

# 6

## Using the FL Studio Mixer and Recording Audio

In this chapter, we will cover:

- ▶ Using send tracks in the mixer
- ▶ Recording external audio – keyboards, vocals, guitars, turntables, and devices
- ▶ Adding effects and your effect chain
- ▶ Perfecting equalization
- ▶ Understanding master tracks and loud wars
- ▶ Getting the best out of your mixer
- ▶ Recording with or without effects

### Introduction

Using send tracks in the mixer, recording external audio, adding effects, adding equalization, mastering your song, and recording with or without effects are all crucial in the mixing process. The FL Studio Mixer offers a consolidation of all of these processes. We have already seen the vast capabilities of FL Studio with regards to rhythm and harmony multitracking; the FL Studio Mixer allows even more control over your sounds and shapes the final sonic landscape for your audience.

## Using send tracks in the mixer

Using send tracks in the mixer allows you to free up your computer load and easily add an effect to multiple mixer slots.

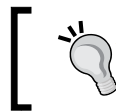
### Getting ready

In order to start using send tracks, you will want to have the FL Studio Mixer open as well as have your channels in the step sequencer sent to the mixer slots. This is done by setting the FX number, as reviewed in the *Sending a channel to a mixer slot* recipe in *Chapter 3, Working with Step Sequencer and Channels*.

### How to do it...

The use of send tracks is a well-known practice on both analog mixers and mixers inside of DAWs. Perform the following steps to learn to use send tracks in these mixers:

1. Open up the FL Studio Mixer. This can be done by pressing *F9*.
2. Look at the far right of the mixer. You will see four send mixer slots titled **Send 1**, **Send 2**, **Send 3**, and **Send 4**.
3. Click on one of the previous send channels, either 1, 2, 3, or 4. In *Fig 6.1*, we have selected **Send 1**.
4. Select an effect from the effect slots. These are labeled 1 through 8 and can be selected using the triangle drop-down icon and by hovering on **Select** or **Replace**. For our purpose, we will select an effect called **Fruity Reeverb 2**. In *Fig 6.1*, we have engaged **Send 1** and picked **Fruity Reeverb 2** in the first effect slot on the right-hand side.
5. Rename the send channel to your liking. In this case, we will rename the channel **Reverb Send** because we know we are working with a reverb effect, as selected in step 4. This is done by selecting the send channel and hitting *F2* to rename it.



Press *Shift* + click on a channel to rename it.

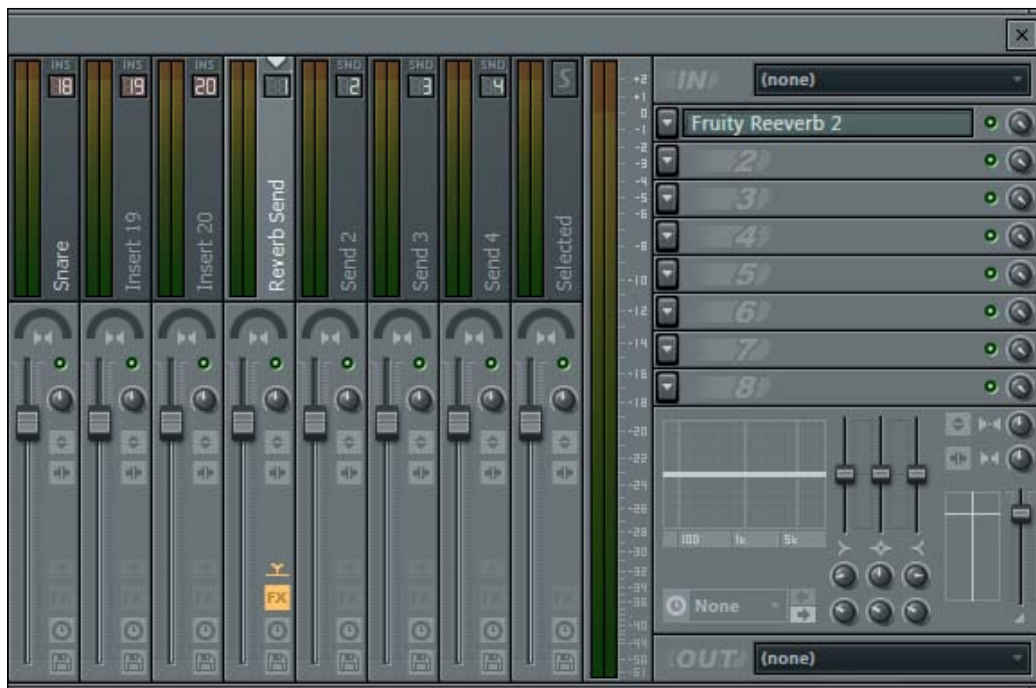


Fig 6.1

6. Click directly on the insert slot that you want to tweak with the send channel. You must engage the audio you want to adjust. In our case, we will click on a **Snare** channel in the mixer, which is shown in Fig 6.2. We have the **Snare** channel audio here, as discussed in the *Sending a channel to a mixer slot* recipe in Chapter 3, *Working with Step Sequencer and Channels*. Once you click on the **Snare** channel or any channel in the mixer, it will be faintly highlighted.

7. Finally, adjust the reverb send knob to your liking. Bear in mind that you need to select/highlight the **Snare** channel first, and then you need to turn your send knob. In Fig 6.2, we have the **Snare** slot highlighted, but we only turn the small send knob near the bottom of the mixer in the same column as the **Reverb Send** channel. When you turn your send knob to the right, you will see a graphical vertical readout of the amount applied as well as the FL Studio hint bar, which will show the percentage, from 0 to 125 percent.



Fig 6.2

8. Turning the **Reverb Send** knob allows the **Snare** mixer slot to send its signal to the **Reverb Send** track, which then applies the effect to the signal and sends the affected signal to the master track. You will also see that regular inserts in the mixer display a very small **INS** slot at the top of the mixer. These are channels sent to the mixer from the step sequencer. The four send slots in Fig 6.2 say **SND**.

## How it works...

When you have a full-scale music project, you will have many channels on various inserts (**INS** or **FX** slots) in the mixer. When you set up a send channel, you can add a little bit of the send effect to multiple mixer inserts, without having to add the same reverb effect individually. The send slot equates to a global effect. If you want to send some reverb (or any effect you desire) to your hi hat mixer slot, you can simply engage your hi hat insert and then adjust the send knob to your liking. If you want to send some of the same reverb send to your percussion or bongo insert, then you can adjust it again with the same send knob. If you want to apply the same send effect to your virtual instrument harmonies, you can use the same send knob again. It is up to you how much you want to apply. Again, your send knob goes from 0 to 125 percent, so you are able to specify how high you want to go in each individual insert slot. You can set up your four send slots and apply them to any mixer slot you desire. Generally, sends are used for reverb and delay, but there are no rules in music production. If you think outside the box, your creative possibilities are boundless. It's all about finding your own sound.

## There's more...

You can also create automation clips (reviewed in *Chapter 10, Recording Automation*) and use physical knobs on a MIDI controller to control your send knob. Additionally, you can add more effects (1 through 8 in the vertical region of the mixer) to shape your send sound. You may also want to cut out your low-end frequency when your send slot is actually highlighted or engaged and you are working with reverb. This will help open up your reverb send and take away the "muddy" and unclear sound. Panning your instruments or sounds left and right also helps a great deal with creating your own sonic space. Please remember that you can still tweak all of your parameters on any given effect as well as scroll through the presets. In this recipe, we can see our virtual effect and all of its parameters by clicking on the **Fruity Reeverb 2** effect in *Fig 6.1*.

## See also

- ▶ The *Adding effects and your effect chain* recipe
- ▶ The *Sending a channel to a mixer slot* recipe in *Chapter 3, Working with the Step Sequencer and Channels*
- ▶ The *Using automation for virtual instruments and effects* recipe in *Chapter 10, Recording Automation*
- ▶ The *Creating automation clips* recipe in *Chapter 10, Recording Automation*

## Recording external audio – keyboards, vocals, guitars, turntables and devices

The recording of external audio is done through the FL Studio Mixer. Please refer to the *Knowing your sound cards and audio interfaces* recipe in *Chapter 1, Configuring FL Studio*, with regards to engaging your audio device. No matter what type of external sound you want to record, you will have to select your sound card or audio interface in your audio settings by hitting *F10* and understanding the basic signal flow.

### Getting ready

To get started with recording external audio, you need to have your FL Studio Mixer open. This can be done by hitting *F9*. A prerequisite for recording external audio is to have your correct sound card or audio interface selected in your audio settings by hitting *F10*. This was reviewed in *Chapter 1, Configuring FL Studio*. Note that if your microphone is near your speakers, you will need to turn your speakers or studio monitors off before recording into a microphone to avoid feedback. The best practice is to turn your speakers all the way down or off before recording and to use headphones to hear your mix. The output of your speakers into the microphone is definitely a bad practice and can cause unwanted feedback and damage to your microphone, so turn your speakers off before recording vocals.

### How to do it...

All external audio recordings include the exact same steps. You simply have to select the input that your audio device is plugged in to on your audio interface or ASIO4all framework. In this example, we will be working with a condenser microphone and recording vocals using the following steps:

1. Click on any mixer slot in the FL Studio Mixer. This will be the path for your audio to travel. You need to pick a mixer slot that is free of any audio. In *Fig 6.3*, we have selected mixer slot **20 (INS 20)** and renamed it to read `MBox mic`.
2. While your external audio mixer slot is still engaged, click on the IN dropdown of your FL Studio Mixer. This is a dropdown of your available audio inputs; it is based on the sound card you previously selected in your *F10* audio settings. In *Fig 6.3*, we can see that we have selected **MBox2 In 2**. In this example, our real-world XLR condenser microphone is plugged into Input 2 on our MBox2 audio interface. This drop-down box directly correlates to the inputs on your audio interface.

- Right-click on the small disk icon at the very bottom of **INS 20**. This column correlates to **INS 20**. It will bring up your computer hierarchy, where you can specify the exact location that you want to save your file in.



This is the point where you can organize your recorded audio. You can name and save this vocal track to an external hard drive, which can contain folders of all your music projects. This helps to save file space on your actual computer hard drive because WAV files are large byte files. Another option is to simply left-click on the small disk icon, but it will not allow you to specify where you want your audio recording saved. Rather, it will simply automatically save your audio recording to the default folder within FL Studio, titled *Recorded* in the browser.

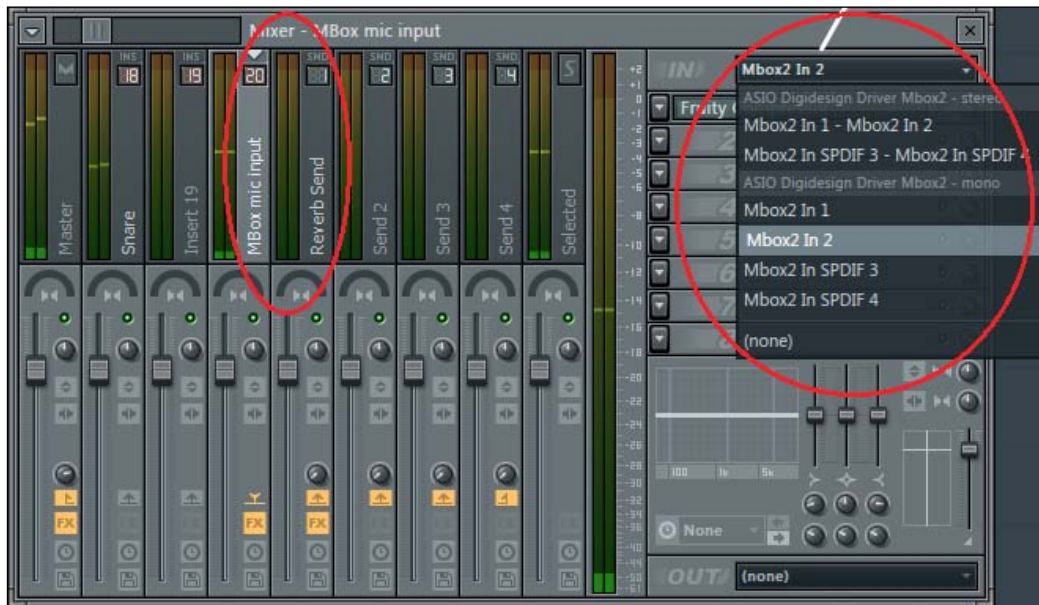


Fig 6.3

4. Bring up your playlist (by hitting *F5*) and highlight the measures you want to record on. Generally, you can highlight an area of your verse, chorus, intro, bridge, or outro. This way, you are specifying where you want to record instead of just recording from the beginning and losing your breath along with your performance. However, if you are a singer-songwriter and want to capture the mood of a straight through performance that lasts 3 to 4 minutes or longer, you can highlight a larger chunk of time. We have double-clicked and dragged our mouse on the measures from 1 to 9 as shown in the following screenshot:



Fig 6.4

5. Click on the recording button on the transport controls as shown in *Fig 6.5*. The transport controls are play/pause, stop, and record.
6. Select **Audio, into the playlist as an audio clip**.



7. Click on the play button, and your recording will count down based on your **3 2 1** countdown setting shown to the right of the transport controls. You can also right-click on the **3 2 1** parameter to select the 1 bar or 2 bars countdown before recording. This will help you prepare before the recording and give you a little time to set up. The following screenshot shows the **Recording** window:

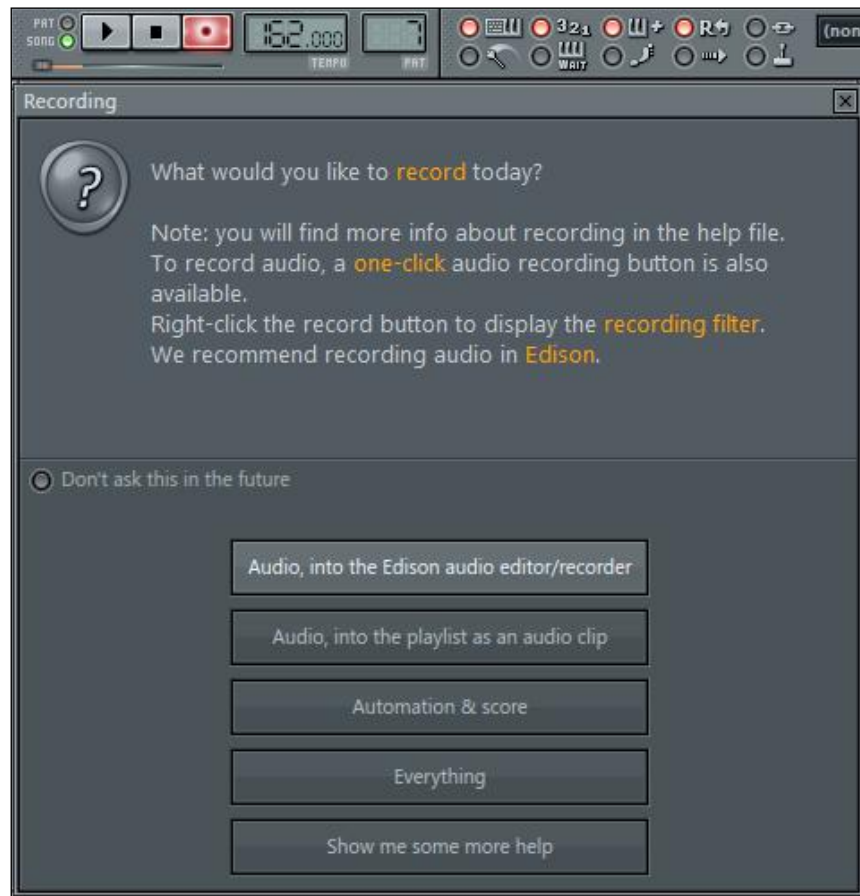


Fig 6.5

8. Your audio recording will now show up in the playlist in the exact section that you previously highlighted before recording. In Fig 6.6, it shows as **Vocal 1\_4**, and you can see the waveform readout. It also automatically goes to the next available track in the playlist, which happens to be **Track 5**.

9. This track can now be treated like any type of audio in the playlist. You can move, cut, copy, paste, and rearrange your audio recording as shown in the following screenshot:

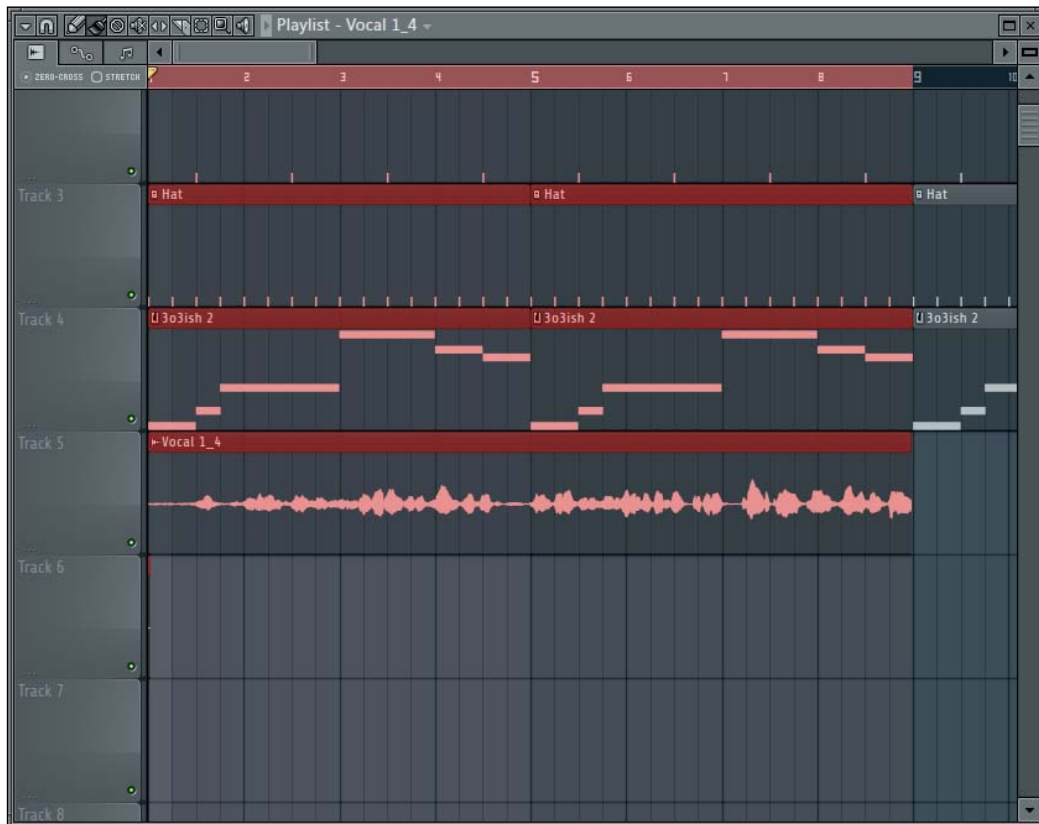


Fig 6.6

Your audio recording is now also its own dedicated channel in the step sequencer, as shown in the following screenshot:

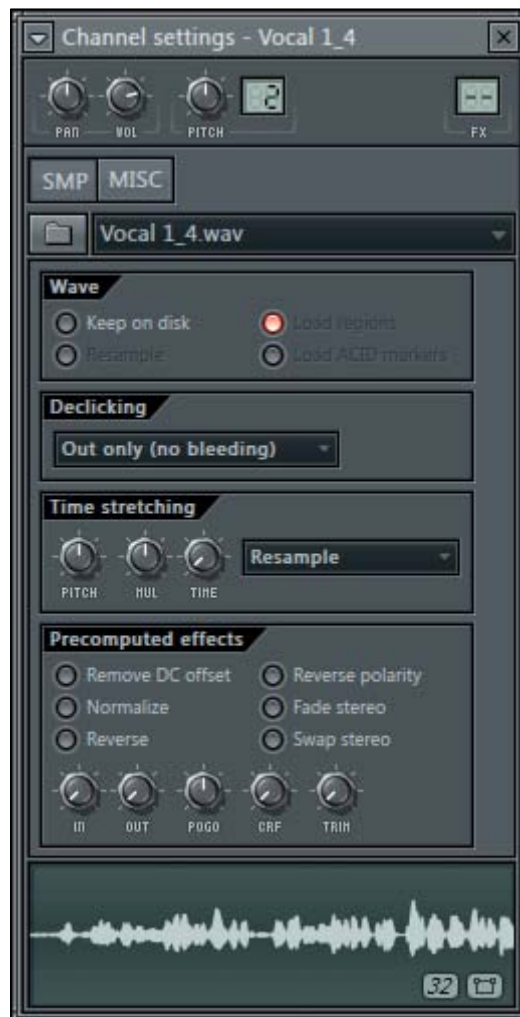


Fig 6.7

10. Once you find your new audio channel in the step sequencer (it will also be defaulted to a new step sequencer group called **Audio Clips**), it can be treated like any other WAV sample, MP3, or virtual instrument channel. You can send this to a mixer slot to gain more control and tweak your vocals further.
11. When you are done recording the vocals, go back to the FL Studio Mixer and select **(none)** on the insert slot where you selected your audio input (as shown in Fig 6.3). In this manner, you won't hear any audio coming through your interface or background noise being picked up from your microphone, and you will be able to mix cleanly again.

### How it works...

Using the FL Studio Mixer allows you to pick a mixer slot for your audio path and select the input on your sound card or audio interface. You can record one microphone or audio input at a time or multiple inputs at the same time depending on your audio interface. For example, if your audio interface has eight inputs, you will need to go through each mixer slot one at a time and then select the input you want from the input drop-down box. This can help those who are in a band and depends on human chemistry and vibe to bring out the best in their recordings. It can also help singer-songwriters because they can use one microphone input for an acoustic guitar and another microphone input for the vocals. If you only have one microphone and one input, you can lay down one piece of the input at a time, which equates to overdubbing one recording after the next. The overdubbing technique is the best way to layer vocals for singers or rappers. Artists can double their vocals to add emphasis to certain words, and the second layer of vocals is where artists usually find their harmonies.

### There's more...

Proper cables are extremely important when recording external audio. If you need 1/4 " cables, make sure you get balanced cables that will reduce the noise and boost your sound to an optimal level. This balanced 1/4 " cable is shown in the following image; it can be recognized by two rings near the tip, which may be black or metallic:



Fig 6.8

When working with condenser microphones, most of the time you will need phantom power, which is usually offered on mixers and audio interfaces, as well as an XLR cable as shown in the following image:



Fig 6.9

You are able to test the level of your audio the moment you select its input from the drop-down box on the FL Studio Mixer, so make sure you have everything set to a good level before recording.

You need to have a very quiet room before recording vocals and even have noise-canceling headphones that won't "bleed" or seep into the microphone. With live artists or a band recording, sometimes a small amount of bleed into the microphone can be considered good because you are capturing the sound of your room. When recording a live drum set, the bleed from one microphone to another is inevitable, and it is up to the producer or engineer to mix the various parts in the best way.

Soundproofing your room makes it so no one on the outside can hear your ruckus. Sound treatment is a whole other animal; it means adding materials (construction, flooring, carpet, doors, windows, bass traps, and monitoring isolation pads) that make your room optimal for mixing. This means that your mix will translate as what you hear and what it sounds like on entertainment systems, on CDs, on online streamed material, and on all devices. When recording vocals, you usually want to be in room that deadens the space; your level and signal will now be that much clearer and focused. Usually, a pop filter is used in front of the microphone so that sharp annunciations are not clipped. Great recordings have come from using closets as recording booths (try the song *Bird's Eye View* by *Statik Selektah*), so you may get lucky in the spaces you find! Good audio recording is, nevertheless, subjective and depends heavily on the type of sound you want to create.

### See also

- ▶ The *Recording with or without effects* recipe
- ▶ The *Knowing your sound cards and/or audio interfaces* recipe in *Chapter 1, Configuring FL Studio*
- ▶ The *Sending a channel to a mixer slot* recipe in *Chapter 3, Working with the Step Sequencer and Channels*

## Adding effects and your effect chain

The adding of effects in your effect chain takes place in the FL Studio Mixer. The purpose of an effect is to monitor or tweak your audio signal. When you engage each **Insert** slot in the mixer, you have the option to add up to eight effects in your chain. You can always add more effects by creating submixes to further mixer channels.

### Getting ready

In order to start using effects on your mixer tracks, you have to have your audio signal sent to actual mixer inserts. This is reviewed in the *Sending a channel to a mixer slot* recipe in *Chapter 3, Working with Step Sequencer and Channels*.

## How to do it...

1. Send a channel in the step sequencer to a mixer slot by double-clicking on the **FX** box (upper right-hand corner) in your **Channel settings**. This was reviewed in the *Sending a channel to a mixer slot* recipe in *Chapter 3, Working with Step Sequencer and Channels*.
2. Press **F9** to bring up the mixer.
3. Press the Space bar to start your project's playback.
4. Click on a mixer slot to engage the slot/column of the mixer. In *Fig 6.10*, we have engaged **INS slot 1**, which we renamed as **Kick**, and it is faintly highlighted. **Shift + click** on a slot to quickly rename it.
5. When you have your mixer slot engaged (it will be faintly highlighted), the mixer vertical hierarchy on the right of the mixer will correlate directly to the audio signal you engaged.
6. Click on the small, drop-down triangle next to the slot you want to enter an effect on.
7. Hover your mouse over **Select** to select the effect you desire. It will say **Replace** if an effect currently exists. It will populate a list for you, as shown in *Fig 6.10*.



Right-click on the small triangle to bring up **PLUGIN PICKER**, which is a neat function that allows you to select plugins based on their picture and audio category.

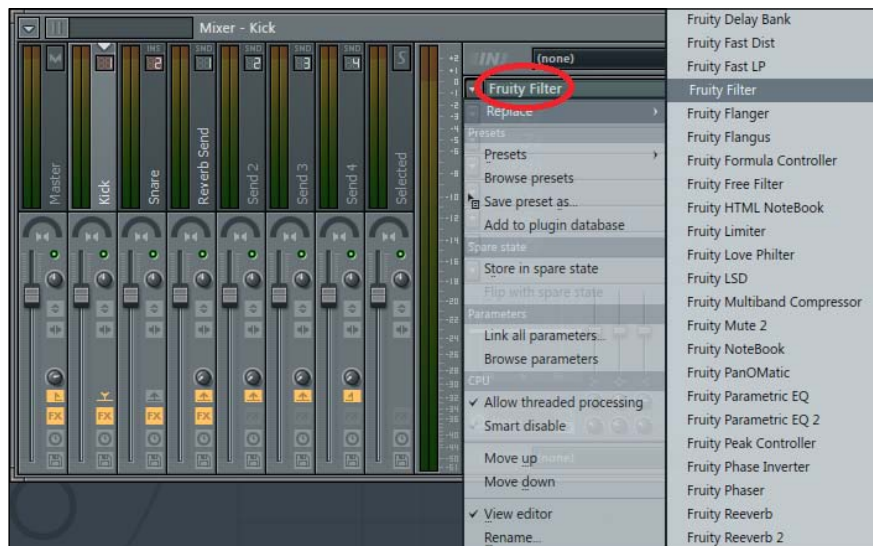


Fig 6.10

8. Click directly on the name of the effect, which is now in the slot you selected, to bring up the vast parameters of the effect.
9. When you click on the name of the effect in your slot, it will bring up the graphical plugin you added. In this case, we have added the **Fruity Filter** plugin, which will adjust the frequency ranges of your given sound.
10. Click on the small arrows on the upper right-hand side of your plugin while looking to the hint bar or right-click on the arrows to bring up the list of presets. *Fig 6.11* shows that we are on the preset **Party next door**, which is number 2 out of the four available presets. Presets are like a collection of parameters named by the plugin designers. From that point on, you can still tweak your parameters and save them as your own preset.



Fig 6.11

11. Add more effects within the same mixer slot/effect chain if you desire. We are still engaged on **INS 1**, which was renamed to read **Kick**. **Fruity Filter** is the topmost effect that we choose, as shown in Fig 6.12, and we now have the option to add 2 through 8. The same principles apply to every insert slot on the FL Studio Mixer. They are all independent from one another. Be cautious as to which mixer slot is currently engaged/faintly highlighted because the vertical hierarchy of each chain will only apply to the slot that is engaged.



Fig 6.12

## How it works...

When working with our effect chain, we are affecting the exact mixer slot that is engaged. This is completely different from what we reviewed regarding the four send tracks in the mixer. You may have a better understanding of how send tracks work now, because when you work with independent mixer slots, they all have eight effects in their respective chains. With send tracks, you can send a little bit of your effect to whichever slots you desire.



When you are working on each mixer track, like we did in this recipe, each added effect will add to the workload of your computer. Also note the green mute button and knob directly to the right of each effect slot. The mute button will turn the effect on and off, and right-clicking on it will enable you to automate the muting. We will review automation in more detail in *Chapter 10, Recording Automation*. The knob to the right of the mute button will adjust the level of your effect. This can go from 0 to 100 percent. You can also automate any of the parameters within your graphical effect plugin by right-clicking on any knob in the plugin and selecting **Create automation clip**. In *Fig 6.11*, you will be able to automate the **Cutoff freq**, **Resonance**, **Low pass**, **Band pass**, **High pass**, and **x 2** buttons. Please remember that your effect chain is directly affected by the slots below it. You need to be aware of this when adding effects beneath other effects.

### There's more...

Keeping with the principle that each effect is affected by what is beneath it, FL Studio allows you to move effects up or down in your chain. In *Fig 6.10*, after you click on the small triangle, you also have the option to move up or down. This can have a drastic effect on your audio signal. The best way to discover what happens when you move effects up or down is to experiment. Your ears will tell you what is likable versus what is unpleasant. If you have a weak processor on your computer and your project starts to pop, click, and glitch when you add a multitude of effects, you have one more option. You can highlight the section of your song with the effects in the FL Studio playlist and export that section only.

When you export something out of the playlist, it will render down all of the effects that are part of that sound. You will also want to mute all of the other channels or simply solo your mixer track that includes the effects. Once it is rendered down and exported into a WAV file, it will have the effects embedded inside of it and be one solid file. You can then import this file back into your project and remove the effects in your chain that were bogging down your computer. This can be a bit tedious but is sometimes the only way to help your computer process all of the information. It's important to ensure that memory-and CPU-hogging applications are not running concurrently with FL Studio.

### See also

- ▶ The *Understanding master tracks and loud wars* recipe
- ▶ The *Exporting and re-importing a WAV file* recipe in *Chapter 8, Exporting and Rendering Your Project*
- ▶ The *Using automation for virtual instruments and effects* recipe in *Chapter 10, Recording Automation*

## Perfecting equalization

Equalization means dealing with the frequencies of your instruments and percussion. **Hertz (Hz)** is the measure of the pitch, also known as the frequency; dB is the volume. Equalization helps you shape the sonic landscape when your music is played back on headphones, speakers, loud speakers, or any type of media device, or even when it is streamed online. You have probably seen the basic controls on entertainment systems and within your automobile radio. The basic controls are simply low, mid, and high. There is a fine line between knowing what to adjust and what sounds good just the way it is! The best advice is to trust your ears and get feedback from others in order to recognize the techniques that work for you. A pitch-to-frequency chart will help you understand the exact frequencies that correlate to the pitches, as shown in the following screenshot:

Pitch

Pitch to Frequency Chart									
OCTAVE									
	0	1	2	3	4	5	6	7	8
A	27.5	55	110	220	440	880	1760	3520	7040
A#	29.13	58.27	116.54	233.08	466.16	932.32	1864.65	3729.31	7458.62
B	30.86	61.73	123.47	246.94	493.88	987.76	1975.53	3951.06	7902.12
C	32.7	65.4	130.81	261.62	523.25	1046.5	2093	4186	8372
C#	34.64	69.29	138.59	277.18	554.36	1108.73	2217.46	4434.92	8869.84
D	36.7	73.41	146.83	293.66	587.33	1174.65	2349.31	4698.62	9397.24
D#	38.89	77.78	155.56	311.56	622.25	1244.5	2489.01	4978.02	9956.04
E	41.2	82.4	164.81	329.62	659.25	1318.51	2637.02	5274.04	10548.1
F	43.65	87.3	174.61	349.22	698.45	1396.91	2793.82	5587.64	11175.3
F#	46.24	92.49	184.99	369.99	739.98	1479.97	2959.95	5919.9	11839.8
G	48.99	97.99	195.99	391.99	783.99	1567.98	3135.96	6271.92	12543.8
G#	51.91	103.82	207.65	415.3	830.3	1661.21	3322.43	6644.86	13289.7

Values above are measured in Hz or CPS

Fig 6.13

## Getting ready

To start using EQ as an effect in the FL Studio Mixer, you will need to have some sort of audio sent to a mixer track. This was previously discussed in this chapter as well as in the *Sending a channel to a mixer slot* recipe in *Chapter 3, Working with Step Sequencer and Channels*. Once you have audio on any given mixer track, you are ready to start using equalization. You may press **F9** to bring up the FL Studio Mixer.

## How to do it...

1. Send your audio to a mixer slot.
2. After your mixer slot is engaged or faintly highlighted, click on the triangle drop-down box next to the first effect slot in your mixer.
3. Select the **Fruity Parametric EQ 2** effect, as shown in Fig 6.14. Also note that the ninth mixer slot is engaged (faintly highlighted) and has been renamed to read *Alien Synth*. The dropdown will read **Replace** or **Select** based on whether an effect currently exists in a slot.



Right-click on the triangular drop-down box to bring up your list of plugins from the very cool **PLUGIN PICKER** feature.

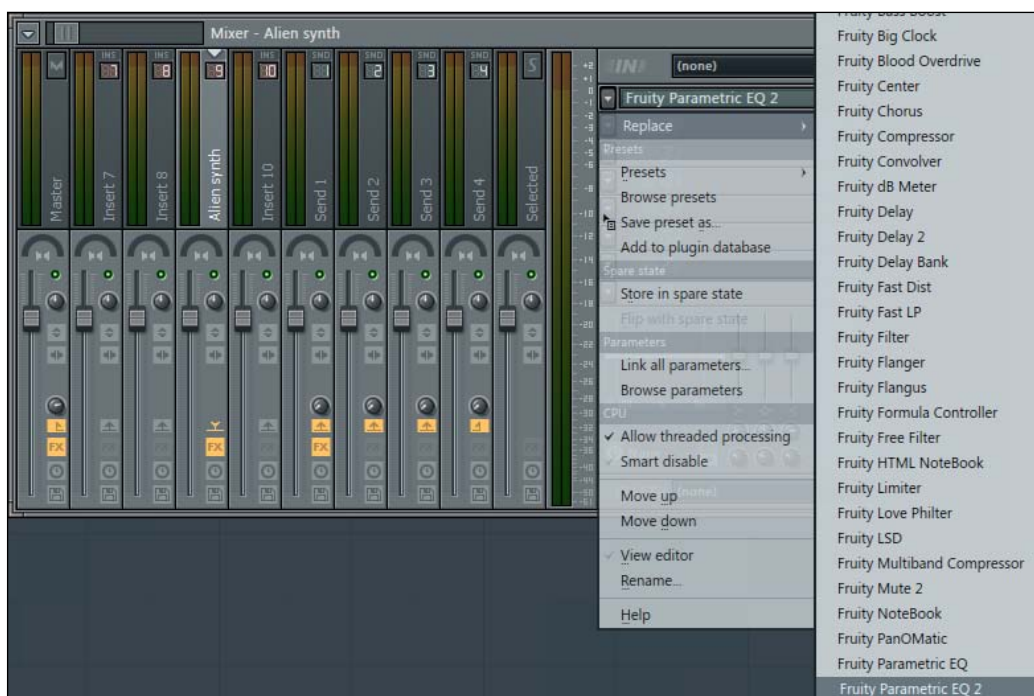


Fig 6.14

4. You will see the audio show up in purple and red visual feedback as shown in Fig 6.15 on your EQ effect plugin. The leftmost side goes all the way to 20 Hz (low), and the rightmost side goes to 20000 Hz (high). Certain sounds and instruments sit in certain frequency ranges. Low bass is where 808s and kick drums sit, while vocals and percussion tend to stay between the mid-high range of frequencies.

5. Look to the right-hand side of your EQ plugin effect and focus on the yellow column.
6. Click-and-hold with your mouse on the small box of the yellow column and drag it up slowly. If you notice the dB numbers on the plugin, the range is from **-18** all the way up to **+18**. For general purposes and as a fundamental approach, you should raise this between **+6** and a little bit above **+12**. In Fig 6.15, we have raised up that particular frequency band to around +10.5 dB. This is the gain box.
7. As you drag up your yellow column, you will see that the circled number 4 in yellow will be pushed up on the EQ readout section of your plugin. When you use the square box in the column, it is locked to a vertical adjustment; it can only go straight up or straight down.
8. Look to your yellow column again and adjust the yellow circle / half circle at the bottom, which is next to **FREQ**. In this manner, you can sweep your frequency left and right until you hear something pleasing to your ears.



Fig 6.15

9. Look at the extreme bottom of your yellow column and you will see another circle that you can adjust. This is the bandwidth control, which is in the **BW** row at the bottom. When you adjust this knob, it will adjust how wide a range you are dealing with, from narrow to broad. Note that the only change we are making is to the bandwidth. The frequency and dB have not changed at all. The only difference between the previous and following screenshot is that the bandwidth is narrower in the latter.



Fig 6.16

10. Once you find something pleasing to your ears, adjust the square box (dB) that goes straight up or down all the way back to **0**. This will not adjust your frequency or the bandwidth you have already set, so do not worry. It will only bring your dB back to zero.
11. Slowly, bring up the dB scale to taste. You will want to slowly bring it up vertically until you hear it kick in. You want to raise it up in a delicate manner. You will not raise this all of the way up to where it was earlier in step 6, but you will raise it ever so slightly. In the following screenshot, we have brought our dB back down to zero and then raised it up to our final position, which is around +2.5 dB:



Fig 6.17

### How it works...

The process we just described is called additive equalization. It boosts specific frequency ranges, but the downside is that it leaves the rest of your music content / mixer tracks down in volume from the area being boosted and reduces headroom. To do this, bring up the gain of a frequency range and sweep the frequency knob back and forth until you hear something you like. When you find a pleasing frequency range, bring the gain back to zero and then add it back until you have just enough for your tastes. This tends to yield a more hyped sound, which is sometimes the desired effect. For example, a kick drum can sound much bigger than it really is! Remember to use your ears in order to distinguish what is too much or too little. Using too much or too little EQ can make or break a song quite easily. Sometimes, the hardest thing to do is to leave instruments that already sound good alone.

A method that is used by prominent engineers is called subtractive equalization. In this method, you will basically do the same thing, but you will remove your displeasing frequency. Turn the gain of one of your frequency bands up by about +5 to +10 dB and sweep the frequency back and forth until you find an area that sounds displeasing to your ears. Then, you can return the gain back down to zero and lower it a little bit. This is regarded as a more natural-sounding use of equalization because it leaves most of the original content intact.

### There's more...

You can also hover your mouse over the top portion of each column in the **Fruity Parametric EQ 2** effect until you see an arrow appear. This will change the type of filter, and you will be able to scroll through a low pass filter, band pass filter, high pass filter, notch filter, low shelf filter, and high shelf filter. A low pass filter will cut off the high frequencies, and you will hear the lows. You will be rolling off the highs and can choose how sharp you want a roll-off slope to be and how extreme that slope is. No dB adjustment will be available. Low pass is the noisy neighbor bass. A band pass filter focuses on the band you want to hear, and no dB adjustment will be available. A high pass filter will cut the low frequencies without dB. You will hear the highs. You will be rolling off the lows and can choose how extreme or sharp a roll-off slope you want. The higher you bring the high pass frequency, the more AM radio sounding it can be!

A notch filter takes out a certain frequency with no dB. Shelving equalizers amplify or satisfy the main frequency selected, plus all of the frequencies beyond that point. Shelving equalizers are good at making an instrument sound a little brighter or darker overall, without affecting any one specific frequency. Shelving EQs have a dB and can work pretty well. Shelving can give more bass or less bass across the board. It can give more treble or less treble across the board. Shelving is an overall boost or an overall removal.



To make your mix less muddy, you may want to remove 75 Hz and below on all instruments and all vocals. This is a tactic that is practiced by some of the best engineers. You can do this by selecting a high pass filter on band 1 (purple column) in **Fruity Parametric EQ 2** and adjusting the frequency to around 75 Hz. This is also a good trick for hi hats and percussion sounds that need to be clear in your mix. Most of the time, you don't need these low frequencies (75 Hz and below) on most your instruments besides bass, so you can roll them off and add more clarity to your mix. However, in cases where you desire to keep some of the darkness in your hi hats or instruments, you can try panning to either side so it has its own sonic space.

Using an equalizer to boost higher frequencies can give the illusion of an instrument sounding closer, while removing higher frequencies can make an instrument sound farther away.

Be mindful of your panning and volume throughout the EQ and mixing process. The greater the difference in the volume on one side (panning), the farther to that side is the sound from the center. So, raising the volume and panning a certain sound could open up the mix a bit.

Also, remember that you can use a MIDI controller to adjust the many knobs and parameters on your EQ plugins and on any type of effect in FL Studio. As always, you can also create automation clips by right-clicking on a given parameter.

Also, beneath your entire tree of effects in your effect chain (1 through 8), there is a basic low-, mid-, and high-frequency selector for your given mixer track on the FL Studio Mixer. This can come in handy for quick adjustments if you don't want to open up **Fruity Parametric EQ 2** and is great in cases where you want to totally cut off the low end. If you want to cut off the low end, simply bring the low shelf slider all the way to the bottom, that is, to -18 dB. You can also adjust the mid and high frequencies with this handy, basic EQ controller. Note that this EQ is like a ninth slot, and thus, it will affect the sound after all of the other slots in the chain. This is the final adjustment right before the output of the track.

## See also

- ▶ The *Adding effects and your effect chain* recipe
- ▶ The *Sending a channel to a mixer slot* recipe in *Chapter 3, Working with the Step Sequencer and Channels*
- ▶ The *Using automation for virtual instruments and effects* recipe in *Chapter 10, Recording Automation*

## Understanding master tracks and loud wars

Loud wars refer to the trend of increasing your songs main output. There are loud wars everywhere you look. If your YouTube video is not as loud as someone else's, the instant you press play, the average listener thinks it is not as good. When you are watching TV and a commercial comes on, it becomes much louder than the program you are watching. Anything that is streamed online must be extremely loud because your average listener truly believes that louder is better. Most producers and artists have to join this battle—if you can't beat them, join them.

The only issue with mastering is that the definition of mastering has changed dramatically over the years and it is still changing today, depending on who you talk to. In the 60s and 70s, when records were made on vinyl, you wanted your whole album to be uniform and flow smoothly from track to track in sequential order. Albums were like a story. They were there to be enjoyed. Mastering engineers, at the time, had the job of deciding which track went in what order, in addition to making sure that the levels and EQ flowed smoothly through the vinyl. This was still practiced with cassettes and CDs because these also told a story, and the mastering process involved picking the song order and making each song flow smoothly from one to the next.

The digital age, the Internet, iTunes, Napster, MP3 compressed files, and the release of singles instead of albums have changed the definition of mastering. Sure, it's awesome that everyone can share their songs worldwide through e-mail and the internet, but we are now dealing with MP3 files, which can be equated to compressed music. If you are simply releasing a single, you don't need someone to pick the album's song order. Picking the song order is irrelevant. Basically, when it comes down to it, your only concern is how loud your song is compared to other commercial releases.

While you don't have to be concerned with this, and you can do whatever you want with your music, loud wars put a good amount of pressure on artists, engineers, and producers. If you are producing pop, electronic, dance, or hip hop, you almost have to join the loud wars. This can be viewed as a good thing as well. This means that your track is loud, punchy, clear (yet hard hitting), and will hopefully include the many frequency ranges that are pleasing to listeners. Loudness while having clarity is what really wins the battle. It is extremely helpful to have a reference track close by, so that you can compare your song to a similar artist or genre you like, to note how the production quality differs.

### Getting ready

To get started with mastering your project, it is imperative that you have your sequencing and mixing completely finished. During mastering it, you will only be dealing with the master track on the FL Studio Mixer, which is the first mixer track on the left-hand side. You want to make your complete production sound as good as is humanly possible, before you get to the mastering stage. Your levels, EQ, panning, sequencing, vocals, harmonies, and song arrangement should all be complete. You can also adjust the EQ when mastering, but it will only be adjustable on the master track. To bring up the FL Studio Mixer and the master track, you can press F9.



## How to do it...

1. Bring up the FL Studio Mixer (by hitting F9) and click on the track titled **Master**.
2. While the master track is engaged, select **Fruity Parametric EQ 2** in the effect's first slot. You can do this by clicking on the small triangle, hovering your mouse over **Select** or **Replace**, and selecting your plugin from the list as shown in Fig 6.18.



Right-click on the small, triangular dropdown to bring up the awesome **PLUGIN PICKER** feature.



Fig 6.18

3. The master volume slider at the top of your FL Studio project (the leftmost slider) should always be set at 100 percent, as shown in Fig 6.19. The same goes for your master track fader in the actual mixer as shown in Fig 6.18. This should always be at 100 percent. The reason for setting both of these at 100 percent is to avoid clipping. We will raise the volume through two effect plugins, not through these tools.



If either of these important sliders are changed, **Alt + click** or **right-click** and select **Reset** to return them to their default positions of 100 percent. **Alt + clicking** to reset the levels also applies the setting to most knobs and sliders in FL Studio.



Fig 6.19

4. Click on the **Fruity Parametric EQ 2** effect name in the first effect slot to bring up the graphical interface. We will only be using this plugin to bring up the volume a little bit.
5. In **Fruity Parametric EQ 2**, look at the column directly to the left of the purple column. Hover your mouse over the small box on this column, and note whether the FL Studio hint bar reads **Main level**.
6. Click-and-drag this column up until you reach about +3 dB in the FL Studio hint bar. You can also use the graphical plugin dB numbers as a guide. In *Fig 6.20*, you can see that the first slider is around +3 dB. There is a straight, white line in the EQ section that represents the main level. Again, we are not using this plugin for any EQ purposes at this particular juncture. This is simply a trick to raise the main level.



Fig 6.20

7. Bring up the **Fruity Compressor** plugin, which is directly underneath **Fruity Parametric EQ 2**. This will be on the second effect slot in the master effect chain as shown in the following screenshot:



Fig 6.21

8. Click directly on the **Fruity Compressor** name in the second slot to bring up the graphical parameters, as shown in Fig 6.22.
9. For now, keep the **Threshold** and **Gain** knobs at **0.0**. At the current juncture, this means that the **Threshold** knob will be turned all the way to the right and the **Gain** knob will be directly in the middle.
10. Adjust your ratio to **3.0 : 1**.
11. Leave **Type** as **Hard**.
12. Turn the **Attack** and **Release** knobs all the way to the left, which will result in an attack time of **0.0 ms** and a release time of **1 ms**.
13. Press the Space bar to hear your project's playback. You will be using your ears during this process.

14. Turn the **Threshold** knob until you reach about **-4.0 dB** (negative 4.0 dB).
15. Turn the **Gain** knob slowly (while holding down *Ctrl* for smaller increments) until you hear the volume boost. This will be right around **4.0 dB** or something close to it. This could be around **3.0 dB** to **4.0 dB** or slightly higher. Use your ears because you do not want to induce any distortion or clipping. You can experiment and move the **Gain** knob way past **4.0 dB** to realize how far you can go without clipping.



Fig 6.22

### How it works...

With regards to the threshold, values above the dB level of the threshold will be compressed in accordance with the ratio. The gain will boost the overall value of the ratio to compensate for the volume reduction. The amount of gain reduction is determined by the ratio. A ratio of 3:1 means that if your input level is 3 dB over the threshold, the output signal will be 1 dB over the threshold. It is the dBs your input signal will need to increase to produce a 1 dB gain in the output signal.

The **Type** tab affects how gradually compression kicks in above the threshold. The **Attack** tab refers to how quickly the signal triggers compression to kick in. The **Release** tab sets the time that the compressor takes to stop acting after the level has dropped below the threshold. This method described previously helps you join the loud wars. You will find that it works great once you export your project, burn a CD, and listen to it in the car while comparing it to other commercial releases. It will also sound great everywhere, including on entertainment systems, MP3 players, your studio monitors, and online streamed material.

What we have done is turned the **Fruity Compressor** effect into a brick wall limiter. (Generally, a ratio of 10:1 is considered for brick wall limiting, but the way we adjusted the attack and release times makes it function as a limiter.) Be mindful of your **Peak meter** option in the FL Studio Mixer. This shows your dB level on your master track, and it should not go past 0.0 dB. Dynamic processors such as compressors and limiters are devices used to control the volume of a signal. Some are used to bring loud signals closer to the volume of quieter signals. Others extend the difference between loud and quiet signals.

A limiter could be compared to a governor, where signal peaks do not exceed a certain value. Typically speaking, a ratio above 8.0:1 is considered to be limiting. Limiters typically employ very fast attack times with fast release times and high thresholds. We have shown an example using the 3.0:1 ratio to demonstrate how powerful this brick wall limiter can be, without having to use the 8.0:1 ratio. Feel free to experiment with different thresholds, ratios, and gain levels.

## There's more...

While mastering, you may also want to use EQ and adjust your frequency ranges. The high-shelving EQs do a nice job of opening up your track and letting air into the high-end spectrum. You may also want to test out multiband compressors; they allow you to focus on each band and then compress or limit as you see fit. Instead of one large compression on the entire song, you can focus on the bass and then compress, focus on the mid-levels and then compress, and finally, focus on the high end and then compress.

Remember that you may also want to master after you have rendered your completed music project, directly before mastering. This greatly helps your CPU load because your entire project will be rendered down to one WAV file. Then, you can close your project, open up a blank project, and import your WAV file into it. Your WAV file will be the only audio file in your entire project in FL Studio. At that point, you can use plugins to master your project.

The method we just used that involves **Fruity Parametric EQ 2** (for the main level only) and **Fruity Compressor** (which was turned into a brick wall limiter) will hold its own against any mastering process out there. You can now win against any producer in the loud wars. You may also want to purchase plugins from [www.waves.com](http://www.waves.com), [www.izotope.com](http://www.izotope.com), [www.fabfilter.com](http://www.fabfilter.com), or <http://mcdsp.com/>. We will review how to install these types of plugins as well as free plugins found on the Internet in *Chapter 1, Configuring FL Studio*.

## See also

- ▶ The *Install virtual instruments and effects* recipe in *Chapter 1, Configuring FL Studio*
- ▶ The *Export your audio stems* recipe in *Chapter 8, Exporting and Rendering Your Project*
- ▶ The *Exporting and re-importing a WAV file* recipe in *Chapter 8, Exporting and Rendering Your Project*

## Getting the best out of your mixer

Since each mixer track in the FL Studio Mixer can have its own chain of effects, there are ways to save your work and develop your own templates over time. FL Studio also has some defaults to get you going and improve your understanding of certain mixer chains. Remember that each mixer slot can have its own chain from 1 to 8 in the vertical list.

## Getting ready

To get started with using your mixer to the best of your abilities, you simply need to have audio enabled on any of the mixer tracks. This was reviewed in the *Sending a channel to a mixer slot* recipe in *Chapter 3, Working with Step Sequencer and Channels*. You can press **F9** to bring up the FL Studio Mixer.

## How to do it...

1. Bring up the FL Studio Mixer and engage a mixer track.
2. Choose your chain of effects. In Fig 6.23, we have engaged / faintly highlighted the **Snare** mixer track (**INS 2**) and selected **Fruity Compressor** on the first slot, **Fruity Parametric EQ 2** on the second effect slot, and **Fruity Flangus** on the third effect slot. In this example, we have already tweaked each of the plugin parameters and we are satisfied with the result.



Fig 6.23

3. Select the small triangular drop-down box in the left-hand corner of the FL Studio Mixer as shown in Fig 6.24.
4. Hover your mouse over **File** and then click on **Save mixer track state as....**



When selecting **Save mixer track state as....**, you can click, hold, and drag it to any other mixer track in order to copy-and-paste the effect chain from one track to another.



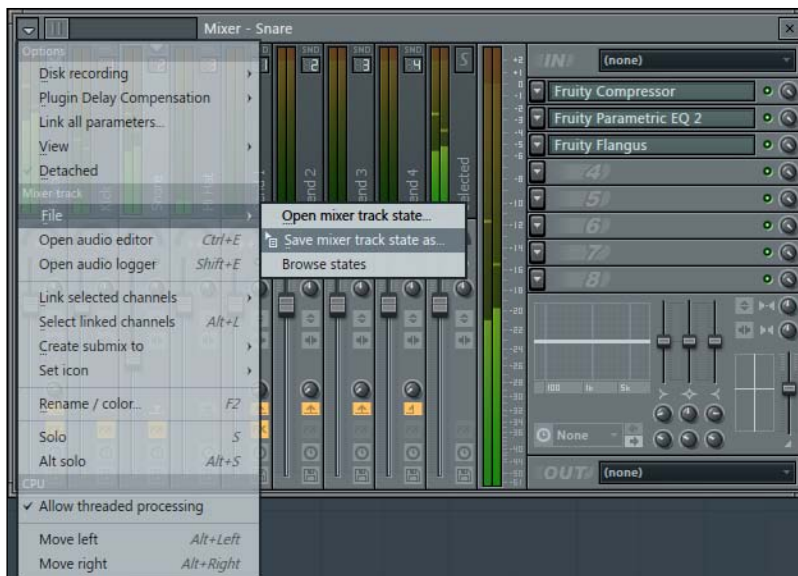


Fig 6.24

5. You will be able to save your effect chain for this given mixer track as shown in Fig 6.25. This action will save your effect chain and all of the parameters within each plugin in the chain.

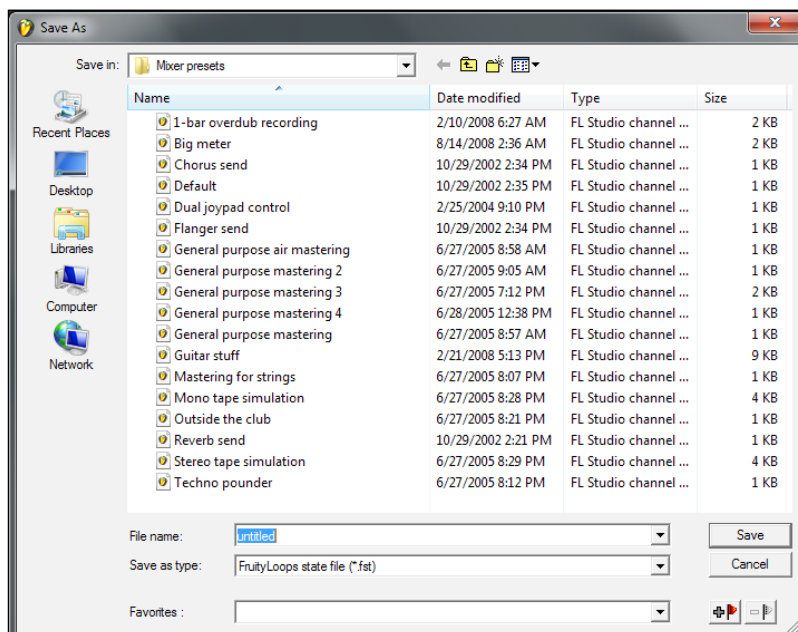


Fig 6.25

6. If you are working with two screens or monitors, you can move the FL Studio Mixer to a new screen using the triangular drop-down box in the left-hand corner of the mixer.
7. Click on the triangle and make sure that **Detached** is clicked. You can now slide your mixer to a new screen to create more screen real estate and organization for your project.

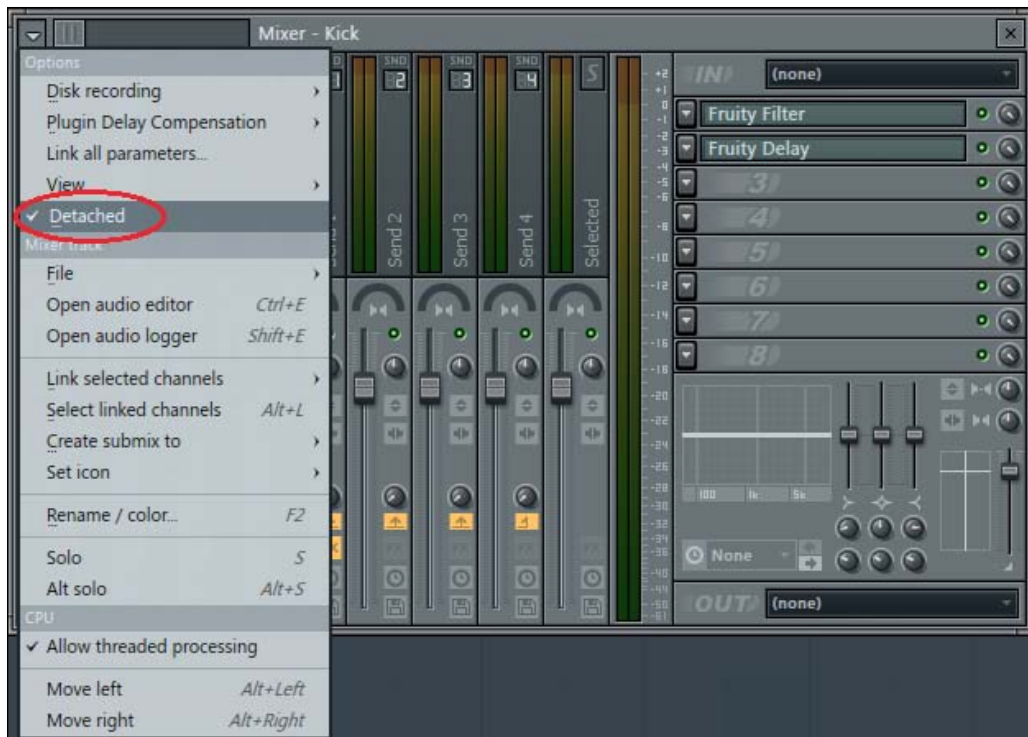


Fig 6.26

## How it works...

The reason for saving your mixer track state is so you don't have to carry out the same manual process time and again. Sure, each project will have its own sounds and concepts, but saving your mixer track state will basically create a template of the mixer track, which you can bring up for quick recall. From that point on, you can tweak it to your liking, but the fundamental settings are apt, or at least close to what you desire. You can rename these mixer track states to whatever you like. This can save hours of time in the long haul.

Additionally, FL Studio includes presets to help you get started. Use the triangular drop-down box, hover your mouse over **File**, and select **Open mixer track state...** to test some of FL Studio's mixer states. Anything you previously saved on your own will also be populated in this area.



## There's more...

When you are mixing your song and have a multitude of instruments and sounds on many mixer tracks, you can right-click on the **Mute / solo** button in order to solo any mixer track you desire. You want to hear your mix in the context of all of the sounds at once, but sometimes you may want to solo a mixer track in order to finely tweak the sound and ensure that it is crisp. The mixing process takes time, and you will get better with experience. The best way to learn how to mix by ear is through experimentation. Listen to other mixes that you consider successful and break down why they are deemed a good mix/master. Rename your mixer track by pressing *Shift* + clicking on a track or highlighting a track and then pressing *F2*; doing so helps to organize the mixer.

As always, you can use a MIDI controller with physical knobs and sliders to adjust the parameters on the mixer instead of using a mouse. You may also automate many of the controls on the mixer, which will be reviewed in *Chapter 10, Recording Automation*.

## See also

- ▶ The *Sending a channel to a mixer slot* recipe in *Chapter 3, Working with the Step Sequencer and Channels*
- ▶ The *Working with MIDI controllers and MIDI pads* recipe in *Chapter 4, Building Your Song*
- ▶ The *Using automation for virtual instruments and effects* recipe in *Chapter 10, Recording Automation*
- ▶ The *Installing virtual instruments and effects* recipe in *Chapter 1, Configuring FL Studio*

## Recording with or without effects

Recording with or without effects relates to the external audio you are recording. The recording of external audio was reviewed earlier in this chapter and relates to vocals, guitars, keyboard synthesizers, turntables, and any audio that is recorded with a microphone. When you are ready to record external audio in FL Studio, you can adjust your sound before recording. This means that your sound inside FL Studio will then hold the parameters and audio signal you tweaked before recording. The audio will be rendered inside FL Studio and may be difficult to change and adjust. The other method is to record your audio signal dry. This means that you will not have any compression or EQ changes on your signal, and you can then edit your audio after the recording. This gives you more freedom and flexibility to shape and change the sound you want inside the box, which means inside your computer program—FL Studio.

However, there is a slight middle ground here. You want to have the clearest and cleanest audio signal possible before recording audio in FL Studio, especially for vocals. This means that you can use an external preamp or compressor, which will amplify your sound, give you a lot more gain, and provide more character to your tone.

## Getting ready

You want to follow the same principles that were reviewed in *Recording external audio* earlier in this chapter.

## How to do it...

1. Engage a mixer track on the FL Studio Mixer.
2. Select your audio input from the upper right-hand **IN** dropdown in the FL Studio Mixer. This will correlate directly to the inputs on your audio interface.
3. Select the disk icon at the bottom of the FL Studio Mixer on the mixer track you have engaged for recording. You may right-click on it to save it to a path you specified or simply left-click to save it in the FL Studio default path.
4. At this point, you can add effects directly on your effect chain while your mixer track is engaged for recording. This will adjust your sound before it is recorded and your adjustments will play back once the recording is complete.
5. Engage the record button in the FL Studio transport controls and then press the play button to begin your recording. You can also use the **3 2 1** countdown before recording.

## How it works...

Before recording, you can add effects in your effect chain to shape your sound. If you are using an audio interface, you can adjust your gain and get your level suitable for recording. If you are using an external preamp or compressor, you can adjust the settings on your hardware before recording. Most of the time, the raising of the gain is well practiced. The question that comes into play is whether or not you are going to add extra compression and EQ to your recorded signal directly before recording it in FL Studio. Generally, the adding of the EQ and compression is practiced before recording vocals. If you have vintage or external analog gear with quality EQ controls and electronics, you may want to give your EQ a try.



All audio interfaces have an onboard preamp; if you are using a vintage piece of gear as your preamp, you will turn your audio interface preamp gain all the way down. In this manner, your gain/EQ will be handled by your vintage preamp; the interface is simply the place for your signal to travel back and forth on your computer. Look for audio interfaces with a good analog-to-digital converter, which will provide as little latency as possible. For example, a great microphone preamp is the Daking Mic Pre One. You could use this piece of gear to amplify your vocals before recording, but make sure to turn your audio interface gain all the way down. Find out more about Daking at [www.daking.com](http://www.daking.com). The same principles apply when working with external EQs or compressors.

### There's more...

You can also monitor your recording with reverb in order to enhance your vocal performance, but the reverb will not actually be rendered in the audio recording. The reverb is set up only to add a nice sonic quality for your vocals during performance. Usually, a vocalist or performer can perform better with a slight reverb effect on their audio signal. You can also do this with other effects. This is referred to as monitor routing.



Fig 6.27

Take a look at how to monitor your vocals using the following steps:

1. You will want to engage or faintly highlight a track for recording. In this case, it is **INS 1**, which is titled **To Disk**. Select your audio input from the **IN** drop-down box in the right-hand corner in the FL Studio Mixer while the **To Disk** track is engaged.
2. While the **To Disk** track is still engaged, send this track to the **Monitor** track (**INS 2**). This is done by engaging the **To Disk** track and then clicking on the area above **FX** on the **Monitor** track. The small circular button will appear as shown in *Fig 6.27* on the **Monitor** column.
3. Now engage the **Monitor** track.
4. While the **Monitor** track is engaged, use one of your send channels on the FL Studio Mixer to send a reverb effect to the **Monitor** track. (This was reviewed earlier in this chapter and is called *Using send tracks in the mixer*.) You will have to add a reverb effect on the send track, but be mindful of what track is engaged. To actually send the reverb to the **Monitor** track, the **Monitor** track will have to be engaged; you can use the send knob on the reverb send mixer track.
5. You can also add compression or any other effect to the actual **Monitor** track. This is done by engaging the **Monitor** track and selecting an effect slot plugin (1 to 8 in the vertical effect list).
6. Your input will be recorded dry, yet you will hear the input routed through the **Monitor** channel, which contains any effect you want and any send effect you desire (usually reverb).

### See also

- ▶ The *Using send tracks in the mixer* recipe
- ▶ The *Recording external audio* recipe
- ▶ The *Sending a channel to a mixer slot* recipe in *Chapter 3, Working with the Step Sequencer and Channels*