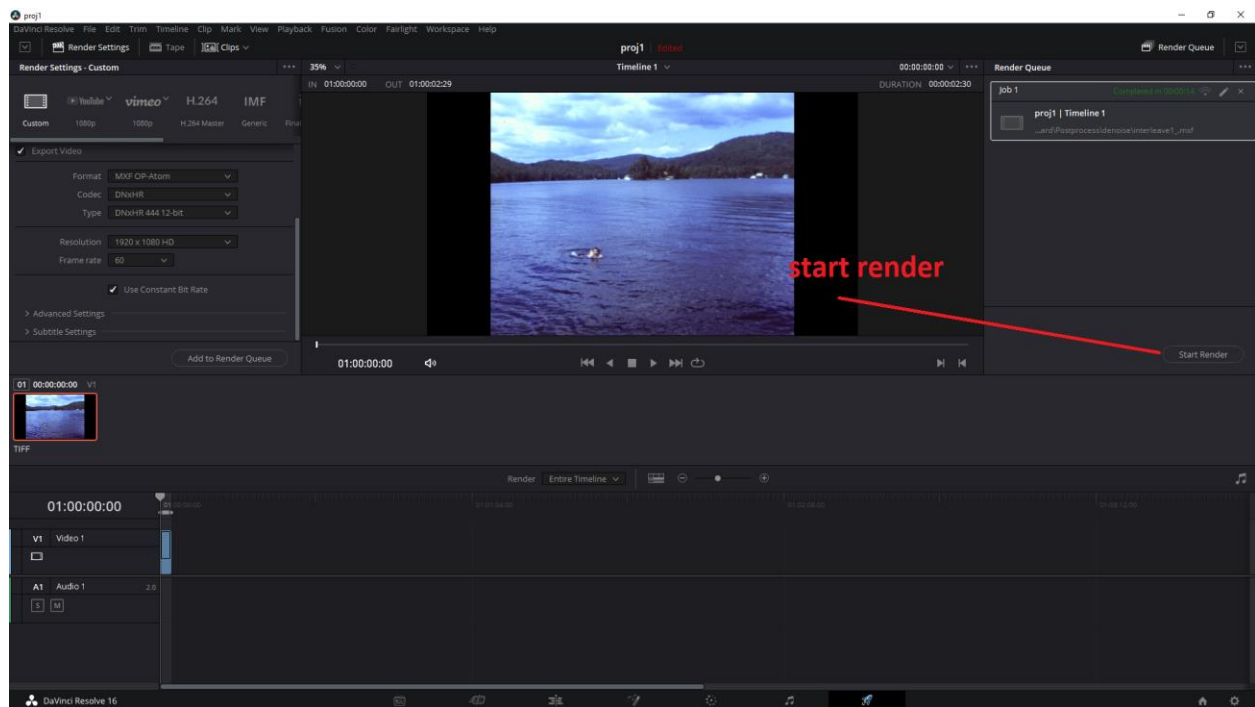
Switch to Deliver Mode.



Select proper video format and add to render queue.



Start rendering.



And that completes the procedure.

