

Rip Audio CDs to MP3s

Converting audio CDs to MP3 consists of two steps:

1. rip the audio tracks from the cd and save them as wave file
2. convert the wave files to mp3 files

The tools required for these two steps are `cdparanoia` and `lame`. The graphical front-end `ripperx` can be used which also provides the option to add artist and title details and write mp3 tags.

Installation of the required tools (if graphical front-end is not required, remove `ripperx`):

```
apt-get install cdparanoia lame ripperx
```

To rip and convert a cd on the command line:

```
cdparanoia -B
#to extract only part of a track like time 0:13.13-1:13.00 from track 1, you
can use
#cdparanoia "1[:13.13]-1[1:13]"
for t in *.wav; do lame -b 192 -h -V 6 $t; done
```

Flac to MP3 conversion

To convert lossless FLAC files to mp3, the easiest option is using `ffmpeg` which will most likely already be installed. This script/command converts all flac files in a directory to MP3 V0 with variable bitrate between 220-260kbps. The resulting compacted audio file cannot be distinguished from the lossless version.

```
#!/bin/bash
for a in ./*.flac; do
  < /dev/null ffmpeg -i "$a" -qscale:a 0 "${a[@]}/%flac/mp3}"
done
```

Trim silence from start/end

This reencodes the file

```
ffmpeg -i input.mp3 -af
silenceremove=1:0:-50dB:stop_periods=1:stop_duration=0:stop_threshold=-50dB
output.mp3
```

This copies the frames without quality loss:

[trim_mp3_silence_copy.sh](#)

```
#!/usr/bin/env bash
set -euo pipefail

# trim_mp3_silence_copy.sh
#
# Usage:
# ./trim_mp3_silence_copy.sh input.mp3 [output.mp3]
#
# Env vars you can override:
# NOISE_DB (default: -40dB) threshold for silencedetect
# MIN_DUR (default: 0.5) minimum silence duration to consider
# (seconds)

in="${1:-}"
out="${2:-}"

if [[ -z "${in}" ]]; then
    echo "Usage: $0 input.mp3 [output.mp3]" >&2
    exit 1
fi

if [[ ! -f "${in}" ]]; then
    echo "Input file not found: ${in}" >&2
    exit 1
fi

if [[ -z "${out}" ]]; then
    base="${in%.*}"
    out="${base}.trimmed.mp3"
fi

NOISE_DB="${NOISE_DB:-40dB}"
MIN_DUR="${MIN_DUR:-0.5}"

# Get full duration (seconds, as float)
duration="$(ffprobe -v error -show_entries format=duration -of
default=nw=1:nk=1 "$in")"

# Run silencedetect and capture lines
sd="$(
    ffmpeg -hide_banner -nostats -i "$in" \
        -af "silencedetect=noise=${NOISE_DB}:d=${MIN_DUR}" \
        -f null - 2>&1 | grep -E 'silence_(start|end):' || true
)"

if [[ -z "$sd" ]]; then
    echo "No silence detected (noise=${NOISE_DB}, d=${MIN_DUR}). Copying
original -> ${out}" >&2
    cp -f -- "$in" "$out"
fi
```

```

    exit 0
fi

# First silence_end => start of audio
start_keep="$(awk '/silence_end:/ {print $NF; exit}' <<<"$sd")"

# Last silence_start => end of audio (trailing silence start)
end_keep="$(awk '/silence_start:/ {v=$NF} END{if(v!="") print v}' <<<"$sd")"

# Fallbacks / sanity
if [[ -z "${start_keep:-}" ]]; then
    # No leading silence_end found; keep from 0
    start_keep="0"
fi
if [[ -z "${end_keep:-}" ]]; then
    # No trailing silence_start found; keep to full duration
    end_keep="$duration"
fi

# Ensure start < end (handle edge cases)
ok="$(
    awk -v s="$start_keep" -v e="$end_keep" 'BEGIN{ if (s+0 < e+0) print
    "1"; else print "0"; }'
)"

if [[ "$ok" != "1" ]]; then
    echo "Could not determine a valid trim window." >&2
    echo "Detected start_keep=${start_keep}, end_keep=${end_keep},
    duration=${duration}" >&2
    echo "Silencedetect output:" >&2
    echo "$sd" >&2
    exit 2
fi

echo "Input:  $in"
echo "Output: $out"
echo "Keep:   ${start_keep}s -> ${end_keep}s (duration ~ $(awk -v
s="$start_keep" -v e="$end_keep" 'BEGIN{printf "%.3f", (e-s)}'))"
echo "Detect: noise=${NOISE_DB}, min_silence=${MIN_DUR}s"

# Stream-copy trim (no re-encode). Use -ss/-to after -i for more
accurate seeking while still copying.
ffmpeg -hide_banner -y -i "$in" -ss "$start_keep" -to "$end_keep" -c
copy "$out"

```

Then use as

```

chmod +x trim_mp3_silence_copy.sh
./trim_mp3_silence_copy.sh input.mp3

```

```
# or  
NOISE_DB=-35dB MIN_DUR=0.3 ./trim_mp3_silence_copy.sh input.mp3 out.mp3
```

From:

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