

PHOTOSHOP FILE FORMATS

Photoshop File Formats

This document contains information on the most common file formats available from Photoshop 7. Use this guide to help you choose the best file format for your working and final images.

Photoshop

Photoshop format (.psd) is the default file format and the only format that supports all of Photoshop's features. When saving a file for use in a previous version of Photoshop (or ImageReady) you can set a preference to maximize file compatibility with previous versions of Photoshop and with other applications. To do this, choose Photoshop > Preferences > File Handling (In Mac OS 9.x, choose Edit > Preferences > File Handling) and select **Always Maximize Compatibility** for Photoshop Files. If you edit or save an image using an earlier version, Photoshop 7's unsupported features are discarded. Keep in mind the following features when working with earlier versions of Photoshop:

- **Photoshop 7.0** introduces the Linear Burn, Linear Dodge, Vivid Light, Linear Light, and Pin Light blending modes and the Layer Mask Hides Effect and Vector Mask Hides Effect advanced blending options.
- **Photoshop 6.0** introduced layer sets, layer color coding, layer clipping paths, fill layers, layer styles, editable type, and advanced type formatting. Photoshop 6.0 also added new layer effects.
- **Photoshop 5.0** introduced layer effects; however, effects added in later versions of Photoshop are not supported. Photoshop 5.0 also introduced color samplers, spot channels, and embedded ICC profiles.
- **Photoshop 4.0** introduced adjustment layers and guides.

The native .psd file type is the preferred working file format, and the preferred archiving file format where you wish to retain the maximum flexibility and editability with your images.

If you are using multiple versions of Photoshop, it may be wise to save a "master" version in 7, then a copy for use in an older version.

BMP

BMP is a standard Windows image format for DOS and Windows-compatible computers. BMP format supports RGB, Indexed Color, Grayscale, and Bitmap color modes. You can specify either Windows or OS/2[®] format and a bit depth for the image. For 4-bit and 8-bit images using Windows format, you can also specify RLE compression.

Create BMP files for use in Microsoft Office (Word, PowerPoint) applications if you do not know what version someone is using.

CompuServe GIF

The Graphics Interchange Format is the file format commonly used to display indexed-color graphics and images in HTML documents over the web. GIF is an LZW-compressed format designed to minimize file size and download time. GIF format preserves transparency in indexed-color images; however, it does not support alpha channels. GIF also supports animation.

GIFs work well for images with large areas of flat color, such as logos. GIFs are not recommended for photographic images.

Photoshop EPS

Encapsulated PostScript (EPS) language file format can contain both vector and bitmap graphics and is supported by virtually all graphic, illustration, and page-layout programs. The EPS format is used to transfer PostScript-language artwork between applications. When you open an EPS file containing vector graphics, Photoshop rasterizes the image, converting the vector graphics to pixels. EPS format supports Lab, CMYK, RGB, Indexed Color, Duotone, Grayscale, and Bitmap color modes, but does not support alpha channels. EPS supports clipping

Use Photoshop's EPS format if you want to maintain a clipping path when using an image in Quark XPress, Adobe PageMaker, or other page layout applications.

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Photoshop EPS (continued)

paths. To print EPS files, you must use a PostScript printer. Keep in mind that there is a difference between pure vector EPS files (which can be created from applications such as Adobe Illustrator, Macromedia Freehand, and Corel Draw) and EPS files created in Photoshop. Photoshop's EPS files are raster, not vector images, and consequently, the file sizes are much larger.

Photoshop EPS files are primarily used in the graphic design and commercial printing industry.

JPEG

Joint Photographic Experts Group (JPEG) format is commonly used to display photographs and other continuous-tone images in HTML and on the web. JPEG format supports CMYK, RGB, and Grayscale color modes, and does not support alpha channels. Unlike GIF format, JPEG retains all color information in an RGB image but compresses file size by selectively discarding data. A higher level of compression results in lower image quality, and a lower level of compression results in better image quality. In most cases, Photoshop's Maximum quality option produces a result indistinguishable from the original, however, artifacts may begin to appear in solid-colored areas of an image.

Avoid re-saving files as JPEGs. Because of the compression (even in the smallest amounts) that takes place, this format should be the final stop for an image, not a working format.

PCX

PCX format is commonly used by IBM PC-compatible computers. PCX format supports RGB, Indexed Color, Grayscale, and Bitmap color modes, and does not support alpha channels. PCX supports the RLE compression method. Images can have a bit depth of 1, 4, 8, or 24.

PDF

Portable Document Format (PDF) is a flexible, cross-platform, cross-application file format. Based on PostScript, PDF files accurately display and preserve fonts, page layouts, and both vector and bitmap graphics. In addition, PDF files can contain electronic document search and navigation features such as electronic links. Photoshop and ImageReady recognize two types of PDF files: **Photoshop PDF** files and **Generic PDF** files. You can open both types of PDFs in Photoshop; however, you can only save images in the Photoshop PDF format.

Photoshop PDFs support annotations and are very useful for collecting comments and edits to a document.

Photoshop PDF files are created using the Photoshop Save As command. Photoshop PDF files can contain only a single image. Photoshop PDF format supports all of the color modes and features that are supported in standard Photoshop format.

Although Generic PDFs can be created in a variety of ways, your best bet is a full version of Adobe's Acrobat (version 5 or earlier) or one of the new versions (version 6 has different offerings for different uses.)

Generic PDF files are created using applications other than Photoshop, such as Adobe Acrobat and Adobe Illustrator, and can contain multiple pages and images. When you open a Generic PDF file, Photoshop rasterizes the image.

Photoshop 2.0

You can use this format to open an image in version 2.0 or to export an image to an application supporting only Photoshop 2.0 files. Saving in Photoshop 2.0 format flattens your image and discards layer information.

It is unlikely that you will find a need for this format, but it is there.

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PICT

The PICT format is widely used among Mac OS graphics and page-layout applications as an intermediary file format for transferring images between applications. PICT format supports RGB images with a single alpha channel, and indexed-color, grayscale, and Bitmap-mode images without alpha channels.

PICT Resource is a PICT file contained in a Mac OS file's resource fork. For example, an application's splash screen or the contents of the Scrapbook. PICT Resource format supports RGB images with a single alpha channel, and indexed-color, grayscale, and Bitmap-mode images without alpha channels. You can use the Import command or the Open command to open a PICT resource. When saving a file as a PICT resource, you can specify the resource ID and resource name.

Screen captures in OS 9.x and earlier are saved as PICT files. (OS X uses the PDF format.) There is not really any use for them in image retouching or on the web, and their Mac-only status limits their overall usefulness.

Pixar

The Pixar format is designed specifically for high-end graphics applications, such as those used for rendering three-dimensional images and animation. Pixar format supports RGB and grayscale images with a single alpha channel.

PNG

Developed as a patent-free alternative to GIF, Portable Network Graphics (PNG) format is used for lossless compression and for display of images on the web. Unlike GIF, PNG supports 24-bit images and produces background transparency without jagged edges; however, some browsers do not support PNG images. PNG format supports RGB, indexed-color, grayscale, and Bitmap-mode images without alpha channels. PNG preserves transparency in grayscale and RGB images.

PNG is a useful alternative to GIF or JPEG for the web and presentations. Usage will depend on file size (use Photoshop's "Save for Web" feature) and compatibility with applications.

Raw (Photoshop)

Raw format is a flexible file format for transferring images between applications and computer platforms. This format supports CMYK, RGB, and grayscale images with alpha channels, and multichannel and Lab images without alpha channels. Raw format consists of a stream of bytes describing the color information in the image. Each pixel is described in binary format, with 0 representing black and 255 white (for images with 16-bit channels, the white value is 65535). Raw images are becoming increasingly common in professional and "prosumer" level digital cameras. Adobe has recently released a Photoshop Camera Raw plug-in which provides fast and easy access within Photoshop to the proprietary "raw" image formats produced by many leading professional and midrange digital cameras.

Scitex CT

Scitex Continuous Tone (CT) format is used for high-end image processing on Scitex computers. This format supports CMYK, RGB, and grayscale images but does not support alpha channels. Scitex CT files are generated using a Scitex scanner and often have extremely large file sizes. These CMYK images saved in Scitex CT format are printed to film using a Scitex rasterizing unit, which produces separations using a patented Scitex halftoning system. This system produces very few moiré patterns and is often demanded in high-end professional color work.

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Targa

TGA (Targa®) format is designed for systems using the Truevision® video board and is commonly supported by MS-DOS color applications. Targa format supports 16-bit RGB images, 24-bit RGB images, and 32-bit RGB images. Targa format also supports indexed-color and grayscale images without alpha channels. When saving an RGB image in this format, you can choose a pixel depth and select RLE encoding to compress the image.

TIFF

Tagged-Image File Format (TIFF) is used to exchange files between applications and computer platforms. TIFF is a flexible bitmap image format supported by virtually all paint, image-editing, and page-layout applications. Also, virtually all desktop scanners can produce TIFF images. TIFF format supports CMYK, RGB, Lab, indexed-color, and grayscale images with alpha channels and Bitmap-mode images without alpha channels. Photoshop can save layers in a TIFF file; however, if you open the file in another application, only the flattened image is visible. Photoshop can also save annotations, transparency, and multiresolution pyramid data in TIFF. Many file formats use compression to reduce the file size of bitmap images. Lossless techniques compress the file without removing image detail or color information; lossy techniques remove detail.

TIFF is one of most useful and widely-used formats for the final image, as it can be imported into many other applications. For maximum compatibility, do not save with layers or compression or the image may not be able to be opened by other applications. If you wish to preserve these features save your document in the Photoshop (.psd) format.

Photoshop DCS 1.0 and 2.0

The Photoshop Desktop Color Separations (DCS) format, a version of the standard EPS format, lets you save color separations of CMYK images. Use DCS 2.0 format to export images containing spot channels. This format generates a master “composite” file, and a file for each channel used, so a CMYK image with a spot color would result in six files being created. These must remain intact or your whole image is lost. To print DCS files, you must use a PostScript printer.

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Compression Information

Many compression methods have mentioned in discussing the various file formats. While it is often better to not use any compression, sometimes it is quite acceptable and beneficial. The following is a breakdown of some commonly used compression techniques mentioned in the file format discussion.

RLE (Run Length Encoding)

Lossless compression; supported by some common Windows file formats.

LZW (Lemple-Zif-Welch)

Lossless compression; supported by TIFF, PDF, GIF, and PostScript language file formats. Most useful for images with large areas of single color.

JPEG (Joint Photographic Experts Group)

Lossy compression; supported by JPEG, TIFF, PDF, and PostScript language file formats. Recommended for continuous-tone images, such as photographs. To specify image quality, choose an option from the Quality menu, drag the Quality pop-up slider, or enter a value between 0 and 13 in the Quality text box. For the best printed results, choose maximum-quality compression. JPEG files can be printed only on Level 2 (or later) PostScript printers and may not separate into individual plates.

CCITT

A family of lossless compression techniques for black-and-white images; supported by the PDF and PostScript language file formats. (CCITT is an abbreviation for the French spelling of International Telegraph and Telekeyed Consultive Committee.)

ZIP

Lossless compression; supported by PDF and TIFF file formats. Like LZW, ZIP compression is most effective for images that contain large areas of single color.

PackBits (ImageReady)

Lossless compression that uses a run-length compression scheme; supported by the TIFF file format in ImageReady only.

For more information...

Visit the Photoshop Help files accessible from within Photoshop.