

Image File Format

(from Wikipedia)

Format Types:

- Raster formats (eg. BMP, JPEG/JPG, GIF, PNG, TIFF)
- Vector formats (eg. SVG)

File Compression:

- Uncompressed (eg. BMP)
- Lossless compression (eg. GIF, PNG)
- Lossy compression (eg. JPEG/JPG)

File formats suitable for Web Pages:

- JPEG/JPG
- GIF
- PNG

Popular file formats:

JPEG/JPG (Joint Photographic Experts Group):

- Uses lossy compression
- Amount of compression can be varied based on the required application type
- Compressed images are stored in JFIF (JPEG File Interchange Format) file format Supports 8-bit grayscale, and 24-bit (8-bit per channel) color images
- Can produce very small files
- A very popular file format for photographic images

GIF (Graphics Interchange Format):

- Supports only 256 colors (8-bit palette)
- Uses lossless compression
- Supports animation capabilities
- Supports transparency
- Mostly suited for diagrams, cartoons, logos etc.

PNG (Portable Network Graphics):

- Free and Open Source format
- Supports 256 colors (8-bit palette), 24-bit color (16 million colors), and 48-bit colors, with or without transparency
- Uses lossless compression
- Animated formats derived from PNG are MNG and APNG
- Suitable for high quality illustrations, and as an intermediate format for editing photographs

TIFF (Tagged Image File Format):

- Designed to be easily extendable
- Can use either lossy or lossless compression
- Very popular in the professional printing business
- Can handle device specific color spaces (eg. CMYK)

Real-life Photographic Image Comparison

Selected sample image:



All the images uses 8-bit color depth for comaprison purpose. The JPG file has 90% compression, and the PNG file uses maximum comression.

For image resolution: **4946x3278**

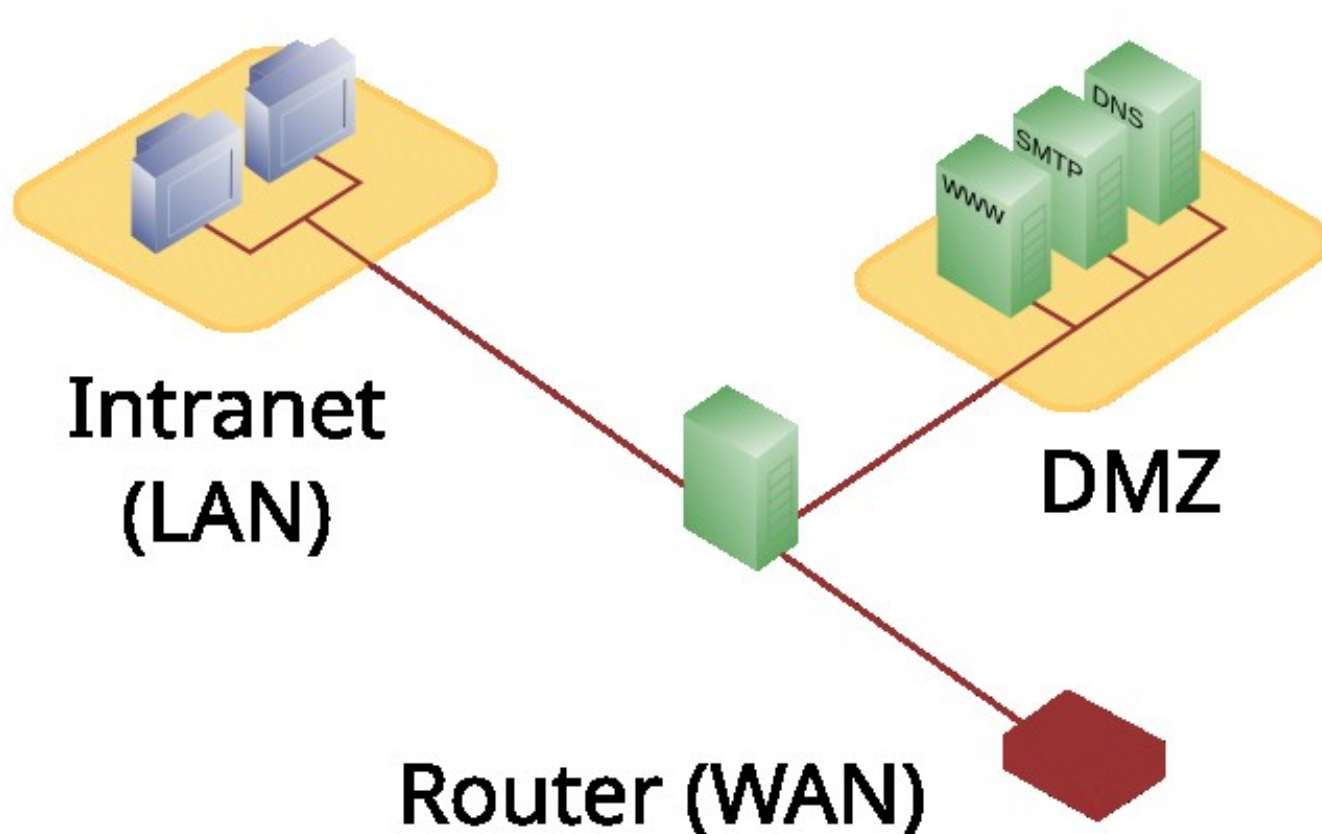
Image Format	Size
TIFF	15.3 MB
PNG	13.2 MB
GIF	3.9 MB
JPEG	1.2 MB

For image resolution: **905x600**

Image Format	Size
TIFF	508.0 kB
PNG	501.3 kB
GIF	152.6 kB
JPEG	98.0 kB

Diagram Image Comparison

Selected sample image:



Following images are converted from a SVG file, downloaded from Wikipedia. The compression settings are same as in the photographic image types.

Image resolution: **640x401**

Image Format	Size
TIFF	51.8 kB
PNG	49.4 kB
JPEG	40.8 kB
GIF	25.2 kB