

Producing an Inkjet Print

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Note: Although this tutorial is written for the Windows XP system, similar processes are available for MAC computers.

Step 1 - Setting a Default Colour Profile

Set the default colour profile for your computer to sRGB.

Do this by going to the Control Panel, and selecting Display. Click on the Settings tab, then Advanced and then Color management. Click on add then select "sRGB Color Space Profile.icm".

Tip: To be consistent you should also set your digital camera's profile to sRGB.

Step 2 - Calibrate your Monitor and Install Calibrated profile.

Use the "Adobe Gamma" wizard or similar software to calibrate your monitor. Save the results with a name other than "sRGB Color Space Profile", say "My Monitor Profile ". Repeat Step 1 and select "My Monitor profile".

Windows will now use this profile as default in all software with Colour management features.

It will be adjusted for your monitor. Repeat this process monthly as monitors do change. (This process may not work with an LCD monitor, in which case just use the "sRGB Color Space Profile.icm".)

Step 3 - Obtain profiles for your printer and/or papers used.

Today, most color devices come with device profiles created by the manufacturer. These are known as *generic*, or canned, profiles because they represent averaged data from a particular device model as it behaved at the factory.

Obtaining Generic Profiles

The easiest way to acquire generic profiles, as just explained, is from device manufacturers. Scanners, displays, and printers typically come with generic profiles that are often installed automatically with the device software. In some cases, however, you may need to download the profiles separately. Some vendors make profiles available for download from their Web sites, including profiles for different printer paper and ink combinations.

There are other ways to obtain generic profiles. Most imaging applications include a set of profiles for common working spaces and devices. A good place to start is with Adobe Photoshop, which is likely to be the most common color management application you'll use.

Producing an Inkjet Print

Adobe Photoshop ships with a variety of profiles, including these:

- Adobe RGB (1998)
- Apple RGB
- ColorMatch RGB
- U.S. Web Coated (SWOP) v2
- U.S. Web Uncoated v2
- U.S. Sheetfed Coated v2
- U.S. Sheetfed Uncoated v2
- Euroscale Coated v2
- Euroscale Uncoated v2
- Japan Standard v2

Note:

If you're not using Adobe Photoshop (or any of Adobe's other professional design applications), Adobe has made many of these ICC profiles available on its Web site for download at www.adobe.com/support/downloads/main.html#ICC

Another way to obtain generic profiles is through profiling services, service bureaus, and printers that have profiled their devices and presses and have made those profiles available on their Web sites.

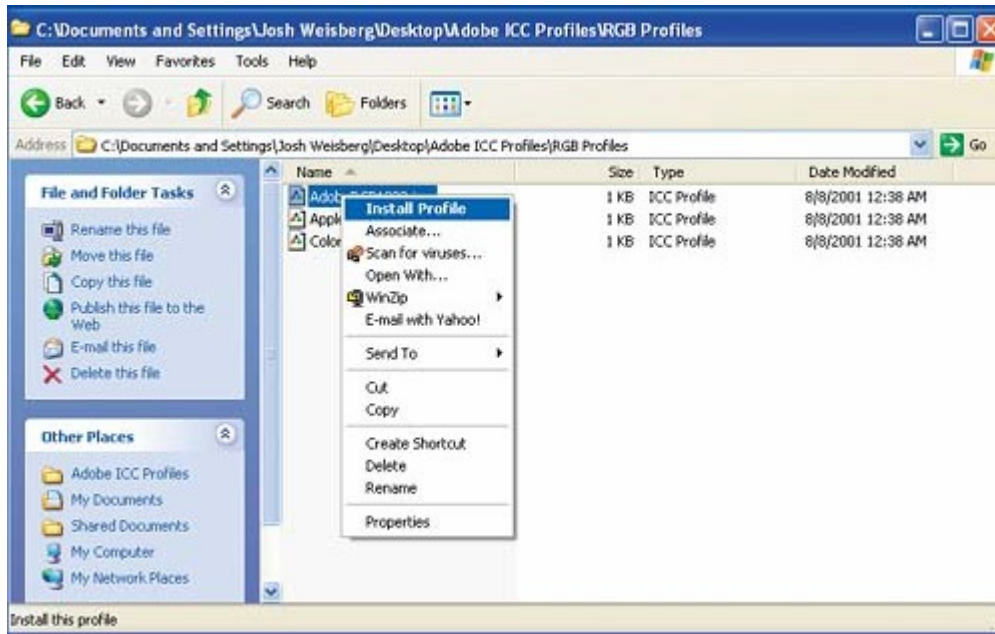
Paper suppliers often provide profiles for their papers based on the printer used. Read the data sheets for web site addresses.

Step 4 - Installing Generic Profiles

If you decide to use generic profiles to get your color management workflow rolling, choose one of the methods described in the preceding section to obtain one or more profiles for devices in your workflow and then perform the following steps to install them:

1. Download the profile or profiles from the Internet to your computer, or if the profiles come as part of an installer, double-click the installer to install the profiles.
2. If the profiles are not part of an installer, right-click the profile and select Install Profile.

Producing an Inkjet Print



Note

This will install the profile into the *C:\WINDOWS\system32\spool\drivers\color* folder. This is the default location where Windows XP stores profiles.

Go to this folder, select the desired profile, right click, and then select associate and add the device (printer) that you wish to associate.

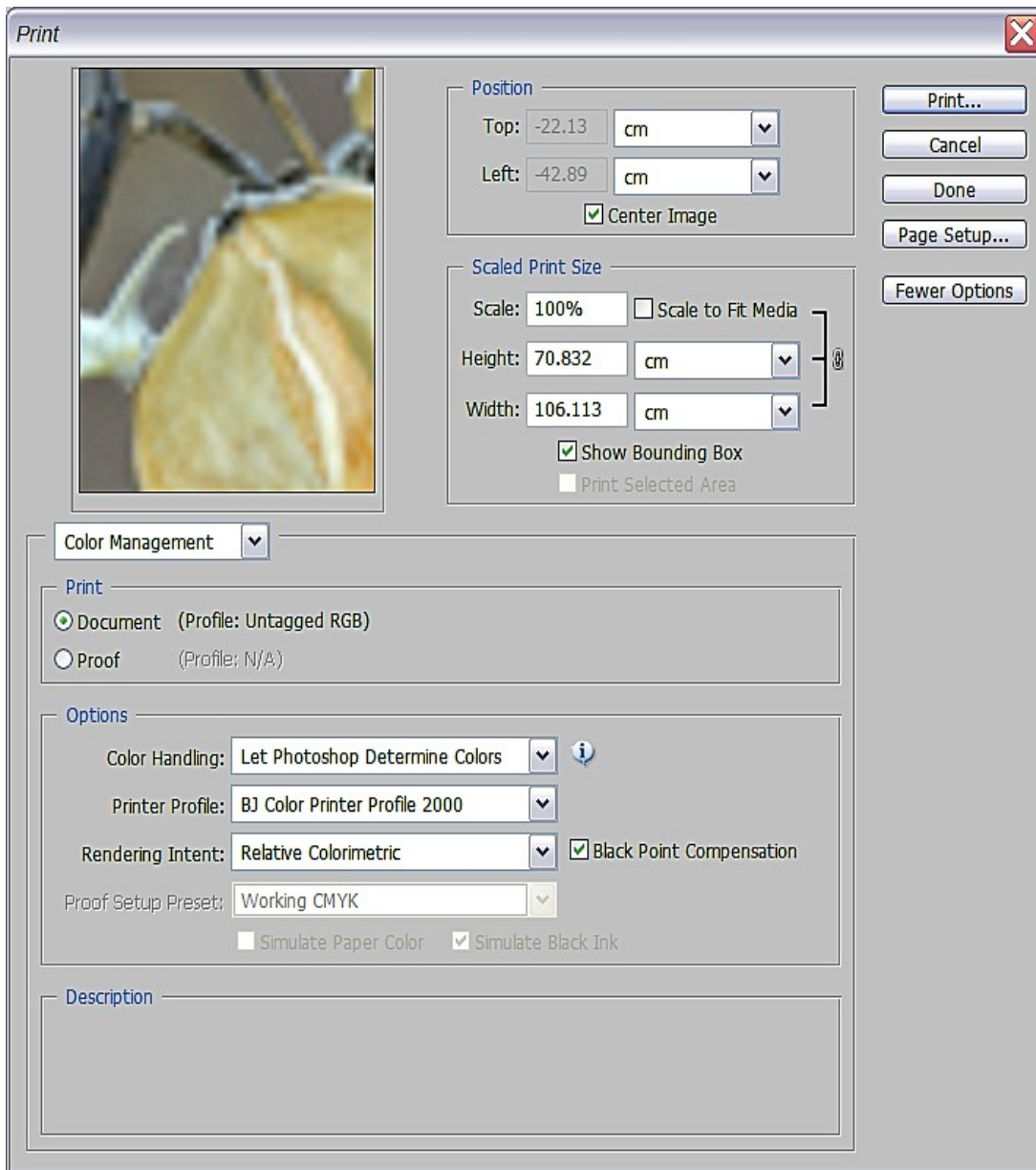
Step 5 - Printing

Photoshop CS2 has five Print menu options: **Page Setup**, **Print**, **Print with Preview**, **Print One Copy** and **Print Online**. By-the-way, the **Print** menu option opens the "System" print dialog, which means that none of Photoshop's print colour management options are available. If you print from this, you may not get satisfactory results. Anyway, this tutorial will be concentrate on **Print with Preview**, which is where the printer colour settings have lived since Photoshop 7.

(Other digital photographic editors will have similar colour management controls. Space does not permit describing how they work.)

As the **Print with Preview** menu option is only available for selection when an image is open on your desktop so if you're following along I suggest that you open an image now..

Producing an Inkjet Print



If you've been using an earlier version of Photoshop you'll immediately notice that we now have a more extensive and very different list of options available. Firstly, the **Color Management** settings are now shown by default, although you can change this if you wish. Anyway, to keep things simple I will focus on the **Print** and **Options** sections of the dialog. I will also try to explain the meaning of each option, and hopefully give you better idea why certain combinations will work and others don't: -

Producing an Inkjet Print

Print:

- **Document:** denotes the ICC profile embedded within or assigned to the document to be printed. The example shown in figure 1 shows Profile: Untagged RGB (this references my custom profile generated in Step 2), but it could be any number of user specified alternatives (e.g. sRGB, Adobe RGB (1998), ColorMatch). If the image has already been converted (i.e. using the Photoshop **Convert to Profile** command) to a printer/media profile this will be the colour space reflected here. It's actually a good way of double checking that you haven't mistakenly converted the image already.
- **Proof:** this field will normally display as (Profile: N/A). Once it's activated via the radio-button it tells Photoshop to *convert* the image on-the-fly from the image source colour space to the destination ICC profile shown in brackets. You can only alter the destination profile from within the **Proof Setup** dialog (see: Photoshop View menu). Also, note that you'll only ever need to use this option if you are intending to make Hard Proofs or Match Prints (i.e. trying to emulate another printer such as a press), therefore I don't intend to discuss this workflow further in this tutorial.

Options:

- **Color Handling** - this is the new pop-up menu from which you choose the preferred method of managing colour when printing. By adopting this approach Adobe have separated the workflow aspects of printing from the media choices. In theory this should make life easier for the user, but only time will tell us whether it has. There are four different choices:
Let Printer Determine Colors,
Let Photoshop Determine Colors,
Separations, and
No Color Management.
Each of these choices has its own associated preset configuration in the **Print with Preview** dialog thereby helping you avoid erroneous settings.
- **Printer Profile** - as its name implies this is the pop-up menu from which you choose the ICC profile associated with the printer/media combination you'll be using. This pop-up will only be active when the **Let Photoshop Determine Colors** is selected in the **Color Handling** pop-up.
- **Rendering Intent and Black Point Compensation** - again, depending upon your choice in **Color Handling** one or both of these settings may be grayed out.
- **Proof Setup Preset** - by default this pop-up menu is grayed out and will only be activated when the **Proof** radio button is selected. As mentioned above this option is normally only used when simulating or proofing other output devices such as a Press.
- **Description** - this is a useful addition to the Print with Preview dialog in so far as it provides short explanations for each of the settings and options.

Producing an Inkjet Print

The description itself is triggered when you hover the mouse cursor over the various buttons and pop-ups (e.g. Color Handling, Rendering Intent, Black Point Compensation, etc).

It's all about Workflow

There are four choices or more accurately workflow options contained within the **Color Handling** pop-up. However, this tutorial will only discuss **Let Photoshop Determine Colors**

With **Color Handling** set to **Let Photoshop Determine Colors** you are able to choose: specific ICC media profiles, the **Rendering Intent**, and whether or not **Black Point Compensation** is to be used. Trying to relate this particular option back to earlier versions of Photoshop is difficult because there was no direct equivalent.

When **Let Photoshop Determine Colors** is selected you'll immediately be given access to the **Printer Profile** pop-up. By default the profile shown in this pop-up is the **Working RGB** profile (defined in Photoshop **Color Settings**), but you'll very seldom want to leave it at **Working RGB**. It's important that your actual choice of **Printer Profile** matches the media and printer model that you'll be using otherwise poor quality prints are almost a certainty. The best quality will be obtained when you use an ICC media profile, which has been created for your specific printer. These can be created by you using specialist software/hardware or purchased from a third party.

Note: I have used a profile for my Canon i9100 printer (BJ Color Printer Profile 2000) supplied by Canon as part of the driver install package. If you don't have a similar profile use the default "sRGB Color Space Profile.icm".

Tip: Many printer manufacturers and paper suppliers provide profiles for their products.

Notice that once a printer profile is selected both **Rendering Intent** and **Black Point Compensation** (BPC) are activated. Generally you'll want to use **Perceptual** or **Relative Colorimetric**, and have **BPC** checked. It's worth noting that with many of the newer models from Epson (e.g. 2100, 2200, R800, etc.) it is probable that choosing **Relative Colorimetric** will produce the more pleasing prints.

Once the **Print with Preview** dialog has been configured to suit your requirements it's time to press the **Print** button.

The Printer dialog will appear. If your printer has a Colour Management facility, ensure that it is off, as Photoshop is directing the printer's colour responses. You only need to set orientation (landscape or portrait), paper size and paper type. The paper's information sheet should tell you the correct type to use for your printer.

Producing an Inkjet Print

References:

[Adjust your Monitor's Brightness and Contrast by help4web.net](http://www.help4web.net/setup/mire.html)

<http://www.help4web.net/setup/mire.html>

[ICC Profiles](http://dx.sheridan.com/advisor/icc_profiles.html)

http://dx.sheridan.com/advisor/icc_profiles.html

[Monitor Calibration - Calibrate Your Monitor - Color Management Methods for On-Screen Display](http://dx.sheridan.com/advisor/icc_profiles.html)

http://dx.sheridan.com/advisor/icc_profiles.html

[Photoshop CS2 - Print with Colour Management](http://www.computer-darkroom.com/ps9_print/ps9_print_1.htm)

http://www.computer-darkroom.com/ps9_print/ps9_print_1.htm

[Photoshop, Color Management and Your Images; It's Just a Numbers Game](http://www.takegreatpictures.com/HOME/Columns/Digital_Photography/Details/params/object/9785/default.aspx)

http://www.takegreatpictures.com/HOME/Columns/Digital_Photography/Details/params/object/9785/default.aspx

[Understanding Color Profiles in Microsoft Windows XP > Generic Profiles](http://www.informit.com/articles/article.asp?p=482326&seqNum=2&rl=1)

<http://www.informit.com/articles/article.asp?p=482326&seqNum=2&rl=1>