How to edit audio tracks

Although at times you will use Adobe Audition CS6 to record new audio, you will often use it to edit, clean up, or add effects to an existing audio file—such as an audio file recorded with a video. For example, after doing an interview, you might use Audition to reduce background noise, to make the audio louder, or to remove a mobile-phone ring.

This guide covers the following tasks:

- Splitting a sound into clips
- Cutting clip length
- Reducing noise on an audio file
- Increasing or decreasing the volume of a track
- Removing a noise from an audio file
- Adding effects to an audio file
- Combining edited clips in a multitrack session
- Stretching clips in a multitrack session

Splitting sound into clips

After recording or importing an audio clip, you can split the clip into parts you can edit and manipulate separately.

To split sound into clips:

1. Start Adobe Audition.
2. Open an audio file in the Waveform Editor.

   Note: To open a file in the Waveform Editor, you can double-click a file in the Files panel or in a multitrack session. You can also choose File > Open to locate and open a file that has not been imported to the Files panel. Another option would be to record a new audio file in the Editor panel. For information on recording audio, see the guide titled “How to record narration.”
3. Select the Time Selection tool in the toolbar (**Figure 1**).
4. Drag to select a segment of the audio file (**Figure 2**).

Figure 1 Toolbar

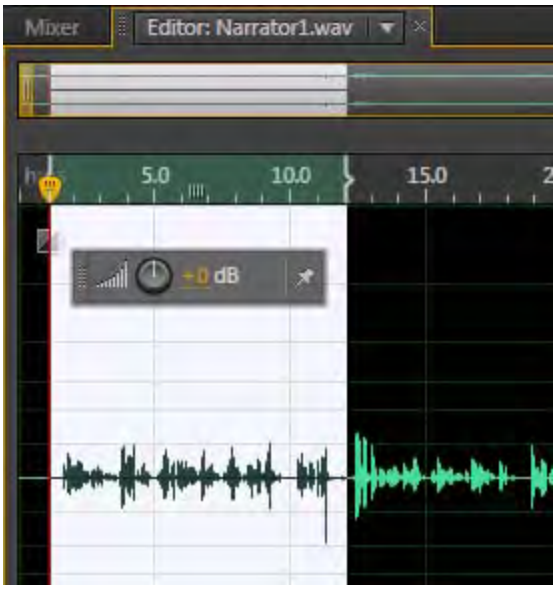

Figure 2 Selecting a segment of an audio file

5. Choose File > Save Selection As.

   The Save Selection As dialog box appears (**Figure 3**).

   Audition creates a new file based on your selection. By default, the new file is a Wave PCM file, but you can change that in the Format menu.

6. Enter a name that describes the selected audio and click OK to create the new file.

   Audition creates a new file. You must import the new file to work with it in Audition.

7. Choose File > Open, browse to locate the new file, select it, and click Open.

   The new file opens in the Editor panel and appears in the Files panel (**Figure 4**).

Figure 4 Clip opened as new file

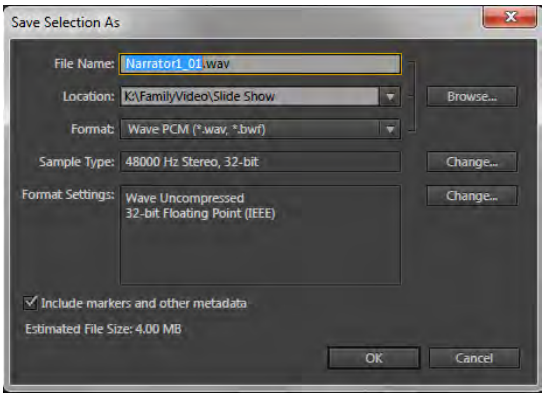

Figure 3 Save Selection As dialog box

Trimming audio files

To remove part of an audio file, select the part of the clip you want to remove and press Delete. You can remove sections from the beginning, middle, or end of a clip.

To trim audio from a clip:

1. Open the audio file in the Waveform Editor.
2. Select the Time Selection tool in the toolbar (**Figure 1**).

   Note: To select the end of the clip, you may need to zoom out. Click the Zoom Out Full button at the bottom of the Editor panel to see the entire clip (**Figure 5**).

3. Drag to select a portion of the clip and press Delete.

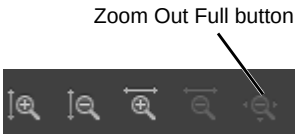

Figure 5 Zoom Out Full button

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Reducing noise

Often your video recording will have consistent background noise: the hisses and clicks picked up by your video camera's microphone or the whirr caused by a nearby machine. You will have clearer vocals if you reduce much of this noise by using noise reduction in Adobe Audition.

When you reduce the noise from a sound file, you begin by capturing a noise print that is representative of the noise you want to remove from the clip. For example, if a narration recording includes a constant hum from a nearby fan, you can capture a noise print of the hum by selecting a quiet portion of the recording, such as during a long pause when the narrator is not speaking. When recording audio, it's always a good idea to ask everyone to be perfectly quiet so you can record about a minute or two of room tone—the ambient sound in the room without dialog or action. This room tone can be an excellent source for the noise print when reducing noise in a file.

To complete this activity, it's best if you have a sound file that includes narration or dialog and includes some ambient background noise you'd like to remove.

To reduce noise:

1. Open a sound file that includes narration or other dialog.

   The file's waveform appears in the Editor panel.

2. Using the waveform, visually locate and select a portion of the clip where there is no dialog but you can still hear the unwanted noise (**Figure 6**).

3. Select Effects > Noise Reduction/Restoration > Capture Noise Print.

4. Select Edit > Select > Select All to highlight the entire clip.

5. Select Effects > Noise Reduction/Restoration > Noise Reduction (Process).

   Audition analyzes the file and opens the Effect–Noise Reduction dialog box, set to the recommended amount of noise reduction (**Figure 7**). You can continue to adjust the levels of reduction in the dialog box or accept the recommended settings.

6. Click the Preview Play/Stop button in the lower-left corner of the dialog box to preview how the file will sound after noise reduction (**Figure 8**).

   While the sound is playing, you can click the Power State Toggle button (**Figure 8**) on and off to hear how the edited file will sound in comparison to the original.

7. Experiment with various Noise Reduction settings until you like the sound of the edit, and then click Apply to confirm the changes.

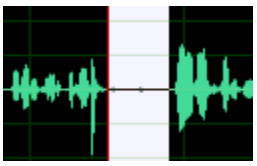

Figure 6 Selection to use for the noise print

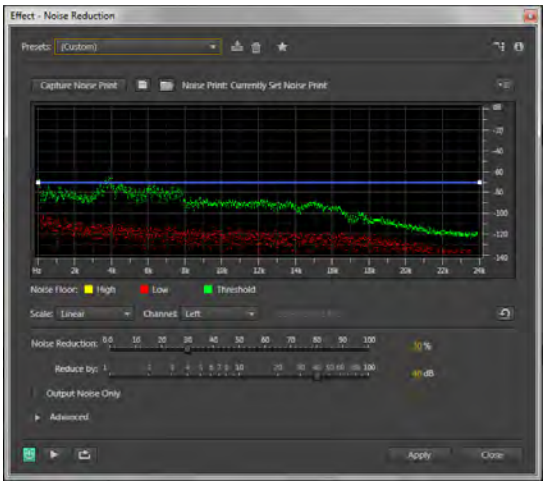

Figure 7 Effect–Noise Reduction dialog box

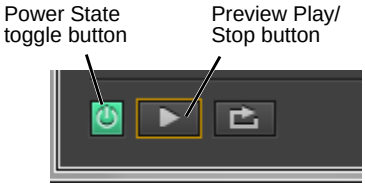

Figure 8 Preview Play/Stop and Power State buttons

Increasing or decreasing volume in a sound file

One thing guaranteed to annoy the audience of your finished video is a soundtrack that requires viewers to continually turn their volume up and down as they watch the movie.

When you record audio, you may or may not achieve a consistent level of sound over the entire duration of the recording. Or, you may be using multiple audio files recorded at different times in different locations, each with a different sound level. When editing or mixing audio in Adobe Audition, you can increase or decrease the volume level of a clip or portions of a clip to create a final sound track with a consistent level from start to finish—or a soundtrack that is quiet or loud exactly when it should be.

To increase or decrease sound level of a clip or selection:

1. Open the audio file you want to adjust.
2. Position the pointer over the Heads Up Display (HUD) in the Editor panel (**Figure 9**).

   Note: If the HUD is not open, select View > Show HUD.
3. Drag left to decrease the volume, or drag right to increase the volume.

   As you drag, the decibel level changes in the HUD and the Waveform shows the change graphically.
4. Release the mouse button.

   The change is applied. After applying the change, the HUD resets to +0 dB. The number in the HUD represents the amount of increase or decrease to volume, based on its current level (not the levels in the original file).
5. Using the Time Selection tool, drag in the Editor panel to select a portion of the clip.
6. Use the HUD to adjust the volume up or down.

   The change applies only to the selected portion of the clip.

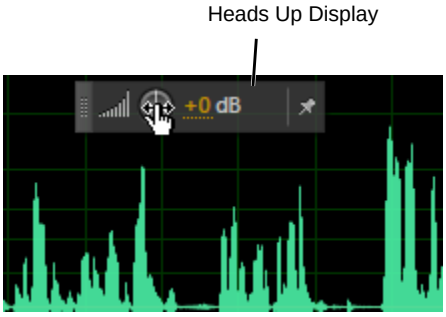

Figure 9 HUD in the Editor panel

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Removing a noise

Sometimes you get a single instance of an unwanted noise in the middle of an audio recording—for example, a mobile phone ringing. You can remove such sounds by using the Adobe Audition selection tools and Spectral Frequency Display.

The Spectral Frequency Display represents sound by using colors, so you can literally see the different sounds in a file. Brighter colors represent greater amplitude (louder) sounds. Darker colors represent quieter sounds. Black represents silence. Default colors range from dark blue (low-amplitude frequencies) to bright yellow (high-amplitude frequencies). By identifying unwanted noise in the Spectral Frequency Display, you can locate, select, and remove (or reduce) only the offending noise. You can also identify noises that occur within a specific frequency range and apply filters that affect only the target range of sounds.

Note: The following techniques work best with distinct, clear sounds, such as a cough, a mobile phone ringing, or a chair sliding. The sample recording illustrated in this section is a voice narration that is interrupted by a cell phone.

Note: Noise removal is a trial-and-error process. If necessary, select Edit > Undo and try a different method.

To remove a noise:

1. Open a sound file in the Waveform Editor.
2. Click the Show Spectral Frequency Display button. (**Figure 10**).

   Play the clip to identify the general area of the offending noise. In this example, you can't distinguish between the dialog and the cell phone ring in the Waveform, but you can clearly see the phone ring in the Spectral Frequency Display (**Figure 11**).

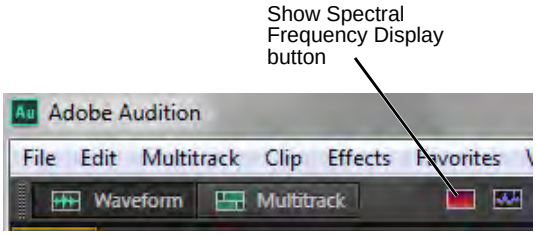

Figure 10 Toolbar

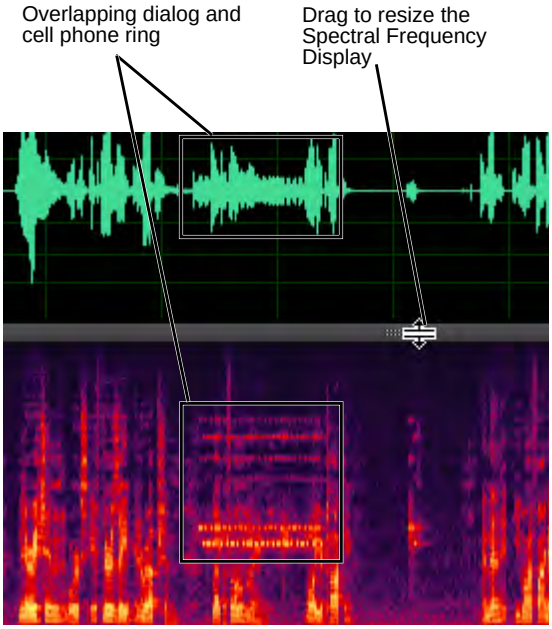

Figure 11 Spectral Frequency Display

3. To increase the size of the Spectral Frequency Display, drags its top border up (**Figure 11**) until it fills the Editor panel (**Figure 12**).

   The x-axis (horizontal ruler) measures time and the y-axis (vertical ruler) measures frequency. This lets you identify noises that occur within a specific frequency range.

   When selecting audio in the Spectral Frequency Display, you may want to zoom in. You do this by right-click dragging in the y-axis.

4. Position the pointer along the y (frequency axis), and right-click (Windows) or Control-click (Mac OS) and drag over the frequency range you want to zoom (**Figure 13**).

   Zooming in makes it easier to locate and select the offending noise. Look for a pattern of colors in that section of the spectral display that differs from the rest of the file. That pattern may represent the offending noise.

   In this example, you can clearly see the brighter colors representing the cell phone ring over the spoken narration (**Figure 14**).

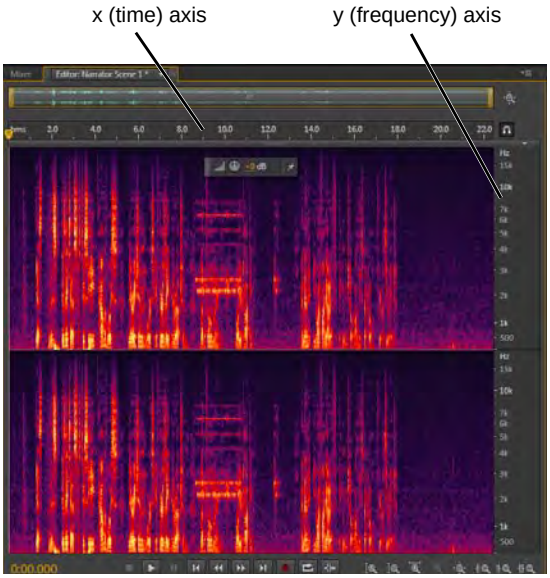

Figure 12 Editor panel

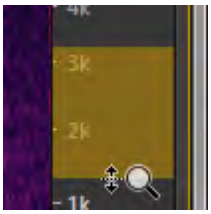

Figure 13 Zoom in the Spectral Frequency Display

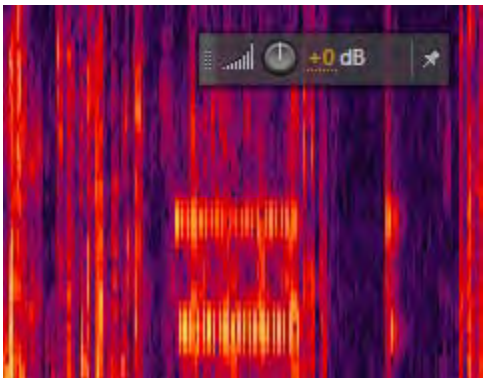

Figure 14 The brighter colors identify the cell phone ring over the background voice narration

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5. In the toolbar, select the Marquee or Lasso selection tool. Drag in the Spectral Frequency Display to select the pattern of colors you believe to be the offending noise (**Figure 15**).
6. In the Transport controls at the bottom of the Editor panel, click the Loop Playback button to select it (**Figure 16**).
7. Click the Play button to repeatedly play the selection. Click the Stop button to stop the playback.
8. Repeat steps 5 and 6 until you have the offending sound isolated and selected.

   With the sound isolated and selected, several methods are available for reducing, removing, or modifying the sound.

   - Apply Auto Healing.
   - Reduce the sound level (amplitude) of the selection by using the HUD.
   - Use a Dynamic Sound Removal effect that targets the specific frequency range you've selected and remove the sound in real time.

   In this first example, you will apply Auto Healing.

   Note: You should never delete a segment completely, as this may affect the rest of the audio track. Similarly, you usually will not want to decrease the Volume pop-up bubble to levels lower than –40.
9. Select Favorites > Auto Heal.

   The Auto Heal button removes the sound gracefully, blending the audio with the surrounding sounds. This may or may not succeed in fixing the problem entirely.
10. Play the selection again to see if Auto Healing removed the noise.

    If Auto Healing didn't do the job, you may need to try another method. You can use the HUD to reduce the sound level.
11. In the HUD, drag left to decrease the volume of the selection sound level. Reduce the sound level by –20, –30, or –40. Play the selection to see how each change affects the clip.

    As you reduce the sound level, the phone ring appears at different frequencies in the Spectral Frequency Display. To remove the cell phone entirely, you need to make additional selections and corrections (**Figure 17**).

    For repair of small audio artifacts such as isolated clicks or pops, you can use the Spot Healing Brush (**Figure 18**). When you select audio with this tool, it automatically applies the Effects > Auto Heal Selection command.

Figure 15 Selected noise

Figure 16 Transport controls

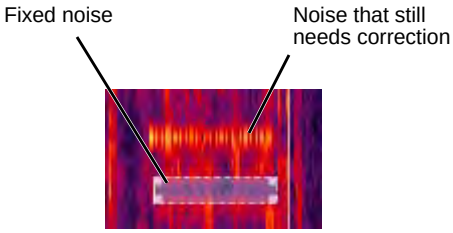

Figure 17 Partially removed noise

Figure 18 Toolbar

12. Select the Spot Healing Brush.
13. Locate a noise pattern in the Spectral Frequency Display, and drag to select it (**Figure 19**).

    Note: You can change the size of the Spot Healing Brush in the toolbar for more accurate selection.

    As with other noise removal, you may need to try more than one method to remove the unwanted sound.
14. Use the Marquee or Lasso tool to select another sound you want to remove. Make note of the frequency range in which the sound occurs.
15. Select Effects > Filter And EQ > Graphic Equalizer (10 Bands).

    The Effect–Graphic Equalizer (10 Bands) dialog box appears (**Figure 20**). You can use the sliders to reduce the sound levels of very specific frequency ranges. For example, you can remove the frequency of a cell phone ring or a cough, while leaving the frequency of speech unchanged.
16. Use the sliders to reduce the sound levels in the noise frequency range, and click Apply.
17. Play the selection to see if adding the effect removed the noise.

Figure 19 Spot Healing Brush selection

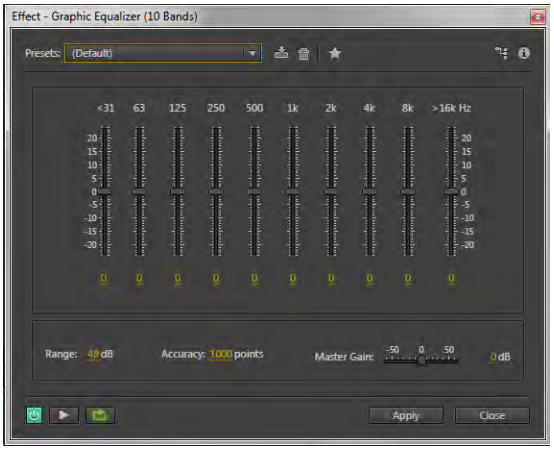

Figure 20 Effect–Graphic Equalizer (10 Bands) dialog box

Applying effects

An *effect* is a way to distort or modify a sound. Adobe Audition enables you to apply up to sixteen effects at once by using the Effects Rack. Effects you add to the Effects Rack can be powered on and off. The effects you add to the Effects Rack are not permanently applied to the file until you save the file. You can preview the effects and customize, bypass, or remove individual effects. You can also add effects by selecting them in the Effects menu or the Favorites menu. Applying effects to a file in the Waveform Editor is different from applying effects to tracks and clips in the Multitrack Editor.

In this activity, you apply affects to a file in the Waveform Editor. You will learn more about applying effects in the “How to apply Adobe Audition sound effects” guide.

Removing a 60-cycle hum by using the menus

Your audio file might have picked up a low-frequency hum from recording equipment that is connected improperly or has picked up signals from nearby electrical outlets. You can remove this hum by using an effect called Remove 60 Cycle Hum. This is located in the Favorites menu.

To remove a 60-cycle hum:

1. Open the sound from which you want to remove a hum. Make sure no portion of the file is selected in the Editor panel so the effect will not be applied to the entire clip.
2. Select Favorites > Remove 60 Hz Hum.

   Adobe Audition applies the effect to detect and remove any presence of a 60 hz hum.

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Adding a reverb effect in the Effects Rack

You can also use effects to add character to your audio files. For example, you can make voices sound as though they are in a large concert hall by using a *reverb effect*.

To add a reverb effect in the Effects Rack:

1. Open the sound to which you want to add a reverb effect.
2. Make sure the Effects Rack panel is open.
3. In the Effects Rack panel, open the Effects menu for the first empty effect (**Figure 21**) and point to Reverb.

   There are five reverb effects to choose from.
4. Select a reverb effect, such as Surround Reverb (**Figure 22**).

   The Effect dialog box appears (**Figure 23**).
5. In the dialog box, open the Presets menu, and select a preset, such as Auditorium.
6. Click the Play button in the transport controls below the Editor panel to preview the effect.

   Note: You may need to drag the dialog box out of the way to see the transport controls.
7. If you are satisfied with the effect, close the dialog box.

   The effect appears as the first effect in the Effects Rack panel (**Figure 24**). The Power State button is toggled to the On state and appears green. You can turn this effect on and off by clicking the Power State toggle button.

   You can add up to 16 effects to a clip.
8. Open the Presets menu in the Effects Rack panel.

   The Effects Rack includes several presets for quickly applying some of the most commonly used effects.

   Note: After adding effects to a clip, you may want to save the entire collection as a new preset. To do that, click the Save Effects Rack As A Preset button (**Figure 24**). Name the new preset and click OK.

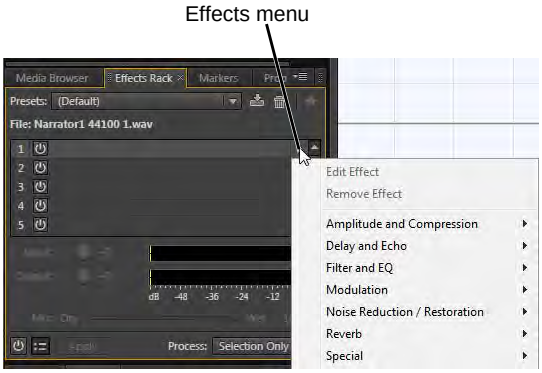

Figure 21 Effects menu in the Effects Rack

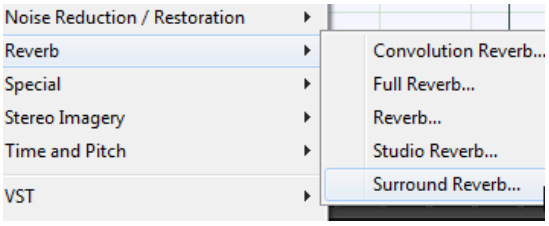

Figure 22 Reverb Effects

Figure 23 Effect–Surround Reverb dialog box

Figure 24 Effects Rack panel

Changing the time and pitch of an audio file

You've heard recordings in which the spoken word is manipulated to sound much slower or faster. One example is in advertisements in which the "fine print" or disclaimer is read at high speed. If you think these narrators are just plain fast talkers, think again. They probably recorded the dialog at normal speed and then added an effect by using a program such as Adobe Audition. Stretching or compressing audio also changes its pitch.

By using the Time and Stretch effects in Adobe Audition, you can manipulate a file's speed and pitch simultaneously to create natural-sounding voices at various speeds. You can also experiment with various speed and pitch settings to create a range of special effects, such as the sound of "chipmunk" voices or the sound of someone who has inhaled helium.

In this activity, you apply Time and Stretch effects to a file in the Waveform Editor. Later in this guide, you will learn to stretch a clip to match the duration of other clips in a multitrack recording.

To change the time and pitch of a sound file in the Waveform Editor:

1. In the Waveform Editor, open an audio file that contains narration or dialog.
2. Play the file to hear how it sounds before adding effects.
3. Select Effects > Time And Pitch > Stretch And Pitch (Process).

   Note: Stretch And Pitch is a process effect, meaning it can only be applied directly to files in the Waveform Editor. It cannot be applied to tracks in a multitrack session, and it cannot be applied as an effect in the Effects Rack panel.

   The Effect–Stretch And Pitch dialog box appears (**Figure 25**). You can enter a specific duration for the file, or you can manually adjust the stretch and pitch shift by percentage of normal. Decreasing the stretch percentage shortens the clip, making voices sound faster. Increasing the stretch lengthens the file, making voices sound slower.

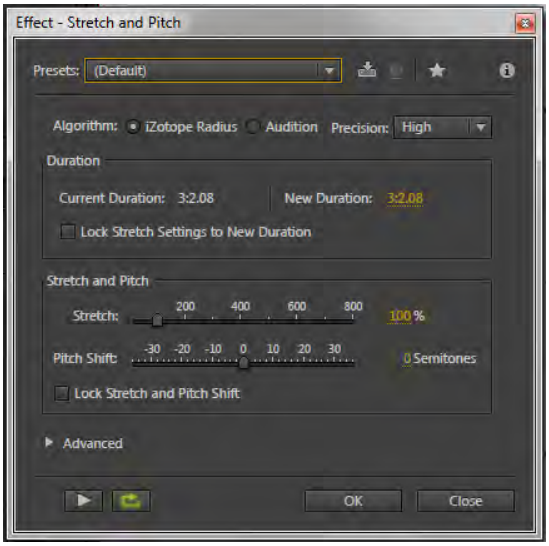

Figure 25 Effect–Stretch And Pitch dialog box

4. Open the Presets menu, and select Fast Talker (**Figure 26**).
5. Click the Play button in the dialog box to preview the effect.

   Stretch is reduced to 45% and Pitch Shift is left at 0%, resulting in a shorter file and faster speech.
6. As the file continues to play, drag the Stretch and Pitch Shift sliders to experiment with various settings and hear how changing the duration and pitch of the file changes the way it sounds.
7. Open the Presets menu, and select Default.

   This returns the audio file to its original settings.
8. Click Close to close the dialog box without applying the effect.

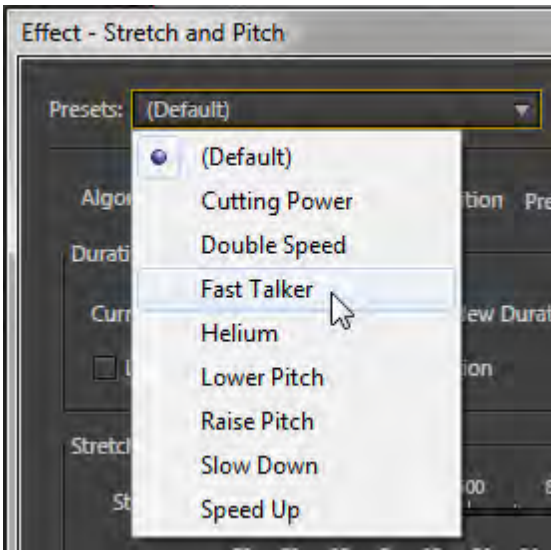

Figure 26 Stretch and Pitch presets

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Combining edited clips in a multitrack session

After editing your individual audio clips, you may want to combine several clips in a multitrack project. You already learned how to create a multitrack file in the “How to compose multiple-track recordings” guide. In a multitrack file, you can easily drag clips from one track to another. You can also split and trim the contents of one track and combine it with the contents of another track to blend audio in a multitrack file.

To combine clips in a multitrack file:

1. Click the View Multitrack Editor button to open the New Multitrack Session dialog box.
2. Enter a name for the new multitrack session and click OK.

   The new multitrack session appears in the Files panel and opens in the Editor panel.
3. Add at least three edited audio clips to the empty tracks in the multitrack file (**Figure 27**).
4. To split the contents of one track, select the track, position the Current Time Indicator (CTI) where you want to split the clip, and choose Clip > Split.

   The clip is divided into two parts (**Figure 28**). You can now edit, trim, or remove the individual parts.
5. Select the first part of the clip you just split.
6. Position the pointer along the right side of the selected clip and drag left to trim the clip (**Figure 29**).

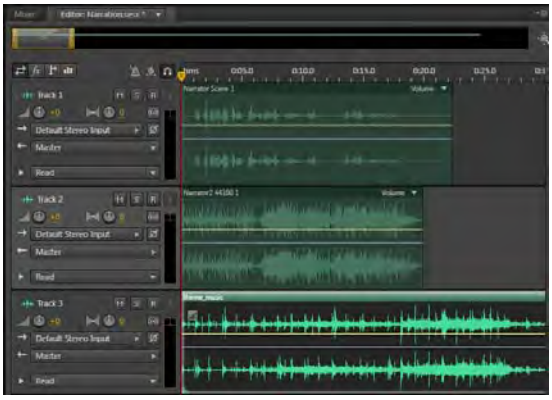

Figure 27 Multitrack file

Figure 28 Split audio track

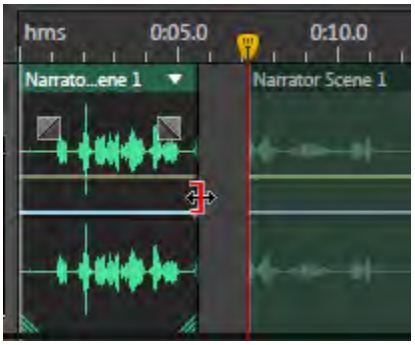

Figure 29 Trimmed section of audio in track 1

7. Drag the audio in track 2 to the right (or trim the clip) to create a gap large enough for the small clip you just created in track 1 (**Figure 30**).
8. Drag the small trimmed section of audio from track 1 into the empty space in track 2.

   As you drag the clip into track 2, the clip snaps to the beginning of the existing audio (**Figure 31**).

   You can also use the Fade In and Fade Out handles (**Figure 31**) to gradually introduce the audio of any track. This is useful when you want the music in one track to gradually fade in or fade out under another audio track.
9. To fade audio, select a clip and drag either the Fade In or Face Out handle (**Figure 31**).

   The distance you drag determines the duration of the fade. The resulting cosine (S-curve) represents how the fade changes volume slowly at first, then rises rapidly, and finishes slowly (**Figure 32**).
10. Continue trimming and combining clips as needed to blend the audio from each track in your multitrack project.

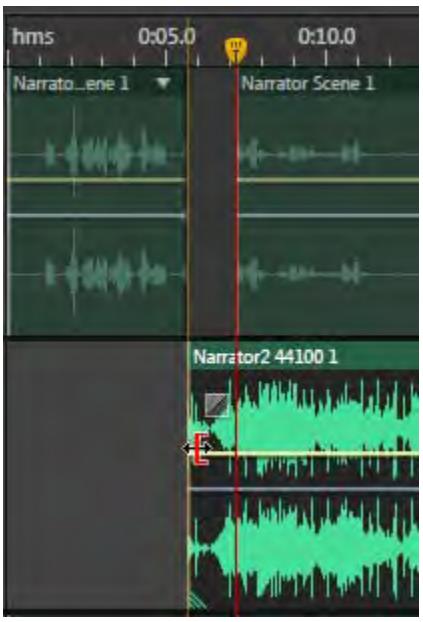

Figure 30 Creating a gap in track 2

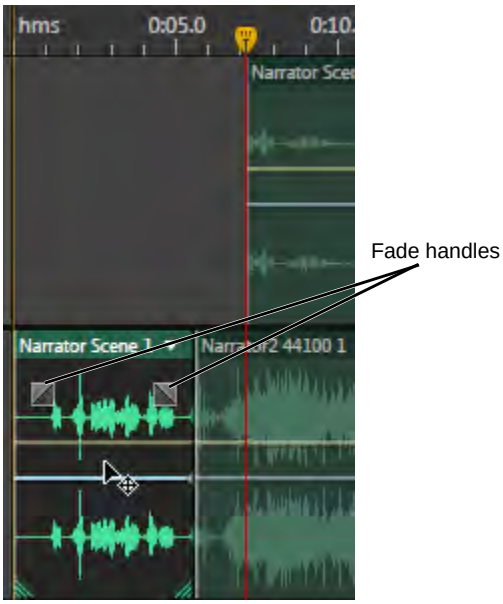

Figure 31 The trimmed clip is now in track 2

Figure 32 Fade-in cosine curve

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Stretching clips in a multitrack session

When composing a multitrack recording, you may want to stretch or compress clips to align perfectly with other clips in the session. For example, maybe you've found the perfect theme music for your movie, but it's about one second too short. You can probably get away with stretching the clip to fit perfectly without your audience ever noticing.

To stretch clips:

1. Open a multitrack session, or create a new multitrack session and add your clips to the empty tracks.
2. Select the clip you want to stretch.
3. Select Clip > Stretch > Stretch Properties.
4. In the Properties panel, scroll to view the Stretch properties. Expand the Stretch properties if you can't see them all (**Figure 33**).

   By default, stretching is turned off. You can activate stretching in the Mode pop-up menu.
5. Open the Mode menu and select Realtime.

   Realtime stretching is less CPU intensive. The stretching is not rendered at the time of the change.

   Rendered stretching renders the stretched clip at the time of the change, reducing the amount of rendering required later.
6. Open the Type menu and select a type of stretching that best matches the file you want to stretch.

   Monophonic is best for stretching single-source sounds, such as voices.

   Polyphonic is best for complex sounds, such as music, and will automatically shift pitch and speed in relation to each other.

   Varispeed simply speeds up or slows down the recording. The speed and pitch are locked so that when a clip speeds up the pitch increases, as if on a tape machine.

   Notice that in the Properties panel, you can enter new values for the clip duration or percentage of stretch. You can also manually control the pitch in relation to speed by using the Pitch slider. Or, you can drag to stretch a clip in the Multitrack Editor.
7. Take a look at the selected clip in the Multitrack Editor.

   With stretching turned on, the stretching icon appears in the lower-left corner of the clip (**Figure 34**). It indicates the percentage of stretch.

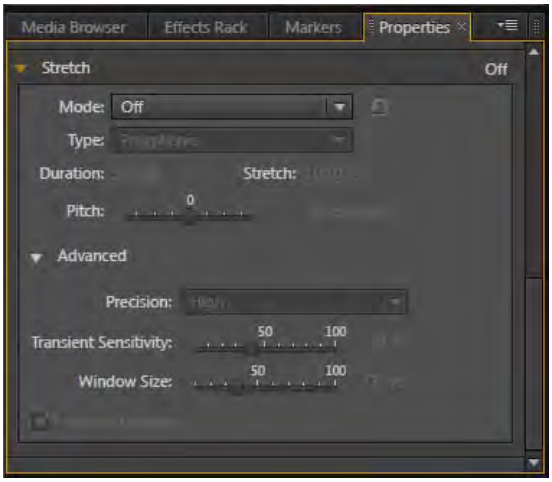

Figure 33 Stretch properties

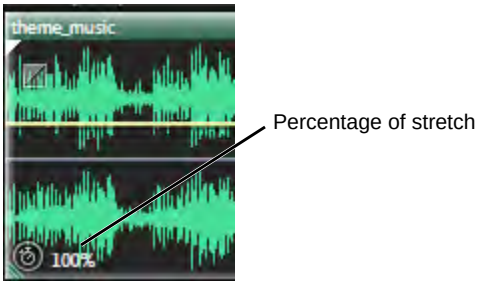

Figure 34 Stretch icon

8. Position the pointer over the stretch handle, a small white triangle in the upper-right corner of the clip (**Figure 35**).

   The pointer changes to a two-headed arrow with a watch.

   Note: A stretch handle also appears at the front edge of the clip in the top-left corner.

9. Drag the stretch handle right or left to adjust the length of the clip as needed (**Figure 36**).

   The entire clip stretches evenly. Stretching is best for small adjustments. If you need a music or sound clip to be of significantly different duration, consider using a sound loop to create your soundtrack. Sound loops are covered in the "How to use sound effects and loops" guide.

Figure 35 Stretch handle

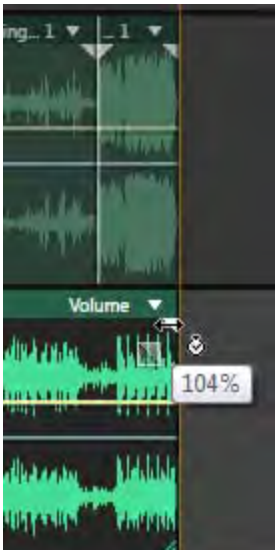

Figure 36 Stretching a clip

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