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## **Test: Batch Compressors**

### **Running like Clockwork**

by Andreas Zerr

With Episode Pro 4, Telestream is introducing a rebranded batch compressor that, according to the manufacturer, compresses videos for the Internet, DVD, or video iPod more quickly, precisely, and simply. Reason enough for Macwelt to take another look at what is happening generally in the very orderly market for batch compressors.

#### **Batch Compressors: Why and for whom?**

Batch compressors take up just where the QuickTime Player or commonly used editing and compositing software or conversion programs like MPEG Streamclip leave off, namely with the batch processing of several videos or the conversion of a video into several formats. Since new end-user devices like the iPod, PSP, or new cell phone models are arriving on the market almost weekly, the need for content is also constantly growing, while the qualitatively high-end formatting of videos is becoming increasingly difficult. If you only want to store your vacation video for Grandma on DVD or post it for your neighbor on a website once a year, you don't need a batch compressor. Here the simple export from QuickTime Pro or iVideo will do just fine. If, however, you produce new videos on a daily basis for various end-user devices or distribution paths or you serve customers with diverse requirements in format, resolution, and codec, you welcome any automated assistance.

#### **Quality of Batch Transcoding Programs**

The quality of a batch transcoding program can be evaluated using three key criteria: ease of use, speed, and diversity of formats. What use is the fastest possible encoding if the final quality falls short? And the greatest format variety is worthless if you don't know how to apply the formats optimally. The ideal combination of all three criteria, together with a good cost/benefit ratio, results in the best batch transcoding program. Since all the competing products rely on the QuickTime architecture and thus produce the same algorithms with a chosen codec of nearly identical quality, we are more interested in filtering, transcoding, and scaling, for example, in the conversion from NTSC to PAL or in the down-converting from HD to SD or even iPod video.

#### **The Classic: Cleaner**

For nearly a decade, from the mid-1990s until two or three years ago, Cleaner was the standard tool for compression of videos for the Net, CD, or DVD. With this innovative product that was easy to use and full of new exciting formats, the developers back then at Terran Interactive revolutionized the QuickTime world. The demise of Cleaner, however, began with the sale of the program to Media 100 and the appearance of the free Compressor. Cleaner lost its top-dog status because of the infrequent updates and the miserable niche existence it now leads with the CAD specialist Autodesk.

Nevertheless Cleaner still provides functionality that you will seek in vain in comparable programs, for example, frame-by-frame preview, direct image clipping with a frame in the preview window, a graphical representation of the encoded bit rate, or a watch folder. The bar representation of a given image size is very helpful, particularly if you are dealing with temporary codecs like Sorenson or MPEG-2, for which not every frame is the same size but different sizes are produced between key frames. Primarily in networks and/or with less experienced users, Cleaner's watch folders help execute quick and precise encodings. This comes from an encoding process that is defined beforehand and begins automatically when a video or sound file is put into the folder.

Although Cleaner supports a large number of non-Mac-specific formats, the test results that we achieved are less positive. With standard MPEG-2 encoding with a VBR of up to 8.0 Mbit, Cleaner needed roughly four times as long as the competition but had the worst quality. Even a simple down-convert from HD to PAL can be characterized as merely satisfactory in image quality as the image appears to be very bright and sometimes fuzzy in comparison with other compressors with identical settings (Blackmagic 8 Bit YUV). Cleaner broke down completely when compressing an HDV clip for the iPod since the benchmarking software measured more than one hour for one minute of video while Episode Pro

compressed the miniclip in less than four minutes. Since the latest update to 6.5.1, Cleaner doesn't crash without notice after every encoding performed under Mac OS X 10.4, which is, after all, a bit of progress.

### **The Freebie: Compressor**

Anything you can do, we can do, too! What otherwise would sound more like Redmond, applies in the case of the Compressor to Cupertino. With the DVD's arrival as an everyday communications medium, Apple introduced its own batch transcoding program that, while optimized for the MPEG-2 format, can encode all other QuickTime-specific formats and, via additional plug-ins, even third-party formats. Compressor is not sold as a standalone product but is found as a free add-on in the Final Cut Studio package.

Purely in terms of its mode of operation, Compressor is relatively rudimentary. It actually consists of two separate programs: a compressor with the user defining the formats and batches, and a batch monitor, where the calculating power is unleashed. Compressor also doesn't come with functions like frame-by-frame previewing or the watch folder, but you can save any setting as a droplet. A droplet is its own small program that starts the encoding process automatically as soon as the user places a video on it. Compressor is the only program to offer really low-price network rendering via the Apple Qmaster.

The Compressor's strength lies not with third-party formats like Windows or Real Media, rather it shines primarily in the speed of MPEG-2 encodings, which it can execute on a one-minute clip with VBR in a two-pass process more quickly than in real time. Compressor is also the only program that can produce Dolby-compatible AC3 for professional DVDs. All the other programs provide only PCM or MPEG-2 audio. Qualitatively all of the tested codecs and settings are about average: acceptable but not optimal. Only the H.264 encoding in 720p from an HDV source can barely be differentiated from the original, although the compressed file amounts to only one-seventh of the original file size.

### **The Renamed: Episode Pro**

It was a big surprise when Telestream bought not only the small WMV-encoding specialist Flip4Mac, but also immediately swallowed up the Swedish firm Popwire, and then released the batch transcoding program known until then as Compression Master with the new product name Episode (Pro). Last year Macwelt evaluated it as relatively average in price and power, but the new Version 4.1.3 offers a few surprises, primarily concerning the quality of the final product.

In our tests, both ease of use and speed were surprisingly positive. Particularly in down-converting from HD material to PAL, or even on a smaller scale to iPod size, Episode Pro in some respects finished well ahead of the competition. Episode stands out mainly through a well-organized window displaying all pre-settings and jobs, while the preview is shown in its own moveable window with "before" and "after" views. Like Cleaner, Episode also comes with a graphical representation of the frame size where you can easily track the compression of temporary codecs. As for individual settings, Episode comes with a large number of parameters inside a popdown window. Of course, these can be stored individually and in their own folders. Unfortunately, Episode cannot access the Apple MP4 format H.264 nor use the third-party format DivX even with an installed plug-in. These, along with a missing watch folder, are the biggest shortcomings of this otherwise very good batch transcoding program.

### **The Flash-encoding specialist: Squeeze**

Similarly, the codec specialist Sorenson is offering a brand new version: Squeeze 4.5. The program, previously developed primarily for flash video encoding, now understands just about all codecs and can also encode in third-party formats like Real and Windows Media (with installed plug-ins) as well as for iPod, PSP, and even HD and Blu-ray DVD, and do so optionally in H.264 or in MPEG-2 HD. The speed of the new Version 4.5 has also improved, particularly regarding Flash and MP3 encoding: Squeeze transcoded a PAL video into Flash 8 format in less than half a minute and was thus about five times faster than the competition. Squeeze was particularly slow, but at the same time very careful, in converting HDV material to MP4 in H.264 with an image size of 720p: the program needed almost a half hour for the computation, but also made five passes and in the end produced first-class results.

Besides Cleaner, Squeeze is the only program that comes with a watch folder for drag-and-drop encoding even in networks and can also cut a video directly in the preview window. Squeeze is also the only application that can accept material directly from a camera so that you don't need to use an editing program first. Of less positive note, however, are the frequent crashes and the sometimes less-than-

optimal quality of the encodings. Above all, the MPEG-2 format of Squeeze appears to be very sloppy, particularly with text, i.e., menu options, and the conversion from the American NTSC to the European PAL material is very shaky. Therefore, Squeeze is chiefly recommended for users who work a lot with Flash Video and require correspondingly rapid and high-quality encoding.

## Conclusion

For applications where cost is a factor, Episode is not only the most economical but also on average the fastest and highest quality program. The lowest-priced standard version of the program will be adequate for the normal user since the "Pro" version is actually only relevant for workgroups or for customers who regularly deal with standards like IMX, MXF, or other MPEG-2/-4 transport formats. Unfortunately, the evaluation of the former champion Cleaner, which has become not only relatively expensive but also slow and at best average in quality, turns out to be very disappointing. If Autodesk remains interested in the sale of this batch transcoding program, then an update is urgently needed. Along with a few usable functions Squeeze surprised most of all with extremely high speed for flash videos and very high quality MPEG-4 H.264 encoding. Frequent crashes and a somewhat difficult user interface, however, made a negative impression. If you don't absolutely need Windows Media Encode and work primarily with Flash Video, you will find the Squeeze Compression Suite completely satisfactory. Compressor, which is to be recommended for its speed primarily with MPEG-2 encodings and actually also does well with all other QuickTime-based formats, in the end finds itself somewhat outside the evaluation parameters. Therefore, if you primarily work with DVD or in QuickTime or you install additional plug-ins for Real and Windows Media, you will be well served with the free Compressor at least for occasional encodings. However, if you compress in different video formats for a variety of user groups and operating systems on a daily basis, you should consider a batch encoder like Episode.

## Buying guide: This is how to find the right program

**Episode Pro 4.1.3** For applications where cost is a factor, Episode is not only the most economical but also on average the fastest and highest quality program. The lowest-priced standard version of the program will be adequate for the normal user while the "Pro" version is actually only relevant for workgroups or for customers who regularly deal with standards like IMX, MXF, or other MPEG-2/-4 transport formats.

**Cleaner 6.5.1** Unfortunately the evaluation of the former champion Cleaner, which has become not only relatively expensive but also slow and at best average in quality, turns out to be very disappointing. If Autodesk remains interested in the sale of this batch encoding program, then an update is urgently needed.

**Squeeze 4.5** Along with a few usable functions, Squeeze surprised us most of all with extremely high speed for flash videos and very high quality MPEG-4 H.264 encoding. Frequent crashes and a somewhat difficult user interface, however, made a negative impression. If you do not absolutely need Windows Media Encoder and work primarily with Flash video, you will find the Squeeze Compression Suite has all that you need.

**Compressor 2.3** The Compressor, which is to be recommended primarily for fast MPEG-2 encodings and does well with all Andersen QuickTime-based formats, lies outside the evaluation parameters. If you primarily work with DVD or in QuickTime or you install additional plug-ins for Real and Windows Media, you would be well served with the free Compressor at least for occasional encodings.

## Speed comparison Batch encoding programs

Product	PAL -> MPEG2 <sup>1</sup> (1:00 min of video)	HDV -> PAL (Blackmagic 8 bit, 1:14 min of video)	HDV -> iPod video (320 pixels, 600 kbit average, 1:14 min of video)	HD -> H.264 (720p multi-pass encoding, 32 MB limit, 1:14 min of video)	PAL -> Flash 8 (SWF with 300 kbit average, 2-pass, 0:30 min of video)	AIFF -> MP3 (192 kbit VBR, 3:50 min track)	AIFF -> AC3 (384 kbit, 3:50 min track)
Unit	min:sec	min:sec	hr:min:sec	min:sec	min:sec	min:sec	min:sec
<b>Representation</b>	< better	< better	< better	< better	< better	< better	< better
Episode	1:39	2:13	00:03:38	6:02	2:40	0:25	-
Squeeze	1:35	5:34	00:08:56 <sup>2</sup>	28:58 <sup>2</sup>	0:28	0:08	-
Cleaner	4:04	3:08	01:12:43	7:04	2:36	0:26	-
Compressor	0:57	3:21	00:04:55	8:40	-	-	0:31

Remarks: <sup>1</sup> 2-pass VBR with 4.2 Mbit average and 8.0 Mbit maximum data rate, <sup>2</sup> 5-pass encoding

## Batch encoding programs Configuration and evaluation

Manufacturer	1st Telestream Macwelt <b>TEST WINNER</b>	2nd Sorenson Media	3rd Autodesk	Apple
Product	Episode Pro 4.1.3	Squeeze 4.5	Cleaner 6.5.1	Compressor 2.3
Price	€ (Germany) 326, € (Austria) 338, Swiss Francs 447, Episode Pro € (Germany) 739, € (Austria) 765, Swiss Francs 1012	Compression Suite € (Germany) 396, € (Austria) 410, Swiss Francs 543, Power Pack € (Germany) 536, € (Austria) 555, Swiss Francs 734	€ (Germany) 650, € (Austria) 673, Swiss Francs 890	Component of Final Cut Studio
Test assessment	Well-organized, fast, high-quality and economical software. Advantages: good transcoding from NTSC to PAL, best result in MPEG-2 compression. Disadvantages: does not support H.264 or Divx, no watch folder	Ideal for video specialists. Advantages: very fast and high-quality primarily for Flash encodings. Disadvantages: MPEG-2 not recommended, ease of use and stability need to be improved	Well-organized and simple to use. Advantages: many helpful functions. Disadvantages: very slow, sometimes sub par results, no universal binary	Good encoding program when used infrequently. Advantages: good for QuickTime and MPEG-2. Disadvantages: sometimes very slow, problems with non-QuickTime formats
<b>Total score</b>	<b>2.4 good</b>	<b>2.8 satisfactory</b>	<b>3.6 fair</b>	<b>not evaluated</b>
COMPONENT SCORE				
Quality NTSC -> PAL	good	fair	fair	poor
Quality HD -> PAL	very good	very good	satisfactory	good
Quality PAL -> Flash 8	fair	good	fair	-
Quality MPEG-2	good	fair	fair	satisfactory
General ease of use	good	satisfactory	good	good
FUNCTIONS				
Batch list storage	yes	yes	yes	yes
Several videos to one format	yes	yes	yes	yes
One video to several formats	yes	yes	no (only by recall)	yes
Before/After preview window	yes	yes	yes	yes
Direct clipping	no <sup>1</sup>	yes	no	no <sup>1</sup>
Watch folder	no	yes	yes	no (only droplets)
Network accounting	yes (only Pro, via Episode Workgroup)	no	no	yes (via Apple Qmaster)
Pause function	yes	no (only a complete abort)	yes	no (computation starts over)
Filter for brightness, deinterlacing, etc.	yes	yes	yes	yes
Pre-settings	good	good	good	fair
Language	English	English	English	German
Transcoding NTSC-PAL, PAL-NTSC	yes	yes	yes	yes
Selectable pixel aspect ratios	yes	yes	yes	yes
Frame-by-frame preview	no	no	yes	no
FORMATS				
Audio formats and codecs:				
AIFF/PCM / WAV / MP3	yes / yes / yes	yes / no / yes	yes / yes / yes	yes / no / no
AC3/Dolby / AAC (m4a)	no / yes	no / yes	no / no	yes / yes
Video formats and codecs:				
Flash 8 FLV / 8 SWF	yes / yes	yes <sup>2</sup> / yes <sup>2</sup>	yes / yes	no / no
iPod video 320 + 640	yes	yes	yes	yes
UMTS 3GPP	yes	yes	yes	yes
MPEG-1 / MPEG-4	yes / yes	yes / yes	yes / yes	yes / yes
MPEG-2 with VBR and 2-pass encoding	yes	yes	yes	yes
Sony Playstation (PSP)	yes	yes	no	no
QuickTime 7 (all local codecs)	yes	yes	yes	yes
Real Media 9 / 10	no / yes	yes / yes	no / yes	no / via plug-in
Windows Media 7 / 9 / 10	no / yes / no	no / yes / no	yes / no / no	no / via plug-in / no
AVI / DIVX	yes / no	no / yes	yes / yes	yes / no
HD-DVD (H.264)	no	yes	no	yes
HD-DVD (Windows VC1)	no	no	no	no
HD-DVD (MPEG-2)	no	yes	no	no

Remarks: <sup>1</sup> only by entering pixel values, <sup>2</sup> only PowerPack or Flash version, test hardware used: Power Mac G5 Dual 2.5 GHz with 4.5 GB RAM  
Info: [Apple](http://www.apple.com/de) [www.apple.com/de](http://www.apple.com/de), [Autodesk](http://www.autodesk.com) [www.autodesk.com](http://www.autodesk.com), [Sorenson Media](http://www.sorensonmedia.com) [www.sorensonmedia.com](http://www.sorensonmedia.com), [Telestream](http://www.telestream.net) [www.telestream.net](http://www.telestream.net)