# What is color management?

Part 6: Convert to Profile command

Now it's time to discuss using ICC profiles on your files. The most flexible place to do this is in Photoshop's Convert to Profile command found in the Image>Mode submenu.
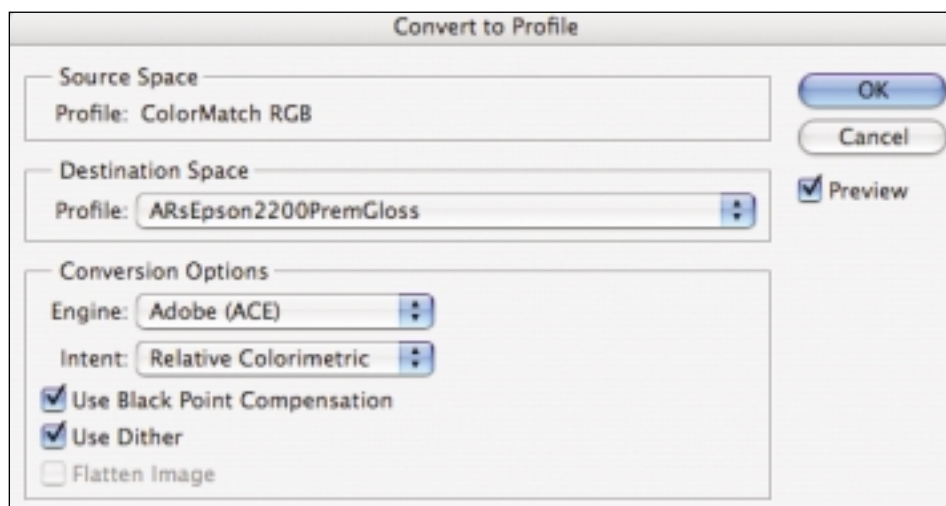
When using the Convert to Profile command, every pixel in the image is altered. The image undergoes a color space conversion and the profile used for this conversion is embedded into the file. Many of the options seen here were covered when I discussed the Photoshop color settings.

Convert to Profile is very flexible. It can convert RGB to RGB, RGB to CMYK, CMYK to RGB, RGB to Grayscale, and so on. Convert to Profile allows you to pick any ICC profile installed on your computer. The illustration shows the Convert to Profile dialog, which features an area that defines the Source Space and the Destination Space for conversions. You cannot change the Source Space; it's the embedded profile in your open file. The Destination pop-up menu allows you to pick an ICC profile for the conversion space.

Using Convert to Profile is easy. First, select the destination profile, which tells Photoshop which ICC profile you wish to use to convert the image into the new color space. With the Preview check box applied, you can select different ICC profiles and settings to see the results of the change onscreen, thus producing a soft proof, a visual simulation of the printed



Convert to Profile dialog box. The Source Space is not editable and reflects the color space of the current file. I wish to print this image on my Epson Stylus Photo 2200 printer onto Premium Glossy paper, so I've selected this profile in the destination pop-up menu. After toggling the different rendering intents with the Preview check box on, I decided I liked the Relative Colorimetric intent best. Now all I have to do is click the OK button and the conversion will take place. The file is ready for printing.

image with the conversion applied. The numbers in the open file will not be altered until you click the OK button.

The Conversion Options area is where you choose the CMM engine you want to convert the data. Depending on your computer operating system and the color management software installed, you might see a number of CMMs listed, including Apple ColorSync, Kodak, Heidelberg and so on. Pick the Adobe ACE setting!

The Intent pop-up menu is where you select the rendering intent, which I covered last month. With the preview check box applied, all you have to do is toggle between the various intents and pick the one that produces the preferred color appearance. Try Relative Colorimetric first, then Perceptual. In some cases, the Saturation intent might actually be useful. I usually

prefer the Relative Colorimetric intent, but I always try Perceptual and then pick what I prefer visually. The Absolute Colorimetric intent is intended for proofing and will affect the paper white. Unless you're doing a color space conversion to simulate a different printed piece (like emulating newsprint on an inkjet printer), you'll never pick Absolute Colorimetric.

Black Point Compensation ensures the black values are mapped correctly during conversions. Turn the check box on and off if you wish, and view the effects on screen. (My advice is to always have this check box on.) You can also check the Flatten Image box if you want Photoshop to do the conversion and flatten the image at the same time. This option is simply for convenience.

Once all the various parameters in the Convert to Profile dialog are set, click OK

to apply the color space conversion. All the numbers in the file will change and, depending on the color space, the file might grow larger. RGB to CMYK, for example, adds a new color channel to the file. The old embedded profile is replaced by the new profile based on the destination profile you selected.

### When to use Convert to Profile

If you have to prepare a file to be output to a printer outside your studio, it's necessary to convert the file to the proper print space and save it, then send it to the computer attached to the printer. This is one situation where the Covert to Profile command is necessary. Even if you had a printer hooked up to your computer, some print drivers are unable to accomplish color conversions using ICC profiles. Any time you want to change the working color space of a file (for example, going from Adobe RGB 1998 to sRGB), you should use the Convert to Profile command. Be careful, though, because saving the file will overwrite the data that was in the original working space. I usually duplicate the file and convert the copy or use the Save As command after the conversion, to ensure my original stays untouched. You could also convert the file, send the data to the printer, and close the file without saving it to disk.

### When not to use Convert to Profile

If you have a printer attached to your computer that understands how to use ICC profiles for conversions, you can simply apply the profile when printing the file. I can leave the file in the original working space, and as the data is sent to the driver, the conversion is applied for that print. The downside is I need to know which rendering intent to tell the driver to use. I first need to set-up a soft proof and decide which rendering intent I prefer. With Convert to Profile, I get to see and then pick the intent at the point of conversion. The upside of converting at the point of printing is that

I don't have to worry about accidentally converting the data in my original file and overwriting it. I don't have to wait for Photoshop to process the data as I would if I used Convert to Profile command

because the printer driver can apply the conversions as the data is being printed.

Next month, we cover the Assign Profile command and how greatly it differs from the Convert to Profile command. ❏