
tangentsky Documentation

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The *pynix* python package provides access to a number of linux system APIs that are not part of the python standard library.

CHAPTER 1

Installation

1.1 Install with pip

The easiest way to install `pynix` is from pypi.org using `pip`. The project name on `pypi.org` is `libpynix`, so the canonical installation command would be:

```
pip install libpynix
```

However, depending on your distribution, you may need:

```
sudo pip install libpynix
```

if you wish to in a system global location (e.g. `/usr/local/lib/python3.6/dist-packages`), or:

```
pip install --user libpynix
```

if you wish to install in a user global location (e.g. `~/.local/lib/python3.6/site-packages`) which I would probably recommend for most users.

1.2 Install from source

You can also install from source with `pip`. You can download a release package from [github](https://github.com) or [pypi](https://pypi.org) and then install it directly with `pip`. For example:

```
pip install libpynix-<version>.tar.gz
```

Note that the release packages on `github` are automatically generated from `git` tags which are the same commit used to generate the corresponding version package on `pypi.org`. So whether you install a particular version from `github` or `pypi` shouldn't matter. They should be the exact same file.

`Pip` can also install directly from `github`. For example:

```
pip install git+https://github.com/cheshirekow/pynix.git
```

If you wish to test a pre-release or dev package from a branch called `foobar` you can install it with:

```
pip install "git+https://github.com/cheshirekow/pynix.git@foobar"
```


CHAPTER 2

Implemented APIs

Linux APIs that are implemented in pynix are:

- `epoll`
- `gettid`
- `inotify`
- `mount`
- `prctl`
- `getres[ug]id`
- `setres[ug]id`
- `signalfd`
- `sigprocmask`
- `sigset`
- `unshare`

3.1 v0.1 series

3.1.1 v0.1.0

Initial release of the pynix package. Provides support for the following linux APIs:

- `epoll`
- `gettid`
- `inotify`
- `mount`
- `prctl`
- `[gs]etres[ug]id`
- `signalfd`
- `sigprocmask`
- `sigset`
- `unshare`

4.1 v0.1 series

4.1.1 v0.1.0

dev0:

- Initial release

5.1 Module contents

class `pynix.EpollEvent`

Bases: `object`

Wraps *struct epoll_event* see <https://www.man7.org/linux/man-pages/man7/epoll.7.html>

data

user data stored with event entry

events

bitmask of available events

class `pynix.EpollEventBuf`

Bases: `object`

`pynix.EpollEvent(int capacity)` Stores an array of *struct epoll_event*

see <https://www.man7.org/linux/man-pages/man7/epoll.7.html>

capacity

number of epollevents slots that can be filled

size

number of epoll events filled

class `pynix.EpollEventBufIter`

Bases: `object`

`pynix.EpollEventIter(pynix.EpollEventBuf buffer)` Iterator over events in an eventbuf*

see <https://www.man7.org/linux/man-pages/man7/epoll.7.html>

class `pynix.SigInfo`

Bases: `object`

Wraps *struct signalfd_siginfo*

ssi_addr
Address that generated signal (for hardware-generated signals)

ssi_band
Band event (SIGIO)

ssi_code
Signal code

ssi_errno
Error number (unused)

ssi_fd
File descriptor (SIGIO)

ssi_int
Integer sent by sigqueue(3)

ssi_overrun
POSIX timer overrun count

ssi_pid
PID of sender

ssi_ptr
Pointer sent by sigqueue(3)

ssi_signo
Signal number

ssi_status
Exit status or signal (SIGCHLD)

ssi_stime
System CPU time consumed (SIGCHLD)

ssi_tid
Kernel timer ID (POSIX timers)

ssi_trapno
Trap number that caused signal

ssi_uid
Real UID of sender

ssi_utime
User CPU time consumed (SIGCHLD)

```
class pynix.SigSet
    Bases: object

    Wraps sigset_t see: http://man7.org/linux/man-pages/man3/sigsetops.3.html

    add()

    delete()

    empty()

    fill()

    ismember()

pynix.chroot()

pynix.epoll_create()
```



```
pynix.epoll_ctl()  
pynix.epoll_pwait()  
pynix.epoll_wait()  
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    Bases: Exception  
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pynix.getresuid()  
pynix.gettid()  
pynix.inotify_add_watch()  
pynix.inotify_init()  
pynix.inotify_read()  
pynix.inotify_rm_watch()  
pynix.mount()  
pynix.prctl()  
pynix.setresgid()  
pynix.setresuid()  
pynix.signalfd()  
pynix.signalfd_read()  
pynix.sigprocmask()  
pynix.unshare()
```


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