

Exact Audio Copy v1.5 with scripting support

EAC is an excellent audio grabber. This guide is about how to automate the process, so that CDs can be grabbed with minimum effort and mouse clicks. I have the following requirements:

1. Maintain highest possible audio quality
2. Simple and speedy grabbing
3. MP3 and FLAC formats for all CDs grabbed
4. Proper MP3 tagging
5. Replay Gain calculation in tags only, without modifying original compressed track file
6. Integration of Album Art into the track file
7. Compatible with Logitech's SqueezeCenter
8. Compatible with iPod / iPhone / iPad (filenames and structure consistent with iTunes)

There used to be a scripting extension called REACT (Run EAC Tasks), which was built for EAC version 0.99. It is not being maintained since 2008, and does not work with EAC version 1.0 and later. I used REACT as an inspiration, simplified and dropped everything I don't need and don't want to spend time testing, which includes everything but the mp3 and flac encoder, and the image mode. If you need any of the dropped features, it would be not too difficult to bring them back in to the project, you just need to study the original REACT ini and cfg files. Refer to my outdated instructions to understand the equivalent installation of [Exact Audio Copy v0.99 with Scripting support - Run EAC Tasks](#).

Installation

Ripping

1. Download and install [Exact Audio Copy](#)
2. Download the current 64 bit version of [FLAC](#) (as of 4 Sep 2020 this is version 1.3.2). Open the zip file and extract *flac.exe* and *metaflac.exe* from the *win64* folder to your *EAC tools* folder (a folder of your choice).
3. Download the current 64 bit version of [LAME](#) from [Rarewares' LAME Bundles](#) (as of 4 Sep 2020 this is version 3.100). Open the zip file and extract *lame.exe* and *lame_enc.dll* to your *EAC tools* folder.
4. Download [Akkurat's REACT mod](#), or this file [react_2.0.aku.b04.zip](#), in case the link is not active. Open the zip file and extract *metamp3.exe* from the *tools* folder to your *EAC tools* folder.
5. Download [ImageMagic](#). There are many different versions available, choose the *Portable Win64 static at 16 bits-per-pixel component*, you won't need HDRI (as of 4 Sep 2020 this is version 7.0.10-28). Open the zip file and extract *mogrify.exe* to your *EAC tools* folder. Alternatively, you can install the whole zip file to a portable directory to use the full program.
6. Download and install the current 64 bit version of [Album Art Downloader](#) (as of 4 Sep 2020 this is version 1.0.5). Album Art Downloader needs .NET 3.5 Framework to run, which you might need to install first.

Trouble shoot encoder settings

1. Install Python. Go to the Microsoft Store, search for "python", and install Python 3.8. Check that

it has properly installed with:

```
powershell python --version
```

2. Install [Mutagen](#) with:

```
powershell python -m pip install mutagen
```

3. There will be a warning that the script directory is not in your path, so Windows cannot find the executables automatically. It will display something like
 "C:\Users\user\AppData\Local\Packages\PythonSoftwareFoundation.Python.3.8_qbz5n2kfra8p0\LocalCache\local-packages\Python38\Scripts"
4. Add this path to your user's environment, so you don't need to type the full path everytime you need to run *mid3v2.exe*. Open the Start Search, type "env" then choose "Edit the system environment variables", and click the "Environment Variables..." button at the bottom.

Music player

- Windows: Install [foobar2000](#). It plays flac and mp3 files, and gives you comprehensive meta tag information on both formats.

Configure MP3

- [The LAME Project](#)
- [LAME](#)
- [EAC: how to properly set up for LAME so that metadata are added to MP3](#)
- [Full command line switch reference](#)
- [MP3 Tagging tools](#)
- [lame: man page](#)

Configure FLAC

1.

```
-8 -V -T "ARTIST=%artist%" -T "TITLE=%title%" -T "ALBUM=%albumtitle%" -T "DATE=%year%" -T "TRACKNUMBER=%tracknr%" -T "GENRE=%genre%" -T "PERFORMER=%albuminterpret%" -T "COMPOSER=%composer%" %haslyrics%--tag-from-file=LYRICS="%lyricsfile%"%haslyrics% -T "ALBUMARTIST=%albumartist%" -T "DISCNUMBER=%cdnumber%" -T "TOTALDISCS=%totalcds%" -T "TOTALTRACKS=%numtracks%" -T "COMMENT=%comment%" %source% -o %dest%
```
2.

```
@tools@\flac.exe @Opt_Flac@ %Cover_tag% %VA_tag% %Disc_Flac% %RG_MetaFlac% -T artist="@artist@" -T album="@album@" -T tracknumber="@track@/@numtracks@" -T title="@title@" -T date="@year@" -T genre="@genre@" -T comment="@comment@" -T encoded-by="%USERNAME%" -T encoding="Flac @Ver_Flac@ @Opt_Flac@" "@source@" -o "%TrackName%.flac"
```
3.

```
-8 -V -T "ARTIST=%artist%" -T "TITLE=%title%" -T "ALBUM=%albumtitle%" -
```

```
T "DATE=%year%" -T "TRACKNUMBER=%tracknr%" -T "GENRE=%genre%" -T
"PERFORMER=%albuminterpret%" -T "COMPOSER=%composer%" %haslyrics% -tag-
from-file=LYRICS="%lyricsfile%"%haslyrics% -T
"ALBUMARTIST=%albumartist%" -T "DISCNUMBER=%cdnumber%" -T
"TOTALDISCS=%totalcds%" -T "TOTALTRACKS=%numtracks%" -T
"COMMENT=%comment%" %source% -o %dest%
```

4. `7 -p -h -v -b 160 wav-file mp3-file`

5. `-V4 -vbr-new -id3v2-only -ignore-tag-errors -ta "%artist%" -tt "%title%" -tl "%albumtitle%" -ty "%year%" -tc "%comment%" -tn "%tracknr%/%numtracks%" -tg "%genre%" -tv "TPE2=%albumartist%" -tv "TPOS=%cdnumber%/%totalcds%" -tv "TCOM=%composer%" %source% %dest%`

6. Use *metaflac.exe* to compute the replay gain and store it with the cover art into all track files:

```
metaflac --replay-gain --import-picture-from="folder.jpg" "*.flac"
```

- [How to setup Exact Audio Copy for FLAC ripping](#)
- [flac documentation](#)
- [metaflac documentation](#)

Configure Metadata

1. Use *metaflac.exe* to compute the replay gain and store it with the cover art into all track files:

```
metaflac --import-picture-from="folder.jpg" "*.flac"
```

2. use *metamp3.exe* to compute the replay gain and store it with the cover art into all track files:

```
metamp3 --replay-gain --frame "APIC{3}:folder.jpg" "*.flac"
```

3. Use *mid3v2.exe* to store the cover art into one track file: `mid3v2 -picture="folder.jpg" "file.mp3"`. With this tool you need to iterate through all mp3 files.

1. [How to use gnudb.org](#)
2. [Metadata for EAC](#)
3. [A Batch Script To Resize Images](#)

Optional

Download and install [Foobar2000](#).

Windows 10

Make sure that the user account they are logged in has read+write permissions for the following folders:

- REACT folder (C:\PortableCustom\REACT2)
- EAC folder (C:\Program Files (x86)\Exact Audio Copy)
- "Use this directory" path setting in EAC (default set by REACT: user "My Music" folder). If you used your "Music" folder, create one in your original user home, e.g. the original path to "Music".
- INI "OutRoot" folder (default setting: user "My Music\EAC" folder)

Configuration

The configuration below was first tested on my English Windows XP SP3 environment, and then migrated to Windows 7 Ultimate (Home Premium should work the same way). It was set up to grab audio tracks in flac and mp3. Other formats would work as well, but with limited functionality.

Configure EAC

After installing EAC, run EAC (without REACT) first to configure your basic settings including CD reader. Go through the procedure of determining whether your CD reader can provide proper CR2 error feedback. To do this, copy a CD to a new disk and scratch this disk with a few scratches. If the CD reader can provide proper CR2 feedback, then EAC will detect a faulty CD within a few seconds, but will not detect any scratches on the original of the same CD.

Configure REACT

After EAC has been properly configured, run REACT and configure EAC for REACT (type Ctrl-F2). After this has been done, some settings of EAC have been reset to default values to work well with REACT. Do not change these settings, as only with these default settings the scripting interface will work properly, even if it's possible to change some of the settings. It is important that the reset naming convention for tracknames remains at the default setting, including the name for compilation CDs, which defaults to "Various Artists". If you change any of these, REACT will not work properly!

AlbumArt Downloader

When properly configured as below, the Album Art Downloader is invoked when F4 is pressed in REACT. From 15 sources all matchable cover arts are fetched, after which you need to select one by right clicking the image and selecting "Save". Do not save to any specific path, selecting save will save to the configured temporary album art path (D:\My Music), the REACT script will later copy the album art to the music folder.

ReplayGain

The predefined settings for replay gain calculation would not work, also, the program Glob.exe necessary in the REACT default configuration file is not installed. Please refer to my configuration file examples to obtain a working replay gain calculation.

Note that replay gain can be done in 2 different ways. Either as a volume offset in the meta tags (supported by SqueezeCenter and Foobar2000) or by recoding the music track. I prefer the first which leaves the original music track, which you can find in the enclosed settings.

Note: ReplayGain is great for a music compilation of pop and rock, specially when you love to hear your music managed by playlists. But it is not recommended for classical music. Set `ReplayGain=1` in `REACT.ini` before you rip classical music.

Configuration files

REACT can be configured through a [ini](#) file and a [cfg](#) file. The ini file contains the necessary modifications to grab the CD to a wave file (default EAC behaviour), convert the wav to flac and mp3, and then delete the wav file. Before grabbing, album art downloader is initiated, and the respective album art is saved to the music folder and automatically embedded into the track files. The cmd file is saved with extension `cfg` and is a batch file. The only thing I modified is saving the log file to the music folder, but other changes are possible, too.

The files provided here work with the setup as described in this post. You can also try to load my [profile](#) for EAC, but then need to rerun the CD reader detection, and might need to reset the file path settings.

Note: I did not modify EAC's default path to the temporary music folder (`D:\My Music`). REACT will delete all files created during the process, as long as the REACT process was properly completed. If you interrupt the script, you need to delete these files manually. You need to modify the music folder path for the permanent storage to your server or drive you are using. To do this, modify the 2 keys, `CoverDownloaderLocalPath` and `OutRoot` in `REACT.ini`. For your reference, my setting in the enclosed sample settings files are `M:\EAC`.

Multi CD Albums

I prefer to have all music files in one directory for multiple CD albums, rather than having them split into different album names. This needs some editing of the CD album name before ripping. In addition, you need to rename the music files after ripping of each CD to keep control of the different CDs within SqueezeCenter and iPod.

Since REACT does not provide a possibility to do this automatically, I wrote a small utility which does this job automatically. To use it, download and unzip [cdnum](#). Update the path name in the registry file to point to the path where `cdnum.exe` was saved, and where to find the LAME and FLAC encoding executables, then enter the registry information to your registry.

Follow the following steps to grab a multi CD album:

1. Use REACT to grab the first CD, e.g. "Live Dates"
2. Find the CD folder "Live Dates", right click on it, select "EAC: Convert names to CD1". Now, all tracknames are renamed to the same name with "1-" preceding. E.g. title "01 The King Will Come" was renamed to "1-01 The King Will Come"
3. Use REACT to grab the second CD to the same folder "Live Dates"
4. Find the CD folder "Live Dates", right click on it, select "EAC: Convert names to CD2". Now, all new tracknames are renamed to the same name with "2-" preceding. E.g. title "01 The Pilgrim"

was renamed to "2-01 The Pilgrim"

Convert wave files

Since REACT does not provide a possibility to encode wav files directly, I wrote a small utility which does this job automatically. To use it, download and unzip [wavcode](#). Update the path names in the registry file to point to the path where wavcode.exe was saved, and where to find the LAME and FLAC encoding executables, then enter the registry information to your registry.

Play flac files on your computer

Install Foobar2000 on your computer. It plays flac and mp3 files, and gives you comprehensive meta tag information on both formats.

Links

- [EAC 0.99 prebeta 5](#)
- [REACT_2.0.akku.b04.zip](#)

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