

A Guide to Understanding Image Formats

If you've ever worked with photo-editing software, you're probably aware of the numerous file formats for saving digital images, ranging from JPG to GIF to TIFF. Some formats are proprietary to specific software, while others can be used across programs and platforms. There are several factors to consider when selecting an image format, such as how the image will be used (prints, slideshow presentation, Web) or whether or not you will need to continue editing the image later.

Saving Images

When you click on an image to view it, a photo-editing program that came installed on your computer such as Windows Picture and Fax Viewer or Apple Preview may open it. If you have a digital camera or scanner, the software that came with your device may open your image. Or you may use Adobe's higher end tools such as Photoshop or Illustrator. The images that your digital camera produces are most likely JPEGs, however when you download an image from the Web, it can be in a variety of formats. If you wish to change the format of an image, click **Save As** in the image-editing program that you are using. Before changing the file type, keep in mind how you plan to use the image. Follow the guide below to help you choose the best file format for your image.

Common Image Formats

BMP

An older format typically used for graphic elements on Microsoft applications such as Microsoft Word, PowerPoint, Paint, etc.. BMP files are uncompressed, meaning they can create extremely large files that will clog up your hard drive. Generally, it's best to avoid using BMP format file. **Note:** To reduce the file size of your Microsoft Word or PowerPoint document, it's best to use the **Insert Picture** feature, instead of copy and paste.

EPS (Encapsulated PostScript)

EPS files are generally used by professional printers (i.e. newspapers, publishers, etc.). The EPS format is especially useful when printing graphics and other files that do not contain a lot of photographs. Unless you're formatting your work in a design platform (i.e. Quark XPress or InDesign) you're probably better off using a more versatile format.

GIF (Graphics Interchange Format)

Typically a Web-based format, GIF allows images with fewer than 256 colors and little pixel information to be displayed at a higher quality. It's ideal for graphic images with few colors such as logos or Web page navigation icons that you want to place on the Web.

JPG/JPEG (Joint Photographic Expert Group)

JPGs are a commonly used format for photographic images (most digital cameras output JPG images). Compression rates for JPGs are adjustable; JPGs that are moderately compressed lose very little quality from the original image. JPG images also have a 24-bit color scheme, which enables subtleties in complex images to be displayed. JPGs are very versatile and can be used for print (i.e. photo prints, desktop publishing) and Web-based applications.

PICT

This format is only supported on Apple Macintosh computers and is typically used for Macintosh software development. It's best to avoid the PICT format for desktop publishing and other everyday uses.

PDF (Portable Document Format)

PDFs are generally used to maintain both textual and graphic information such as a newsletter or brochure. PDFs are a standard for making such materials available on the Web for download.

PNG

This format was developed to replace the older GIF format for use on the Web. However, unlike a GIF formatted file, PNG allows for a wider range of color use.

PSD (Photoshop Document)

This format is used to save Photoshop projects midway through completion. It is especially helpful with multi-image or multi-layer projects that you have not completed or may want to return to edit later. Do not use this format to save an image you wish to use outside of Photoshop.

RAW

This format contains all the image data collected by a digital camera. RAW files are uncompressed and very large. This format is used by many photographers to capture camera settings.

TIFF (Tagged Image File Format)

Generally used for print images, the TIFF format allows varying degrees of compression and a 24-bit color scheme. Because it allows for a completely uncompressed file, it is most often used for professional printing of high-resolution images.

Format	Optimal Use	Color Quality	Versatility
BMP	PowerPoint, Paint, MS Word, Microsoft application development	Varies	Low
EPS	Professional printing	Varies	Low
GIF	Basic Web images	Low	Low
JPG	Photos, professional printing, desktop publishing, high quality images for the Web	Varies	High
PICT	Macintosh application development	Low	Very Low
PDF	Making documents available on the Web	Varies	High
PNG	More complex Web images	Mid	Mid
PSD	Saving complex images for further editing	Varies	Low
RAW	Photography	High	Low
TIFF	High-quality prints	Varies	High

Compression

If you intend to email an image or post it to the Web, it's a good idea to reduce to the file size for accessibility purposes. Here are links to Loyola's Tech Tips that provide information on free photo-editing software solutions and steps for resizing images.

Free Photo Editing Tools:

http://www.luc.edu/its/pdfs/Ttips-2007-07-27_Free_Photo_Editing_Tools.pdf

Resizing Photos and Making Banners with Paint.NET:

http://www.luc.edu/its/pdfs/Ttips-2007-09-07_Resizing_Photos_Banners.pdf

Resize your Digital Photos in Windows XP:

http://www.luc.edu/its/pdfs/Ttips-2007-08-03_Resizing_Photos_XP.pdf