

# Resizing Images for the Web and E-mail

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There is a lot of misunderstanding about resizing and optimizing images to display on the Internet or for e-mailing as an attachment.



Figure 1

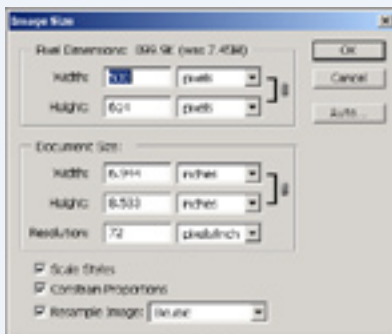


Figure 2

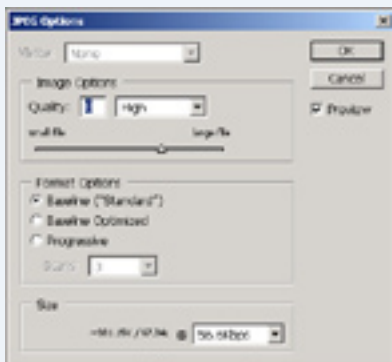


Figure 3

The first suggestion is to calibrate your monitor using either Adobe Gamma™ or a 3<sup>rd</sup> party calibration system. For most digital cameras, the default color mode is sRGB and this is the best choice for Windows computers to display graphics. If you have a camera that outputs to sRGB, Adobe RGB or ColorMatch RGB, it is recommended that you use Adobe RGB for all of your editing as Adobe RGB has a wider color space that should be used for printing. Then save a web version of the image with sRGB as the color space as it is optimized for screen and not for print. You can change your Mode from Adobe RGB to sRGB in the Photoshop Image menu > Mode > select sRGB.

## Correct Resolution

One of the most confusing terms in digital imaging is resolution. There are different types of resolution, which can be measured in pixels per inch (ppi) for displaying on the monitor; dots per inch (dpi) for screen displays; and for printers, where dpi is the number of dots of ink they place on paper.

Display resolution is normally 96 dpi on Windows and 72 dpi for Macintosh computers. Newer

LCD displays are constantly raising the dpi number so there are now more choices.

As I said above, screen resolution or pixel dimensions refers to how many pixels are displayed on the screen. Common setups are 1024 X 768 and 800 X 600. What's important to realize is the only number we need to worry about for displaying an image on-screen is *pixel dimensions*. Changing the pixels per inch (resolution) has no effect on the dimensions or the size of the image shown on screen or on the file size. File size is strictly determined by the number of pixels in the image; e.g., 800 pixels wide by 600 pixels high, or 480,000 pixels in total. As there is a red, green and blue component for each image pixel the total file size would be 3 times 480,000 or 1.44 megabytes.

Notice the dialog box shown in Figure 1 shows the image with a resolution of 360 ppi and the file size is 899.9K. It has a Pixel Dimension of 500 X 614. Then note that Figure 2 with the same Pixel Dimension and a resolution of 72 ppi that the file size is also 899.9K, the same as in Figure 1. What did change, however, was the document size or the size of a print that will result from these settings.

If you are sending images as an email attachment it would be nice if the recipient of your email could view your image without scrolling. Considering that he/she has a computer with at least a display resolution of 800 X 600, and if you take into account the pixels required for menu and tool bars, then a good maximum image height would be 500 pixels. If you're sizing your images for displaying on the Internet then other factors come into play.

PSA members who want to enter virtual exhibitions will find that the common maximum size is 1024 x 768 with a requirement that they be compressed by saving as a JPEG so that the file size will be below 300K. PSA Study Groups are using a 500

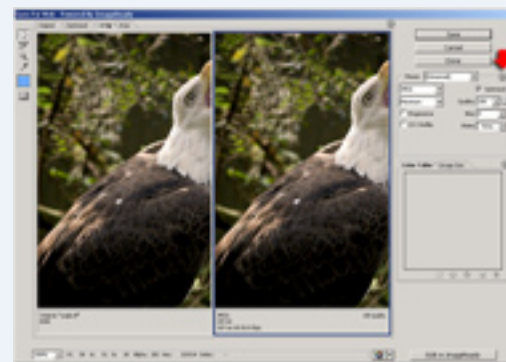


Figure 4



Figure 5

pixel X 500 pixel max size with a maximum file size around 80K, although it has not been finalized at the time this article was written.

### Resizing your Image in Photoshop

To resize an image for an exhibition in Photoshop™, go to Image > Image size. In the Pixel Dimensions box enter 1024 in the Width or 768 in the Height box, depending on the image being a horizontal or vertical orientation. In Photoshop Elements, the Image size command will be found in Image > Resize menu. After entering your numbers, click OK.

Next, File> Save As, and in that dialog box select JPEG in the Format box. In the resulting dialog box, Figure 3, pick a Quality that is a compromise between picture quality and file size. For dial-up Internet connections and if it is to be used as an email attachment, a Quality of 3 would probably be OK. For broadband, a quality of 8 is a good choice.

I like to use the Save for Web menu command, see Figure 4, because you can see the before-and- after compression in either a 2-up or a 4-up display. This way you can visually select the lowest quality (and smallest file size!) that results in an acceptable print. If you are optimizing for submitting to a virtual exhibition or a study group, a good way to get the best quality and stay below the maximum files size is to click on the small arrow in the upper right of the dialog box above the word, optimized, see Figure 5. This brings up a small menu where you should select Optimize to File Size and in the resulting dialog box enter the maximum file size allowed, in Figure 6, I selected 80kb. In Figure 7, notice the optimized file size is 79.74 at a quality of 65.

For images that you want to use in a digital slide show and want to optimize both vertical and horizontal images for being projected with a XGA (1024 X 768) projector there is another resizing command in Photoshop CS that is useful. With an image open, in the File menu select Automate and then Fit Image. In the resulting dialog box you can enter the

maximum pixel dimensions envelope for an image to fit within, in this case, 1024 X 768. See figure 8. This will resize verticals to be 768 in height and horizontals to be 1024 in width.

The final step after resizing your image is to sharpen the image either using Photoshop's Unsharp Mask or your favorite sharpening plugin. I use nik multimedia's Sharpener Pro™.

### Actions

If you are using Photoshop 7 or CS™, you can create an Action to automate this process. To create the Action, open the Actions palette. In the Actions menu select New Set and give it a name like Resizing images. Then in the menu select New Action and give it a name, for example Resize for the Web and click Record. Now every step will be recorded as an Action. Do the following steps:

Image > Image Size >

Check Resample Image

In this dialog box click the small arrow and select Bicubic Sharper

Enter numbers in the Pixel Dimensions box  
Click OK

Image Menu > Mode > Convert to Profile

Select from the drop down list > sRGB  
IEC61966-2.1

Click OK

In Filter menu select Unsharp Mask and adjust settings

Although each image is different guidelines are;

Amount 100-150%

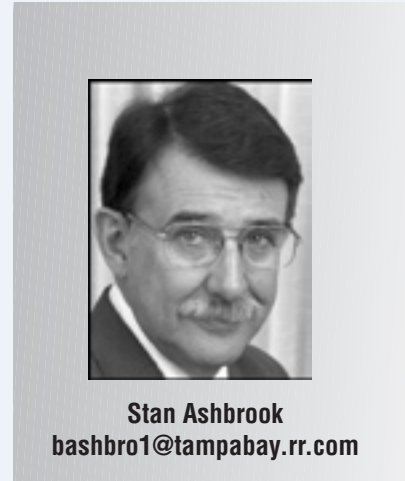
Radius 6 – 1.2

Threshold – 4-6

Click OK

You can then stop recording by clicking on the small icon at the bottom of the Actions Palette located on the far left.

You can create separate Actions for images to be used in a slide show, for images you want to e-mail and for those to be used in an exhibition or study group. 📁



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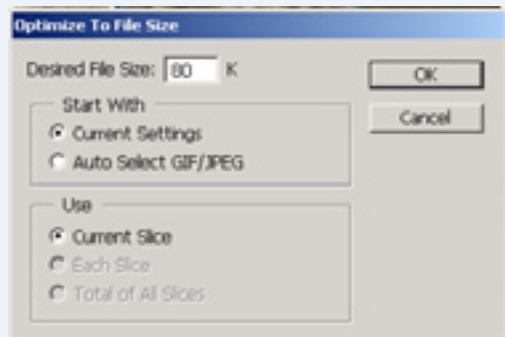


Figure 6

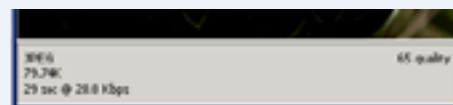


Figure 7

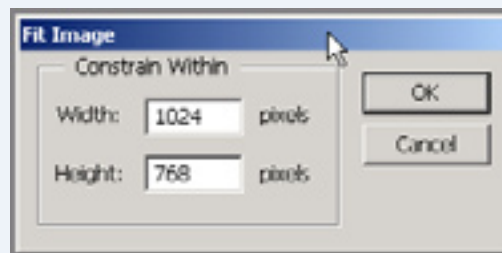


Figure 8