
pysoundio Documentation

Release 2.0.0

Joe Todd

Feb 26, 2021

Contents

1	Installation	3
2	Examples	5
3	Testing	7
4	Advanced	9
5	Contributing	11
6	Backends	13
7	Formats	15
8	API Reference	17
9	Changelog	19
10	Index	21

A simple Pythonic interface for [libsoundio](#).

`libsoundio` is a robust, cross-platform solution for real-time audio. It performs no buffering or processing on your behalf, instead exposing the raw power of the underlying backend.

CHAPTER 1

Installation

You can use `pip` to download and install the latest release with a single command.

```
pip3 install pysoundio
```


See examples directory.

Some of the examples require [PySoundFile](#)

```
pip3 install soundfile
```

On Windows and OS X, this will also install the library `libsndfile`. On Linux you will need to install the library as well.

- Ubuntu / Debian

```
apt-get install libsndfile1
```

`devices.py`

List the available input and output devices on the system and their properties.

```
python devices.py
```

`record.py`

Records data from microphone and saves to a wav file. Supports specifying backend, device, sample rate, block size.

```
python record.py out.wav --device 0 --rate 44100
```

`play.py`

Plays a wav file through the speakers. Supports specifying backend, device, block size.

```
python play.py in.wav --device 0
```

`sine.py`

Plays a sine wave through the speakers. Supports specifying backend, device, sample rate, block size.

```
python sine.py --freq 442
```


CHAPTER 3

Testing

To run the test suite.

```
tox -r
```


CHAPTER 4

Advanced

If you wish to use your own build of libsoundio (perhaps you want Jack enabled) then build from source and install it globally and reinstall pysoundio.

Note: PySoundIo only works with libsoundio versions $\geq 1.1.0$

If you find any bugs or other things that need improvement, please create an issue or a pull request at <https://github.com/joextodd/pysoundio/>. Contributions are always welcome!

You should get the latest version from [GitHub](#):

```
git clone https://github.com/joextodd/pysoundio.git
cd pysoundio
```

To install the package for development, first build the library

```
python3 pysoundio/builder/soundio.py
```

and then install with pip.

```
pip3 install .
```

Before submitting a pull request, make sure all tests are passing, and all of the example scripts run as they should.

If you make changes to the documentation, you can locally re-create the HTML pages using [Sphinx](#). You can install it and the read the docs theme with:

```
pip3 install -r docs/requirements.txt
```

To create the HTML pages, use:

```
python3 setup.py build_sphinx
```

The generated files will be available in the directory `docs/_build/html`.

CHAPTER 6

Backends

Value	Backend Description
pysoundio.SoundIoBackendJack	JACK Audio
pysoundio.SoundIoBackendPulseAudio	Pulse Audio
pysoundio.SoundIoBackendAlsa	ALSA Audio
pysoundio.SoundIoBackendCoreAudio	Core Audio
pysoundio.SoundIoBackendWasapi	WASAPI Audio
pysoundio.SoundIoBackendDummy	Dummy backend

CHAPTER 7

Formats

Value	Format Description
pysoundio.SoundIoFormatS8	Signed 8 bit
pysoundio.SoundIoFormatU8	Unsigned 8 bit
pysoundio.SoundIoFormatS16LE	Signed 16 bit Little Endian
pysoundio.SoundIoFormatS16BE	Signed 16 bit Big Endian
pysoundio.SoundIoFormatU16LE	Unsigned 16 bit Little Endian
pysoundio.SoundIoFormatU16BE	Unsigned 16 bit Little Endian
pysoundio.SoundIoFormatS24LE	Signed 24 bit Little Endian using low three bytes in 32-bit word
pysoundio.SoundIoFormatS24BE	Signed 24 bit Big Endian using low three bytes in 32-bit word
pysoundio.SoundIoFormatU24LE	Unsigned 24 bit Little Endian using low three bytes in 32-bit word
pysoundio.SoundIoFormatU24BE	Unsigned 24 bit Big Endian using low three bytes in 32-bit word
pysoundio.SoundIoFormatS32LE	Signed 32 bit Little Endian
pysoundio.SoundIoFormatS32BE	Signed 32 bit Big Endian
pysoundio.SoundIoFormatU32LE	Unsigned 32 bit Little Endian
pysoundio.SoundIoFormatU32BE	Unsigned 32 bit Big Endian
pysoundio.SoundIoFormatFloat32LE	Float 32 bit Little Endian, Range -1.0 to 1.0
pysoundio.SoundIoFormatFloat32BE	Float 32 bit Big Endian, Range -1.0 to 1.0
pysoundio.SoundIoFormatFloat64LE	Float 64 bit Little Endian, Range -1.0 to 1.0
pysoundio.SoundIoFormatFloat64BE	Float 64 bit Big Endian, Range -1.0 to 1.0

CHAPTER 8

API Reference

v2.0.0

- Updated to use CFFI
- Improved performance
- Bundled in libraries for macOS, Linux, Windows and Raspbian
- Fixes issue where multiple instances cause a crash
- Added command line scripts for examples

v1.1.0

- Added support for libsoundio v2.0.0
- Added support for Windows (thanks @cameronmaske)
- Fixes for malloc errors

v1.0.0

- Initial release

CHAPTER 10

Index

- genindex