Optimizing GIF images for the web with PhotoGIF™

GIF files use a lossless compression method called LZW that is an efficient general purpose compression algorithm. Image data is encoded a scan line at a time and LZW compression efficiency is closely related to the amount of linear change in the scan lines of the image being compressed.

Dithering, a common technique to improve the quality of indexed color images, adds entropy, or change, that makes the LZW compression used by GIF less efficient. Dithered images will generally compress as well as non-dithered images. The custom palette color reduction in PhotoGIF™ does not use traditional dithering techniques, it uses a variable intensity selective dithering method that minimizes the entropy added to the image by dithering and thus improves compressibility as much as possible while still ensuring satisfactory visual quality.

Aside from dithering and the entropy it causes that adversely affects the compressibility of image data, the biggest factor effecting image size is resolution, or bit-depth of the image. The lower the bit-depth and fewer number of colors used in an image, the smaller it will compress as a GIF file. PhotoGIF™ has superior custom and fixed palette color reduction that allows you to achieve acceptable visual results, while using fewer colors in images. This capability will allow you to create smaller GIF files that download and display faster.

In addition PhotoGIF™ has optimization features that automatically find and remove redundant colors in the palette from the image being saved. This can result in unwanted quality loss for images with smooth gradients but for most images the effects are not visually apparent, while the effects on file size are significant.

Beyond the capability built into PhotoGIF™, GIF images can be optimized by hand to improve their compressibility. This is not a fast process but it is an easy one that can make a very large difference in file size at times. By manually removing areas of horizontal change in the scan lines of an image to be saved as GIF files, you can make a very noticeable difference in file size with no question of image quality.