

# Multimedia File Formats Guide

## Images

A single still video image, whether created by a drawing or paint program or scanned from a book or grabbed with a video camera, can be stored in any of a wide variety of file formats. The data will be stored in a raster or a vector file format. A raster image is one composed of a field of pixels, each characterized by a color, and is usually created in paint programs, by scanning a picture or by grabbing an image. A vector format is created almost always by a drawing/CAD program and consists not of pixels, but objects such as curves, shades, and characters.

Raster formats can be generally separated into two categories. Lossy formats lose resolution (sharpness) when converted to, while lossless formats preserve image information. For example, when converting from a GIF (lossless) to a JPEG (lossy), some information is lost. However, lossy formats tend to be much smaller than their lossless counterparts, and for most photographic images, there will be almost no subjective difference.

The following list of image file formats is not inclusive, but describes the formats that comprise the majority of files encountered on the Internet. All of the following formats are raster formats unless otherwise stated.

### **.gif**

GIF, which stands for Graphics Interchange Format, is a graphics file format originally popularized by Compuserve. GIF files are encoded, 256 color (8-bit) images which use a lossless compression technique and can be opened by almost all graphics programs including xv, Lview, and Photoshop.

### **.jpg, .jpeg, .jif**

JPEG stands for Joint Photographics Experts Group. JPG (more accurately JFIF) files are true color (16.7 million colors, or 24-bit) images that are compressed using a lossy compression algorithm called JPEG. This means that files may degrade in quality when they are JPEG encoded. However, this degradation is not noticeable for most scanned photographs and images with smoothly colored areas. Do not use JPEG encoding on line art or cartoon images. JPEG files are significantly smaller than most other formats and can be opened and saved with many graphics programs on all platforms.

### **.ps, .eps, .epsi**

Postscript (PS), Encapsulated Postscript (EPS), and Encapsulated Postscript with preview image (EPSI) are all *vector* graphics file formats. They are mainly used to store printed or printable documents and are in widespread use.

### **.pdf**

PDF stands for Portable Document Format and is created by Adobe Acrobat. An Enhancement of the Postscript language, PDF files contain all the same text and page layout information but can include many WWW features such as images, links, and heading references. PDF files can be viewed using Adobe Acrobat software.

### **.tif, .tiff**

TIFF (Tagged Image File Format) files are uncompressed true color images. Most graphics programs allow you to store TIFFs with compression. These files can be opened by many graphics programs including xv, Lview, and Photoshop.

### **.tga**

TGA (Targa) files, like TIFFs, are uncompressed true color (24-bit) images. They can be opened by many graphics programs including xv, Lview, and Photoshop.

### **.pict**

A PICT file is a standard Macintosh image file format and can be either a raster image or a vector image, depending on the program that created it. Most Macintosh applications will open them.

### **.bmp**

BMP files are Windows Bitmap files. They are usually 8-bit color images (256 colors) and can be viewed by many programs including Windows Paintbrush. BMP files can be used as backgrounds for the Windows desktop.

### **.pcx**

A PCX is a Zsoft paint file. PCXs are openable by Windows Paintbrush.

### **.pbm, .ppm, .pgm**

Portable Bitmap, Portable Pixmap, and Portable Graymap are all file formats used by the PBMtools set of Unix graphics utilities. Most commonly used on Unix workstations, they are openable by Photoshop in addition to xv.

### **.psd**

PSD signifies an Adobe Photoshop graphic file. They are openable on Pentium and Macintosh systems by Adobe Photoshop.

### **.cvs**

A CVS is a *vector* graphic file format and is openable by Canvas.

### **.cgm**

A Computer Graphics Metafile, CGM, is also a vector format and can be opened by Canvas and ClarisDraw.

## **.wpg**

WPG are WordPerfect graphics files that can be opened with Lview.

## **.wmf**

WMF files are Windows MetaFiles that can be opened by Canvas.

## **.xpm, .xbm**

X PixMap or X bitmap files are usually small files used in the X Window System.

Different file formats work with different programs, although almost all drawing/paint programs will read and write JPEG, GIF, and TIFF formats. GIF and JPEG formats are popular for FTP and the WWW because they are much smaller than other formats, so more of them can be stored. GIF and JPEG formats are not compressible, so it is generally a waste of effort to run a compression program on them. However, other file formats often compress by large amounts. PICT and TIFF formats work best with wordprocessing and desktop publishing programs like Microsoft Word 6.0 and Adobe Pagemaker 6.0.

## **Movies**

Movies, as they are labelled here, consist of a series of still images, sometimes with embedded audio information, united in such a way as to produce a single playable file. MPEG and QuickTime are the two most commonly encountered movie formats on the Internet.

## **.avi**

AVI is a file format developed by Microsoft and primarily used in Windows. AVIs are compressed movies that can be viewed in Windows environments with Media Player and on Unix workstations with xanim.

## **.flc, .fli**

An FLC is an Autodesk Flick movie and is a raw, uncompressed series of frames. They take up more space than other formats, but the image quality is higher. You can play them within Windows with Media Player.

## **.mov, .MooV, .qt**

Any of these file extensions means that the file is an Apple Quicktime movie. Applications that can view QuickTime video include: Simple Text, WordPerfect, and Microsoft Word. Flattened QuickTime video clips can be viewed on Unix workstations with xanim and on IBM-compatible personal computers with Media Player.

## **.mpg, .mpeg**

MPEG files use the MPEG-1 video compression routine, a universal protocol for creating and displaying time coded data created by the Motion Picture Experts Group. MPEG video clips can be viewed with **mpeg\_play** on Unix workstations, Sparkle on Macintoshes, and MPEG\_PLAY on IBM-compatible personal computers.

## **Sound**

Files containing data used to recreate audio on a computer are called audio files and are also available in many different formats. Similar to image formats, audio files can either store a digital sampling of the sound wave (sound files, like a raster image) or contain a digital encoding of the type, shape, and timing of all the notes used in the composition (music files, like vector images).

## **.au**

An AU is an audio sound file native to Sun workstations. It is playable by wplany on Pentium computers or with Netscape's built-in AU player. .

## **.iff**

An IFF is a sound file playable on Pentium computers with wplany and on Unix workstations with xanim.

## **.mid, .rmi**

MIDI files can be played with the Windows MIDI sequencer. They are music files that conform to the MIDI standard. Play them with Media Player on the Pentium computers, or load them into MusicProse or Finale on a Macintosh.

## **.mod**

A MOD file is a music file format originally from the Commodore Amiga, but which is now popular on IBM-compatible computers.

## **.qt**

A QuickTime movie can contain just sound and no video. Any program that can play QuickTime can play QT sound files.

## **.snd**

An SND is a Macintosh clickable sound format. It is playable on any Macintosh and on Pentium computers with wplany.

### **.voc**

VOC (voice) files were originally popularized by Creative Labs. They are sound files similar to WAV. These files are openable on Pentium computers with wplany.

### **.wav**

WAV (wave) files are Microsoft's native audio sound format. WAV files can include 8-bit or 16-bit sound, in mono or stereo. They can be played on Pentium computers with Media Player and wplany.

Music software packages such as MusicProse and Finale, can also be used to compose music, but they use their own proprietary music formats.

## **Multimedia on the Web**

Once you have the appropriate software, you have to configure your WWW browser to automatically play/display any downloaded multimedia file. This procedure varies by both platform and software, but is somewhat similar.

Helper applications are programs which can stand on their own but are referred to from within a WWW browser to enhance its capability to play/display multimedia file formats. Normally, you must tell your browser which programs to use for which file format encountered. Since Netscape Navigator is the most popular WWW browser for most computer platforms, its method of setting and using helper applications is described below.

Netscape for Macintosh or IBM-compatible computers can be customized to automatically respond to almost any file format encountered. To do this:

- Pull down the Options menu and select Preferences.
- From the selection box at the top of the window that opens, choose Helper Applications.
- Now, find the row corresponding to the multimedia file format you wish to automate with a helper application, and select the radio button corresponding to the action you wish Netscape to take: save, launch helper application, or use Netscape's built-in viewer.
- If you want Netscape to open a helper application, you must click once on Browse and select an appropriate program.