ello, and welcome to this month's edition of A Spider Speaks. Each month I strive to provide you, the Mac user, with a wealthy source of tips, tricks, and tidbits of useful information. Comments or questions can be sent to me at erik@applewizards.net . I'm always looking for ideas, so fire up your email application and throw some bytes my way.

This month I'm delving into muddy waters: MP3s. Specifically, I'll be telling you how to make MP3s from your own audio CDs with freeware tools. So far as I know, MP3s made from your own audio CDs and kept for your own personal use are legal, but there are many myths surrounding MP3s, so beware.

Thanks to Brian Greendan for suggesting this topic for A Spider Speaks. If you've got an idea for a future column, just email me at erik@applewizards.net ! Thanks.

Brief Intro to MP3

Many Mac users have heard of MP3s. Many have not. Though I won't wade into the (il)legalities of MP3s, I do believe that a brief background is useful. Simply put, MP3 (short for MPEG-1, Layer III) is a file format which allows for highly compressed, high-quality sound. Want more information than that? Keep reading.

An audio CD typically holds about 68-74 minutes of 16-bit, 44.1 kHz audio data. 16-bit refers to the number of "steps," or degrees of loudness, and the sample rate, measured in kHz, refers to the sample rate (44,100 samples/second). A full CD occupies 650 MB, so the classic way to reduce size is to reduce either the bit rate or the sample rate. Cutting the bit rate

to 8 would reduce the file size by 1/2, but you'd lose quality.

PEG Audio was created to combat that problem — losing quality with file size. MPEG Audio strips information which is not important based on studies of human perception. In other words, if a strong signal appears, the weaker signal which follows is not perceivable. MPEG removes the weaker signal to save space. This is called "perceptual coding." At higher levels of compression, "less" important signals are removed, and so on.

MPEG Audio Layer III is the most complex MPEG Audio model currently used. It does a lot of filtering and uses what is known as a Huffman coder. Coding at 128 Kbps produces very high-quality sound, and coding at 160 Kbps or higher produces an MP3 that you won't be able to tell apart from the original audio CD track.

Why would you want to convert your audio CD tracks to MP3s? Well, imagine the possibilities. Because a single CD-ROM has enough room to store around 150 MP3s (versus the roughly 16 songs which fit on an audio CD), you can create "best of" collections from your collection and make it through an entire work day without switching CDs!

Note: Much of this information was obtained from the MPEG Audio Page at http://www.raum.com/mpeg/ . I encourage you to visit this fine site yourself!

Note 2: Because of the stringent encoding/decoding requirements, I recommend that only folks with Power Macs (a 603e/120 MHz or later) play, encode, or decode MP3s. If you're patient, try it anyway, but consider yourself warned!

et the Tools!

Throughout this tutorial we'll be using three or four tools, so you'll probably want to get them. Most of the tools are freeware, so this exercise won't even cost you much! Whoever said the best things in life are free must have been

a Mac user!

MPecker Drop Decoder (Free)
http://www.anime.net/~go/mpeckers.html

If you want to convert your MP3s back into some other format, you'll need this dandy, easy-to-use application. Grab it and keep it around "just in case."

MPecker Encoder (Free)
http://www.anime.net/~go/mpeckers.html

This will be doing the brunt of the work in this tutorial. If you want to make an MP3 at all (at least via my methods), you'll need this one!

MoviePlayer (QuickTime 3 Pro)
http://www.apple.com/quicktime/

You'll need QuickTime to use some of the other tools, and in a pinch, MoviePlayer can be substituted for the next tool.

Track Thief (Free)
http://www.student.nada.kth.se/~d88-bli/misc/

Want the simplest way to strip audio from your CDs? This is it. MoviePlayer can do it, but this is much, much faster.

MacAmp or MacAmp Lite (Free Public Betas/Shareware)
http://www.macamp.com/

You'll need either MacAmp or MacAmp Lite (see the contest in The Happy Mac and the mini-review in From the Desktop) to play your MP3s. Of course, there are other players out there, but these are the best.

Now that you've gathered your tools, let's get down to it!

etting Down To It

Once you've got the tools, encoding your MP3s is easy. Let's take it step by step.

Step 1: Rip it From the Audio CD

The first step in converting your audio CD tracks to MP3s is to actually "grab" or "rip" the track from the CD. Essentially, you need to convert it from red book (audio CD) format to a file format which can be converted to MP3.

When burning CDs on a Mac, 44.1 kHz, 16-bit AIFF (Audio Interchange File Format) files are used. On the PC, WAV files are used. Thinking and working in reverse, we need to convert the CD audio to an AIFF file. Luckily, Track Thief does this for us in one step. Simply open Track Thief with an audio CD in your Mac's CD-ROM drive and follow these steps:

1.1 — Check that the speed is as high as possible (which may or may not be as high as your CD-ROM drive's speed) and that the Device ID is correct (usually, only one is available).
1.2 — Check the boxes for Reliable buffering and Separate files (unless you prefer a single, very large file).
1.3 — Set remaining checkboxes to suit your preference (I prefer to leave them all unchecked).
1.4 — Choose "Steal…" to transfer the tracks from the audio CD to your disk. Make sure you save them to a disk which has lots of free space! Each minute will cost you roughly 10 MB.

tep 1.5, an Alternative: Using MoviePlayer
MoviePlayer can also be used to rip tracks from audio CDs, but its process is slower and more tedious.

1.6 — Fire up MoviePlayer and choose "Import..." from the File Menu. Locate the appropriate audio CD track and choose it. In the next dialog box (which prompts you to save the converted file to your hard disk), click the "Options..." button and make sure that 44.1 kHz, 16-bit, and Stereo are selected.
1.7 — Save the file and allow MoviePlayer to convert the track. It will now be an AIFF file ready for the next step.

Step 2: Convert to an MP3
Now we'll use MPecker Encoder to encode the AIFF file to an MP3. Before we can encode an MP3, we'll first want to set the preferences. Within MPecker Encoder, choose "Preferences" from the File menu and set the following preferences:
Layer: Layer III
Bit Rate: 128 or 160 (I often use 160, many others use 128)
Psy Model: Complex
Stereo Mode: Stereo
Remaining Preferences: Set the remaining preferences to your liking. As you can see in the screenshot below, I opt to delete the original AIFF files and add ID3 V2 tags (more on these later) when MPecker is done encoding.

fter you've set your preferences, quit MPecker Encoder and drag the ripped AIFF files (or folders of these files) to the MPecker Encoder icon. Voilà! Encoding should begin (speeds vary across computers) and in a relatively short amount of time, you'll have your very own MP3s! Wowee!

The ID3 V2 tag?
The ID3 V2 tag is essentially a nifty little tag included "inside" the MP3 files themselves. Without getting too technical, it allows you to store things like the song name, artist, album title, musical genre (rock, classical, etc.), and more within the MP3 file itself. Intelligent MP3 players, like MacAmp, can do things like scroll this embedded information across the player window. I find it to be very useful, though you may not. Besides, you can always go back and add an ID3 V2 tag later.

ome Practical Applications

The cynics in my audience are asking "why" right now. Why convert your CDs to a massive MP3 collection that clogs up your hard drive? Well, there are a number of good reasons.

Convert Entire CD Collections to a Few
Audio CDs typically have about four or five good songs. Who enjoys listening to those songs, ejecting the CD, and putting in another? With MP3s, you can make "best of" collections of around 150 songs and store them on a single CD (20 or so will fit on a 100 MB Zip disk). Imagine the time and pleasure benefits! And stop carrying ten CDs to work every day!

Transfer Files Easily
My friend is a musician looking to break into the business. He's furthered his career and garnered listeners without having a single record deal. How? MP3s — he offers them for free from his website. Because most of his songs are 3-5 MB, people download them. Besides, would you rather email your friend a 40 MB AIFF file or a 4 MB MP3, given that there is no noticeable difference in quality?

Make Regular CDs
Using MPecker Drop Decoder, you can decode your files to AIFF files. These can, in one step, be burnt onto CDs. Take that "best of" MP3 collection and make a few audio CDs for your car or home stereo. Eventually, as portable

MP3 players become more popular, you will be able to transfer MP3s to memory cards and listen to them while exercising, walking, or otherwise spending time away from your computer.

:03, 0:02, 0:01, 0:00... The End!

MPEG-1 Layer III is a cool format. I listen to MP3s I've encoded from my own audio CDs every day. It sure beats the "listen-eject-listen-eject" routine! With fun software like MacAmp and MacAmp Lite, listening to MP3s sure as heck beats audio CDs in other ways too. Go ahead, give it a try. I'm sure you'll be impressed as well.

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