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What are graphic formats? What's the difference between them, and how do you know which one to choose when saving an image? JPG, TIFF, EPS, PDF, GIF and PNG, are some common extensions at the end of a file name that represent how a digital image is encoded. Compression schemes found in each format offer key features that affect the efficiency of a file and sometimes even how an image appears.

There are essentially two types of compression schemes: lossless and lossy. Lossless compression algorithms preserve all of the binary information. When the image is saved and then reopened, there is no loss of image quality. Lossy compression algorithms, while efficiently reducing file size, may compromise image quality.

Here are descriptions of the most common graphic formats that are likely to be encountered in a normal graphics environment and when you might consider choosing them.

- **JPEG (Joint Photographic Experts Group)—** JPEGs efficiently compress images while allowing a choice of quality. JPEG can also be expressed as the three digit extension JPG, depending on the platform. JPEG stores information as 24 bit color. At its highest quality it produces no compression, but the degree of compression is adjustable. JPEGs are useful for archiving flattened images to read-only media. However, when they are opened, altered and saved, they can deteriorate with each saved version.

- **TIFF (Tagged Image File Format)—**This universal format can be lossless or lossy. Usually TIFFs are saved either without compression or in a lossless scheme called LZW (Lempel Ziv Welsch) that applies limited compression. TIFF is among the best quality output from digital cameras and for large-format prints. TIFF can also be used as a work-in-progress storage format because it supports most of Photoshop's features.

- **EPS (Encapsulated Postscript)—**These files are more or less self-contained, PostScript documents that describe an image or drawing and can be placed within another document generated by a postscript compatible program like Adobe Illustrator or InDesign. At minimum, an EPS file contains a bounding box that contains the image described by the EPS encoding.

- **PDF (Portable Document Format)—**PDF is a universal format for document exchange that is used to represent the appearance of a document independent of the software in which it was created regardless, of platform. A PDF file renders a complete description of a fixed-layout, flattened document, including the text, fonts, graphics, pictures and other information needed to display it.

- **GIF (Graphics Interchange Format)—**GIF images use a color look up table (CLUT) to distill the 16,777,216 colors of the original image into an image containing a maximum of 256 colors. Sometimes GIF applies the closest color in the CLUT to represent each pixel, and sometimes it uses dithering to adjust color of adjacent pixels to better simulate blended colors. GIF format also supports animation. An image with a sequence of layers can be converted to GIF to produce a simple animation for web publications.

- **PNG (Portable Network Graphic)—**This relatively new format is lossless and maintains quality with limited compression. PNG finds recurring patterns in an image that it can use to compress file size. It uses a lossless two-stage compression scheme known as Deflate. PNG was originally created to improve upon and replace GIF as an image-file format. PNG supports palette-based images with palettes of 24-bit or 32-bit RGB colors and grayscale images. PNG is used as a web format or a screen capture format and not for professional-quality print graphics, as it does not support non-RGB color spaces such as CMYK.
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