Third-party print drivers can enhance both print quality and the digital workflow

To RIP or not to RIP

Many photographers are considering the purchase of a raster image processor (RIP) to drive their inkjet printers. Many printer makers are bundling RIPs with their printers, for additional costs, so they can offer customers more printer capabilities (and make higher profit margins). But do you really need a RIP?

Before we answer that question, we need to examine the two most-used primary graphic file types. Raster files comprise a mosaic of pixels that form colors and shapes. TIFF, JPEG and PSD are three examples. (This file type is sometimes called a bitmat, but technically a bitmap file describes only black and white.)

A vector file is a mathematical description of a simple shape. The font you create in a word processor is a vector file. If you build logos or other simple graphic files in applications such as Adobe Illustrator, you're creating a vector file.

In order to output any file on a printer, you need to create a raster image so that the file's pixels can be translated into ink dots. Vector files are purely mathematical, so at some point the files must be rasterized —the process of transforming the math into a mosaic of pixels—with a RIP. Photoshop is a simple RIP. All the text on layers in Photoshop are vector data until you flatten the image. When you open a PDF file in Photoshop, you'll see the dialog in **Figure 1**. This is where you define the resolution and color space for the rasterized data.

If you're working only with image files, there's really no need to use RIP—they *are* raster files. There's been some confusion in the market because products that don't actually rasterize vector data have been called RIPs. These products are better

> ## If you're working only with image files, there's really no need to use RIP—they *are* raster files.

described as substitute print drivers or printer environments. Most RIPs can handle files in an industry-standard Adobe page language called PostScript. PostScript RIPs are often more expensive than other RIPs due to the PostScript licensing fees. Unless you print complicated pages out of InDesign, Quark or other such products, forget PostScript.

Why bypass the original print driver for a substitute? For better print quality and added print functionality. I recently did some tests with ImagePrint software from ColorByte, one of the RIPs (print engines) I use for my Epson printers. I sent the same files through both the Epson driver and ImagePrint, using both custom and supplied ICC profiles. One major issue with the Epson driver is its highly non-linear behavior. It simply lays down too much ink in shadow areas and no profile can account for it. While the Epson-supplied driver is tremendously improved in the new K3 generation printers (2400/4800/9800 series), there's a lot of room left for improvement.

The ImagePrint driver produced far

Import PDF

Select:
◉ Pages ○ Images

| 439 | 440 |
| 441 | 442 |

1 of 478 page(s) selected

Thumbnail Size: [Large ▾]

Page Options

Name: [CMS4Photographers]

Crop To: [Bounding Box ▾]

☑ Anti-aliased

Image Size: 18.5M

Width: [2229] [pixels ▾]

Height: [2904] [pixels ▾]

☑ Constrain Proportions

Resolution: [300] [pixels/inch ▾]

Mode: [sRGB IEC61966-2.1 ▾]

Bit Depth: [8 bit ▾]

☐ Supress Warnings

[Reset] [OK]

Figure 1. Photoshop's rasterize-PDF dialog asks us to specify a color space and resolution so it can create the desired number of pixels from the vector data.
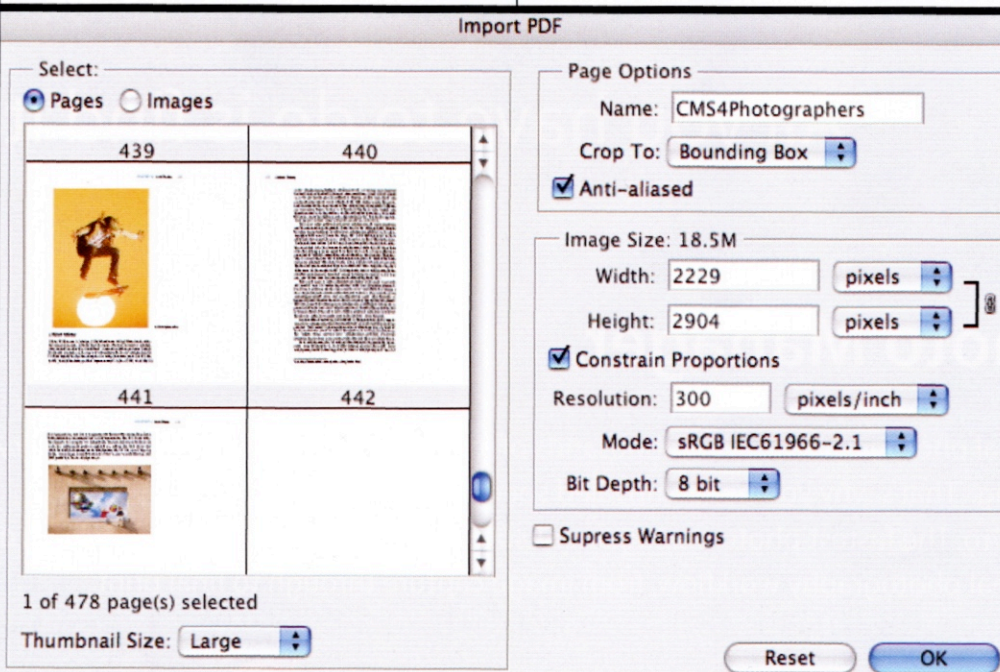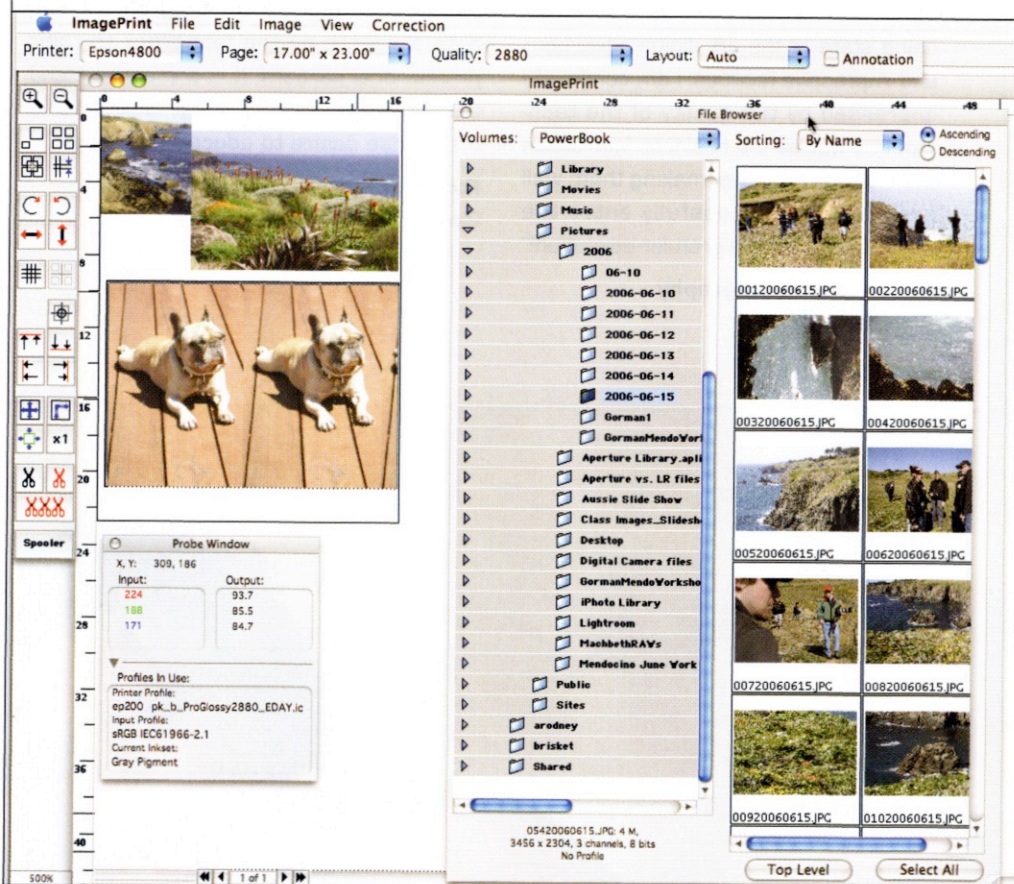
Figure 2. In ImagePrint's main workspace, the virtual canvas can be of any size and any number of images can be dropped into the canvas. Here I have a 17x23-inch canvas. Each image can be sized, rotated, and, as with the dog shot in this example, stepped and repeated. A file browser is seen to the right of the workspace.

more linear output, resulting in less ink usage and better shadow detail, from both the supplied and custom profiles. The dither, or screening, was more detailed and the prints looked sharper compared to the Epson driver's output. Tonal transitions were smoother with more of a continuous-tone appearance. The difference was apparent with up-close viewing, but might be less noticeable when viewed from a distance.

Another shortcoming of the Epson driver is that its paper settings are based solely on Epson papers. You can use third-party papers, but selecting the appropriate setting is a big guessing game. ImagePrint ships with a few hundred ICC profiles for just about every paper you can imagine. My custom profiles built through ImagePrint were better than

the supplied profiles, but the latter were quite good, and available to all users. If your paper isn't supported, ColorByte will create a profile for you. Unique to ImagePrint is its ability to actually use all of the data in 16-bit images. Most drivers simply convert on the fly to 8-bit in the print pipeline.

Like nearly all manufacturer-supplied drivers, the Epson driver handles images one at a time. With ImagePrint, you can build a virtual canvas of any size, then drag-and-drop as many images as you wish into it. You can size, rotate and position any or all of the images, then output the file. Consider having to do this on a large-format 44-inch printer, first creating the canvas in Photoshop, then opening each high-resolution image. It's slow and it takes up

huge amounts of disk space.

ImagePrint is very useful if you use templates or gang print multiple images; it's far faster than doing it in Photoshop. You can output color and grayscale images on the same page. To load a single image and create multiple copies on the page, just hold down the shift key and drag. As you drag, the software builds additional copies for output (*Figure 2*). If you output huge banners, you need the ability to control the overlap so you can eventually butt them into a single image. This is easily accomplished with the tile functionality in ImagePrint.

Queues are another useful feature of most RIPs. Once a "page" is created and printed, it's usually saved and can be reprinted by a single mouse click. ImagePrint incorporates a secondary application called Spool Face—I love that name. At any time, you can click on a print job in the queue and reprint it or delete it. While the print job does take up disk space, you don't have to rebuild a page you printed days or weeks before. This feature could be very useful if your customers want reprints later on.

Bottom line: a so-called RIP may not be a true RIP, and you might not even need one. But you might want to examine some of the third-party driver offerings to see if their capabilities would be worthwhile in your workflow. There's more to such products than increased output quality. Most provide some kind of demo that allows you to get an idea of the print quality, assuming you don't mind seeing the word "demo" printed all over your test sample. The downside is the cost and often a steep learning curve.

ImagePrint runs with both Macintosh and Windows. The price is based on the printers you need to drive. For more info, visit www.colorbytesoftware.com/imageprint.htm. ∎