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2026-04-20



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Mix effects (full project)

Per-track mixer, mute/solo, trim, and MIDI details

MIDI ☐ ☐

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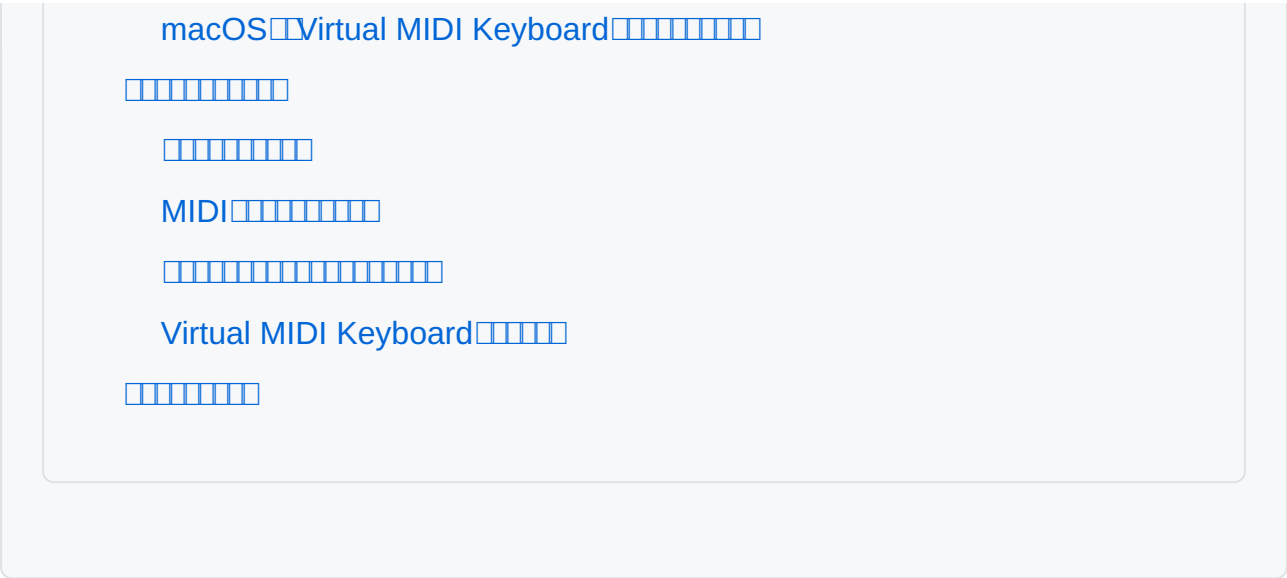
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Musician's Canvas

Musician's CanvasPC
MIDIWAVFLAC
Virtual MIDI KeyboardMIDI

Musician's CanvasDAW

- MIDI
-
- SoundFontFluidSynth MIDI
-
- /
-
- WAVFLAC
-
- 18EnglishDeutschEspañolFrançaisJapanesePortuguêsChineseРусскийSvenskaSuomiDanskNorskPolskiΕλληνικάGaeilgeCymraegPirate
- Virtual MIDI Keyboard



musicians_canvas

```
./musicians_canvas
```














```
project.json
```



1. : Project Location
2. + Add Track
3. ☐ Options



- **Open Project:** File > Open Project  — 
- **Save Project:** File > Save Project  — 

- **Project Settings:** Project > Project Settings  — 

- **Configuration:** Settings > Configuration  — 
- **Metronome Settings:** 

- Options
- Options

[illegible][illegible]

- `uint8_t`: `uint8_t` array of 16 elements
- `uint16_t`: `uint16_t` array of 16 elements, 1 `uint16_t` element, 1 `uint16_t` element, 1 `uint16_t` element
- `uint32_t`: `uint32_t` array of 16 elements, 1 `uint32_t` element, 1 `uint32_t` element, 1 `uint32_t` element
- **Options** `uint8_t` `uint8_t` array of 16 elements
- `uint8_t`: `uint8_t` array of 16 elements, MIDI `uint8_t` array of 16 elements
- `uint8_t` (x): `uint8_t` array of 16 elements

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1	
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[illegible]

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-  No audio recorded
- **MIDI**  A0 C8 
 MIDI  No MIDI data recorded

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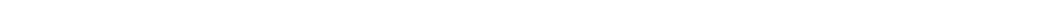


1. 
2.  Arm 
3. **Record** 
4.  3  Get ready... 3  2  1 
5.  Recording 
6. **Stop** 

Diagram illustrating the structure of a 16-bit word. The word is divided into two 8-bit halves. The 10th bit (from the left) is labeled 'FLAC'.

[illegible][illegible]

Options

[illegible]

- 
- \equiv 
- 
1ch
- OK 

████████████████████SRC████████████████████ project.json audioEffectChain ██████████
██

Mix effects (full project)

Project → **Project Settings** → **Mix Effects** lets you build the same kind of ordered effect chain as **Track effects** (**Reverb**, **Chorus**, **Flanger**, **Overdrive / distortion**, **Amp & cabinet**, **Vibrato (Tremolo)**), but applied to the **entire mixed program**: when you press **Play** to hear all enabled tracks together, and when you export with **Mix tracks to file** (toolbar or **Tools** menu). The chain is saved in `project.json` under `projectSettings` → `mixEffectChain`.

Project → **Project Settings** → **Aux / Send Bus** configures a **shared effect chain** fed by each track's **Aux** send slider (on the track row). The dry mix of all tracks is summed, each track's post-gain/post-pan signal is scaled by its **Aux** level and sent through this bus, then the **wet aux** output is added back to the dry sum **before Mix Effects** run. Use it for a single shared reverb/delay while keeping per-track insert effects independent.

To reduce harsh [digital clipping](#) when processing pushes peaks toward full scale, the effect engine applies a **soft limiter** to normalized float samples immediately before conversion to 16-bit PCM. The **EffectWidget** base class documents `guardFloatSampleForInt16Pcm()` and `softLimitFloatSampleForInt16Pcm()` for any new real-time code that writes to 16-bit audio.

Per-track mixer, mute/solo, trim, and MIDI details

Each track row includes a compact **mixer strip**:

- **Gain**: Per-track level in decibels (the slider uses tenths of a dB; 0 dB = unity gain).
- **Pan**: Stereo placement (-100 = full left, +100 = full right).
- **Aux**: Send amount (0–100%) into the project **Aux / Send Bus** (see above).
- **Mute**: Silences the track in the mix without disabling it in the arrange view.
- **Solo**: If **any** track has **Solo** enabled, **only** soloed tracks are heard (unless they are also muted).

Options → **Track Configuration** also offers **Clip trim (non-destructive)**: **Trim start** and **Trim end** skip that many seconds from the beginning and end of the clip for **playback**, **mix**, and **export** without deleting the underlying recording.

.mid

Undo

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- MIDI

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2

- # Settings

Project > Project Settings > Audio

[illegible]

[illegible]

☐ USB ☐ Musician's
Canvas ☐

MIDI ☐ ☐

- Options MIDI
- Settings > Configuration > MIDI MIDI
- Record
- MIDI
- Stop

[illegible]

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Musician's Canvas 



- [illegible]

3

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Play

Diagram illustrating the layout of data segments (FLAC, MIDI, FluidSynth) across two rows of blocks.

Stop

Tools > Mix tracks to file (Ctrl+M)

-
-

MIDI

Settings > Configuration (Ctrl+,)

General

- Theme:
- Musician's Canvas

Display

- LED

Language

- ☐ System Default ☐ English ☐ Deutsch (German) ☐ Español (Spanish) ☐ Français (French) ☐ Japanese ☐ Português (Brazilian Portuguese) ☐ Chinese (Traditional) ☐ Chinese (Simplified) ☐ Dansk (Danish) ☐ Ελληνικά (Greek) ☐ Gaeilge (Irish) ☐ Norsk (Norwegian) ☐ Polski (Polish) ☐ Русский (Russian) ☐ Suomi (Finnish) ☐ Svenska (Swedish) ☐ Cymraeg (Welsh) ☐ Pirate ☐

MIDI

- MIDI Output Device:** ☐ FluidSynth ☐ MIDI ☐ MIDI ☐ ☐ Refresh
- SoundFont:** MIDI ☐ .sf2 SoundFont ☐ Linux ☐ fluid-soundfont-gm ☐ SoundFont ☐ Windows ☐ macOS ☐ SoundFont ☐

MIDI

Audio

- Audio Input Device:** ☐
- Audio Output Device:** ☐

Project > Project Settings (Ctrl+P) ☐ SoundFont ☐ project.json ☐

☐ MIDI

MIDI

- MIDI Device:** ☐ MIDI ☐
- SoundFont:** ☐ SoundFont ☐
- Refresh:** ☐ MIDI ☐

Audio

- **Audio Input Device:**
- **Recording capture backend** ☐ PortAudio ☐
- **PortAudio (native input):** ☐ Audacity ☐
- **Qt Multimedia:** Qt ☐
- **PortAudio Input Device:** PortAudio PortAudio
- **Audio Output Device:**

- **Sample rate:** 8000 Hz 192000 Hz (native)
 (resampled) Musician's
Canvas
- **Channels:**

Mix Effects tab

The **Mix Effects** tab is a scrollable list with the same controls as **Track effects (Add effect...**, drag \equiv to reorder, \times to remove). Processing order is **top to bottom** on the **combined** mix of all enabled tracks. These effects run during **whole-project playback** and when **mixing to a single WAV or FLAC file**; they are **not** baked into individual track files on disk. An empty list leaves the mixed signal unchanged aside from the mixer's own level handling.

Aux / Send Bus tab

Configure the **shared aux effect chain** (same effect types as track inserts). Each track's **Aux** slider on the track row controls how much of that track's signal is sent through this bus; the wet aux return is summed with the dry mix **before Mix Effects** are applied.

□□□□

File□□□□

□□□□□	□□□□□□	□□
Save Project	Ctrl+S	□□□□□□□□□□□□□□
Open Project	Ctrl+O	□□□□□□□□□□□□□□
Close	Ctrl+Q	□□□□□□□□□

Project□□□□

□□□□□	□□□□□□	□□
Project Settings	Ctrl+P	□□□□□□□ Aux / Send Bus □□□□
Tempo map		□□□□□□□BPM□□□□□□□□□□□MIDI □□□□□□
Add Demo Data to Selected Track		□□□□□□□MIDI□□□□□□

Edit□□□□

□□□□□	□□□□□□	□□
Undo	Ctrl+Z	□□□□□□□□□□□□□□
Redo	Ctrl+Shift+Z	□□□□

Settings□□□□

□□□□□	□□□□□□	□□
Configuration	Ctrl+,	□□□□□□□□□□□□□□

Tools

Mix tracks to file	Ctrl+M	
Export stems to folder		WAV Mix Effects
Recording options		
Quantize MIDI		MIDI MIDI
Add drum track	D	MIDI .mid
Virtual MIDI Keyboard		

Help

Manual	Alt+M	PDF
About		

Ctrl+S	
Ctrl+Z	
Ctrl+Shift+Z	
Ctrl+O	
Ctrl+M	
D	Tools
Ctrl+P	
Ctrl+,	/ Configuration
Alt+M	PDF Help
Ctrl+Q / Alt+F4	

Tools → Add drum track [] [] [] [] [] [] D [] General MIDI [] [] [] [] 10 [] [] [] [] [] [] 9 [] MIDI [] [] [] [] [] []
[] [] [] [] [] Drums [] [] [] [] [] [] [] []

-  BPM 
-  BPM  120 BPM 

 Audient MDrummer Reddit CS229 PDF

Virtual MIDI Keyboard

Virtual MIDI Keyboard MIDI

virtual_midi_keyboard Tools > Virtual MIDI Keyboard

Virtual MIDI Keyboard

-
-
- MIDI FluidSynth
- MIDI
- 10%--200%
- SoundFont
- MIDI/General MIDI SoundFont
- /
- 3+5
- MIDI CC#70--127

- Volume:** MIDI CC#70--127
- Octave:** <> 3+5
- Chorus/Effect:** / MIDI CC#931--127
Apply
- MIDI** 1--16 MIDI
1 SoundFont
bank/program
- MIDI MIDI
MIDI 10 General MIDI
- MIDI FluidSynth SoundFont
Bank: Program Name MIDI 128 General MIDI

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[illegible]

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Z	C
S	C#/Db
X	D
D	D#/Eb
C	E
V	F
G	F#/Gb
B	G
H	G#/Ab
N	A
J	A#/Bb
M	B

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MIDI

- **MIDI Output Device:** FluidSynth
- **MIDI Input Device:**
- **Synthesizer Volume (Master Gain):** 10%--200%
- **SoundFont:** .sf2 SoundFont
- **Refresh:** MIDI

Audio

- **Audio Output Device:**

Language

- Musician's Canvas

Virtual MIDI Keyboard

Ctrl+,	
Ctrl+U	/
Ctrl+Q	

FAQ

MIDI

-
- Options**
- MIDI**
- Settings > Configuration > MIDI** MIDI SoundFont .sf2
- Arm** Arm 1
- Record** Stop

File > Save Project .mid project.json

MIDI

SoundFont FluidSynth Settings > Configuration > MIDI
Project > Project Settings .sf2 Linux SoundFont
Windows macOS SoundFont

Virtual MIDI Keyboard Musician's Canvas

Tools > Virtual MIDI Keyboard Musician's
Canvas MIDI OS MIDI Musician's Canvas
MIDI

Configuration Project Settings

Settings > Configuration MIDI/ SoundFont Project >
Project Settings project.json
Configuration

.wav .flac

< .flac / \ : * ? " < > |
project.json MIDI < .mid project.json

MIDI

WAV < .flac FLAC
ID

2

Arm 1

Windows ASIO

Windows ASIO ASIO4ALL

macOS Virtual MIDI Keyboard

.app Virtual MIDI Keyboard Musician's Canvas.app Contents/
MacOS/1 Tools > Virtual MIDI Keyboard

- Settings > Configuration > Audio
- Linux PipeWire PulseAudio amixer
- Windows ASIO ASIO4ALL
ASIO Musician's Canvas Windows ASIO







MIDI

- Settings > Configuration > MIDI SoundFont .sf2
- Linux fluid-soundfont-gm SoundFont
- Windows macOS SoundFont



- Musician's Canvas
- USB 32000 Hz
- Qt Multimedia Project Settings > Audio PortAudio

Virtual MIDI Keyboard

- PipeWire   libpipewire-0.3-dev 
- FluidSynth 
- SoundFont 
- 



Linux macOS Windows **README**