

Audacity

Audio Software for Editing/Recording

Presented by the Media Creation Lab

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1. Intro

1.1. Overview

- **Open-source:** Free, established community
- **Compatibility:** Windows, Mac, Linux
 - <https://www.audacityteam.org/download/>
- **Plugins:** Support for more audio formats (M4A)
 - <https://support.audacityteam.org/basics/installing-ffmpeg>
- **Standard features:** Recording, audio effects

1.2. Installation

Windows

1. Open executable-file (*.exe)
2. Follow prompts of Setup Wizard

macOS

1. (If applicable) Open package file (*.pkg)
2. Open disk-image file (*.dmg)
3. (In window) Drag Audacity icon to Applications shortcut

1.3. User Interface

- **Menu bar:** *File, Effect, View* menus
- **Toolbar:** Playback, recording, selection, zoom
- **Audio Setup:** Devices & settings
- **Volume meters:** Input levels & output levels
- **Timeline**
- **Canvas:** Tracks/lanes & clips within
- **Track controls:** Gain, pan, muting/soloing, conversion
- **Info panel:** Project rate, timestamps, playback speed

2. Tracks

2.1. Importing Tracks

1. *File -> Import ... -> Audio*

- Default: Imported files have separate tracks/lanes
- Tracks have separate control panels
 - Track menu: Change visual/file settings
 - **Mute** button: Mutes current track
 - **Solo** button: Mutes all other tracks
 - Gain: Increase/decrease to volume (dB)
 - Pan: Shift audio left/right

2.2. Converting Tracks: Stereo to Mono

Convert (one-sided) stereo track to mono track

1. Import track
2. Open track-settings menu (arrow next to name of track)
3. Select ***Split Stereo to Mono***
4. Delete empty track: click ***X*** in control panel

2.3. Three Lines

- **Marker:** Black vertical line (at project start by default)
 - Click body of track/clip or click Skip To buttons
- **Skimmer:** White vertical line
 - Appears while project *stopped*
 - Move cursor along timeline
- **Playhead:** Green triangle with black vertical line
 - Appears while project *playing* or *paused*
 - Click timeline or click Play button (plays from marker)

2.4. Playback

- **Pause [P]**
 - Freezes/unfreezes playhead at position in timeline
- **Play [spacebar]**
 - Plays from marker position
- **Stop**
 - Clears playhead, enables editing (clip-selection)

3. Clips

3.1. Clip Selection

Select by clip-head

1. Single-click head (section with title)

Select by clip-body

1. Double-click body (section with waveforms)

Select by control-panel

1. Click **Select** button to select entire track (all clips within)

3.2. Clip Arrangement

Click & Drag (need sufficient space)

1. Click clip-head & hold
2. Drag clip left/right

Cut & Paste (need sufficient space)

1. Select clip
2. Right-click clip & select **Cut** [Ctrl/Cmd + X]
3. Click track (set marker)
4. Right-click track & select **Paste** [Ctrl/Cmd + V]

3.3. Clip Trimming

Split & Delete

1. Set marker
2. Right-click clip & select ***Split Clip***
3. Select unwanted clip & press Backspace or Delete key

Drag Edge

1. Point to edge (between clip-head & nearest waveform)
2. Look for double-arrow cursor
3. Click & drag edge inward

4. Volume

4.1. Monitoring Volume

- *Watching* volume level is important as listening
- Blue lines mark (local) peaks
- Ideal volume (peak values):
 - Primary audio (speech): -12 dB to -6 dB
 - Secondary audio (music): -24 dB to -18 dB

4.2. Editing Volume

Normalize function (set volume *to* dB value)

1. Select clip
2. Open **Effect** -> **Volume & Compression**
3. Select **Normalize ...** function
4. (Window) Set **Normalize peak amplitude** to [-12] dB

Track-wide adjustment (change *by* dB amount)

1. Click & drag slider in **+/-** scale of track control-panel

4.3. Fading Volume

Fading functions

1. Select portion of clip (click & drag)
2. Open ***Effect*** menu
3. Select ***Fading***
4. Select appropriate function (e.g. ***Fade In, Fade Out***)

4.4. Reducing Background Noise

Noise Reduction function

1. Select portion of clip with background noise (sample)
2. Open ***Effect*** -> ***Noise Removal and Repair***
3. Select ***Noise Reduction ...*** function
4. (Window) Click ***Get Noise Profile***
5. Repeat Steps 2 & 3
6. Adjust values (***Noise reduction***) & click ***Preview*** button
7. Click ***OK*** button

5. Recording

5.1. General Process

1. Click **Audio Setup** button (toolbar)
2. Select **Recording Device** -> desired input device
3. (If applicable) Select **Recording Channels** -> **Stereo**
4. Click Record Meter (mic icon) button
5. Select **Start Monitoring** & speak as intended/expected
6. Click Record button [R or Shift + R for new track/lane)
7. (Optional) Click Pause button to pause/resume
8. Click Stop button

5.2. Recording in Audacity with H4n

Setup on H4n

1. (Recommended) Turn off H4n
2. Connect USB cable (Micro-USB port, left side)
3. Connect cable to computer
4. Select **Audio I/F**
5. Select **Frequency** -> **48kHz** (**44.1kHz** possible on Mac)
6. Select **Connect**
 - H4n appears on computer as **H4**

(continued)

Setup on Mac (macOS)

1. Open ***Applications*** -> ***Utilities*** -> ***Audio MIDI Setup***
 - Or use Spotlight Search to find **Audio MIDI Setup**
 2. Select ***H4 (2 ins / 0 outs)*** in sidebar
 3. Set ***Format*** drop-down to match setting of H4n
 - a. (H4n) ***44.1kHz*** = (Mac) ***44,100 Hz***
 - b. (H4n) ***48kHz*** = (Mac) ***48,000 Hz***
- Discrepancies result in abnormal (high/low) pitch

(continued)

Setup in Audacity

1. Select **Audio Setup** -> **Recording Device** -> **Microphone (H4)**
2. **Audio Setup** -> **Recording Channels** -> **Stereo**
3. Select **Record Meter** (icon) -> **Start Monitoring**
4. (H4n) Adjust **Rec Level** as needed
5. Click Record button to start recording
6. (Optional) Click Pause button to pause
7. Click Stop button to stop recording

6. Saving & Exporting

6.1. Saving & Exporting

Saving (project file unique to Audacity)

1. Open **File** -> **Save Project**
2. Select either **Save Project** or **Save Project As ...**
3. Set location & name

Exporting (standalone file in standard format)

1. Open **File** -> **Export**
2. Select **Export as [format]**
3. Set location & name

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