Saving for the Web with Photoshop 5.5

There are two image formats for the Web. They are GIF and JPEG. Using Photoshop's **File > Save for Web** command, you can preview your image in either format and see how long it will take to download over a modem.

The goal of every web designer is to make great images that download quickly. But to get those images to download quickly, you have to sacrifice image quality. The reason this new feature is so exciting is that now you can see in real time what kind of trade off you are making when you sacrifice image quality for download speed.

Choosing between GIF & JPEG
These two formats were created for very different images. Generally graphics should be saved as GIF and photographs as JPEG. If in doubt, simply experiment with the Save for Web command to see which looks best and downloads the quickest.

GIF = Graphics Interchange Format
This format was created for graphics such as logos with more **distinct shifts** in value or hue. It uses a limited palette of **256 colors** or less, known as **Index** mode. By reducing the palette, the image downloads quickly. This format is generally **lossless**.*

JPEG = Joint Photography Experts Group
Designed with photographs in mind, this format was created to optimize images with **continuous tones**. It uses a full palette of **millions of colors**, which is the standard **RGB** mode. To compress the image, this **lossy** format generalizes about the color used in the image and throws out some color data each and every time you save.**

How they compress a file's size
GIF scans an image's pixels horizontally and maps out areas of color that are the same. Imagine the stripes of the American Flag. They are horizontal bands of color with crisp edges demarcating the areas of red and white. That type of a graphic would be easily mapped reducing the amount of information needed to describe each and every pixel. But remember that stripes running vertically would not be mapped as easily as horizontal stripes and hence the file size would be bigger. The same is true of a blend.

smaller   larger   smaller   larger

JPEG looks for areas of color that it can generalize about. If there are a number of blue pixels in an image of some clouds for example, JPEG will group those pixels together and describe them as the same color. It works in a paint by numbers sort of way. As you go down to the lowest quality setting in JPEG, the edges between these areas of colors becomes obvious. Banding appears like terraces on a rice field. Try setting the quality to zero and you will see how the JPEG scheme maps out the areas of color.

Getting the smallest file size
To squeeze a JPEG image, you lower the quality. To squeeze a GIF, you lower the number of colors. Your eye is the best judge as to when the trade off is no longer worth the loss in image quality. You will have to get a feel for download times on your own, but here are a few guidelines... As a rule, average photos should be 20-60K. A larger image should not exceed 100K. Graphics such as buttons should be 1-6K. A page worth of images, should not add up to more than 60K total. Dreamweaver calculates the page download size and displays this info in the lower right hand corner of the document window.

GIF Options in Save for Web
1. Use your eye to choose the appropriate number of colors. For the American Flag you would guess 3 (red, white and blue). If that looks bad then double the number and see how that looks. Keep adjusting until you reach the threshold where you can see a noticeable difference.
2. Adaptive palette (uses the colors in your image).
3. Diffusion for a dither option and a dither amount that looks good. Diffusion dither allows Photoshop to approximate a color not in the palette by using two adjacent colors that can fool the eye and smooth possible banding. This adds "noise" to the image by scattering different color pixels around the image, but often makes the image look much better. First choice would be no dither, otherwise use as needed.
4. Interlacing makes an image slowly come into focus as it downloads - only needed for large images.

JPEG Options in Save for Web
1. Use a quality setting of Low to Medium (30% to 60%). Progressive is like Interlace in #4 above.

Image Size
Always design with a target monitor in mind. A Windows 98 PC monitor runs at 800 pixels wide x 600 high. The browser window with all of it's buttons and scroll bars eats up a good part of those dimensions. To make sure that someone can see an image without scrolling, it should be around 750 x 400 for a PC, 650 by 440 for an iMac, etc. If you want to go even bigger, make a link to a larger image so that people with larger monitors can choose to look at a larger image. In the Save For Web window you can click on the **Image Size Tab** to resample the image.

* GIF footnotes: If you want to work on an image that has been saved as a GIF and you want to do more than just paint out a few pixels, you will have to switch modes from **Index** to **RGB**. You will notice in the swatches palette of a GIF that the colors are limited and not a full range like that of an RGB image. Also your Photoshop filters will be greyed out and if you add any text, it will look jagged since antialiasing will be off. Switch to RGB using **Image > Mode > RGB**, make your edits and then Save for Web will switch it back to Index mode for you.

Saving an image as a GIF is lossless if your image originally contains less than 256 colors and if you choose a palette that conforms to the colors used in your image. However, if you save an RGB scan (millions of colors) as GIF, you will be throwing out color data. Note: Photoshop also has a new feature that allows you to add lossy compression to further compress the image when using the Save for Web command.

JPEG footnotes: Be sure to work in a lossless format such as Photoshop or TIFF until you are finished editing and then **save a copy using the Save for Web command. Then if you need to go back and edit again, you will have a clean uncompressed copy available in your original.

For more information:
WebMonkey.com: **http://hotwired.lycos.com/webmonkey/geektalk/97/30/index3a.html** GIF vs. JPEG
C/Net.com: **http://www.builder.com/Graphics/Photoshop55Tips/ss01.html** Save for Web
Bandwidth Conservation Society: **http://www.infohiway.com/faster/index.html** look for the link to GIF Tricks and JPEG comparisons (info is a bit dated, but still offers an excellent explanation)
GifWizard.com: **http://www.gifwizard.com/**