Axiom
An FFmpeg Interface for Windows

Axiom

Axiom UI generates command scripts to be interpreted and processed by multimedia encoder, FFmpeg, and streams analyzer, FFprobe.

It is portable and can be run from any location on the computer.

Convert, Cut, Resize multimedia with Lossless, Constant, and Variable Quality Modes.

FFmpeg

FFmpeg is separate command-line software, developed and maintained at www.ffmpeg.org.

Axiom first checks Window's Environment Variables to see if FFmpeg is installed and uses that location. If not found, it looks for ffmpeg.exe & ffprobe.exe in ffmpeg\bin\, within its current folder.
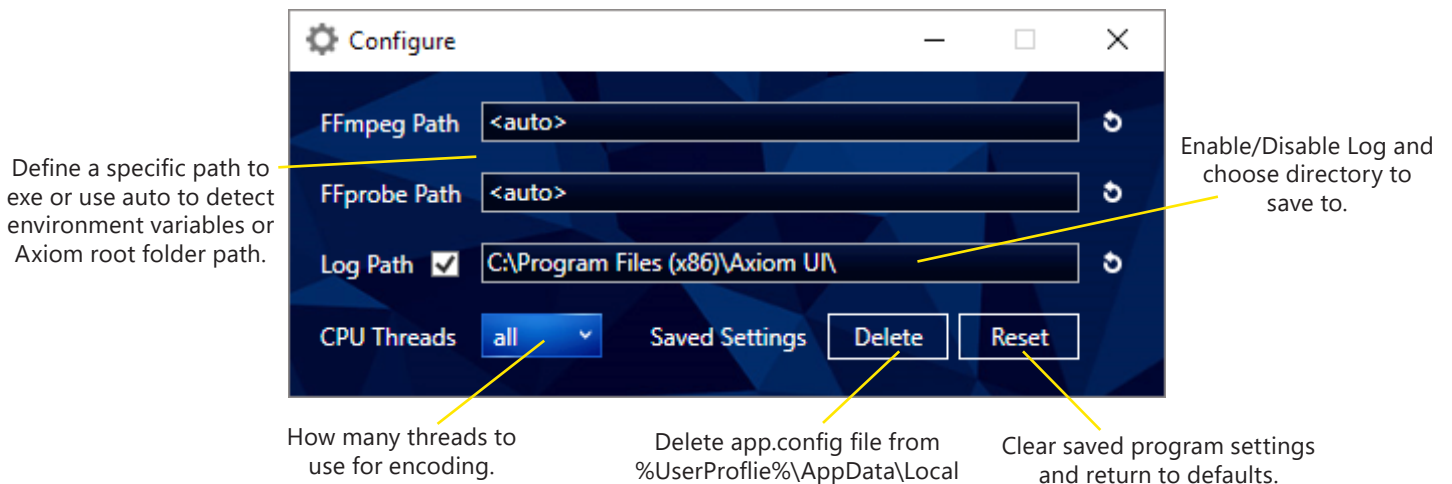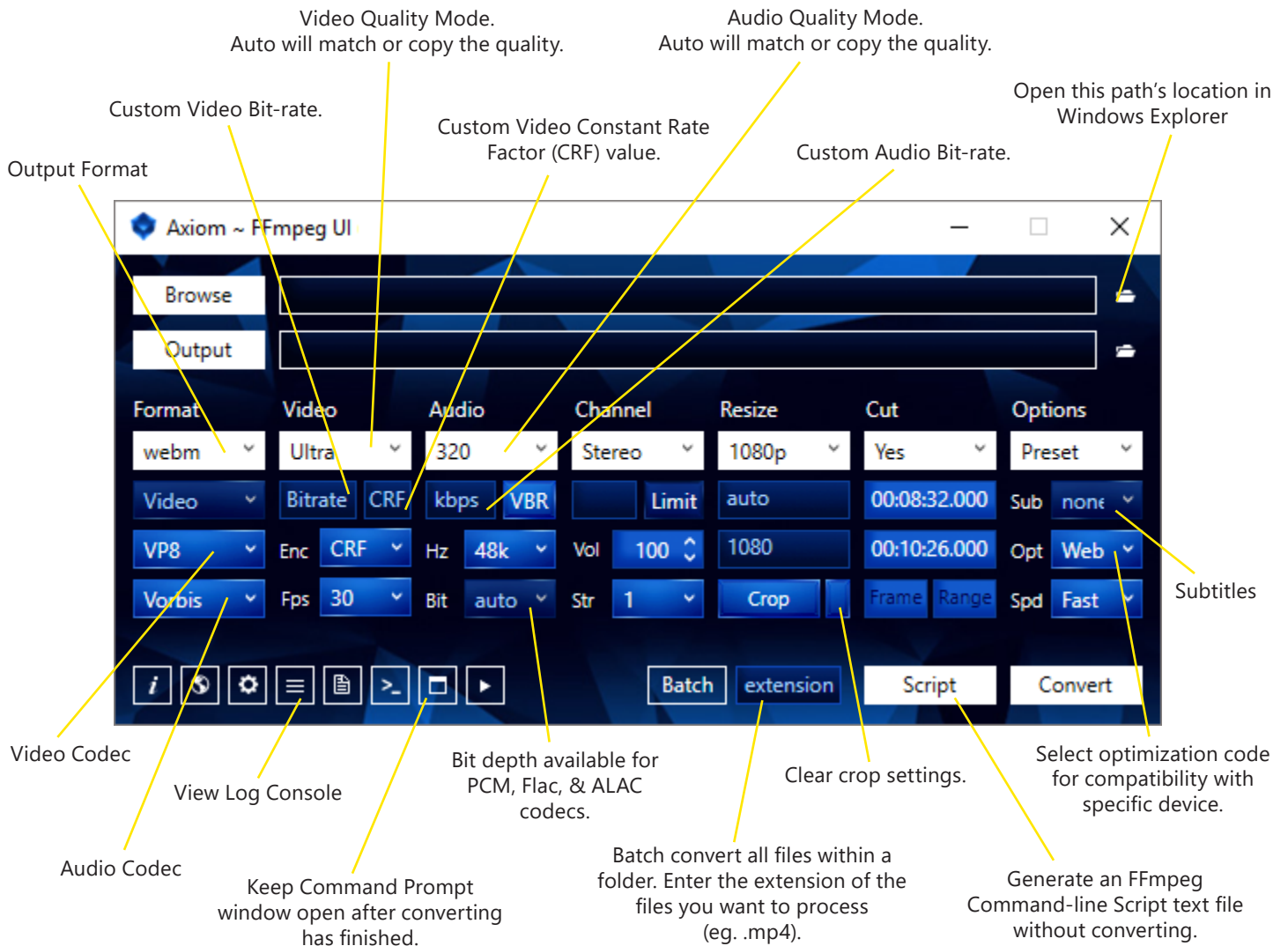
Enable FFmpeg Through Command Prompt (optional)

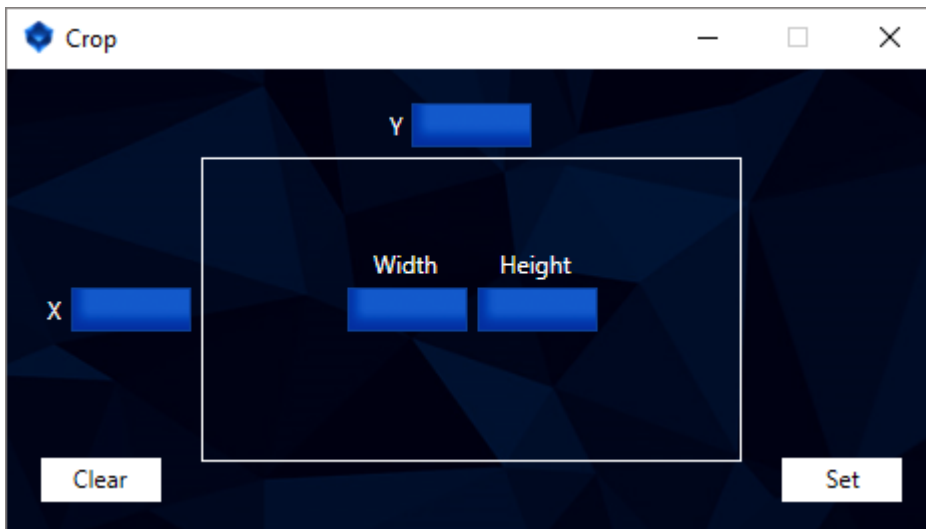Move FFmpeg folder to a location of your choice, such as C:\Program Files\.

- Control Panel → System and Security → System → Advanced system settings
- Advanced Tab → Environment Variables → System variables → Path
- Add **C:\Program Files\FFmpeg\bin**
- Separate multiple paths with semicolon ;

Typing **ffmpeg** in Command Prompt will now execute without needing to specify a direct path.

Interface

Video Quality Mode.
Auto will match or copy the quality.

Audio Quality Mode.
Auto will match or copy the quality.

Custom Video Bit-rate.

Custom Video Constant Rate
Factor (CRF) value.

Open this path's location in
Windows Explorer

Output Format

Custom Audio Bit-rate.

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Browse

Output

Format	Video	Audio	Channel	Resize	Cut	Options
webm	Ultra	320	Stereo	1080p	Yes	Preset
Video	Bitrate CRF	kbps VBR	Limit	auto	00:08:32.000	Sub none
VP8	Enc CRF	Hz 48k	Vol 100	1080	00:10:26.000	Opt Web
Vorbis	Fps 30	Bit auto	Str 1	Crop	Frame Range	Spd Fast

i ⊕ ✿ ≡ ▤ >_ ▢ ▶   Batch extension   Script   Convert

Subtitles

Video Codec

View Log Console

Audio Codec

Keep Command Prompt
window open after converting
has finished.

Bit depth available for
PCM, Flac, & ALAC
codecs.

Clear crop settings.

Batch convert all files within a
folder. Enter the extension of the
files you want to process
(eg. .mp4).

Select optimization code
for compatibility with
specific device.

Generate an FFmpeg
Command-line Script text file
without converting.

Configure

FFmpeg Path	<auto>	↺
FFprobe Path	<auto>	↺
Log Path ☑	C:\Program Files (x86)\Axiom UI\	↺

CPU Threads [all ▼]   Saved Settings [Delete] [Reset]

Define a specific path to
exe or use auto to detect
environment variables or
Axiom root folder path.

Enable/Disable Log and
choose directory to
save to.

How many threads to
use for encoding.

Delete app.config file from
%UserProflie%\AppData\Local

Clear saved program settings
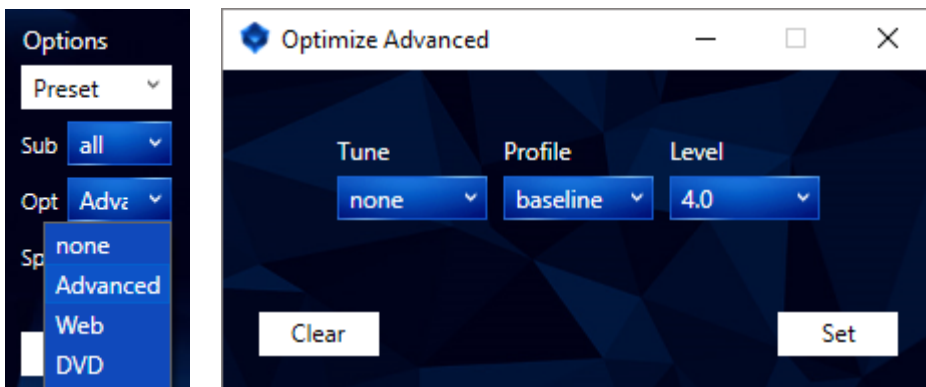and return to defaults.

Windows

Crop

Set the Crop Position and Aspect.

X is the position from the left.

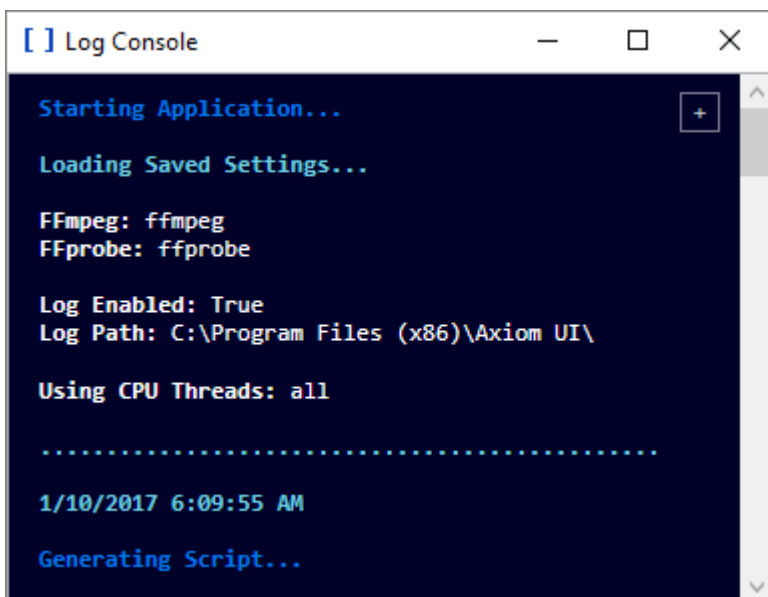Y is the position from the top.

Width & Height is the size of the cropped area.

Advanced Optimize

In the Options section, under Opt, select Advanced from the dropdown.

These options are only available for x264 and x265 codecs.

Log Console

This window displays all actions performed by the program. These same actions can be saved to an output.log file through the Configure Window.

Interface Settings

FFmpeg
The interface looks for ffmpeg.exe & ffprobe.exe in {Current Folder}\ffmpeg\bin\.
If you already have FFmpeg installed on your system, the included ffmpeg and ffprobe are not needed.
Custom compiled versions of FFmpeg may not work if they are missing certain codecs.

Browse / Output
Select a file to convert and choose a directory to output to.
If you do not choose Output, the default output directory will be the same as the input directory.

Batch
First check the Batch checkbox, then Browse for a folder to batch process the files within.

Auto
Attempts to copy the original bit-rate with 2 Pass encoding or uses acodec copy if input and output are the same format.

Copy
If Auto mode selected and input/output formats are the same, Copy will automatically activate in the Codec dropdown.

Lossless
Sets the format's correct lossless codec options or uses -crf 0, depending on format.

Video

   Custom CRF Quality:
   0 <------ 18 <--------- 23 -------> 28 -------> 51
   lossless   better default   worse   worst

VP8/VP9:		**x264:**		**x265:**		**Theora:**	
Ultra:	Bit-rate 4M + CRF 8	Ultra:	CRF 18	Ultra:	CRF 23	Ultra:	qscale 10
High:	Bit-rate 2M + CRF 10	High:	CRF 23	High:	CRF 28	High:	qscale 8
Med:	Bit-rate 1.3M + CRF 14	Med:	CRF 30	Med:	CRF 35	Med:	qscale 6
Low:	Bit-rate 600K + CRF 18	Low:	CRF 37	Low:	CRF 42	Low:	qscale 4
Sub:	Bit-rate 250K + CRF 23	Sub:	CRF 45	Sub:	CRF 50	Sub:	qscale 2

   Video Bit-rate is measured in bytes, K or M. (e.g 3000000 or 3000K or 3M)

Audio
Default is Constant Bit-rate (CBR).
VBR enables a Variable Bit-rate equivalent to the CBR value selected in the Audio drop down list.
e.g. MP3: 320k (CBR) = V0 (VBR)

Track
If your video has multiple audio tracks, such as English or Japanese, you can select which one to use or keep all.
View the video properties through a media player to find the number of the track.
The default (auto) uses the first track or copies all tracks if you are converting to the same format.
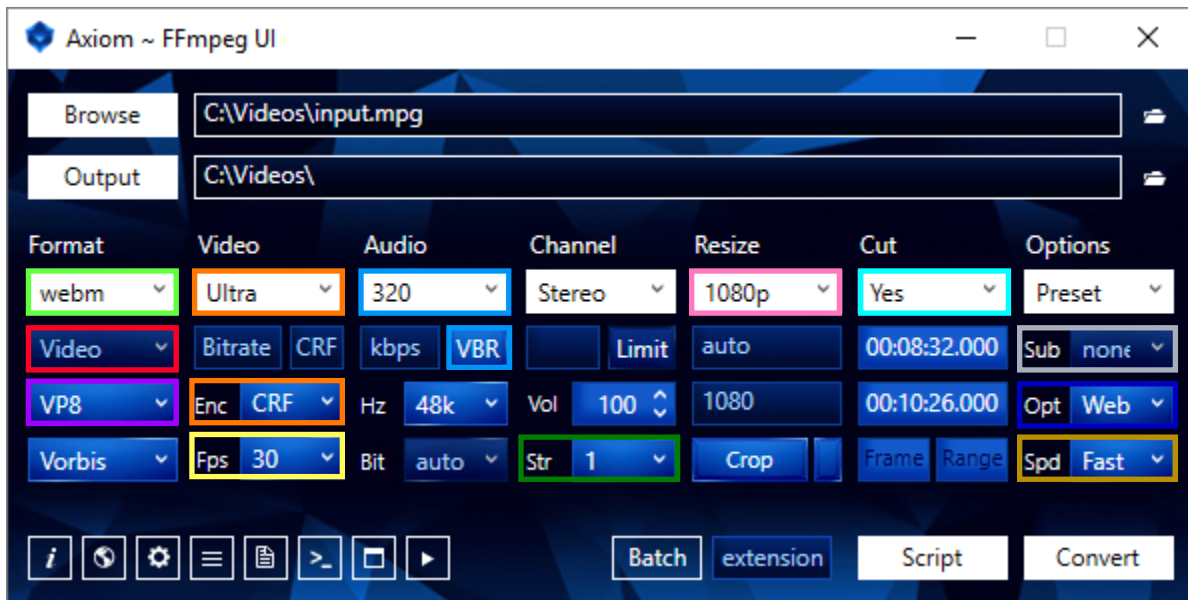
Resize
Specify a custom Width and Height.
Typing "auto" (without quotes) in a text field will select the correct width or height to match.

Cut
Format must be 00:00:00.000
Hours:Minutes:Seconds.milliseconds (note the period instead of colon).

FFmpeg Command-line

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| Browse | C:\Videos\input.mpg |
| Output | C:\Videos\ |

Format	Video	Audio	Channel	Resize	Cut	Options
webm	Ultra	320	Stereo	1080p	Yes	Preset
Video	Bitrate CRF	kbps VBR	Limit	auto	00:08:32.000	Sub none
VP8	Enc CRF	Hz 48k	Vol 100	1080	00:10:26.000	Opt Web
Vorbis	Fps 30	Bit auto	Str 1	Crop	Frame Range	Spd Fast

Batch extension Script Convert

ffmpeg -i "C:\Videos\input.mpg" -y
-vcodec libvpx -b:v 3.5M -crf 8 -pix_fmt yuv420p -quality good -cpu-used 1
-vf scale=-1:1080 -r 24
-acodec libvorbis -q:a 9 -ar 48000 -af "volume=1.2"
-map 0:v:0? -map 0:a:0? -sn -movflags faststart -ss 00:00:23.000 -to 00:01:05.000
-threads 8 "C:\Videos\input.webm"

C:\WINDOWS\system32\cmd.exe

```
C:\>ffmpeg -i "C:\Videos\input.mpg" -y -vcodec libvpx -b:v 3.5M -crf 8
-pix_fmt yuv420p -quality good -cpu-used 1 -vf scale=-1:1080 -r 24 -aco
dec libvorbis -q:a 9 -ar 48000 -af "volume=1.2" -map 0:v:0? -map 0:a:0?
 -sn -movflags faststart -ss 00:00:23.000 -to 00:01:05.000 -threads 8 "
C:\Videos\input.webm"
```
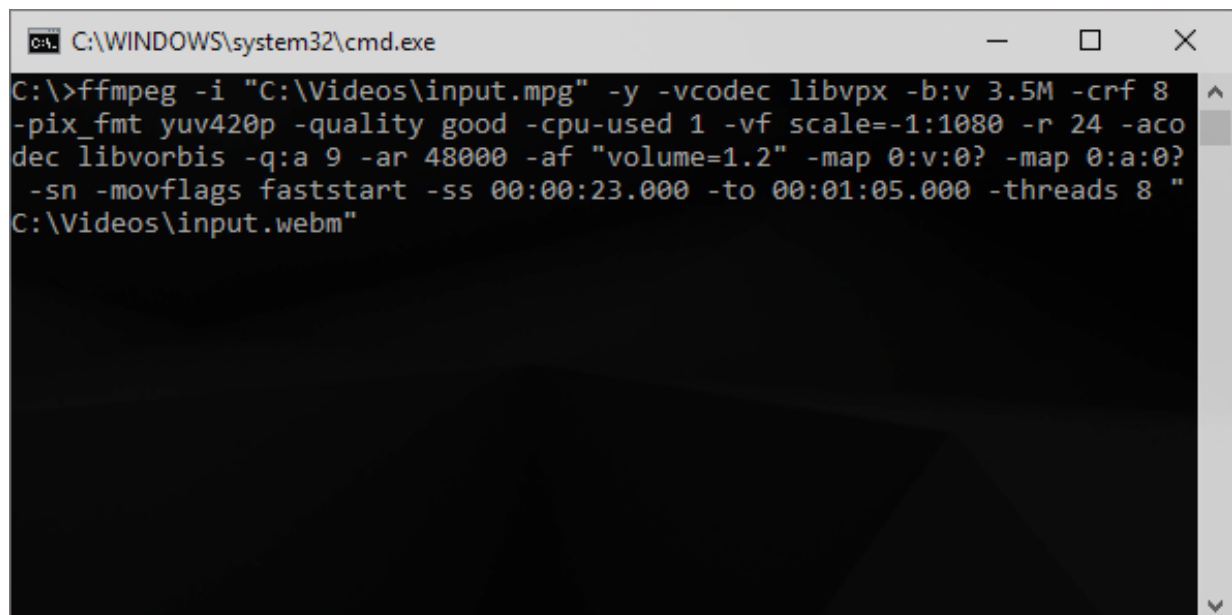
FFmpeg Batch Command-line

Change to Directory
cd "C:\Users\Videos\" &

Batch Process Filetype
for %f in (*.mpg) do ffprobe -i "C:\Users\Videos\%~f" -select_streams v:0 -show_entries format=bit_rate -v quiet -of csv="p=0" &

FFprobe File's Size
for /f "tokens=*" %S in ("ffprobe -i "C:\Users\Videos\%~f" -select_streams v:0 -show_entries format=size -v quiet -of csv=p=0") do (echo) &
Set the Size Variable %S using a temp text file
(%S > tmp_size) & SET /p size= < tmp_size & del tmp_size &
Expand the Variable
for /F %S in ('echo %size%') do (echo %S) &

FFprobe File's Duration
for /f "tokens=*" %D in ("ffprobe -i "C:\Users\Videos\%~f" -select_streams v:0 -show_entries format=duration -v quiet -of csv=p=0") do (echo) &
Set the Duration Variable %D using a temp text file
(%D > tmp_duration) & SET /p duration= < tmp_duration & del tmp_duration &
Remove Duration Decimals for DOS
for /f "tokens=1 delims=." %R in ('echo %duration%') do set duration=%R &
Expand the Variable
for /F %D in ('echo %duration%') do (echo %D) &

FFprobe File's Video Bit-rate
for /f "tokens=*" %V in ("ffprobe -i "C:\Users\Videos\%~f" -select_streams v:0 -show_entries format=bit_rate -v quiet -of csv=p=0") do (echo) &
Set the Video Bit-rate %V using a temp text file
(%V > tmp_vBitrate) & SET /p vBitrate= < tmp_vBitrate & del tmp_vBitrate &
Expand the Variable
for /F %V in ('echo %vBitrate%') do (echo %V) &

If Video Variable = N/A, Calculate Bit-rate (((Filesize*8)/1000)/Duration)*1000
(if %V EQU N/A (set /a vBitrate=%S*8/1000/%D*1000) else (echo Video Bitrate Detected)) &
Expand the Variable
for /F %V in ('echo %vBitrate%') do (echo %V) &

FFprobe File's Audio Bit-rate
ffprobe -i "C:\Users\Videos\%~f" -select_streams a:0 -show_entries stream=bit_rate -v quiet -of csv="p=0" & for /f "tokens=*" %A in ("ffprobe -i "C:\Users\Videos\%~f" -select_streams a:0 -show_entries stream=bit_rate -v quiet -of csv=p=0") do (echo) &
Set the Audio Bitrate %A using a temp text file
(%A > tmp_aBitrate) & SET /p aBitrate= < tmp_aBitrate & del tmp_aBitrate &

If Audio Variable = N/A, Default to 320k
for /F %A in ('echo %aBitrate%') do echo %A & (if %A EQU N/A (set aBitrate=320000)) &
Limit Audio Variable bit-rate to Output Format's maximum allowed bit-rate
for /F %A in ('echo %aBitrate%') do echo %A & (if %A gtr 400000 (set aBitrate=400000) else (echo Bitrate within AAC Limit of 400k)) &
Expand the Variable
for /F %A in ('echo %aBitrate%') do (echo %A) &

Start FFmpeg
ffmpeg -i "C:\Users\Videos\%~f" -y -vcodec libx264 -profile:v main -b:v %V -acodec aac -b:a %A -map 0:v:0? -map 0:a:0? -map 0:s:0? -strict experimental -vf scale="trunc(iw/2)*2:trunc(ih/2)*2" -threads 8 -pass 1 "C:\Users\Desktop\%~nf.mp4" & ffmpeg -i "C:\Users\Videos\%~f" -y -vcodec libx264 -profile:v main -b:v %V -acodec aac -b:a %A -map 0:v:0? -map 0:a:0? -map 0:s:0? -strict experimental -vf scale="trunc(iw/2)*2:trunc(ih/2)*2" -threads 8 -pass 2 "C:\Users\Desktop\%~nf.mp4"