Maya 2024 : Simple Deadline Job Submission

You must install the Deadline Client application on your local laptop or desktop computer before you can render with Deadline. See:

Preparing To Use Deadline MacOS
or
Preparing To Use Deadline Windows 10

The DMA Support Tutorials page has information about Deadline use at DMA.

For assistance with rendering, please contact Israel Gutierrez: issag@arts.ucla.edu

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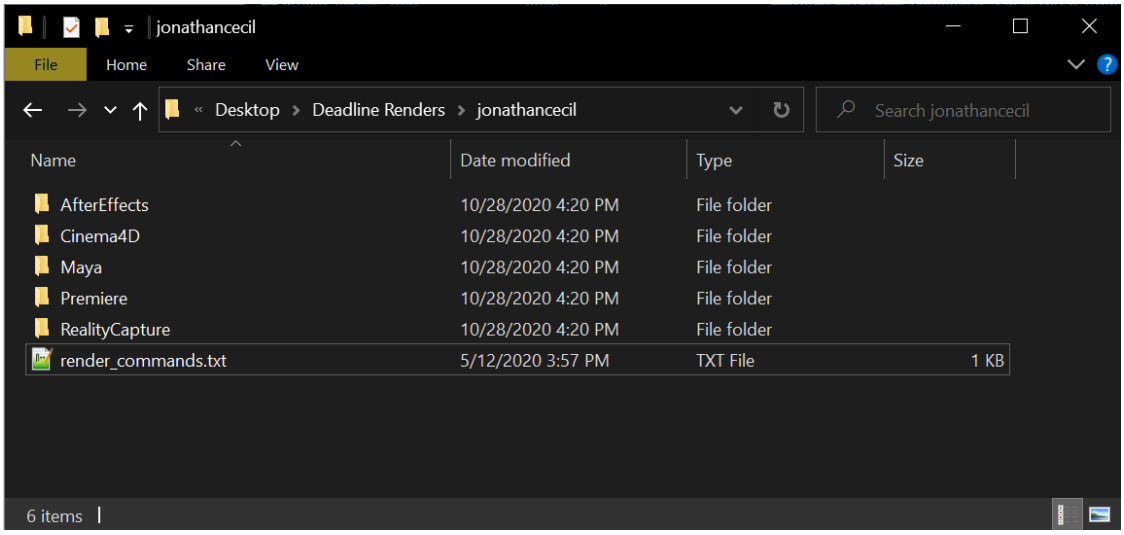
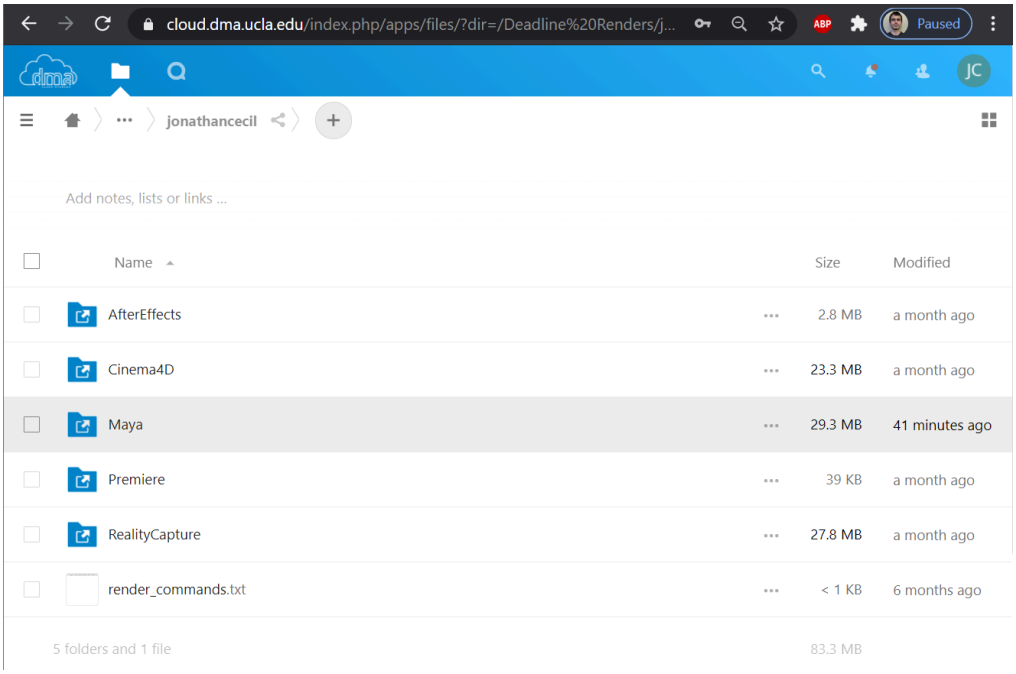
1. **Set up your Maya workspace**

To render in Deadline, your Maya project space and all associated files need to be in your "Desktop/Deadline Renders/user" folder. Any media or files referenced by Maya outside this folder will cause a render error after being sent to Deadline. It is useful to organize your render folder by program name. Such as:

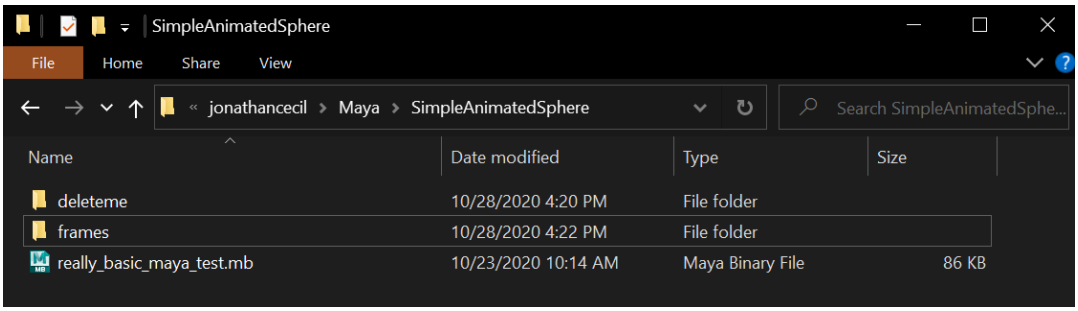


Notice the DMA user name (jonathancecil) is the name of the folder inside the 'Desktop/Deadline Renders' folder. You'll use your DMA user name.

Your DMA cloud file structure needs to match exactly:



You should create a subfolder for each of your projects. For this example, the project folder is called ‘SimpleAnimatedSphere’. The folder hierarchy looks like this:



And the cloud.dma file and folder structure is identical. If you want to output your frames to a subfolder, as will happen with this render job, make sure the folder path is correct inside your project space. The output folder must be inside your folder

“Desktop/Deadline Renders/yourDMAusernamehere”

If you try to render frames to a location outside of that path, your Deadline job will fail.

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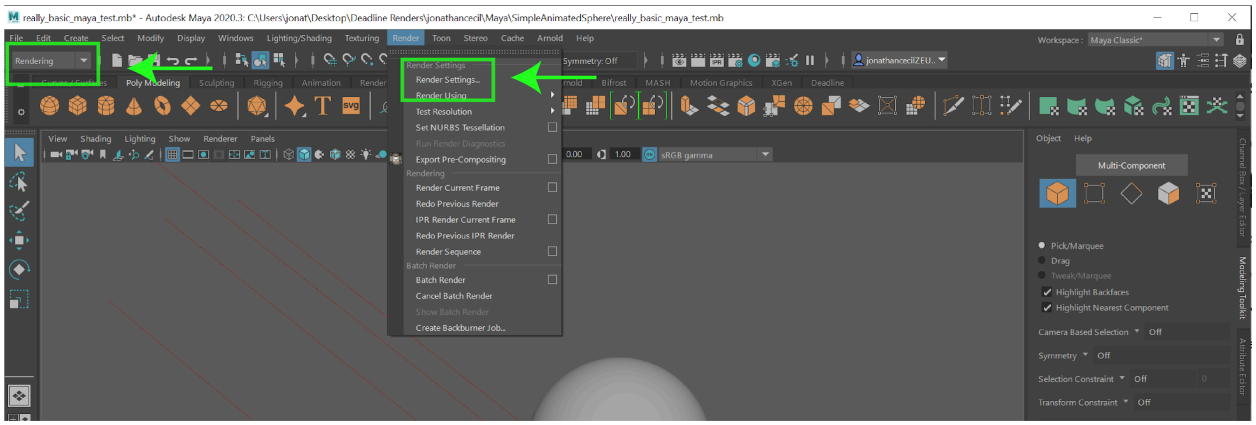
2. Set up your Maya project

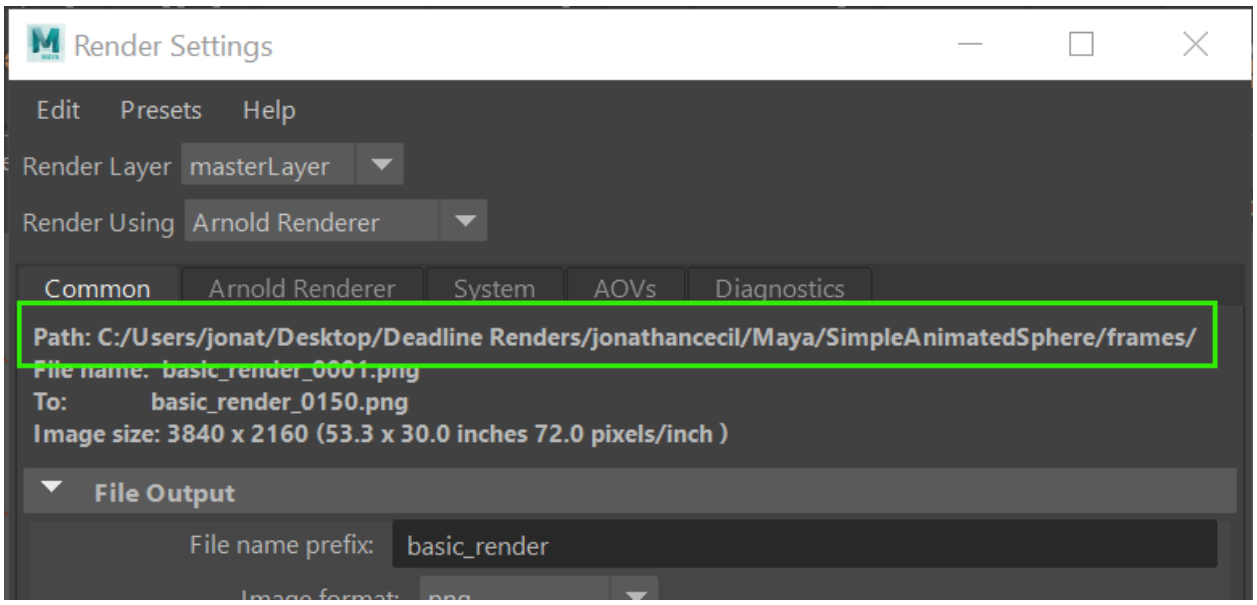
You should open your Maya scene file and set the image output folder for rendering in your Maya scene. In my case, I'll set the output to

"Desktop/Deadline Renders/jonathancecil/Maya/SimpleAnimatedSphere/frames"

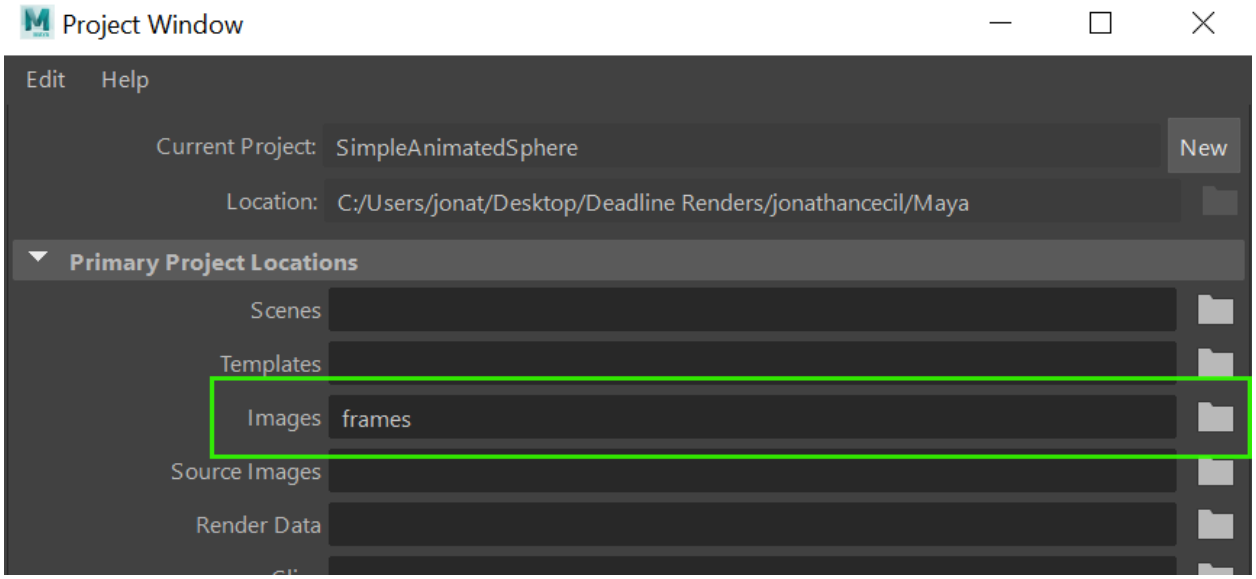
Check the output path by setting the Maya menu context to "Rendering", and from the "Rendering" menu choose "Render Settings".



The render output path is indicated near the top of the "Render Settings" window.
Important note - be sure to set the File name prefix in this window, if you leave it blank, Deadline may mangle your file names.



If the path is wrong, go to Edit->Change Project Image directory, which opens up the “Project Window”. Set your desired render output folder for “Images”:



You can render to any directory you like. Maya, by default, will set up project spaces with render output in a folder called “Images”.

You can render a more complex workspace that contains many scenes, render data folders, source images, textures, and video files. Just make sure all those folders are linked correctly in the “Project Window” before moving to the next step.

******* ADDITIONALLY ********
Deadline may not be able to see your assets if they are linked absolutely. To ensure all your assets are available at every render node, make sure they linked in a relative in the Maya interface.

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3. **Sync your local folder with your remote folder**

After you have finished editing and saving your Maya project on your local “Desktop/Deadline Renders/yourDMAusername” folder, you must transfer your Maya workspace to cloud.dma.ucla.edu. Make sure to put it in the same folder as you have it in the local. Now it will be in two places, local on your computer and remote in the cloud. Also make sure that your render output folder, textures, source images, movies, and all project subfolders are present in your cloud.dma workspace.

We have configured our Deadline render manager to replace your local file locations with the network file locations. This is a complex process and can result in errors, so please reach out our Render Wrangler for help if you think you are having problems with file path mappings.

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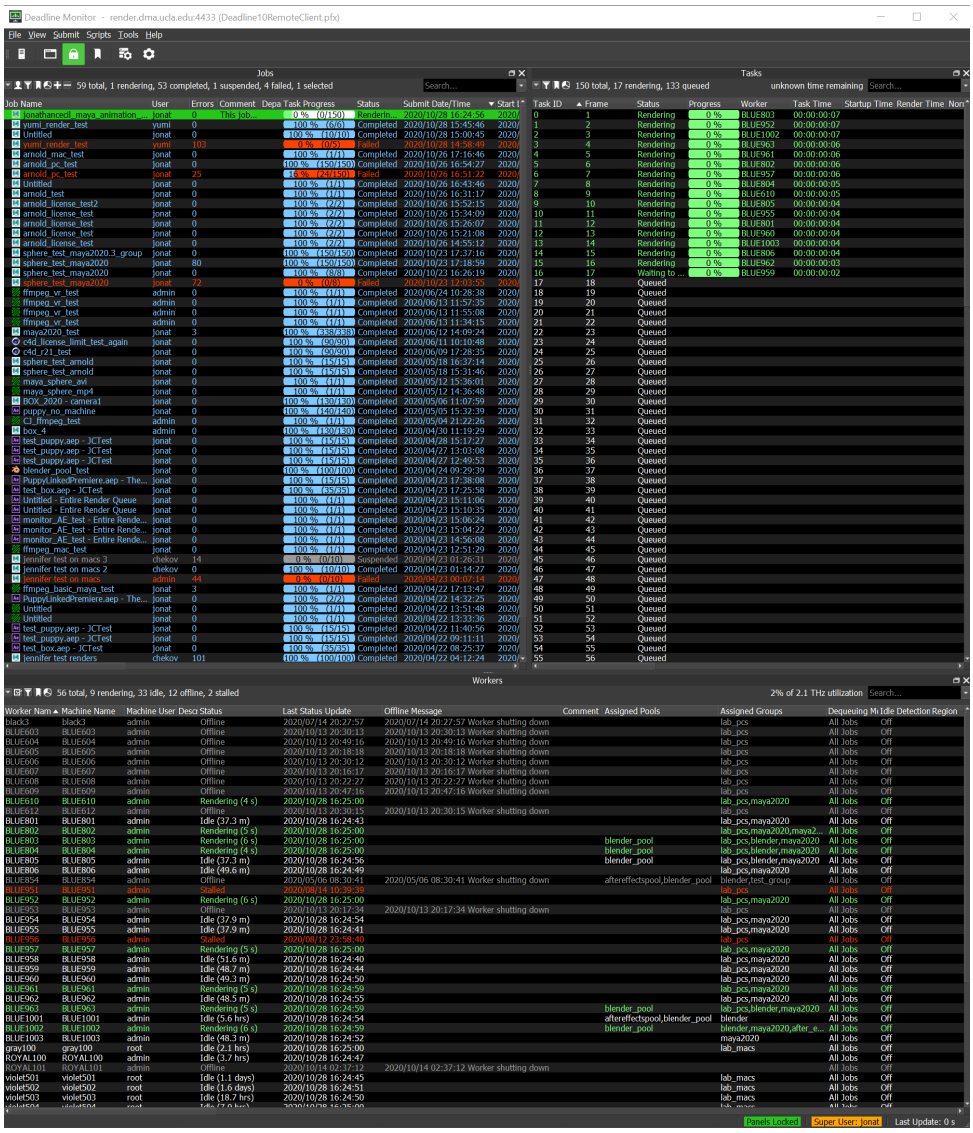
4. Open the Deadline Monitor

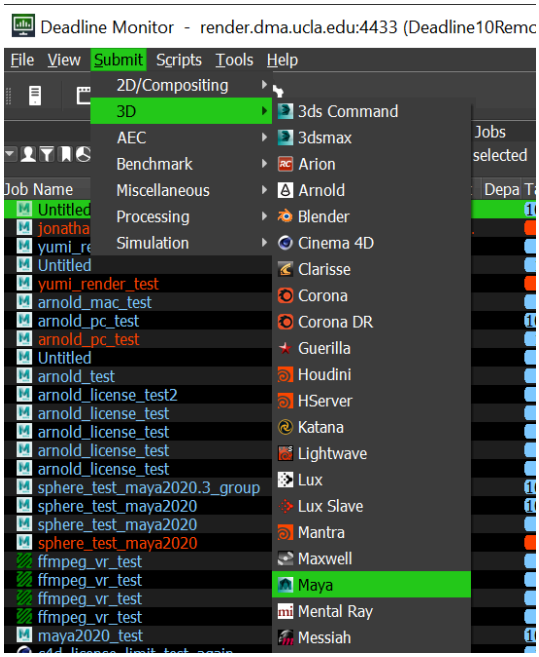
The Deadline Monitor connects you to the rendering system at DMA. On Mac, start this up by doing a Spotlight Search for DeadlineMonitor10 and clicking the app to make it go. On PC, you can find the Deadline Monitor in the Start menu under Thinkbox -> Deadline Monitor 10. Start the application and you'll see something that looks like this:



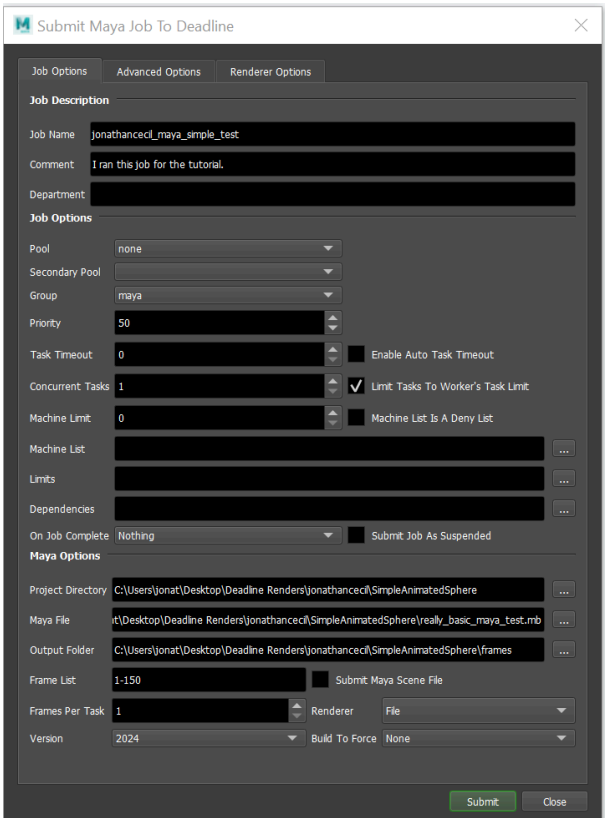
It looks intimidating, there is quite a bit of information in the window. It is divided into three main sections: jobs, tasks, and workers. The 'Jobs' section lists all jobs regardless of status: completed, running, or queued. The 'Tasks' section shows individual tasks associated with each 'Job'. Finally, the 'Workers' section lists all the render nodes we have in Broad along with their status. This info is very helpful to determine the status of the rendering system, but it's safe to ignore it for now. The important element for rendering jobs is the "Submit" menu at the top of the window.

4. Submit the render job to Deadline

Open the Maya job submission window by using the menu Submit -> 3D -> Maya



When you click it will bring up the Maya submission window. Be advised that it will be pre-populated with any previous data. Here's what my completed job submission looks like:



Job name: give your job a descriptive name that includes your dma user name. All jobs go into a single list in the Deadline Monitor, so if you need help, our DMA Render Wrangler (Israel) will need a way to track down which job is yours.

Comments: put anything you believe will be helpful here. This makes no difference for the render. Be respectful.

Group: choose the maya from the dropdown. This will ensure that all machines used to render your file are configured properly.

Project Directory: make sure this is set to the saved location of your Maya project. This should be something like mine:

C:\Users\jonat\Desktop\Deadline Renders\jonathancecil\Maya\SimpleAnimatedSphere

Maya File: point this to the local Maya file you are rendering.

Output Folder: make sure this is set to a location inside your “Desktop/Deadline Renders” folder. This should be the same location you set in your Maya scene. Your rendered frames will not appear locally on your computer! They will be sent to the corresponding folder on cloud.dma.ucla.edu It is up to you to download them later.

Frame List: set the frame range to match your animation. Using 10 for your frame list will result in Maya rendering frame number 10. To render a range of frames from 1 to 1200, enter a value of 1-1200

Frames Per Task: this is the number of frames that each machine will render before picking up a new task. It’s useful to have this set to more than 1, but less than 10. 5 is a good place to start.

Renderer: set this to the same renderer you assigned in your Maya scene.

Version: use 2024, it is the currently supported version of Maya for DMA.

Leave the other settings as shown. This should be enough to render simple scenes.

Once you have everything set, click on the Submit button at the bottom of the window. This starts the rendering of your file on the DMA lab computers once there are computers available to render on.

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5. View the render status in Deadline Monitor

After you submit, your job will appear in the ‘Jobs’ list in the Deadline Monitor. While running, your task will be green, and if you click on it, you will see the individual render nodes processing your job. Blue means successful completion. Red means there was a problem. If your job turns red and see many errors listed, you can right click on the job and choose “View Job Reports”. This will give the error messages from every render node. They can be a little tricky to decipher, so don’t spend too much time sifting through error logs, just reach out for help!

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7. Download your files

Once the task progress reaches 100% in the Deadline Monitor, your job is finished. You can navigate to your render folder on cloud.dma.ucla.edu and download your frames to your local computer. In my case, Maya produced frames with names like basic_render_0001.png

If you are creating a mp4 from your rendered frames, you can also leave your frames in place and send an ffmpeg job to create the .mp4. As an extra challenge, try using the ffmpeg submission window: it’s found in the Deadline Monitor under Submit -> Processing -> ffmpeg For this animation, these are the ffmpeg settings I used to make an mp4: