

Moving Picture Electronic Services: Producer's Cheat Sheet: April 2009

File extensions. Those letters at the end of your files explained.

So, you've received an attachment from a colleague containing THE important information you need for your big production. But wait! It won't open! What kind of file is it anyway? Making note of the file extension at the end of the file name can help you find the correct program needed to open it. Below you'll find some common file extensions for documents, multi-media and graphics and where to get the program if needed.

Common File Extensions:

.doc – Microsoft Word Document. Created by Microsoft Word, the most popular word processing program; included with all versions of Microsoft Office; may contain formatted text, images, tables, graphs, charts, page formatting, and print settings.

.pdf – Portable Document Format File. Cross-platform document created by Adobe Acrobat or a program with the Acrobat plug-in; commonly used for e-mail attachments or for saving publications in a standard format for viewing on multiple computers; usually created from another document instead of from scratch. To download the Acrobat Plug-in go to:

<http://get.adobe.com/reader/otherversions/>

.txt – Plain Text File. Standard text document that contains unformatted text; recognized by any text editing or word processing program; can also be processed by most other software programs.

.wpd – WordPerfect Document. Text document created by Corel WordPerfect, a popular word processing application; supports formatted text, tables, forms, and images; saved in a proprietary Corel format, but can be exported to other formats from within WordPerfect.

.ppt – PowerPoint Presentation. Editable slide show created with Microsoft PowerPoint; often used for creating presentations; may include formatted text, bullet points, images, movies, sound effects, and other audio files; often built from one of many templates included with the PowerPoint software.

.xls – Microsoft Excel Spreadsheet. Spreadsheet created by Microsoft Excel, the most widely-used spreadsheet program; stores data in a table with rows and columns; table cells can contain manually entered data or the results computed from the data of other cells; can also be used to create charts and graphs.

.exe – Windows Executable File. DOS or Windows executable program or self-extracting archive; runs when opened; any Windows file that ends in ".exe" should run when double-clicked. "SETUP.EXE" and "INSTALL.EXE" are common installer files included with Windows software.

EXE files will not run in Mac OS X, but can be run using emulation software, such as Parallels Desktop for Mac.

Compressed Files:

When sending large files over email it is often useful to compress them into smaller files that can be uploaded and downloaded faster, and then be un-compressed later. Some common compressed files are as follows:

.zip – Zipped File. File compressed or "zipped" using Zip compression, a common type of compression in which every file in the archive is compressed separately; supported by most file compression/decompression programs. Windows users can create ZIP files using a program such as PKZip or WinZip; Mac OS X users can create ZIP archives by right-clicking a file and selecting "Create Archive of [filename]." To un-zip a file try: <http://www.winzip.com/index.htm> for Windows or <http://my.smithmicro.com/mac/stuffit/index.html> for Macintosh.

.sit - Stuffit Archive File. Compressed file "stuffed" by Smith Micro Stuffit software; common file compression format used on Macintosh systems; originally Mac-only, now cross-platform, meaning SIT files can be created and opened on both Macintosh and Windows platforms. Download it at: <http://my.smithmicro.com/mac/stuffit/index.html>

Multi-Media:

Internet boundaries are ever-expanding and web developers are waist deep in multi-media projects that they are trying to deliver to as many people as possible all over the world. Therefore, developers have created all kinds of graphic, video and audio formats that boast the highest quality without forcing their audience to sit through the download process all day. Before we decipher these formats, it is important to know some basics about compression.

General Compression Terms:

Bitrate, the average amount of data required to store one second of music/video (expressed in kilobits per second, or Kbps). Some codecs like allow files to be encoded at different bitrates. Generally, as bitrate decreases, so does the sound/video quality of the resulting file, as well as the amount of memory required to store it.

Codec A codec is a way of **compressing** and **decompressing** digital files. Each codec uses a slightly different set of algorithms to accomplish this.

Container format A container format is one that holds different kinds of data within its file. Container formats, such as RealAudio (.rm) and TIFF (.tif), are gaining in popularity because of their multimedia applications, as well as their cross-platform compatibility. For example, a single container file can hold chapter information, hyperlinks and subtitles, as well as different kinds of codecs that enable various types of players to read the file.

Lossless data compression As the name implies, lossless compression retains all of the data of the original file as it's converted to a smaller file size. When a lossless file such as a TIFF is opened, algorithms restore all compressed information, creating a duplicate of the source file. Lossless compression is generally preferred for creating high-quality or professional-grade audio and video files where it's important to retain fine detail.

Lossy data compression With this kind of compression, some of the source file's information is discarded to conserve space. When the file is decompressed, this information is reconstructed through algorithms, usually resulting in some loss of sound quality or image detail when compared to the original. Generally, the higher the resolution of the compressing file, the less the degradation. An MP3 file with a resolution of 256 Kbps, for example, tends to sound more like the source file than one made at 64 Kbps.

Variable Bitrate (VBR) Most newer audio and video codecs employ a technology known as variable-bitrate encoding, which allows resulting files to look and sound better while still retaining a compressed, convenient file size. Essentially, VBR encoding assigns more bits to complexly-detailed portions in the original source, and fewer bits to the simpler portions.

Constant-bitrate (CBR) encoding, by contrast, uses about the same amount of memory for simple and complex passages — so the user is more likely to experience audible or visible loss of quality during complex parts, especially with lower-bitrate files.

Common Graphic File Extensions:

.jpg / .jpeg – JPEG Image File. Named after the **J**oint **P**hotographic **E**xperts **G**roup, JPEG is a lossy codec for storing and transferring full-color digital images that's often used to post photography and artwork on the Web. JPEG compression takes advantage of the human eye's inability to see minute color changes, removing portions of data from the original picture file. When creating a JPEG file, varying amounts of compression can be selected, depending on the desired file size and image quality.

A form of this codec known as **Motion JPEG** is used by some digital cameras and camcorders for storing video clips of a relatively small file size. With Motion JPEG, each frame of video is captured separately and reduced in size using JPEG compression.

.gif - Graphic Interchange Format. A format for storing digital images, commonly used for bullets, icons, and other graphics on the Web. The GIF format is limited to 256 colors, so it's not as commonly used as JPEG for storing digital photos. A single GIF file can combine several frames together for basic animated motion.

.tif - TIFF Image File Format. TIFF is a flexible container format for digital still images, commonly used in desktop publishing. TIFF images can incorporate various forms of compression (like JPEG), or can be uncompressed. Some digital cameras offer a special TIFF mode for capturing uncompressed photos; however, these files require many times more storage space than JPEGs,

and can quickly fill up your camera's available memory.

.bmp - Windows Bitmap Image. A standard format used for storing images on Windows-based PCs. BMP images can either be compressed or uncompressed. This type of file also sometimes appears with the ".DIB" extension.

.png – Portable Network Graphic. PNG images may also include an 8-bit transparency channel, which allows the colors in the image to fade from opaque to transparent. GIF images only support fully opaque or fully transparent pixels, whereas PNG images are now supported by most Web browsers.

.ai – Adobe Illustrator File. Vector image file created by Adobe Illustrator; composed of paths, or lines connected by points, instead of bitmap data; may include objects, color, and text; often referred to as an Illustrator drawing.

.psd – Photoshop Document. Document created by Adobe Photoshop, the most commonly used professional image editing program; can include image layers, adjustment layers, layer masks, annotation notes, file information, keywords, and other Photoshop-specific elements.

Video File Extensions:

.qt / .mov - QuickTime is a file format for storing and playing back movies with sound. Though developed and supported primarily by Apple, Inc., this flexible format isn't limited to Macintosh operating systems — it's also commonly used in Windows systems and other types of computing platforms. In Windows, QuickTime files usually appear with the ".MOV" filename extension.
DOWNLOAD QUICKTIME PLAYER FOR FREE AT: <http://www.apple.com/quicktime/download/>

.wmv - Windows Media Video. Microsoft's proprietary lossy compression format for motion video. Windows Media Video is used for both streaming and downloading content via the Internet. Microsoft's Windows Media Player, an application bundled with Windows Vista operating systems, lets you play back and manage a range of audio and video file types, including WMA and WMV.

.avi - Audio/Video Interleaved A file format for storing and playing back movie clips with sound on Windows-based PCs. An AVI file is organized into alternating ("interleaved") chunks of audio and video data. AVI is a container format, meaning that it specifies how the data will be organized, but is not itself a form of audio or video compression.

AVI is the type of file that's created when DV clips are imported from a digital camcorder to a PC. (These clips are often referred to as "DV-AVIs" because they contain full-quality digital video content.)

MPEG MPEG stands for **M**oving **P**icture **E**xperts **G**roup — a committee that sets international standards for the digital encoding of movies and sound. There are several audio/video formats

which bear this group's name. In addition to their popularity on the Internet, several MPEG formats are used with different kinds of A/V gear:

.mp1 - This format is often used in digital cameras and camcorders to capture small, easily transferable video clips. It's also the compression format used to create Video CDs, and commonly used for posting clips on the Internet. The well-known **MP3** audio format (see definition below) is part of the MPEG1 codec.

.mp2 - Commercially produced DVD movies, home-recorded DVD discs, and most digital satellite TV broadcasts employ MPEG2 video compression to deliver their high-quality picture. MPEG2 is also the form of lossy compression used by TiVo-based hard disk video recorders. It can rival the DV format when it comes to picture quality. Because MPEG2 is a "heavier" form of compression that removes a larger portion of the original video signal than DV, however, it's more difficult to edit with precision. The MPEG2 codec allows for selectable amounts of compression to be applied, which is how home DVD recorders and hard disk video recorders can offer a range of recording speeds. MPEG2 is considered a container format.

.mp4 - A flexible MPEG container format used for both streaming and downloadable Web content. It's the video format employed by a growing number of camcorders and cameras.

.swf – Macromedia Flash Movie. Animation created by Adobe Flash (formerly Macromedia Flash); can include text as well as both vector and raster graphics; plays in Web browsers that have the Flash plug-in installed; most Web browsers come with a recent version of the Flash plug-in.

Audio File Extensions:

.mp3 - MPEG1, Audio Layer 3. The most popular codec for storing and transferring music. Though it employs a lossy compression system which removes frequencies judged to be essentially inaudible, MP3 still manages to deliver near-CD sound quality in a file that's only about a tenth or twelfth the size of a corresponding uncompressed WAV file. When creating an MP3 file, you can select varying amounts of compression depending on the desired file size and sound quality.

.wav - WAVE Audio File. A standard audio format for Windows operating systems, often used for storing high-quality, uncompressed sound. WAV files can contain CD-quality (44.1 KHz/16-bit) audio signals. However, CD-quality WAV files require relatively large amounts of memory — roughly 10 MB per minute of music. WAV is a container format.

.wma - Windows Media Audio. Developed by Microsoft, Windows Media Audio is one of today's most pervasive Internet audio formats. Though not as popular as MP3, proponents of lossy WMA claim that it can outperform MP3 in the area of sound quality, particularly with files encoded at lower bitrates such as 64 or 96 Kbps. This performance advantage makes it handy for applications like portable digital audio players, where total play time is limited by a finite amount

of internal memory.

The Windows Media Audio format features built-in copy protection abilities, unlike MP3. Windows Vista, Microsoft's current flagship operating system software, contains native support for WMA encoding, enabling users to create their own WMA music files. Don't have Windows Media Player? DOWNLOAD IT NOW AT:

<http://www.microsoft.com/windows/windowsmedia/player/10/default.aspx>

.rm – RealMedia. One of the most popular formats for streaming content on the Internet, RealMedia includes the **RealAudio** codec for sound clips and **RealVideo** codec for movies. RealAudio and RealVideo files are often given the common RealMedia ".RM" file extension. RealMedia is a container format that's often heavily compressed for streaming over dial-up Internet connections. **RealMedia variable bitrate (RMVB)** has been developed for VBR streaming files.

.aiff - Audio Interchange File Format. An audio format for Macintosh operating systems commonly used for storing uncompressed, CD-quality sound (similar to WAV files for Windows-based PCs). AIFF is considered a lossless container format.

.au – Audio File. An audio format commonly used for posting sound clips on the Internet. AU files can be played back on Windows, Macintosh, and other operating systems.

.midi - Musical Instrument Digital Interface. A MIDI file doesn't contain actual audio data, but rather contains commands that let MIDI-capable synthesizers re-create a specific musical passage. The MIDI protocol has been used for years as a way for electronic musical instruments (like digital keyboards and sequencers) to communicate with each other.

Computer sound cards typically feature the ability to interpret MIDI files into music. Since they don't actually contain the music itself, but rather the commands used to re-create music, MIDI files are a lot smaller than audio files like MP3s, WMAs, or WAVs. MIDI files are small and manageable enough that it's not uncommon to find them embedded in web pages, adding a sonic element to the surfing experience. They usually appear with the ".MID" filename extension.

For more information about file extensions go to: <http://www.fileinfo.com/common.php> where you can find a comprehensive searchable database of all file extensions and their associated programs.