

Workflow Tips/Tricks for Tagging WAV files with iTunes (OS X)

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Just a few shortcuts I'm using to speed up the very manual process of dealing with WAV file tagging in iTunes. There are no doubt some scripts that could be written to speed up and automate these processes and improve upon them greatly! Please keep in mind much of this stuff is fairly obvious, but is required to have this be a somewhat comprehensive guide. This can be a living document, so if there are any further tips or suggestions, do add!

Warning: keep in mind that all the work you have/are/will be putting into tagging WAV files in iTunes is stored in the iTunes database file and not tagged to individual files like it would typically be with ALAC, MP3 or AIFF, so if your library file goes poof, your tagging goes poof. If you try to move your files to another install of iTunes, same thing (need to move/copy the whole library/folder together).

Topics to be discussed include the following:

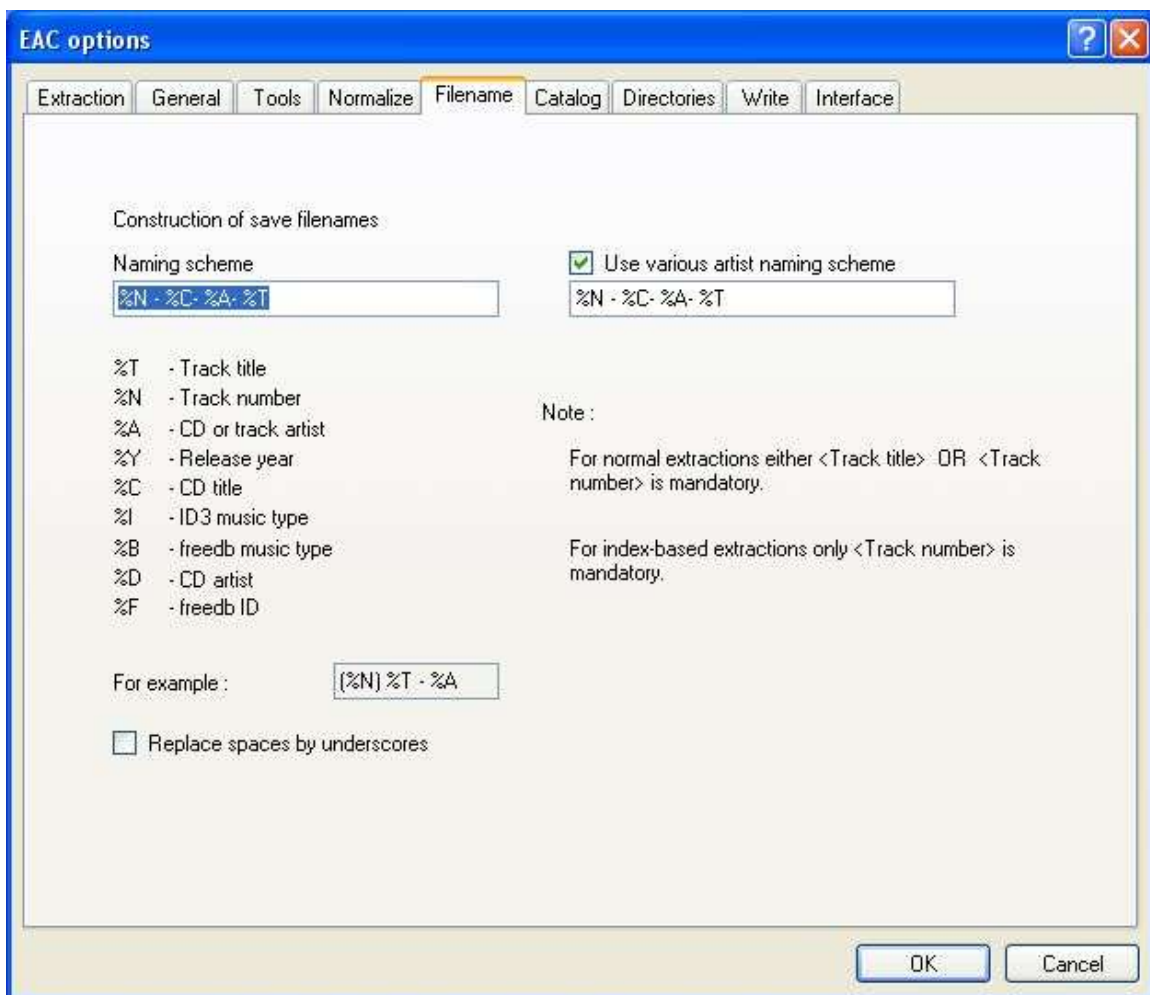
- I. Applications Utilized
- II. Ripping Tips
- III. Importing WAV files into iTunes
- IV. Converting files to WAV (utilizing existing tags) – Preferred Method
- V. Adding album artwork with CoverArt

I. Applications Utilized:

- 1) WAV ripper of your choice. I have found **EAC** to provide (i) best ripping quality and (ii) flexibility in file naming (benefits discussed later), so will include a couple relevant tips here, and (iii) more recently I learned that you can output both WAV and a compressed format to speed up tagging. EAC is easily run under Windows XP using Bootcamp on the Mac.
[Developer Site](#)
- 2) **MacDrive**. Not required, but I use to save ripped CD's directly to my Mac partition so that I don't have to have a bloated Windows bootcamp partition to accommodate ripping multiple CD's during the same session.
[Developer Site](#)
- 3) **iTunify**. For a few shortcuts on manually tagging files in iTunes.
[Developer Site](#)
- 4) **CoverArt**. To add artwork at the "album" level in iTunes (as iTunes does not currently support tagging individual songs with artwork in the iTunes database). [Developer Site](#)

II. Ripping Tips:

Leaving sonic quality discussion aside, the practical benefit of working with a ripper such as EAC (or numerous others) is that it lets you configure the WAV filenames. This is of value as iTunes doesn't currently recognize any WAV tagging format I've tried to-date. The tips here are: (1) getting some of the key information in the file name, and (2) putting the track number first. This allows you to efficiently sort and manipulate the tracks based on the contents of their filename in iTunes. I always put the track number first in the title syntax as it allows one to quickly sort the tracks in numeric order and then have iTunify number each track with one of its scripts. This is the syntax I use in EAC and recommend this format in whatever ripper you use (most important being track number at the beginning, and song name at the end; artist name and album name are just there for sorting if needed in iTunes):



As for other settings in EAC if you're using it, recommend one of the multiple guides that are available ([for example](#))

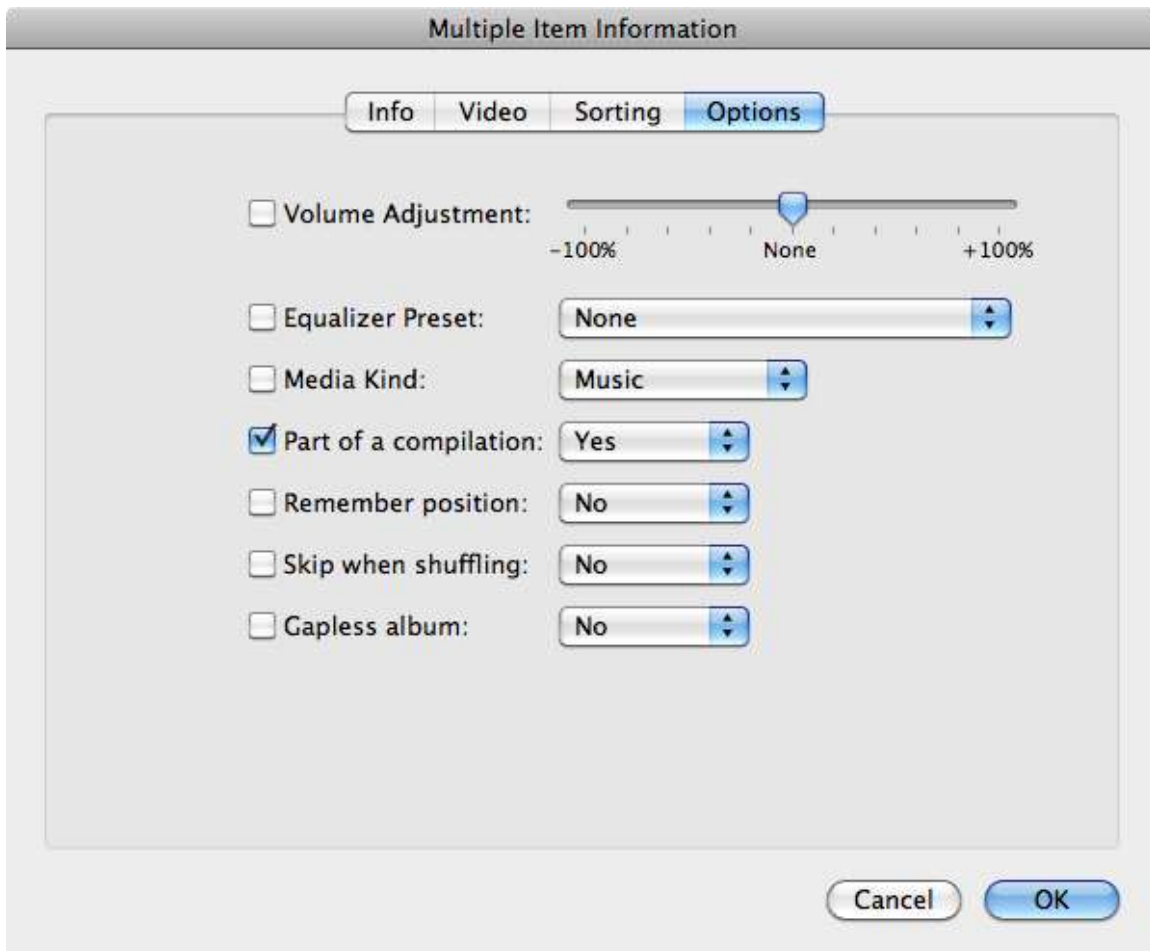
ADDITIONAL TIP: some rippers like EAC allow simultaneous saving/processing to two formats at once, for example WAV and MP3 (and embedding the MP3 files with appropriate tags). This can save a LOT of time as the tags can be copied and pasted in iTunes as discussed in the next section.

III. Importing WAV files into iTunes:

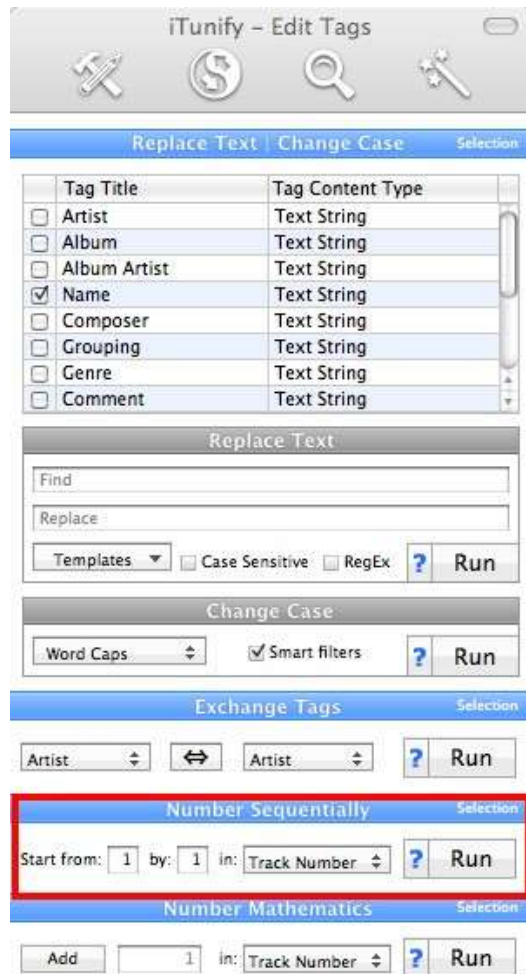
This is the manual tagging process made a little faster with iTunify. This is a pretty fast process for simple albums like most Rock, Folk, etc. For classical or some Jazz where the tags can be a little more complicated (with different composers or artists per track), would recommend going to the next section and importing two sets of the files (one WAV and one tagged set, even if you have to rip a 2nd time with a 64kpbs mp3 set just to get the tags).

Key steps:

- 1) Recommend importing one album at a time into iTunes. Once you've dragged one album, you can certainly drag the next album into iTunes while you work on the tagging for the album just loaded in. Recommend sorting iTunes by Date Added (most recent first).
- 2) Select tracks just imported, right click, Get Info. Manually enter Artist, Album and Year (and # of tracks if you want to), and Genre. Takes 5 seconds or less. Just make sure you don't hit "OK" until all the tracks have finished loading and iTunes does the volume check otherwise it won't be accepted by all the tracks. *As an aside, I also add in the comments section for the album which drive and ripper I used for burning as I've transitioned over time and will go back to my favorites and re-rip with my current workflow (i.e., I add "LG Blu-ray EAC" while earlier albums had "TEAC dbPoweramp")*
- 3) Another tip do to at this stage for albums with different artists listed across the tracks is to go to designate the album as a "Compilation", otherwise iTunes seems to see them as different albums and when you get to CoverArt later, it will ask you for different cover art for each artist, which is obviously a PITA. This can be done when all the tracks are selected as part of step 2, by going to the Options tab and checking the compilation box



- 4) Now to number the tracks. If the tracks were imported in the correct order (which typically happens with EAC, didn't usually with a couple other rippers), we can go directly to iTunify. If not, with the tracks highlighted, just type enough words in the search bar to isolate this album (artist, album keywords, etc.). Once you have just the album tracks selected and no others, sort by name (ascending). This is where naming tracks with number first comes in handy. With the tracks highlighted, switch over to iTunify. On the first tab, 2nd from bottom under "Number Sequentially" enter a 1 and a 1 in each of the boxes (needs to be done the first time you launch iTunify), then hit Run. iTunify adds track numbers to the album.



- 5) Now to cleanup the Song titles/names. This is pretty quick. Goal here is to remove the album and artist info from the song names. Go to one of the tracks from the album in iTunes and click to edit the song name from the main window (slow double click). Highlight everything from the dash after the song number to the space just before the song name. This text is contained in every one of the tracks, and we want to do a “search and destroy” with iTunify to batch clear it. So copy this text (leaving a single space either at beginning or end). Now select all the tracks of the album. We are now going to use the “Replace Text” function on the first tab of iTunify. Paste the text into the “find” box and leave replace empty. Then hit Run and watch iTunify clear out the album and artist info. The only downside (if you care) is that you’ll still have the song number in the title, which is the necessary evil for being able to sort the tracks. *[note to programmers: one could build a script to search and delete all “## - “ at the beginning of the entire iTunes library in the Name category only]*

iTunify - Edit Tags

Replace Text | Change Case | Selection

Tag Title	Tag Content Type
<input type="checkbox"/> Artist	Text String
<input type="checkbox"/> Album	Text String
<input type="checkbox"/> Album Artist	Text String
<input checked="" type="checkbox"/> Name	Text String
<input type="checkbox"/> Composer	Text String
<input type="checkbox"/> Grouping	Text String
<input type="checkbox"/> Genre	Text String
<input type="checkbox"/> Comment	Text String

Replace Text

Pink - Diane Panton -

Replace

Templates ☐ Case Sensitive ☐ RegEx ? Run

Change Case

Word Caps ☐ Smart filters ? Run

Exchange Tags | Selection

Artist Artist ? Run

Number Sequentially | Selection

Start from: 1 by: 1 in: Track Number ? Run

Number Mathematics | Selection

Add 1 in: Track Number ? Run

iTunes

Q- Diane Panton pin

Name	Date Added	Artist	Year	Tr...	Album	Genre	Time	Bit Rate
<input checked="" type="checkbox"/> 01 Wouldn't it be Lovely	1/19/10 8:18 PM	Diane Panton	2009	1	Pink	Jazz	3:52	1411 k
<input checked="" type="checkbox"/> 02 My Ideal	1/19/10 8:18 PM	Diane Panton	2009	2	Pink	Jazz	3:58	1411 k
<input checked="" type="checkbox"/> 03 I Walk a Little Faster	1/19/10 8:18 PM	Diane Panton	2009	3	Pink	Jazz	4:06	1411 k
<input checked="" type="checkbox"/> 04 My Future Just Passed	1/19/10 8:18 PM	Diane Panton	2009	4	Pink	Jazz	4:21	1411 k
<input checked="" type="checkbox"/> 05 Wonder Why	1/19/10 8:18 PM	Diane Panton	2009	5	Pink	Jazz	2:44	1411 k
<input checked="" type="checkbox"/> 06 Me Myself and I	1/19/10 8:18 PM	Diane Panton	2009	6	Pink	Jazz	2:34	1411 k
<input checked="" type="checkbox"/> 07 What is There to Say	1/19/10 8:18 PM	Diane Panton	2009	7	Pink	Jazz	4:03	1411 k
<input checked="" type="checkbox"/> 08 Tea For Two	1/19/10 8:18 PM	Diane Panton	2009	8	Pink	Jazz	4:24	1411 k
<input checked="" type="checkbox"/> 09 Please be Kind	1/19/10 8:18 PM	Diane Panton	2009	9	Pink	Jazz	3:47	1411 k
<input checked="" type="checkbox"/> 10 I Wish I Knew	1/19/10 8:18 PM	Diane Panton	2009	10	Pink	Jazz	4:50	1411 k
<input checked="" type="checkbox"/> 11 They Didn't Believe Me	1/19/10 8:18 PM	Diane Panton	2009	11	Pink	Jazz	3:37	1411 k
<input checked="" type="checkbox"/> 12 Love Wise	1/19/10 8:18 PM	Diane Panton	2009	12	Pink	Jazz	4:36	1411 k
<input checked="" type="checkbox"/> 13 Hold Me Hold Me Hold Me	1/19/10 8:18 PM	Diane Panton	2009	13	Pink	Jazz	3:24	1411 k
<input checked="" type="checkbox"/> 14 Five Minutes More	1/19/10 8:18 PM	Diane Panton	2009	14	Pink	Jazz	3:43	1411 k
<input checked="" type="checkbox"/> 15 Wait Till You See Him	1/19/10 8:18 PM	Diane Panton	2009	15	Pink	Jazz	1:50	1411 k

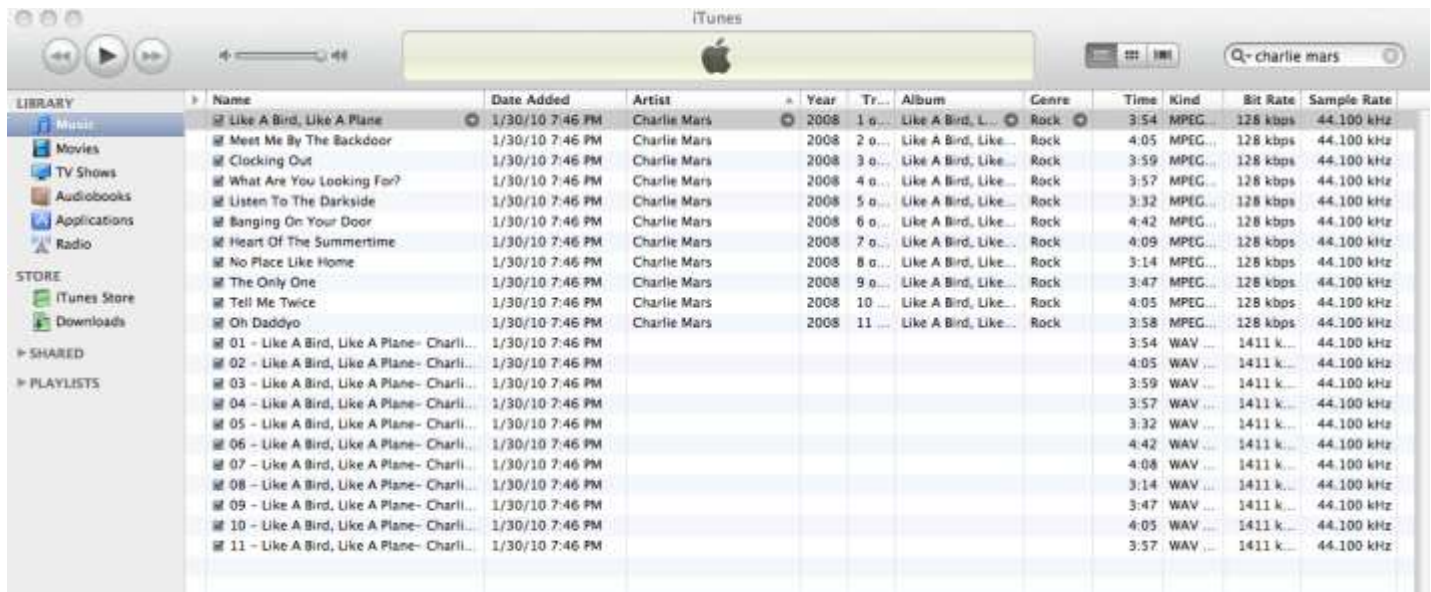
While it seems cumbersome (and it certainly is versus automatic tagging), it's a pretty quick workflow once you've done it a few times. And certainly worth it if you're set on using WAV files.

IV. Converting ALAC or AIFF files to WAV and adding to iTunes (utilizing existing tags):

This is definitely the preferred method! Note that importing files from another format with embedded tagging is very quick. With iTunify, it's simply a matter of having both the WAV version and the other format version in iTunes (with tags), and batch copying the tags from the latter to the former (will use MP3 in this document as an example). There are two caveats: (i) the tags must be copied and pasted with files in the same order (very important!), and (ii) the tag fields in iTunes must all be complete from one set to the other set for iTunify to function (a minor issue I suggested the developer correct in the next version – i.e., a blank in one composer field of an album will result in that song's tag not being copied over). As mentioned earlier, this is an easy path if (a) you're converting purchased FLAC files to WAV (i.e., you can convert two sets), (b) you have an AIFF or ALAC version you'd like to convert and use as WAV, (c) you're using one of the ripping programs like EAC which allows both WAV and a tag-supported format to be saved on the same rip.

Key steps:

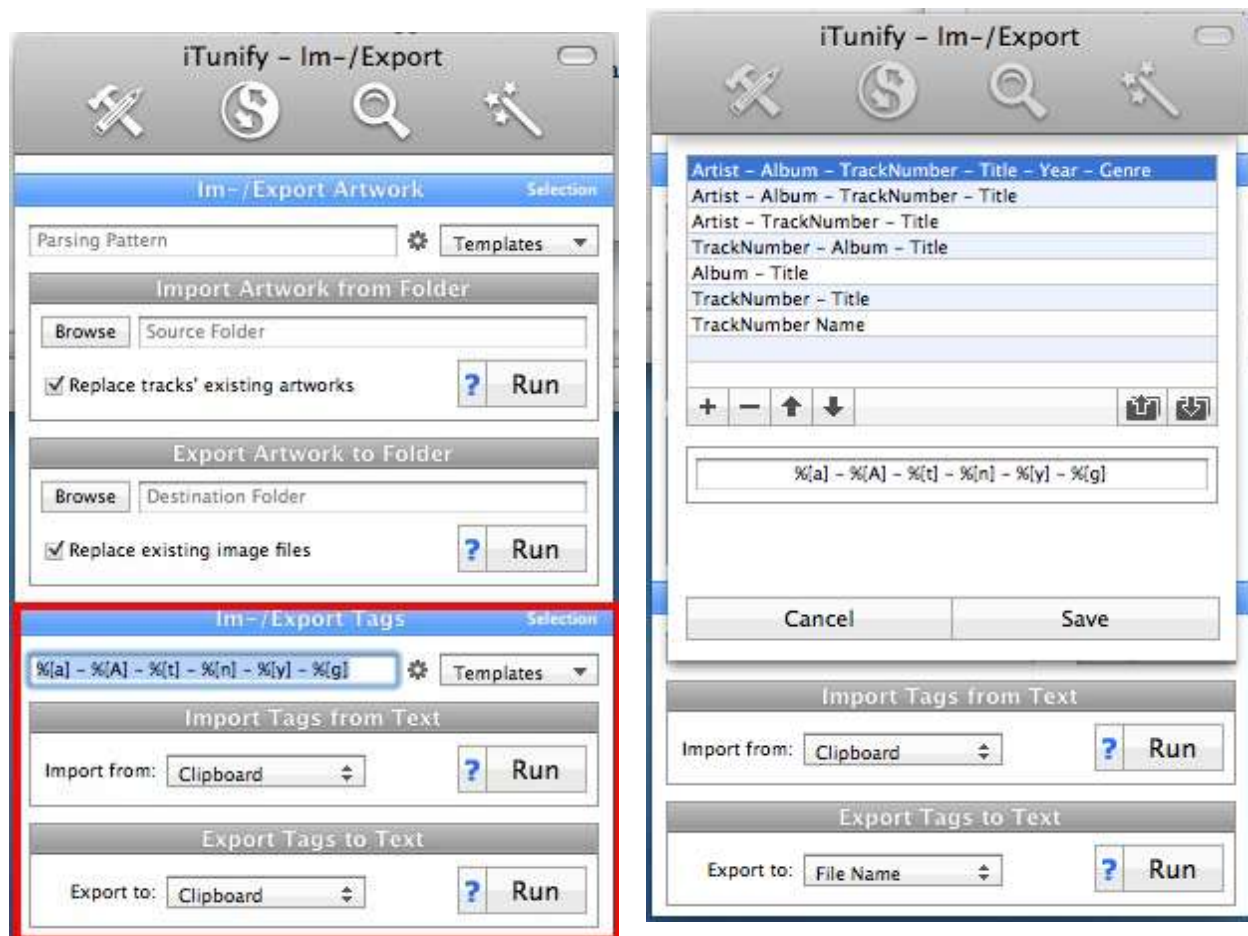
- 1) Import both the WAV and tagged (i.e. MP3) versions of the album into iTunes. If you've used EAC as in the example above, the naming scheme recommended allows you to easily insert album and/or artist name to isolate both albums. Sort by Album and the tracks of both will be in correct order (as shown).



The screenshot shows the iTunes application window. The top bar includes playback controls and a search field containing 'charlie mars'. The left sidebar shows the 'LIBRARY' section selected. The main area displays a table of tracks. The table has columns for Name, Date Added, Artist, Year, Track number, Album, Genre, Time, Kind, Bit Rate, and Sample Rate. The tracks are sorted by album, showing the first 11 tracks of 'Like A Bird, Like A Plane' by Charlie Mars. The first 10 tracks are in MP3 format (MPEG), and the last track is in WAV format.

Name	Date Added	Artist	Year	Tr...	Album	Genre	Time	Kind	Bit Rate	Sample Rate
Like A Bird, Like A Plane	1/30/10 7:46 PM	Charlie Mars	2008	1 o...	Like A Bird, L...	Rock	3:54	MPEG...	128 kbps	44.100 kHz
Meet Me By The Backdoor	1/30/10 7:46 PM	Charlie Mars	2008	2 o...	Like A Bird, Like...	Rock	4:05	MPEG...	128 kbps	44.100 kHz
Clocking Out	1/30/10 7:46 PM	Charlie Mars	2008	3 o...	Like A Bird, Like...	Rock	3:59	MPEG...	128 kbps	44.100 kHz
What Are You Looking For?	1/30/10 7:46 PM	Charlie Mars	2008	4 o...	Like A Bird, Like...	Rock	3:57	MPEG...	128 kbps	44.100 kHz
Listen To The Darkside	1/30/10 7:46 PM	Charlie Mars	2008	5 o...	Like A Bird, Like...	Rock	3:32	MPEG...	128 kbps	44.100 kHz
Banging On Your Door	1/30/10 7:46 PM	Charlie Mars	2008	6 o...	Like A Bird, Like...	Rock	4:42	MPEG...	128 kbps	44.100 kHz
Heart Of The Summertime	1/30/10 7:46 PM	Charlie Mars	2008	7 o...	Like A Bird, Like...	Rock	4:09	MPEG...	128 kbps	44.100 kHz
No Place Like Home	1/30/10 7:46 PM	Charlie Mars	2008	8 o...	Like A Bird, Like...	Rock	3:14	MPEG...	128 kbps	44.100 kHz
The Only One	1/30/10 7:46 PM	Charlie Mars	2008	9 o...	Like A Bird, Like...	Rock	3:47	MPEG...	128 kbps	44.100 kHz
Tell Me Twice	1/30/10 7:46 PM	Charlie Mars	2008	10 ...	Like A Bird, Like...	Rock	4:05	MPEG...	128 kbps	44.100 kHz
Oh Daddy	1/30/10 7:46 PM	Charlie Mars	2008	11 ...	Like A Bird, Like...	Rock	3:58	MPEG...	128 kbps	44.100 kHz
01 - Like A Bird, Like A Plane- Charli...	1/30/10 7:46 PM						3:54	WAV ...	1411 k...	44.100 kHz
02 - Like A Bird, Like A Plane- Charli...	1/30/10 7:46 PM						4:05	WAV ...	1411 k...	44.100 kHz
03 - Like A Bird, Like A Plane- Charli...	1/30/10 7:46 PM						3:59	WAV ...	1411 k...	44.100 kHz
04 - Like A Bird, Like A Plane- Charli...	1/30/10 7:46 PM						3:57	WAV ...	1411 k...	44.100 kHz
05 - Like A Bird, Like A Plane- Charli...	1/30/10 7:46 PM						3:32	WAV ...	1411 k...	44.100 kHz
06 - Like A Bird, Like A Plane- Charli...	1/30/10 7:46 PM						4:42	WAV ...	1411 k...	44.100 kHz
07 - Like A Bird, Like A Plane- Charli...	1/30/10 7:46 PM						4:08	WAV ...	1411 k...	44.100 kHz
08 - Like A Bird, Like A Plane- Charli...	1/30/10 7:46 PM						3:14	WAV ...	1411 k...	44.100 kHz
09 - Like A Bird, Like A Plane- Charli...	1/30/10 7:46 PM						3:47	WAV ...	1411 k...	44.100 kHz
10 - Like A Bird, Like A Plane- Charli...	1/30/10 7:46 PM						4:05	WAV ...	1411 k...	44.100 kHz
11 - Like A Bird, Like A Plane- Charli...	1/30/10 7:46 PM						3:57	WAV ...	1411 k...	44.100 kHz

- 2) Next step is to copy the tags from the MP3 version to the WAV version of the album in this case. This requires setting up iTunify to import and export the tagging fields you want. In iTunify you'll find this feature on the 2nd tab, called "Im-/Export Tags". First thing we'll do is setup a new template which covers the most common tags: i) Artst, (ii) Album, (iii) Track Number, (iv) [track] Name, (v) Year, (vi) Genre. In some cases you'll want to add composer or comments, but that can be done case by case or setup a different template for it. You can either use the tool to the right of the syntax box or just copy and paste this:
%[a] - %[A] - %[t] - %[n] - %[y] - %[g]
Once in the syntax box, click on the drop down menu to the right and Save Template so you can easily access it next time. If you prefer, use the up arrow to move it to the top of the list.

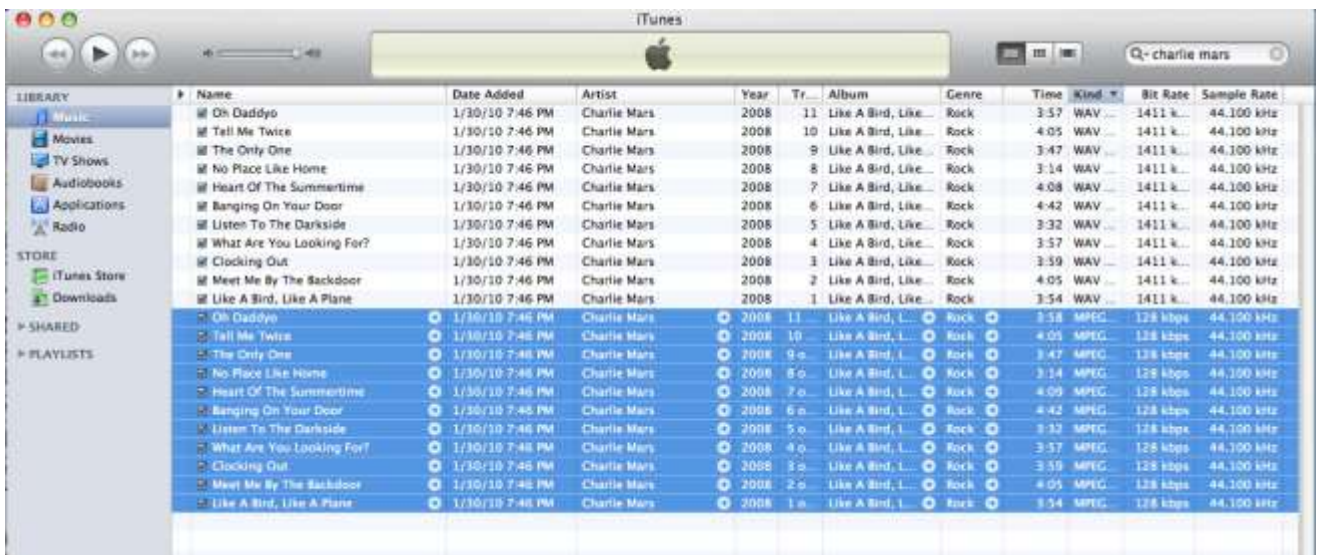


- 3) With the template now setup, confirm both the Import and Export boxes on iTunify are set to "Clipboard" as shown above (you'll probably need to change the Export section). Now highlight the MP3 / tagged version of the album in iTunes (IMPORTANT: ensure it's sorted from 1st track to last

track in order), switch to iTunes and hit Run button in the EXPORT section, sending the tag info to the clipboard. Next switch back to iTunes and select the WAV tracks, and ensure they are in order from 1st track to last track (if you don't the tags will be applied to the wrong songs). Switch back to iTunes and hit RUN under the IMPORT tags section. You'll then see the tags being populated in iTunes. Last step, sort the two albums again by Bit Rate in iTunes and delete the MP3 version and you're all done.



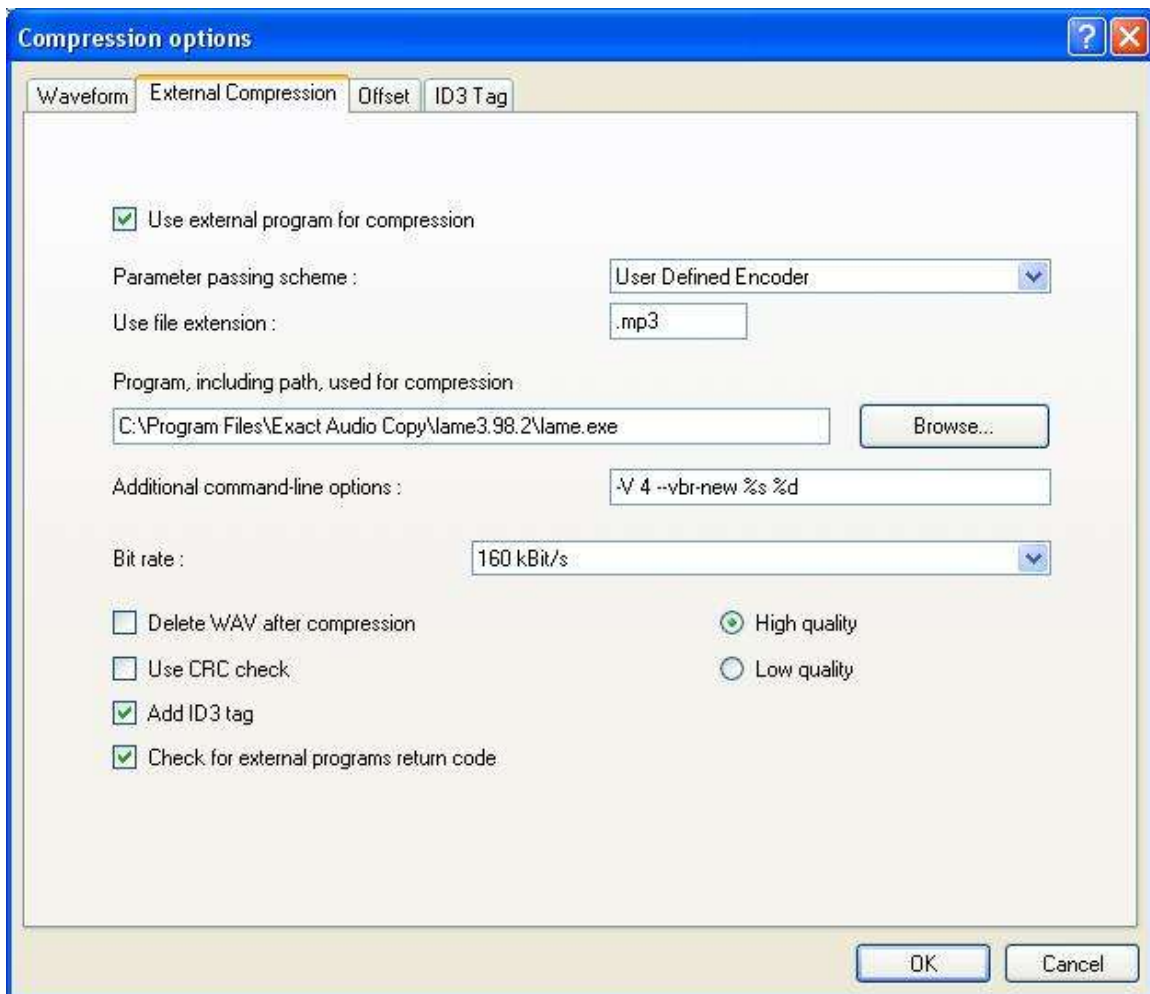
LIBRARY	Name	Date Added	Artist	Year	Tr...	Album	Genre	Time	Kind	Bit Rate	Sample Rate
Music	Like A Bird, Like A Plane	1/30/10 7:46 PM	Charlie Mars	2008	1 o...	Like A Bird, Like...	Rock	3:54	MPEG	128 kbps	44,100 kHz
Music	Like A Bird, Like A Plane	1/30/10 7:46 PM	Charlie Mars	2008	1	Like A Bird, L...	Rock	3:54	WAV	1411 k...	44,100 kHz
Music	Meet Me By The Backdoor	1/30/10 7:46 PM	Charlie Mars	2008	2 o...	Like A Bird, Like...	Rock	4:05	MPEG	128 kbps	44,100 kHz
Music	Meet Me By The Backdoor	1/30/10 7:46 PM	Charlie Mars	2008	2	Like A Bird, L...	Rock	4:05	WAV	1411 k...	44,100 kHz
Music	Clocking Out	1/30/10 7:46 PM	Charlie Mars	2008	3 o...	Like A Bird, Like...	Rock	3:59	MPEG	128 kbps	44,100 kHz
Music	Clocking Out	1/30/10 7:46 PM	Charlie Mars	2008	3	Like A Bird, L...	Rock	3:59	WAV	1411 k...	44,100 kHz
Music	What Are You Looking For?	1/30/10 7:46 PM	Charlie Mars	2008	4 o...	Like A Bird, Like...	Rock	3:57	MPEG	128 kbps	44,100 kHz
Music	What Are You Looking For?	1/30/10 7:46 PM	Charlie Mars	2008	4	Like A Bird, L...	Rock	3:57	WAV	1411 k...	44,100 kHz
Music	Listen To The Darkside	1/30/10 7:46 PM	Charlie Mars	2008	5 o...	Like A Bird, Like...	Rock	3:32	MPEG	128 kbps	44,100 kHz
Music	Listen To The Darkside	1/30/10 7:46 PM	Charlie Mars	2008	5	Like A Bird, L...	Rock	3:32	WAV	1411 k...	44,100 kHz
Music	Banging On Your Door	1/30/10 7:46 PM	Charlie Mars	2008	6 o...	Like A Bird, Like...	Rock	4:42	MPEG	128 kbps	44,100 kHz
Music	Banging On Your Door	1/30/10 7:46 PM	Charlie Mars	2008	6	Like A Bird, L...	Rock	4:42	WAV	1411 k...	44,100 kHz
Music	Heart Of The Summertime	1/30/10 7:46 PM	Charlie Mars	2008	7 o...	Like A Bird, Like...	Rock	4:09	MPEG	128 kbps	44,100 kHz
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Music	No Place Like Home	1/30/10 7:46 PM	Charlie Mars	2008	8 o...	Like A Bird, Like...	Rock	3:14	MPEG	128 kbps	44,100 kHz
Music	No Place Like Home	1/30/10 7:46 PM	Charlie Mars	2008	8	Like A Bird, L...	Rock	3:14	WAV	1411 k...	44,100 kHz
Music	The Only One	1/30/10 7:46 PM	Charlie Mars	2008	9 o...	Like A Bird, Like...	Rock	3:47	MPEG	128 kbps	44,100 kHz
Music	The Only One	1/30/10 7:46 PM	Charlie Mars	2008	9	Like A Bird, L...	Rock	3:47	WAV	1411 k...	44,100 kHz
Music	Tell Me Twice	1/30/10 7:46 PM	Charlie Mars	2008	10...	Like A Bird, Like...	Rock	4:05	MPEG	128 kbps	44,100 kHz
Music	Tell Me Twice	1/30/10 7:46 PM	Charlie Mars	2008	10	Like A Bird, L...	Rock	4:05	WAV	1411 k...	44,100 kHz
Music	Oh Daddy	1/30/10 7:46 PM	Charlie Mars	2008	11...	Like A Bird, Like...	Rock	3:58	MPEG	128 kbps	44,100 kHz
Music	Oh Daddy	1/30/10 7:46 PM	Charlie Mars	2008	11	Like A Bird, L...	Rock	3:57	WAV	1411 k...	44,100 kHz



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Music	Meet Me By The Backdoor	1/30/10 7:46 PM	Charlie Mars	2008	2	Like A Bird, Like...	Rock	4:05	WAV	1411 k...	44,100 kHz
Music	Like A Bird, Like A Plane	1/30/10 7:46 PM	Charlie Mars	2008	1	Like A Bird, L...	Rock	3:54	WAV	1411 k...	44,100 kHz
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	What Are You Looking For?	1/30/10 7:46 PM	Charlie Mars	2008	4	Like A Bird, Like...	Rock	3:57	WAV	1411 k...	44,100 kHz
	Clocking Out	1/30/10 7:46 PM	Charlie Mars	2008	3	Like A Bird, Like...	Rock	3:59	WAV	1411 k...	44,100 kHz
	Meet Me By The Backdoor	1/30/10 7:46 PM	Charlie Mars	2008	2	Like A Bird, Like...	Rock	4:05	WAV	1411 k...	44,100 kHz
	Like A Bird, Like A Plane	1/30/10 7:46 PM	Charlie Mars	2008	1	Like A Bird, Like...	Rock	3:54	WAV	1411 k...	44,100 kHz

- 4) TIP: If you're doing the copy/paste approach with WAV files that are not named with the track number first, you will need to find another way to sort the tracks. If it's name first, this should also work if you sort the two albums by Album. If it's artist first, then I've found the best way to sort is by song time or file size and copy and paste on that basis (chances of a song have the exact size of another song within the same album is pretty low). Specifically, select the MP3 album, sort by size descending, copy tags to clipboard. Resort by file type or bit rate if needed to isolate the WAV album, sort by descending size and then Import tags from Clipboard with iTunes. Also note you may need to select the MP3 album, isolate it with the search function, export tags to clipboard, clear the search, sort all tracks by Date Added in iTunes to see the new tracks, sort by size descending (and then Import tags). Search for the album/artist to bring both albums to view. As an intermediate step before import, you could select the newly imported WAVs and give them a unique album name that you can search against so you can watch the tags being pasted. As mentioned earlier, if you have a couple missing fields, say composer in all but two of the tracks, you will need to fill them in manually before doing the tag copy otherwise those tracks will be skipped (iTunes doesn't seem to recognize a null value)
- 5) As a last tip to this section, if you are using EAC to rip both WAV and MP3, setup WAV options as outlined above in naming and the referred guide. You will then need to setup the LAME encoder and respective options in EAC. This [guide](#) can be used for the MP3 section, and the LAME encoding bundle can be found [here](#) at Rarewares.com. An example of the settings I use under MP3 are as follows, with the key being to uncheck the option of deleting the WAV files after compression. Under added command line options, can also use a simple 128kbps constant compression, with the syntax being: `-h %s %d` Under the Offset tab, you can also add a "comments" tag for all the songs (this is where I put in the software and drive combo used and also add the 'comments' field to the tag copy syntax in iTunes).



V. Adding Album Artwork with CoverArt

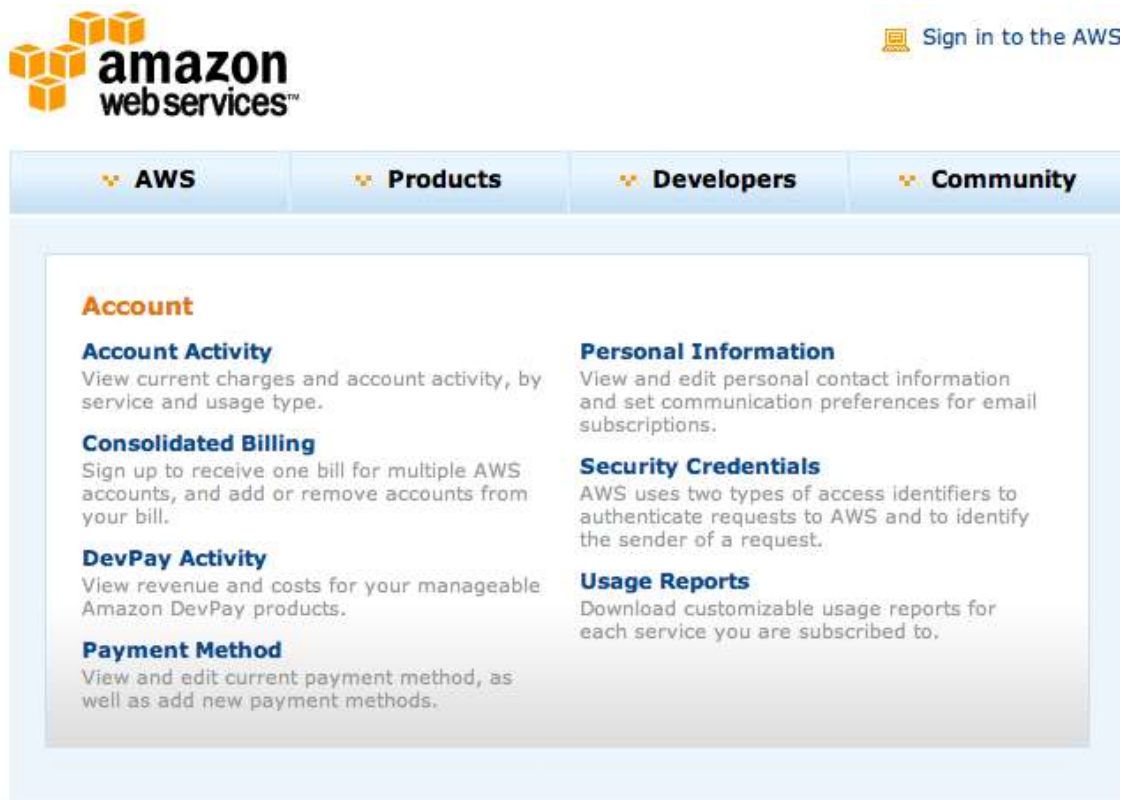
The CoverArt script is excellent, and since it comes with instructions, I'll limit what I add here. A few pictures might be helpful though which may make installation easier. Will also add a usage example with screenshots to the extent helpful.

- 1) Installation. Best to install the latest version of Python [here](#) to ensure it works on Snow Leopard. As indicated in the Readme, then change the first line of text of the script "coverArtServer.py" to (using TextEdit – right click on file and open with TextEdit):

```
#!/usr/local/bin/python
```

- 2) Follow the instructions in the Readme to obtain an Amazon Web Services account, obtain and add the Secret access key the “amazonLicense.txt” file again with TextEdit

The Account Management options shown below after you’d signed up for an account (using your existing Amazon credentials if you’re a current Amazon user). Click on “Security Credentials” section:



Once in the security credentials area, click on the “Show” button as highlighted in the next screenshot:

Amazon Web Services

Sign in to the AWS Management Console | Create an AWS Account

Account

- Account Activity
- Usage Reports
- Security Credentials**
- Personal Information
- Payment Method
- Consolidated Billing
- AWS Management Console
- DevPay

Security Credentials

Welcome, | Sign Out
Account Number | | | |

Access to applications and services within AWS cloud is secure and protected in multiple ways. Accessing those applications and services requires the use of special credentials that are associated with your account. There are three types of credentials currently offered by AWS. If you know which security credentials you need, simply select one of the links below:

- Access Credentials:** Your Access Keys, X.509 Certificates, and Key Pairs
- Sign-In Credentials:** Your E-mail Address, Password, and AWS Multi-Factor Authentication Device
- Account Identifiers:** Your AWS Account ID and Canonical User ID

If you are not sure which security credentials you should use, the link below will help you identify the credentials you need for the task you want to accomplish:

[Find out which AWS Security Credentials you need](#)

Access Credentials

There are three types of access credentials used to authenticate your requests to AWS services: (a) access keys, (b) X.509 certificates, and (c) key pairs. Each access credential type is explained below.

Access Keys | X.509 Certificates | Key Pairs

Use access keys to make secure REST or Query protocol requests to any AWS service API. We create one for you when your account is created — see your access key below.

Your Access Keys

Created	Access Key ID	Secret Access Key	Status
January 5, 2010	r Z 3' v 3Q 2	Show	Active (Make Inactive)

[Create a new Access Key](#)

For your protection, you should never share your secret access keys with anyone. In addition, industry best practice recommends frequent key rotation.

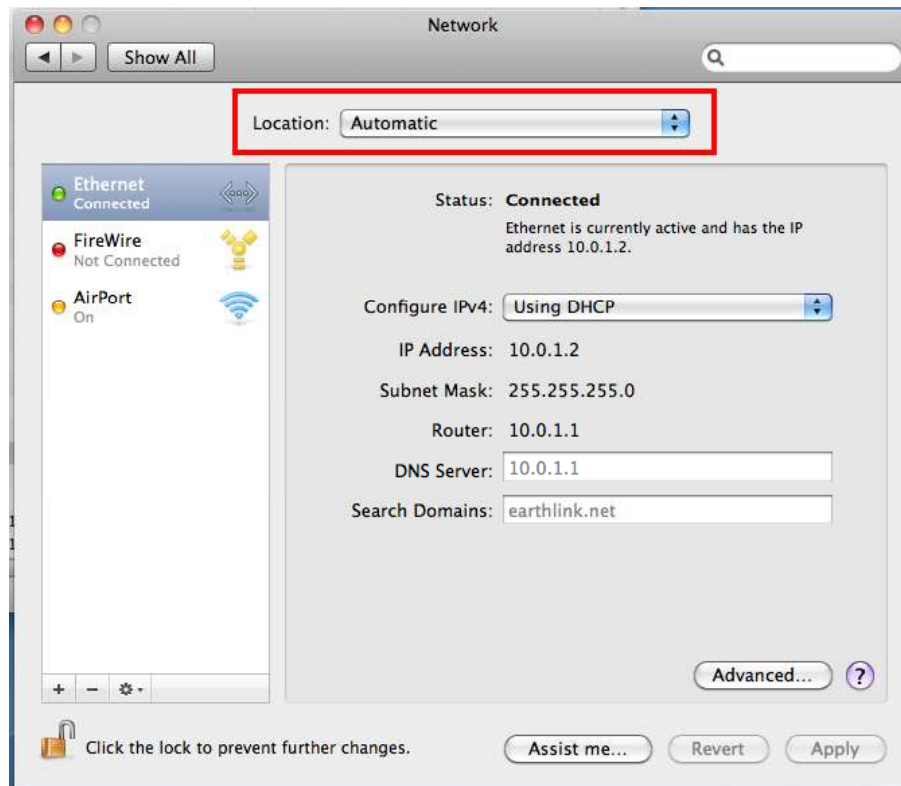
[Learn more about Access Keys](#)

Sign-In Credentials

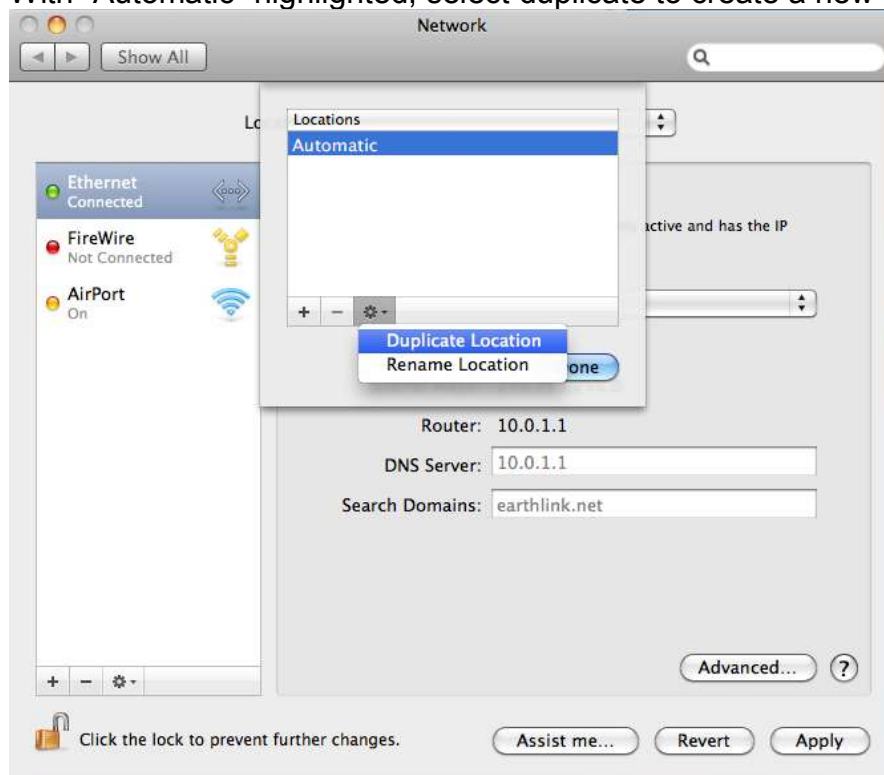
To sign in to AWS web sites and applications, AWS requires your Amazon e-mail address and password. Additionally, it

- 3) Setting up Network proxy for coverArt. Much easier than it sounds in the readme, and very easy to switch back and forth to use coverArt once setup the first time.

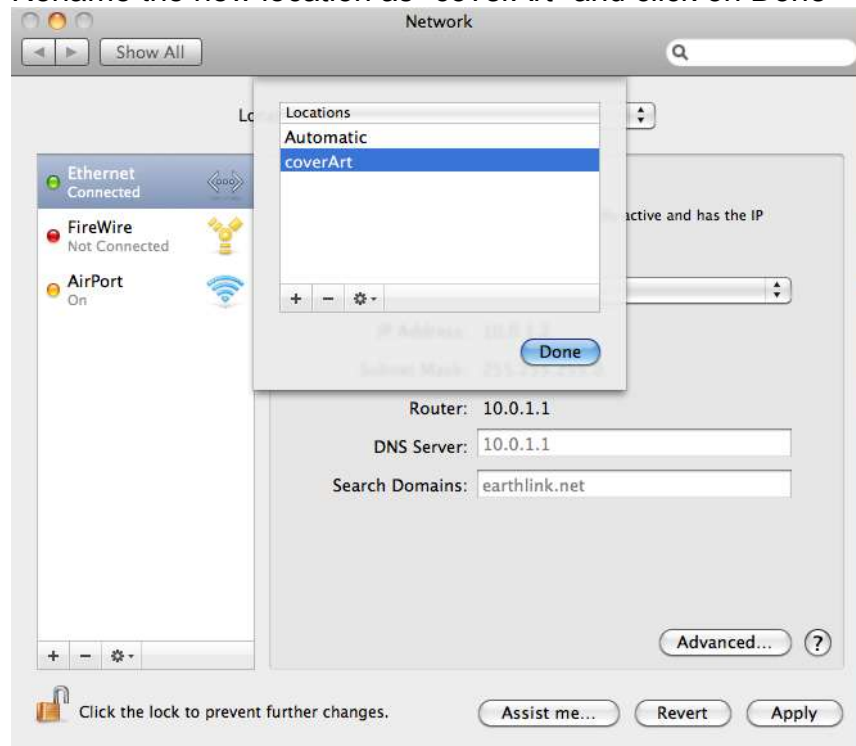
Go to System Preferences -> Network, and select "Edit Locations" in the Location drop-down menu



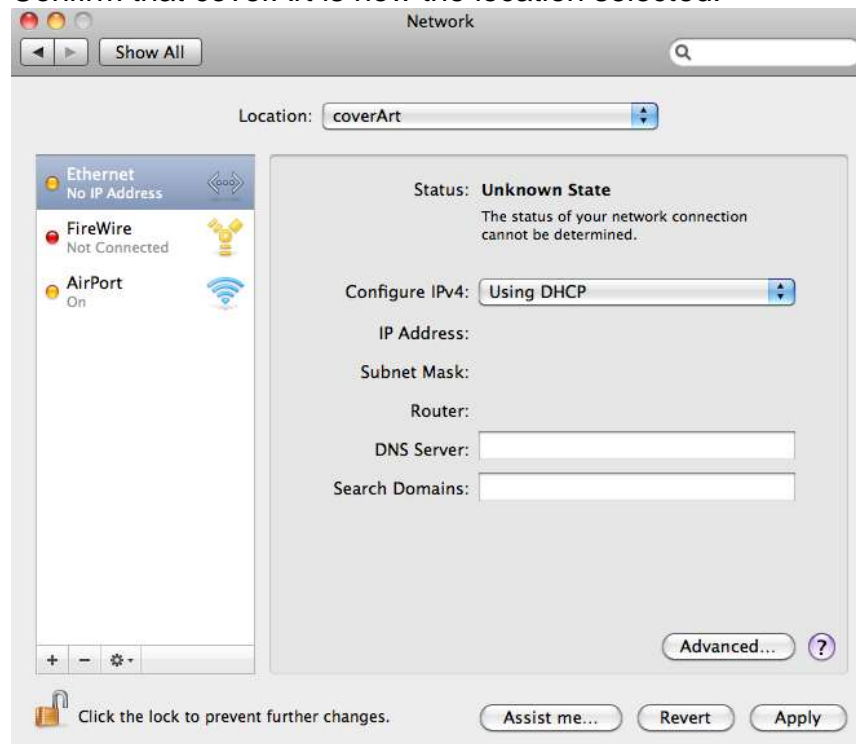
With “Automatic” highlighted, select duplicate to create a new location.



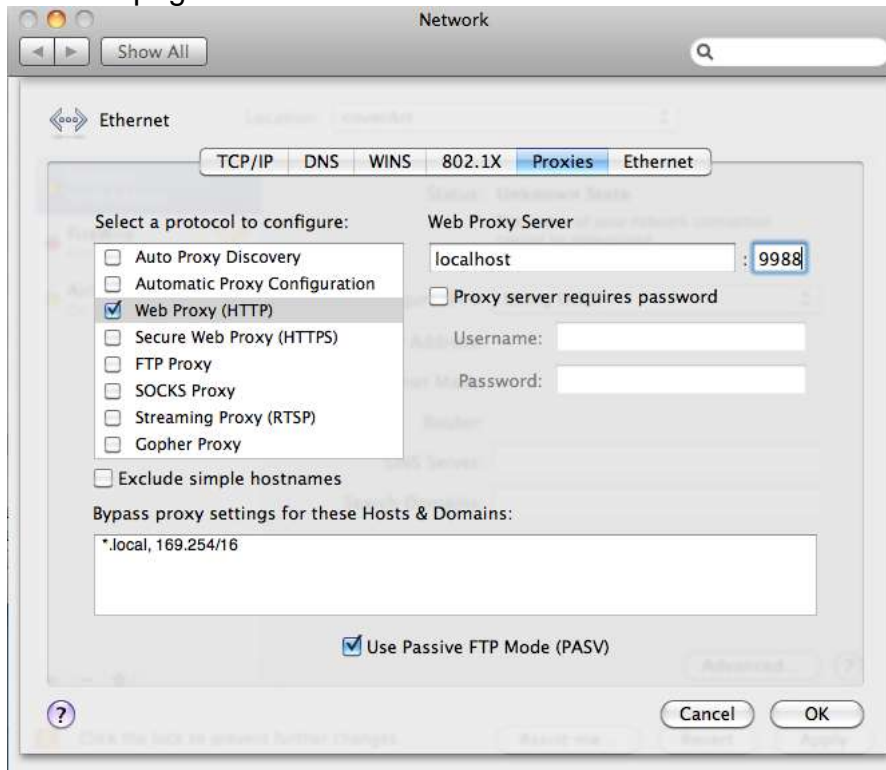
Rename the new location as “coverArt” and click on Done



Confirm that coverArt is now the location selected:



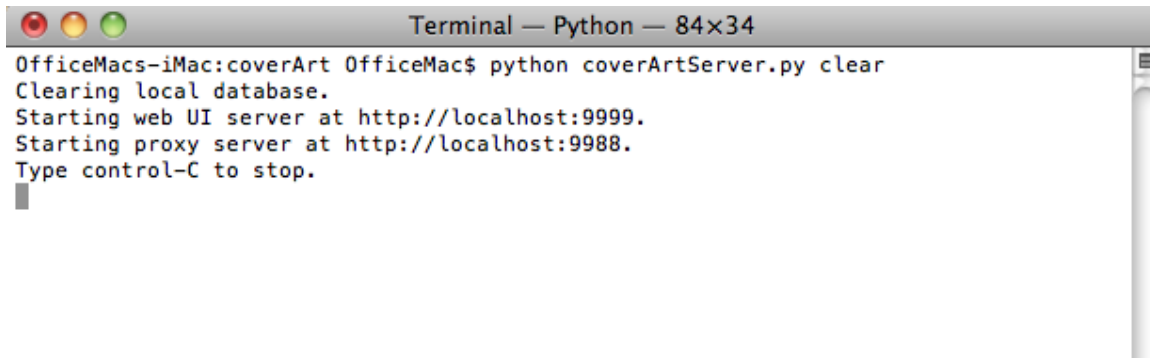
Now click on the “Advanced...” button in the lower right hand corner, click to the “Proxies” tab. Place a check mark next to “Web Proxy” and add localhost:9988 as shown below. Click OK and then hit Apply on the main Network page.



- 4) Now time to launch the python cover art script. Launch a Terminal window and navigate to your coverArt folder. I keep mine on my Desktop, so navigate to within the folder as shown.

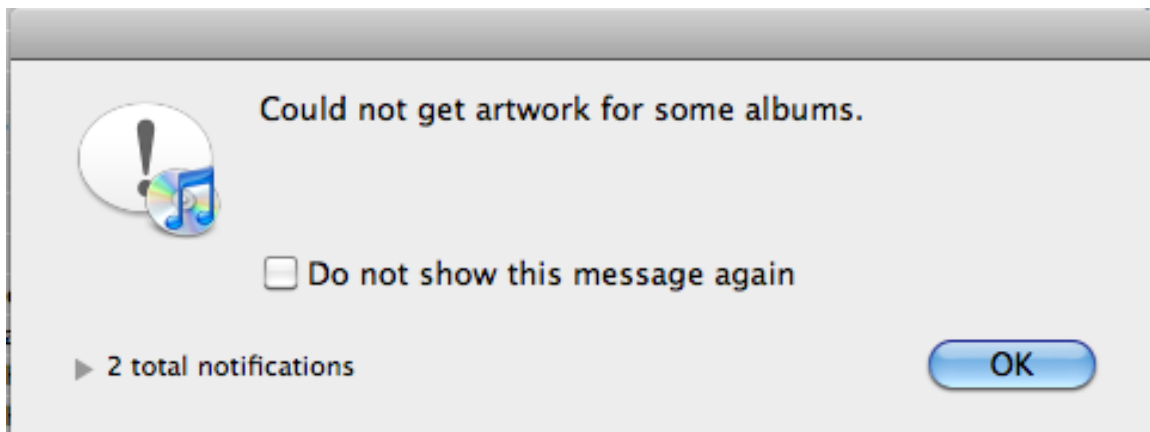
```
Terminal — bash — 84x34
Last login: Sun Jan 31 00:00:25 on console
OfficeMacs-iMac:~ OfficeMac$ ls
Desktop      Jts          Pictures
Documents    Library      Public
Downloads    Movies       Sites
IBJts        Music
ImageArchiveiMac2.dmg  Parallels Image
OfficeMacs-iMac:~ OfficeMac$ cd Desktop
OfficeMacs-iMac:Desktop OfficeMac$ cd coverArt
OfficeMacs-iMac:coverArt OfficeMac$ ls
README.txt      amazonCoverArt.py  frameset.tpl
album.tpl       amazonLicense.txt  list.tpl
albumDatabase.py  coverArtServer.py  stpy.py
OfficeMacs-iMac:coverArt OfficeMac$
```

Launch the python script with the following: `python coverArtServer.py clear` as shown. I usually start a session with the “clear” flag so that what shows up in the browser interface is only the albums that require cover art.

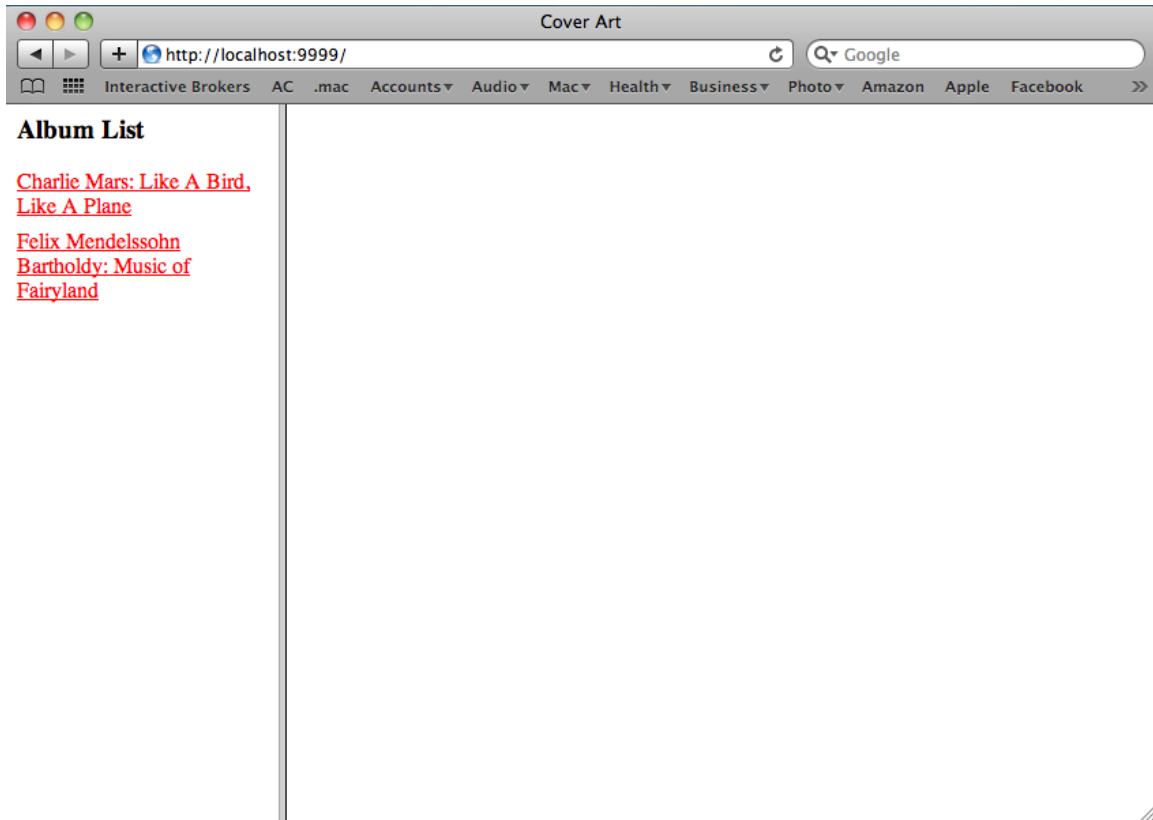
A screenshot of a macOS Terminal window titled "Terminal — Python — 84x34". The window shows the command `python coverArtServer.py clear` being executed. The output text is: "Clearing local database.", "Starting web UI server at http://localhost:9999.", "Starting proxy server at http://localhost:9988.", and "Type control-C to stop.".

```
OfficeMacs-iMac:coverArt OfficeMac$ python coverArtServer.py clear
Clearing local database.
Starting web UI server at http://localhost:9999.
Starting proxy server at http://localhost:9988.
Type control-C to stop.
```

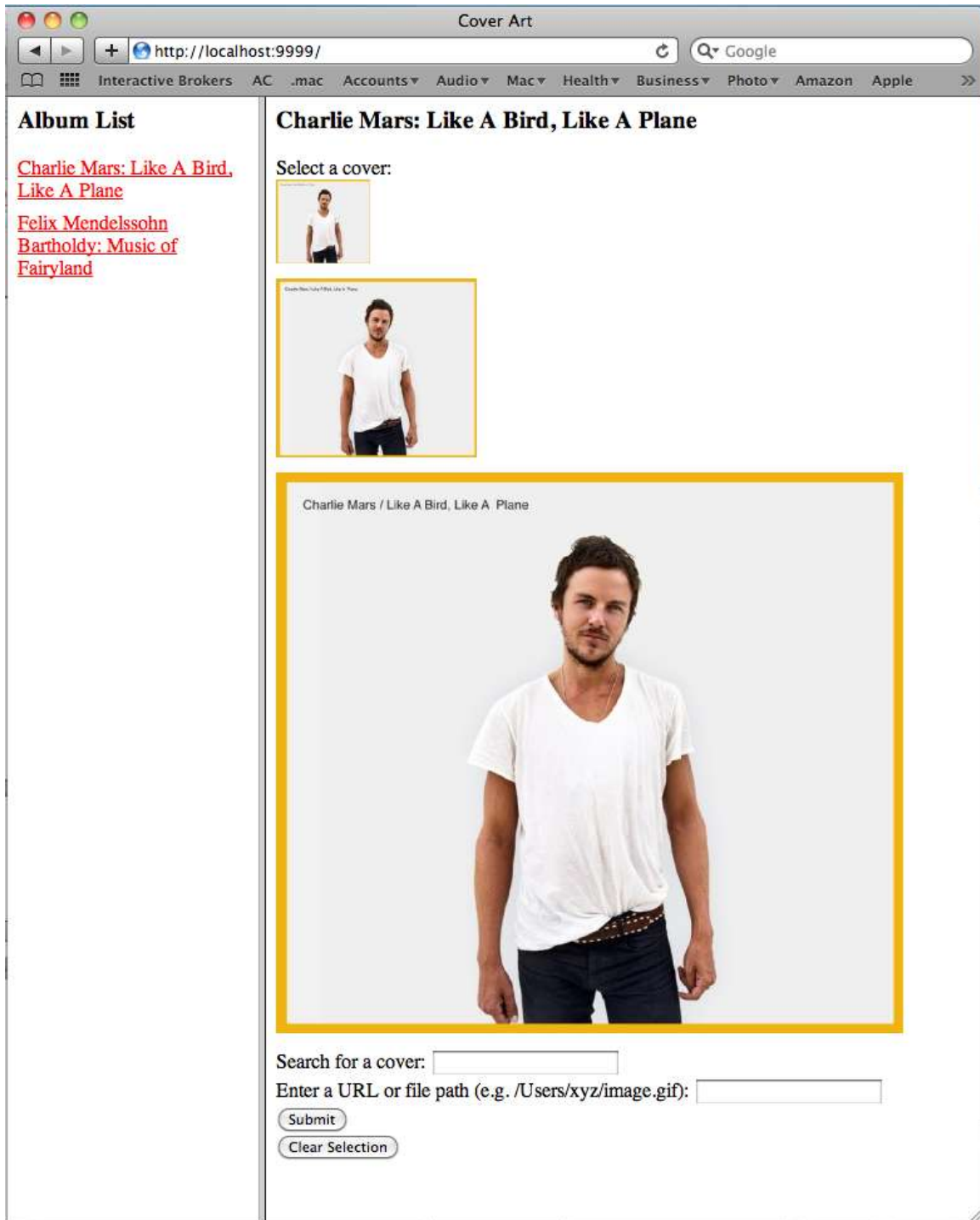
- 5) Determine Missing Artwork. What I now do is go to iTunes (which should be launched at this point), is select all songs in the Library and right click and select “Get Album Artwork”. This process just tells the coverArt server which albums require cover art. The first time I did this it was many hundreds. I just added a couple CD’s, including the Charlie Mars example above which the script is picking up.



- 6) Selecting Artwork. Now launch a browser window and navigate to <http://localhost:9999>. In Safari, I now see the following screen:



Next step is to click on an album, and immediately you'll get typically several choices of artwork if the album name and artist name are recognized in the Amazon database. I typically select the largest, highest quality artwork. See screenshot below for an example of what comes up in the browser. Simply click on the artwork of your choice and then move on to the next album.



- 7) Importing the Artwork into iTunes. Now that the server has your selections for the artwork, it's simply a matter of going back into iTunes, selecting all tracks (or a subset if you prefer), and right clicking on "Get Album Artwork" again. This time, when it determines the artwork is

missing for these albums, coverArt intercepts the iTunes network artwork request and instead populates your library with the selected covers.

- 8) TIP 1: if you don't see the albums artwork or artwork of sufficient quality, the creator of the script has made it very easy for us all. First, you can free text search in the "Search for a cover:" text box shown at the bottom of the screenshot above. This will typically bring up options if you search with fewer words, for example. My preferred method is to start another browser window and hop over to Google Images search engine, plug in the album / artist and pick the highest quality / resolution cover available. If you click on the image in Google as you normally would, click through to "See full size image" you get the artwork shown in the browser (many folks already do this anyway). You now have two options with coverArt. (i) right click on the image and Copy Image Address. Paste this address into the "Enter a URL..." text box in the coverArt server browser page for that album, and then click on Submit. Note certain image file types won't process (i.e., PNG), so I prefer the 2nd option... (ii) drag the picture to the Desktop, and see what kind of image it is. If it isn't JPG or Bitmap, I'll convert it quickly with Preview. Then it's just a matter of dragging the JPG file into the same "Enter a URL..." text box and the location will be pasted. Hit Submit and file is selected and will be used.
- 9) TIP 2: In addition to ensuring a compatible image file type (I haven't gone through all of them), if you're uploading local files, they must have unique names or I've noticed they will not be processed by the server.
- 10) TIP 3: As mentioned earlier, for any albums where there exists multiple artists within the album, iTunes will classify them as distinct and you will be required to select cover art for each. This can be avoided by selecting the album in iTunes, right clicking on Get Info, and in the Options tab setting the album as a Compilation. This was advice from the author of the script when asked, and worked well for me. After making a number of these corrections (especially for Jazz and Classical), I ran the script again with the "clear" flag and all the iterations of the same album were gone.
- 11) Not related to coverArt specifically, but for downloaded hires albums, it's common to be provided very small artwork and high quality PDF linear notes (i.e. HDTracks). If I can't quickly find a quality cover on the website (2L is great with this), I'll just use the Grab app (or even faster, Control-Command-Shift-4) to take a snapshot of the cover from within the PDF when zoomed to desired size, convert to JPG and drag into coverArt.