



Mixxx User Manual

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The Mixxx Development Team

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Introduction to Mixxx

Mixxx enables you to perform live DJ mixes with your digital music collection. It helps you rock the party with DJ controllers, vinyl turntables, or even just your keyboard. It is developed by an international team of volunteers who want to bring the joy of DJing to everyone. The project is non-profit, open-source and community driven. Together, we aim to build the best DJ software ever created. We hope you will *join us!*

1.1 How Mixxx Works

Mixxx is different from typical music player applications because it plays multiple audio files at the same time and has many features to manipulate the playback of the audio files. This lets you creatively mix different tracks together on the fly.

You can use Mixxx to preview the next track in headphones before the audience hears it, also known as headphone cueing. This helps you choose a track that is appropriate for the present moment and that will mix well into the currently playing track(s). To use headphone cueing, you need at least 2 separate audio outputs, typically provided by a USB audio interface (also known as a “sound card”, although most of them are not shaped like cards anymore). Mixxx can be used in two different ways for headphone cueing:

Internal Mixing

Mixxx plays multiple audio files on the computer at the same time, mixes them together, and sends the mixed signal to one audio interface output. A separate signal is sent to another audio interface output for headphone cueing. Often a DJ controller is used with internal mixing to provide easier control over Mixxx than a mouse and keyboard.

External Mixing

In this kind of setup, Mixxx plays multiple audio files on the computer at the same time and sends each track to a separate audio interface output. The audio interface’s outputs are plugged into an external hardware mixer. The hardware mixer performs the actual mixing of the audio signals. On the hardware mixer, there are separate outputs for the mixed signal to play to the audience and for the DJ to use headphone cueing. External mixing is typically used with turntables and *special vinyl records* to manipulate digital music files as if the music was on the vinyl records.

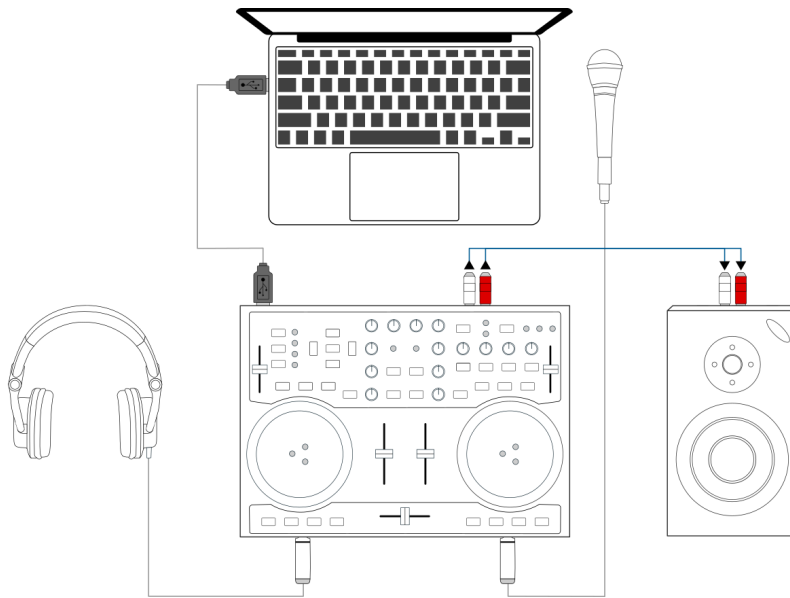


Fig. 1: Using Mixxx together with a DJ controller for internal mixing. The DJ controller has an integrated audio interface that provides two separate stereo outputs.

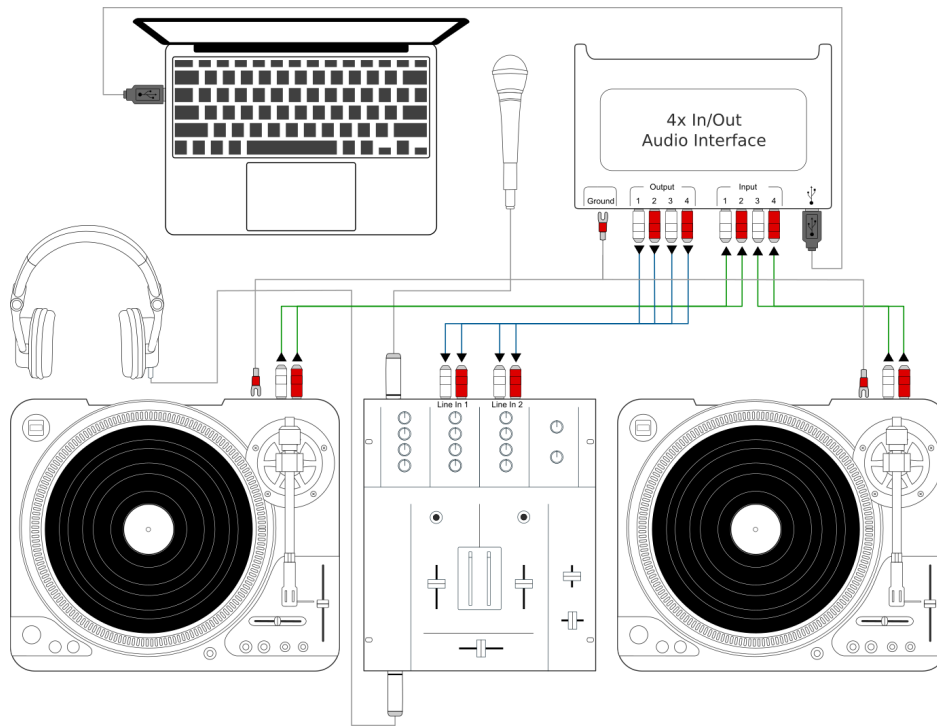


Fig. 2: Using Mixxx together with a USB audio interface, external mixer, and timecode vinyl for external mixing

2.1 Opening Mixxx



Once you've installed Mixxx, start by opening Mixxx and importing your music to the Mixxx library.

Windows Double-click the Mixxx icon on the Desktop. Alternatively, browse your Windows start menu and click the Mixxx icon, or perform a search for `Mixxx.exe`.

Mac OSX Double-click the Mixxx icon in the Applications folder. Alternatively, drag the Mixxx icon to the dock and double-click it there or search for `mixxx` in Spotlight.

GNU/Linux Click the Mixxx icon in the applications menu or launcher of your desktop environment or perform a search for `mixxx`. Alternatively type `mixxx` into the terminal, then hit `Return`. If your *audio interface* is not accessible from Mixxx because it is used by other applications via PulseAudio, you may close and restart Mixxx using `pasuspender mixxx`. See *Command line options* for an overview of Mixxx's command line options.

2.2 Importing your audio files

The first time you run Mixxx, you are asked to select a directory where your music is stored. By default, the dialog points to a location where music files are typically held, but you can select any location on your computer.

Click *Select Folder* and Mixxx will scan your music library. Depending on the size of your library this could take some time. All the supported music files Mixxx detects will be listed in the *Tracks - View and edit your whole collection*.

If you want to refresh your library (for example because you added or moved files), you can do this with *Library → Rescan Library* in the menu. If you want to rescan at every launch, select *Preferences → Library → Rescan on startup*.

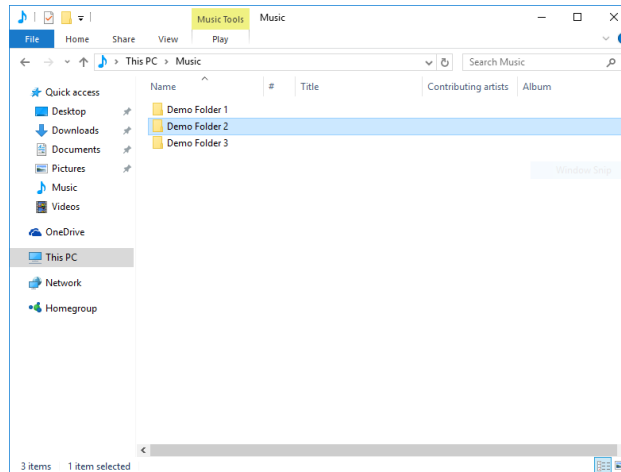


Fig. 1: Mixxx running on Windows 10 - Choose music library directory dialog

Warning: On Windows 7 and 8 the import dialog points to your Windows “Music“ Library, a special-purpose virtual folder. You can **not** use these virtual folders. Select a regular folder instead, usually “My Music“, like pictured above.

2.3 Analyze your library



Mixxx automatically analyzes tracks the first time you load them in a deck, nevertheless it is recommended that you analyze them before playing live to ensure the beatgrids are correct. Furthermore, track analysis takes considerable CPU power and might cause skips in the audio — things you surely don’t need while performing.

Once you have *imported your music library*, press *OK* on the Preferences window. Go to the Analyze view on the left side panel of the library. This allows you to run *beatgrid*, *key*, and *ReplayGain* detection on tracks in advance. While analyzing, the progress in percentage and total queue length are shown.

See also:

For more information, go to *Beat Detection*.

2.4 Configuring sound input and output

Before you can start using Mixxx, you need to configure Mixxx to use your sound hardware in *Preferences* → *Sound Hardware*. You do not need to configure all inputs and outputs.

The *DJ Hardware* chapter explains different types of DJ hardware and how to set them up with the the input and output options. For Mixxx to perform the best it can on your system, configure the other *Sound Hardware* preferences in addition to the inputs and outputs.

2.4.1 Output Options

Internal mixing:

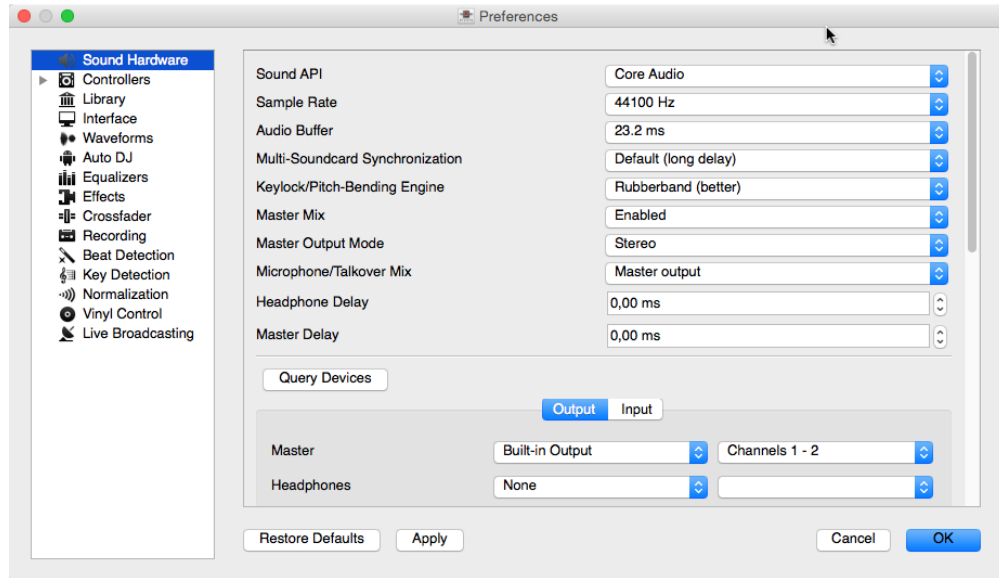


Fig. 2: Mixxx Sound Hardware Preferences

Use these outputs if you are not using an *external hardware mixer*. If you are using a controller with a built-in audio interface, use these outputs.

- *Master*: all decks, samplers, microphones, and auxiliary inputs mixed together. This output is sent to the speakers for the audience.
- *Headphones*: all decks, samplers, microphones, and auxiliary inputs assigned to *pre-fader listening*
- *Booth*: same as Master output, but has a separate gain control

External mixing:

- *Decks 1-4*: the individual unmixed decks to send to an external mixer
- *Bus Left/Center/Right*: all decks, samplers, and auxiliary inputs assigned to each side of Mixxx’s crossfader

2.4.2 Input Options

Internal mixing:

Use these inputs if you are not using an external hardware mixer. If you are using a controller with a built in audio interface, use these inputs.

- *Microphone 1-4*: live microphone or musical instrument inputs
- *Auxiliary 1-4*: other sound sources

External mixing:

- *Record/Broadcast*: When this is configured, Mixxx will record and broadcast from this audio interface input instead of the internal master mix. If you have a microphone plugged into the mixer, do not configure the Microphone 1-4 inputs.

Either internal or external mixing:

- *Vinyl Control 1-4*: timecode input from turntables or CDJs for manipulating decks 1-4

See also:

Using Microphones

An Overview of the Mixxx Interface

Welcome to the Mixxx interface. This is where the magic happens. You are going to want to get very familiar with this interface because it is the main way to use Mixxx. In this chapter, we present the default interface of Mixxx and describe its elements, knobs and faders.



Fig. 1: The Mixxx interface - Latenight skin

This is the Latenight skin. It is the default skin supplied with Mixxx. There are a variety of others skins included with Mixxx. You should explore them all to figure out which one you prefer. This section will focus on Latenight only.

3.1 The Deck Sections

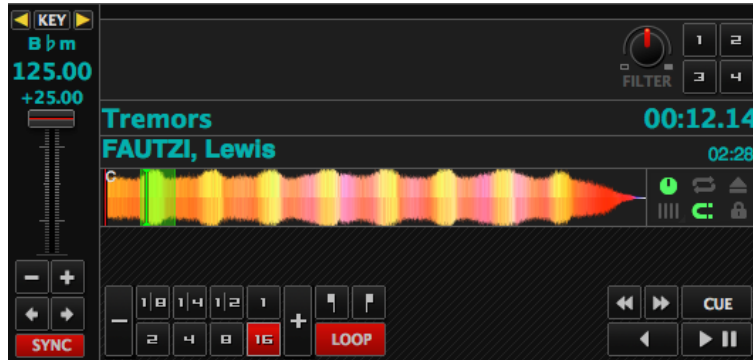


Fig. 2: A deck with a track loaded

The deck section allows you to control everything relating to a virtual turntable *deck*. We are going to break this down into sections.

3.1.1 Track Information Display



Fig. 3: The track information section of the deck

Track Title The title of the track that was loaded into a deck is displayed on top. This is the same as the title listed under the *Title* column heading in the Mixxx library. This information is initially loaded from the track's *metadata*. If the metadata is missing, the title and artist are guessed from the filename.

Track Artist The artist of the track is listed below. It is the same as listed under the *Artist* column heading in the Mixxx library.

BPM (Tempo) The number at the top right is the effective *BPM* of the track. This is the detected *BPM* of the track, adjusted for the playback rate of the track. For example, if the track is normally 100 BPM, and it is playing at +5%, then the effective BPM will read 105 BPM.

Hint: You can use a keyboard shortcut and tap with the beat to set the BPM to the speed you are tapping, go to [Using a Keyboard](#) for more information.

Time Elapsed/Remaining/Both

New in version 2.1.0: Option to show elapsed and remaining time simultaneously

By default it displays the total elapsed time in the track up to the millisecond. Clicking on the display switches to the *Time Remaining* view, which indicates how much time is left before the track reaches the end. Clicking the display again, both the elapsed and remaining time are shown simultaneously in the format *elapsed time / remaining time*. You can change the default in *Preferences* → *Interface* → *Track Time Display*.

3.1.2 Waveform Displays

The waveform section of a deck allows you to visualize the audio changes that occur throughout the track, you can basically “see” your music.

By default the waveform displays are aligned parallel to each other in order to make *beatmatching* easier, as it is possible to beatmatch visually by aligning the beats that appear in each waveform.



Fig. 4: Mixxx default skin (Latenight) - Parallel waveforms

Depending on the skin Mixxx displays either parallel waveforms (default) or separate waveforms. Select your preferred appearance in *Preferences* → *Interface* → *Skin*.



Fig. 5: Mixxx alternative skin (Deere) - Separate waveforms

Warning: If you have a slower computer and notice performance issues with Mixxx, try lowering the frame rate or changing the waveform type in *Preferences* → *Interface* → *Waveforms*.

Waveform summary The big waveform summary shows the waveform envelope of the track near the current playback position and is updated in real time. The mouse can be used on the waveform to pause, scratch, spin-back or throw the tracks. Right-clicking on the waveforms allows you to drag with the mouse to make temporary pitch adjustments.

Hint: You can select from different types of displays for the waveform, which differ primarily in the level of detail shown in the waveform, in *Preferences* → *Interface* → *Waveforms* → *Summary type*.

Waveform overview

New in version 2.1.0: Darken played part of track in decks and samplers

3.1. The Deck Sections

The smaller, zoomed-out version of the waveform shows the various markers within the track as well as the waveform envelope of the entire track. This is useful because they allow DJs to see breakdowns far in advance. As visual aid, the part of the track that has already been played is darkened.

Clicking somewhere on the waveform allows you to jump to an arbitrary position in the track. Like with the Waveform summary, you can select from different types of displays for the overview in *Preferences* → *Interface* → *Waveforms* → *Overview type*.

Vinyl Widget The line on the vinyl widget rotates if the track moves. It is similar to the position marker found on scratch records. Use the mouse on the vinyl widget to pause, scratch, spin-back or throw tracks - just like a real record. When performing *Loop rolls* or right-clicking on the vinyl during playback, a “ghost” marker hints where the playback will continue. The Vinyl Widget is hidden by default and can be enabled in the *Deck Options Button Grid*.

If *Vinyl control* is enabled, it can optionally display the time-coded vinyl signal quality. Activate the option in *Preferences* → *Vinyl Control* → *Show Signal Quality in Skin*.

Waveform Zoom Using the mouse-wheel everywhere in the waveform summary will zoom the waveform in or out. You can choose whether to synchronize the zoom level between the decks in *Preferences* → *Interface* → *Waveforms*.

Waveform Marker While mixing, various additional markers can appear on the waveforms:

- **Position marker:** The static vertical line in the center of the waveform summary indicates the playback point of the deck. The waveform overview includes a vertical line to show the current position within the track.
- **Beat marker:** The regular white lines on the waveform summary indicate the locations of beats in the audio, also called the *beatgrid*.
- **Cue marker:** Indicates the position of the *cue point*.
- **Hotcue marker:** Indicate the position and number of a *hotcue* point if set.
- **Loop-in/Out marker:** Indicate the beginning and the end of a loop.
- **Loop overlay:** Is drawn between the Loop-in/Out markers and changes color depending on whether a loop is activated or not.
- **Track ending notification:** If the waveform overview flashes red, only 30 seconds are left before the track reaches the end.

3.1.3 Deck Options Button Grid



Fig. 6: The Options Button Grid of the deck

The six buttons at the bottom right below the waveform allow you to configure the deck. Starting from the top-left and moving clockwise the buttons are as follows:

Show/Hide Vinyl Widget Toggles the visibility of the Vinyl Widget in the *Waveform Displays*.

Repeat Mode Toggle If enabled, the repeat mode will jump back to the beginning and continue playing when the track finishes.

Eject Track Button Clicking this button ejects the track from the deck. Alternatively you can use a keyboard shortcut, go to the chapter *Using a Keyboard* for more information.

Beat-grid Adjust Button Clicking this button adjusts the track beat-grid so that the current position is marked as a beat. This is useful if Mixxx was able to accurately detect the track’s *BPM* but failed to align the beat markers on the beats. For more information, go to the chapter *Beat Detection*.

Quantize Mode Toggle If enabled, all cues, hotcues, loops, and beatloops will be automatically *quantized* so that they begin on a beat.

Keylock Toggle *Keylock* locks the track’s pitch so that adjustments to its tempo via the rate slider do not affect its pitch. This is useful if you would like to speed up or slow down a track and avoid the “chipmunk” effect that speeding up vocals has.

3.1.4 Playback/Cue Controls



Fig. 7: The playback and cueing controls of the deck

Play/Pause Button Clicking the Play/Pause button starts and pauses the playback.

See also:

The actual behavior of the Play/Pause button depends on the selected *Cue mode*.

Hint: To return to the beginning of the track, right-click on the deck’s *Fast-Rewind Button*.

Cue Button If the button is pressed while the track is playing, the play position jumps to the *Cue point* on the track and the track is paused. Once the track is paused at the Cue point, you can preview it by holding the Cue Button. If you have not moved the Cue point yet, the default point is at the track’s beginning.

See also:

The actual behavior of the Cue button depends on the selected *Cue mode*.

Setting Cue points

Every track has a Cue point, by default on its beginning. Unlike with *Hotcues*, you can’t delete, but only move Cue points.

The Cue point is moved according to the selected Cue mode, as explained below.

Auto Cue

Mixxx automatically seeks to the saved Cue point on track load. If none exists, seeks to the beginning of the track.

Uncheck *Preferences* → *Interface* → *Auto Cue* → *Jump to main cue point on track load* to always seek to the beginning of the track.

Using Cue Modes

Mixxx supports various Cue modes that adapt to fit other devices in your setup, or your personal preferences. The actual behavior of the Play, Pause, and Cue buttons depends on the selected Cue mode. To change the Cue mode, go to *Preferences* → *Interface* → *Cue mode*.

Mixxx mode (default)

- **While paused at Cue point (Cue button lit):**
 - Holding down the Cue button plays the track from the *Cue point*, as long as the button is pressed. After releasing the Cue button, the track jumps back to Cue point and pauses again. Continue playback by pressing the Play/Pause button before releasing the Cue button.
- **While paused not at Cue point (Cue button flashing):**
 - Tapping the Cue button stores the current position as new Cue point.
- **While playing:**
 - Tapping the Cue button causes the track to instantly jump to the location of the Cue point where it pauses the playback.
 - Tapping the Play/Pause button pauses the track at the current position.

Mixxx mode (no blinking)

Is the same as the default Mixxx mode, but with no blinking indicators.

Pioneer mode

- It is basically the same as Mixxx mode but the buttons are more flashy like a Pioneer CDJ player.
- The Play/Pause button flashes once per second when a track is paused.
- The Cue button flashes twice a second when the next push will move the Cue point.

Denon mode

- **While paused at Cue point (Cue button lit):**
 - Holding down the Cue button plays the track from the Cue point, as long as the button is pressed. After releasing the Cue button, the track jumps back to Cue point and pauses again. Continue playback by pressing the Play/Pause button before releasing the Cue button.
 - Tapping the Play/Pause button starts the track at the current position.
- **While paused not at Cue point (Play button flashing):**
 - Tapping the Cue button moves the track back to Cue point.
 - Tab the Play/Pause button to start playing. The Cue point moves to the position where the track was started.
- **While playing:**
 - Tapping the Cue button causes the track to instantly jump to the location of the cue point where it pauses the playback.
 - Tapping the Play/Pause button pauses the track at the current position.

Numark mode

- It is basically the same as Denon mode but without a flashing Play/Pause button.
- This mode is useful if you want to implement a custom skin with 3-button decks, featuring a Cue button, a dedicated Pause button, and a Play/Stutter button.

CUP (Cue + Play) mode

- **While paused at Cue point (Cue button lit):**
 - Continue playback by releasing the Cue button.
- **While paused not at Cue point (Cue button flashing):**
 - Tapping the Cue button stores the current position as new Cue point. Continue playback by releasing the Cue button.
- **While playing:**
 - Tapping the Cue button causes the track to instantly jump to the location of the Cue point where it pauses the playback. Continue playback by releasing the Cue button.
 - Tapping the Play/Pause button pauses the track at the current position.

Hint: Use the *Hotcue Controls* to place more reference points on a track.

See also:

You can also use keyboard shortcuts for Cueing. Go to *Using a Keyboard* for more information.

3.1.5 Transport Controls

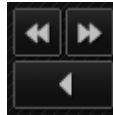


Fig. 8: The transport controls of the deck

Fast-Rewind button As long as the button is pressed, the track will play in reverse with increased speed. Right-clicking on the button will seek the play position to the beginning of the track.

Fast-Forward button As long as the button is pressed, the track will play with increased speed. Right-clicking on the button will seek the play position to the end of the track.

Reverse button As the name suggests, this button plays a track backwards. Right-clicking on the button puts a track into reverse while being held, resumes the track and disables Slip mode when released. Useful to censor expletives on the fly, or simply as part of your mix.

3.1.6 Vinyl Control Mode and Cueing controls



Fig. 9: The Vinyl Control Mode and Cueing controls of a deck

The control above the waveforms relate to the *vinyl control* feature in Mixxx and is **hidden** in the default *Mixxx user interface*. Click the *VINYL section expansion button* in the mixer section, or use the specific *Application shortcuts* to show or hide the section.

Abs/Rel/Const button

- **Absolute mode:** The track position equals needle position and speed.
- **Relative mode:** The track speed equals needle speed regardless of needle position.

- **Constant mode:** The track speed equals last known-steady speed regardless of needle input.

Off/One/Hot button

This button determines how *cue points* are treated in vinyl control relative mode:

- **Off:** Cue points are ignored.
- **One Cue:** If the needle is dropped after the cue point, the track will seek to that cue point.
- **Hot Cue:** The track will seek to nearest previous *hotcue* point.

See also:

For more information on how to use Vinyl control in your setup, go to the chapter *Vinyl Control*.

3.1.7 Sync and Rate Controls

The rate controls allow you to change the rate at which tracks are played. This is very useful for *beatmatching* two tracks together in a mix. You can control rate changes also from your computer’s keyboard, see the chapter *Using a Keyboard* for more information.

SYNC button

- **Left-Click:** Changes the *rate* of the track so that the *BPM* and *phase* of the track matches the other deck.
- **Right-Click:** Only changes the *rate* of the track to match the other deck but does not adjust the *phase*.

Decks and samplers now pick which sync target to sync to on the fly. Decks can’t sync to samplers and samplers can only sync to decks. The sync target for samplers is:

- The first deck (in numerical order) that is playing a track with a detected beatgrid, and has a rate different than zero.
- The first deck (in numerical order) that has a track loaded with a detected beatgrid, no matter if it is playing or stopped.

So basically, if you sync a sampler and both deck 1 and deck 2 are playing a track with a beatgrid then deck 1 will win since numerically it is first. The sync targets for decks are chosen with the new master sync feature, see *Master Sync* for more information.

Pitch/Rate slider The slider allows you to change the speed of the song, by default up to 10% from the tracks original tempos. The speed will increase as you move the slider up, opposite to the behavior found on DJ turntables and *CDJ*. Right-clicking on the slider will reset the tempo to its original value.

Pitch Rate Display The percent that the track’s rate is sped up or slowed down is noted here. Is the Pitch/Rate slider positioned at the center, the pitch rate display is at +0.0%, which indicates no change.

Pitch/Rate buttons The plus and minus buttons increase or decrease the tempo in steps at which a song is played, same as pulling the pitch slider slightly. By right-clicking the buttons you get even finer adjustments.

Temporary Pitch/Rate buttons (Nudge) Pushing the left and right arrow buttons is like nudging the metal edge of a turntable, or the outer edge of a CD player. It will give the track a push or pull forwards or backwards. If the buttons are released the previous tempo is restored. The buttons can act as either a fixed *pitch bend* or a *ramping pitch bend*.

See also:



Fig. 10: Rate controls

To customize the amount by which the buttons alter the pitch of the track, the slider range as well as the direction, go to *Preferences* → *Interface* → *Adjustment buttons* → *Permanent / Temporary*.

Hint: If the tempo of a track changes, you'll notice that the tone changes based on the pitch used (e.g. playing at faster pitch gives a chipmunk sound). You can enable the *Keylock* feature to maintain a constant tone.

3.1.8 Loop Controls



Fig. 11: The beatloop and looping controls of the deck

In this section of the Mixxx interface you can control (beat-)loops and set the loop points of a track.

Beatlooping Buttons

- **Instant loop:** The numbered buttons represents a different *bar* length. Clicking on any of that buttons will set a loop of the defined number of beats from the beat immediately following the current playback position. If a loop is set, a loop overlay will be drawn on the *waveforms*.
- **Loop roll:** Right-click on any of the numbered loop buttons to temporarily setup a rolling loop over the defined number of beats. Playback will resume where the track would have been if it had not entered the loop.
- **Double loop:** Clicking on the plus button will double the current loop's length up to 64 bars. The length of the loop overlay in the waveform will increase accordingly.
- **Halve loop:** Clicking on the minus button will halve the current loop's length down to 1/32 bars. The length of the loop overlay in the waveform will decrease accordingly.

Loop Buttons

- **Loop-In:** This button allow you to manually set the start point of a loop. A loop-in marker is placed on the waveform indicating the position. If clicked when a loop was already set, it moves the start point of a loop to a new position.
- **Loop-Out:** This button allow you to manually set the end point of a loop. A loop-out marker is placed on the waveform indicating the position. If clicked when a loop was already set, it moves the end point of a loop to a new position.
- **Loop:** Also dubbed Reloop, this button toggles whether the loop is active or not. This works for manually placed loops as well as automatic loops set by the beatlooping buttons. Depending on the current status of the loop, the loop overlay on the waveforms changes color.

Hint: If you are playing inside a loop and want to move the end point beyond its current position in the track, click on the *Loop* button first and when the play position reaches the desired position, click on the *Loop-Out* button.

See also:

If the *Quantize* mode is enabled, the loops will automatically snap to the nearest beat. This is disabled by default, click on the *Quantize Mode Toggle* to enable it.

3.1.9 Hotcue Controls



Fig. 12: The hotcue controls of the deck

To jump in between different parts of a track, you can use these numbered buttons. You can also use keyboard shortcuts, go to [Using a Keyboard](#) for more information.

Setting Hotcues

Clicking on a numbered button will set a *hotcue* at the current play position on the track. A marker with the corresponding number will appear in the waveform and the button will light up to indicate that the hotcue is set.

Playing Hotcues

- **While playing:** Tap a hotcue button to cause the track to instantly jump to the location of the hotcue and continue playing. If you are playing inside a loop and tap a hotcue whose position is outside of the loop, then the track still instantly jumps to the hotcue but the loop will be deactivated.
- **While stopped:** Tap a hotcue button to cause the track to instantly jump to the location of the hotcue and start playing as long as the button is pressed. Press the *Play* keyboard shortcut while the hotcue button is pressed to continue playback, then release the hotcue button.

Hotcue labels

New in version 2.1.0.

You can add custom names to hotcues. Right-clicking on a selected track in the *track list* reveals the context menu. Choose *Properties* → *Cuepoints* → *Label* and add a label for the hotcue. Press *Enter*, then click *OK* to save.

The hotcue indicator on the waveform changes to the format `# : label`.

Deleting Hotcues

To delete a hotcue, right-click on the numbered button. The marker in the waveform will be deleted as well.

Note: Mixxx supports up to 36 hotcues per deck. By default, only some of them are visible in the user interface. You can customize your *keyboard* or *controller* mappings to use all of them.

See also:

Just as with the loops (see above), if the *quantize* mode is enabled, the hotcues will automatically snap to the nearest beat. This is disabled by default, click on the *Quantize Mode Toggle* to enable it.

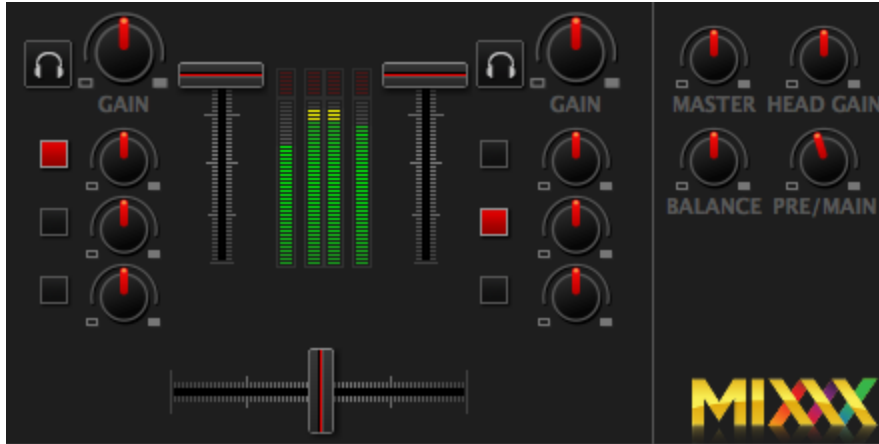


Fig. 13: The mixer section

3.2 The Mixer Section

The mixer section of the *Mixxx user interface* allows you to control how the different decks and samplers are mixed together.

3.2.1 Channel Faders and Level Meters

Level meters In the center of the mixer section are 4 *level meters*. The two outer-most level meters are for each deck, while the 2 inner-most level meters are the left and right level meters for the master output. These should stay at the top of the green region, with the loudest parts of the music (transients) briefly going into the yellow region. They should never be in the red region. Refer to *Setting your levels properly (gain staging)* for more details.

Line faders The two large faders on either side of the level meters are the deck volume faders, also known as Channel- or Line-faders. Adjusting these controls the volume of each deck.

Hint: Some DJ's prefer to use the line faders over the crossfader for fading between tracks. Try it, you may like it.

3.2.2 Section Expansion Buttons

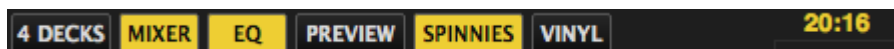


Fig. 14: The section expansion buttons on top

On top, and on the bottom of the user interface are the section expansion buttons.

If you click on either *MIC*, *SAMPLER*, or *VINYL* then you will enable control sections for interacting with:

- *The Microphone Section*
- *The Sampler Section*
- *Vinyl Control Mode and Cueing controls*

You can also use the specific *Application shortcuts*.

3.2.3 Headphone and Master Mix Controls

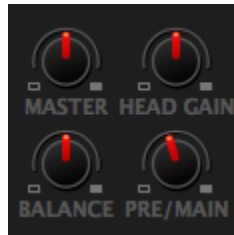


Fig. 16: The headphone and master mix knobs

Pre/Main Knob Allows you to control how much of the master output you hear in the *Headphones* output. It works like a crossfader between the stereo Master and stereo *PFL* signal. If the knob is set to the left, you only hear the *PFL* signal, which is the usual position for prelistening tracks.

This can be used to practice DJing with only one stereo output and a set of either speakers or headphones.

Additionally, this can be used to mix in headphones when you cannot hear the speakers connected to the *Master* output and there are no booth monitor speakers. Some DJs prefer to use this knob to mix in headphones all the time, but many find it to be a difficult way to play. If there is only one set of speakers and no booth monitors, you can avoid the need to mix in headphones by setting up the speakers behind you so both you and your audience can hear them.

Note: Don't forget to activate the *PFL* button on the deck you want to listen to in your headphones.

Head-Split Button If activated, two mono signals are sent to the headphone output instead of one stereo signal. The master signal plays in the right channel, while the cueing signal plays in the left channel. You can still adjust the *Pre/Main Knob* to control the mix of the master and cue signals in the left channel.

Balance Knob This knob allows you to adjust the *balance* (left/right orientation) of the master output.

Master Knob The Master Gain Knob controls the gain applied to the Master output signal that Mixxx sends to your sound card, Internet broadcasting servers, and recorded mixes. Generally, this knob should not be adjusted. To change the output volume, a gain control should be adjusted as close to the speakers as possible for the best signal-to-noise ratio throughout your signal chain. Ideally, the volume would only be adjusted by adjusting the gain on the power amplifier. On active speakers, including computer speakers, studio monitors, and PA systems that do not require a separate amplifier, this means adjusting the gain on the speakers (which may be labeled "Volume").

As a DJ, you may not have access to the power amplifier. In that case, adjust the volume by adjusting the gain on the equipment closest to the power amplifier that you have access to. Typically, this is a DJ mixer. If you are not going through a mixer, adjust the gain of your sound card. If your sound card does not have any controls on it (for example, for sound cards built into computers), adjust the sound card settings with your *OS* mixer program. The Master Gain Knob in Mixxx should be a last resort for adjusting volume.

Warning: In no case should any part of the signal chain be clipping, indicated by a level meter going into its red region or an LED labeled "clipping" turning on.

See also:

For an explanation of why you should set your gains this way, see *Setting your levels properly (gain staging)*.

Head Gain Knob This knob controls the gain applied to the headphone output signal that Mixxx sends to your sound card. Generally, this knob should not be adjusted. To adjust the volume in your headphones, adjust your sound card's gain on the headphone output. Most external sound cards have a gain knob specifically for the headphone jack. If you use an onboard sound card for your headphones, adjust the gain control in your *OS* mixer program. If your sound card only has one gain knob that controls both the main output and the headphone output, then adjust the *Head Gain* knob in Mixxx to control the volume of your headphones without affecting your main output.

3.2.4 PFL/Headphone Button



Fig. 17: The headphone buttons of both decks in the mixer

The headphone button is also known as the *pre-fader listen or PFL* button and allows you to use headphone cueing. That is, it allows you to hear the track you will play next in your headphones before your audience hears it. This helps you plan when to start the next track and manipulate it to make it blend better with the currently playing track (for example, by synchronizing the beats, setting a loop, or using EQs). Pressing the PFL button plays the track on the headphone output at full volume regardless of the position of the crossfader or the deck's line fader. To play a track in your headphones but not have the audience hear it, press the PFL button and move the crossfader all the way to the opposite side of the deck or turn the deck's volume fader all the way down.

Note: Headphone cueing is only available if you have configured a Headphone Output in *Preferences* → *Sound Hardware*.

Note: If you use an external hardware mixer, plug your headphones into that rather than your sound card. Use the headphone buttons on the mixer rather than the buttons in Mixxx.

3.2.5 Equalizers and Gain Knobs

Gain Knob The gain knob allows you to adjust the gain applied to the deck. Use this to compensate for the differences in recording levels between tracks. In general, you should adjust this knob so that the track's *level meter* stays around the top of the green region with the loudest parts of the track (the transients) briefly going into the yellow region. **Do NOT turn the Gain Knob up so much that the level meter is in the red region. At this point the track is clipping, which sounds bad and could damage equipment.**

Note: By default, Mixxx automatically applies an additional ReplayGain so tracks have approximately equal loudness at unity gain. Your tracks must be *analyzed* to take advantage of this feature. When an unanalyzed track is loaded, Mixxx calculates its ReplayGain value, but will not apply a newly calculated ReplayGain value to a track after it has already started playing (to avoid a sudden change in the gain of a playing track).

See also:

For an explanation of why you should set your gains this way, see *Setting your levels properly (gain staging)*.

EQ Knobs The low, mid, and high EQ knobs allow you to change the filters of the audio. This allows you to selectively reduce or boost certain frequency ranges of the audio.

Warning: Be careful not to raise the EQs so much that the signal clips, indicated by a *level meter* being in the red region. See *Setting your levels properly (gain staging)* for a more detailed explanation.

Kill Switches The small boxes next to each EQ knob are called *kills*. Hold these buttons to fully remove that frequency range. Short click on the buttons for latching. When in Latch mode, click again to restore the frequency range. If the Kill switches do not work as expected, check the high/low shelf EQ settings in the preferences.

See also:

You can customize the EQ settings in *Preferences* → *Equalizer*.

3.2.6 Crossfader



Fig. 19: The crossfader section of the mixer

The *crossfader* determines the actual volume of each deck when moving the slider from left to right. If both decks are playing and the crossfader is in its default center position, then you will hear both decks. Right-clicking on the crossfader will reset the slider to its default position.

You can reverse the configuration of the crossfader, so that the right deck is on the left end of the crossfader and vice versa. This is also known as *Hamster Style*. To adjust the crossfader to your style of mixing, go to *Preferences* → *Crossfader*.

Hint: Using the *AutoDJ* feature in Mixxx, you can automate the crossfade between the decks.

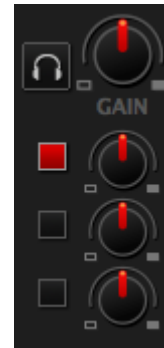


Fig. 18: EQ Controls

3.3 The Sampler Section

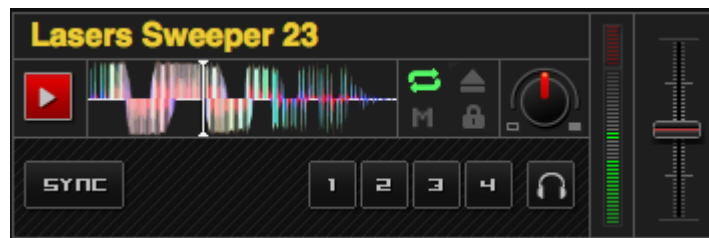


Fig. 20: A sample deck

Samplers are miniature decks. They allow you to play short samples and jingles but also additional tracks in your mix. They come with a small overview waveform and a limited number of controls. All controls work just like on the regular decks, see *The Deck Sections*.

The Sampler section can be **hidden** in the *Mixxx user interface*. Click the *SAMPLER* button, or use the specific *Application shortcuts* to show or hide the section.

3.3.1 Waveform Display

Waveform overview The waveform shows the various markers within the track as well as the waveform envelope of the entire track. Clicking somewhere on the waveform allows you to jump to an arbitrary position in the track.

Waveform Marker While mixing, some additional markers can appear on the waveforms:

- **Position marker:** A vertical line indicates the playback point of the sample deck.
- **Hotcue marker:** Indicate the position and number of a *hotcue* point if set.

3.3.2 Track Information Display

Track Artist/Title The artist and title of the track that was loaded into a sampler deck is displayed here.

BPM (Tempo) The number at the top right is the effective *BPM* of the track. Tap the BPM to set the BPM to the speed you are tapping.

3.3.3 Deck Options Button Grid

The buttons grid next to the waveform overview allow you to configure the sampler deck. Starting from the top-left and moving counterclockwise the buttons are as follows:

Repeat Mode Toggle If enabled, the repeat mode will jump back to the beginning and continue playing when the track finishes.

Eject Track Button Clicking this button ejects the track from the deck.

Mix Orientation Toggle This control determines the sampler input's mix orientation.

Keylock Toggle *Keylock* locks the track's pitch so that adjustments to its tempo via the rate slider do not affect its pitch.

3.3.4 Sample Deck Controls

Play/Pause button Clicking the button always starts playback from the *cue point*. If playback is already enabled the play position will jump back to the *cue point*. Right-clicking on the button will stop playback and seek the play position to the beginning of the sample.

Sync Button Syncs the Sampler deck to a regular deck, as described in *Sync and Rate Controls*.

- **Left-Click:** Changes the *rate* of the track so that the *BPM* and *phase* of the track matches the sync target.
- **Right-Click:** Only changes the *rate* of the track to match the sync target but does not adjust the *phase*.

Hotcue Controls To jump in between different parts of a sample, you can use these numbered hotcue buttons.

PFL/Headphone Button If active, the *pre-fader listen or PFL* button allows you to listen to the track in your headphones.

Gain Knob Allows you to adjust the gain applied to the track.

Level Meter Shows the level of the signal and can be adjusted with the Gain knob.

Pitch/Rate slider The slider allows you to change the speed of the sample. Right-clicking on the slider will reset the tempo to its original value.

3.4 The Effects Section

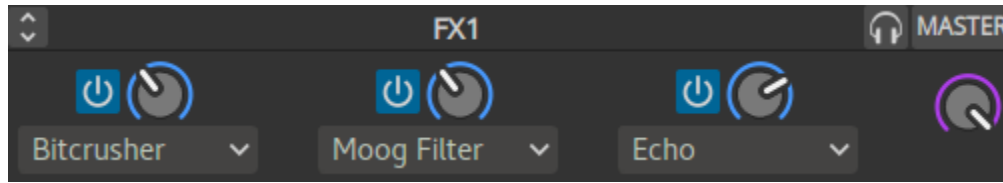


Fig. 21: An effect unit

Mixxx comes with some built in sound effects that can be chained together in effect units. Effect units can be freely assigned to different decks as well as other inputs. The buttons for routing decks to effect units are in the *The Deck Sections*.

See also:

The *Effects* chapter has a more detailed explanation of the effects system.

3.5 The Microphone Section

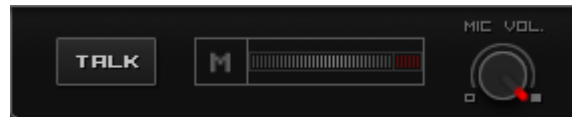


Fig. 22: The Microphone section

The microphone section is **hidden** in the default *Mixxx user interface*. Click the *MIC* button in the mixer section, or use the specific *Application shortcuts* to show or hide the section.

See also:

The *Using Microphones* chapter has detailed instructions for setting up microphones with various hardware.

3.5.1 Microphone Controls

Talk Button Hold this button and talk to mix the microphone input into the Mixxx master output. Short click on the button for latching. This is handy for talking for an extended period, for example when *streaming* a radio show. When in Latch mode, click again to mute the microphone input.

Mix Orientation Toggle This control determines the microphone input's mix orientation. Either to the left side of crossfader, to the right side or to the center (default). Clicking cycles through all the options.

Microphone Volume Meter This displays the microphone volume input signal strength.

Microphone Gain Knob Use this knob to adjust the gain of the microphone output. Try to keep the volume at a reasonable level to avoid signal clipping.

3.6 Preview Deck Section

The Preview Deck is a special deck that allows you to pre-listen to tracks in the headphones before using them in your mix. Pre-listening a track does not change the tracks's *Played* state as well as the play counter and is not logged in the

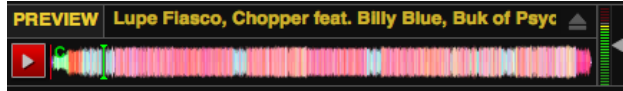


Fig. 23: The Preview Deck with a track loaded

History. Press CTRL + 4 (Windows/Linux) or CMD + 4 (Mac) to display the Preview Deck.

The features in detail:

- **Track Artist/Title:** The artist and title of the track is displayed here. This is the same listed under the *Track* and *Title* column in the Mixxx library. This information is initially loaded from the track's *metadata*.
- **Eject Track button:** Clicking this button ejects the track from the deck.
- **Play/Pause button:** Clicking the button starts and pauses the playback. Right-clicking on the button will stop playback and seek the play position to the beginning of the tracks.
- **Waveform overview:** Shows the various markers (Cues, Hotcues) within the track as well as the waveform envelope of the entire track. Clicking somewhere on the waveform allows you to jump to an arbitrary position in the track.
- **Gain slider:** Move the slider to adjust the gain of the track.
- **Volume Meter:** Shows the current volume of the track. If it's too loud and distorted, a peak indicator flashes red.

See also:

For more information, go to the chapter *Previewing Tracks*.

The Mixxx Library

4.1 Overview of the Library features

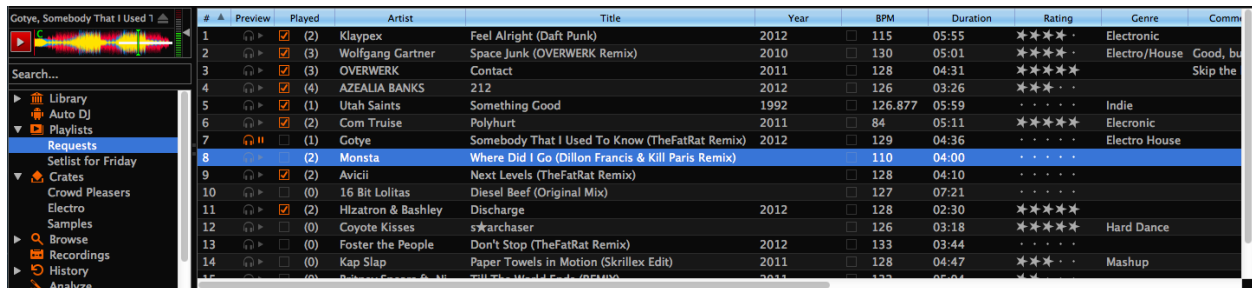


Fig. 1: The Mixxx Library

The library manages all of your music files. This is where you can find the tracks you want to play and load them into a *deck* or *sampler*; see *Loading Tracks*. Mixxx imports your music library automatically when it is run for the first time, see *Changing music directories* for more information.

The sidebar on the left contains different collections of music. The track list view on the right displays the tracks in those collections.

Sidebar:

- **Search:** Search for tracks in your Mixxx library.
- **Tracks:** View and edit your whole collection.
- **Auto DJ:** Automatically load and crossfade tracks for unattended mixing.
- **Playlists:** Arrange tracks in a set order.
- **Crates:** Organize tracks in (unordered) collections.
- **Computer:** Navigate, view, and load tracks from folders on your hard disk and connected devices.

- **Recordings:** Record your mix and view previous recordings.
- **History:** Browse lists of tracks played in past mixing sessions.
- **Analyze:** Generate Mixxx-specific data for tracks before a gig.
- **External Libraries:** Access your existing iTunes, Traktor, Rhythmbox, and Banshee libraries.

Track List:

- **Sort:** Display and sort track collections by different criteria.
- **Load:** Drag tracks you want to play to the waveform display.
- **Edit:** Rate tracks and edit track properties.

4.2 Tracks - View and edit your whole collection



A sortable list of all the tracks in your music library.

Customizing the view Move columns by clicking a column header and dragging it to another position. Right-click on a column header to show or hide individual columns. Adjust the column width to fit the contents of the rows by double-clicking on the separator between two column headers.

Sorting Tracks Tracks are automatically sorted by the active column. Click on the active column header to reverse the sort order. Click on another column header to change the active column.

- **Multi-Column sorting**

You can sort multiple columns by clicking *up to three* column headers you wish to sort your tracks by. This makes searching for tracks in a large list more efficient. Clicking twice on a column header will reverse the sort order.

Example:

1. Click on the *BPM* column header -> list is sorted by BPM
2. Click on the *Year* column header -> list is sorted by year. If year is equal, it is still sorted by the last criteria, e.g. BPM.
3. Click on the *Genre* column header -> list is sorted by genre. If genre is equal, it is still sorted by year. If genre and year is equal, then it is sorted by BPM.

- **Random sorting**

New in version 2.1.0.

Click on the *Preview* column header to randomly sort tracks.

- **Sort keys by circle of fifths**

New in version 2.1.0.

Click on the *Key* column header. The order starts with *C* at the top, then its relative minor (*a*), then adds 1 sharp (*G*), then *G*'s relative minor (*e*), and so adding sharps/removing flats around the circle of fifths. For *Lancelot* notation, it starts with *G#m* at the top, which is *1A* in that notation, and proceeds alphanumerically (minor keys appear before their relative major keys in this case).

Rating tracks Make sure the *Rating* column is not hidden. Rate tracks by hovering over the rating field and clicking the stars.

Track Inline editing Mixxx reads *metadata* from the tracks to fill the columns of the library. Double-click on a field, edit the data, and hit `Enter` when you are done. Go to the chapter *edit metadata* for detailed information.

Loading tracks To load a track into a *deck*, you can either drag it to the waveform display or use the context menu. Go to the chapter *Loading Tracks* for detailed information.

Importing tracks Mixxx imports your music library automatically when it is run for the first time. Go to the chapter *Changing music directories* for detailed information.

Previewing Tracks To pre-listen to tracks in your headphones without loading them to a regular deck, click the  icon in the *Preview* column. Go to the chapter *Previewing Tracks* for detailed information.

Cover/Album Art

Mixxx can display cover art it finds for a track in the library. It will search for available cover art in the following places in order and will use the first one it finds:

1. The first image saved in the track's ID3v2/Vorbis *tags*
2. An image file in the track folder (if there is only one image file there.)
3. `%track-file-base%.jpg` in the track directory for `%track-file-base%.mp3`
4. `%album%.jpg`
5. `cover.jpg`
6. `front.jpg`
7. `album.jpg`
8. `folder.jpg`

Mixxx supports the following image types: jpg, jpeg, png, gif, bmp

Rescan Library If you want to manually refresh your library without exiting (for example because you added or moved files) you can do this with *Library* → *Rescan Library* in the menu at the top of the application window. You can prompt an automatic rescan when Mixxx is started under *Preferences* → *Library* → *Rescan on startup*.



4.2.1 Track list context menu

Right-clicking on selected tracks in the track list reveals the context menu:

New in version 2.1.0:

Add options to replace AutoDJ queue, clear waveforms

- Use checkbox menu in Crates selection
- Add BPM conversions 133,33% and 150%
- Re-organize context menu
- **Add to Auto DJ:** Adds the content of the selection to either the *bottom* or *top* of the *Auto DJ* playlist for automatic mixing. The *replace* option deletes the Auto DJ queue first, and then fills it with the selected tracks.
- **Load to:** Loads a selected file to one of the available *Decks*, *Samplers* or to the *Previewdeck*. Alternatively simply drag it to the *Waveform Displays*. The number of available decks and samplers might differ, depending on the selected skin. Note that you can't load multiple files at once.
- **Add to Playlist:** Add selected tracks to an existing playlist, or drag the selection to a playlist crate in the sidebar. Choose *Create new playlist* to put them into a new playlist.
- **Crates:** The checkbox shows in which existing crates the selection is in. Changing the crates selection does not collapse the menu, which allows much easier categorization of tracks without going through the menu from scratch. Choose *Create new Crate* to put them into a new crate.
- **Metadata:**

- **Import from File Tags:** If the track’s *metadata* changes, (e.g. if you used iTunes to edit it,) this option lets you save the new values for the selected tracks to the Mixxx library. See *edit metadata*.
- **Import from MusicBrainz:** Look up *metadata* online by searching the *MusicBrainz* database and apply the search results to your tracks. See *edit metadata*.
- **Export to File Tags:** Saves *metadata* to files. Mixxx may wait to modify files until they are not loaded to any decks or samplers. If you do not see changed metadata in other programs immediately, eject the track from all decks and samplers or shutdown Mixxx.
- **Cover Art:**
 - * **Choose New Cover:** Select an image from the file browser as the cover.
 - * **Clear Cover:** Delete any cover information saved for this track.
 - * **Reload from track/folder:** Reload the cover from the tracks’ ID3v2 *tags* or a picture in the track folder if the tags do not supply any.
- **Clear:**
 - **BPM and Beatgrid:** Removes the *BPM* and *beatgrid* data from the selected tracks in the Mixxx library. After doing this, we recommend *analyzing* the tracks again.
 - **Play Count:** Marks selected tracks as not played in the current session and sets their play counter to zero. The icon in the *Played* column changes.
 - **Hotcues:** Clears all saved *hotcues* and *hotcue labels*.
 - **ReplayGain:** Clears all saved *ReplayGain* values.
 - **Waveform:** Clears the saved waveform data from the selected tracks. This is useful if a file is overwritten by another file of the same name, or was edited externally (e.g. in a waveform editor). To clear the waveform cache for all tracks in the library, select *Preferences* → *Waveforms* → *Clear cached Waveforms* .
 - **All:** Clears all of the data above from the Mixxx library database at once.
- **Change BPM:**
 - Allows to change the *BPM* to 50%, 66%, 75%, 133,33%, 150%, or 200% of the BPM set by Mixxx when *analyzing* the tracks. If many of the detected BPM values are incorrect, you might want to adjust the *BPM Range* in the *Analyzer Settings* and re-run the analysis.
 - **Lock/Unlock BPM:** Locks/Unlocks the *BPM* of selected tracks so you can’t edit them in the track properties. The  icon next to the track’s BPM in the library row is a toggle. Clicking it will set the status to “locked”, and the icon changes to .
- **Hide from Library:** Temporarily hides selected tracks from the track list. Hidden tracks are listed in the *Hidden Tracks* menu item which is explained below.
- **Open in File Browser:** Brings up the selected files in your file manager.
- **Properties:** Similar to inline editing explained above, the properties dialog allows you to view and edit metadata such as title, artist, album, and view the full file name and path. Note that you can not edit multiple files at once.

Note: Most of the context menu items are available in file lists of other views like Auto DJ, Playlists, and Crates as well.

4.2.2 Missing Tracks

The Missing Tracks view is accessible by expanding the Library tree item in the sidebar. Any tracks that were previously loaded into your library but were later not found on your drive will appear here. Mixxx does not automatically delete records of missing tracks so that extra metadata Mixxx might have (such as hot cues and beat grids) will not be lost in case the file is replaced.

The features in detail:

- **Select All button:** Selects all tracks in the current view.
- **Purge button:** Purges the selected tracks from the Mixxx library, but does not remove them from your computer. This will delete all *metadata* Mixxx has for a track.

4.2.3 Hidden Tracks

The Hidden Tracks view is accessible by expanding the Library tree item in the sidebar. Any tracks that were previously loaded into your library but were later set to be hidden from the library will appear here. Use the *Hide from Library* context menu item in the *tracks* view to temporarily hide selected tracks.

The features in detail:

- **Select All button:** Selects all tracks in the current view.
- **Purge Button:** Purges the selected tracks from the Mixxx library, but does not remove them from your computer. This will delete all *metadata* Mixxx has for a track.
- **Unhide Button:** Removes the selected tracks from the *Hidden Tracks* view and makes them available in the regular track lists again. The tracks will re-appear in every playlist or crate they were in before being hidden.

See also:

To learn how to permanently remove tracks from the Mixxx library using the *Hidden Tracks* view, see *permanently remove tracks*.

4.3 Loading Tracks

Tracks can be loaded into a deck in several ways:

- Right-click the *library track table*: Right-clicking on a track in the table will present the options *Load in Deck 1* and *Load in Deck 2*, among others. Making either selection will load a track into a deck.
- By *Using a Keyboard* to load the selected track in the library track table.
- Drag-and-drop from library track table: Dragging-and-dropping a track from the track table onto a waveform display will load the track into that deck.
- Drag-and-drop from deck to deck: Once you've loaded a track to deck, sampler, or preview deck, click on the *track title* and drag it to another deck or sampler.
- Drag-and-drop from external file browser: Dragging-and-dropping a track from an external file browser directly onto a waveform display in Mixxx will load that track. This function also works with some other applications. For example, on macOS, dragging-and-dropping a track from iTunes onto one of Mixxx's waveform displays will load it into that deck.

4.4 Finding Tracks (Search)

The search function filters the currently displayed list (e.g. a playlist, a crate, or even the whole library) for tracks that match your search query.

- Activate the search input field by clicking in it or pressing `CTRL + F` (Windows/Linux) or `CMD + F` (Mac).
- Type your search term(s). Mixxx filters the tracks as you type and shows only those matching the search term(s). Search terms can include an artist's name, a song title, BPM, etc.
- To clear the search string hit `ESC` or click the clear button right next to the input field.
- Hit `TAB` to cycle between the search and the list of results in the library. Use the `ARROW UP` and `ARROW DOWN` keys to scroll in the list of results.

Note: If the search input field has focus, the Mixxx keyboard shortcuts are disabled, see [Using a Keyboard](#).

4.4.1 Using search operators

Search operators allow you to form more complex search queries. They allow you to limit certain search terms to particular properties of your tracks.

Mixxx supports the following filters:

- **Text filtering:** album_artist, album, artist, comment, composer, crate, genre, grouping, location, title
- **Numeric filtering:** bitrate, bpm, played, rating, track, year
- **Special filtering:** key, duration, added, dateadded, datetime_added, date_added
 - Supports fuzzy matching of key searches. The following example list tracks with harmonically compatible keys to C# minor.

```
~key:c#m
```

You can combine operators but there's no way to do an "OR" search right now. The following example list all tracks by "Danger" over 3 minutes long that are rated 4 or 5.



```
artist:Danger duration:>3m rating:>=4
```

- Negative search filters. Use the `-` prefix as negation operator. The following example would find "hip-hop" from any year but 1990.

```
genre:hip-hop -year:1990
```

Examples for text filtering	Examples for numeric filtering	Examples for duration filtering
artist: "com traise"	bpm:140	duration:2m10
album: Danger	bpm: >140	duration:<2:10
genre: Trance	year: <2010	duration:>1m35s
title: foo	bpm: >=140	duration:>62
composer: foo	rating: <=4	
comment: foo	bpm: 140-150	
genre:hip-hop -genre:gangsta	played: >10	
Note it doesn't matter if you have space between the colon and the argument or not. Quotes must be used for multi-word text arguments.	Note that you can put a space after the colon but currently there must be no space between the operator and the number.	Note that you can put a space after the colon but currently there must be no space between the operator and the number.

4.5 Previewing Tracks

To pre-listen to a track, activate the *Preview* column in a library view. Clicking the  icon in the library's *Preview* column loads the selected track into a special *Preview Deck* that will only output sound in the *headphones* channel. Click the  icon to stop the playback.

Alternatively, select a track from the track list of the Mixxx library, drag the track to the waveform view of the *Preview Deck* and click the *Play* button next to the waveform.

To display the Preview deck, press CTRL + 4 (Windows/Linux) or CMD + 4 (Mac).

Hint: Click on the *Preview* column header to randomly sort tracks.

4.6 Edit metadata of audio files

New in version 2.1: Option to write audio tags back into files

Mixxx reads relevant *metadata* from the tracks and displays them in the library columns. You are free to edit most metadata, and Mixxx offers a number of different ways to do so. Note that some information can not be edited, such as bitrate, size, length, type, filename, and location.

Note: Mixxx does not support editing the metadata of many tracks at a time (bulk editing).

Warning: Mixxx wont touch your audio files by default. Changes to a track's metadata will be saved to the Mixxx library, but **not** to the track itself.

If you wish to write modified track metadata from the library into file tags, check the box in *Preferences* → *Library* → *Track Metadata Synchronisation*.

4.6.1 Manual Edit

Track Inline editing: Double-click on a field in the *library*. If the field is editable, it will become an editable text box. Enter a value and hit *Enter* when you are done.

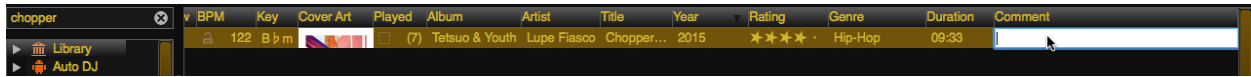


Fig. 2: Mixxx library - Inline editing

Properties editor: Click on a **single track** in the library and select *Properties* to open the editor. Add or change values in the editable fields, and save your changes as explained below.

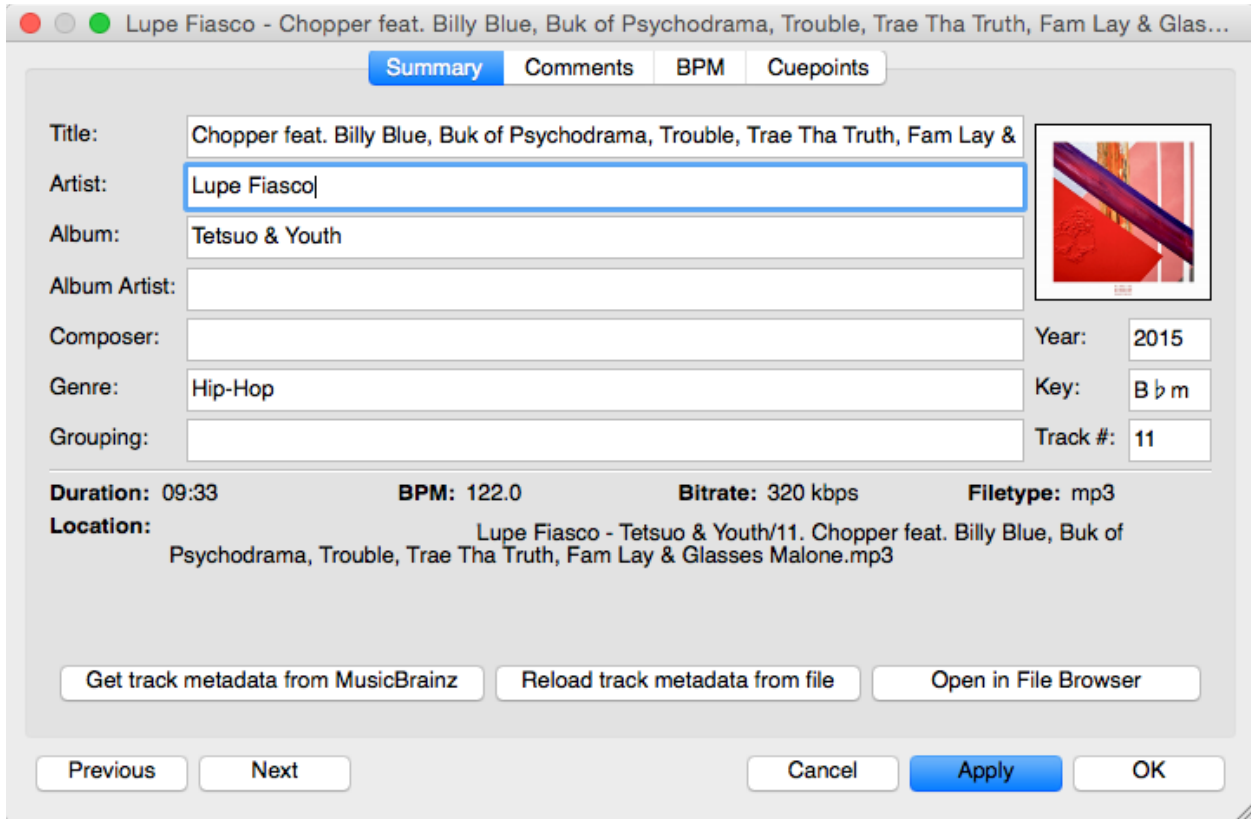


Fig. 3: Mixxx library - Properties editor

- **OK:** Accept the changes and close the editor.
- **Apply:** Accept the changes and leave the editor open.
- **Cancel:** Discard the changes and close the editor.
- **Previous/Next:** Load the previous or next track in the current library view.
- **Import Metadata from File:** Prompts Mixxx to re-read the metadata of the selected track (such as when you have modified it externally with another application.)
- **Import Metadata from MusicBrainz:** Look up metadata on-line by searching the *MusicBrainz* database. See below.

4.6.2 Using the MusicBrainz online database

Musicbrainz is an *open-source* music encyclopedia that collects music *metadata* and makes it available to the public.

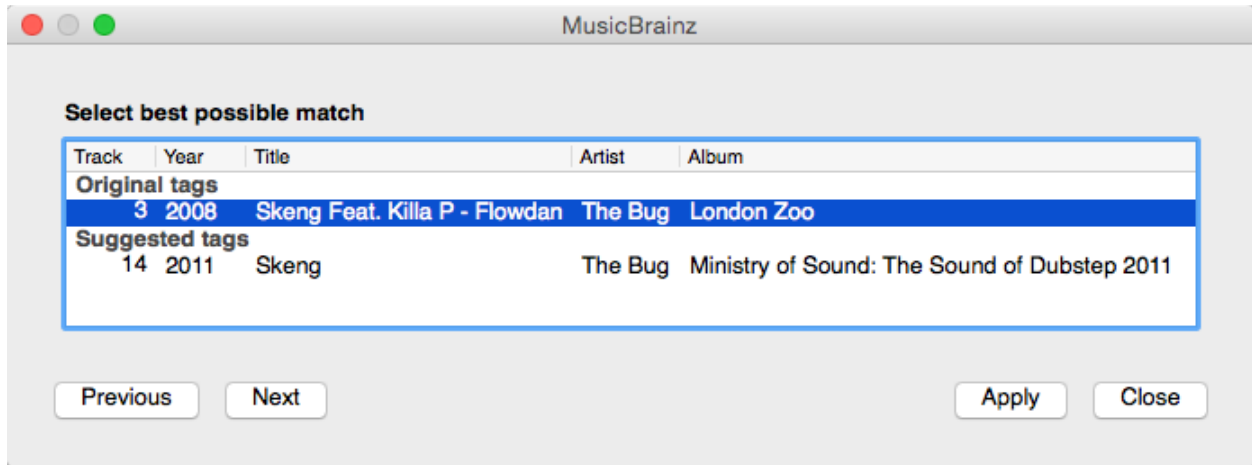


Fig. 4: Mixxx library - MusicBrainz Wizard

The MusicBrainz wizard in Mixxx allows searching the MusicBrainz database and applying the results to your tracks.

Click on a **single track** in the library and select *Get Metadata from MusicBrainz*. Mixxx fetches track data from the MusicBrainz database and displays the search results.

Select the best match from the search results by clicking on it in the list.

- **Apply:** Apply the selected MusicBrainz metadata to the track.
- **Close:** Close the wizard.
- **Previous/Next:** Load the previous or next track in the current library view and perform a MusicBrainz lookup on it as well.

Fetching track metadata from MusicBrainz can fail:

- if Mixxx is unable to find the specified track in the MusicBrainz database,
- if Mixxx cannot reach the MusicBrainz servers (if they are down,)
- or if you are not connected to the Internet.

Hint: The MusicBrainz service has been designed for identifying full audio files. If a track is less than 2 minutes long, identifying the file will likely fail. Identifying a layered mix-track or mash-up may produce false positives in the result list.

4.6.3 Using third-party software

If you have modified file metadata in third-party software, select *Library* → *Rescan Library* in the menu on top of the application window. This prompts Mixxx to re-read the metadata from **all** tracks in the library.

Popular software to edit metadata of audio files include:

- [Mp3tag](#) (Windows)
- [Kid3](#) (Mac, Windows, Linux)
- [Picard](#) (Mac, Windows, Linux)

4.7 Auto DJ - Automate your mix



The Auto DJ queue is a special playlist that contains extra controls for automatic mixing. This is useful when taking a break from live mixing or for using Mixxx as media player.

The Auto DJ features in detail:

New in version 2.1: Selection Info label

- **Shuffle button:** Randomizes the order of tracks in the Auto DJ playlist.
- **Add Random button:** Adds a random track from track sources (crates) to the Auto DJ queue. If no track sources are configured, the track is added from the library instead.
- **Skip track button:** Skips the next track in the Auto DJ playlist.
- **Fade now button:** Triggers the transition to the next track.
- **Transition time spin-box:** Determines the duration of the transition. A negative value will add a pause between tracks.
- **Selection Info label:** Displays the duration and number of selected tracks. Press `Ctrl + A` to get the total duration of the AutoDJ queue.
- **Enable Auto DJ button:** Toggles the Auto DJ mode on or off.

The *Skip track*, *Add Random* and *Fade now* buttons are only accessible if the Auto DJ mode is enabled. The Search field in the upper left corner is disabled in Auto DJ. By default, Auto DJ removes tracks after playing them but if you want it to play the same tracks over and over again, you can activate the *Auto DJ Requeue* option in *Preferences* → *Auto DJ* → *Re-queue tracks after playback*.

Auto DJ Crates

It is possible to add random tracks to the bottom of the Auto DJ playlist. The tracks are chosen from a set of crates that you have set as a source for Auto DJ, or from the standard library. Mixxx will normally try to select tracks that haven't yet been played. You can set a minimum number of tracks that are always available for selection no matter when they were last played in *Preferences* → *Auto DJ* → *Minimum available tracks in Track Source*.

See also:

For more information, go to the chapter *Using Auto DJ For Automatic Mixing*.

4.8 Playlists - Arranging tracks in a set order



Playlists are ordered lists of tracks that allow you to plan your DJ sets. Some DJs construct playlists before they perform live; others prefer to build them on-the-fly.


Playlists are not directly loadable into decks as Mixxx is primarily intended for live, attended performance use. However, you can right-click a playlist to queue it to *Auto DJ*, so in a sense you can “play” it.

- **Create a playlist:** Right-click on the *Playlists* sidebar item and select *Create New Playlist*. Name the playlist and click *OK*. The total number of tracks and total duration are displayed next to the name.
- **Import playlists:** Right-click on the *Playlists* sidebar item and select *Import Playlist*. Select one or more playlists and click *OK*. Mixxx creates an import of these existing external playlists as new Mixxx playlists.

- **Add Tracks:** Add tracks to a previously created playlist by dragging-and-dropping a selection of tracks from the library or playlists onto the name of a playlist in the sidebar. Alternatively, use the right-click context menu in the library's *track list*.

Hint: If you have a track selected in the library, all of the visible playlist and crates that it is in are shown in bold.

Right-click on an existing playlist name to access the different features in the context menu:

- **Add to Auto DJ:** Adds the content of the playlist to the *Auto DJ* queue for automatic mixing.
- **Rename:** To rename a playlist, just enter a new playlist name and click *OK*.
- **Duplicate:** Sometimes you want to build a playlist based on an existing one. Select the playlist you would like to duplicate, choose *Duplicate Playlist*, name the new playlist and click *OK*.
- **Remove:** Removes an unlocked playlist. Tracks that were in the playlist remain in the library for later use.
- **Lock:**  This icon indicates a locked playlist. If a playlist is locked, you cannot add tracks, rename or delete the playlist. Choose *Unlock* from the context menu to unlock the playlist.
- **Analyze entire playlist:** Forces the analysis of the tracks in the playlist in the *Analyze* view.
- **Import playlist:** Import tracks from external playlists in various file formats to the selected playlist. For more information, go to *iTunes, Traktor, Rhythmbox, Banshee - Using external libraries*.
- **Export playlist:** Export a playlist to various file formats such as *m3u, m3u8, pls, txt, or csv*. This allows you to use the data in other applications.
- **Export Track files:** This copies all of the tracks in a playlist into a folder such as an external USB stick. Only files are copied, not Mixxx-specific metadata like waveforms or cover art that is not embedded in the file.


4.9 Crates - Organizing tracks into collections



Crates are unordered collections of tracks, just like DJ cases holding your favorite records.

- **Create a crate:** Right-click on the *Crates* sidebar item and select *Create New Crate*. Name the crate and click *OK*. The total number of tracks and total duration are displayed next to the name.
- **Import crates:** Right-click on the *Crates* sidebar item and select *Import Crate*. Select one or more playlists and click *OK*. Mixxx creates an import of these existing external playlists as new Mixxx crates.
- **Add Tracks:** Add tracks to a previously created crate by dragging-and-dropping a selection of tracks from the library or playlists onto the name of a crate in the sidebar. Alternatively use the context menu in the library's *track list*.

Right-click on an existing crate's name to access the different features in the context menu:

- **Rename:** To rename a crate, enter the new crate name and click *OK*.
- **Duplicate:** Just like playlists you can duplicate an existing crate. Select the crate you would like to duplicate, choose *Duplicate Crate*, name the new crate and click *OK*.
- **Remove:** Removes an unlocked crate. Tracks in the crate are still available in the library for later use.
- **Lock:**  This icon indicates a locked crate. If a crate is locked, you cannot add tracks, rename or delete the crate. Choose *Unlock* from the context menu to unlock the crate.

- **Auto DJ Track Source:** Use this crate as a source for random tracks in Auto DJ, see *Auto DJ crates* .
- **Analyze entire crate:** Forces the analysis of the crate in the *Analyze* view.
- **Import crate:** Import tracks from external playlists in various file formats to the selected crate.
- **Export crate:** Export a crate to various file formats, such as `m3u`, `m3u8`, `pls`, `txt`, or `csv`. This allows you to use the data in other applications.
- **Export Track files:** This copies all of the tracks in a crate into a folder such as an external USB stick. Only files are copied, not Mixxx-specific metadata like waveforms or cover art that is not embedded in the file.

4.9.1 Crates vs. Playlists

Crates are unordered collections of tracks. Unlike playlists, they cannot contain duplicate entries and do not support arranging tracks within them.


Often DJs group tracks by genre, keep lists of favorite tracks, and/or prepare lists of tracks they want to play at a particular party. In these cases they rarely care about the order since they will choose it at the party based on the dance floor and mood. They certainly don't want duplicates in these lists. Crates serve these purposes. You can think of them like labels in Gmail or Web 2.0 tags for your music.

If however you want to plan out a specific set and practice the transitions, you will want an ordered list of tracks. Playlists serve this purpose.

4.10 Computer - Loading tracks from anywhere on your computer



This mode works like a file manager and allows you to load tracks from anywhere on your computer and connected devices, that are not necessarily already in your Mixxx library.

Click the *Computer* sidebar item to navigate the computer and find your music. Depending on your *operating system*, your music will usually be found in the “My Music” or “Music” folder. Drag the files you want to import to the  *Tracks* icon or directly to the *Waveform Displays*.

Note: Currently you can only drag files (not folders) to the Mixxx library.

Right-click on a folder and choose *Add to Library* to add the folder as an additional music directory. Mixxx will watch this directory and its subdirectories for new tracks.

See also:

For more informations, go to *Changing music directories*.

4.10.1 Quick Links - Bookmark your favorite folders

Using the *Quick Links* sub-menu you can bookmark folders for direct access. Click the *Browse* sidebar item and navigate to the folder you would like to bookmark. Right-click and choose *Add to Quick Links*. The folder is now pinned below the *Quick Links*. To un-pin that folder, right-click and choose *Remove from Quick Links*.

4.11 Recordings



In this section of the library you can start and stop recording your session as well as view previous recordings and the dates they were made.

See also:

For more information, go to *Recording Your Mix*.

4.12 History - Keep track of your sessions




The history section automatically keeps a list of tracks you play in your DJ sets. This is handy for remembering what worked in your DJ sets, posting set-lists, or reporting your plays to licensing organizations. Every time you start Mixxx, a new history section is created. If you don't play any tracks during the session, it will be discarded.



This icon indicates the current session.

Click on the *History* icon in the sidebar to switch to the *History* view, then right-click on a session's name/date to access the different features:



- **Add to Auto DJ:** Adds the content of the session to the *Auto DJ* queue for automatic mixing.
- **Rename:** Rename a session. The default is the calendar date (YYYY-MM-DD).
- **Remove:** Remove a previous (unlocked) session. (You cannot remove the current session.)
- **Lock:** Protect a previous session against accidental merge or deletion. An  icon indicates a locked session.
- **Create new history playlist:** Split off the current history session and add a new session without having to restart Mixxx. The current history must contain at least one track for this option to be available.
- **Join with previous:** Append the selected history session to the end of the previous one.
- **Export playlist:** Export a session in various file formats. This allows you to use the data in other applications.



4.13 Analyze - Prepare your tracks

This section allows you to analyze your tracks in advance of loading them into a deck. Analyzing tracks requires considerable CPU power and may cause skips in the audio while performing, so it helps to have your tracks analyzed before you play. See *Analyze your library* for details.

4.14 iTunes, Traktor, Rhythmbox, Banshee - Using external libraries

Supported libraries:

-  iTunes (Windows, macOS)
-  Traktor (Windows, macOS),

-  Rhythmbox (GNU/Linux)
-  Banshee (Windows, macOS, GNU/Linux)

The external library views allow you to use music libraries you have created in these third-party applications. You can access music as well as playlists. If available, Mixxx automatically loads the external libraries from their default locations on your hard drive.

Note: Playing a track from an external library will add it to your Mixxx library.

Right-click on the iTunes icon in the Library tree and select *Choose Library* to load the iTunes Music Library.xml from a different location. Select *Use Default Library* to reset.

- Right-click on a iTunes/Traktor/Rhythmbox/Banshee playlist and choose *Import Playlist* to import it into a new Mixxx playlist.
- If you have an iTunes configuration file (*.xml) from a Windows or Mac partition mounted in Linux, you can load it and use your iTunes tracks and playlists as well.

See also:

External libraries can be disabled under *Preferences* → *Library*.

4.15 Removing tracks from the library

Removing tracks from the Mixxx library will **not** physically delete them from your drive. However it does delete extra metadata Mixxx might have (such as hotcues and the beatgrids), and removes links to playlists or crates.

1. Click the *Library* item in the sidebar.
2. Find and select the tracks you want to remove, perform a right-click on them and select *Hide from Library* from the context menu.
3. Expand the *Library* item in the sidebar and click on the *Hidden tracks* sub-item. All tracks that were set to be hidden from the library will appear here.
4. Select the tracks you want to remove, or use the *Select All* button.
5. To confirm you want to permanently remove these tracks from the library, click *Purge*.

Hint: If you later decide to add some of the deleted tracks back, import them to the Mixxx library again, see *Changing music directories*.

4.16 Compatible file formats

Mixxx supports a variety of audio file formats:

Lossless	Lossy
<i>FLAC</i> (flac)	<i>MP3</i> (mp3)
<i>Wave</i> (wav)	<i>Ogg Vorbis</i> (ogg)
<i>Aiff</i> (aiff, aif)	<i>AAC</i> (aac, m4a, mp4)
	<i>Opus</i> (opus)

Lossless formats preserve every detail of the original recording and are recommended for the best sound quality. The *FLAC* format compresses the files to take less space on your computer without sacrificing audio quality. *WAV* and *AIFF* files are uncompressed and take up much more space.

Lossy formats take up less storage space on your computer than lossless formats at the expense of reducing sound quality. Assuming an average track length of about 4 minutes, a 1 TB hard drive or solid state drive can store about 42000 *FLAC* files or about 115000 *MP3* files at 320 kbps.

There is no benefit to converting lossy file to lossless formats. The detail lost when making the lossy file cannot be recovered.

AAC (*M4A*) is supported on Windows Vista and macOS 10.8 onwards. The [Platform Update Supplement](#) is required for Windows Vista.

On Linux, *AAC* playback is disabled by default due to licensing restrictions. To enable the playback of *AAC* files, [build Mixxx from source with m4a/AAC files support](#).

Warning: *DRM* protected files, such as *m4p* files purchased in the iTunes Store in 2009 or earlier, are not supported.

Warning: *ALAC* files use the same container *MP4* container format and file extensions (*m4a*, *mp4*) as *AAC* files, but Mixxx cannot play *ALAC* files. It is recommended to convert *ALAC* files to *FLAC* for use in Mixxx. This will not reduce the sound quality of the files.

4.17 Music from audio CDs

Mixxx can not play music directly from audio CDs. Use a CD ripping program to copy the audio from the CD to files on your computer. It is recommended to save the ripped files in the *FLAC* format. Many different programs are available to rip CDs, but not every program is capable of saving them to *FLAC*.

Although Mixxx can be used with just a laptop or desktop computer, fully taking advantage of Mixxx's features requires specialized DJ hardware. Depending on your budget and application area, your setup and requirements may vary. This chapter provides general background information about various types of DJ hardware.

See also:

The [Mixxx DJ Hardware Guide](#) lists specific devices with information about their prices, features, and compatibility with Mixxx.

5.1 Controllers

DJ controllers are devices with knobs, faders, buttons, and jog wheels to control DJ software such as Mixxx. Controllers allow quick access to different controls while providing tactile and visual feedback indicating the state of each control, such as the position of a knob or whether a switch is on or off. This allows you to focus on manipulating the music without needing to look at your computer screen all the time. Controllers also allow using two hands to manipulate two different controls at the same time, which is required for many mixing techniques.

DJ controllers typically do not do any actual audio processing. Instead, they send signals (typically *MIDI* or *HID* over a USB cable) to the computer to instruct DJ software how to manipulate the audio. Many DJ controllers include an *audio interface* with 2 separate stereo outputs built into the device. This allows the DJ to transport and setup only one piece of hardware in addition to a laptop. Some devices can be used as both a controller and *hardware mixer*.

Mixxx can work with any *MIDI* or *HID controller* as long as there is a mapping file to tell Mixxx how to understand the controller's signals. Mixxx comes bundled with a number of MIDI and HID mapping presets, which are listed in the [Mixxx DJ Hardware Guide](#) on the wiki. For controllers that Mixxx does not yet support, you can [search the forum](#) to see if anyone has started a mapping. You can also start one yourself using the information in the [Controller Mapping Documentation](#) on the wiki.

See also:

[Using MIDI/HID Controllers](#) describes how to configure Mixxx to use controllers.

5.2 Audio Interfaces

An audio interface (also known as a “sound card”, although few of them are shaped like cards anymore) is a device that allows a computer to send output to and receive input from audio equipment. Whether using *internal or external mixing*, it is recommended to use a single audio interface with at least 4 independent output channels (2 separate stereo pairs).

The headphone jack on most laptops is not a second audio output. Rather, plugging headphones into the jack simply redirects the laptop’s single stereo output from its speakers to your headphones. A splitter cable can be used to separate the stereo output of a headphone jack into two separate mono outputs for headphone cueing, but it is recommended to use a sound card with at least four mono outputs (for two stereo pairs). Such sound cards tend to be higher quality than those built into laptops and allow your mix to be enjoyed in stereo by your audience.

Unlike some proprietary DJ systems, Mixxx can use any audio interface and any *MIDI* or *HID* controller that your *OS* has drivers to use. If your controller has an integrated audio interface, you may choose to use a different audio interface for higher quality audio. Mixxx can also use multiple audio interfaces simultaneously.

5.2.1 Audio Interface Considerations

This section provides background information to help you choose an audio interface to use with Mixxx.

Bit Depth and Sample Rate

Most music is published with a bit depth of 16 bits at a sample rate of 44.1 kHz because this is all that is needed to store all the detail of music in digital form.

Bit depth determines the possible dynamic range of the signal. 16 bits is more than enough for playing back music. While 24 bits is helpful for recording, it is useless for playback.

Half the sample rate determines the maximum frequency that can be represented by the signal. Humans generally can’t hear frequencies above 20 kHz, so a sampling rate of 44.1 kHz, representing a maximum frequency of 22.05 kHz, is fine for playback. Higher sample rates like 88.2 kHz and 96 kHz can be helpful to reduce aliasing distortion when recording, but have no benefit for playback and make your computer work harder.

For a more thorough and technical explanation of why 16 bits at 44.1 kHz is all that is needed for playback, read [24/192 Music Downloads Are Very Silly Indeed](#).

Specifications

When considering specifications, higher dynamic range, higher signal-to-noise ratio (SNR), higher maximum output level, lower THD+N (Total Harmonic Distortion + Noise; look for a more negative dB value or smaller percentage), and lower crosstalk (more negative dB value) are better. Cheap audio interfaces tend to not have these specifications published.

Connector and Cable Types

If you are unfamiliar with professional audio equipment, read Digital DJ Tips’ [Essential Guide to Audio Cables for DJs](#) to understand the different kinds of connectors on audio interfaces. It is better to use an audio interface with balanced outputs, especially if you will run long cables directly into an amplifier or active speakers without going through a *hardware mixer*. Balanced signals reject interference and are less susceptible to ground loop hum issues (which can be a problem when plugging unbalanced gear into separate power sources).

However, most venues have DJs plug into *hardware DJ mixers*, which typically only have RCA inputs (RCA cables cannot be balanced). Most home/computer speakers and amplifiers have RCA and/or 1/8" TRS stereo inputs. Most live sound mixers have balanced 1/4" TRS mono inputs. If you need to interconnect balanced and unbalanced gear, refer to this [guide from Presonus](#) and this [guide from Rane](#).

Number of Channels

Audio interfaces sometimes have multiple connectors for a single channel, resulting in more connectors than channels. So, not every connector can send or receive an independent signal. For example, some audio interfaces made for DJing have 4 output channels with 4 mono output connectors and 1 stereo headphone connector. This does not mean that the audio interface can send out 6 different signals at the same time; rather, the signal on 2 of the mono outputs and the stereo headphone output would be the same. Also, many controllers have separate master and booth outputs with independent volume controls, but they both play the same signal.

Vinyl Control and Phono Preamplifiers

Turntables output low voltage (phono level) signals that need to be amplified to line level before most audio equipment can work with them. So, if you want to use *Vinyl Control*, sometimes referred to as a Digital Vinyl System (DVS), it is best to have phono preamplifiers (one for each deck) somewhere between your turntable and sound card to boost the turntable's phono level signal to line level. Mixxx can amplify phono level signals in software, but it is better to do it in hardware. The phono preamp can be in the turntable, in the audio interface, or a stand alone device. Most audio interfaces do not have phono preamps; these are generally found on audio interfaces specifically made for controlling DJ software with timecode vinyl. *Mixers* with audio interfaces have phono preamps on their deck inputs, but not necessarily on every deck input. Many higher-end all-in-one controllers also include audio interfaces with phono preamps.

5.3 Mixers

Mixers are devices that combine audio signals. DJ mixers are different from live and studio mixers because they have multiple stereo channels with phono preamplifiers for connecting *Turntables*. It is conventional to use a DJ mixer with *Vinyl Control*, but vinyl control can be used without a hardware mixer.

Using Mixxx with a DJ mixer requires an audio interface with at least 4 mono outputs (2 stereo pairs) to send Mixxx's decks to the mixer's stereo channels. Some DJ mixers have a USB *audio interface* built into them. This lets Mixxx send unmixed audio files directly to the mixer without needing a separate stand-alone audio interface.

Often DJs who use DJ software with internal mixing send their master output to a hardware mixer. This can be helpful to send the mixed signal to both a main speaker output for the audience and booth speakers for the DJ with separate gain controls for each output. It also facilitates smooth transitions between DJs.

However, using an external mixer with internal mixing is not necessary and reduces the sound quality. Each piece of equipment an audio signal passes through reduces the sound quality, so avoiding unnecessary equipment in the signal path can provide better sound quality. Many DJ controllers provide separate master and booth outputs with independent volume controls. Alternatively, a sound card with at least 6 output channels can be used with Mixxx's *Booth* output.

Many people confuse "analog mixers" and "hardware mixers", but these are not the same. Many hardware mixers process audio digitally with specialized signal processors as opposed to a general purpose CPU like those in laptop and desktop computers.

See also:

[Recording And Broadcasting With An External Hardware Mixer](#)

5.4 Turntables

Turntables are mechanical devices that play music recordings cut into vinyl phonograph records. Before software like Mixxx was available, the art of DJing originated with turntables and *DJ mixers*. Special vinyl records can be used with turntables to control the playback of digital files in Mixxx as if the digital file was pressed onto the vinyl record.

See also:

Vinyl Control

5.5 CDJs

CDJs are devices that play digital audio files and have controls from manipulating the playback of the audio. Originally CDJs played audio CDs, but new devices typically use USB storage drives or SD cards. Some CDJs can be plugged into a computer with a USB cable to function as a *controller* for Mixxx.

5.6 Microphones

Microphones convert changes in sound pressure in air to changes in voltage (an analog audio signal). Mixxx can work with any microphone that can be plugged into your *audio interface*.

See also:

Using Microphones

This chapter presents some example hardware setups with instructions for how to configure Mixxx to work with them.

See also:

- *DJ Hardware*: background information about different types of equipment.
- *Configuring sound input and output*: details about each available input and output option.
- *Using Microphones*: details for configuring Mixxx to work with microphones.
- *DJ Hardware Guide* lists specific devices with information about their prices, features, and compatibility with Mixxx.

6.1 Computer Only

The built-in audio interface on most computers comes with a single stereo line-out and a microphone input. This can be set up with Mixxx in two ways:

6.1.1 Practicing Mixing / Broadcasting

This setup can be used with a single audio output for speakers or headphones to practice DJing without investing in any equipment other than a computer and a set of speakers or headphones. With this configuration, use the *Pre/Main Knob* to switch back and forth between the Master mix and *PFL* signal. This setup cannot be used to play for a live audience because the Master mix is not sent to an audio interface output. However, it can be used by radio DJs who only need to send the Master mix to a broadcast audience.

1. Open *Preferences* → *Sound Hardware*
2. Select the *Output* tab
3. From the *Headphones* drop-down menu, select your built-in audio interface, then *Channels 1-2*. Although this is labeled *Headphones*, you can also plug speakers into the output jack of your computer.
4. Depending on your audio interface, you can specify a *microphone*

- (a) Use your built-in microphone or connect a microphone to your computer
 - (b) Check that your microphone is detected by your *OS*
 - (c) Open the *Input* tab
 - (d) From the *Microphone* drop-down menu, select the input your microphone is connected to
5. Click *Apply* to save the changes.

6.1.2 Playing for an Audience

This setup allows for playing to an audience without headphone *cueing*.

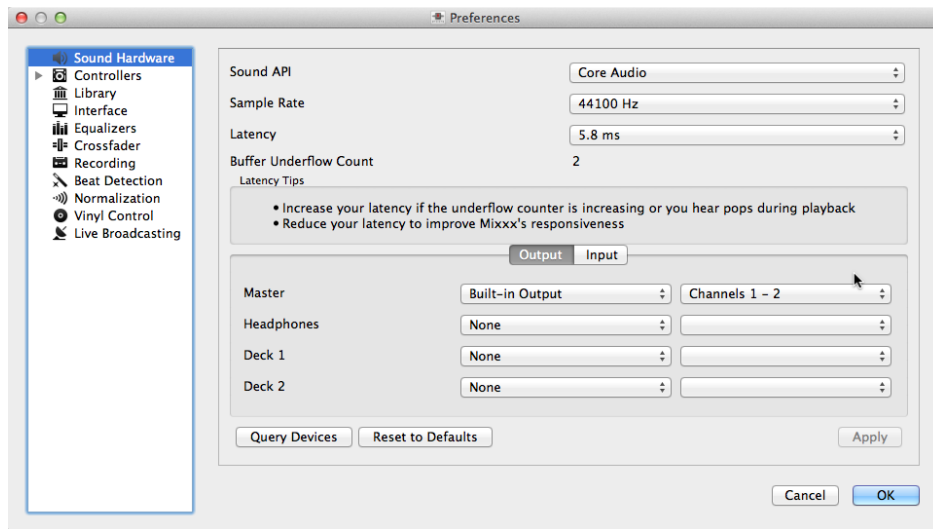


Fig. 1: Using Mixxx with your built-in sound card

1. Open *Preferences* → *Sound Hardware*
2. Select the *Output* tab
3. From the *Master* drop-down menu, select your built-in audio interface, then *Channels 1-2*
4. Depending on your audio interface, you can specify a *microphone*
 - (a) Use your built-in microphone or connect a microphone to your computer
 - (b) Check that your microphone is detected by your *OS*
 - (c) Open the *Input* tab
 - (d) From the *Microphone* drop-down menu, select the input your microphone is connected to
5. Click *Apply* to save the changes.

6.2 Laptop and Splitter Cable

The cheapest way to DJ and *cue* with headphones uses a stereo-to-mono DJ splitter cable (also known as a “Y cable”) plugged into the headphone jack of a laptop or other computer. This cable divides the stereo output from a single jack into two separate mono signals.

This setup allows you to start DJing without having to invest in expensive equipment. However, because the signals are in mono, you and your audience will not be able to enjoy music producers' positioning of sound in space (although many club PA systems are wired in mono anyway). Furthermore, audio interfaces built into computers are usually low quality and often pick up interference from other components of the computer.

Using a built-in audio interface and a stereo-to-mono splitter

1. Open *Preferences* → *Sound Hardware*
2. Select the *Output* tab
3. Check that your headphones are plugged into the side of the cable with a headphones symbol and that the speakers are plugged into the side of the cable with a speaker symbol.
4. From the *Master* drop-down menu, select your built-in audio interface, then *Channel 1*
5. From the *Headphones* drop-down menu, select your built-in audio interface, then *Channel 2*
6. Click *Apply* to save the changes.

Warning: Most splitter cables, particularly those marketed as headphone splitter cables, output the same stereo signal to two headphone jacks and will not work for this DJ setup. Also, if you use a generic stereo-to-mono splitter adapter, you may only be able to hear out of one side of your speakers and headphones. DJ splitter cables allow you to hear the same mono signal on both sides of your headphones and speakers.

6.3 Laptop and External USB Audio Interface

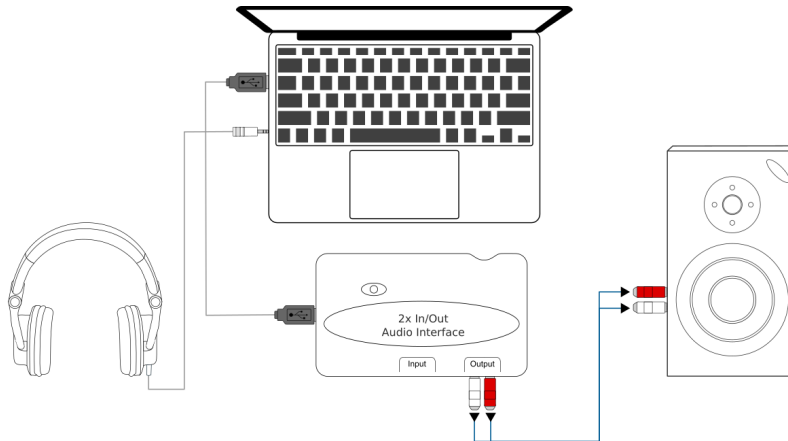


Fig. 2: Using Mixxx together with an external audio interface

Using two audio interfaces (built-in + external)

1. Open *Preferences* → *Sound Hardware*
2. Select the *Output* tab
3. From the *Master* drop-down menu, select the external audio interface, then *Channels 1-2*
4. From the *Headphones* drop-down menu, select the built-in audio interface, then *Channels 1-2*

Using an external multi-channel audio interface

1. Open *Preferences* → *Sound Hardware*

2. Select the *Output* tab
3. From the *Master* drop-down menu, select the external audio interface, then *Channels 1-2*
4. From the *Headphones* drop-down menu, select the external audio interface, then *Channels 3-4*
5. Click *Apply* to save the changes.

6.4 Laptop and MIDI or HID Controller

See also:

The *Controllers* section of the *DJ Hardware* chapter has background information about controllers.

6.4.1 Controllers with an integrated audio interface

Many DJ controllers include an integrated *multi-channel* audio interface. A setup with this kind of controller may look like the diagram below:

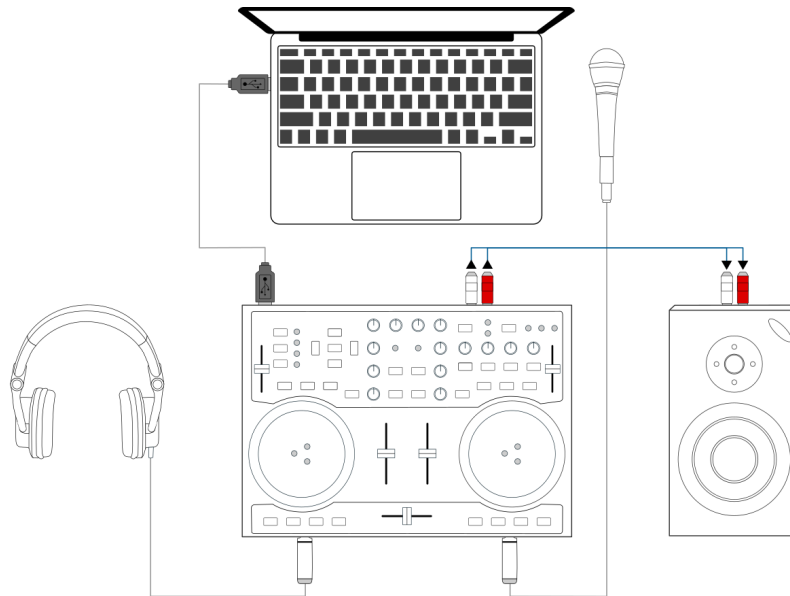


Fig. 3: Using Mixxx together with a DJ controller and integrated audio interface

Using a controller with an integrated multi-channel audio interface

1. Open *Preferences* → *Sound Hardware*
2. Select the *Output* tab
3. From the *Master* drop-down menu, select your controller's audio interface, then *Channels 1-2*
4. From the *Headphones* drop-down menu, select your controller's audio interface, then *Channels 3-4*
5. Click *Apply* to save the changes.

6.4.2 Controllers without an integrated audio interface

Controllers without an integrated audio interface can be used together with a USB audio interface as depicted in the diagram below:

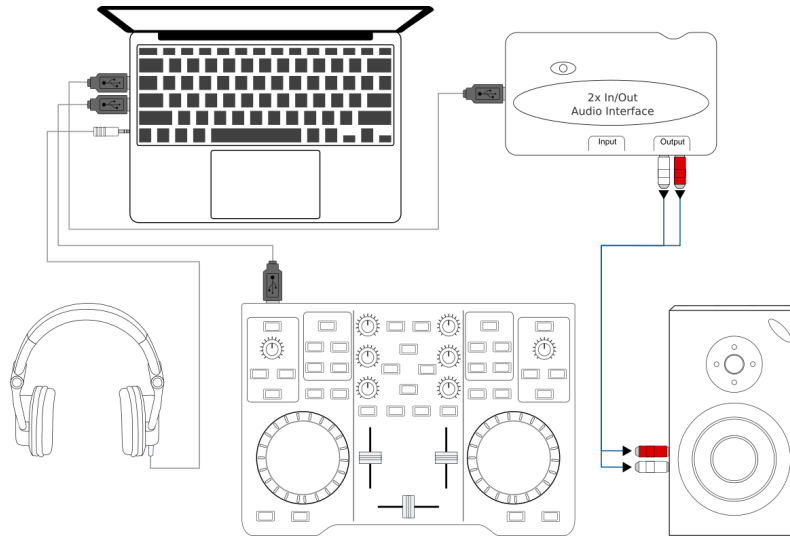


Fig. 4: Using Mixxx together with a DJ controller and external audio interface

Using a controller without an integrated audio interface

1. Open *Preferences* → *Sound Hardware*
2. Select the *Output* tab
3. From the *Master* drop-down menu, select the external audio interface, then *Channels 1-2*
4. From the *Headphones* drop-down menu, select the built-in audio interface, then *Channels 1-2*
5. Click *Apply* to save the changes.

6.5 Laptop, External Hardware Mixer and Vinyl Control

This setup allows DJs to use the techniques of DJing with vinyl record turntables combined with the portability and flexibility of a laptop computer. Instead of carrying crates of records or CDs, DJs can carry their entire music collection on their laptop. In addition to a laptop and headphones, this setup requires an audio interface with at least two pairs of stereo inputs and outputs as well as a pair of *timecode* records.

See also:

Go to the chapter *Vinyl Control* for detailed information.

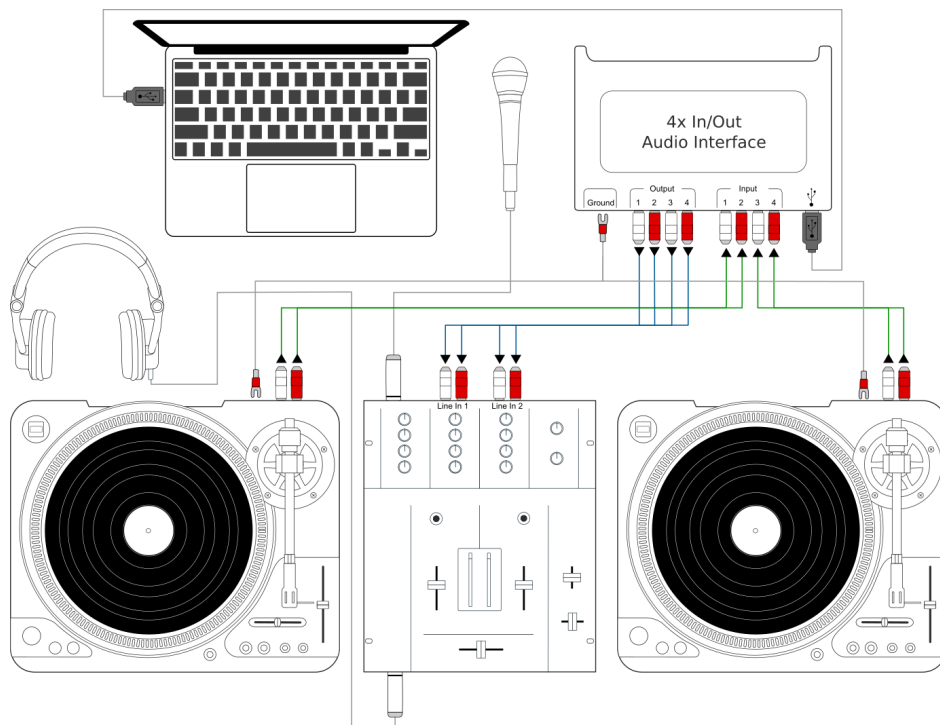


Fig. 5: Using Mixxx together with turntables and external mixer

Controlling Mixxx

Mixxx can be controlled with a keyboard, a mouse, *MIDI/HID* controllers, time-code records/CDs, or a combination of these. The choice usually depends on your budget or style of DJing.

7.1 Using a Mouse and Touchpad

Use your mouse to interact with the controls in the *Mixxx User Interface* on your computer screen. You can perform actions by pointing and clicking with your mouse.

- **Single Left Click:** Performing a left mouse click on buttons triggers the default action for that control. Moreover if you click on a value in the track list of the Mixxx *library*, you can change the value. For example the year of a track.
- **Single Right Click:** On most buttons, performing a right click triggers a different action than a left click. You can return any knob or fader to its default value by right-clicking that control.
- **Mouse Drag:** Click on a knob or fader, hold the left mouse button and move your cursor to change the value of the control. Use mouse drag to drop tracks from the file list to the decks, crates, playlists, etc.
- **Mouse Wheel:** Just like Mouse Drag, you can change knob and fader values by placing the cursor over the control and moving the mouse wheel.

Hint: If you hover with the mouse over a control (e.g the crossfader) in the Mixxx user interface, the tooltip lists the left- and right-click action respectively.

Hint: On a Macbook or a computer with a touchpad that lacks mouse buttons, a two-finger click gesture is often treated as a right click.

See also:

Using the Mouse drag/wheel on the waveforms you can adjust zoom and playback rate of the tracks. For more information, go to *Waveform Displays*.

7.2 Using a Keyboard

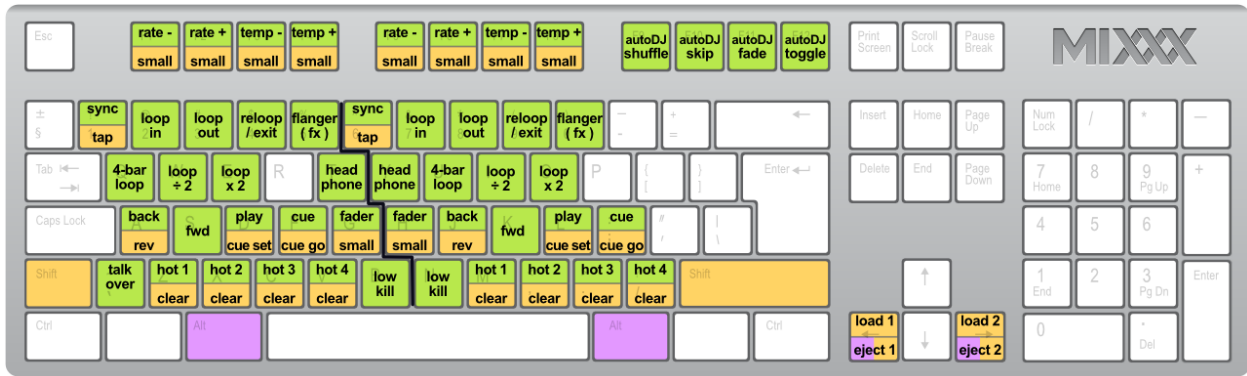


Fig. 1: Mixxx Keyboard shortcuts (for en-us keyboard layout)

[Download the image](#)

Controlling Mixxx with a keyboard is handy. Unlike mouse control, the keyboard allows you to manage things simultaneously. For example, you can start playing a track on deck 1 whilst stopping deck 2 at the same time.

The default mapping for English keyboards is depicted in the figure above. It is divided into a left-hand side for deck 1 and right-hand side for deck 2. Please note that you can also access the functions through Mixxx’s interface.

For some user groups, like those using *controllers* or *vinyl control*, it might be useful to enable/disable the keyboard mappings at runtime. You can do so by clicking *Options* → *Enable Keyboard Shortcuts*.

Hint: If you hover with the mouse over a control (e.g. the crossfader) in the Mixxx user interface, the tooltip lists the keyboard shortcuts of the control among a description of the control.

See also:

For a list of default shortcuts, go to *Keyboard mapping table*.

7.2.1 Customizing the keyboard mapping

Mixxx allows you to customize the keyboard control. For more information, go to:

- *Making a Custom Keyboard Mapping*

7.3 Using MIDI/HID Controllers

Mixxx supports MIDI and HID *controllers* which are external hardware devices used to control audio applications. Many DJs prefer the hands-on feel of a controller with Mixxx because it can feel similar to using a real mixer and turntables or *CDJ*.

7.3.1 Loading a controller preset

Without loading the correct preset, your controller does not work with Mixxx.

1. Connect your controller(s) to your computer

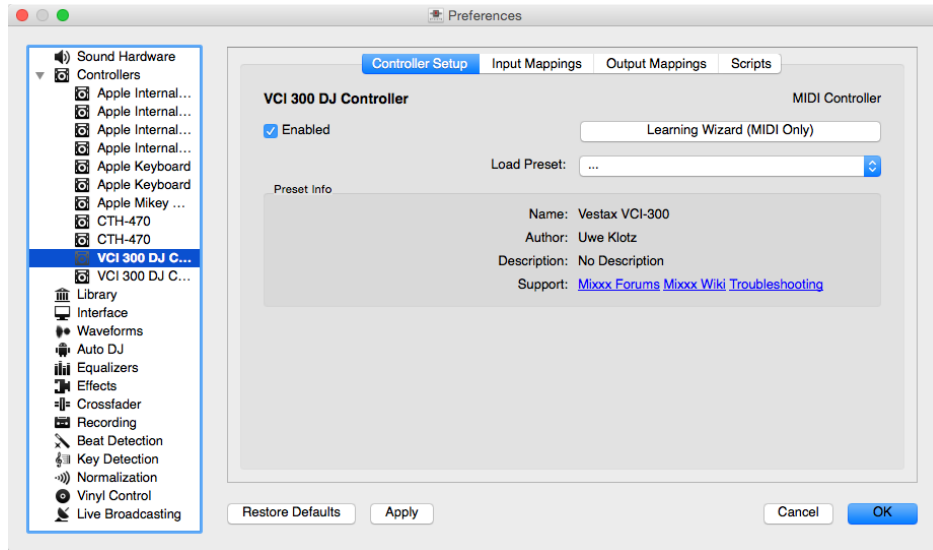


Fig. 2: Mixxx Preferences - Loading a controller preset

2. Start Mixxx
3. Go to *Preferences* → *Controllers*
4. Select your device from the list of available devices on the left, and the right pane will change
5. Activate the *Enabled* checkbox
6. Select the mapping for your controller from the *Load Preset* drop-down menu
7. Click *Apply* and Mixxx can now be controlled by your controller(s).
8. Repeat step 4-7 for any of the controllers you want to use

Hint: If you do not find a connected device in the list, make sure to install any necessary drivers for that device.

7.3.2 Supported controllers

Mixxx can use any *MIDI/HID* controller that is recognized by your *OS* (some may require drivers), as long as there is a MIDI/HID mapping file to tell Mixxx how to understand it. Mixxx comes bundled with a number of mappings for various devices. There are two levels of controller mappings:

- **Mixxx Certified Mappings:** These mappings are verified by the Mixxx Development Team.
- **Community Supported Mappings:** These mappings are provided and have been verified as working by the Mixxx community, but the Mixxx Development Team is unable to verify their quality because we don't have the devices ourselves. They might have bugs or rough edges.

If you run into issues with any of these mappings, please file a *bug report* on our [Bug Tracker](#) or tell us about it on our mailing list, forums, or *IRC* channel. Device support varies for each supported *OS*, so make sure to consult the documentation of the device.

Hint: Additional mappings are available in the [Controller presets forum](#).

See also:

Before purchasing a controller to use with Mixxx, consult our [Hardware Compatibility wiki page](#). It contains the most up-to-date information about which controllers work with Mixxx and the details of each.

7.3.3 Installing a preset from the forum

To use a controller mapping that did not come bundled with Mixxx, place the controller mapping in your User Presets folder. This is the folder called “controllers” inside your User Preferences folder. To open your User Presets folder, go to *Preferences* → *Controllers* and click the *Open User Preset Folder* button. Alternatively, navigate to the folder in your *OS* file browser:

- GNU/Linux: `/home/<username>/.mixxx/controllers`
- macOS: `/Users/<username>/Library/Application Support/Mixxx/controllers`
- Windows Vista and newer: `C:\Users\<username>\AppData\Mixxx\controllers`
- Windows XP: `C:\Documents and Settings\<username>\AppData\controllers`

On Windows, the `AppData` folder is hidden, so if you have not already, you will need to set Windows Explorer to show hidden files and folders (how to do this varies with each version of Windows).

If the mapping was posted as a `.zip` file, first extract the `.zip` file by right clicking on it in your file browser and selecting the option for extracting an archive or compressed folder. Copy the `.xml` file into your User Preset folder. If there is a `.js` file, also copy that to your User Preset folder. Restart Mixxx and *load the preset*.

7.3.4 Map your own your controller

There is no mapping available for your controller or you want to change an existing mapping? You can map your controller by using the Controller Wizard or take full control with the MIDI Scripting support in Mixxx.

See also:

Go to *Adding support for your MIDI/HID Controller* for detailed information.

7.4 Using Timecode Vinyl Records and CDs

Vinyl control allows a user to manipulate the playback of a track in Mixxx using a turntable or *CDJ* as an interface. In effect, it simulates the sound and feel of having your digital music collection on vinyl. Many DJs prefer the tactile feel of vinyl, and vinyl control allows that feel to be preserved while retaining the benefits of using digital audio.

See also:

Go to *Vinyl Control* for detailed information.

Vinyl control allows a user to manipulate the playback of a track in Mixxx using a real turntable as a controller. In effect, it simulates the sound and feel of having your digital music collection on vinyl. Many DJs prefer the tactile feel of vinyl, and vinyl control allows that feel to be preserved while retaining the benefits of using digital audio.

8.1 How does it work?

Vinyl control uses special *timecode* records or CD's which are placed on real turntables or *CDJ*. The audio output of the turntables is plugged into a audio interface connected to a computer on which Mixxx is running. When a record is played on one of the attached turntables, Mixxx reads the timecode from the record and uses the information to manipulate whatever track is loaded.

8.2 What do I need to use it?

It is possible to use Mixxx's vinyl control with a variety of setups. Unlike some proprietary DJ software, Mixxx can use several types of timecode media and any audio interface that your *operating system* has drivers to use. Optionally, any *MIDI/HID controller* can be used together with timecode control. The basic setups for timecode control are:

Setup 1: Vinyl DJ

2-4 timecode vinyls, 2-4 turntables with phono pre-amplifiers (or line-level output), and 2-4 stereo sound inputs.

Your audio interface inputs must match the turntable outputs. Turntables output very quiet phono-level outputs that must be amplified for Mixxx to use. You should either find a audio interface that has phono pre-amplifiers built in (one for each deck), use standalone phono pre-amplifiers, or use turntables with built in phono pre-amplifiers.

You can try skipping the phono pre-amps if you use the software pre-amp in Mixxx on the Vinyl Control preferences pane. This may not work for everyone. Line-level signals are preferred and recommended.

For turntables a typical setup is depicted in the figure below. First, connect the RCA cables from the turntables to the inputs on your audio interface. Second, connect the outputs of your audio interface to the inputs on your mixer.

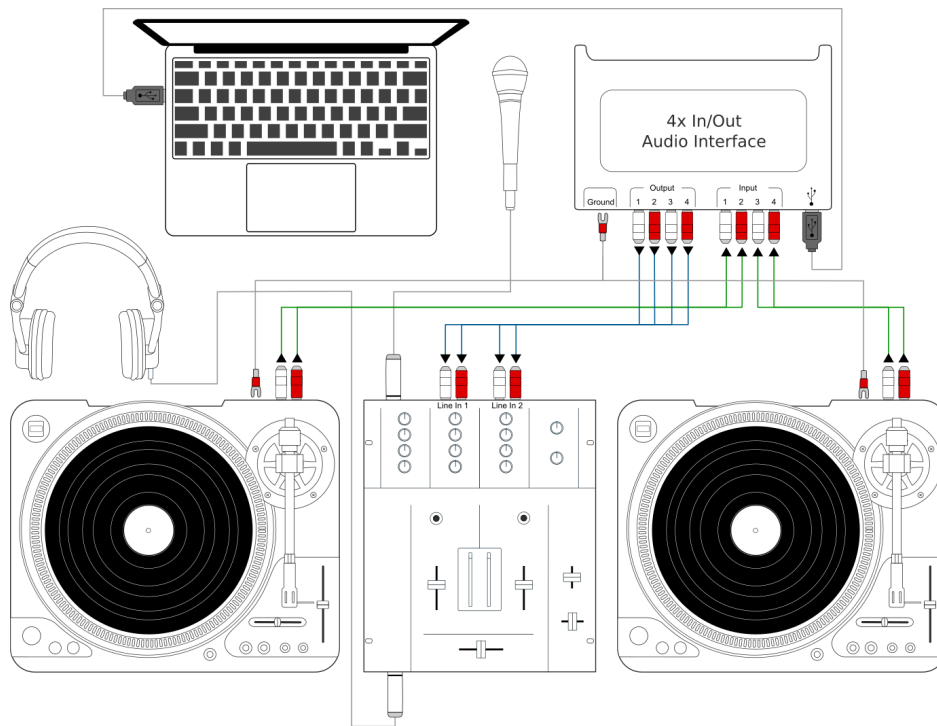


Fig. 1: Using Mixxx together with turntables and external mixer

Note: Many modern turntables have a *Line/Phono* select switch. If yours does, make sure it matches the input or switch setting on your sound card.

Setup 2: CDJ

2-4 timecode CDs, 2-4 CD decks, and 2-4 stereo sound inputs.

Setting up CDJs for use with timecode CDs is similar to setting up turntables. The figure below outlines a typical configuration. First, connect the RCA cables of the CDJs to inputs of your audio interface. Second, connect the inputs of your mixer to the outputs of your audio interface. Make sure the input mode of your audio interface is set to *Line*.

Sound inputs

- It is recommended to use a DJ audio interface that has **multiple** stereo line inputs on it.
- Alternatively you can use multiple audio interfaces, each with a single stereo line in, but this is strongly discouraged.

Mixxx supports vinyl control input through a single audio interface with at least 4-channels of input (two stereo line-in jacks), or through multiple separate audio interfaces which each have 2-channels of input (a single stereo line-in jack). Vinyl control requires the use of stereo line-in jacks - Mono or microphone inputs will not work.

It is strongly recommended to use a audio interface that comes with native low latency drivers such as ASIO (Windows) or CoreAudio (Mac). Linux users depend on the quality of the corresponding open source driver.

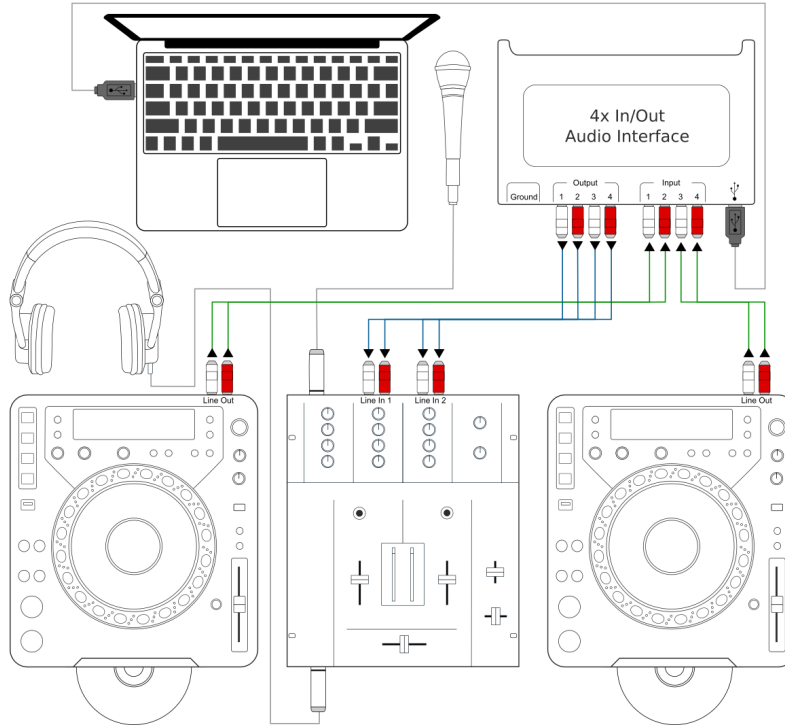


Fig. 2: Using Mixxx together with CDJs and external mixer

Note: For best scratch performance with vinyl control, we recommend using a system capable of *latencies* of 10ms. With higher latencies the scratch sound will start to become distorted.

Note: An external hardware mixer is not required for using timecode control. You can use a *MIDI or HID controller* to mix in software instead.

8.2.1 Supported Timecode media

You can use any of the timecode media supported by Mixxx:

Type	Responsiveness
Serato CV02 Vinyl	Very high
Serato CV02 CD	Very high
Traktor Scratch MK1 Vinyl	Very high
Traktor Scratch MK2 Vinyl	Not supported
MixVibes DVS V2 Vinyl	Very high

At the present time, Serato records are recommended if you are looking to buy vinyl. If you want to use CDs, you can download a free copy for personal use from [Serato](#).

8.3 Configuring Input and Output devices

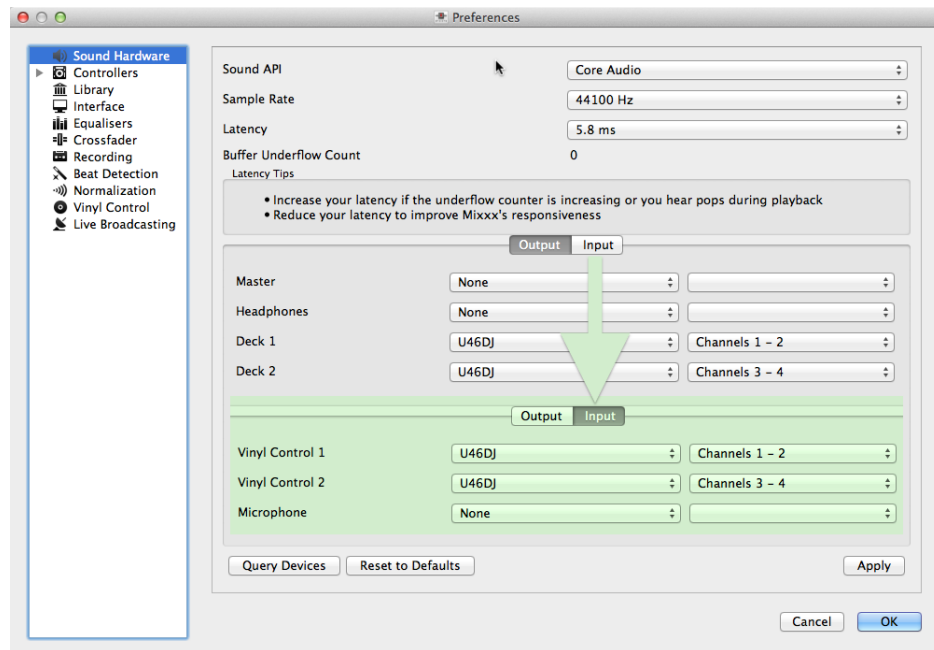


Fig. 3: Mixxx preferences - Setting up Input and Output devices for Vinyl Control

Mixxx can be controlled by up to 4 decks with either timecoded vinyl or timecoded CDs.

1. Open *Preferences* → *Sound Hardware*
2. Select the *Input* tab
3. From the *Vinyl Control 1 - Vinyl Control 4* drop-down menus, select the audio interface(s) which your decks are plugged into.
4. In the channel selection drop-down menu, select the channel pairs corresponding to the plug on your audio interface that your deck(s) are plugged into, typically *Channels 1-2* and *Channels 3-4* etc.
5. Click *Apply* to save the changes.
6. Select the *Output* tab
7. Specify *Deck 1 - Deck 4* to route Mixxx's output directly to the external mixer
8. Click *Apply* to save the changes.

8.4 Configuring Vinyl Control

You can configure vinyl control in *Preferences* → *Vinyl Control*.

8.4.1 Turntable Input Signal Boost

Many turntables provide unamplified “phono level” output which must be boosted to a “line level” signal. Normally, a mixer or audio interface provides this amplification, but if you’re plugging a turntable’s phono output directly into a audio interface that doesn’t support phono input, Mixxx can do the amplification. The *Turntable Input Signal Boost*

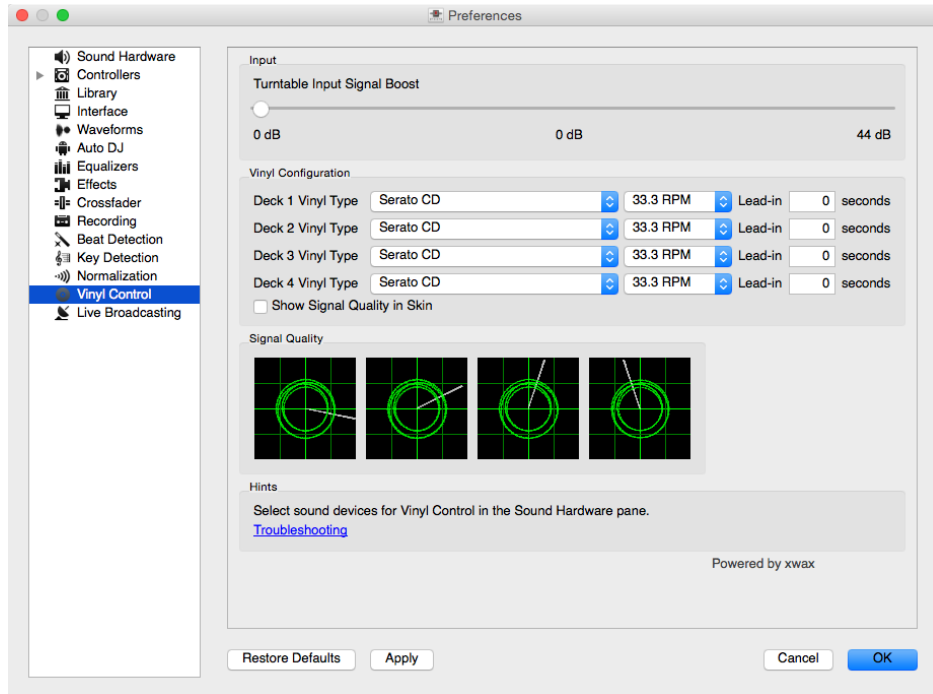


Fig. 4: Mixxx preferences - Setting up vinyl control

slider allows you to adjust the level of preamplification applied to your decks' signal. However, it is always preferable to use a proper phono preamplifier if you have one.

8.4.2 Vinyl Configuration

- **Vinyl Type:** Several types of timecoded media can be used to control Mixxx. Configure the drop-down menus to match what type of timecoded media you are using on your decks.
- **Deck Vinyl Tempo:** Change this if you prefer to scratch with your turntable or CDJ set at 45 RPM, default is 33 RPM.
- **Lead-in Time:** Allows you to set a dead-zone at the start of your vinyl or CD, where the time code will be ignored. This is useful in situations where the time code begins very close to the edge of a vinyl which can make back-cueing over the first beat in a track tricky to do without your turntable's needle falling off the vinyl. Setting a lead-in time of 20 seconds or more helps alleviate this by giving you more room on the vinyl to cue with. It's also useful when you've worn the grooves at the edge of a control record to the point that it no longer works reliably: you simply set the lead-in so that the start of the tracks begin in good groove area. You can keep doing this until you run out of groove area, thereby decreasing your record replacement frequency.
- **Show Signal Quality in Skins:** If enabled, a circular representation of the incoming timecode signal is displayed in real-time on the *Vinyl Widget* in the Mixxx Interface.

Hint: Although not recommended, you can use different kinds of timecode media per deck.

8.4.3 Control Mode

Mixxx has three control modes regardless of which control records you use.

- **Absolute Mode:** Provides Mixxx with both pitch and position information from the timecode, and allows you to seek by needle dropping on your vinyl or seeking on your CDJ.
- **Relative Mode:** Takes the position to be relative to your deck’s starting point, and only controls the pitch in Mixxx. It is not possible to seek using your deck in relative mode, with one exception. If you drop the needle in the *Lead-in Time* area (see *Vinyl Configuration*), Mixxx will seek back to the beginning of the track. Once a track is playing in Relative Mode, Mixxx will not allow you to select Absolute mode. Otherwise, the track would suddenly jump to a new position. Make sure the record is stopped and then you’re free to select Absolute mode.
- **Constant Mode:** This special mode is usually only activated when Mixxx needs to keep playing a track even if the vinyl control signal isn’t present. Constant mode is automatically enabled when the needle reaches the end of a vinyl control record.

8.4.4 Cueing Modes

Mixxx has two optional cueing modes for vinyl control which **only** apply to **Relative Mode**. These modes are useful for quickly seeking to specific positions in a track without touching the laptop. Turntablists often need to find a break or a vocal sample, and cueing modes make these easy to find.

- **Cue:** In this mode, when you drop the needle on the record *after* the Cue point, Mixxx will seek to that cue point.
- **Hot Cue:** When the needle is dropped Mixxx will seek to the nearest hotcue point, working backwards. So if you have a hotcue at the one-minute mark, and another at the two-minute mark, you can drop the needle anywhere between one and two minutes and Mixxx will seek to the one-minute hotcue.

Hint: You can change the Control and Cueing Modes directly in the Mixxx user interface while mixing, go to *Vinyl Control Mode and Cueing controls*. Alternatively, use the *Application shortcuts*.

8.4.5 Signal Quality

A successful vinyl control setup hinges on good signal quality. Many factors can affect signal quality, but the most important one is ensuring the volume level of your timecode signal is moderate. A signal that is too loud or too quiet will cause adverse performance, often characterized by a loss of position data causing absolute mode to behave like relative mode.

Mixxx represents the quality of the timecode signal as a circular graphic coming from the vinyl control audio itself. The graphs correspond to your active input devices *Deck 1 - Deck 4*.

If your vinyl signal is working, you should see a round, green circle drawn with two lines. This vinyl “doughnut” should be as circular as possible, and the lines should be clear with a minimum amount of fuzz.

Hint: You can display the signal quality in the Mixxx user interface while mixing, see *Configuring Input and Output devices*.

8.5 Enabling Vinyl Control

For each deck, select *Options* → *Vinyl Control* → *Enable Vinyl Control*, or use the *Application shortcuts*.

8.5.1 Vinyl Control Status Display



Fig. 5: The vinyl control status, and signal quality display of the deck

A rectangle provides visual feedback with regards to vinyl control status of a deck.

- **Off:** Vinyl control disabled on the deck.
- **Green:** Vinyl control is enabled on the deck.
- **Yellow:** The needle has reached End-Of-Record.

8.6 Single Deck Control

If you only have one turntable, you can still use Mixxx to play your sets. In the *Preferences* → *Sound Hardware* → *Input* tab, use the same audio input for both *Vinyl Control* decks.

When mixing, you'll have one track playing automatically while the other is controlled by the turntable. Start by enabling vinyl control on the first deck, and start mixing. When you're ready to cue up the next record, just disable vinyl control on the first deck and enable it on the second deck. Playback will continue on the first deck without interruption. Cue up the second track and mix it in. When you're ready to cue the first deck again, just toggle the second deck off and the first deck on again.

Use the *Application shortcuts* to swap focus from one deck to the other. Alternatively, select *Vinyl* → *Single Deck mode* in the *Controller Wizard*, to assign the control to a key on your controller.

8.7 End-Of-Record Mode

Sometimes the track you are playing is longer than the timecode area on your record. If the needle reaches the end of the vinyl timecode, Mixxx will enter a special *End-Of-Record Mode*. When this happens, the vinyl indicator (usually a green rectangle) will blink yellow as a warning. At the same time, Mixxx will automatically enable *Constant Mode* and will ignore the turntable's pitch. At this point the track will simply continue playing until the end. When you load a new track, *End-Of-Record Mode* will be automatically disabled and *Constant Mode* turned off.

When you're in *End-Of-Record Mode* and you want to still use the turntable for pitch control, simply lift the needle and place it anywhere in the main timecode area. It's OK, the track won't stop playing. As soon as Mixxx detects that the needle has settled, it will automatically switch to *Relative Mode*.

8.8 Control Track

Some vinyl control records have a special portion of grooves near the center of the record for selecting and loading tracks in the user interface. You can see these grooves because there is a gap between the main timecode area and the inner circle. Some control records have not been tested with Mixxx, and their control areas are not supported. Serato CV02 Vinyl and Traktor Vinyl MK1 are known to work. Serato CV02 CDs are known not to work.

Just drop the needle in the control area and let the record play forward or backward. The highlighted row in the library should move up or down. Simply lift the needle and drop it anywhere in the main timecode area to load the track.

8.9 Troubleshooting

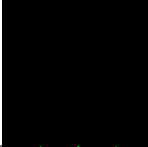
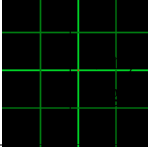
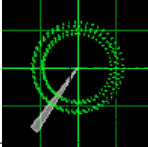
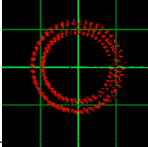
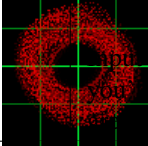

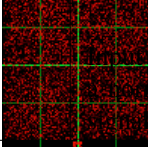
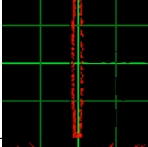
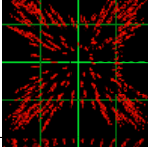
Configuration

To complete your setup you must configure Mixxx properly. Make sure you have:

- specified *Deck 1 - Deck 4* in *Preferences* → *Sound Hardware* to route Mixxx's output directly to the external mixer
- specified *Vinyl Control 1 - Vinyl Control 4* under *Preferences* → *Sound Hardware* → *Input*
- selected the correct control type under *Preferences* → *Vinyl Control* → *Vinyl type* in the preferences. See the list of *Supported Timecode media*
- enabled vinyl control via the menu under *Options* -> *Vinyl Control* → *Enable Vinyl Control*.

Signal Quality

The graph is displayed in *Preferences* → *Vinyl Control*, see *Signal Quality*.

Signal	Meaning	Troubleshooting
	control input channels not correctly set up. control will not work.	Open Preferences/ Sound Hardware and set up the devices you want to use, see <i>Configuring Input and Output devices</i>
	control input channels set up correctly. Wait for timecode input signal.	Start your turntable or CDJ with the selected timecode vinyl or CD.
	perfect green doughnut about about half the of the graph. Rotating radar sweeps in the on your record on the turntable is spinning.	Everything is OK, nothing to do. Go spin some beats.
	ect choice of vinyl control source. Doughnut good but has a solid red color.	Select the correct vinyl type in the preferences. E.g. maybe you selected side B of the Serato Vinyl but your record is on side A.
	timecode signal is bad. As the vinyl signal gets worse, see the color of the doughnut change from over orange to red.	Check the wiring / grounding on your turntable / CDJ. You timecode record / CD might be worn out or the needle on your turntable is dirty.
	ing direction. The green doughnut looks good e radar sweeps in the opposite direction of the on your turntable / CDJ.	You probably have a wiring problem. Try reversing the left and right inputs on your turntable. You may also have to rewire the headshell.
	r right channel is missing. Mixxx receives mono signal but needs a stereo timecode sig- operate.	Check the wiring on your turntable / CDJ and also the headshell and needle on your turntable.
	ode signal too loud. Mixxx receives a signal has too much amplification.	Lower the amplification, either on your external mixer, audio interface, or with the <i>Turntable Input Signal Boost</i> .
	ode signal too quiet. Mixxx receives a signal has not enough amplification.	Boost the amplification, either on your external Mixer, audio interface, or with the <i>Turntable Input Signal Boost</i> .

Using Microphones

Mixxx can work with any microphone that can be plugged into your *audio interface*. There are three ways to use microphones with Mixxx, each with their own pros and cons:

- *Software Monitoring*: Cheapest and simplest to set up, but you cannot hear yourself without a disorienting delay, referred to as “latency”.
- *Direct Monitoring*: Recommended for most users. This is the cheapest to set up with good sound quality and without the latency of software monitoring.
- *Hardware Mixers*: Most expensive option to set up with high sound quality. This does not have the latency of software monitoring.

Warning: USB microphones are not recommended. These devices have their own audio interface built in and can only be used with software monitoring. Some USB microphones have headphone jacks for direct monitoring, but the music from Mixxx cannot be heard in this headphone jack. Also, they can be difficult to configure at the same time as a different audio interface for music output.

See also:

The [Mixxx DJ Hardware Guide](#) lists specific audio interfaces with information about their prices, features, and suitability for use with microphones.

9.1 Software Monitoring

Software monitoring can be used with the built-in microphone on a laptop or with a headset plugged into the built-in audio interface on a computer. However, there is a delay between the time you make sound into the microphone and hear it in the Master output. Due to the nature of digital audio, it takes time for input from the audio interface to be available for Mixxx to process, time for Mixxx to process the audio, and more time to send the audio back out the audio interface. This time is referred to as “latency”.

Mixxx can be configured to run at low latencies by choosing a smaller *Audio Buffer*, but there is no way to completely eliminate latency. Although latency is measured in milliseconds, even a few milliseconds of latency can be disorienting

and distracting to hear, whether you are using the microphone for spoken announcements, vocals, or playing a musical instrument.

To use software monitoring:

1. Open *Preferences* → *Sound Hardware*.
2. Select the *Input* tab.
3. For *Microphone 1*, select the audio interface that your microphone is plugged into.
4. Click the *Apply* button.
5. Click the *OK* button.
6. Click the *Mics* button in the main Mixxx window to show the microphone controls.
7. Click the *Talk* button when you are using the microphone.

Hint: If you would prefer to not hear the microphone input, you can set the *Microphone Monitor Mode* option to *Direct monitor (recording and broadcasting only)*. This will still mix the microphone input with your recorded and broadcasted mixes, but it will not mix the microphone with the Master output. Don't forget to press the *Talk* button when using the microphone if you use this option.

9.2 Direct Monitoring

An audio interface with direct monitoring and a *Loopback Input* is the recommended way to use microphones with Mixxx for most users. Except for audio interfaces built into computers, most audio interfaces with microphone inputs support direct monitoring. However, not all audio interfaces that support direct monitoring also have a loopback input.

Direct monitoring routes the audio from the audio interface's inputs directly its outputs. This avoids the latency of sending it into the computer and back out with *Software Monitoring*. At the same time, the audio interface sends the input into the computer so Mixxx can record and broadcast it.

9.2.1 Loopback Input

Some audio interfaces that support *Direct Monitoring* have a loopback input feature. They add Mixxx's output to the microphone signal before sending it to the computer. This makes it easier to set up Mixxx with direct monitoring than configuring *Latency Compensation*.

To configure Mixxx with a loopback input:

1. Open *Preferences* → *Sound Hardware*.
2. Click the *Input* tab.
3. Select the audio interface for the *Record/Broadcast* input. Do not configure anything for the *Microphone 1-4* inputs.
4. Click the *Apply* button.
5. Click the *OK* button.
6. *Activate direct monitoring and loopback on your audio interface.*
7. Adjust the microphone volume with the input gain knob on your audio interface.

The microphone controls in Mixxx will not affect your microphones because they are mixed by the audio interface and not sent directly to Mixxx.

9.2.2 Latency Compensation

When using *Direct Monitoring*, you will hear the microphone mixed with the music from Mixxx without any noticeable latency. However, it still takes time for Mixxx to receive the microphone signal and process it. Without compensating for this latency or using a *Loopback Input*, the microphone inputs will be out of time relative to the music in your recorded and broadcasted mixes.

Mixxx can compensate for this timing misalignment, but it is complicated to set up. If you do not want to record your microphone into your mix or broadcast, you can *activate direct monitoring on your audio interface* without configuring latency compensation.

Measuring Round Trip Latency

To configure Mixxx to compensate for input latency while using direct monitoring, first you must measure the round trip latency of your setup. The round trip latency is different from the size of the *Audio Buffer* configured in Mixxx. It is the amount of time it takes for audio to make a complete trip from your audio interface's input, through your computer, and back out the audio interface.

Mixxx cannot calculate the round trip latency because it depends on details of your audio interface's hardware, your operating system, your audio interface's driver, and other factors in your computer's hardware. The round trip latency can only be found by measuring it. To do this, use a physical cable to connect the audio interface's output to its input. Then, use a third party program to measure the round trip latency. These programs are recommended on each OS:

- **GNU/Linux:** `jack_iodelay`
- **Windows:** *RTL Utility*
- **macOS:** *Audacity*

You must use the same sample rate and audio buffer size in the measurement program as you do in Mixxx for the measurement to be accurate. If you decide to change the sample rate or buffer size you use with Mixxx, you will need to remeasure your round trip latency to have your microphone inputs aligned in your recorded and broadcasted mixes.

Warning: Make sure direct monitoring is *not activated on your audio interface* while you are measuring the round trip latency or you will not get an accurate measurement.

Configuring Latency Compensation

1. Before opening Mixxx, *measure the round trip latency*.
2. Open Mixxx.
3. Open *Preferences* → *Sound Hardware*.
4. Click the *Input* tab.
5. Select the audio interface input(s) for the *Microphone 1-4* inputs. Select a single mono channel for each Microphone input unless you are using stereo microphones.
6. For the *Microphone Monitor Mode* option, select *Direct monitor (recording and broadcasting only)*.
7. Enter the measured round trip latency in milliseconds for the *Microphone Latency Compensation* option.
8. Click the *Apply* button.
9. Click the *OK* button.
10. *Activate direct monitoring on your audio interface*.

11. Click the *Mics* button in the main Mixxx window to show the microphone controls.
12. Click the *Talk* button when you are using the microphone.
13. Adjust the microphone volume with the input gain knob on your audio interface. Do not adjust the microphone gain in Mixxx. If you do, the relative volume of the mics and music will be different in your recorded and broadcasted mixes compared to what you hear out of your audio interface.

Mixxx will not record or broadcast your microphone if the *Talk* button is not active. However, you will still hear the microphone in your main output because the microphone is mixed by your audio interface, not Mixxx. You may leave the *Talk* button on to ensure you do not forget it, but this will record and broadcast background noise when you are not actively using the microphone. If your microphone has an on/off switch on it, you may leave the *Talk* button enabled in Mixxx and use the switch on the microphone to avoid adding background noise to your mix. Alternatively, you can adjust the input gain on your audio interface throughout your mix.

9.2.3 Activating Direct Monitoring And Loopback On The Audio Interface

General tips for activating direct monitoring and loopback are described below. However, every audio interface is different, so refer to the audio interface manual from the manufacturer for more details.

On stand-alone audio interfaces, there is often a knob on the device that controls direct monitoring. This knob cross-fades the audio interface's output between the signal from the computer and the directly monitored inputs. If your audio interface has a knob like this, set the knob to the center. Alternatively, some audio interfaces have a switch to toggle direct monitoring instead of a knob.

To hear mono microphone inputs on both sides of the stereo output with direct monitoring, you typically need to toggle a switch on the device.

If the audio interface supports *Loopback Input*, that may be activated by a switch on the device.

Audio interfaces with lots of inputs and outputs often have a control panel program provided by the manufacturer that is installed automatically with the driver. This may be used instead of knobs and switches on the hardware to control direct monitoring, loopback, stereo/mono switches, and other audio interface features. On GNU/Linux, you might be able to access these controls with **alsamixer**.

Refer to the section below for details about *DJ Controllers With Microphone Inputs*.

9.3 Hardware Mixers

Mixxx can be used with a microphone plugged into an external hardware mixer. This does not have the problem with latency that happens with *Software Monitoring*. However, it is generally recommended to use an audio interface that supports *Direct Monitoring* and a *Loopback Input* instead of an external mixer. If you are using *Vinyl Control* and a microphone, you may need an external mixer.

Mixxx can send each deck to separate stereo channels on an external mixer by using the *Deck 1-4* outputs. This requires an audio interface with at least 4 output channels (2 stereo pairs). Audio interfaces built into computers only have one stereo output and they do not have high sound quality. Thus, another audio interface is recommended. Audio interfaces with at least 4 output channels typically have microphone inputs and support *Direct Monitoring*, so there is no need for the external mixer.

However, audio interfaces with phono preamplifiers for *Vinyl Control* do not have microphone inputs. If you want to use vinyl control with a microphone, it is recommended to plug the microphone into a DJ mixer.

Warning: Some mixers that are not designed for DJing have a built-in USB audio interface. However, the audio interfaces in these mixers typically send only 2 channels (one stereo pair) to the mixer, so they are not recommended.

9.3.1 Recording And Broadcasting With An External Hardware Mixer

To record or broadcast with an external hardware mixer, the output of the mixer needs to be connected to the input of an audio interface. Most DJ mixers have an extra output for this which may be labeled “record”, “session”, “auxiliary”, or “booth”. Some audio interfaces for vinyl control have enough input channels to receive the output of the mixer and timecode from two turntables. If yours does not, you may use the input of the audio interface built into your computer, but these do not have high sound quality.

Alternatively, some DJ mixers have a built-in USB audio interface. These have inputs with phono preamplifiers for vinyl control and usually can send the record output back to the computer without a separate audio interface. Many (but not all) of these mixers are digital mixers, so they can send signals back and forth to Mixxx without converting them to analog. This results in higher sound quality for your recorded and broadcasted mixes compared to using a separate audio interface with an external mixer.

To configure Mixxx for using a hardware mixer for recording and/or broadcasting:

1. Open *Preferences* → *Sound Hardware*.
2. In the *Output* tab, select the audio interface for the *Deck 1-2* outputs (and *Deck 3-4* outputs if your audio interface and mixer support 4 decks).
3. Click the *Input* tab.
4. For the *Record/Broadcast* input, select the audio interface connected to the mixer’s output. For mixers with a built-in USB audio interface, refer to the mixer manufacturer’s manual to find which channels of the mixer’s audio interface send the record output.
5. If you are using vinyl control, select the audio interface connected to the turntables for the *Vinyl Control 1-4* inputs.
6. Click the *Apply* button.
7. Click the *OK* button.

Do not configure anything for the *Microphone 1-4* inputs when using an external mixer. The microphone controls in Mixxx will not affect your microphones because the microphone is mixed by the external mixer.

DJ mixers typically do not supply phantom power required for condenser microphones. Stand-alone audio interfaces typically do supply phantom power.

9.4 DJ Controllers With Microphone Inputs

DJ controllers with microphone inputs typically mix the microphone input with the master output without sending it to the computer. This does not have the problem with latency that happens with *Software Monitoring*. However, many cheap DJ controllers do not digitize the signal to make it available to the computer. Refer to the controller’s page on the [Mixxx wiki](#) or the manual from the controller manufacturer for details about your particular controller.

If the controller does not digitize the microphone input, you cannot use Mixxx’s microphone input to record or broadcast with the microphone using Mixxx’s *Microphone 1-4* inputs. It is still possible to record and broadcast the microphone by connecting the booth output of the controller to an audio interface input and configuring this for Mixxx’s *Record/Broadcast* input. If the controller does not have a booth output, a Y splitter cable can be used on each side of the stereo main output to connect the main output to both the speakers and to another audio interface’s input.

DJ controllers typically do not supply phantom power required for condenser microphones. Stand-alone audio interfaces typically do supply phantom power.

Live Broadcasting - Start your own Internet radio

Live Broadcasting in Mixxx allow you to stream your mix over the Internet to listeners around the world.

See also:

The *Using Microphones* chapter has detailed instructions for including input from microphones in your broadcasted mixes.

10.1 Streaming Servers

Remote streaming server Mixxx allows you to feed your audio stream directly to *Shoutcast* and *Icecast* streaming servers. Depending on the number of listeners, streaming audio requires a significant amount of bandwidth. Streaming servers provide the required bandwidth and broadcast the stream to your listeners. A popular free streaming service is *Caster.fm*. A review of several free and paid stream hosts is available at broadcasting-world.net.

Fig. 1: Mixxx as client-side streaming source broadcasting to an remote streaming server

Local streaming server For experienced users, it may be interesting to set up your own local streaming server. This turns your personal computer into a radio station and listeners connect directly to your server. Mixxx as a streaming source does not need to run on the same computer as your streaming server. However, professional stations often run the streaming source on the same computer as the streaming server for stability and reliability reasons. Keep in mind that if want to stream audio to a significant number of listeners, you'll need enough bandwidth. Read the [Shoutcast documentation](#) or [Icecast documentation](#) for server setup instructions.

Fig. 2: Mixxx as client-side streaming source broadcasting to an local streaming server

10.2 Configuring Mixxx

Start by supplying Mixxx with all information needed to establish a connection to the streaming server:

- Open *Preferences* → *Live Broadcasting*.
- Insert the settings following the descriptions in the *Live Broadcasting Preferences*
- Click *OK*
- Go to *Options* → *Enable Live Broadcasting* or use the *Application shortcuts* to start broadcasting.

10.3 Live Broadcasting Preferences

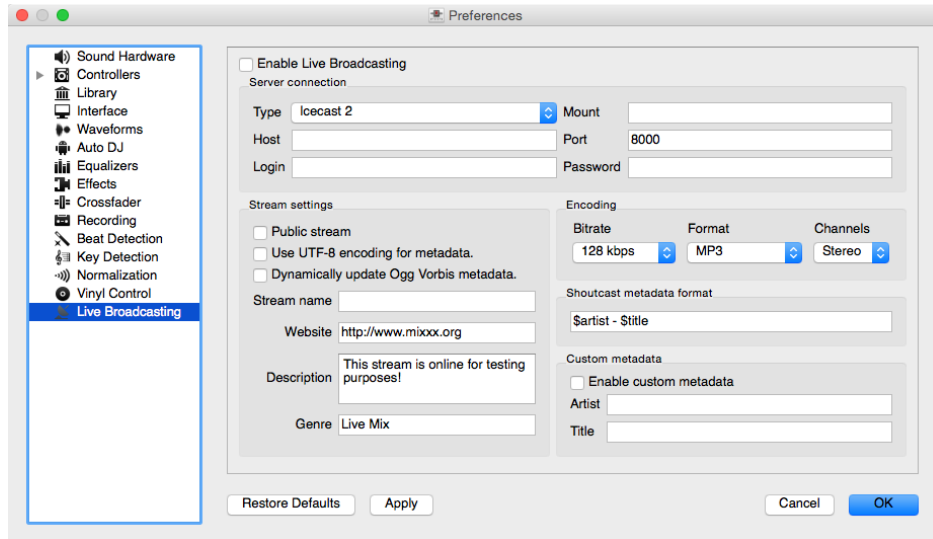


Fig. 3: Mixxx preferences - Setting up live broadcasting

Server Connection

- **Type:** Select the type of streaming server you want to connect with. *Shoutcast 1*, *Icecast 1*, and *Icecast 2* servers are supported.

Mixxx works with Shoutcast 2 using the Shoutcast 1 protocol if you provide a stream name in *Preferences* → *Live Broadcasting* → *Stream Settings*. If you don't provide a stream name, Shoutcast 2 rejects the connection (where Shoutcast 1 would accept this case).

- **Host:** You can enter the host as either a host name or an IP address.
- **Login:** As provided by your streaming server provider. Without this, you will not connect successfully to the server. The default login for *Icecast* is `source` while the default login for Shoutcast is `admin`.
- **Mount:** A mount point is a unique name identifying a particular stream. For *Shoutcast* it is not necessary to specify a mount point. The setting must not be blank if you are using *Icecast*. Try the default `/mount` or `/live`. If you haven't been given a specific mount point you can usually make one up. It always begins with a `/` (slash) followed by a text without any special characters in it.
- **Port:** As provided by your streaming server provider. Most servers use the default port 8000.
- **Password:** As provided by your streaming server provider, unless you run your own radio server. It is required to establish the connection to the server and to start the broadcast.

Warning: Do not enter a *URL* as the host! `http://example.com:8000` does not work. Use `example.com` in the *Host* field and `8000` in the *Port* field instead.

Stream Setting

- **Public stream:** If enabled, this option adds your radio station to the Shoutcast/Icecast directory.
- **Enable UTF-8 metadata:** If enabled, this option fixes broken accented and foreign language symbols in *meta-data*, assuming the streaming provider has configured the server to support UTF-8 metadata.
- **Dynamically update Ogg Vorbis metadata:** Due to flaws in some streaming clients, updating Ogg Vorbis metadata dynamically can cause listener glitches and disconnections. Check this box to update the metadata anyway. Some players that listeners can use have bugs that can cause audio glitches or disconnections when the Ogg Vorbis metadata is updated dynamically. If this is not a problem, you can enable this checkbox.
- **Stream name:** So, what's the name of your show?
- **Website:** The website you would like your listeners to visit.
- **Description:** Enter your DJ name and a short tagline.
- **Genre:** List the main genres you play. This attracts search hits on stream directories. Genre must not be blank.

Encoding

- **Bitrate:** Selecting a *bitrate* of 128 or 160 *kbps* is common and provides sufficient quality to your listeners. Higher bitrates will use a larger chunk in your Internet connection bandwidth to stream and for your listeners to receive the stream.
- **Format:** Mixxx supports streaming to Icecast servers either in *MP3* or *Ogg Vorbis* format, streaming to Shoutcast servers is supported in *MP3* format.

Shoutcast metadata format

This allows to set custom metadata formats for the Shoutcast title field. Previously only `artist - title` was allowed. For example if you were broadcasting as part of a station, you could add the station's name or the presenter's name in the title: `MyStation | $artist - $title`. Or if you were doing a live mix with several artists, you could have: `Live mix by MyName - currently playing: $artist`. Or even if you wanted a very unusual format: `Hey, I like $artist, here is $title by $artist`.

The changes **do not** affect the case for the combination of OGG/Icecast2.

Custom metadata

By default, Mixxx broadcasts artist and title information of the files that you play to your listeners. You can disable this feature and use your own custom metadata.

- **Enable custom metadata:** Toggles custom metadata on and off.
- **Artist:** Insert your custom artist metadata here, your DJ name for example.
- **Title:** Insert your custom title metadata here.

Note: Due to licensing restrictions, MP3 streaming is not enabled by default. For information on how to enable MP3 streaming, go to the chapter *Activate MP3 streaming support*.

10.3.1 Icecast vs. Shoutcast

Both essentially serve the same purpose. An Icecast server can stream either *MP3* or *Ogg Vorbis*. However, although Ogg is more efficient and effective (you get higher-fidelity sound than MP3 at lower data rates) not all players can play Ogg streams. As a result MP3 is probably a safe choice unless you know your listeners can hear an Ogg stream successfully.

10.3.2 Broadcast directories

Generally your streaming server host adds your radio station to the Shoutcast/Icecast directory, if you enable the *Public Stream* option in *Preferences* → *Live Broadcasting* → *Stream Settings*.

- **Shoutcast radio directory:** www.shoutcast.com
- **Icecast radio directory:** dir.xiph.org

Often streaming hosts will run their own directories. Check your host's FAQ to find out. If you want to promote your streaming radio station even more, register at services like streamfinder.com. An overview of different internet radio directories is available at shoutcheap.com

10.4 Troubleshooting

- If you have trouble connecting to your streaming server, check the configuration in the *Live Broadcasting Preferences*.
- You may need the *LAME* libraries to stream in MP3. See *Activate MP3 streaming support*.
- You may have selected the *Ogg Vorbis* format that is unsupported by Shoutcast servers.
- You may need to check your firewall settings. Both Icecast and Shoutcast use two ports. If you are streaming on a port (for example, port 8000) then you need to open up the next port (port 8001) as well.
- You may need to configure port forwarding if you are behind a router or your router will block requests to your streaming port (for example, port 8000)

10.5 Activate MP3 streaming support

Due to licensing restrictions, *MP3* streaming is not enabled by default. In order to enable MP3 streaming you must install the *LAME* MP3 *codec* yourself. The following section explains how you can do that.

Hint: If you have activated MP3 streaming support, you'll be also able to record your mixes in MP3 format. Go to the chapter *Recording Your Mix* for more information.

10.5.1 Activate MP3 streaming support on Windows

To activate MP3 streaming on Windows, follow these steps:

1. Download LAME 3.98.4 *binaries* from <http://www.rarewares.org/mp3-lame-libraries.php>.

Hint: The download page includes 32-bit and 64-bit versions. Make sure the version you download matches the version of Mixxx that you use, not the version of Windows. If you are on 64bit Windows but are using 32bit Mixxx, you need the 32bit ("x86") version of the LAME binaries.

2. Unpack the downloaded archive. You need a utility for manipulating archives like the free *7zip*.
3. Copy `libmp3lame.dll` to the location you have installed Mixxx, probably `C:\Program Files\Mixxx\`.

4. **Only** if you are running Mixxx 1.11 or earlier, you **must** also rename `libmp3lame.dll` to `lame_enc.dll` in the folder where you have installed Mixxx. Select *Help* → *About* to find out your version of Mixxx.
5. Restart Mixxx

Windows Troubleshooting

- Double check that the version of LAME you use (“x86” = 32-bit vs. “x64” = 64-bit) matches the version of Mixxx you use.
- If you are running Mixxx 1.11 or earlier, did you rename the `libmp3lame.dll` to `lame_enc.dll`?
- Make sure you put the correct LAME `*.dll` file in the same folder that contains the installation of Mixxx you are using.

Warning: Some websites like [Audacity](#) provide lame *binaries* too. Do not use these versions or Mixxx will show an error when activating live broadcasting and your stream will fail.

10.5.2 Activate MP3 streaming support on macOS

Method A: Download

To activate MP3 streaming on macOS, follow these steps:

1. Download [LAME 3.98.4 Intel](#) (macOS 10.8+ 64-bit)
2. Double-click on the downloaded zip file to unpack the file and you’ll get an installer package file
3. Double-click on the installer package file and follow the step-by-step instructions in the installer
4. Restart Mixxx

Method B: Package manager

Another easy way to activate MP3 streaming is to use [Homebrew](#) or [MacPorts](#), which are package managers like `apt` on Debian/Ubuntu Linux. They provide a convenient way to install many Open Source packages. Once Homebrew or Macports is installed, adding MP3 support to Mixxx is rather simple.

Homebrew:

1. Open a terminal and type the following commands:

```
brew install lame
```

2. Restart Mixxx

Macports:

1. Open a terminal and type the following commands:

```
sudo port install lame
```

2. Restart Mixxx

10.5.3 Activate MP3 streaming support on Linux

On Ubuntu and GNU/Linux-based operating systems MP3 streams can be activated by installing the package `libmp3lame`. Dependent on your Linux distribution the package might be slightly named different such as `lame`.

1. Open a terminal and type the following commands:

```
sudo apt-get install libmp3lame0
```

2. Restart Mixxx

Mixxx has a powerful sound effects system. Understanding how it works can open you up to a wide variety of mixing techniques.

11.1 Effect Units

Mixxx has 4 effect units. By default, only 2 of them are shown. The other 2 effect units can be shown by toggling the setting in the skin settings menu.

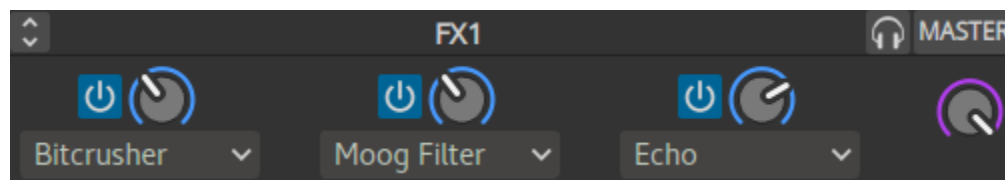


Fig. 1: An effect unit

Each effect unit can load up to 3 effects in a chain. These effects are processed one after the other in series. You will hear different sounds depending on the order of effects within the chain. Each effect in the chain has its own button to toggle it on and off.

Effect units can process sound from:

- decks
- microphones
- auxiliary inputs
- the master mix
- the *PFL* (headphone) mix
- left/middle/right crossfader buses

The buttons to route effect units to decks, microphones, and auxiliary inputs are located in the deck, microphone, and auxiliary sections of the skin. The buttons for routing other inputs to effect units are in different locations depending on the skin.

If a channel is assigned to multiple effect units, those effect units are chained together. This allows you to chain more than 3 effects at a time.

The mix knob adjusts the mix between the dry signal (input to the unit) and the wet signal (output of the last effect in the unit). It changes the level of all 3 effects in the unit together. When the knob is fully left, no sound will be heard from the effect unit. When the knob is fully right, only the output of the effect unit will be heard without any of the dry input signal.

Effects are processed after the deck faders and crossfader. This allows effects like Echo and Reverb to continue outputting sound after their input has been cut off by lowering the fader. Unlike other DJ software and hardware, effects can also be heard in headphones even though they are processed after the faders for the master output. Refer to the [Effects In Headphones](#) section below for details.

Note that equalizer and filter effects create a phase shift. If the mix knob is anywhere in the middle between dry and wet and any of these effects are enabled in the unit, there will be comb filtering which is probably not desired. For more background information, read [Equalizers and Phase Shift](#).

11.2 Effect Parameters & Metaknobs

Every effect within an *Effect Unit* has its own set of parameters. By default, these are hidden. Instead, there is a single knob called a “metaknob” for each effect which is linked to the different parameters. The metaknob allows you to easily control the effects in a unit without having to manipulate every parameter individually.

If you want more detailed control of effects, press the expansion button on the effect unit to reveal the effect parameters:



Fig. 2: An effect unit with parameters showing

You can customize how the metaknob is linked to the parameters by clicking the buttons below the parameter knobs. The button under the parameter name controls the metaknob link mode:

- Inactive: parameter not linked
- Active: parameter moves with metaknob
- Left side active: parameter moves with left half of metaknob turn
- Right side active: parameter moves with right half of metaknob turn
- Left and right side active: parameter moves across range with half of metaknob turn and back with the other half

The button below the metaknob link button inverts the parameter’s relationship to the metaknob.

For information about specific effects and their parameters, hover your mouse over them to show the tooltip. If you do not see tooltips, check that you have them enabled for the skin in *Preferences* → *Interface*.

Effects (except for Reverb) that have a length of time as a parameter are synchronized to the tempo of decks.

11.3 Effects In Headphones

To preview how a track will sound with effects before you mix in the track, simply assign the deck to an effect unit and enable the headphone button for the deck. Note that this will increase CPU compared to assigning an effect unit to a deck without the headphone button enabled. This is because effects are processed in parallel for the headphone output (prefader) and master output (postfader).

Effects can also be previewed in headphones on decks that are playing to the audience, but this requires a few more steps:

1. Disable the effect unit for the deck
2. Enable the headphone button for the deck
3. Enable the headphone button for the effect unit
4. Enable effects and adjust their metaknobs and parameters for how you want the effects to sound.
5. When you are ready to mix in the effect, turn the mix knob fully left (dry)
6. Enable the effect unit for the deck
7. Turn the mix knob right so the effects are heard in the master output
8. Disable the headphone button for the effect unit so you do not forget to turn it off later

Mixxx was designed to be easy to learn for both novice and experienced DJs.

This part of the manual provides you with directions for using Mixxx’s features to create your own mixes.

12.1 Setting Your Levels Properly (Gain Staging)

Setting your levels properly, also known as gain staging, is essential for getting the best sound quality out of the equipment you are using. At every link in your signal chain, from Mixxx’s channel gains to the power amplifier, the level should be well above the noise floor, but lower than the maximum level before the signal clips. The *level meters* should mostly be around the top of their green region. The level meter pictured to the left shows where Mixxx’s level meters should average at the loudest parts of tracks. The average level should not be in the yellow region. Use the yellow region to leave headroom, or available level above the average before the signal clips. The loudest parts of the music (the transients) should briefly go into the yellow region.

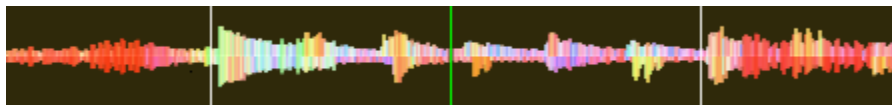


Fig. 1: A waveform at a good level. Note that the example waveforms in this section were made by adjusting the visual gain of the waveform display in Mixxx to illustrate the concepts. Adjusting the visual gain of the waveform display does not change the level of the audio.

If a level meter is in its red region, the signal is clipping and the gain should be turned down. Some equipment doesn’t have a level meter and only has an LED that turns on when the signal clips. Clipping means that the peaks of the waveform are flattened because the equipment has reached the maximum level that it can amplify the signal to. This distorts sound in an unpleasant way and can damage equipment by driving it with more power than it is designed to handle. Increasing the gain past the point where clipping begins (further into the red on a meter) will distort the signal more. If you want to make the sound louder when every part of the signal chain is at its maximum without clipping, use more speakers or use speakers that are more sensitive and convert electrical energy into acoustic energy more efficiently.



Fig. 2: A clipping waveform



On the other hand, the signal should not be too low. This is because every audio device generates a little noise at a level referred to as its noise floor. Additionally, analog signals pick up noise as they travel along wires. The signal measured by the meter on the left is relatively close to the noise floor. When a device is turned up, the noise floor does not go up; only the signal does. However, every time the signal is amplified by the gain of another piece of equipment, both the noise and the signal from previous devices in the signal chain are amplified. For example, if your sound card is turned down and you turn the gain up on your mixer to compensate, the signal-to-noise ratio (SNR) of the sound card output will be low and the mixer’s gain will amplify the signal and the noise from the sound card, plus the noise picked up along the wire. The end result will have more noise than if the output of the sound card was turned up before the signal reached the mixer and the mixer’s gain did not have to be turned up.

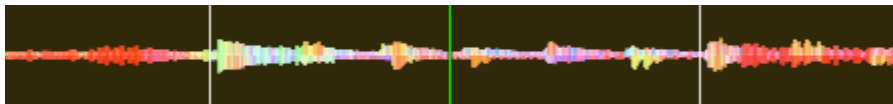


Fig. 3: A waveform that is too close to the noise floor

Note: To adjust the output volume of a sound system while maintaining a high signal-to-noise ratio, the gain should be adjusted as close to the speakers as possible. Refer to the *Gain Knob* section for details.

12.2 Beatmatching and Mixing

Beatmatching is the process of adjusting the playback rate of a track so that it matches the tempo of another track. Beatmatching also involves adjusting the *phase* of the beats in a track so that they are aligned with the beats in the other track. Matching the *tempo* and aligning the beats are the two things a DJ must do to beatmatch.

Mixxx can match the tempo and align the beats for you but this requires an accurately detected BPM value and a correct beat grid for both tracks. To enable this feature, tap the *SYNC* button. To beatmatch manually, the tempo of the two tracks must be synchronized by adjusting the playback rate sliders. You can adjust the phase of the beats by right-clicking and dragging on either waveform display to temporarily speed up or slow down one of the tracks until the beats are aligned. The temporary pitch bend buttons can also be used to momentarily adjust the playback rate, allowing you to “shuffle” the beats in a track forwards or backwards, so they can be aligned with another track. See the chapter *Sync and Rate Controls*.

Two tracks are beatmatched once their tempos are matched and their beats are aligned. A “perfect” beatmatch is nearly impossible - there will always be a tiny difference in the playback rates. A keen DJ will keep his or her ears open and listen for the beats drifting out of alignment. This has a distinct “double bass kick” sound which is often preceded by the kick weakening in intensity as the two kicks drift out of phase. When this happens, the beats can be realigned by simply tapping one of the temporary pitch bend buttons a few times in the appropriate direction.

12.3 Master Sync

Master Sync is an intelligent assistant that allows you to leave the beatmatching to Mixxx so you can focus on track selection, effects manipulation, looping, 4 deck mixing, and other advanced DJing techniques.

To activate Master Sync on a deck, push and hold (or click and hold) the *SYNC* button. You'll know Master Sync is on because the sync button will remain lit. Changing the rate of any deck that has Sync lit will change the rates of all other decks that also have the Sync button lit. There is no need to set specific decks to be a master or followers. You can play, stop, eject, load, and queue any track with master sync and it won't interrupt the playback of the other decks. However, changing the rate of a stopped deck will change the rate of playing decks.

Master Sync will also notice if one of your tracks is double the BPM of another track and match them correctly. So if you want to mix a 140 BPM drum & bass track with a 70 bpm dubstep track, Master Sync will make sure they are lined up properly.

Hint: Usually, Master Sync will only make sure the rate sliders are set correctly. If you also want to make sure your beats are perfectly in sync, turn on the *QUANTIZE* button. When activated, Quantize will ensure that the beats are perfectly lined up as well.

12.4 Harmonic Mixing

Harmonic mixing is a technique to mix songs with matching melodies and harmonies. To learn more about harmonic mixing you might want to check out [the mixshare archive](#).

Mixxx has two features to help you with harmonic mixing. The first is a *key lock*. When it is active changing the speed of a track won't affect the key. To enable *key lock*, click the *key lock* button in the *Deck Options Button Grid*. The second is that Mixxx can automatically detect the key of a track and will display it in the library and the decks. The notation which is used to display a key can be changed in *Key Detection Preferences*.

12.5 Recording Your Mix

With the integrated recording feature you can record your mix as an audio file and listen to it later, distribute it as a *Podcast* or burn it to CD.

By default, Mixxx records the Master output. Alternatively, Mixxx can record the output of an external mixer if you have an audio interface configured for the *Record/Broadcast* input in *Preferences* → *Sound Hardware*. Refer to [Recording And Broadcasting With An External Hardware Mixer](#) for details.

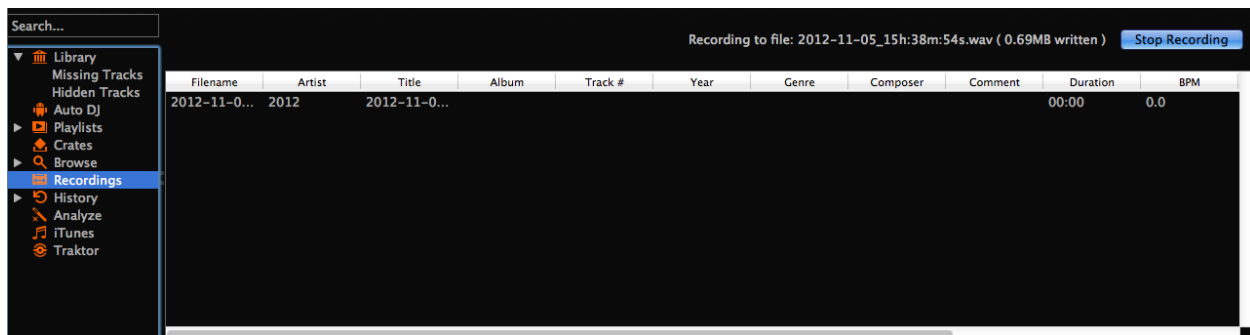


Fig. 4: Mixxx library - Recordings view

Mixxx can record your mix in various audio formats and quality settings. You can split your recordings, generate *cue files*, choose a custom recording directory and even set your own *metadata*. By default, Mixxx saves your recordings as lossless *wav* files to a `Mixxx/Recordings` sub-folder in the Mixxx music directory. Before you start recording, we recommend that you adjust the settings in *Preferences* → *Recording*.

If you click on the *Recordings* icon in the sidebar of the Mixxx library, the track table to the right displays the content of your recordings directory. New recordings are automatically saved to this directory as well as CUE files if you choose to create them in the preferences.

Hint: Recording your mixes and listening to them later to critique yourself is a great tool for improving your DJing skills. Sending your mixes to other DJs for feedback can also be helpful.

12.5.1 Record your mix to disk

New in version 2.1: Added recording widget to toggle a recording session.

Click on the recording icon on top of the application window to start, and stop the recording session. The duration of the running recording is displayed next to the icon.

Note: The recording widget might not be available in some skins.

Alternatively:

- Click on the *Recordings* icon in the sidebar to switch to the *Recordings* view
- Click the *Start Recording* button or click *Options* → *Record Mix* in the menu on top of the Mixxx application window.
- The display above the track table shows how much data has already been recorded, as well as the duration of the recording.
- Perform your mix
- Click the *Stop Recording* button to stop the recording when the mix has finished.

Hint: You can instantly play your recording as a track in Mixxx. Simply drag-and-drop the track to a deck.

12.6 Using Auto DJ For Automatic Mixing

Auto DJ allows you to automatically load tracks from the Auto DJ playlist when the current track is nearly finished, and crossfade into it. See *Auto DJ - Automate your mix*.

12.6.1 Loading tracks into Auto DJ

To play tracks automatically, they must first be loaded into the Auto DJ playlist. The Auto DJ playlist is empty by default.

There are several ways to load tracks into the Auto DJ playlist:

- Select single or multiple tracks from the library, a regular playlist or crate and drag them to the Auto DJ icon on the left.

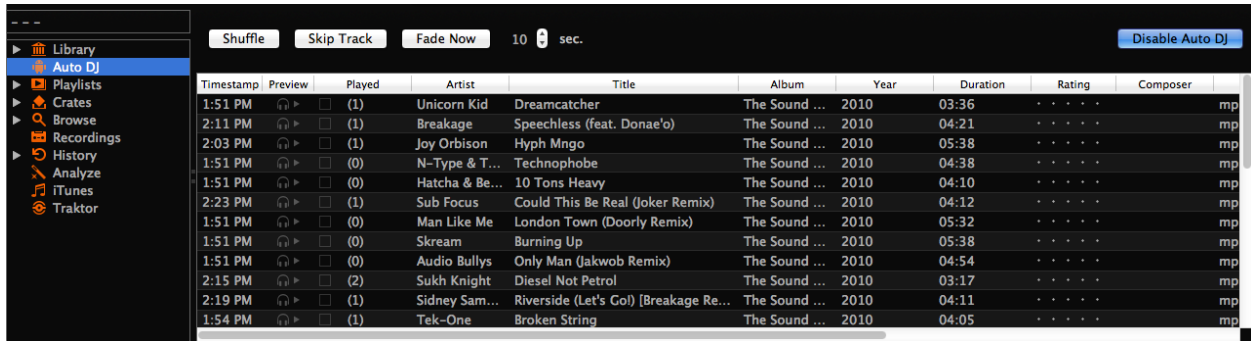


Fig. 5: Mixxx library - Auto DJ view

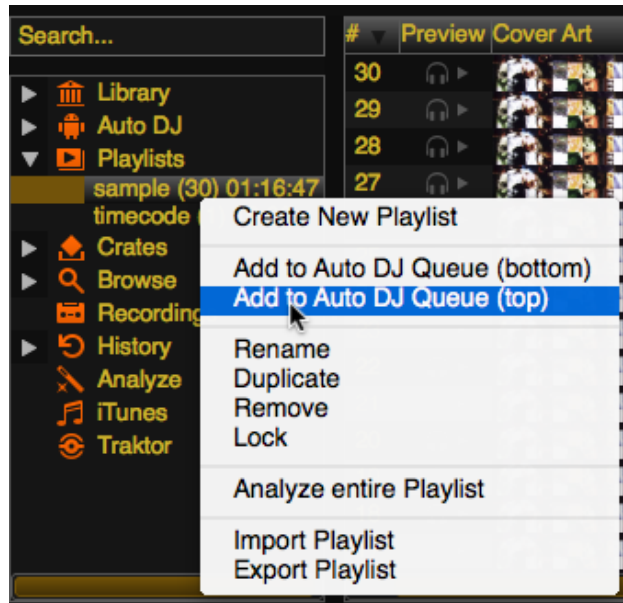


Fig. 6: Mixxx library - Adding a playlist to Auto DJ

- Select a regular playlist or crate, right-click with the mouse and select *Add to Auto DJ* from the mouse menu. This adds all tracks to Auto DJ.
- While in the Auto DJ view of the library, drag tracks from external file managers to the Auto DJ icon in the sidebar or to the Auto DJ track table on the right.

12.6.2 Using Auto DJ crates

Instead of inserting the contents of the crates directly into the Auto DJ playlist, *Auto DJ crates* are associated crates that become a source of random track selections.

- **Add a crate to the Auto DJ track sources:** Expand the *Auto DJ* item in the sidebar, and right-click on the *Crates* sub-item. Select one of the existing crates from the list. This makes the content of the crate available for random selection into the *Auto DJ* queue for automatic mixing. The name of the crate is now listed as sub-item below.

If you do not have any crates available for selection in the list, go and create a crate first and add some tracks, see *Crates - Organizing tracks into collections*.

- **Manually add tracks from track sources to Auto DJ:** Click the *Auto DJ* item in the sidebar and switch to the Auto DJ view of the library. Click the *Add random* button to add one track at the time from Auto DJ track sources to the bottom of the Auto DJ playlist.

Note: If you did not set any crates as an Auto DJ track source, clicking the *Add Random* button will add a randomly selected track from the whole library instead.

- **Automatically add tracks from track sources to Auto DJ:** Mixxx can randomly add tracks to the Auto DJ playlist from track sources as soon as a specified minimum number of tracks remain. Select *Preferences* → *Auto DJ* → *Enable random track addition to queue* → *On*. Set *Minimum allowed tracks before addition* to change the minimum number of tracks after which random tracks may be added.

Note: If you did not set any crates as an Auto DJ track source, tracks are selected from the whole library instead.

- **Remove a crate from the Auto DJ track sources:** Expand the *Auto DJ* item in the sidebar, and right-click on one of the crates listed below the *Crates* sub-item. Select *Remove Crate as Track Source* to remove the crate from the Auto DJ track sources.

12.6.3 Playing tracks in Auto DJ

Now that you have loaded tracks into the Auto DJ playlist, you can activate Auto DJ as follows:

- Click on the *Auto DJ* icon in the sidebar to switch to the *Auto DJ* view of the library.
- Click the *Enable Auto DJ* button.
- The first tracks from your list are loaded into the decks and the playback starts.
- Mixxx will continue to automatically mix until the Auto DJ playlist is empty.
- Click the *Disable Auto DJ* button to stop the automatic mixing

Hint: You can add a track to the end of the Auto DJ playlist once it is played instead of removing it. Set *Preferences* → *Auto DJ* → *Re-queue tracks after playback* → *On*.

Mixxx has many options to customize in *Options* → *Preferences*.

13.1 Sound Hardware

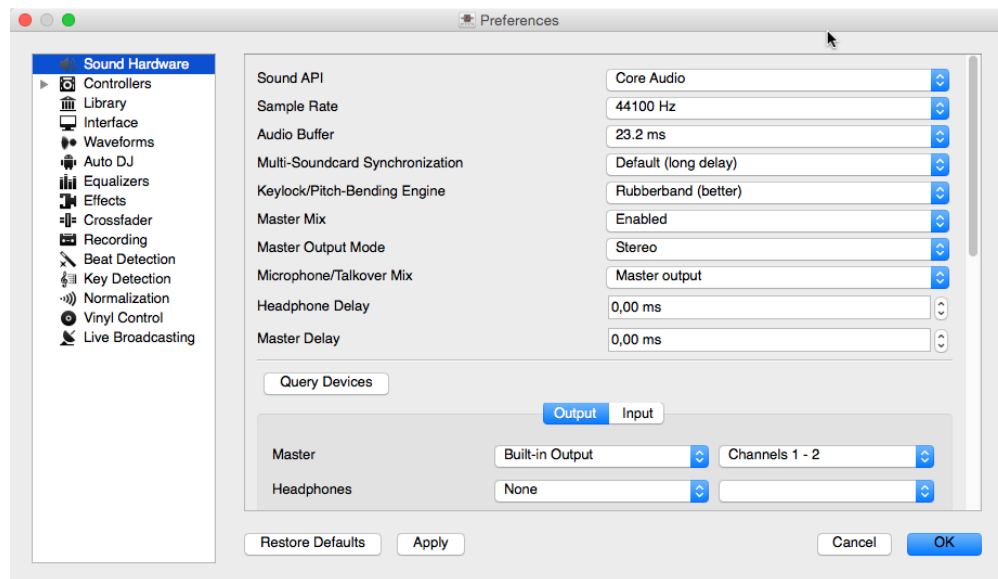


Fig. 1: Mixxx Sound Hardware Preferences

To achieve the best performance with Mixxx it is essential to configure your *audio buffer*, *sample rate*, and *audio API*. These three factors largely determine Mixxx's responsiveness and reliability. The optimal settings will vary based on your computer and hardware quality.

For information about the different input and output options, refer to *Configuring sound input and output*. The *DJ Hardware* chapter explains different types of DJ hardware and how to set them up with the the input and output

options. If you are using a microphone, refer to the *Using Microphones* chapter.

13.1.1 Audio Buffer

The audio buffer is the amount of audio in milliseconds that Mixxx processes at a time. This is a major factor that determines the latency between changing controls in Mixxx such as moving the crossfader or pressing the play button and hearing the audio change. For example, with an audio buffer of 23 ms, it will take approximately 23 milliseconds for Mixxx to stop the audio after you toggle the play button. The actual latency will be longer depending on a variety of factors.

The audio buffer setting determines how quickly your *Operating System* expects Mixxx to react. A smaller audio buffer means Mixxx will be more responsive, but requires a faster CPU and quality audio interface. Setting your audio buffer too small may be too much for your computer and audio interface to handle. In this situation, Mixxx playback will be choppy and very clearly distorted as your system will not be able to keep up with how frequently Mixxx is trying to processing audio. It is recommended to set your audio buffer as small as your system can handle reliably without glitches. Experiment with different audio buffer sizes to find what works for your system.

An audio buffer between 23-64 ms is acceptable if you are using Mixxx with a keyboard/mouse or a controller. An audio buffer below 10 ms is recommended when vinyl control is used because Mixxx will feel unresponsive otherwise.

The [Adjusting Audio Latency](#) page on the Mixxx Wiki has tips for different operating systems that may help you use a smaller audio buffer reliably.

Warning: Your system may glitch only occasionally if you have your audio buffer set a little too low. This will happen at unpredictable times and you may not notice if you are only doing brief tests of each audio buffer size. When you think you have found a good buffer size for your system, play with Mixxx for at least a half hour before performing to ensure no glitches happen.

13.1.2 Sample Rate

The sample rate setting in Mixxx controls how many samples (chunks of audio) per second are produced by Mixxx. This determines the maximum frequency in Mixxx's signal, which is half the sample rate. Humans can only hear up to 20 kHz, so there is generally no need to use more than a 44.1 kHz (44100 Hz) sample rate for playback. Most music is published with a 44100 Hz sample rate, and playing music in a different sample rate than the audio file slightly reduces sound quality.

Warning: A sample rate of 96 kHz gives your computer less than half the time to as to do the same processing. Increasing the sample rate will increase CPU usage and likely raise the minimum audio buffer size you can use reliably.

13.1.3 Sound API

The Sound *API* that Mixxx uses is the method by which Mixxx talks to your *Operating System* in order to deliver audio to your audio interface. Your choice of Sound API can drastically affect Mixxx's performance on your computer. **Therefore it is important to take care to choose the best Sound API available to you.**

Windows

The following Sound APIs are available on Windows:

- **ASIO:** Good
- **WDM-KS:** Good
- **WASAPI:** Acceptable
- **DirectSound:** Poor
- **MME:** Poor

It is best to use the ASIO Sound API that bypasses the sound processing of the Windows kernel. Using ASIO requires a driver for your audio interface from the manufacturer. Check the manufacturer's website to see if a driver download is available. Soundcards designed for musicians almost always have an ASIO driver available, but audio interfaces built into computers and very cheap audio interfaces typically do not have an ASIO driver. If there is no ASIO driver available for your audio interface, use the WDM-KS API. There is generally no advantage to using [ASIO4ALL](#), a wrapper around the WDM-KS API.

GNU/Linux

The following Sound APIs are available on GNU/Linux:

- **ALSA:** Good
- **JACK:** Good
- **OSS:** Acceptable

ALSA is the simplest sound API to configure. Using ALSA will prevent any other programs from using the audio interface(s) that Mixxx is using.

JACK allows you to route audio between JACK-compatible applications in flexible ways and output sound from multiple programs at the same time. However, JACK can be complicated to set up. Unless you will be connecting Mixxx to other JACK-compatible applications, JACK offers no advantages over ALSA. To use JACK, start the JACK daemon *before* running Mixxx. Otherwise JACK will not appear as a Sound API in the preferences.

Most modern GNU/Linux distributions use PulseAudio by default. When launched from a GUI menu entry or icon, Mixxx suspends PulseAudio while it is running so that Mixxx can use ALSA directly. Like JACK, PulseAudio allows multiple programs to access one audio interface, but PulseAudio and JACK have opposite design goals. PulseAudio is designed to make ordinary computer usage such as watching videos online and listening to music easy whereas JACK is designed for demanding low latency audio programs like Mixxx. It can be difficult to setup JACK and PulseAudio to work well together. So, unless you already use JACK, it is easiest to let Mixxx suspend PulseAudio and use ALSA.

If the PulseAudio plugin for alsalibs is installed on GNU/Linux, you can choose the virtual device `pulse`. This allows Mixxx to share the default system audio interface with other media players. This only works if you start Mixxx without `pasuspender`, which you can do by running `mixxx` from a console rather than clicking the launcher icon in a menu or on your desktop. Since the sound stream is routed from ALSA to Pulse and back to ALSA, this adds an additional latency of $\sim 2 \times$ the selected audio buffer size.

OSS is an Sound API that predates ALSA. Few modern audio interfaces have OSS drivers.

macOS

CoreAudio is the only Sound API on macOS.

13.1.4 Other Sound Hardware options

- **Multi-Soundcard Synchronization:** Mixxx is able to use two or more *audio interfaces* at a time, each with its own clock. When multiple audio interfaces are in use, the Mixxx engine is driven by the Master audio

interface. Here you can select the synchronization used for the other audio interfaces to avoid buffer overflows or underflows.

- **Keylock/Pitch-Bending Engine:** This allows you to select the engine used for independent tempo and pitch changes (e.g. *keylock*). Use *Soundtouch* on lower power machines (such as netbooks) or if you experience buffer underflows while using *keylock*.
- **Master Mix:** You may disable the master mix to reduce Mixxx's CPU usage if you do not use the Master output, recording or live broadcasting.
- **Master Output Mode:** In Mono mode, the left and right channel are combined into a mono signal which is passed to both channels of your master audio interface. This is useful for setups where the audience cannot hear your mix in stereo because of speaker placement or playing in a space with lots of reverberation.
- **Buffer Underflow Count:** Underflows (data is not available when needed) indicate that some of the subsystems in Mixxx can't keep up with real-time deadlines imposed by the current audio buffer size. This is useful to tune the latency settings. If the counter increases, then increase your audio buffer size, decrease the sample rate setting or change the sound API setting if available.

13.2 Library

13.2.1 Changing music directories

You can manually add, relink, and remove Mixxx music directories in *Preferences* → *Library*.

Add a new music directory Mixxx handles multiple music library folders. Click *Add* to browse to a directory where your music is stored. Mixxx will watch this directory and its subdirectories for new tracks.

If you add a directory that is already in your library, or you are currently *rescanning your library*, the operation is canceled.

Directories can also be added from the *Computer* sidebar item inside the library.

Relink a existing music directory If an existing music directory is moved, Mixxx doesn't know where to find the audio files in it. Click *Relink* to select the music directory in its new location. This will re-establish the links to the audio files in the Mixxx library.

Remove a music directory Click *Remove*, and Mixxx will no longer watch a directory and its subdirectories for new tracks, and asks what would you like to do with the tracks from these directories.

- Select *Hide Tracks* to hide all tracks from this directory and subdirectories.
- Select *Delete Track Metadata* to delete all metadata for these tracks from Mixxx permanently
- Select *Leave Tracks Unchanged* to leave the tracks unchanged in your library.

Hiding tracks saves their metadata in case you re-add them in the future.

Metadata means all track details (artist, title, playcount, etc.) as well as beatgrids, hotcues, and loops. This choice only affects the Mixxx library. No files on disk will be changed or deleted.

Hint: When changing music directories, you might want to run a library rescan afterwards. Select *Library* → *Rescan Library* in the menu.

13.3 Beat Detection

Mixxx uses an ultra-precise BPM and beat detector. Manual adjustments are redundant in many cases because Mixxx knows where the beats are.

BPM and beat detection is a complex operation. Depending on your computer and the track's bitrate and duration this may take some time. By default Mixxx analyzes the complete track. To accelerate beat detection on slower computers, a "Fast Analysis" option is available. If enabled, the BPM is computed by analyzing the first minute of the track. In most cases this does not affect the beat detection negatively because most of today's dance music is written in a 4/4 signature with a fixed tempo.

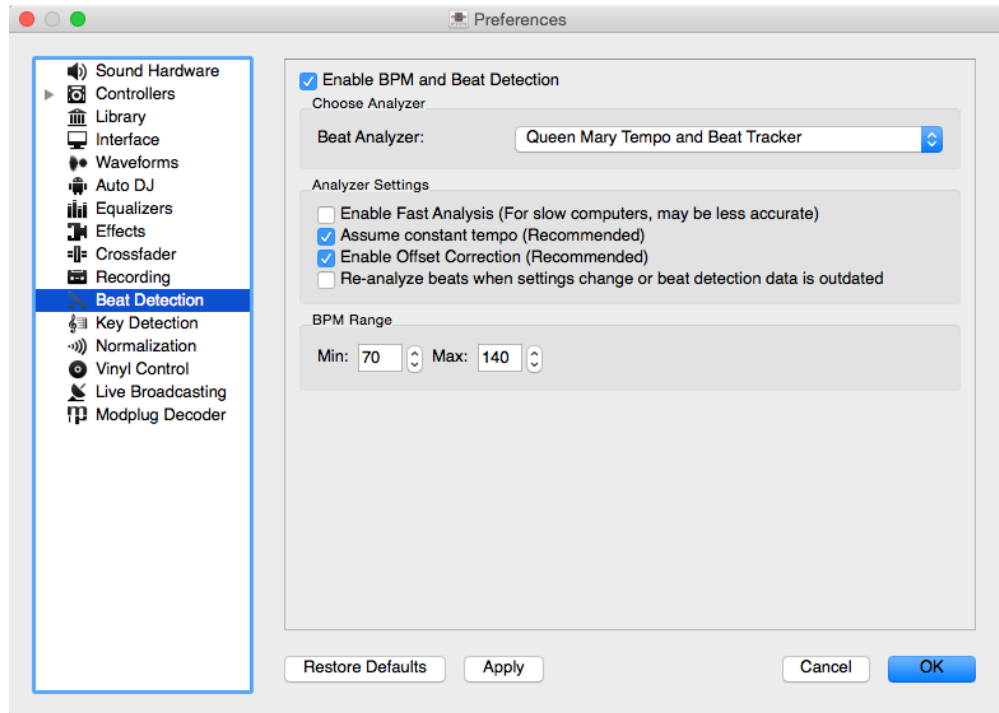


Fig. 2: Mixxx preferences - BPM settings

The table below summarizes the beat detection settings:

Option	Description
Enable Fast Analysis	If enabled, BPM will be detected by only using the first minute of audio.
Assume constant tempo	If enabled, Mixxx assumes that the distances between the beats are constant. If disabled, the raw beat grid obtained by the analyzer is presented. The latter is appropriate for tracks with variable tempo.
Enable Offset Correction	Prevents beat markers from being placed incorrectly.
Re-analyze beats when settings change or beat detection data is outdated	If enabled, Mixxx over-writes old beat grids from prior versions. Moreover, it will re-analyze the BPM if your beat detection preferences change or BPM data from 3rd party programs are present.

13.3.1 Correcting Beat Grids

There may be situations where BPM and beat detection do not result in a proper beat grid.

Typically, the detected BPM is correct but the analyzer has failed to detect the location of the first beat. Consequently, the beat markers are shifted, i.e. the beat markers are a fixed distance from the true beat. To adjust the beat grid, cue the track before a real beat and click the *Beat-grid Adjust* button in the *Deck Options Button Grid*.

If the detected BPM is not accurate, the corresponding beat grid will also be inaccurate. A deviation of 0.02 BPM units from the correct BPM will cause beatgrid alignment issues on long tracks (e.g. a club mix). If this happens, your beatgrid may look aligned for the few minutes but you will notice a slight drift as the song goes on. Finding the correct BPM is easy in many cases - just follow the note below.

Note: If the detected BPM value is not sufficiently accurate but very close to an integer value, try to set the BPM value manually to the integer.

13.4 Key Detection

Mixxx comes with a high precision musical key detector to help you make smooth mixes by ensuring that your tracks are musically compatible.

13.4.1 Analyzer Settings

Key detection is a complex operation. Depending on your computer and the track’s bitrate and duration this may take some time. By default Mixxx analyzes the complete track. To accelerate key detection on slower computers, a “Fast Analysis” option is available. If enabled, the key is computed by analyzing the first minute of the track.

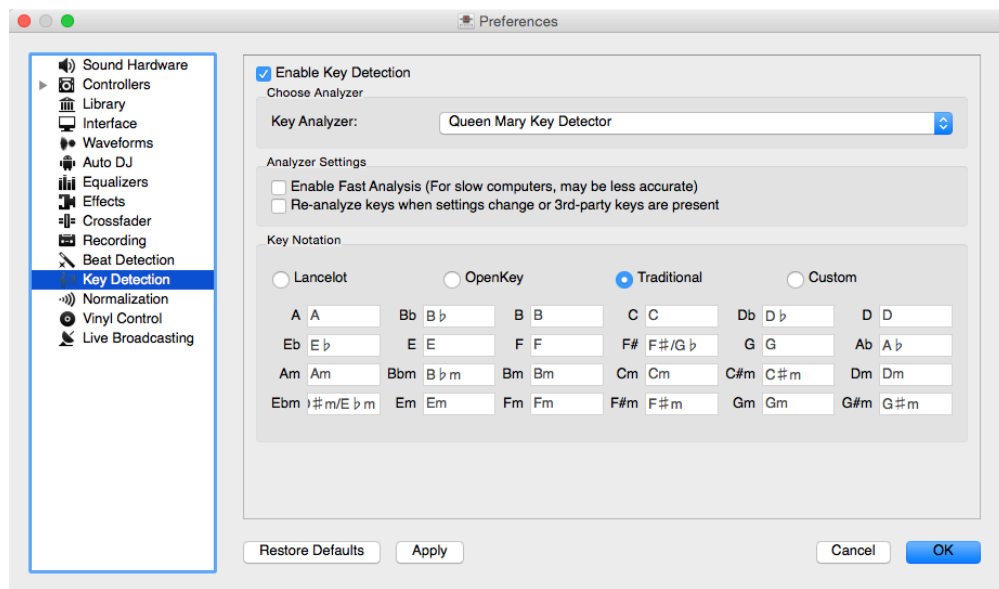


Fig. 3: Mixxx preferences - Key settings

The table below summarizes the Key detection settings:

Option	Description
Enable Fast Analysis	If enabled, the key will be detected by using only the first minute of audio.
Re-analyze key when settings change or Key detection data is outdated	If enabled, Mixxx will re-analyse tracks if you select a different key detection plugin or the key was generated by a program other than Mixxx.
Key Notation	Change the way keys are displayed in the library.

13.5 Equalizers

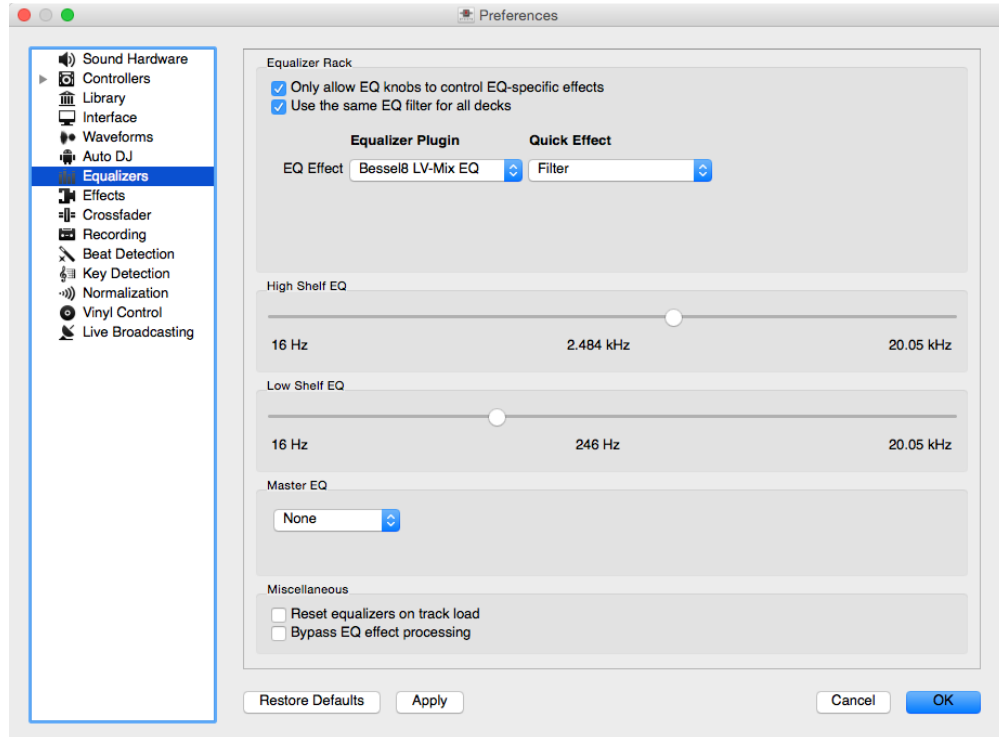


Fig. 4: Equalizer Preferences

Preferences → *Equalizer* allows you to setup the equalizers.

- **Equalizer Rack:** The Equalizer Rack is a special effect rack that is connected to the deck’s equalizer and filter controls.

In this section you can select the equalizers and quick effects that are used with the decks.

- **Equalizer Plugin:** Here you can select the effect that is used as the mixing EQ in each deck. By default only built-in equalizers are displayed. Unchecking *Only allow EQ knobs to control EQ specific effects* allows you to select any other effect.
- **Quick Effect:** Here you can select the effect that is controlled by the dedicated filter knob in each deck. By default only built-in filter effects are selected for all decks, but that can be changed as above.
- **High/Low Shelf EQ:** This slider sets the crossover frequencies of the mixing EQ. It controls which frequency range is affected by the low, mid, and high channel EQ knobs. By default the low knob controls the bass and sub bass range up to 246 Hz. The mid knob controls the mid range up to 2.5 kHz. The remaining treble range is controlled by the high knob.
- **Master EQ:** This section allows you to setup an EQ that affects the master output.

13.5.1 Mixing Equalizers

Mixxx offers three types of mixing equalizers with a full kill option. These equalizers are “isolators”, adapted from analog crossover networks. Each EQ is combination of a high shelf filter, a band pass filter, and a low shelf filter. Each EQ type has a unique sound, so try them out to find out which one you prefer.

The Bessel EQs with Lipshitz and Vanderkooy Mix (LV-Mix) do not alter the sound or take any processing time when their knobs are in the center position. They activate once you adjust an EQ knob.

The Linkwitz-Riley EQ on the other hand always applies a minimum, natural sounding phase shift to the sound. Their processing time does not change when you adjust the EQ knobs.

The following table compares some technical parameters:

Type	cut	roll-off	phase shift	bit perfect	CPU usage
Bessel4 LV-Mix	soft	-24 db/Oct	linear	yes	low
Bessel8 LV-Mix	medium	-48 db/Oct	linear	yes	medium
Linkwitz-Riley	sharp	-48 db/Oct	minimum	no	high

- cut: the frequency response (curve form) at the cross over frequency.
- roll-off: The steepness of the EQ bands.
- linear phase: No phase distortion, all frequencies are processed with the same group delay.
- minimum phase: A natural phase distortion, the group delay changes by the frequency.
- bit perfect: Whether the EQ leaves the original samples untouched when the EQ is at unity.
- CPU usage: Processing time needed to calculate the EQ output.

14.1 Adding support for your MIDI/HID Controller

With several dozens of DJ controllers supported out-of-the-box, Mixxx gives you comprehensive hardware control for your DJ mixes, see *Using MIDI/HID Controllers*.

Support for additional devices can be added to Mixxx by creating a new preset file. This file tells Mixxx how to translate, or map, *MIDI/HID* messages from a controller into commands that Mixxx understands.

You can download and share custom controller presets in the [Mixxx User customizations forums](#).

14.1.1 Controller Wizard

By far, the easiest way to create a new MIDI preset is by using the Controller Wizard.

1. Connect your controller(s) to your computer
2. Start Mixxx
3. Go to *Preferences* → *Controllers*
4. Select your device from the list of available devices on the left, and the right pane will change
5. Activate the *Enabled* checkbox
6. Click on *Learning Wizard* to open the selection dialog
7. Click any control in the Mixxx *GUI*
8. Alternatively, click the *Choose Control* button and choose one from the selection list
9. Push *Learn* and then move a control or push a button on your controller to map it. You can also move a control without pushing the *Learn* button if you are learning many controls.
10. If you are learning a button, just push it once. If you are learning a knob or a slider, try to move it throughout its range.

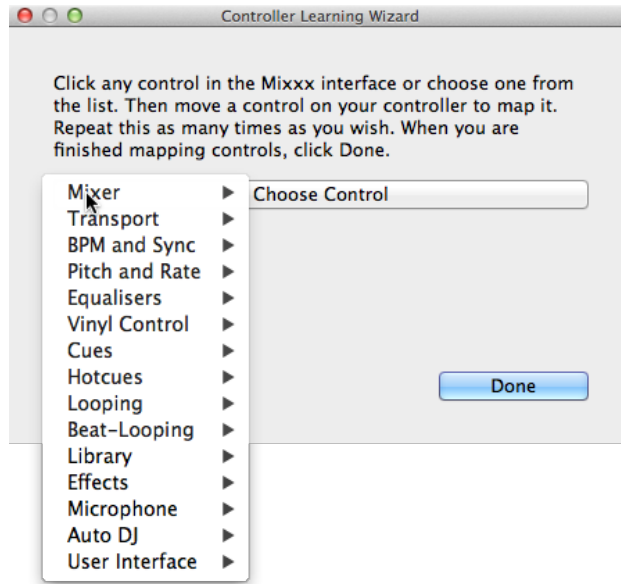


Fig. 1: Mixxx Controller Wizard - Mapping a control

11. After Mixxx detects the control, you may click *Learn Another* or you can click on another button in the Mixxx *GUI* to learn another control.
12. When you are finished mapping controls, click *Done*

There are also some advanced options in the Midi Wizard you may need to use:

- **Soft Takeover:** Use this option for knobs or sliders to avoid sudden jumps in when the knob in the *GUI* doesn't match the physical knob. If you select this option, you won't be able to perform super-fast motions as easily. (Recommended off)
- **Invert:** Use this option for controls that you want to work backwards from how they were detected.
- **Switch Mode:** Use this option on controllers that have controls that act like switches and emit one value on the first press, and a different value on the next press. (Think an actual hardware toggle switch, or a button that lights up on the first press and turns off on the second press).
- **Jog Wheel / Select Knob:** Use this for knobs that don't have a beginning or an end, but spin continuously.

The Controller wizard saves the new preset to the following file paths:

- **Linux:** /home/<username>/.mixxx/controllers
- **macOS:** /Users/<username>/Library/ApplicationSupport/Mixxx/controllers
- **Windows:** %LOCALAPPDATA%\Mixxx\controllers

You can then modify the XML file it creates (or any of the ones that ship with Mixxx) if you'd like to fine-tune it or add more presets. For more information, go to https://mixxx.org/wiki/doku.php/midi_controller_mapping_file_format.

The Controller Wizard works only for *MIDI* devices. Currently you can't map modifier (shift) keys and platter rotations. Use *MIDI Scripting* instead.

14.1.2 MIDI Scripting

In order to support the advanced features of many *MIDI/HID* controllers, Mixxx offers what we call MIDI Scripting.

It enables MIDI controls to be mapped to **QtScript** (aka Javascript/EMCAScript) functions stored in function library files, freeing Mixxx from a one-to-one MIDI mapping ideology. These user-created functions can then do anything desired with the MIDI event such as have a single controller button simultaneously affect two or more Mixxx properties (“controls”), adjust incoming control values to work better with Mixxx (scratching), display a complex LED sequence, or even send messages to text displays on the controller.

For more information, go to https://mixxx.org/wiki/doku.php/midi_scripting and https://mixxx.org/wiki/doku.php/hid_mapping_format.

14.2 Making a Custom Keyboard Mapping

The *default keyboard mappings* are defined in a text file which can be found at the following location:

- Linux: `/usr/local/share/mixxx/keyboard/en_US.kbd.cfg`
- macOS: `/Applications/Mixxx.app/Contents/Resources/keyboard/en_US.kbd.cfg`
- Windows: `<Mixxx installation directory>\keyboard\en_US.kbd.cfg`

Depending on your system’s language settings, Mixxx might use a different file as default, e.g. `de_DE.kbd.cfg` for German or `es_ES.kbd.cfg` for Spanish.

It is not recommended that you modify the system-wide keyboard mapping file because all your changes may be lost if you uninstall or upgrade Mixxx. Instead, copy the default mapping file to the following location:

- Linux: `~/.mixxx/Custom.kbd.cfg`
- macOS: `~/Library/ApplicationSupport/Mixxx/Custom.kbd.cfg`
- Windows: `%LOCALAPPDATA%\Mixxx\Custom.kbd.cfg`

Then edit this file and save the changes. On the next startup, Mixxx will check if `Custom.kbd.cfg` is present and load that file instead of the default mapping file. This has the advantage that you can always revert back to the default mapping by deleting `Custom.kbd.cfg`.

For a list of controls that can be used in a keyboard mapping, see <https://mixxx.org/wiki/doku.php/mixxxcontrols>.

You can download and share custom keyboard mappings in the [Mixxx User customizations forums](#).

14.3 Additional Effects via external Mixer Mode

Mixxx comes with a set of *native effects*. Additionally, using the *external mixer mode* you can route each deck directly to 3rd party effect hosts.

The following examples are only intended to encourage experimentation, they are not definitive guidance.

14.3.1 Effects via AU Lab on macOS

On macOS there is a simple and free way to give Mixxx access to the collection of AU/VST/MAS plugins that are installed on your system.

- Install the free [Soundflower](#), a system extension for inter-application audio routing.
- Download AU Lab.app standalone from Apple (you will need an free Apple Developer Login though), go to the [Downloads for Developers](#) page and search for “AU Lab” to get it.

In Mixxx

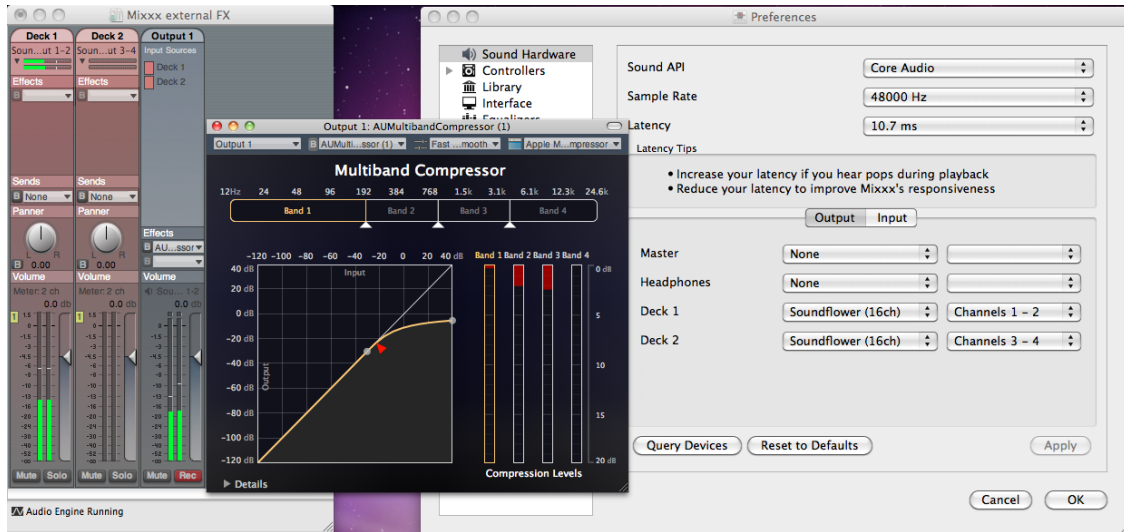


Fig. 2: The Au Lab routing for external effects on macOS

- Go to *Preferences* → *Sound Hardware* → *Output*
- Select for *Deck 1* the *Soundflower 16* device with *Channel 1-2*
- Select for *Deck 2* the *Soundflower 16* device with *Channel 3-4*
- Click the *Apply* button

In AU Lab

- Click on the + button to create a new configuration
- Add 2 stereo input tracks in the *Audio Input Tab*
- Add 2 stereo output tracks in the *Audio Output Tab*
- Click *OK*
- Change the audio input device to *Soundflower 16*
- Change the audio output device for example to *Built-in Output*
- Click *Create document*
- In the *Output 1* channel, select an effect from the drop-down menu, for example *Apple > AUCompressor*

The effect should now react if you play a track in Mixxx.

14.3.2 Effects via JACK Rack on GNU/Linux

Use *Jack* to route each deck directly through *JACK Rack* effect racks, or for more control you can use *Ardour* (or another DAW) using sends for effects. This gives Mixxx access to the extensive collection of LADSPA plugins.

Make sure the correct multichannel audio interface has been selected in *Jack* (*Jack settings* visible bottom left). Note that Mixxx possibly labels its *Jack* ports as “*Portaudio*”.

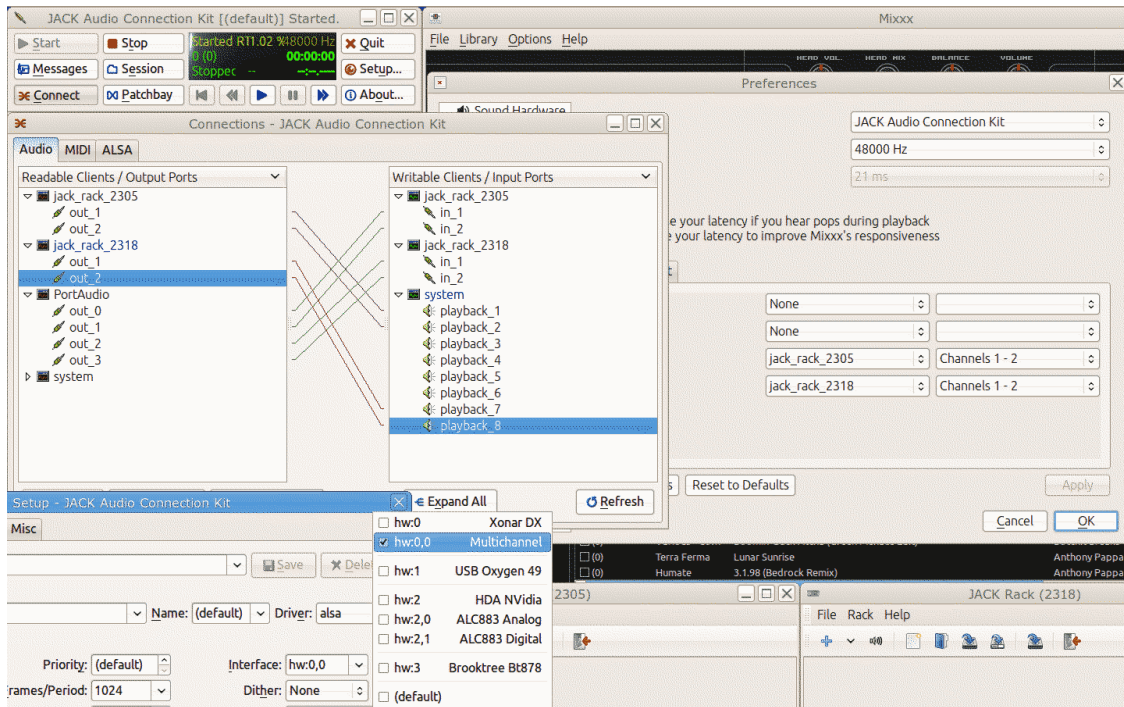


Fig. 3: The Jack routing for external effects on GNU/Linux

14.4 Deleting Your Library

The library file is stored in the following places depending on your *operating system*:

Windows The Mixxx library is stored in the %USERPROFILE%\Local Settings\Application Data\Mixxx\ folder. To delete your library on Windows, delete the mixxxdb.sqlite file in this folder.

macOS The Mixxx library is stored in the Library/Application Support/Mixxx folder in your home directory. To delete your library on macOS type the following command into a terminal:

```
rm ~/Library/Application\ Support/Mixxx/mixxxdb.sqlite
```

GNU/Linux The Mixxx library is stored in the .mixxx folder in your home directory. To delete your library on GNU/Linux type the following command into a terminal:

```
rm ~/.mixxx/mixxxdb.sqlite
```

Warning: Deleting your library will lose all of your *metadata*. This includes saved hotcues, loops, comments, ratings, and other library related metadata. Only delete your library if you are fine with losing these.

Contributing to the Project

Mixxx is a community-driven project involving many DJs worldwide. Without the contributions from these DJs, Mixxx would not exist, and we're constantly looking for more contributors.

We want to make it as easy as possible for people to get involved in Mixxx development. First off, to be clear **you don't have to be a programmer to contribute**.

15.1 As a non-developer

- [Donate](#) to Mixxx using Paypal to help support and enhance development.
- [Make skins](#)
- [Make MIDI mappings](#) for your controller
- [Report bugs](#)
- Update our [Wiki](#) to make sure the information on it is up to date.
- Translate Mixxx using [Transifex](#)
- Answer questions on the [Troubleshooting Forum](#) and the [Launchpad Answers page](#)
- Help promote Mixxx: If you've got a blog, write an article about Mixxx. Blog about our new releases when they come out. Any exposure on the web and in print helps our project grow, and is much appreciated.
- Send us some photos of you using Mixxx at a gig!

15.2 As a software developer

- You don't have to know C++. There are developers who got into Mixxx development while learning C++ along the way.
- Join our mailing list: [mixxx-devel](#)

- Join our [Zulip chat](#).
- Tell us your ideas! Email us, talk on [Zulip](#), file wishlist [bugs](#), or post on the forums.
- Register an account on our development platform [Github](#) and fork our code. See [Using Git for Mixxx Development](#)
- Join the [Mixxx Development Team](#) on Launchpad.
- Get familiar with the code. Pick a bug off of the [Easy Bug List](#)
- Get help fixing the bug on [Zulip](#), talk to us about the best way to do it.

Contributing to Mixxx in 3 Easy Steps:

1. Pick a bug off of the [Easy Bug List](#)
2. Talk to us on [Zulip](#) for help on how to fix it.
3. Fix it! *Done!* Your name will now be on the [Mixxx contributor list](#).

16.1 Additional Resources

Got questions? Need more information? Want to *contribute*? There are a variety of other resources where you can find out more:

- **Mixxx Website:** For general information and updates, as well as the latest news on Mixxx, go to: <https://mixxx.org>
- **Mixxx Wiki:** For up-to-date information about supported DJ hardware, documentation on making controller mappings, and other tips and tricks, go to: <https://mixxx.org/wiki/>
- **Mixxx Community Forums:** To search for answers, post your question or answer other DJ's questions, go to: <https://mixxx.org/forums>
- **Mixxx Zulip Chat:** Hang out with Mixxx developers and users on our [Zulip chat](#). Stand-alone apps for Zulip can be configured to use the server `mixxx.zulipchat.com`.
- **Mixxx Source Code:** To download the source code for Mixxx, go to: <https://github.com/mixxxdj/mixxx>
- **Mixxx Bug Tracker:** To report a bug or request a feature, go to: <https://bugs.launchpad.net/mixxx>
- **Mixxx Translations:** To translate Mixxx and promote your mother tongue, go to: <https://www.transifex.com/mixxx-dj-software/public/> . Please read the [Translation FAQ](#) first.
- **Social Media:** Follow us on [Twitter](#) , [Facebook](#) , and [Google+](#) .

16.2 Keyboard mapping table

Shortcuts let you work more efficiently. This table lists the default keyboard shortcuts for accessing Mixxx with an English keyboard layout. Depending on your language settings the defaults may be different.

Function	Deck 1	Deck 2	Master
Mixer			
Crossfade Left			G
Crossfade Right			H
Small Crossfade Left			Shift + G
Small Crossfade Right			Shift + H
Activate/Disable Effects Unit	5	0	
Headphone Cue (Pre-fader listen)	T	Y	
Bass Kill	B	N	
Playback			
Load selected track to deck	Shift + left	Shift + right	
Unload track from deck	Alt + Shift + left	Alt + Shift + right	
Playback	D	L	
Seek Backwards	A	J	
Reverse Playback	Shift + A	Shift + J	
Seek Forwards	S	K	
Tempo Adjust Down	F1	F5	
Tempo Adjust Up	F2	F6	
Small Tempo Adjust Down	Shift + F1	Shift + F5	
Small Tempo Adjust Up	Shift + F2	Shift + F6	
Temporary Tempo Adjust Down	F3	F7	
Temporary Tempo Adjust Up	F4	F8	
Small Temporary Tempo Adjust Down	Shift + F3	Shift + F7	
Small Temporary Tempo Adjust Up	Shift + F4	Shift + F8	
Tempo (BPM) Sync	1	6	
BPM Tap Tempo Adjust	Shift + !	Shift + ^	
Cue and Loop			
Set Cuepoint	Shift + D	Shift + L	
Cue	F	;	
Cue Go-to-and-stop	Shift + F	Shift + :	
Activate 4 Beat Loop	Q	U	
Halve Beat Loop Size	W	I	
Double Beat Loop Size	E	O	
Set Loop In Point	2	7	
Set Loop Out Point (Activates Loop)	3	8	
Toggle Loop On/Off	4	9	
Set Hot cue 1	Z	M	
Set Hot cue 2	X	,	
Set Hot cue 3	C	.	
Set Hot cue 4	V	/	
Clear Hot cue 1	Shift + Z	Shift + M	
Clear Hot cue 2	Shift + X	Shift + <	
Clear Hot cue 3	Shift + C	Shift + >	
Clear Hot cue 4	Shift + V	Shift + ?	
Microphone			
Microphone Talkover			,
Auto DJ			
Shuffle Auto DJ playlist			Shift + F9
Skip next track in Auto DJ			Shift + F10
Fade to next track in Auto DJ			Shift + F11
Toggle Auto DJ on/Off			Shift + F12

Continued on next page

Table 1 – continued from previous page

Function	Deck 1	Deck 2	Master
Preview Deck			
Load Selected Track And Play			Alt + Return
Start/Stop			Return
Seek Backwards			Alt + Left
Seek Forwards			Alt + Right
Vinyl Control			
Passthrough	Ctrl + J	Ctrl + K	
Vinylcontrol Mode	Ctrl + Shift + Y	Ctrl + Shift + U	
Vinylcontrol Cueing	Ctrl + Alt+ Y	Ctrl + Alt + U	
Single Deck Toggle / Swap Decks	Ctrl + T	Ctrl + T	
Search bar			
Focus	Ctrl + F		
Clear input	Ctrl + Back		
Exit search and leave focus	ESC		
Library			
Select all files in current list	Ctrl + A		
Select group of files in current list	Click first item, hold Shift key, click last item		

See also:

Mixxx allows you to customize the keyboard shortcuts. For more information, and to download a keyboard mapping image, go to *Using a Keyboard*.

16.3 Application shortcuts

Use these shortcuts to access features available in the menu on top of the application window.

Function	Key
File menu	
Load Track to Deck 1	Ctrl + O
Load Track to Deck 2	Ctrl + Shift + O
Library menu	
Add new Playlist	Ctrl + N
Add new Crate	Ctrl + Shift + N
View menu	
Show Samplers	Ctrl + 1
Show Microphone Section	Ctrl + 2
Show Vinyl Control Section	Ctrl + 3
Show Preview Deck	Ctrl + 4
Show Effect Rack	Ctrl + 5
Show Cover Art	Ctrl + 6
Maximize Library	Space
Full Screen (Windows & Linux)	F11
Full Screen (macOS)	Shift + Command + F
Options menu	
Enable Vinyl Control 1	Ctrl + T
Enable Vinyl Control 2	Ctrl + Y
Enable Vinyl Control 3	Ctrl + U

Continued on next page

Table 2 – continued from previous page

Function	Key
Enable Vinyl Control 4	Ctrl + I
Enable Live Broadcasting	Ctrl + L
Record Mix	Ctrl + R
Enable Keyboard Shortcuts	Ctrl + `
Open Preferences (Windows & Linux)	Ctrl + P
Open Preferences (macOS)	Ctrl + ,
Exit Mixxx	Ctrl + Q
Developer menu	
Reload skin	Ctrl + Shift + R
Developer Tools	Ctrl + Shift + T
Stats: Base Bucket	Ctrl + Shift + B
Stats: Experiment Bucket	Ctrl + Shift + E
Debugger Enabled	Ctrl + Shift + D

Hint: The `Ctrl` key on Windows & Linux is equivalent to the `Command` key on macOS. The `Alt` key on Windows & Linux is equivalent to the `Option` key on macOS. Application shortcuts are not customizable.

Note: The Developer menu is available if Mixxx is started using the *Command line options*.

16.4 Command line options

Mixxx is designed to be as user-friendly as possible. As such, its command line options are only useful for development or debugging, as they make these tasks easier. Command line options are case-sensitive.

New in version 2.1.0: `--debugAssertBreak` option `--LogLevel` option `--logFlushLevel` option

Changed in version 2.1.0: `--controllerDebug` option also prints outgoing MIDI messages

Option	Description
[FILE]	Load the specified music file(s) at start-up. Each file you specify will be loaded into the next virtual deck. For a list of supported file types, go to <i>Changing music directories</i>
-resourcePath PATH	Top-level directory where Mixxx should look for its resource files such as MIDI mappings, overriding the default installation location.
-pluginPath PATH	Top-level directory where Mixxx should look for sound source plugins in addition to default locations.
-settingsPath PATH	Top-level directory where Mixxx should look for user settings files such as the library database and preferences configuration file.
-controllerDebug	Causes Mixxx to display/log all controller data it sends and receives, and script functions it loads.
-developer	Enables developer-mode. Includes extra log info, stats on performance, a Developer tools menu, extra developer skins, and provides useful information for skin writers in widget tooltips and logs .
-safeMode	Disables risky things at start up. This should help troubleshoot crashes at startup or if Mixxx won't boot. <ul style="list-style-type: none"> • Automatically loads empty waveforms • Disables spinning vinyl widgets • Disables synchronization polling • Doesn't open controllers by default
-locale LOCALE	Use a custom locale for loading translations (e.g fr)
-f, -fullScreen	Starts Mixxx in full-screen mode
-logLevel LEVEL	Sets the verbosity of command line logging <ul style="list-style-type: none"> • critical - Critical/Fatal only • warning - Above + Warnings • info - Above + Informational messages • debug - Above + Debug/Developer messages • trace - Above + Profiling messages
-logFlushLevel LEVEL	Sets the the logging level at which the log buffer is flushed to <code>mixxxx.log</code> . LEVEL is one of the values defined at <code>--logLevel</code> above.
-debugAssertBreak	Breaks (SIGINT) Mixxx, if a <code>DEBUG_ASSERT</code> evaluates to false. Under a debugger you can continue afterwards. This will also avoid to switch the <code>MIXXX_DEBUG_ASSERTIONS_FATAL</code> flag which leads to a time consuming full rebuild. Now the <code>MIXXX_DEBUG_ASSERTIONS_FATAL</code> is only respected if <code>--debugAssertBreak</code> is not passed.
-h, -help	Display this help message and exit

16.5 Developer tools

To start Mixxx in Developer mode from a custom resource directory with *MIDI* and *HID* logging enabled, type the following line into the terminal and hit return:

```
./mixxx --controllerDebug --developer --resourcePath res
```

16.5.1 Experiment modes for rapid development and testing

- Adds a static Experiment class with a tri-state mode flag that indicates whether the experiment mode is OFF, BASE, or EXPERIMENT.
- Adds *Developer* → *Stats:Experiment Bucket* and *Developer* → *Stats:Base Bucket*. Each one toggles between OFF and BASE/EXPERIMENT so you can choose exactly what time spans you would like to collect in your base and experiment buckets.
- Updates StatsManager to segment collected stats into a base and experiment bucket. This allows you to quickly measure the difference a code change has on relevant counters / timers within the same execution of Mixxx.

This is useful for quickly enabling and disabling a code change without a re-compile/re-run cycle to get an anecdotal sense of how it “feels” as well as a quantified sense of how it differs in terms of stats Mixxx collects.

All stats collected via the usual Counter/Timer/ScopedTimer/etc. tools are segmented into a BASE STATS and EXPERIMENT STATS section printed to the log on exit.

16.6 Version History

v2.1.0 (2018-04-15)

- Graphical interface scales for high resolution screens
- Overhauled Deere and LateNight skins
- New Tango skin
- Resizable waveforms
- Effects are synchronized to the tempo
- Effects are processed post-fader and post-crossfader and can be previewed in headphones
- One metaknob per effect with customizable parameter control for intuitive use of effect chains
- Nine new effects: Autopan, Biquad Equalizer, Biquad Full Kill Equalizer, Loudness Contour, Metronome, Parametric Equalizer, Phaser, Stereo Balance, Tremolo
- Loaded effects and their parameters are saved and restored when Mixxx restarts
- More transparent sounding equalizers (Biquad Equalizer and Biquad Full Kill Equalizer)
- Improved scratching sounds with jog wheels, vinyl control, and dragging waveforms with the mouse
- Simplified looping and beatjump controls
- Configurable rows of 8 samplers with up to 8 rows available for a total of 64 samplers
- Files loaded to samplers are reloaded when Mixxx restarts
- Improved volume normalization algorithm (EBU-R 128)
- Filter library table by crates
- Sort musical keys in library table by circle of fifths
- Write metadata tags back to audio files
- New JavaScript library for controller mapping

- Configure multiple Internet broadcasting stations and use multiple stations at the same time
- Broadcast and record microphones with direct monitoring and latency compensation
- Broadcast and record from an external mixer
- Booth output with independent gain knob for using sound cards with 6 output channels without an external mixer
- Prevent screensaver from starting while Mixxx is running
- CUP (Cue And Play) cue button mode
- Time remaining and time elapsed now take into account the tempo fader
- Clicking cover art now shows it full size in a separate window

For a full list of new features and bugfixes, go to: <https://launchpad.net/mixxx/2.1>.

v2.0.0 (2015-12-31)

- 4 Decks with Master Sync
- New Effects Framework with 4 Effect Units and 5 Built-in Effects: * Flanger, Bit Crusher, Reverb, Echo, Filter
* More to come!
- Configurable, Resizeable User Interface with 3 Brand New Skins
- Cover Art Display
- Music Key Detection and Shifting
- Vinyl Audio Pass-Through
- 4 Microphone inputs and 4 Auxiliary inputs
- MIDI Mapping GUI and Improved Learning Wizard
- MusicBrainz metadata fetching
- RGB Musical Waveforms
- Hundreds of Bug Fixes and Improvements
- New Pitch-Independent Algorithm for Better-Sounding Key-lock

For a full list of new features and bugfixes, go to: <https://launchpad.net/mixxx/2.0>.

See also:

For an overview of previous versions, [take a look](#) at the timeline.

Glossary of Terms

AAC Advanced Audio Coding (AAC) is a patented audio compression algorithm which uses a form of *lossy* data compression. Designed to be the successor to *MP3*, AAC generally achieves better sound quality at similar bit rates. While the .aac extension is sometimes used for AAC-encoded files, they are typically saved with an .m4a file extension.

AcoustID An acoustic fingerprint system built entirely on *open-source* technology. It aims to create a free database of user-submitted audio fingerprints with mapping to the *MusicBrainz metadata* database and provide a web service for audio file identification using this database. For more information, see '<<https://acoustid.org/>>'. _.

AIFF Short for Audio Interchange File Format. High-quality digital audio file format, similar to .wav files. Contains CD-quality audio stored in a non-compressed, *lossless* format. AIFF files generally end with a .aiff or .aif extension.

ALAC Apple Lossless Audio Codec (ALAC) is a *lossless* audio file format used by iTunes and other Apple products. ALAC files use the same MP4 container format as AAC and use the same file extensions (m4a, mp4). Mixxx and many other programs are not compatible with ALAC. It is recommended to convert ALAC files to *FLAC* for use in Mixxx.

API An Application Program Interface (API) is a specification and set of rules for how software programs interact with each other. In Mixxx, an example of this is the Sound API that Mixxx uses to communicate with the *Operating System* to make use of the *soundcards* connected to the computer.

audio interface

audio interfaces An audio interface is a device that facilitates the input and output of audio signals to and from a computer, typically connected by USB. Almost all computers come with a basic audio interface built in, but a higher quality audio interface with at least 4 output channels is recommended for Mixxx.

balance A balance control on a mixer allows you to adjust the balance between the left and right channel. The balance refers to the relative volume of the corresponding channel in a stereo audio signal.

bar In musical notation, a bar (or measure) is a segment of time defined by a given number of beats. Typically, a piece consists of several bars of the same length.

beatgrid A series of markers that point to the location of beats within the track. Beatgrids are used for advanced mixing functions such as track *sync*, precise effects synchronization, looping and accurate *BPM* representation.

beatmatching A mixing technique used to establish a similar tempo with two or more tracks, making them sound like just one track.

binaries Files that contain compiled computer code, which was compiled from source code. Source code, which is usually a bunch of text files, is processed with a program called a compiler. The compiler then generates a binary, which is something like an .exe or a .dll file. By using binaries you are relieved of the task of having to compile the code by yourself.

bitrate Describe the quality of an audio or video file. For audio data the bitrate is commonly measured in *Kbps*. For example, an MP3 audio file that is compressed at 192 Kbps will have a greater dynamic range and may sound slightly more clear than the same audio file compressed at 128 Kbps.

BPM Beats per minute (BPM) is used as a measure of tempo in music. If you tap your foot to music you are following the “beat”. If you count how many taps you do in a minute you have calculated the BPM.

bug report Every software has bugs. When you come across a bug in this software, you should submit a report about it to the developers. They can use this to identify, replicate and fix the issue.

CDJ CDJ is a term originally used to describe a line of CD players from Pioneer Electronics. Today CDJ generally refers to DJ CD players that work like a record player. They allow analog control of music using CDs, usually using a touch sensitive emulated vinyl control surface.

codec Short for compressor/decompressor, a codec is any technology for compressing and decompressing audio and video data. Some popular codecs for computer audio include *MP3* and *Ogg Vorbis*.

controller An external hardware device that generates and transmits signals to a computer, usually via USB, to control software with physical controls other than a mouse and keyboard. Controllers have many uses for music such as controlling DJ programs like Mixxx. They typically send *MIDI* signals but some controllers use *HID* signals. Many DJs prefer to control DJ software using physical knobs, faders, and wheels on controllers instead of using a computer keyboard and mouse.

crossfader The crossfader is a slider that determines how much each deck of audio contributes to the *master output*.

cue A Cue or Cue point is a reference point in the track usually placed on the position the DJ wants the track to start at by default. This is useful to instantly jump to that point without seeking through the track.

cue sheet A cue sheet (or CUE file, CUE sheet, etc.) is a formatted plain text file which is used to provide index information for a large audio file. For example, it can be used to tell software extra details about the layout of a CD to burn.

cueing Headphone cueing, or just cueing, is listening to the next track you would like to mix in in your headphones. The audience will not hear what you are cueing in your headphones. Being able to cue is a crucial aspect to DJing.

db Short for decibels. A Decibel is a logarithmic measurement of sound level. Whispering is around 25 dB while unbearable sound such as a jet engine is around 160 db. Rule of thumb: A volume increase of 10 dB is perceived as twice as loud.

deck A deck is like a virtual vinyl turntable. You can load a *track* into it and play the track, just like you would put a record on turntable and play it.

direct monitoring A feature of many *soundcards* that allows microphones and other input signals to be heard through the soundcard outputs with no perceivable latency. With direct monitoring, the audio interface mixes the input signal in hardware with the output signal from Mixxx. This bypasses the latency of sending the signal into the computer for Mixxx to process and sending it back out to the soundcard.

DRM Digital Rights Management (DRM) technologies attempt to control what you can and can't do with the media and hardware you've purchased. Typically, a DRM system either encrypts the data so that it can only be accessed in a way authorized by copyright holders or marks content with a digital watermark or similar method so that the content can not be freely distributed. For information about how you can get involved in activism against DRM, see *Defective by Design*.

EQ

Equalizer An equalizer allows the sound in specified frequency bands to be amplified or reduced, in order to adjust the quality and character of the sound.

A simple graphic equalizer consists of multiple controls for boosting or cutting bands or frequencies of sound.

A parametric equalizer controls more parameters of the sound than a graphic equalizer. It can control three aspects of each frequency: level (boost or cut), the center or primary frequency, and the bandwidth or range of each frequency.

fast-forward To cause something to advance at quicker than normal speed. In terms of audio software that means if you press the fast-forward button the audio will play with increased speed as long as the button is pressed. This is useful to seek through a track.

fast-rewind The opposite of *fast-forward*. If you press the fast-rewind button the audio will play in reverse with increased speed as long as the button is pressed.

file manager A computer program that organizes data files into groups and shows you where they are when you need to find them again. Popular file managers for the *operating systems* Mixxx supports are Explorer on Windows, Finder on macOS and Nautilus on GNU/Linux.

FLAC Free Lossless Audio Compression (FLAC), a patent-free audio compression similar to *MP3* but *lossless* (i.e. there is no loss in audio quality when used). FLAC files generally end with a .flac extension.

flanger A flanger is an effect that mixes the input signal with a delayed copy of itself which leads to interferences in the signal and creates a comb-filter effect. By routing the output of the effect back into the input (feedback), the effect is enhanced.

GUI Short for “Graphical User Interface” and is pronounced “goeey”. It refers to a user interface based on graphics (icons, pictures and menus) instead of text. In Mixxx, it uses a mouse, keyboard, or *MIDI / HID controllers* as input devices.

head/mix button The head/mix button is used to control how much you mix the *master output* into your *headphone output*. This can be very useful when *cueing* a track, because you can test out how it sounds when mixed with the main mix in your headphones, before letting the audience hear the track.

headphone button The headphone button is used to indicate whether or not you are pre-listening to a deck or sampler in your headphones.

headphone output The headphone output is what you hear in your headphones.

HID Short for Human Interface Device, a part of the USB specification. It specifies a device class (a type of computer hardware) for human interface devices such as keyboards, mice, game controllers, and some DJ *controllers*.

hotcue Similar to the main *cue* point, a hotcue is a reference point in the track. DJs usually place hotcues at distinctive positions within a track such as drops, breaks or kicks and snares. Mixxx supports up to 36 hotcues.

HSV HSV stands for hue, saturation, and value, and is also often called HSB (B for brightness). The HSV Color Model represents color in a way more suited to the human perception of color. For example, the relationships “stronger than”, “darker than”, and “the opposite of” are easily expressed in HSV. In contrast, the representation of the hardware-oriented *RGB* model is close to what most monitors show.

icecast Icecast is free and *open-source* software that allows digital audio content to be broadcast to and from media player software, enabling the creation of Internet radio stations. Unlike *Shoutcast*, the software provides the ability to stream in free file formats like *Ogg Vorbis* and run your own directory server.

IRC Internet Relay Chat (IRC) is an online chat network. The Mixxx IRC channel was on the [FreeNode IRC Network](#) in the #mixxx channel. The channel was replaced in 2018 by the [Mixxx Zulip Chat](#).

kbps Short for kilobits per second. Here used to measure the quality of audio data. See *bitrate*

key Short for “musical key” (i.e. C major).

key lock

keylock With key lock enabled, the tempo of the track will change but the pitch remains consistent. When unlocked, the pitch slider will speed up (or slow down) the track and the pitch will increase (or decrease) along with it.

kill switch A button to turn on and off individual frequency ranges within a channel, i.e. treble, mid and bass. Useful for effects where the DJ drops a track out for a period or creates room for a transition.

LAME LAME is a free software *codec* used to encode/compress audio into the *lossy MP3* file format.

latency Latency refers to a short period of delay (usually measured in milliseconds) between when an audio signal enters and when it emerges from a system. Being able to lower the latency as much as possible makes a huge difference in responsiveness.

level meter The level meter is used to show the average levels of audio signals. The level should average around the top of the green region, with the loudest parts of the music (the transients) briefly going into the yellow region. If the level meter is in the red, the signal is clipping and the gain should be turned down.

lossless Used when describing audio compression algorithms, a lossless algorithm is one which results in no loss in audio quality when used.

lossy Used when describing audio compression algorithms, a lossy algorithm is one which results in a loss in audio quality when used.

macOS macOS (originally named “Mac OS X” until 2012 and then “OS X” until 2016) is the current Mac operating system that officially succeeded the classic Mac OS in 2001.

master output The master output is the main audio output. It is what your audience hears.

master sync Master sync mode persistently adjusts a track’s *tempo* and *phase* (if *quantization* is enabled) in order to stay in sync with other decks that are in master sync mode.

metadata In general, any piece of information about a music file that Mixxx uses (e.g. title, artist, album, hotcue locations, loops, etc.). Various file metadata formats allow information such as the title, artist, album, and track number to be stored in the audio file itself, see <https://en.wikipedia.org/wiki/ID3> . Mixxx stores additional metadata about music files in its database, like *beatgrid*, waveform data, *hotcues*, playlists, crates, number of plays, etc.

MIDI Short for Musical Instrument Digital Interface. A digital communications language and hardware specification enabling compatible electronic instruments, sequencers, computers, etc., to communicate with each other in a network. Most DJ *controllers* use MIDI to communicate with computers.

MP3 A patented audio compression algorithm which uses a form of *lossy* data compression. It is de-facto standard of digital audio compression for music. MP3 files generally end with a .mp3 extension.

MusicBrainz A open-source music encyclopedia that collects music *metadata* and makes it available to the public. For more information, see <https://musicbrainz.org/>.

Ogg Vorbis A patent-free audio compression algorithm which uses a form of lossy data compression. It is designed to provide for efficient streaming and manipulation of high quality digital audio. Ogg Vorbis files generally end with a .ogg or .oga extension.

open-source Generically, open-source refers to a program for which the source code is available to the public for use and/or modification from its original design free of charge. Open source code is typically created as a collaborative effort in which programmers improve upon the code and share the changes within the community. Open source sprouted in the technological community as a response to proprietary software owned by corporations. For more information, see [Wikipedia](#).

OpenGL An *operating system* feature used to draw hardware-accelerated graphics. Mixxx uses OpenGL to draw the waveform displays and spinning vinyl widgets.

operating system Your operating system (OS) is the computing environment on your computer. For example, Windows, macOS, or GNU/Linux are the three operating systems that Mixxx supports.

Opus Opus is a totally open, royalty-free, highly versatile *lossy* audio codec. The .opus filename extension is recommended.

PFL PFL or “pre-fader listen” is the headphone signal that is not affected by the deck volume faders. This allows for pre-listening tracks in headphones by lowering the volume fader so the deck plays only to headphones but not to the audience. See also: *headphone button*.

phase The phase of a track is its position relative to another track. If two tracks are *sync’d* to the same tempo and in-phase then they should be playing so that their beats are aligned.

pitch bend A technique used by DJs that temporarily *bends* the rate of a track up or down, usually while a button is held. This technique is usually used to make micro-adjustments to the synchronization of tracks while beat-matching. Before digital DJing, this was accomplished by dragging one’s finger alongside the turntable to slow it down or by twisting the record spindle to speed it up.

podcast A podcast is a feed of audio or video files made available for free or for purchase over the Internet. Podcast clients such as iTunes allow listeners to subscribe to the feed and automatically download content to their portable audio players as it becomes available.

quantization Quantization is the process of aligning notes and other events like loops or cuepoints so that they start or finish exactly on beats or fractions of beats.

ramping pitch bend Basically identical to the regular *pitch bend* with the difference that the pitch changes gradually, instead of all at once. Often uses for temporary pitch changes. It simulates the effect of touching a turntable to temporarily slow down or speed up a record.

rate The speed at which a track is played back, usually expressed in terms of a percentage of the speed relative to the tracks normal rate. Often while mixing, DJs adjust the rates of tracks so that they can play at the same tempo as other tracks. This allows DJs to *beatmix*, and is an essential part of DJing.

ReplayGain ReplayGain normalizes audio data in a non-destructive way, so the tracks in your music library don’t all play at different volumes. Audio files are scanned by a psychoacoustic algorithm to determine the loudness of the audio data. ReplayGain information is stored as *metadata* in a digital audio file in order for the sound to be correctly played at the right level of loudness.

reverse Reverse plays a track backwards.

RGB The RGB color model is an additive color model in which red, green, and blue light are added together in various ways to reproduce a broad array of colors. The name of the model comes from the initials of the three additive primary colors, red, green, and blue.

shoutcast Shoutcast is proprietary software that allows digital audio content to be broadcast to and from media player software, enabling the creation of Internet radio stations.

soundcard

soundcards Another name for an *audio interface*, although few audio interfaces are shaped like cards anymore.

sync Sync allows you to automatically adjust a track’s *tempo* and *phase* to be in sync with another deck that is playing.

tempo The speed of a track measured in *bpm*.

timecode Used here in conjunction with *vinyl control*. A special audio signal on a control vinyl or control CD (time-code media) that a computer can listen to in order to determine speed, direction and position of the playback.

track A track is another word for a song.

- url** Uniform Resource Locator. The address that defines the route to a file on an Internet server. URLs are typed into a Web browser to access Web pages and files, and URLs are embedded within the pages themselves as hypertext links. One example of a URL is <https://mixxx.org> .
- vinyl control** A method of controlling DJ applications which simulates the traditional DJing paradigm of two turntables. Using special *timecode* media, the DJ application analyzes the timecode signal and simulates the sound and feel of having your music collection on vinyl.
- volume** A term that refers to the degree of sound intensity or audibility; loudness. Volume is determined by people's perception and does not directly correspond to any physical property of sound.
- WAV** Standard digital audio file format used for storing waveform data; allows audio recordings to be saved with different sampling rates and bitrates; often saved in a 44.1 KHz, 16-bit, stereo format, which is the standard format used for CD audio. Wave files are not compressed, and are therefore *lossless*. Wave files generally end with a .wav extension.
- waveform overview** The waveform overview shows the waveform envelope of the entire track, and is useful because they allow DJs to see breakdowns far in advance.
- waveform summary** The waveform summary shows the waveform envelope of the track near the current playback position.
- Zulip** *Zulip* is a powerful, open source group chat application that combines the immediacy of real-time chat with the productivity benefits of threaded conversations. The Mixxx Zulip Chat can be found at <https://mixxx.zulipchat.com> .