


Compressing Videos

April 1 2020

One way to get your lectures up on Canvas (after recording through Zoom) is to choose to record the meeting automatically, and “In the Cloud”. Such videos will automatically be stored on Canvas, in a location where you have unlimited storage.

Meeting Options

- Require meeting password
- Enable join before host
- Mute participants upon entry 
- Use Personal Meeting ID 9526497748
- Enable waiting room
- Record the meeting automatically On the local computer In the cloud

This document covers what to do if you choose NOT TO UPLOAD

AUTOMATICALLY IN THE CLOUD. There are various reasons you may want to do this: maybe auto-uploading is causing problems with your internet, or you want to edit your video file before upload, or you didn't record with Zoom at all (say a pre-recorded lecture filmed at a board using your phone's camera app).

Summary of The Process

Get Panopto (Course Videos) on your canvas site, and **upload videos through there.** While the video is “processing” **you may choose settings on its final resolution size**, which will automatically compress it for you. If you want to **compress your video before uploading (to save upload time)** you may use **QuickTime** on a Mac, or **Video Editor / Windows Movie Maker** on Windows to do so easily. **I recommend compressing to 720p.**

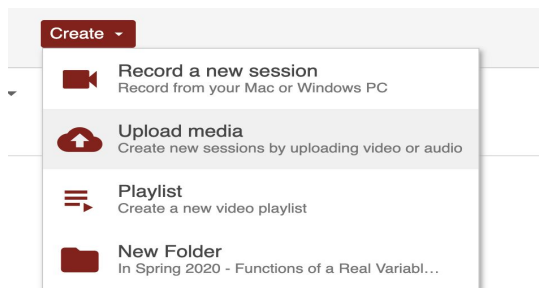
Compression Via Panopto (Course Videos)

You can still use Canvas to automatically compress a video file you choose to upload, and store it in a location that grants you unlimited storage. This is through the Panopto platform, which is called Course Videos in Canvas. It is not automatically enabled in Canvas, you have to do that yourself. Luckily, there's an easy video tutorial!

Enabling Panopto in Canvas

<https://vptl.stanford.edu/panopto-enable>

Once you have the Panopto tab in Canvas, you upload a video by going to "Create"



Happily, there are also more details of this process available if you would like:

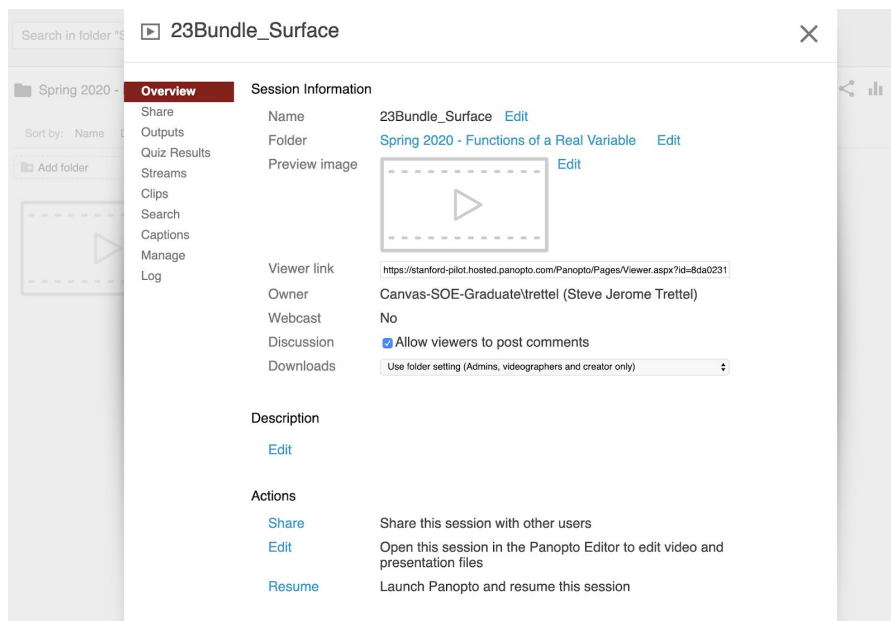
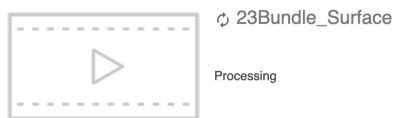
Uploading A Pre-Recorded Video to Panopto Guide

<https://vptl.stanford.edu/Upload-Video-File-Panopto>

In the Winter quarter, using campus internet, this took approx 30 mins to upload a recording of a 1hr lecture (recorded with the camera app on an iPad). After this upload is complete and before the video is posted, **Panopto can compress it for you so your student's video does not lag**. You can adjust your Panopto settings so it does this uniformly for each upload over the course.

Panopto Settings

After the upload is complete (though not after the "processing" is finished, so do this right after the upload is complete), there are individual settings that need to be fiddled with: choose the settings icon for the individual video, bringing up another dialog box with tabs Overview, Share, Outputs, Quiz Results, Streams, etc (below is the screen when the video is processing...move your mouse over the top to access settings).



Here is the result of opening "Settings". In "Overview," change the name as appropriate (since otherwise the name will be IMG_0042.MOV or whatnot). In "Outputs," choose the video quality: 720p is sufficient for online viewing, and results in file sizes of approximately 300-400mb or so for a 1hr lecture.

The screenshot shows the Panopto interface for a video bundle named "23Bundle_Surface". The "Outputs" tab is selected in the left-hand navigation menu. The main content area displays the following information:

- Overview:** These are the various output formats and ways of accessing them.
- Panopto Web Viewer:** Viewer not ready: Processing
- Video Podcast:** Podcast not ready: No Podcast
- Type:** Primary Video Only (dropdown menu)
- Quality:** 720p (30 fps) (dropdown menu)
- Apply:** A blue button to apply the selected settings.

Other tabs visible in the navigation menu include Overview, Share, Quiz Results, Streams, Clips, Search, Captions, Manage, and Log. The "Streams" tab is highlighted in red.

"Streams", you can select a PDF to upload alongside the video (we used this in Math 51 in the Winter to have the lecture notes appear with the lecture). It leads to a very nice split-screen experience when you view on a laptop -- though I think phone-based viewers probably can only pull up one media at a time (either the video or the lecture notes) on their small screen.

The screenshot shows the Panopto interface for a video bundle named "23Bundle_Surface". The "Streams" tab is selected in the left-hand navigation menu. The main content area displays the following information:

- Streams:** No streams.
- Presentation Documents:** No presentation documents.
- PDF Documents:** No PDF documents.
- Choose File:** A button with the text "No file chosen" next to it.
- Upload PDF:** A button to upload a PDF document.

Other tabs visible in the navigation menu include Overview, Share, Outputs, Quiz Results, Streams, Clips, Search, Captions, Manage, and Log. The "Streams" tab is highlighted in red.

Compression on Your Local Machine

The instructions above require uploading your entire recording to Canvas, which may itself be difficult with the speed of home internet. **So it's probably in your best interest to compress the video locally on your own computer first, to decrease the size of your upload.** This can be done using basically any video software; I have a Mac so I ran performance tests of the two pre-installed options there, Quicktime and iMovie. For Windows, the analog of iMovie is called Video Editor in Windows 10, and before that was known as Windows Movie Maker. Some websites offering instructions for Windows Compression appear at the end of this document.

Compression With Quicktime

To downsize a video in QuickTime, you may open it and then go to **File->Export As**, where you get a **choice of common sizes: 1080p, 720p, 480p**.



I usually go for the 720p option (as we did in Math 51). However, to investigate the differences in file sizes, I screen-recorded myself typing this document for 10mins (a very boring video I will not include) and compressed it to all options.

Comparison of different compression options in QuickTime

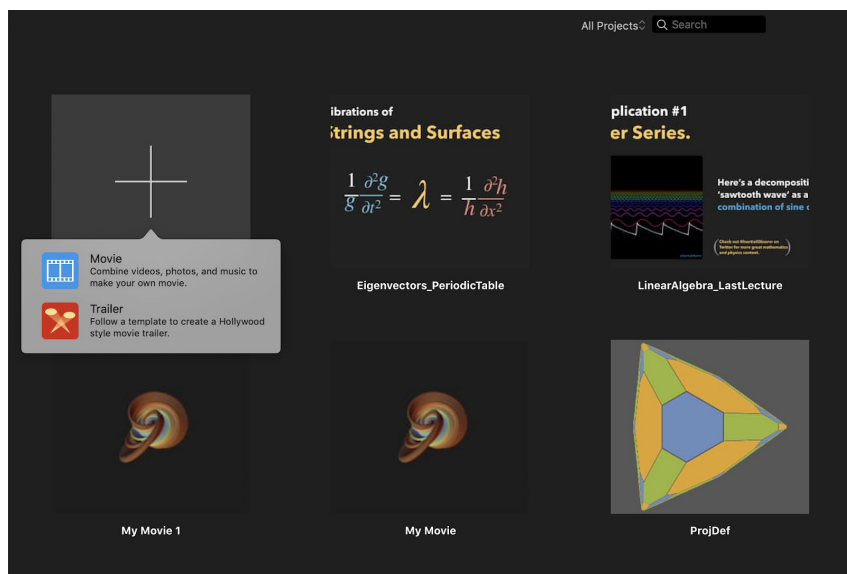
The video I began with was 10mins long, and 858Mb when recorded using a screen capture of my laptop display.

Original Video:	858MB
1080p	402MB
720p	192MB
480p	66MB

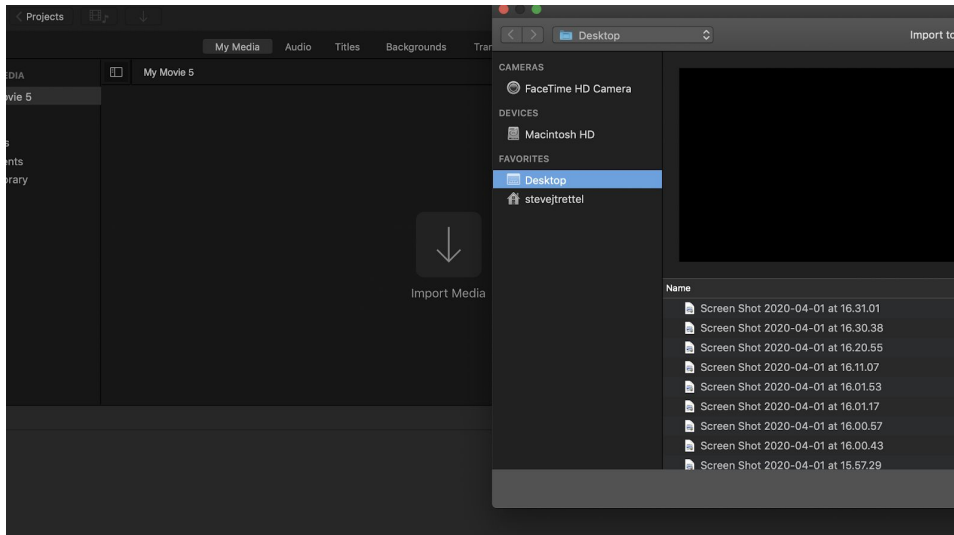
When it comes to playback, the original, 1080 and 720 are all fine for viewing. The 480 is too compressed, so I recommend **not using 480p to compress your video for student viewing**. Be warned: there's no free lunch this compression takes a bit of time (each such test above took 6mins on my machine, for a 10min video) but it is not using your internet bandwidth.

Compression with iMovie

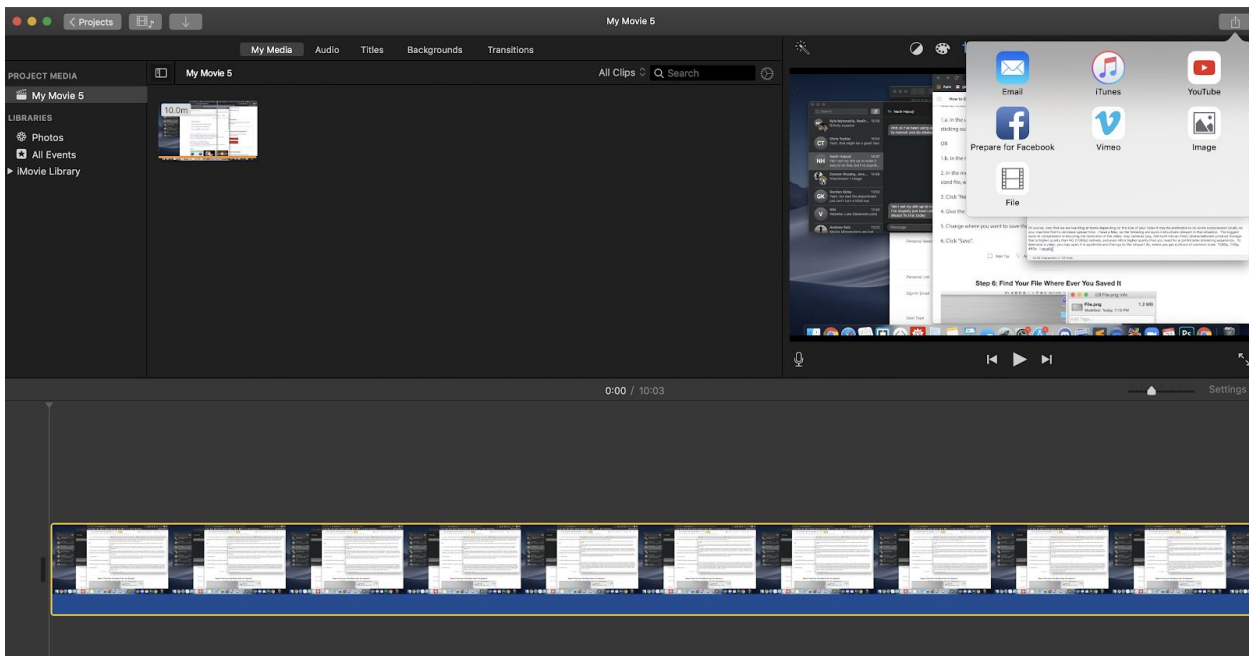
To have more control about the quality of your resulting video, as well as editing features, you may use iMovie (which also comes pre-installed). Open the program, and create a new project.



In this new project click “Import Media” to get a dialog window where you can find your video:



Once your media is loaded, you can drag it down to the film strip (which is your “project” at the bottom of the screen). This affords you more control if you would like to combine multiple video clips together, for instance. When you are ready to compress, go to the “Share” icon in the upper right corner, and select to share as a file.



This opens a dialog window which gives you more compression options: you may choose the resolution (like in the simpler option of quicktime) as well as the quality (at a given resolution, how much it compresses each frame: you get choices like low, medium high), and the compression speed: do you want the program to work faster, or to do a better job at preserving quality.

(Ignore the estimated file size the program gives on the bottom - it is complete nonsense.) I will follow the advice I gave above, and only look at compressing to 720p here. But instead, I will compare the different file sizes that result from choosing different quality options.

Comparison of different compression options in QuickTime

The video I began with was 10mins long, and 858Mb when recorded using a screen capture of my laptop display.

Original Video:	858MB
720p High Quality	133MB
720p Medium Quality	131MB
720p Low Quality	120MB

I should note this compression took longer than quicktime, approx 10mins for each 10min clip. There was no actual noticeable quality difference between the playback of these movies. So - the file sizes here are smaller than QuickTime's (for the same resolution output) but the save time is longer, so it is a trade off. **In general, I would recommend quicktime for its ease of use unless your local internet is really slow and the upload time is your main struggle.**

Compression on Windows

The windows analog of iMovie is called Windows Movie Maker (or at least it used to be - a quick search informs me that in Windows 10 it is now called Video Editor), and can similarly compress videos.

Online Tutorial on Video Compression Via Windows

<https://www.lifewire.com/how-to-compress-a-video-4685786>