JHymn Info and Help

Set your iTunes music free • Remove DRM restrictions without loss of sound quality • Convert AAC to high-quality MP3

- What JHymn is meant to do
- Download latest versions of the JHymn applications and code
- The "Big Secret" you need to know to deep-clean your unlocked files
- Basic instructions
- What's new · Release history
- In the World of the Future... and how you might help! (not yet written)

Written by FutureProof Current JHymn version: 0.7.4 hymn-project.org home

Help is coming.
Help is coming... one day late.
One day late.
After you've given up and all is gone.
Help is coming... one day late.

From the song "One Day Late", on Sam Phillips' album *A Boot and a Shoe.*

Let me start with what JHymn is *not* meant to do. JHymn is not meant to aid music piracy. I personally love shopping for music at the iTunes Music Store (I have nearly 900 legally-purchased songs so far, at the time of this writing), I'm happy to pay for the music I get, and I wish Apple all the success in the world at making legal music downloads a viable, profitable business.

I don't much care, however, for Digital Rights Management (DRM). I understand why it's there, and I know Apple never would have gotten the music industry to cooperate without it, but that doesn't mean I have to like DRM or having my fair-use rights restricted.

I have a non-Apple network music player attached to my stereo. With DRM, I can't play my music on my stereo with my existing equipment. I like to play my music on my computer at work, but I don't like the idea of having to "authorize" a computer that's not completely under my control. I like to edit my music sometimes — trimming intros, adding fade-ins and fade-outs, splicing consecutive tracks together to eliminate between-track dropouts, etc. As of iTunes 4.5 and QuickTime 6.5.1, however, my favorite audio editing software would no longer open my iTunes purchases for editing. That really annoyed me. I couldn't burn iTMS purchases music using Toast anymore, either. That annoyed me even more.

Thus my interest in the Hymn project began. I was happy to find the Hymn solution when it came out — and damned impressed with the code-cracking skills that went into the solution, skills I certainly don't possess — but being a more Graphics User Interface-oriented person, I wanted something slicker looking, easier to use, and more automated. When iTunes 4.6 came out — and not only refused to play my previously "hymnified" songs, but started deleting them from my iPod, as well — I also gained an interest in better understanding the process of removing DRM, and in understanding what made a file identifiable as having once been protected by DRM, even after the DRM had been removed.

Here's the ideal experience that I'd like JHymn to provide: You buy some new music through iTunes, you run JHymn — hopefully do no more than click one or two buttons — and when you quit JHymn and go back to iTunes, all of your DRM-protected music has been seamlessly replaced by unlocked, DRM-free music with the same sound quality as your original purchases, music which is virtually indistinguishable from music that you rip from your own

CDs. If you had set up playlists which had included protected songs, the unprotected versions of those songs would now be in those same playlists, in the same play order.

JHymn can get pretty close to that ideal experience now, even for Windows users as of JHymn version 0.5. (Some issues were much easier to solve on Mac OS X, for technical reasons.) Hopefully time, contributions from other users, and even unintended help from Apple (like some much-needed improvements in the iTunes COM SDK) will lead to even better JHymn functionality and performance.

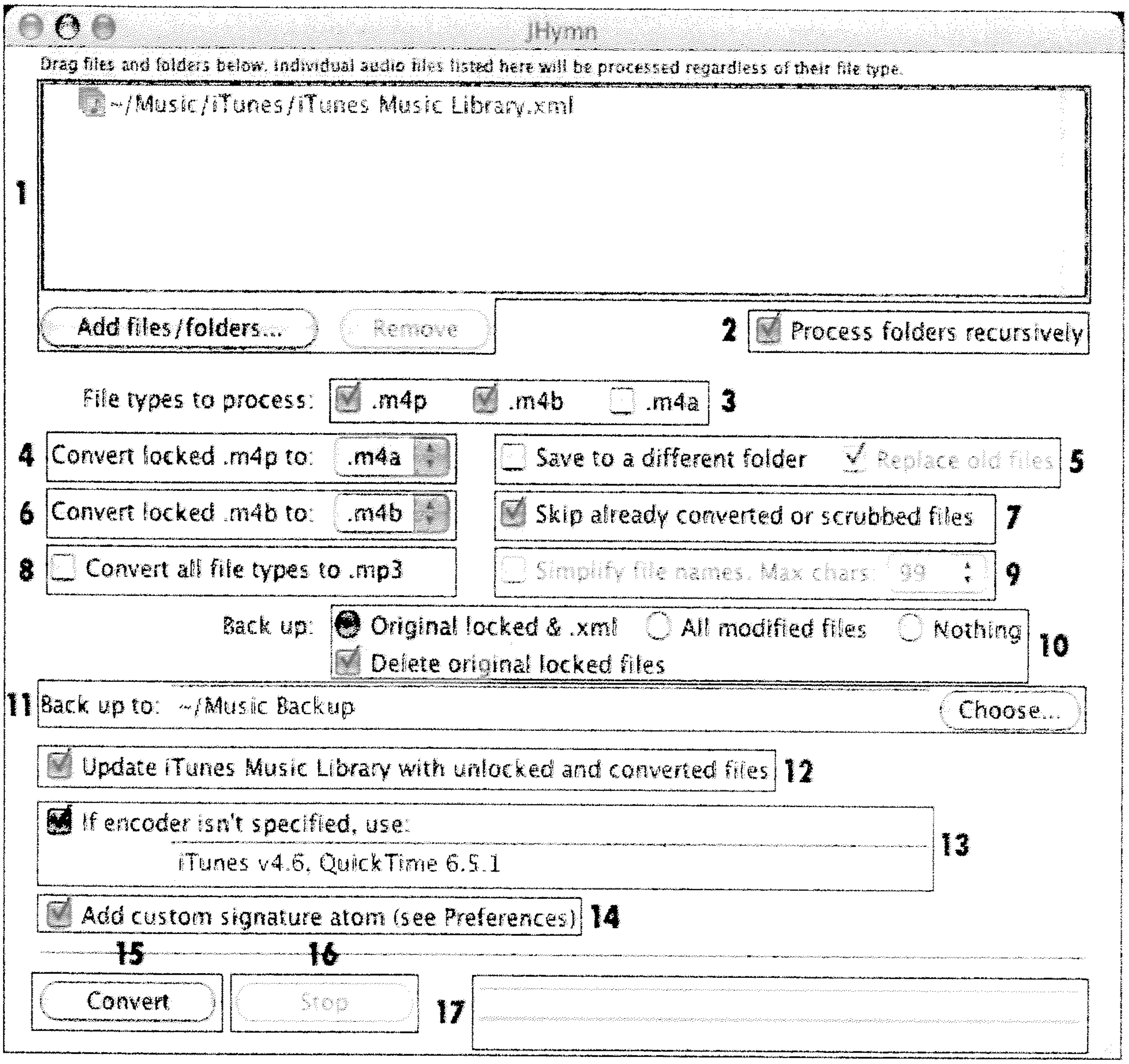
JHymn 0.7.4, Mac OS X version	Click here to download the 832K .zip file
JHymn 0.7.4, Windows version	Click here to download the 800K .zip file
Source code, with Mac OS X Xcode project	Click here to download the 608K .zip file
Java downloads*	Click here to go to Sun's web site.

*Windows users especially might need to download Java to run JHymn.

For various philosophical and quasi-legal reasons, JHymn, right "out of the box" so to speak, does not strip your Apple ID or the copyright information contained within the files from which DRM is removed. Leaving this information in your files, however, is a dead giveaway that those files once lived a life as DRM-protected files. We know after what happened when iTunes 4.6 came out that such vulnerabilities can, and probably will, be exploited.

You have to make the decision yourself, as the user of JHymn, to remove either or both of these items by going into JHymn's Preference settings (In the JHymn menu on OS X, in the Edit menu on Windows) and telling JHymn to delete the Unwanted atoms associated with these items. Doing so looks something like this:

(apID)\n(cprt)



Drag files and folders below. Individual audio files listed here will be processed regardless of their file type.

~/Music/iTunes/iTunes Music Library.xml

☑ Process folders recursively

File types to process: ☑ .m4p ☑ .m4b □ .m4a

Convert locked .m4p to: .m4a

□ Save to a different folder ✓ Replace old files

Convert locked .m4b to: .m4b

☑ Skip already converted or scrubbed files

□ Convert all file types to .mp3

□ Simplify file names. Max chars: 99

Back up: ● Original locked & .xml ○ All modified files ○ Nothing

☑ Delete original locked files

Back up to: ~/Music Backup

☑ Update iTunes Music Library with unlocked and converted files

☑ If encoder isn't specified, use:

iTunes v4.6, QuickTime 6.5.1

☑ Add custom signature atom (see Preferences)

Note: For convenience, I'm using the terms *locked* and *unlocked* to mean protected by DRM and free from DRM, respectively. This usage should not be confused with your computer's file system concept of locked (read-only) and unlocked (read/write) files.

These are the files and folders containing files that you want JHymn to unlock and/or scrub. You can use the button, or simply drag-and-drop files and folders.

"Recursively" is a word that's probably more technical than should be used casually with a non-technical user, but it takes up a whole lot less room on the display than saying "If there are folders inside of another folder, look inside those folders for files too. And if there are folders inside those folders, look there too, etc. etc." If you turn this check box off, only files immediately inside the folders listed will be examined by JHymn. Folders within folders will be ignored.

These are the file types that JHymn will examine — (AAC files with DRM), (audiobooks, with or without DRM), and (standard AAC files).

Normally you only need to examine protected files — and The only reason to have JHymn look at files is for what I like to call "scrubbing", by which I mean cleaning up any residual traces that a file was once a DRM-protected file (see The "Big Secret" for more).

JHymn will run faster with unchecked, since it won't have to spend time looking at files you've already unlocked, but it might be a good idea to check the option on the first time you run JHymn, and also when new versions of JHymn come out since scrubbing techniques may need to be improved over time.

Purchases from the iTunes Music Store come as files (aside from audiobooks — we'll get to that subject later). Typically you'll want to remove the DRM and turn these files into unlocked files.

When is *un*checked, new unlocked files are saved right where the original locked files were found. Already-unlocked files that need to be scrubbed are simply modified in place.

When is checked, new unlocked files and freshly-scrubbed files are saved to whichever drive or folder you specify in section .

If you uncheck , JHymn will preserve any already-existing files in the target folder by changing the names of new files as needed. For example, if *Song.m4a* already exists in your target folder, and song *Song.m4a* is about the be rewritten, a new file named *Song_copy_01.m4a* will be created.

Audiobooks, with their file extension, need to be handled as a special case. If you unlock an file and change the extension to , it will be quite playable as an unprotected audio file, but special features like bookmarks and variable-speed playback won't work. If you leave the extension as , you get full audiobook features, but iTunes still describes each such file as a "Protected AAC audio file", and JHymn has to do a little more work when it looks at files — slowing things down a little for you bit, the patiently waiting user — because it needs to read a bit of the beginning of each file before it can tell if it's unlocked yet or not.

I personally recommend leaving files with their extension, but the choice to change the extension is there if you want it.

The purpose of the is to make JHymn run faster by not re-converting and re-scrubbing files that have already been processed once before. Probably the only good reason to ever switch this option off is if you're running a newer version of JHymn and there's a good reason to force JHymn to re-do what an earlier version of JHymn had done.

If you've got this option turned on you might, however, find yourself asking one day, "Hey? Why is JHymn redoing all of those file that have already been unlocked and scrubbed? I thought it was supposed to skip them!" Well, this can happen for a couple of reasons:

One is that what's considered "scrubbed" can change. Both your own Preference settings and new versions of JHymn can re-define what is considered scrubbed and what isn't. Something that had been scrubbed once before might need to be scrubbed again.

Another thing that can make the difference is the option. When saving to a different folder, two things need to be true for JHymn to skip reprocessing a file: The *target* file must be judged as being fully scrubbed, and the original file and the target file must have the same file modification dates. When JHymn does decide to process or reprocess particular files then, starting with JHymn 0.4.x, JHymn will set the modification date of any newly-unlocked and/or newly scrubbed file to match its original. Subsequently, as long as you don't change the original file (by editing song info or updating artwork, for instance) JHymn will know to skip over reprocessing these files the next time you run JHymn.

Use this feature to convert AAC files, even locked and as well as unlocked files, directly into MP3 ( ) files.

If you wish to adjust MP3 sound quality and bit rate settings, go into JHymn's settings. There are separate settings for audiobooks and all other AAC files. While the range of sound quality settings available from the pop-up menus should serve most users needs, you can also enter your own custom settings, using LAME's command line switches. Use custom settings with caution: JHymn does no validity checking for these settings, and bad settings could cause LAME to fail in unpredictable ways.

JHymn extracts song information such as song title, album name, artist, etc., from AAC files, and then uses LAME's ability to set ID3 tags based on this information. For compatibility, JHymn strips diacritical marks and makes other modifications so that your tag text can be represented using unaccented Roman letters, digits, and simple English punctuation (basic ASCII). As LAME does not support a tag for composer names, JHymn will append composer names to the artist tag. Not all genre names will convert to those understood by LAME, so some of your genre information may be rendered simply as "Other".

If you have unchecked, and checked, your MP3 files will have full tag information, without the above limitations, created via iTunes' own tagging facilities. The major thing missing from your MP3 files will be artwork.

This option gives you the ability to shorten file names (as well as the names of artist and album folders that may be created to store your files) and to simplify the character set used for folder and file names so that the resulting files will have the greatest cross-platform compatibility. is only applicable when the option is checked on.

It's always a good idea to . The goal of JHymn is to create unlocked files which are indistinguishable from files that you might rip from your own CDs, *but this goal cannot be guaranteed.* Apple may have ways of marking files as store purchases that no one contributing to hymn-project.org has yet discovered, and any such undiscovered markers *could* mean, although I hope it is unlikely, that files which you once thought were completely freed from DRM suddenly become unplayable. Such problems have already occurred once, when iTunes 4.6 was released.

The first back-up option, , backs up any locked and files that get unlocked, plus a pre-update copy of the XML-formatted version of your iTunes Music Library in the event that an update is needed.

The second back-up option, , adds to the first option any unlocked but scrubbed files, backing up pre-scrubbed copies. This option might be especially useful if you're using JHymn to strip away cover art (something I'll get around to documenting later) yet want to make sure that you can recover the artwork later.

As long as you've chosen to make back-ups, the option is useful not only to save disk space, but to avoid problems where iTunes ignores your newly-unlocked files in favor of your old DRM-protected files. must be checked on in order to use the option.

This field changes depending on whether is checked or unchecked. When unchecked, this field is where you set up a back-up folder. When checked, this is the "different folder" you'll be saving to. You can type in a folder path, drag-and-drop a folder into this field, or use the button to select a folder.

Selecting this option lets iTunes know that locked files have been replaced by unlocked files with changed file extensions. This way, your iTunes Library and your playlists will be the same as they were before running JHymn, except that unlocked files will have replaced DRM-protected files. Without using this option (especially on Windows), iTunes will often not know where the newly-created unlocked files are, or where your old locked files are either, but will instead present you with broken tracks that can't be played.

You can only use the option if is unchecked, and is checked on. You may also need to check your in case JHymn needs help locating your iTunes Music Library files.

The following limitations to the Library update process should be noted:

- iTunes will list all files as "Protected AAC audio file", whether they are truly protected or not. JHymn's Library update procedure will not change this.
- Mac OS version: Unlocked files may be briefly listed as "Protected AAC audio file" until you've played them, done a "Get Info" on them, or otherwise nudged iTunes into refreshing a little bit of outdated display information.
- Windows version: User-configured start and finish times for individual tracks will not be copied from old locked files to their corresponding new unlocked files.
- Windows version: Some unusual playlists (probably not very useable or practical ones) will not be updated, such as playlists combining both URL streams and song files.

Files you rip from your own CDs include information about the encoder used to create the files. Files from the iTunes Music Store lack this information. In order to make de-DRMed and scrubbed files look more like home-ripped files, the option allows you to add an extra touch of fake authenticity.

The option gives you a way to mark your files as your own, both to discourage piracy and to give you a way, should the need arise, to figure out which of your files in your music collection had once been DRM-protected.

To create a custom signature atom, you need to set up your signature in JHymn's . While the signature text can be pretty much anything you want it to be, care must be taken in choosing your signature atom or you could corrupt your files and render them unplayable.

If that last bit scares you, then you probably shouldn't try to use a custom signature. If, however, you feel like boldly pressing onward, here are some things to keep in mind:

Atoms are four character codes. You can use any four characters, but it's best to stick with unaccented Roman letters, digits, and simple English punctuation (basic ASCII characters). For your own atom, remember that the goal is to come up with a four-character code that's very unlikely to be something Apple would want to use for its own purposes. Apple, for instance, reserves all all-lowercase atoms, so don't use all lowercase yourself. I'd recommend a mix of upper- and lowercase characters, and a bit of odd random punctuation is also a good idea. If I weren't using up these atom names by using them as examples here, things like 'BoB#' and 'wHy?' and 'bL1p' would probably be very good ideas.

If you're a technically-minded user using a Mac, or on Windows and have something like Cygwin installed, you could locate your custom-signed files from a command prompt with something like this:

```
grep -r "MyID.\{4\}data.\{8\}My signature" .
```

For brevity, this button simply says , but if having a button the width of the entire JHymn main window weren't a problem, it might very well say "Convert, Scrub, and Update the iTunes Library as Needed". Click here when you're ready to have JHymn get to work converting, unlocking and scrubbing your files. If you're going to be updating your iTunes Library, you'll need to quit iTunes before you can get started.

Click to interrupt the conversion and scrubbing process. You may be asked to allow a Library Update to proceed for files that had already been converted before you interrupted the process.

Progress information and status messages are displayed here, including the countdown to any pending automatic FairKeys deauthorizations.

- JHymn can now read AAC files with bad date tags without throwing an exception.
- JHymn will now keep going, after throwing an exception on an individual difficult file, with the rest of a multi file conversion task.
- will now display any exception thrown while attempting to read and display a file.

- Fixed a bug which I thought had been fixed in version 0.7.1, dealing with an undefined "played date" causing Library updates to fail in the Mac version of JHymn.
- Added back-up of the binary iTunes database to back-up of the XML version.

- Fixed a bug which prevented the Windows version from converting some files to MP3 when double-quote characters appeared within ID3 tag data.
- Can now read and process files with excess trailing data, files which used to be skipped over by JHymn for being badly formatted.
- Improved scrubbing — removal of an identifying mark found within JPEG cover art.
- Fixed a bug that could cause unnecessary Library updates after scrubbing files, and even possibly doubled-up entries in the Library for the same files.
- will now display atoms with odd names as eight-digit hexadecimal numbers rather than four-character codes.
- 8-digit hexidecimal atom names can now be used when specifying unwanted atoms.
- AOL IDs, as were Apple IDs before, are now preserved from scrubbing unless user preferences indicate that (apID) should be scrubbed. (Previously, AOL IDs still survived initial DRM-removal, but they would most likely have been deleted by any subsequent scrubbing.)
- Eliminated the need for JHymn to start iTunes, and then quickly quit iTunes, at the start of the conversion process when Library updating has been selected.

- Fixed a bug caused by a strange situation one user had where a file had a play count greater than zero, yet no "played date" (the time the last play occurred) was defined. This inconsistent state caused JHymn's Library update to fail.

- Fixed a bug in the Windows version that might cause playlists to be updated without preserving playlist order, even for playlists with 100 or fewer tracks.
- Added a warning to eject your iPod before performing an automatic iTunes Library update — doing so will help you avoid the annoyance of iTunes starting an iPod update while JHymn is trying to start and quit iTunes for its own reasons.

- to help with recent (Jan-Feb 2005) iTMS downloads which have previously been unreadable by either JHymn or Hymn, and some scrubbing improvements to tidy up the mess inside these oddly formatted files.
- Mac version of JHymn now uses scripted updating of the iTunes Library to create a more thorough break by unlocked files from their locked originals — this can solve some of the problems seen with the release of iTunes 4.7.1 and songs being unplayable and/or deleted from iPods.
- Incorporated some features from the new Mac scripted Library update into the Windows version, including, for speed, a size threshold for how playlists are rebuilt.
- — useful, among other things, for solving some iTunes 4.7.1-related problems.
- — conversion to MP3 is no longer restricted to the "Save to a different folder" mode.
- , causing each file in such playlists to be inspected just as the contents of a folder would be.
- The Mac version has been updated with FAAD 2.1 beta, which, among other improvements, allows .m4b audiobooks to be converted to MP3. Had used FAAD 2.0.
- The Windows version has been updated with LAME 3.96.1. Had been 3.96.
- Error handling has been improved, including fixing a bug where unreadable AAC files were skipped over without any errors being reported.
- It's no longer necessary to use the option in order to have the option of updating the iTunes Library.
- Some legacy file extension choices (.mp4, .aac) have been removed.
- Interrupting a Library update by clicking is no longer permitted, as this could leave the iTunes Library in a bad state.
- Fixed a bug where, in the Windows version, the conversion process would keep running in the background when it should be paused, waiting for a user response when the user has interrupted conversion and is prompted about continuing with a Library update or not.

- Fixed a bug where part of JHymn could hang after an attempt to display certain log messages.
- The is now automatically activated for users running Java 1.4.0, rather than 1.4.1 or later. Java 1.4.0's certificate store is insufficient for validating the Music Store connection. For such users, updating to the latest Java release is recommended.

- Fixed a bug in the Mac version which caused MP3 conversion to fail unless you'd previously installed FAAD2 on your computer.
- Fixed a potential problem in where *possibly* a duration value might have been formatted to say something like 0:03:60.000 instead of 0:04:00.000.

- files with low sample rates (24 kHz or less) or low bit rates (32 kbps or less) will be treated just like audiobooks as far as the quality settings used for MP3 conversion.
- Some minor GUI tweaking, including a visual cue linking the option to the option.
- Elimination of a superfluous error message that could occur when a user interrupts MP3 conversion.
- Better progress feedback during the AAC→WAV phase of MP3 conversion on Windows.
- A little bit of README documentation added to the source code, including some notes on how the Windows version gets built, and the minor changes that were made to the FAAD2 source code for Windows.
- A *possible* fix for this obscure incompatibility problem on Windows.
- provides more information about viewed files, such as bit rates and duration.

- Option for , including protected files, directly . FAAD2 2.1 and LAME 3.96 are built into JHymn and used for this purpose. ID3 tags are supported.
- Fixed some strangeness in text selection behavior.
- Small improvements to error logging and reporting.

- — shows details of conversion, Library update, and FairKeys activities. This feature will be especially useful to *me* when any of *you* run into problems you need to report.
- Better menu support for AAC view-as-text windows ( ).
- On Windows, JHymn windows now have a custom title bar icon, rather than the default Java coffee cup.
- Better interface font consistency on Windows.
- option now only works when is checked on.
- JHymn can tell if iTunes is running and when necessary warn users to quit iTunes before JHymn proceeds.
- New warning messages to caution users against FairKeys overuse.
- option has been removed — this only existed to make up for a lack of automatic Library updating for Windows, which is now no longer a problem.
- The file count beneath the progress bar now only counts audio files. Including the iTunes Library file in the count as I did before seemed to have caused a lot of confusion.
- Other small enhancements and bug fixes.

- Fixed a bug related to correctly reading audiobooks.

- Fixed a bug introduced in 0.4.2 which caused problems when re-writing AAC files which contained unknown data when first read in.

- Added the "Naive Trust Manager" feature to help overcome log-in problems caused by having an old Java installation.
- windows no longer misleadingly editable.
- Color coding and error text added to windows.
- Made a step towards improving the robustness of reading AAC files (but accidentally introduced a potential problem at the same time).
- When determining if a file can be skipped over as already processed in mode, the "cleanliness" of any pre-existing target will be considered.
- Changed the AES decryption used by FairKeys so that it would work for users with Java 1.4.1 or 1.4.0.

- Replaced the "Immediately deauthorize" option with an option for delayed automatic deauthorization.

- : No iPod needed, just log into the music store and get the keys you need to free your music.
- Assistance for Windows users in restoring their iTunes Library and playlists with newly-unlocked .m4a files replacing old protected .m4p files. *Mac users don't need this assistance. By sheer luck (and not just because I'm a Mac fan!) there's a simple trick, already implemented, that helps Mac users sync their libraries and playlists.*
- The built-in link to this help page.
- A new option to replace old files, and to ignore already-converted files, when using the option.
- Enhanced "scrubbing" to improve how well unlocked files look like home-ripped files.
- The Cancel button now works properly in the Preferences dialog.

- First versions that run on Windows.
- First distributions of ready-to-run application binaries.

- Early source-code-only, Mac only versions.