Compression Workshop

With RICHARD HARRINGTON

Richard Harrington

Richard Harrington is a certified Project Management Professional, Adobe Certified Expert in Photoshop and After Effects, and Apple-certified instructor in Final Cut Pro. Additionally, he has completed Avid's Master Editor Workshop and the Avid Certified Instructor Program. His visual communications consultancy, RHED Pixel, creates motion graphics and produces video and multimedia projects. He is a faculty member at The Art Institute of Washington, a popular speaker at conferences, and an instructor for Future Media Concepts. He is the author of *Photoshop for Nonlinear Editors* as well as a moderator for Creative Cow's Photoshop Forum. Richard can be reached at http://www.rhedpixel.com

notes

Successfully getting a video file delivered to your audience usually means it will be compressed (heck it's often compressed just so we can work with it in the first place). Making the video file available to your target audience is your goal, but the challenges of hardware, connection speed, and even operating system can affect the decisions you make. Let's take a common sense approach to getting your video out there.

web.mov   compression.avi   is.mp4   fun.wmv

The 'Illities'

There are four major facets that will shape your compression approach. I call them the illities to make them easier to remember.

1.) Portability- How easy is the file to get from one device to another? Is the compressed file small enough to transfer via the Internet (and at what connection speed)?

2.) Compatibility- Can the file be viewed by multiple applications and/or web browsers?

3.) Affordability – Are the codec or hardware requirements within your budget? Are there any licensing fees involved?

**4.) Quality –** Does the image or sound quality match your audience's needs?

Compression Workshop

With RICHARD HARRINGTON

The Language

There are several bits of lingo that will pop-up when working with compression. Here are the most common with their plain English translations.

Architecture: This is like the global family or classification of a file. It includes those such as MPEG, QuickTime, Windows Media, AIFF, etc. It is the 'global' picture.
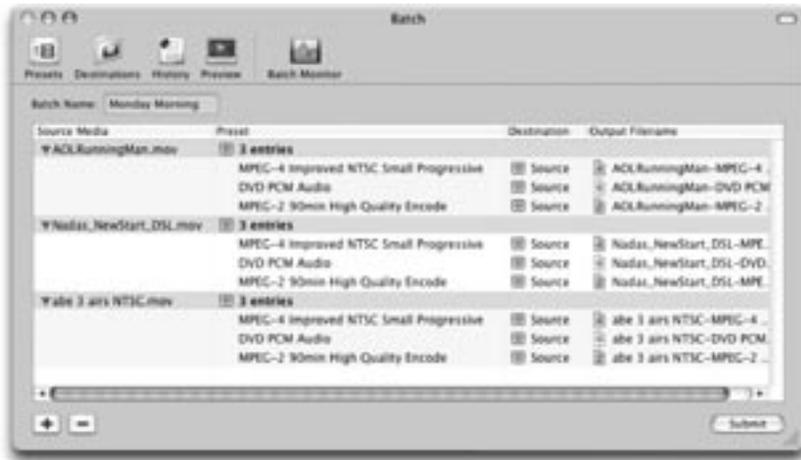
Batch Processing: A benefit of many compression utilities as it allows you to set up several files to run. This is a key benefit as it allows you to walk away and leave your computer working hard.

Bit Rate: How much data per second there is in your file. The higher the number, the larger the file.

Channels: Most common will be the choice between stereo and mono. Stereo files use two channels of audio data and occupy twice the space as mono files.

Compress: The process of shrinking the file using mathematical algorithms. Modern compression techniques are significantly more effective than their historical counterparts.

Codec: Stands for Compressor/Decompressor. The algorithm ot code allows for further shrinking of the files. In some cases, compressors cost additional money to the content creator. Decompressors are usually free to improve the distribution plan and market share.
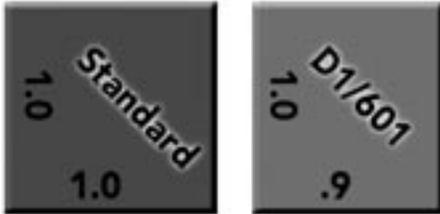
notes

148

Compression Workshop

With RICHARD HARRINGTON

Encode: To turn an analog source (such as audio waves) into a digital file. This is also called capturing by some.

Pixel Aspect Ratio: Computer pixels are square in shape, digital video pixels can be rectangular or non-square. The video editing software or playback device (such as a television) usually compensates for this. If you plan to show the video on a computer, you will need to manually resize the document to the right shape.

Resolution: Also called sample size, which is the number of bits used by the computer to describe the analog data. Audio CDs are usually 16-bit, however newer DVD audio discs are frequently 24-bit. Bigger is higher quality.

Sampling Rate: The number of samples captured per second. Audio CDs are usually 44.1kJz while digital video is usually 48 kHz. Bigger is higher quality.


Variable Bit Rate (VBR) Compression: One of the most effective ways to create smaller files. The computer analyzes the video file before compressing the data. Encoding this way is far slower, but if you can choose this method for superior results.

notes

With RICHARD HARRINGTON

10 Steps to Better Compression

1.) De-interlace your video: Most video files are interlaced, which means that half of one image is blended with half of the next. On a Television this produces smoother motion, on a computer it produces junk.

2.) Lower your audio standards: Most users are listening to computer audio on tiny speakers. Cutting your sample rate to 22 or 11 kHz and the sample size to 8 bit will often produce unnoticeable audio changes but huge space saving.

3.) Shrink the window: While you don't need to make video postage stamps sized. But reducing the window to half size creates a file that is 25% the file size of the original. That's a BIG savings in space.

4.) Reshape the video: Most likely you are working with a video file that is sized 720 X 480 (or 486) pixels. You need to resize this to 640 X 480 for it to properly display on the computer monitor.

5.) Restore the washed-out picture: Video signals operate between an RGB value of 16 thru 235. Computers use an RGB value of 0 thru 255. You will need to restore the back and white point of your image. Many applications have this option.

6.) Improve the saturation: A video file displayed on a computer will also need the saturation turned up a bit. This is to compensate for what I call the Wal-Mart effect. Consumer TVs have their reds over-cranked to make skin tones appear richer on their cheap tubes.
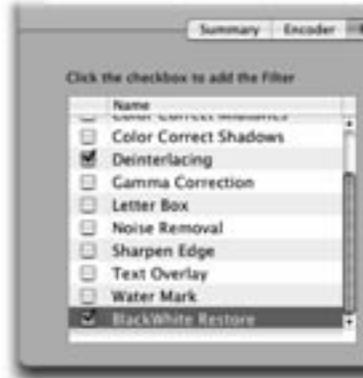
7.) Frame Rate: Your video file is likely recorded at approximately 30 fps. This is needed for a television display, but not important for most web video. Reducing your frame rate to 15 or even 10 fps will result in a 50 - 66% savings in file size.

8.) Codecs: The file architecture you pick will often have its own codec chosen. However some file formats support a variety of codecs. Be sure to keep compatibility and audience requirements in mind. Newer codecs offer a significant advantage over older formats.

9.) Don't use a Conduit: For faster compression, don't run web compression through a conduit like Final Cut Pro to your compression utility. Instead, save a flattened, self-contained movie and then compress.

notes

mac
design
C O N F E R E N C E EXPO

> **10.) Test it:** Before you compress a lot of video, create a small test file. Try compressing 10 seconds of video with different settings. Find the ones that work best for you.

Tools to Try Out

QuickTime Pro (www.quicktime.com) One of the most versatile tools to compress to a variety of formats. Very few presets, but a lot of raw power in there.

iMovie (www.apple.com) You can't beat free. This tool can do quite a bit and has some nice presets for beginner users.

Apple Compressor (www.apple.com) If you own Final Cut Pro or DVD Studio Pro, then this utility comes with the package. It's very fast, and can batch encode. However it can't output some Window's oriented formats and it is occasionally cranky and requires restarts, trashing preferences, and even re-installs to get back on track.

Compressor

Sorenson Squeeze (www.sorenson.com) An easy to use compression utility that also unlocks some specialty formats. The major bonus is getting the full version of the Sorenson codec which supports variable bit rate encoding. If you do a lot of Flash work, the Spark encoder does a great job of prepping video for use in Flash animations.

Sorenson Squeeze

discreet Cleaner (www.discreet.com) The granddaddy of encoding utilities. It ahs suffered from changing ownership several times and hasn't seen much development for Mac lately. However if you need to output Windows Media Files (only v.7 at this point) this is the only Mac solution.

notes

Compression Workshop

With RICHARD HARRINGTON

Want to keep in touch?

The Creative Cow website (http://www.creativecow. net) offers several free forums and tutorials. With a distinct slant towards video professionals, the Photoshop/Illustrator forum offers a great place to look for ideas or trouble-shooting advice.

notes

notes