

Sound Forge: The Basics

Lesson 1: Getting Started

What is Sound Forge?

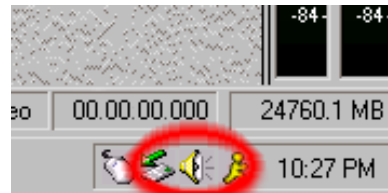
Sound Forge is an application that will let you capture sounds into your computer and create sound files, which you can then add to your multimedia projects. You can either record from a CD or use a microphone to record your voice or other "live" sounds.

How do I specify the sound source?

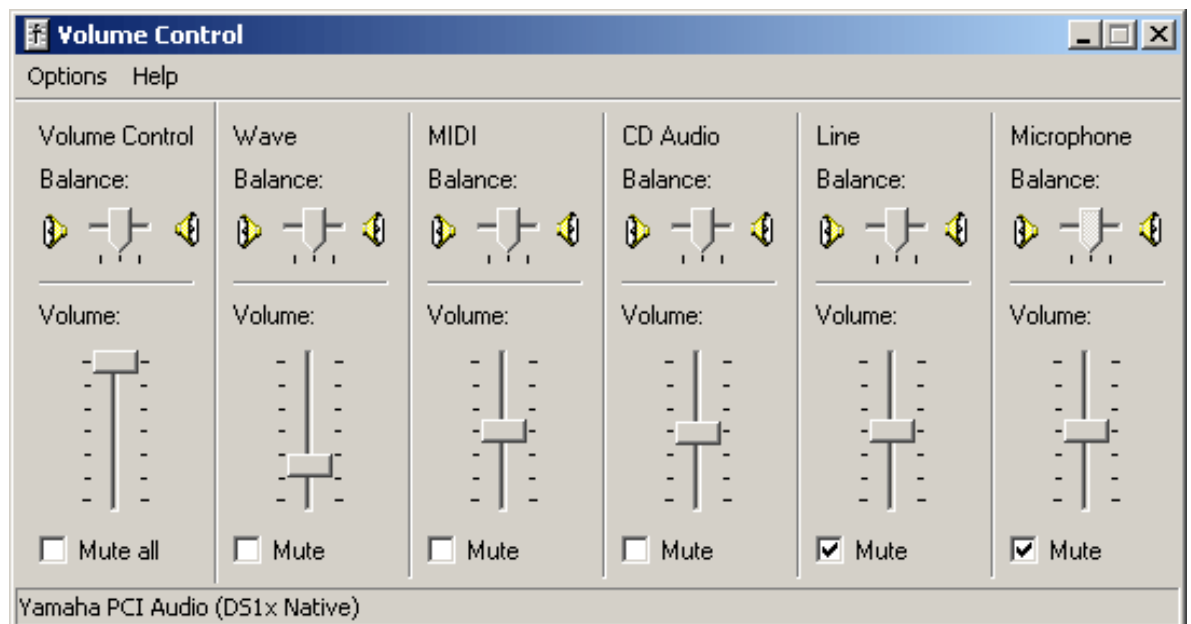


Before you begin using Sound Forge, you must tell the computer what your sound source (also called the *sound input*) will be, and adjust the settings appropriately. You can select either CD or microphone. To do this, follow these steps:

- 1) **Open the Volume Control panel** by double-clicking the Volume Control icon (🔊) in the lower right corner of your screen:

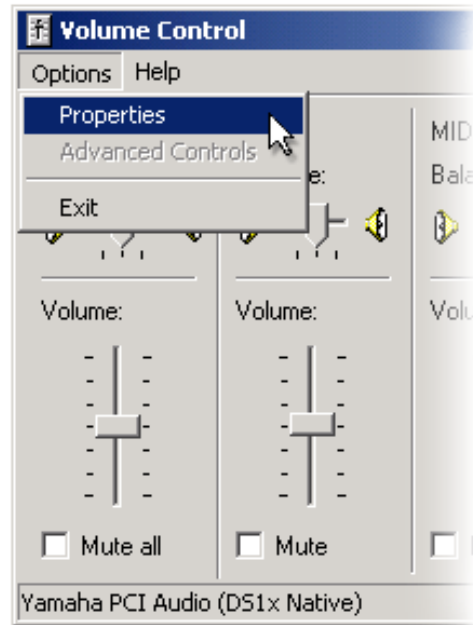


The Volume Control panel will appear, like this:



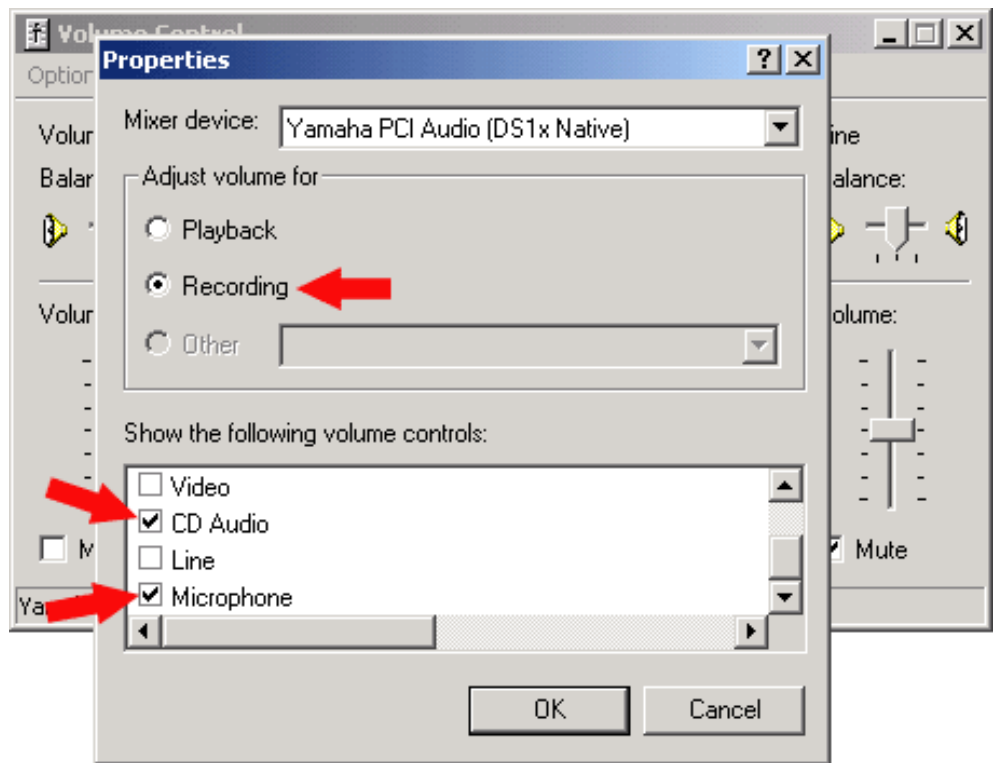
If the **Mute** checkbox in the CD Audio column is checked, uncheck it so that you can hear CD's when they play.

2) **Open the Properties dialog box** by pulling down the **Options** menu and selecting **Properties**:

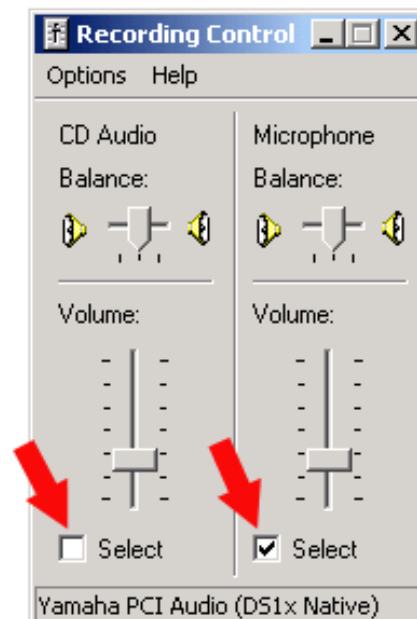


The Properties dialog box will appear.

3) **View the Recording Control panel.** Under the "Adjust volume for" area in the Properties dialog box, click on the Recording radio button, then select "Microphone" and "CD Audio" from the scrolling list to show those controls. Then click **OK**:



The Recording Control panel will appear, with columns for both CD Audio and Microphone inputs:



4) **Specify the sound source.** If you are recording from a microphone, click the **Select** check box in the Microphone column; if recording from a CD, click the **Select** check box in the CD Audio column. Click the Close box to close the Recording Control panel.

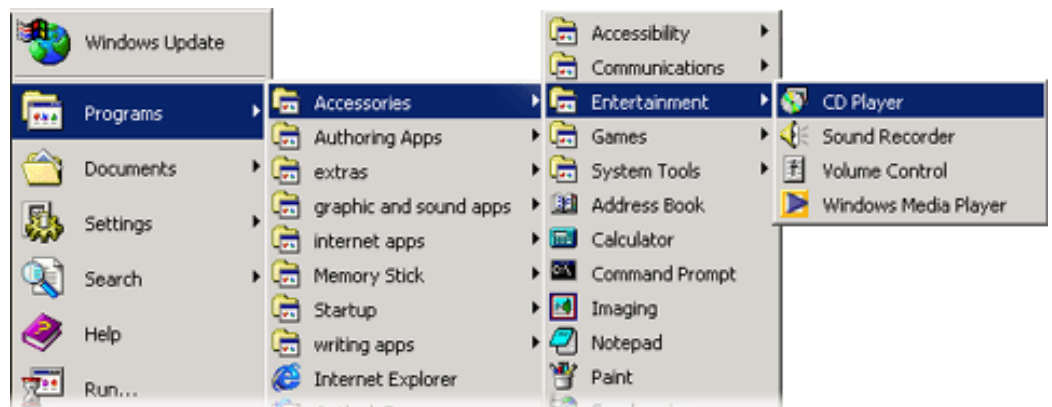
5) **Verify that your sound source is properly**

connected. If you are using a microphone, make sure that the mic is properly plugged in to your computer. If you are using an external CD drive, ensure that it is connected correctly. (If you have an internal CD drive, you don't have to check this.)

Tip: You can adjust the volume and balance from these "recording input" controls. Setting the volume between 1/2 to 3/4 (sliding the selector lever up) will ensure proper recording level.

How do I play a CD?

To record from a CD, you need to be able to play it. This is done with the **CD Player** accessory that comes with Windows. To launch it, click on the **Start** menu and select Programs->Accessories-> Entertainment -> CD Player:



IMPORTANT! Do not use the **Windows Media Player**; you cannot record digitally from it.

Use the CD Player controls (labeled below) to control the CD functions.



CD Practice

Now let's practice getting started with the CD Player:

- Open the Volume Control panel
- Make sure "CD Audio" is not muted
- Open the Recording Control panel (using the Options->Properties command)
- Click the Select check box in the CD column
- Verify the CD player is properly connected
- Insert the music CD
- Open the CD Player application
- Press the play button to hear the CD

If you hear music coming out of your speakers or headset, you're ready to start recording from CD!

Tip: When recording a soundtrack from a CD, start recording before you start playing the CD. You can edit out the extra blank sound at the beginning, but it's not so easy to add what you don't have!

Mic Practice

This time let's practice getting started with the microphone:

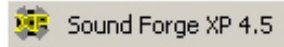
- Open the Volume Control panel
- Open the Recording Control panel (using the **Options->Properties** command)
- Click the **Select** check box in the Microphone column
- Make sure your microphone is plugged into the appropriate spot on your computer
- Sing a verse of your favorite song

If you can hear your voice coming out of your speakers or headset, you're ready to start recording with the microphone!

Lesson 2: The Interface

Launching Sound Forge

Before launching Sound Forge, make sure that you have set up your computer's recording options, as described in the last lesson, *Recording Setup*.

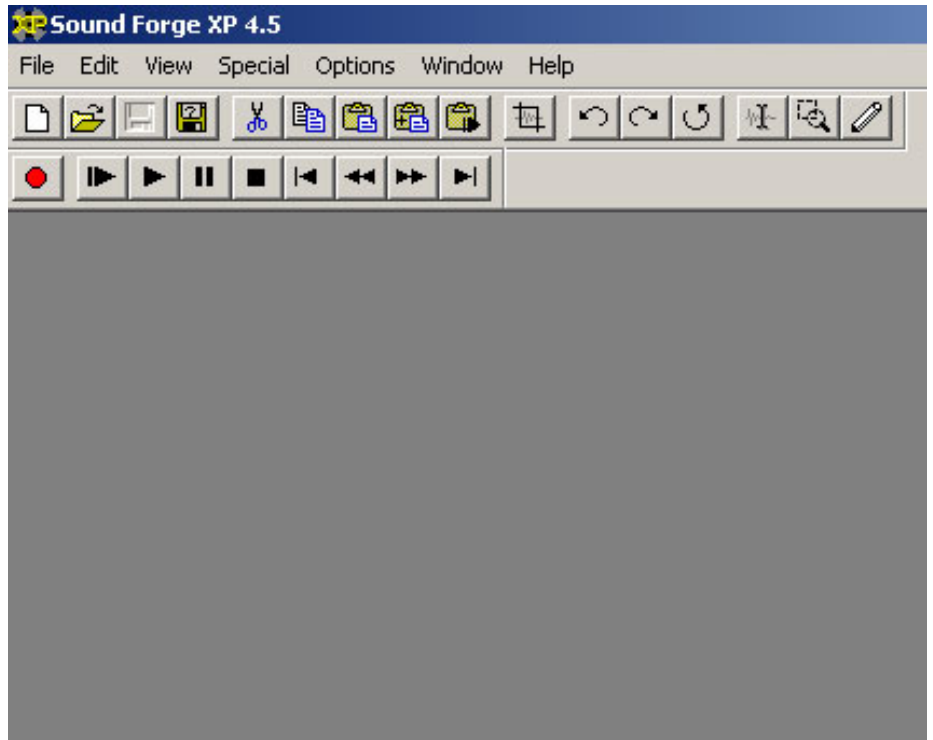


To launch Sound Forge, click on the **Start** menu in the lower left corner of your screen. Locate **Sound Forge** under **Programs** in your **Start** menu and click it to open the application. The main interface window of Sound Forge will appear.

(Note: When you open Sound Forge, a *Tip of the Day* dialog box may appear. If you like, take a few moments to read through the tip. When you are finished, click on the close box to make it go away.)

The Workspace

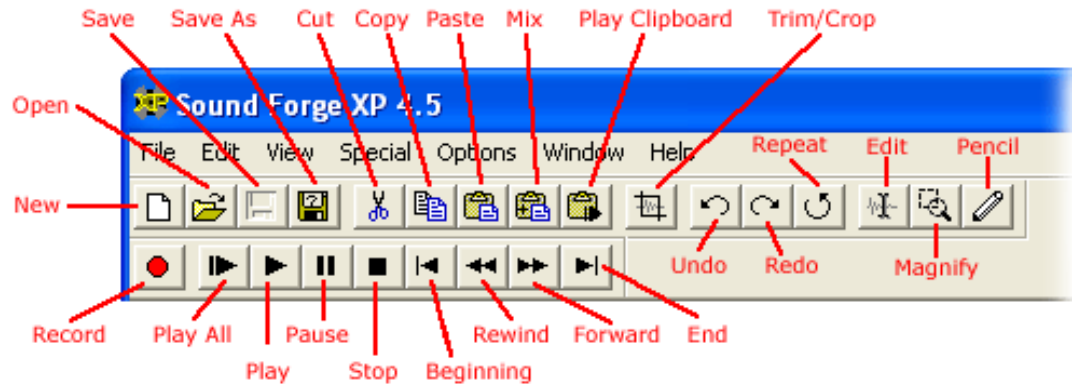
Below you can see the Sound Forge interface window, or workspace, where you will do all of your sound creating and editing. The first time you open Sound Forge, the workspace will be empty, just as you see here:



When you open a sound file, it will appear in this window.

The Toolbars

At the top of the workspace, you can see two toolbars: one for editing files (the Editing toolbar), and one for controlling sound playback and recording (the Transport toolbar). The graphic below shows you what each button is for:



Notice how the sound controls on the Transport toolbar are very similar to those on a tape recorder.

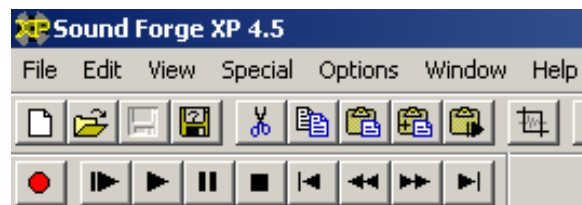
When you point to each button with the mouse pointer, a brief description of its function appears. Later on, we'll discuss many of the toolbar functions in detail.

The Menus

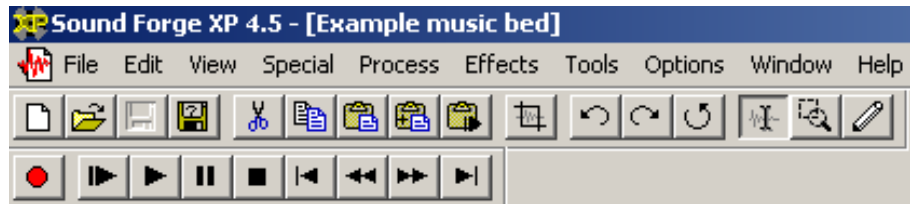
The menu bar displays the Sound Forge menus: **File**, **Edit**, **View**, **Special**, **Process**, **Effects**, **Tools**, **Options**, **Window**, and **Help**. These menus contain various commands or functions for creating and editing sounds.

When no sound files are open, the **Process**, **Effects**, and **Tools** menus are not listed because these contain functions that require an open file.

Here is the menu bar with no sound files open:



Here is the menu bar with a sound file open:



Opening a File

To create a new sound file, either click the **New** button on the toolbar, or pull down the **File** menu and select **New**:



To open an already existing sound file, either click the **Open** button on the toolbar, or use the **File->Open** command.

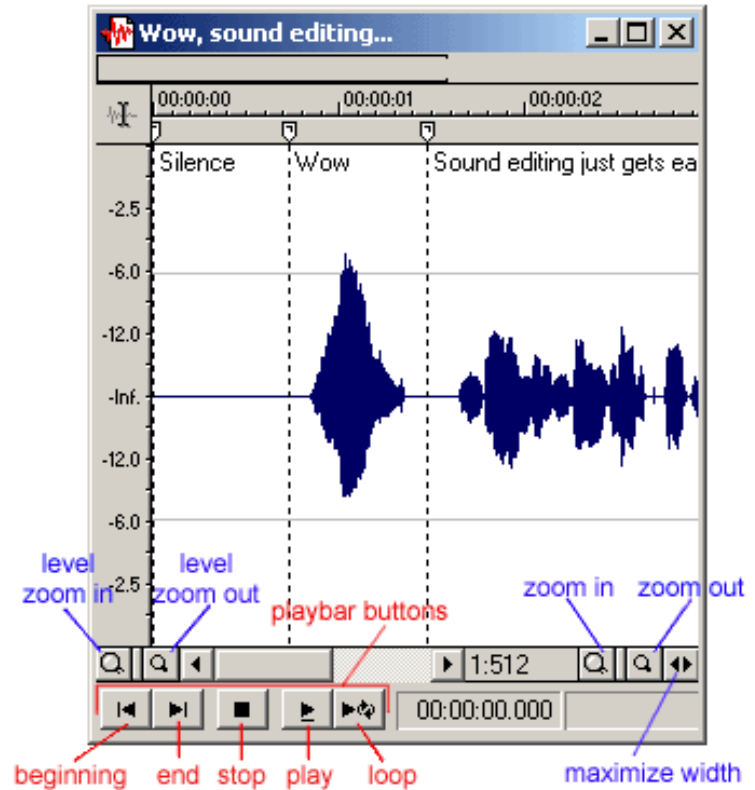
The Data Window

Each opened sound file has its own data window displaying a sound wave. The data window can be moved, resized, or minimized, just like any other window.

Across the bottom of the data window are some buttons. The zoom buttons (labeled in **blue** in the graphic below) let you zoom in on the sound wave to see more detail, or zoom out to see more of the wave. The zoom feature in most applications enlarges or shrinks both the height and the width of your view at the same time. However, Sound Forge lets you zoom in and out of the height and width independently:

- The **Zoom In** and **Zoom Out** buttons change the horizontal scale of the graph; in other words, they stretch or compress the width of the sound wave, while leaving the height the same.
- The **Level Zoom In** and **Level Zoom Out** buttons change the vertical scale of the graph; in other words, they stretch or compress the height of the sound wave, while leaving the width the same.
- The **Maximize Width** button maximizes the width of the data window so that you can see as much sound wave as possible.

The playbar buttons (labeled in **red** in the graphic below) let you jump to the beginning or end of the sound, play it, stop it, or loop it so it repeats continuously.



Practice

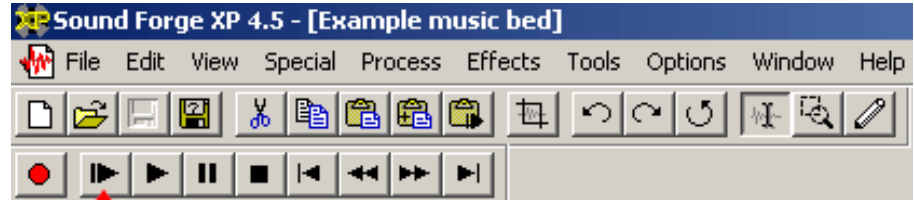
Practice with the interface to get familiar with it:

1. Open Sound Forge.
2. Notice the contents of the menu bar.
3. Open the "tutfill.wav" file, located in the **Soundforge** folder under the **Program Files** folder on the C: drive.
4. Now that a sound file is open, notice the additional menus in the menu bar.
5. A data window should appear that looks like the one displayed above.
6. Click the **Zoom In** button a few times to see how it works; now try the **Zoom Out** button.
7. Click the **Level Zoom In** button a few times to see how it works; now try the **Level Zoom Out** button.

Lesson 3: Playing a Sound

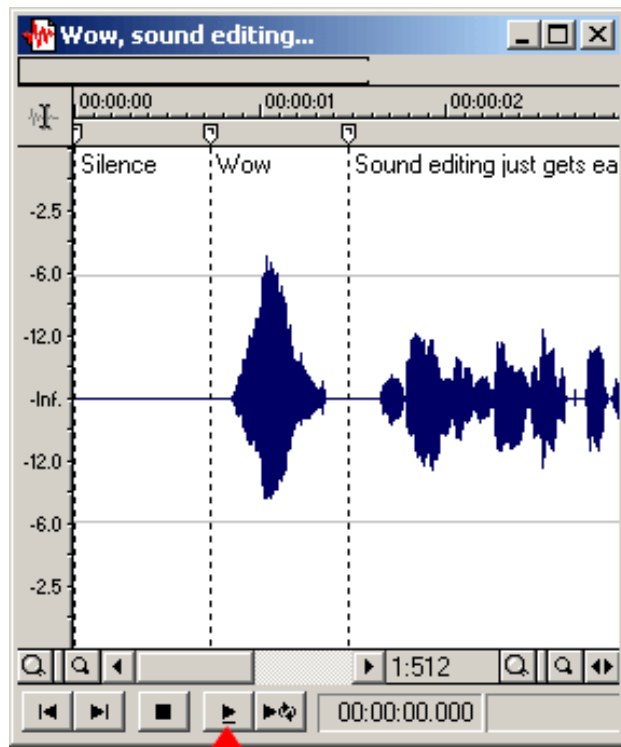
How do I play a file?

You can hear a sound file by clicking on the **Play All** button on the Transport toolbar:



play all

You can also play the sound by clicking the **Play** button on the Playbar at the bottom left of the data window:



play

While the file is playing, a vertical bar moves along the sound wave, showing the currently playing portion of the sound.

How do I play just part of a file?

It's easy to play a subset of your entire sound file.

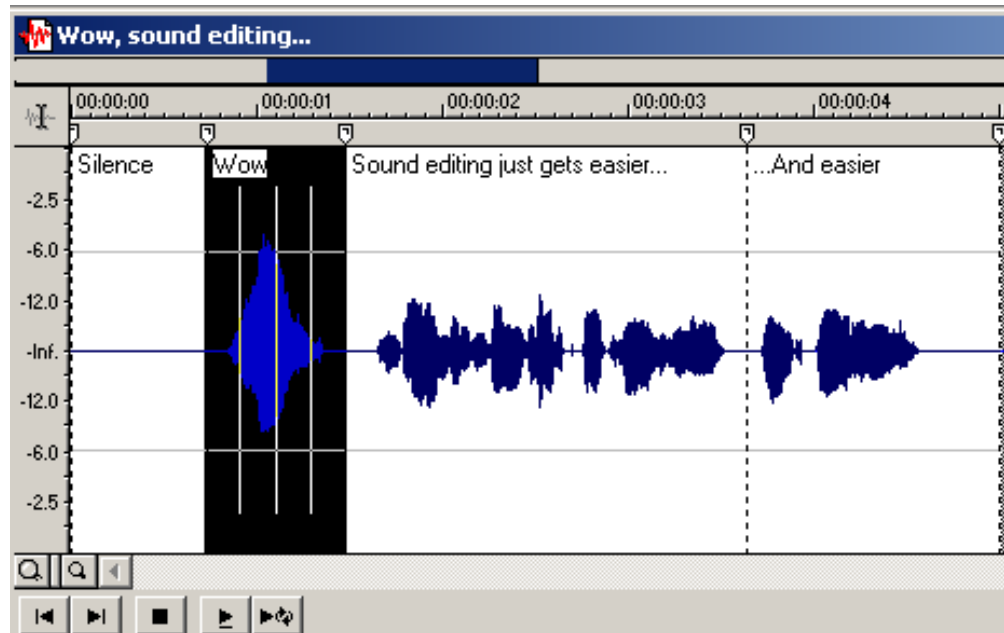
You can begin playing at any point on the waveform by clicking where you would like to begin and then clicking the **Play** button. The sound will begin to play at the starting point you indicated, and will continue until the end.

If you don't want the sound to play through until the end, you can select a portion to play. Simply drag your mouse across the section of the soundwave that you want to play, then click the **Play** button.

In either case, you can click **Play** on either the Transport toolbar or the Playbar. (Don't click **Play All**, as Sound Forge will ignore the placement of your cursor and play the entire sound.)

Shortcut: Pressing the spacebar is the same as clicking the **Play** button.

Below is an example of what it looks like when you select part of a sound file. The mouse was dragged over the blackened section of the waveform. When the play button is clicked, the user will hear only "Wow" and nothing else.



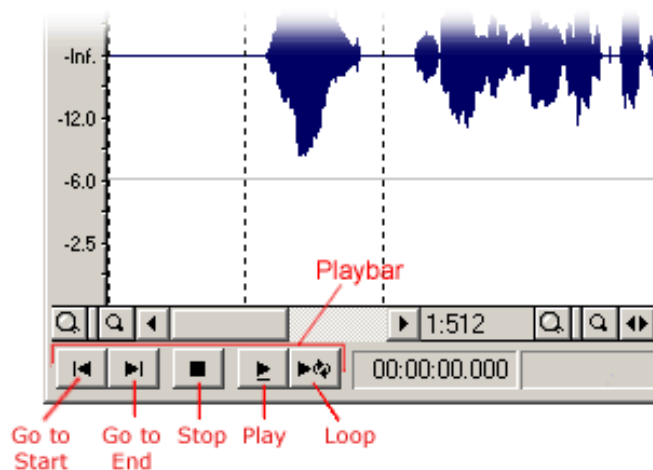
How else can I control play?

In addition to the **Play** and **Play All** buttons, both the Transport toolbar and the Playbar have buttons for controlling sound playback. (Some buttons can be found on both bars; others can only be found on one bar or the other.)

Transport Toolbar:



Playbar:



The **Go to Start** and **Go to End** buttons allow you to put the cursor at the start or end of the current sound file.

The **Stop** button stops the currently playing sound and returns the cursor to the beginning.

The **Pause** button stops the currently playing sound, but leaves the cursor at the stopping point. This way, you can click **Play** to continue playing from where you stopped.

The **Rewind** button moves the cursor back a little bit with each click.

The **Forward** button moves the cursor forward a little bit with each click.

The **Loop** button plays the selected section over and over in a continuous loop.

Practice

Let's practice!

Open a sound file:

- Launch Sound Forge (if not already open).
- Open the "tutor1.wav" file, located in the **Soundforge** folder under the **Program Files** folder on the C: drive.

Play an entire sound file:

- On the Transport toolbar, press **Play All**.
- Observe how the cursor bar moves along the data window showing the current position.
- You will also hear the words "Wow, sound editing just gets easier and easier."

Start in the middle and play

- Move your mouse pointer to the silence section right after the "Wow" portion of the file.
- Click (don't drag, we don't want a selection yet) and you will see the flashing cursor bar in the silence area after the word "wow."
- Click the **Play** button, and now you will only hear the "sound editing just gets easier and easier" part. (If you don't hear anything you may have made a small selection by accidentally dragging the mouse. If you would like to start over, just click in the data window again to clear the selection.)

Play a selection

- Click and drag starting at the section of silence prior to "wow".
- Drag the mouse until you have selected the entire "wow" area. (Notice how the soundwave highlights as you make your selection.)
- Release the mouse button when you have made the selection you want.
- Click the **Play** button, and you should hear just the "wow" portion of the file.

Try the other controls

- Experiment with the other controls, both in the Transport toolbar and the Playbar, until you are comfortable with how they work.

Lesson 4: Recording

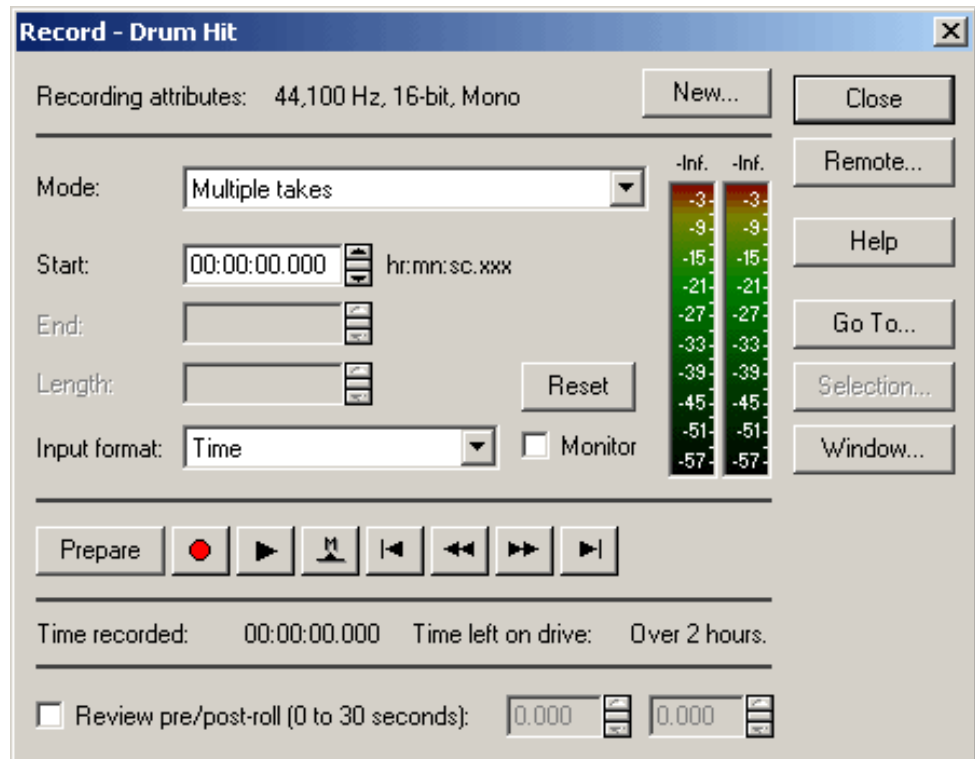
How do I record sound?

To record a sound onto your computer (also called "digitizing"):

- 1) Click the **Record** button on the Transport toolbar:

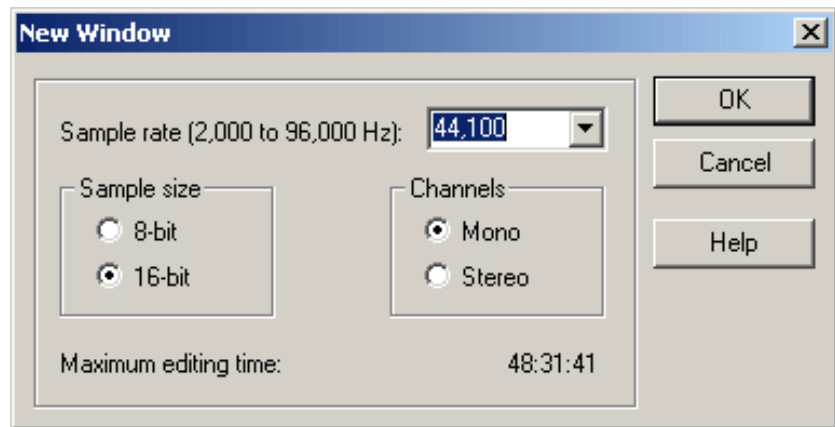


The Record dialog box will appear:



- 2) Click the **New...** button at the top of the dialog box to create a new sound file where your recorded sound will be placed.

The **New Window** dialog box will appear:



3) Set the desired recording attributes: *sample rate*, *sample size*, and *channel* settings. Just as with graphics, high quality and low file size must be balanced, based upon the situation.

- **Sample Rate** - The number of times each second the sound wave is measured. (It's similar to the number of frames per second in a film.) The higher the sample rate, the better the sound quality. But since you are storing more information about the sound wave, higher sampling rates take up a lot more disk space than lower ones. As a rule of thumb, voice recordings need a sampling rate of only 8,000-11,000 Hz, while high-quality CD recordings are sampled at about 44,100 Hz.
- **Sample Size** - The sample size refers to how much information is stored for each sound sample. An 8-bit sample means that 256 different levels can be stored; 16-bit means that over 65,000 levels can be stored. (If this sounds familiar, it's because this is very similar to the bit depth of graphics; 8-bit graphics can have up to 256 colors, while 16-bit graphics can have over 65,000.) Again, higher sample sizes mean bigger file sizes. However, when choosing 16-bit over 8-bit, the increase in sound quality is exponential, while the size only doubles.
- **Channels** - You can record sound in "mono" (one channel) or "stereo" (two channels). Since you have to store twice as much information when using two channels, the file size of a stereo recorded sound is twice as large as its mono equivalent.

How big are sound files? Here's a real-life example: A 10-second digitized sound that was recorded in 16-bit stereo at 44,100 Hz takes up almost 2 megabytes of disk space. That means that each minute of high-quality sound would take almost 12 MB of space!

When you are done setting the recording attributes, click the **OK** button. The **New Window** dialog box will disappear, and the **Record** dialog box will re-appear. (Notice that the title of the window into which you will record is displayed in the titlebar at the top of **Record** dialog box.)

4) To begin recording, click the **Record** button in the **Record** dialog box (not the one on the Transport toolbar). The word "Recording" will flash in red the entire time you are recording, and the **Record** button is replaced by the **Stop** button (the button with the black square).

5) When you have finished recording, click the **Stop** button. The waveform of the sound you recorded will immediately appear in the data window sitting behind the **Record** dialog box.

6) Click the **Close** button to close the **Record** dialog box and view your sound in the data window.

You can now play your sound clip to see if you like it before you save it as a file. (See the previous lesson, *Playing a Sound*, for details.)

Practice

Have some fun! Practice recording your voice, and then record a music clip from a CD. (See Lesson 1, *Getting Started*, if you need to be reminded how to change your sound input.)

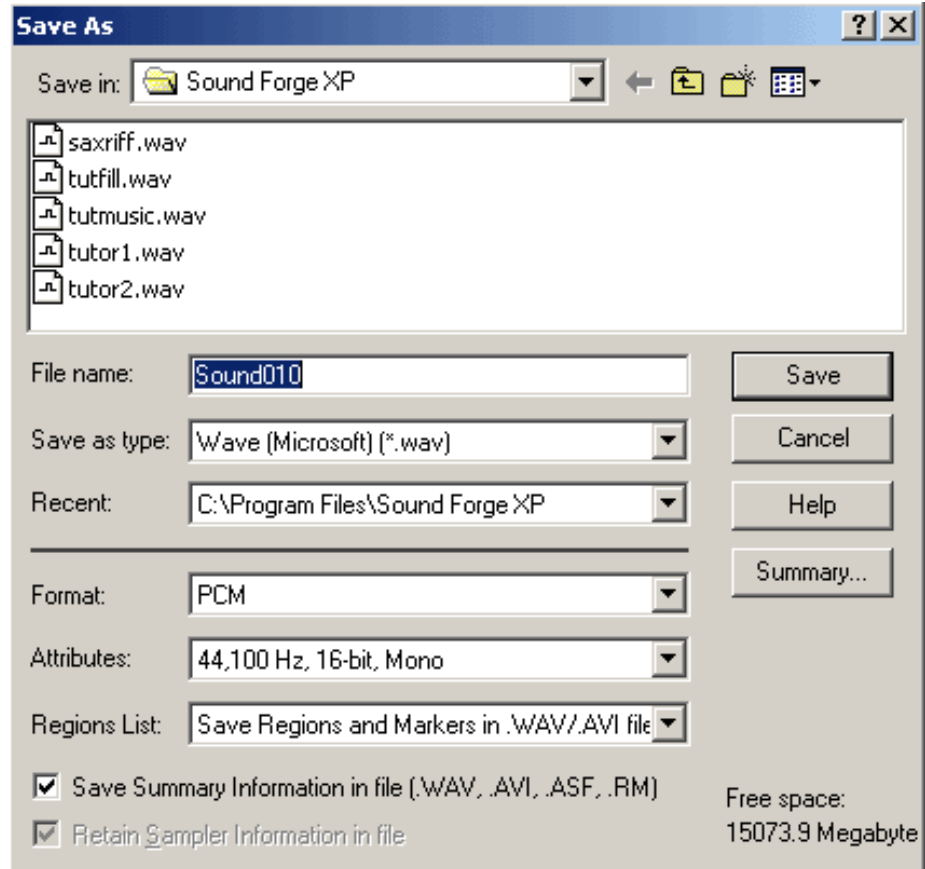
If you like, record a selection of your choice and use it for the remaining lessons in place of the suggested sound files.

Lesson 5: Saving a File

How do I save a sound?

To save your recorded sound:

- 1) Make sure the data window is the active, front window.
- 2) Pull down the **File** menu and select **Save As**. The **Save As** dialog box will appear:



3) In the **Save In** field, click the down arrow and select the folder you want the file to be saved in. (Remember, sound files use a large amount of space.)

4) Give the file a name in the **File Name** field.

5) In the **Save As Type** field, it should specify the .wav format, which is Sound Forge's default. If it doesn't, choose **.wav** from the pop-up menu.

5) Click the **Save** button.

The **Save As** dialog box also lets you change file types, data format, and recording attributes for the file. You can find further information on these topics in the Sound Forge Help menu.

End of Lesson

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