Introduction

This appendix is for using the command line to render. For information on using the command line for a silent installation, please see the silent installation section of [Chapter 1.04: Installing Moho](#).

Starting in 5.1, Moho Pro introduced a command-line interface to its rendering engine. This interface is different than the Export Animation or Moho Exporter renderers in that users can launch renders without needing to interact with application windows or buttons. It is a perfect environment for users who would like to automate the rendering of their Moho projects without the need to do repetitive work of setting up application dialogs.

Usage

To use Moho for command-line rendering, here is an example of the simplest command:

Syntax:

```
Moho.exe -r MyScene.moho
```

Explanation:

The command tells Moho to render the file MyScene.moho and to produce a rendered output file in the same folder as the project file (more on that below).

It can be used directly from a Windows Command Prompt, MacOS Terminal, or integrated into whatever scripting environment you choose (eg. Poser, Ruby, Bash).

Windows and MacOS have some specific quirks when using Moho from the command-line. Be sure to read the "Platform Notes" section below to learn about your particular platform.

Main Options

The following are the main options for the renderer:

-r or -render

Syntax:

```
-r <moho project file> or -render <moho project file>
```

Explanation:

This is the only required option. It tells Moho to render the given project file and then quit. The Moho project file can be a .moho project or one of the legacy document formats (.anime, .anme, or .moho) back to version 4 of the format.

-f <format>

Syntax:

`-f <format>`

Explanation:

This tells Moho what format to render the output as. Valid formats are any of the presets specified in the Export Animation dialog. Here are the some examples that work on both Mac and Windows:

- JPEG

- TGA

- BMP

- PNG

- PSD

- QT

- MP4

- Animated GIF

The video and Animated GIF formats generate a single output file, while the other formats create numbered sequences of still images. If you don't specify a format on the command-line, the default format used will be "JPEG".
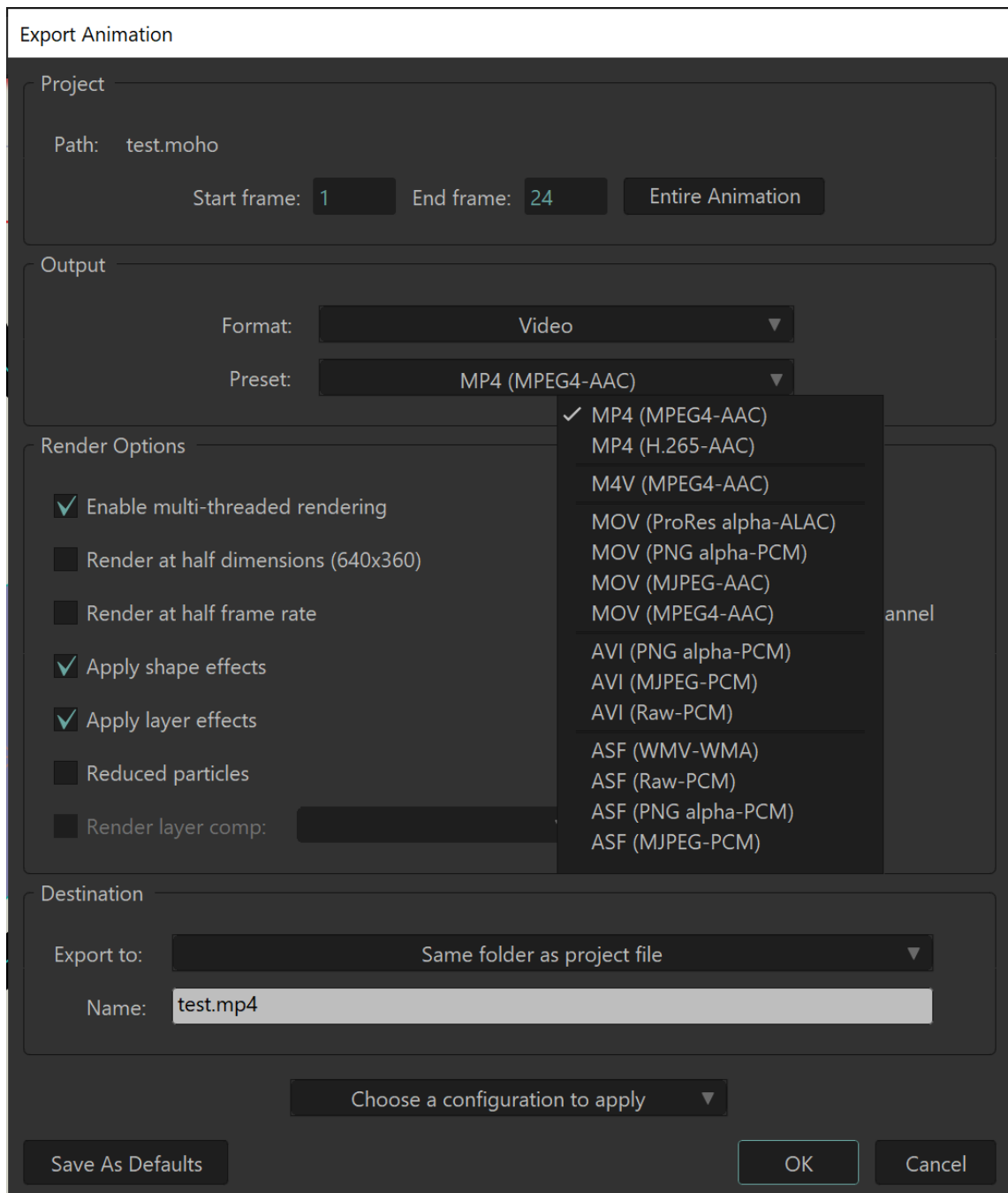
-options

Syntax:

`-options <preset codec>`

Explanation:

For video formats, besides the -f option for the output format, you will also need to indicate the options (full name of the preset) for that format. This is because a format, such as the MOV format, can have a lot of different codecs, so it's not enough to just say MOV – the codec needs to be specified. The codecs are shown in the Presets menu:

The Preset menu, showing the file formats and their available codecs.

For example, to use the MP4 (MPEG4-AAC) preset, the syntax would be:

```
Moho.exe -r MyScene.moho -f MP4 -options "MP4 (MPEG4-AAC)"
```

-o or -output

Syntax:

```
-o <output> or -output <output>
```

Explanation:

Specifies an output file or folder. The output file should include the file extension of the desired output format. If the output format is PNG the output should be named something like MyScene.png.

If you skip this option, the output file will automatically have the same name as the input file, but with an extension matching the format you choose. For example, if you are rendering a file named MyScene.moho to a format of "MP4 (H.265-AAC)", the output will be placed in the same folder as the document file with the name MyScene.mp4.

If a folder is specified instead of a file name, the output will be placed within the folder with a name matching the document file and the appropriate output extension.

-start <frame number>

Syntax:

```
-start <frame number>
```

Explanation:

Specifies the starting frame to render. If omitted, Moho will start rendering at the document's start frame (usually 1).

-end <frame number>

Syntax:

```
-end <frame number>
```

Explanation:

Specifies the last frame to render. If omitted, Moho will render up through the last frame of the document.

-v or -verbose

Syntax:

```
-v or -verbose
```

Explanation:

Runs the rendering job in "verbose" mode. In this mode, Moho will print out the render option values along with messages about its status. This includes an estimate of the time remaining in the rendering job.

-q or -quiet

Syntax:

```
-q or -quiet
```

Explanation:

Runs the renderer in "quiet" mode. "quiet" mode disables all command-line output, both information and errors. "quiet" mode overrides "verbose" mode. This option was introduced in version Pro 9.5.

-log <logfile>

Syntax:

```
-log <logfile>
```

Explanation:

Specifies a log file for the render. Information and errors that are normally shown as command-line output are instead logged to the log file. This option was introduced in version Pro 9.5.

Render Options

The following options control rendering options, just like you see in the Export Animation or Moho Exporter dialog in Moho Pro. Most of the options can be turned on or off with a value of yes or no. If an option is not specified, the render will perform the default.

-multithread or -multithreaded

Syntax:

```
-multithread <yes|no> or -multithreaded <yes|no>
```

Explanation:

Used to turn on or off multithreaded rendering. If multi-threaded rendering is on, the render will use up to 5 threads (4 image frame threads + 1 movie encoding thread) to render your output files. Set this option to no if you wish to increase the system's performance while a render is taking place. The default is yes.

-halfsize

Syntax:

```
-halfsize <yes|no>
```

Explanation:

Render the output at half size. If the project dimensions of the document is set to 720p (1280x720), the output dimensions of the render would be 640x360 when using this option. This option is useful if you want to get a quick overview of your scene as it will dramatically reduce the time it takes to render. The default is no.

-halffps

Syntax:

```
-halffps <yes|no>
```

Explanation:

Render at half frame rate. If the project frame rate is set to 30 FPS, the output format would be 15 FPS when using this option. The default is no.

-shapefx

Syntax:

```
-shapefx <yes|no>
```

Explanation:

Render shape effects. The default is yes.

-layerfx

Syntax:

```
-layerfx <yes|no>
```

Explanation:

Render layer effects. The default is yes.

-fewparticles

Syntax:

```
-fewparticles <yes|no>
```

Explanation:

Use reduced particles. The default is no.

-layercomp

Syntax:

```
-layercomp <comp name>
```

Explanation:

Render a specific layer comp defined within the document.

If `AllComps` or `AllLayerComps` is specified as the comp name, all layer comps will be exported during one run of the renderer. It is highly recommended that you use either `-addlayercompsuffix` OR `-createfolderforlayercomp` when specifying these comp names, otherwise multiple layer comp exports could overwrite each other.

> *The recommended way to render all layer comps in Moho 14 is AllComps or AllLayerComps).*

This option was introduced in version Pro 10.0.

-aa

Syntax:

```
-aa <yes|no>
```

Explanation:

Antialiased edges. The default is yes.

-extrasmooth

Syntax:

```
-extrasmooth <yes|no>
```

Explanation:

Extra-smooth images. The default is no.

-premultiply

Syntax:

```
-premultiply <yes|no>
```

Explanation:

Premultiply alpha. The default is yes.

-ntscsafe

Syntax:

```
-ntscsafe <yes|no>
```

Explanation:

NTSC safe colors. The default is no.

Examples

Here are a couple of examples exports using the render options:

Syntax:

```
Moho.exe -r MyScene.moho -o C:\output\preview.mp4 -f MP4
-options "MP4 (H.265-AAC)" -start 12 -aa no -halfsize yes
```

Explanation:

Reading the options left-to-right, the command above will render (on Windows) the file "`MyScene.moho`", creating the result "`C:\output\preview.mp4`", in MP4 format using the MP4 (H.265-AAC) codec, starting at frame 12 (and continuing to the document's end frame), with no antialiasing and at half the file's normal pixel dimensions.

Syntax:

```
Moho.exe -r MyScene.moho -start 124 -end 124 -f PNG
```

Explanation:

The command above renders a single frame of the file "`MyScene.moho`", frame 124 (the start and end frames are the same. The result is in PNG format. Since no output file is specified, the output file will be the same as the input file, but with an appropriate extension for the format chosen - in this case the output file would be automatically named "`MyScene.png`".

Regarding QuickTime: When rendering from the command line, Moho will use the codec and codec settings that you last used in Moho's Export Animation or Moho Exporter dialog. So, to change the QuickTime settings used by the command line mode, you need to render a QuickTime movie (even a short, tiny one) in those dialogs, entering the settings you wish to use.

Other Options

Most of the following options are not directly exposed within the user interface of Moho, but can help organize or change the quality of your rendered output:

-addformatsuffix

Syntax:

```
-addformatsuffix <yes|no>
```

Explanation:

Append the format name to the file name of the output path. This option is not new. It was available in 9.5. I just wanted to point it out here. An example of this is if you specified a format of "`MP4 (H.264-AAC)`", the output file would be named:
`MyAnimation-MP4 (H.265-AAC).mp4`. The default is no. This option was introduced in version Pro 10.0.

-addlayercompsuffix

Syntax:

`-addlayercompsuffix <yes|no>`

Explanation:

If `-layercomp` is specified, adds a layer comp suffix to the rendered file name(s) (e.g. `MyScene-LayerCompName.mp4`). The default is no. This option was introduced in version Pro 11.2.

-createfolderforlayercomps

Syntax:

`-createfolderforlayercomps <yes|no>`

Explanation:

If `-layercomp` is specified, the rendered file(s) will be created in a subfolder of the output path (-output) or output folder (-outfolder). The subfolder's name will be the layer comp name (e.g. `C:\output\LayerCompName\MyScene.mp4`). The default is no. This option was introduced in version Pro 11.2.

-videocodec

Syntax:

`-videocodec <number>`

Explanation:

The number is the fourcc value for the QuickTime codec. This option ONLY works with a format of quicktime (aka qt or mov). Here is a list of FOURCC codes, not all work with QuickTime:

http://www.fourcc.org/codecs.php

The FOURCC code must be converted to a 32-bit integer before being passed to the command-line. I'll try and come back to this post and add the common values for the FOURCC codes that QuickTime supports. Also in 10.1, we will see about making -videocodec more user friendly so that you can specify something like

"H.264" or "Animation" instead of this ugly integer number.

> *Specifying -videocodec does not work with the "QuickTime" presets on Mac. (e.g. "QuickTime (H.264-AAC)")*

-quality

Syntax:

`-quality <number>`

Explanation:

The quality of the export. This option ONLY works with a format of quicktime (aka qt or mov). Quality is a number between 0 and 5. The default is 3.

0 = Minimum Quality

1 = Low Quality

2 = Normal Quality

3 = High Quality

4 = Max Quality

5 = Lossless Quality

> *Specifying -quality does not work with the "QuickTime" presets on Mac. (e.g. "QuickTime (H.264-AAC)")*

-depth

Syntax:

`-depth <number>`

Explanation:

The pixel depth of the export. This option ONLY works with a format of quicktime (aka qt or mov). The value defaults to 24, but for some codecs like Animation that support an alpha channel, you can specify a depth of 32.

> *Specifying -depth does not work with the "QuickTime" presets on Mac. (e.g. "QuickTime (H.264-AAC)")*

Examples

Here are a few examples using these options:

Syntax:

```
Moho.exe -r MyScene.moho -layercomp "AllComps"
```

```
-createfolderforlayercomp yes
```

Explanation:

All defined layer comps in the project file MyScene.moho will be rendered in one pass of the renderer. If the layer comps were named Background, Character 1, Character 2, the output paths will be named this:

Background\MyScene.mp4

Character 1\MyScene.mp4

Character 2\MyScene.mp4

An alternative to -createfolderforlayercomp is -addlayercompsuffix:

Syntax:

```
Moho.exe -r MyScene.moho -layercomp "AllComps"
-addlayercompsuffix yes
```

Explanation:

Again, all defined layer comps will be rendered, but instead of separate folders, a suffix will be added to the output files to prevent a name collision. The output paths would be named this:

MyScene-Background.mp4

MyScene-Character 1.mp4

MyScene-Character 2.mp4

And simply:

Syntax:

```
Moho.exe -r MyScene.moho -layercomp "Character 1"
```

Explanation:

Only the "`Character 1`" layer comp will be rendered. The name of the output file will be MyScene.mp4 as -addlayercompsuffix and -createfolderforlayercomp were not specified.

Platform Notes

Windows Notes

On Windows, GUI programs are normally unable to print output to the command line. So, when running Moho in command-line rendering mode, you will need to use the -log option

If you prefer a UNIX-style command line, try out the free Cygwin tools, which include a bash shell for Windows:

http://www.cygwin.com/

Mac Notes

On Mac OS, GUI applications are wrapped up in "bundles". The Moho application you see in the Finder is actually a folder containing lots of little files. What this means is that to run it from the command-line, you need to do things a little differently.

Instead of this:

```
Moho.exe -r MyScene.moho
```

You need to use this command:

```
Moho.app/Contents/MacOS/Moho -r MyScene.moho
```

Or, if the Moho folder is not in your path, use this command (the full path to Moho):

```
/Applications/Moho.app/Contents/MacOS/Moho -r MyScene.moho
```

Other than that, Moho runs very nicely in command-line mode on the Mac.