

## **Technical Stuff about Audio File Types**

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The whole point of caring about Audio file types is that certain programs will only open certain audio file types. A more detailed description of the different file types is listed at the end of this document

For our purposes, the most useful sound files types on the PC/Windows platform are the MP3 and WAV sound files. How you go about getting your sounds into the correct file type depends on the software you are using, and what format the sound originally came to you in.

If you don't want to purchase any software, and just use what come on your operating system or you can download for free, some good options are:

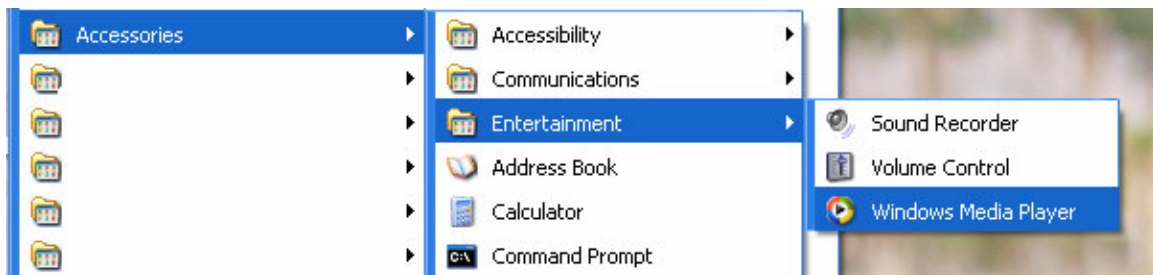
### **iTunes**

<http://www.apple.com/itunes/download/>

### **Windows Media Player**

Located in your operating system

Start→Programs→Accessories→Entertainment→Windows  
Media Player



### **Audacity**

<http://audacity.sourceforge.net/>

## JetAudio

[http://www.download.com/3000-2167\\_4-10696318.html](http://www.download.com/3000-2167_4-10696318.html)

If you are willing to pay for a converter, and if you are using lots of MP4/M4A files, you can purchase AllMusicConverter for \$14.90.

<http://www.allmusicconverter.com/>

Please note that I am not endorsing one piece of software over another. Nor do I guarantee that any of these will work well on your computer. In the case of any program, it is your risk if you download music, or if you install something that proves to be incompatible. What I can say is that I've used all of these programs, and have been successful in creating sound files, without any apparent detriment to my system.

### Program Summary:

Program Name	Purpose for Using	Will open
iTunes	Organizing Sound files, ripping CDs, playing music	MP3, MP4, M4A, WAV
Audacity	Editing Sound files	Audacity files, MP3, WAV
JetAudio	Playing Music, converting sound files	WMA, MP3
Windows Media Player	Ripping CDs, playing music	WMA, MP3

### Program Details

1. Both iTunes and Windows Media Player can "rip" CDs (get the music off CDs and onto your hard drive)
2. Once that is done, music is stored in My Documents→My Music
3. If Media Player did not recognize the album, it will be saved under "Unknown Artist"
4. Windows Media player saves files as \*.wma

5. iTunes defaults to MP4 (M4A) files, but can be changed to import to \*.wav or \*.mp3
6. Most special ed software prefers \*.wav or \*.mp3
7. \*.wav files are LOTS bigger than \*.mp3 files

Sample file sizes

Song time length	wav	wma	mp3	m4a
4.40	48.729 MB	4.453 MB	4.421	4.411
3.42	38.489	3.519	3.492	3.503

So what are the file types? Definitions listed are courtesy of Wikipedia

### WAV

<http://en.wikipedia.org/wiki/WAV>

**WAV** (or **WAVE**), short for Waveform [audio format](#), is a [Microsoft](#) and [IBM audio file format](#) standard for storing audio on [PCs](#). Uncompressed WAV files are quite large in size, so, as [file sharing](#) over the [Internet](#) has become popular, the WAV format has declined in popularity. However, it is still a commonly used, relatively "pure", i.e. lossless, file type, suitable for retaining "first generation" archived files of high quality, or use on a system where high fidelity sound is required and disk space is not restricted.

More frequently, the smaller file sizes of compressed but [lossy](#) formats such as [MP3](#), [ATRAC](#), [AAC](#), [Ogg Vorbis](#) and [WMA](#) are used to store and transfer audio. Their small file sizes allow faster internet transmission, as well as lower consumption of space on memory media. However, lossy formats trade off smaller file size against loss of audio quality, as all compression algorithms compromise available signal detail.

## MP3

<http://en.wikipedia.org/wiki/MP3>

**MPEG-1 Audio Layer 3**, more commonly referred to as **MP3**, is a popular [audio](#) encoding format. It uses a [lossy compression algorithm](#) that is designed to greatly reduce the amount of data required to represent the audio recording, yet still sound like a faithful reproduction of the original uncompressed audio to most listeners. The compression takes off certain sounds that cannot be heard by the listener, i.e. outside the normal human hearing range.

## WMA

[http://en.wikipedia.org/wiki/Windows\\_Media\\_Audio](http://en.wikipedia.org/wiki/Windows_Media_Audio)

**Windows Media Audio (WMA)** is brand name for several technically distinct [proprietary compressed audio file formats](#) developed by [Microsoft](#). The original WMA, also known as **WMA Standard**, was initially intended to be a competitor to the popular [MP3](#) format, and thanks to Microsoft's aggressive marketing efforts and the [PlaysForSure](#) certification program, has become the second most widely supported format for compressed audio.

M4A (also = mp4 - only difference is filename extension)

[http://en.wikipedia.org/wiki/MPEG-4\\_Part\\_14](http://en.wikipedia.org/wiki/MPEG-4_Part_14)

Files in .M4A format are actually the audio layer of (non-video) MPEG 4 movies.

The existence of two different file extensions for naming audio-only MP4 files has been a source of confusion among users and multimedia playback software. Since MPEG-4 is a container format, MP4 files may contain any number of audio, video, and even subtitle streams, making it impossible to determine the type of streams in an MP4 file based on its filename extension alone. In response, Apple Inc. started using and popularizing the .m4a file extension. Software capable of audio/video playback should recognize files with either .m4a or .mp4 file extensions, as would be expected, as there are no file format differences between the two. Most software capable of creating MPEG-4 audio will allow the user to choose the filename extension of the created MPEG-4 files.

While the only official file extension defined by the standard is .mp4, various file extensions are commonly used to indicate intended content:

Audio-only MP4 files generally have a \*.m4a extension.

MP4 files with audio streams encrypted by [FairPlay Digital Rights Management](#) as sold through the [iTunes Store](#) use the .m4p extension.

[Audio book](#) and [podcast](#) files, which also contain metadata including chapter markers, images, and hyperlinks, can use the extension .m4a, but more commonly use the .m4b extension. An m4a audio file does not "bookmark" (remember the last listening spot) on an iPod, whereas m4b extension files do. Users can rename mp4 m4a file extensions m4b to activate this and faster listen iPod features.

MP4 files with audio and video generally use the .mp4 and .m4v extensions, occasionally .mp4v. To add to confusion sometimes raw [MPEG-4 Visual](#) bitstreams are named .m4v.

[3G mobile phones](#) use [3GP](#), a simplified version of MPEG-4 Part 12 (a.k.a MPEG-4/JPEG2000 ISO Base Media file format, MPEG-4 Part 14 is a derivative of the standard from ISO Base file format too), with the .3gp and .3g2 extensions. These files also store non-MPEG-4 data (H.263, AMR, TX3G).

The common, but non-standard use of the extensions .m4a and .m4v is due to the popularity of [Apple's iPod](#) and the [iTunes Store](#).