Audacity Manual

1. GETTING STARTED
Creating a new project

- Open Audacity, select **New** and under the **File** menu select **Save Project As**
- Give the project a name and save to the Desktop.
- Audacity will save all audio to a directory called **Projectname_data.** The Project itself will be saved to the same location as an AUP (Audacity Project) file.

Checking preferences

- In the **Audacity** menu go to **Preferences** and select **Audio I/O**
- On a Mac **Playback Device** should be set to **Built-in Output** and **Recording Device** should be set to **Built-in Microphone**
- In Windows **Playback Device** should be set to **Microsoft Sound Mapper Output** and **Recording Device** should be set to **Microsoft Sound Mapper Input**
- In the **Quality** menu check that the **Default Sample Rate** is set to **44100Hz** (the standard sample rate for an Audio CD) The sampling rate frequency defines the number of samples per second.
- In the File Formats menu there are two options under **When importing uncompressed audio files into Audacity:**

i. **Make a copy of the file before editing (safer)** means that Audacity copies the entire audio file that you imported in to its project data directory and in the process sets up the overview graphics, whose descriptions get stored in the project data directory too.
ii. **Read directly from the original file (faster)** means that Audacity will now read the imported file once and simply create the graphics overviews for them in the data directory, and subsequently write to disk all the audio data that you change. The original file is only used for playback. All audio that remains unchanged will be played from the original file.

- The advantage of choosing to make a copy of the original is that you avoid trouble, should anything in the original file change. For example, should you accidentally delete the original file, you're lost.
- Choose to make a copy of all imported files, and you'll use more space on your hard disk(s), but it will be easier to back up the project too, because all files that have anything to do with your project will be in the project data directory.

- The **Uncompressed Export Format** can be set to WAV on both PC and Mac.

2. IMPORTING AND PLAYBACK

- There are two ways to import an audio file into Audacity:

i. Select Import Audio from the Project menu
ii. Ctrl-I

- Audacity can import WAV, AIFF, MP3, OGG and a few other less common files formats

File Formats

- **Audacity Project (AUP)**
  Audacity projects are stored in an AUP file, which is a format that has been highly optimised for Audacity so that it can open and save projects quickly. The AUP format is not compatible with any other audio program, so when you are finished working on a project and you want to be able to edit the audio in another program, select Export.

- **WAV (Windows Wave format)**
  This is the default uncompressed audio format on Windows, and is supported on almost all computer systems.

- **AIFF (Audio Interchange File Format)**
  This is the default uncompressed audio format on the Macintosh, and it is supported by most computer systems, but it is not quite as common as the WAV format. Audacity can read and write this format.

- **MP3**
  This is a compressed audio format that is a very popular way to store music. It can compress audio by a factor of 10:1 with little degradation in quality.

- **Ogg Vorbis**
  This is a new compressed audio format that was designed to be a free alternative to MP3 files. Ogg Vorbis files are not as common, but they are about the same size as MP3 with better quality and no patent restrictions. Audacity can import and export this format.

- Once the imported file is displayed in an audio track it should look something like the picture below.
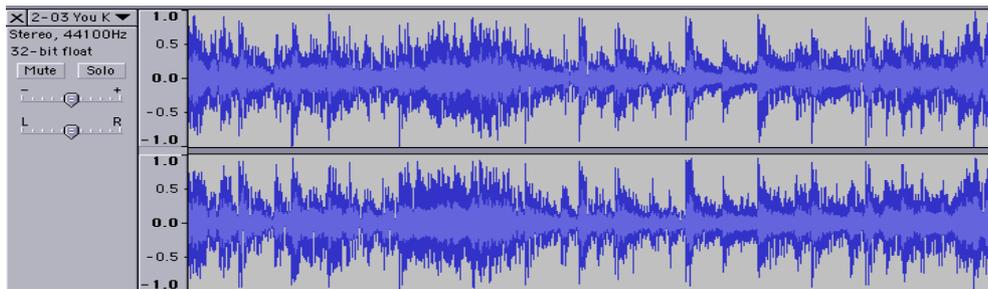
Playback Control Toolbar

Button	Action
	moves the cursor to the start of the project.
	plays your project from the position of the cursor. Use to listen to the audio in your project.
	pressing the record button will record a new track from your computer's sound input device.
	pause playback or recording. Press again to unpause.
	stops playback or recording.
	moves the cursor to the end of the project.

3. EDITING

3.1 Making a selection

- To select the part you wish to cut, copy or paste to, use the selection tool. If it's not activated, do so by clicking on it in the toolbar.
- Press and hold the left mouse button while you drag the mouse to mark an area.
- This area is darker than the surrounding area of the clip. Note, that even though you can mark an area larger than or extending beyond the actual audio clip in the track, the operations will only work on the actual clip. Playback however will work outside the clip.
- Press the space bar to listen to the audio in the marked area.
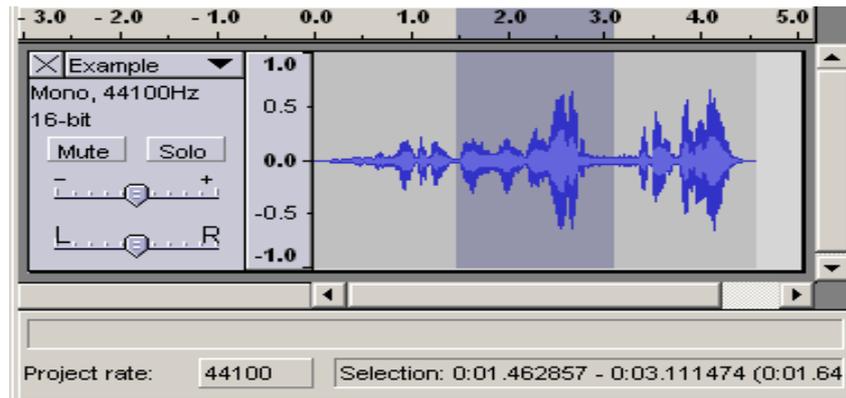
- To extend or contract your selection, hold down the SHIFT button and click on the area you wish your selection to extend or contract to.
- If you click at a spot that is on the right hand side from the middle of the current selection, you will set the right hand boundary of your new selection.

3.2 Cutting the selection

- There are three ways to cut the selected audio - select **Cut** from the Edit menu, -X/Ctrl-X for Mac/Windows respectively or by pressing DELETE.
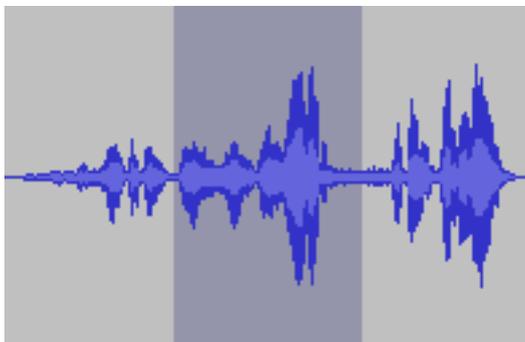
Before the cut   After the cut
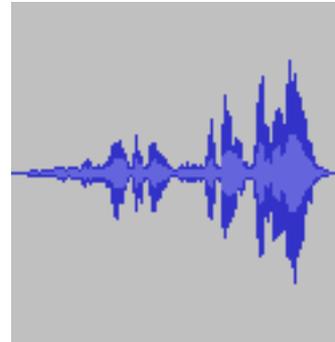
- To undo this operation, select Undo in the Edit menu or -Z/Ctrl-Z.
- Selecting **Copy** or -C/Ctrl-C will copy the selection to the clipboard.
- You can then paste that data back in to any track by clicking where you want this audio to be inserted and select **Paste** or -V/Ctrl-V.

3.3 Silence, Duplicate and Split

Silencing unwanted sources

- This operation flattens the selection. It is a cut operation without deleting the selection completely. After all, if you cut a second away, nothing remains. Using the Silence operation will still leave you with a flatlined area.
- When silencing parts between vocal lines, please keep in mind that a sudden drop in background ambiance can have a bad effect, so at the very least fade the area around the silenced part, to minimize that effect. Rules to start with are, fade in quickly and fade out slowly.

- Alternatively, use the envelope tool to lower the volume in that area. That way, you can comfortably change it later.

Duplicate

- This function allows a selected area to be copied into a new track at the same point in the timeline.
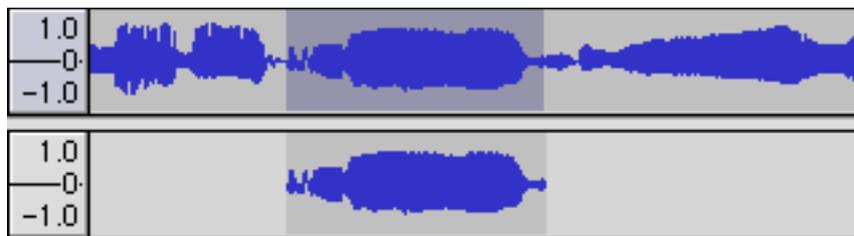
- One benefit of duplicating is that it allows you to experiment with effects

Split

- **T**his performs the same as Duplicate, but it also silences the selected material, after copying it to a new track.
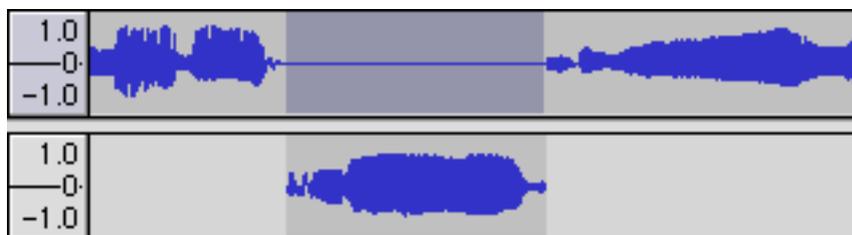
3.4 Splitting and sub-mixing

Moving sections of audio

- In all projects you'll be pushing your audio around at some point.
- There are techniques, easily achievable with Audacity, to cover almost any kind shifting you'd want to do. In the example, we have a small sentence of speech where the speaker made a pause after the first word. We'd like to eliminate that pause.
- The part after the pause is selected
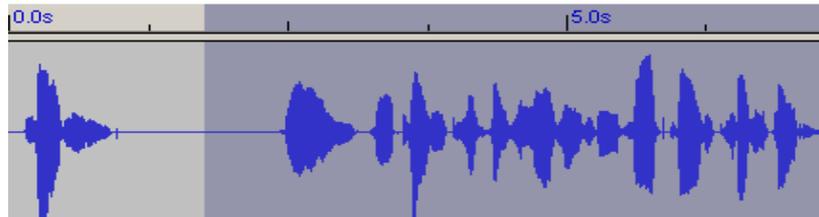
- Then the split function is used to place the selected audio into a new track
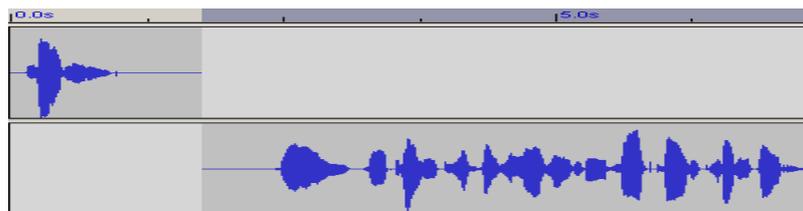
- The Time Shift Tool ↔ is selected and the audio on the lower track is moved left.

- Now, it's a good idea to listen to the two tracks individually for breathing sounds for example.
- Use the solo button of the tracks for this. Then listen them both in the mix. Again, you can use the solo buttons for this.
- If you have a lot of other tracks playing at the same time, press the solo buttons on both tracks. There should be no overlapping or cut-off breathing sounds.
- When you're satisfied, fade out the last two thirds of the overlapping upper part of the track, and fade in the first two thirds of the lower overlapping audio.
- Two thirds, and not the whole overlapping audio, are chosen to keep the level of audio constant. If the whole overlapping parts were faded, you would get a level drop of 3dB in the middle of those fades.
- You can check this out by taking a piece of music, duplicating it, and then fading the tracks, one fading out, the second fading in. In the middle of those fades, the level of the mix will drop audibly. Do a fade over last two thirds for the fade out and first two thirds for the fade in, and you probably won't notice any change in level.
- Two thirds is a guideline, but not the law, so you may have to experiment a little.
- We can use the Quick Mix function in the Project menu to bring down the number of tracks. However, you don't need to mix everything in to one new track.
- Select the tracks you want to mix together by SHIFT+clicking on the track panels. In the graphics above, the first four tracks are selected.
- Then select Quick Mix.

3.5 Tracks

Deleting Tracks ⊠

• Clicking on this button deletes the track. This action is undoable.

Soloing Tracks [Solo]

• Clicking on this button will switch this track to solo mode. Click it again to un-solo the track.

Muting Tracks [Mute]

• Clicking on this button will mute this track, i.e. this track is switched off without deleting it. Click it again to un-mute the track.

Pop-Down Menu

• **Name** - Edit the name of the track.

• **Move Track Up/Down -** Move Track up or down in the display

• **Waveform -** Traditional display of audio material. It displays the amplitude of the audio over time. This is the default display mode.

• **Waveform (dB) -** Like Waveform, but logarithmic instead of linear vertical units. It displays the amplitude in dB of the audio over time.

• **Spectrum -** Displays the frequency spectrum of the audio over time.

• **Pitch (EAC) -** Tries to detect the pitch of the current audio and displays that information over time.

• **Mono -** Set playback of this single channel track on the left and right channels.

• **Left Channel -** Set playback of this single channel track on the left channel.

• **Right Channel -** Set playback of single channel track on the right channel.

• **Make Stereo Track -** The selected track and that beneath it is turned in to one stereo track.

• **Split Stereo Track -** Turn one stereo track in to two single channel tracks.

• **Set Sample Format -** Pick the sample format for this track. The result is that all newly written data is written in this format, no matter what format the original material was in. Newly written data can be produced by effects and generator plugins for example.

• **Set Rate -** Set the sample rate of this track. Upon import, the track sample rate is set to that of the imported material. On playback or exporting the audio will be re-sampled to the project rate on the fly. This option can be useful to change the speed and pitch of audio, or if the sample rate of the source was wrong.

Gain and Pan

- **Gain (Volume) -** This slider controls the track volume, or rather the overall gain of that particular track. It's default position is in the middle, as shown in the picture to the left. This setting represents 0 dB. Hold down Shift to adjust by 1 dB at a time.

- **Pan -** This slider sets the panning position of the track in the stereo field.
  It's default position is in the middle, as shown in the picture to the left. Hold down Shift for finer control.

Edit Toolbar

Button	Action
The **Cut** button	removes selected audio data and places it on the clipboard.
The **Copy** button	copies the selected audio data to the clipboard without removing it from the track.
The **Paste** button	pastes whatever is in the clipboard into the track at the position of the selection cursor.
The **Trim** button	deletes all of the track except the current selection.
The **Silence** button	replaces the current selection with silence instead of removing it completely.
The **Undo** button	undo the last editing operation performed.
The **Redo** button	redo any editing operations that were just undone.
The **Zoom In** button	zooms in on displayed tracks displaying less time and giving a more detailed view of the track.
The **Zoom Out** button	zooms out displaying more time and a less detailed view of tracks.
The **Fit Selection** button	fits selected audio into the width of the screen to show the selection in more detail.
The **Fit Project** button	shows entire project in one screen.

Tools Toolbox

Button	Action
The Selection Tool	use to select sections of an audio track to work on.
The Envelope Tool	this tool allows you to control how tracks fade in and out.
The Draw Tool	allows you to draw on the waveforms of individual tracks.
The Zoom Tool	zooms in or out of a specific part of the audio.
The Timeshift Tool	allows you to change the positioning of tracks relative to one another in time.

- The Multi-tool Mode automatically changes the tool depending on where the mouse cursor is positioned within the track. It's like having all of the editing tools turned on at once. With the multi-tool selected you can adjust volumes up and down by adding envelope handles and you can select portions of the audio with the I-beam selection cursor. You can also zoom in on your selection by right clicking and dragging to select the sample you wish to see.

4. Recording Voice

- Use the selection tool to click where you want to begin recording.
- Put on your headphones, and click the red record button.
- Make sure the volume in the headphones is not so loud that it bleeds through and into the microphone.
- Look at the microphone input volume and adjust it so that it is at a level that is not too soft and not too loud.
- When you have finished recording, press the Stop button.

Checking The Recording

- The wave that you record should not so loud that it creates clipping or distortion. The image below shows a wave with clipping. It looks like a wave that was too big to fit in the window. If yours looks like this, turn down the mic volume and record again.
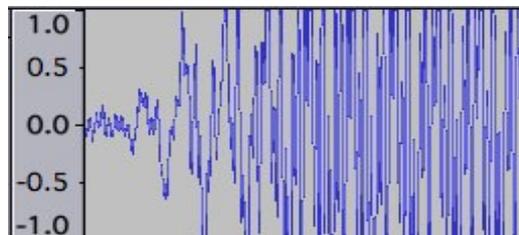
- Below is a recording that was too soft. Turn up the mic volume and try again.
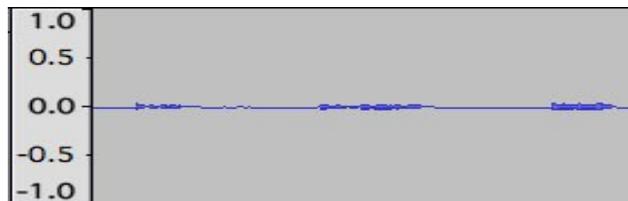
- If it looks like the image below, then that's good enough to work with.

5. Effects

- Select some audio - use the mouse or to select some audio. The effects menu won't be highlighted unless some audio is selected. You can listen to that selection as many times as you like and adjust the boundaries of the selection.
- Select an effect using the drop-down menu

- Tweak the parameters to your liking and select **OK**.

6. Exporting

- When the project is exported to an MP3 files, all of the tracks are "flattened" and the sound is compressed into one single file.
- You simply need to use one of the **File > Export As** commands in Audacity to export the particular format you want your file to be in (e.g. AIFF, MP3, WAV).
- On a PC Audacity will not export a file directly to the desktop, it works if you export to the **My Documents** folder.
- Selecting **File > Export Multiple** will export each track in your project as a separate file.
- If you wish to stop working on your project and return to it later to finish editing remember to simply **Save Project As**

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Keyboard Shortcuts

Action	Mac	Windows
File Commands		
Save Project	-S	Ctrl-S
New Project	-N	Ctrl-N
Open Project	-O	Ctrl-O
Close Project	-W	Ctrl-W
Editing Tools		
Undo	-Z	Ctrl-Z
Redo	-Shift-Z	Ctrl-Y
Copy	-C	Ctrl-C
Paste	-V	Ctrl-V
Cut	-X	Ctrl-X
Delete	-K or DELETE	Ctrl-K
Silence	-L	Ctrl-L
Duplicate	-D	Ctrl-D
Split	-Y	Ctrl-Y
Select All	-A	Ctrl-A
Playback and Recording		
Play/Stop	Space	Space
Loop	Shift-Space or L	Shift-Space or L
Pause	P	P
Record	R	R
Preview 1 second	1	1
Play from Cursor to Selection	B	B
Navigation		
Zoom In	-1	Ctrl-1
Zoom Normal	-2	Ctrl-2
Zoom Out	-3	Ctrl-3
Fit In Window	-F	Ctrl-F
Fit Vertically	-Shift-F	Ctrl-Shift-F
Zoom to Selection	-E	Ctrl-E