

# VIDEO COMPRESSION COMPARISON: DISCREET CLEANER 6 AND CANOPUS PROCODER 1.2

**What's the best tool to squish that video?** By Chris Manners

In the beginning of desktop video there was multimedia. For years, video editors compressed and exported files using the Cinepak codec, which was considered the best codec.

Although Cinepak was the first robust video codec designed to play back video on a computer, it was eventually surpassed in quality by newer formats, most notably the Sorenson Video codec, which was first incorporated into QuickTime 3.0. And then a multitude of new delivery formats were created. In addition to being used on CD-ROMs, video could be played and delivered over the Web, burned onto DVDs, and (more recently) played back on handheld devices. These new options opened up a market for applications that specialized in compression and generated video files for a variety of delivery platforms.

The first program on the market was Cleaner, originally known as Movie Cleaner Pro. It's had a somewhat convoluted history. It was initially developed by Terran Interactive, then sold to Media 100, and finally purchased and further developed by Discreet.

Discreet recently released Cleaner 6 for Mac OS X. In the meantime, though, a newcomer has arisen to challenge Cleaner's dominance. Canopus recently released ProCoder 1.2, a Windows-only application that performs similar encoding and compression functions.

I'm going to cover some of the features for each program, then wrap up with a comparison of image quality and a head-to-head evaluation.

## Cleaner 6

Discreet, \$599 (\$179 upgrade)

The content of Discreet's upgrade of Cleaner (www.discreet.com) isn't immediately apparent when the program first boots: The application appears almost identical to the previous version and functions in a similar fashion. It's designed for drag-and-drop encoding and compressing of video files for DVDs, the Web, CD-ROMs, and now PDA

devices. What's great about the Cleaner 6 upgrade, however, is that Discreet added

**Score:** ♦♦♦♦◇

### Pros

Easy and intuitive system for encoding video files for the Web, CD-ROM, DVDs, and PDAs. Much faster. Supports encoding multiple files into one file, or one file into many formats.

### Cons

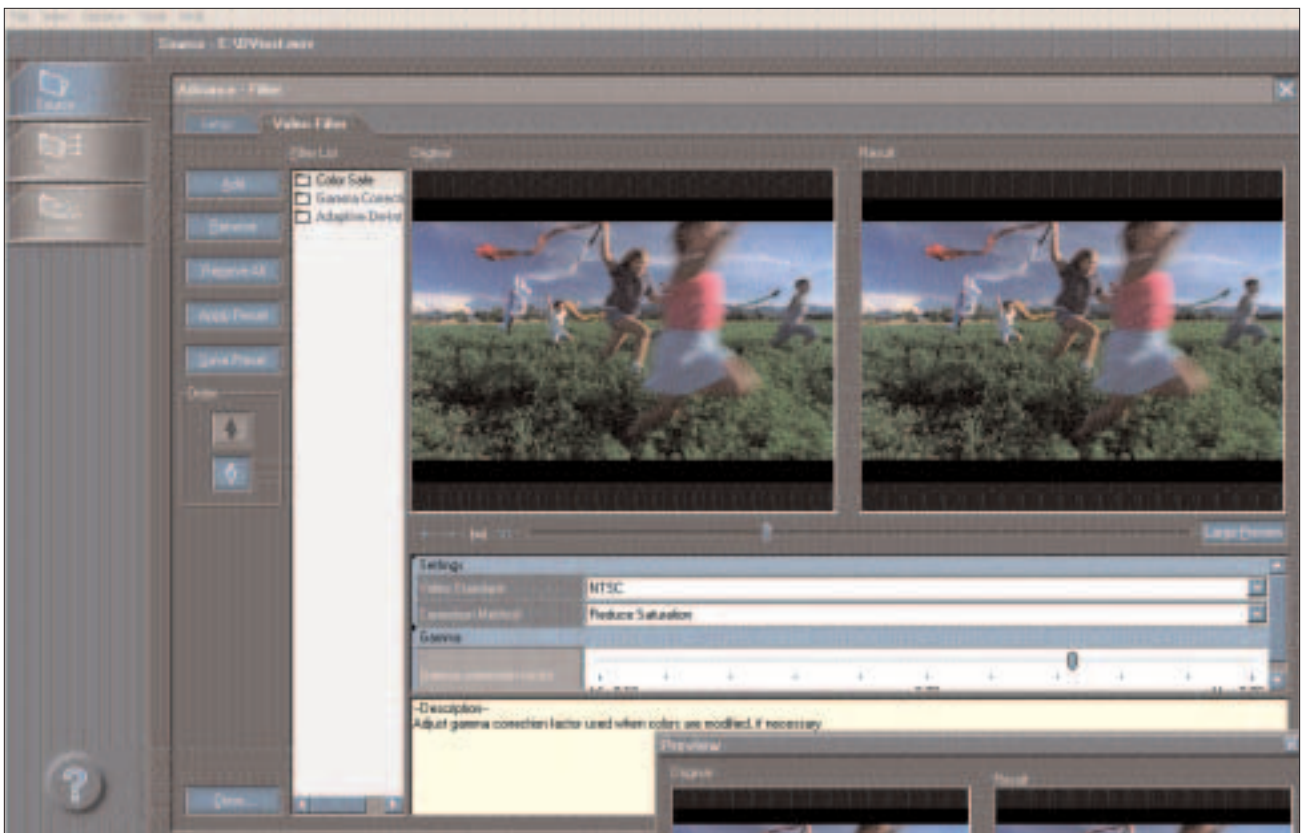
RealSystem content must currently be encoded under Mac OS 9. New formats not integrated into main UI. Limited audio tools.

### Bottom Line

A solid upgrade from Discreet. Current users will want to upgrade for the speed gains alone.

### System Requirements

PowerPC G3 or faster processor; OS 9.1 or higher and Mac OS X version 10.1 or higher; 128 MB RAM; QuickTime 5 or higher.



(left) Pictured is Cleaner 6's interface with the Project, Preview, Eventstream, and Output windows visible. It's currently available only on Mac, although a Windows version is planned.

(above) ProCoder's Source panel with the video filter options selected. It's currently only available on Windows.

a plethora of new capabilities and features without changing the underlying structure of the program. Unfortunately, though, many of these new features haven't been fully integrated into the UI. Accessing many of the new codecs will take a few more clicks, and a slightly different way of working with the program.

Perhaps the most dramatic new feature is the inclusion of the Kinoma encoding engine for outputting files for Palm OS-based PDAs, including Handspring, Kyocera, Palm, and Sony devices. The upgrade has full support for QuickTime 6 (with MPEG-4 and AAC), and now provides MPEG-1 and MPEG-2 file generation with two-pass variable bitrate encoding (VBR) for generating files for DVDs.

The program of course is still able to export Web-ready QuickTime, RealVideo, and Windows Media Player files for playback over the Web. The program is well integrated with some standard NLEs, and direct encoding is available from the timelines of Apple Final Cut Pro, Adobe Premiere, and Avid Xpress DV. Cleaner 6 also provides batch output so a slew of files can be compressed with a single click. At the same time,

the program still features adaptive noise reduction, an invaluable tool for cleaning up your clips.

### Speed improvements

Many of the enhancements are workflow and performance related, with the program providing speed improvements that, the company says, can speed up compression by up to two and a half times in some cases. In my testing, this speed improvement was apparent, with most Cleaner 6 files generated in around half the time the previous version of the program took.

All of the presets for file output have been reworked, and the program provides better management of these settings by allowing users to duplicate and adjust the presets to refine them for specific projects. Other workflow enhancements include the addition of a Watch Folder, which Cleaner 6 constantly monitors and automatically encodes files dropped into it.

Cleaner 6 now supports the output of multiple files from a single source movie. By Shift-selecting or Command-selecting any number of the presets that ship with Cleaner 6, multiple output formats and codecs can be generated at once. In addition, you can send output (including streaming media) to a network or directly to an FTP server.

### New features

Other useful improvements include better 3:2 pulldown removal with an enhanced

Intelecine Filter; native YUV processing; cropping and scaling; deinterlacing; brightness, hue, saturation, and contrast adjustments; and audio tools for adjusting volume, noise removal, noise gate, notch, reverb, high pass, low pass and dynamic range, and MP3 output. Unfortunately, these audio filters have no preview mode, so they must be rendered to determine their effect.

Cleaner 6 supports EventStream to embed interactivity into QuickTime, RealSystem, and Windows Media files. I've used it a couple times to allow users to click to another movie when the first has played to completion. Now it's been enhanced and streamlined to add hotspots, chapters, text, keyframes, and hyperlinks to video files.

The program also features a new A/B preview capability. It's an improvement on previous versions that let you use a dynamic slider to wipe across the face of a frame for a "before compression" and "after compression" prediction. Now you can see a whole frame at a time, and click between that and the original. ProCoder doesn't have anything similar to either feature.

One drawback is that RealSystem content has to be encoded under Mac OS 9—it isn't yet supported under OS X. The Sorenson Video 2 and QDesign Music 2 Pro codecs are also not available for Mac OS X. Fortunately, Cleaner 6 runs fine in Classic mode under Mac OS X. Another drawback is that the Windows Media encoding SDK Microsoft provides to the Mac is old and

**Score:** ◆◆◆◆◆

**Pros**

Straightforward interface that efficiently compresses video to a broad variety of file formats. Strong support for RealVideo 9 and MPEG-1 and MPEG-2.

**Cons**

Doesn't support the addition of interactivity to movies. Poor QuickTime and Web-based delivery options.

**Bottom Line**

A strong contender on the Windows platform, especially because Cleaner 6 has yet to be released for the PC.

**System Requirements**

CPU with MMX support; Windows 98, ME, 2000, XP; 128 MB RAM; USB port.

limited, only supporting the older Windows Media Video V7 and Audio V7 codecs, and lacking the Intelligent Streaming technology for optimum realtime streaming. In all, though, current users of Cleaner will be pleased with this Cleaner 6 upgrade, particularly with the speed enhancements.

## ProCoder 1.2

Canopus, \$699

I was surprised that Canopus ProCoder 2.1 ([www.canopus.com](http://www.canopus.com)), a relatively inexpensive application, has a USB dongle for copy protection. However, in a thoughtful touch, Canopus provides a small USB hub to avoid a lack of USB ports.

When you first load and boot Canopus ProCoder 1.2, you're presented with a straightforward interface that contains three tabs: Source, Target, and Convert. Under the Source tab, you select your clip to be encoded and click the Advanced button for trimming capabilities and video filtering options such as adaptive deinterlacing, bitmap keying, color safe, gamma correction, and video pull-down. These options—as well as audio filters that include low pass, normalize, and volume adjustments—can be accessed through both the Source and Target tabs.

### Procoding

The guts of the application are found under the Target tab. In this panel, the easiest way to work is to select one of the program's presets and then adjust it by selecting the Advanced button. This brings up another panel for adjusting the individual parameters via a series of pull-down and entry field dialogs. All of the parameters are viewable in a tree-diagram-like fashion.

The targeting facility offers a selection of a variety of presets that are broadly grouped under the headings Basic, Web, VCD/DVD, DV, and Custom. This is also where you can

save modified presets for later use. After you select and tweak the appropriate format, use the Convert tab to export and save the compressed file, which can include a network destination.

ProCoder 1.2 provides an Adobe Premiere 6 plug-in for direct export from its timeline. ProCoder can encode a single source to multiple output formats, and the Source tab also lets you stitch files together, even if they're not in the same format or have different frame rates. Once a particular setting has been refined, you can create an automatic droplet that resides on the desktop. Then you simply drag files onto the droplet for one-stop compression.

### Feature comparison

ProCoder 1.2 provides many of the same features as Cleaner 6. ProCoder can perform aspect ratio conversion, frame rate interpolation, NTSC-PAL conversion, and provides two-pass VBR encoding for MPEG-2 files. The program can handle multiple color spaces, including YUV and RGB. However, the program's support for QuickTime, RealVideo, and Windows Media is more patchy. As an example, the program simply uses the basic presets created in Windows Media Encoder.

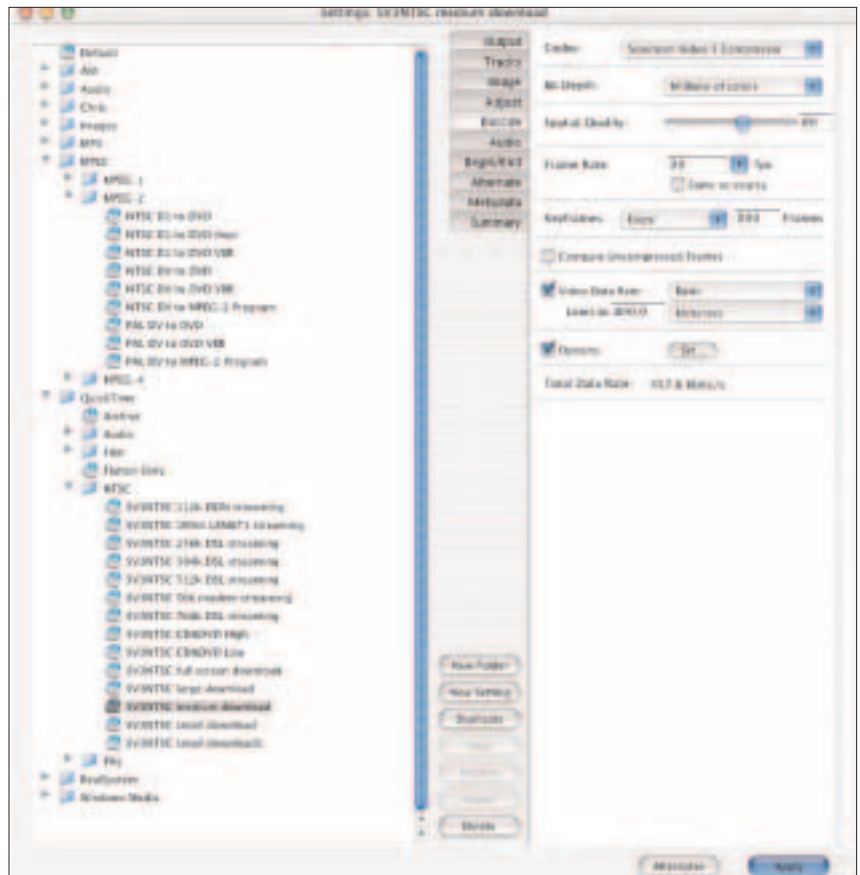
Windows users who need to be able to compress and encode video should

consider ProCoder 1.2 an excellent option that's somewhat more capable than the older version of Cleaner 5—the version currently available on Windows as of press time. But although it has superior MPEG support, it's support for Web-based formats isn't as complete as Cleaner 5's. However, when Cleaner 6 is released for Windows, it may have an edge over ProCoder 1.2 because it has the ability to add interactivity to video files, as well as full QuickTime support. One clear advantage to using ProCoder 1.2, however, is that it provides NTSC-PAL conversion, something that Cleaner has yet to implement.

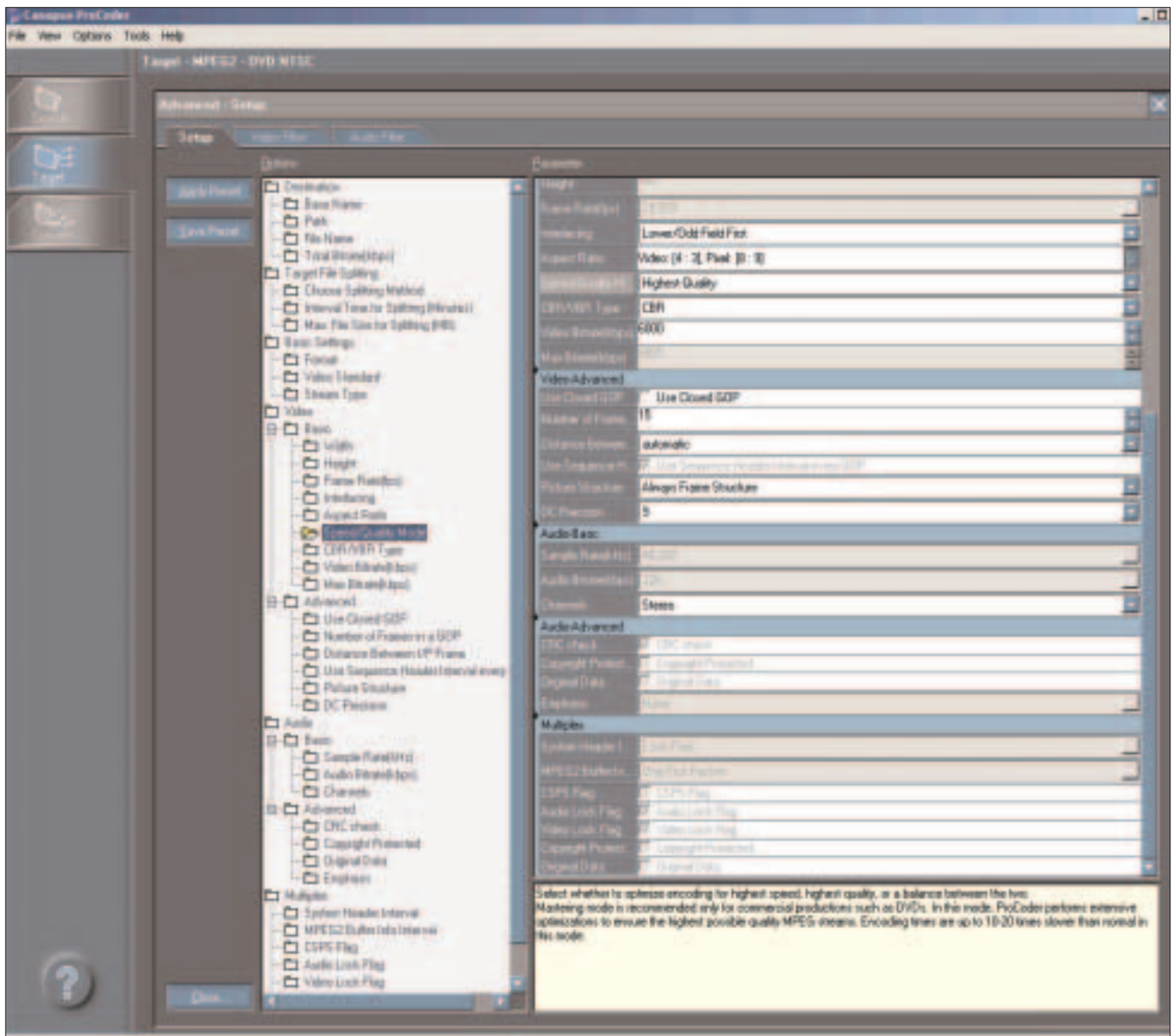
Perhaps the most important aspect of ProCoder 1.2 is simply that it applies market pressure to the reigning Cleaner 6. It's great to have another encoding and compression tool choice.

## Head-to-head comparison

Given the fact that it's not possible to run these two programs on the same machine and platform, speed trials weren't germane. However, I could still compare quality of output by compressing an identical file in identical formats and then observing the results.



**Cleaner's setting dialog with the Compression tab open. Multiple output formats can now be selected by Shift-clicking on additional presets.**



Here is ProCoder 1.2's Target panel, with the Advanced compression options visible. Multiple formats can be selected to output a single file in a variety of formats.

The procedure for this test was first performed in the 10-bit board Roundup in the August 2002 issue of *DV*. I used the same footage and comparison techniques (for a full description, see the Roundup's sidebar called "Test Images and Procedures"). For this test, I created three files from uncompressed footage: a file with the Apple DV NTSC codec, one compressed with the Sorenson 3 codec, and an MPEG-1 clip. Data rates, frame rates, and output quality were matched for each codec.

The results of these subjective visual tests were mixed. The Cleaner 6 files encoded with the Sorenson codec were significantly crisper, with far fewer differences from the uncompressed frames.

The highest quality compression to DV, on the other hand, was produced by ProCoder 1.2. Cleaner 6 DV files had visible horizontal banding that wasn't

apparent at all in the ProCoder 1.2-generated clips.

The MPEG test was more difficult to judge, partly because Cleaner 6 markedly decreased the contrast and brightness of the clips. On the other hand, ProCoder 1.2's output was less blurry and kept the original saturation levels intact, but created more stairstepping on diagonal lines. In a final informal test, the same clip was run through the Sorenson test on the PC with Cleaner 5. ProCoder 1.2 was noticeably faster, completing the task in roughly 75 percent of the time.

## Conclusion

As of press time, neither of these applications were available as a cross-platform version, so making a decision about

which program to buy will probably be determined by which platform you use. However, if and when Discreet releases a Windows version of Cleaner 6 (Cleaner 5 is available for both Mac and PC), ProCoder 1.2 will have a formidable adversary, particularly for Web-based output.

In the meantime, though, as the new kid on the block, ProCoder 1.2 is a solid performer considerably more capable than anything on the market for PC users. Cleaner 6, on the other hand, has yet to have any serious competitors on the Mac. But Discreet now knows that Cleaner isn't the only game in town anymore. ■

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