

## File formats

- *.aa* files purchased from outside sources such as Audible.com website for a monthly usually end in ".aa." literally stands for audible audio and usually refers to an audio book
- *ape* - the *.ape* file format from Monkey's Audio is claimed to give about 50% compression without loss in audio quality.
- *atrac* (*.oma*, *.omg*, *.atp*) - the newer style Sony proprietary format designed for minidisc use. It always has a *.oma*, *.omg* or *.atp* file extension. It is similar to mp3 and probably only useful if you are reading files from minidisks or writing for minidisks. (Adaptive Trans-form Acoustic Coding) - Sony's, used in MiniDiscs, DATs (digital audio tapes), SDDS theater sound, and Sony's MP3 players.
- *atrac* (*.wav*) - the older style Sony ATRAC format. It always has a *.wav* file extension. To open these files simply install the ATRAC3 drivers.
- *au* - the standard audio file format used by Sun, Unix and Java. The audio in *au* files can be PCM or compressed with the *ulaw*, *alaw* or *G729* codecs.
- *aac* - the Advanced Audio Coding format (*aac*) is a particular codec, or encoding scheme. It is used in Apple iPods and iPods by Hewlett Packard. based on the MPEG4 audio standard owned by Dolby. A copy-protected version of this format has been developed by Apple for use in music downloaded from their iTunes Music Store.
- *aiff* - the standard audio file format used by Apple. It is like a *wav* file for the Mac.
- *cda* - file format of music on a music CD
- *dss* - Digital Speech Standard files are an Olympus proprietary format. It is a fairly old and poor codec. Prefer *gsm* or *mp3* where the recorder allows.
- *dvf* - a Sony proprietary format for compressed voice files; commonly used by Sony dictation recorders. You might need a Sony plugin to load this.
- *dct* - A variable codec format designed for dictation. It has dictation header information and can be encrypted (often required by medical confidentiality laws).
- *flac* - a lossless compression codec. You can think of lossless compression as like *zip*, but for audio. If you compress a PCM file to *flac* and then restore it again it will be a perfect copy of the original. other codecs are lossy which means a small part of the quality is lost). The cost of this losslessness is that the compression ratio is not good.
- *gsm* - designed for telephony use in Europe, *gsm* is a very practical format for telephone quality voice. It makes a good compromise between file size and quality. This format is recommended for voice - *wav* files can also be encoded with the *gsm* codec.
- *midi* - not an audio file format really - it is a list of musical notes which a synthesizer can play.
- **MP3** - data compression technique - drastically reduces the size of the original CD music files - this data-reduction amount is variable - a higher reduction rate (i.e., a lower bit rate) results in a smaller file, but the smaller the file, the poorer the sound quality - the MPEG Layer 3 Audio format is the most

popular format for downloading and storing music and is easily transferred to most MP3 players. By eliminating portions of the audio file that are essentially inaudible, mp3 files are compressed to roughly one-tenth the size of an equivalent PCM file while maintaining good audio quality - not that good for voice storage. MP3 (MPEG-1 Layer 3) Refers to a specific codec's outputted digital audio file - many new players can play both MP3 and WMA file formats - MP3 is an abbreviation for Motion Picture Experts Group Level 3. A format for compressing files so they'll not only take up less memory, they'll also download faster. MP3 is not the only compression system used, but currently it is the best known. Many players are called MP3 players, regardless of the type of compression system they use.

- *msv* - a Sony proprietary format for Memory Stick compressed voice files. You might need a Sony plugin to load this.
- *ogg* - a free, open source container format supporting a variety of codecs, the most popular of which is the audio codec Vorbis. Vorbis files are often compared to MP3 files in terms of quality.
- *ram* - a text file that contains a link to the Internet address where the Real Audio file is stored. The .ram file contains no audio data itself.
- *raw* - a raw file can contain audio in any codec but is usually used with PCM audio data - rarely used except for technical tests.
- *ra* - a Real Audio format designed for streaming audio over the Internet. The .ra format allows files to be stored in a self-contained fashion on a computer, with all of the audio data contained inside the file itself. - often referred to as RealAudio G2. RealAudio G2, etc.
- SDMI (Secure Digital Music Initiative) - A way of protecting the copyright of electronically distributed music.
- *vox* - the vox format most commonly uses the Dialogic ADPCM (Adaptive Differential Pulse Code Modulation) codec - similar to wave files except that the vox files contain no information about the file itself so the codec sample rate and number of channels must first be specified in order to play a vox file. Vox a very old file type and is pretty poor.
- *WAV* - The file format used by many PCs for sound files - standard audio file format used mainly in Windows PCs. Commonly used for storing uncompressed (PCM), CD-quality sound files, which means that they can be large in size, around 10MB per minute of music. It is less well known that wave files can also be encoded with a variety of codecs to reduce the file size (for example the GSM or mp3 codecs).
- *WMA* stands for Windows Media Audio. Like MP3, it's a way to compress files, but it's far more effective. A song downloaded and stored in the WMA format takes only half the space that the same song would if you used the MP3 format, and it sounds just as good. Unlike MP3 files, WMA files can be protected and come with licensing, meaning when you get a WMA file, it is generally from a legal, legitimate source and is protected with certain rights. *wma* - the popular Windows Media Audio format owned by Microsoft. Designed with Digital Rights Management (DRM) abilities for copy protection. Wal-Mart's Music Downloads uses the latest version (DRM9) of the WMA

format, which is protected. Not all MP3 players are compatible with this version.