

# Guide to File Formats



# Raster File Format

## JPG/JPEG (Joint Photographic Experts Group)

JPEG is a widely used compression format for photographs and images with complex color gradients. It is a lossy compression format, which means that some image information is discarded during compression to reduce file size.

**BEST USE:** Suitable for photographs and images where a certain amount of loss in image quality is acceptable. It is commonly used on the web and in digital photography.

## PNG (Portable Network Graphics)

PNG is a lossless compression format that supports transparency and a wide range of colors. Unlike JPEG, PNG retains all the image information without loss of quality during compression.

**BEST USE:** Ideal for images with transparency, such as logos and icons, and for images where preserving the highest quality is important.

## GIF (Graphics Interchange Format)

GIF is a compressed format that supports animation and a limited color palette (256 colors). It uses lossless compression, making it suitable for simple graphics, logos, and images with areas of uniform color.

**BEST USE:** Commonly used for simple animations, logos, and graphics with a limited color palette. It is widely supported on the web.

## BMP (Bitmap)

BMP is an uncompressed raster image format that stores color data for each pixel without any compression. As a result, BMP files are often large.

**BEST USE:** Suitable for situations where high-quality images are needed without compression, but it is less commonly used due to its larger file sizes.

## TIF/TIFF (Tagged Image File Format)

TIFF supports lossless compression and is often used for high-quality images and professional photography. It can also store multiple layers and is suitable for print and archival purposes.

**BEST USE:** Ideal for professional photography, print graphics, and situations where high-quality and lossless compression are essential.



*A raster file, also known as a bitmap or pixel-based image, is a type of digital image file format that stores data as a grid of individual pixels. Each pixel contains information about its color and location in the image. Raster files are commonly used for photographs, digital artwork, and other detailed graphics.*



# Vector File Format

## SVG (Scalable Vector Graphics)

SVG is an XML-based vector image format designed for the web. It supports interactivity and animation and is widely used for web graphics, icons, and scalable images on websites.

**BEST USE:** Ideal for web graphics, logos, and icons. It can be easily edited with a text editor and is supported by most web browsers.

## AI (Adobe Illustrator)

AI is the native file format for Adobe Illustrator, a popular vector graphics editor. It can store vector graphics, including paths, shapes, and text, as well as raster images.

**BEST USE:** Primary use is for illustrations, logos, and designs created in Adobe Illustrator. It may also include embedded raster images.

## EPS (Encapsulated PostScript)

EPS is a versatile vector file format that can contain both vector and raster elements. It is commonly used in print design and desktop publishing.

**BEST USE:** Suitable for logos, illustrations, and other graphics that need to be reproduced at high quality in print media.

## PDF (Portable Document Format)

While PDF is known for its document format, it can also contain vector graphics. PDFs can include text, images, and vector elements, making them suitable for a wide range of applications.

**BEST USE:** Used for documents, presentations, and graphics that need to be shared and printed with consistent formatting.



*A vector file is a type of digital image that uses mathematical equations to represent shapes, lines, and colors. Unlike raster files, which are pixel-based, vector files are resolution-independent and can be scaled infinitely without losing quality. Vector graphics are commonly used for logos, illustrations, fonts, and other graphics where scalability and precision are crucial.*



# Understanding DPI

## Printing:

### PRINT QUALITY:

In printing, a higher DPI indicates a greater level of detail and sharpness in the printed image. More dots per inch mean that the printer can reproduce finer details, resulting in a higher-quality print.

### PHOTOGRAPHIC DETAIL:

For detailed photographs and images, a higher DPI is generally preferred to ensure that the printed output accurately represents the original.

## Digital Display:

### SCREEN RESOLUTION:

In the context of digital displays (such as computer monitors, smartphones, and TVs), DPI is often referred to as PPI (Pixels Per Inch). Higher PPI values on a display generally result in crisper and clearer images.

### VISUAL CLARITY:

A higher PPI is particularly important for tasks that involve detailed graphics or fine text, as it ensures that individual pixels are not easily discernible, leading to a smoother and more visually pleasing display.

## Scanning and Image Capture:

### SCANNING RESOLUTION:

When scanning images or documents, the DPI setting determines the level of detail captured. Higher DPI settings during scanning result in larger files, but they also provide more information for detailed reproduction.

### GRAPHIC DESIGN:

For graphic design work, a higher DPI setting is often used to ensure that images are captured with enough detail for professional-quality prints.

*It's important to note that while higher DPI/PPI generally correlates with better quality, there are practical limits. For instance, the human eye may not discern improvements beyond a certain point, and very high DPI settings can lead to significantly larger file sizes, which may not always be necessary.*





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