:mod:`select` --- Waiting for I/O completion

System Message: ERROR/3 (`D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst`, line 1); *backlink*

Unknown interpreted text role "mod".

System Message: ERROR/3 (`D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst`, line 4)

Unknown directive type "module".

```
.. module:: select
   :synopsis: Wait for I/O completion on multiple streams.
```

This module provides access to the :c:func:`select` and :c:func:`poll` functions available in most operating systems, :c:func:`devpoll` available on Solaris and derivatives, :c:func:`epoll` available on Linux 2.5+ and :c:func:`kqueue` available on most BSD. Note that on Windows, it only works for sockets; on other operating systems, it also works for other file types (in particular, on Unix, it works on pipes). It cannot be used on regular files to determine whether a file has grown since it was last read.

System Message: ERROR/3 (`D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst`, line 9); *backlink*

Unknown interpreted text role "c:func".

System Message: ERROR/3 (`D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst`, line 9); *backlink*

Unknown interpreted text role "c:func".

System Message: ERROR/3 (`D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst`, line 9); *backlink*

Unknown interpreted text role "c:func".

System Message: ERROR/3 (`D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst`, line 9); *backlink*

Unknown interpreted text role "c:func".

System Message: ERROR/3 (`D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst`, line 9); *backlink*

Unknown interpreted text role "c:func".

Note

The :mod:`selectors` module allows high-level and efficient I/O multiplexing, built upon the :mod:`select` module primitives. Users are encouraged to use the :mod:`selectors` module instead, unless they want precise control over the OS-level primitives used.

System Message: ERROR/3 (`D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst`, line 20); *backlink*

Unknown interpreted text role "mod".

System Message: ERROR/3 (`D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst`, line 20); *backlink*

Unknown interpreted text role "mod".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 20); *backlink*

Unknown interpreted text role "mod".

The module defines the following:

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 29)

Unknown directive type "exception".

```
.. exception:: error

   A deprecated alias of :exc:`OSError`.

   .. versionchanged:: 3.3
      Following :pep:`3151`, this class was made an alias of :exc:`OSError`.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 37)

Unknown directive type "function".

```
.. function:: devpoll()

   (Only supported on Solaris and derivatives.)  Returns a ``/dev/poll``
   polling object; see section :ref:`devpoll-objects` below for the
   methods supported by devpoll objects.

   :c:func:`devpoll` objects are linked to the number of file
   descriptors allowed at the time of instantiation. If your program
   reduces this value, :c:func:`devpoll` will fail. If your program
   increases this value, :c:func:`devpoll` may return an
   incomplete list of active file descriptors.

   The new file descriptor is :ref:`non-inheritable <fd_inheritance>`.

   .. versionadded:: 3.3

   .. versionchanged:: 3.4
      The new file descriptor is now non-inheritable.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 56)

Unknown directive type "function".

```
.. function:: epoll(sizehint=-1, flags=0)

   (Only supported on Linux 2.5.44 and newer.) Return an edge polling object,
   which can be used as Edge or Level Triggered interface for I/O
   events.

   *sizehint* informs epoll about the expected number of events to be
   registered.  It must be positive, or `-1` to use the default. It is only
   used on older systems where :c:func:`epoll_create1` is not available;
   otherwise it has no effect (though its value is still checked).

   *flags* is deprecated and completely ignored.  However, when supplied, its
   value must be ``0`` or ``select.EPOLL_CLOEXEC``, otherwise ``OSError`` is
   raised.

   See the :ref:`epoll-objects` section below for the methods supported by
   epolling objects.

   ``epoll`` objects support the context management protocol: when used in a
   :keyword:`with` statement, the new file descriptor is automatically closed
   at the end of the block.

   The new file descriptor is :ref:`non-inheritable <fd_inheritance>`.
```

```
   .. versionchanged:: 3.3
      Added the *flags* parameter.

   .. versionchanged:: 3.4
      Support for the :keyword:`with` statement was added.
      The new file descriptor is now non-inheritable.

   .. deprecated:: 3.4
      The *flags* parameter.  ``select.EPOLL_CLOEXEC`` is used by default now.
      Use :func:`os.set_inheritable` to make the file descriptor inheritable.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 92)

Unknown directive type "function".

```
.. function:: poll()

   (Not supported by all operating systems.)  Returns a polling object, which
   supports registering and unregistering file descriptors, and then polling them
   for I/O events; see section :ref:`poll-objects` below for the methods supported
   by polling objects.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 100)

Unknown directive type "function".

```
.. function:: kqueue()

   (Only supported on BSD.)  Returns a kernel queue object; see section
   :ref:`kqueue-objects` below for the methods supported by kqueue objects.

   The new file descriptor is :ref:`non-inheritable <fd_inheritance>`.

   .. versionchanged:: 3.4
      The new file descriptor is now non-inheritable.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 111)

Unknown directive type "function".

```
.. function:: kevent(ident, filter=KQ_FILTER_READ, flags=KQ_EV_ADD, fflags=0, data=0, udata=0)

   (Only supported on BSD.)  Returns a kernel event object; see section
   :ref:`kevent-objects` below for the methods supported by kevent objects.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 117)

Unknown directive type "function".

```
.. function:: select(rlist, wlist, xlist[, timeout])

   This is a straightforward interface to the Unix :c:func:`select` system call.
   The first three arguments are iterables of 'waitable objects': either
   integers representing file descriptors or objects with a parameterless method
   named :meth:`~io.IOBase.fileno` returning such an integer:

   * *rlist*: wait until ready for reading
   * *wlist*: wait until ready for writing
   * *xlist*: wait for an "exceptional condition" (see the manual page for what
     your system considers such a condition)

   Empty iterables are allowed, but acceptance of three empty iterables is
   platform-dependent. (It is known to work on Unix but not on Windows.)  The
   optional *timeout* argument specifies a time-out as a floating point number
```

```
in seconds.  When the *timeout* argument is omitted the function blocks until
at least one file descriptor is ready.  A time-out value of zero specifies a
poll and never blocks.

The return value is a triple of lists of objects that are ready: subsets of the
first three arguments.  When the time-out is reached without a file descriptor
becoming ready, three empty lists are returned.

.. index::
   single: socket() (in module socket)
   single: popen() (in module os)

Among the acceptable object types in the iterables are Python :term:`file
objects <file object>` (e.g. ``sys.stdin``, or objects returned by
:func:`open` or :func:`os.popen`), socket objects returned by
:func:`socket.socket`.  You may also define a :dfn:`wrapper` class yourself,
as long as it has an appropriate :meth:`~io.IOBase.fileno` method (that
really returns a file descriptor, not just a random integer).

.. note::

   .. index:: single: WinSock

   File objects on Windows are not acceptable, but sockets are.  On Windows,
   the underlying :c:func:`select` function is provided by the WinSock
   library, and does not handle file descriptors that don't originate from
   WinSock.

.. versionchanged:: 3.5
   The function is now retried with a recomputed timeout when interrupted by
   a signal, except if the signal handler raises an exception (see
   :pep:`475` for the rationale), instead of raising
   :exc:`InterruptedError`.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 167)

Unknown directive type "attribute".

```
.. attribute:: PIPE_BUF

   The minimum number of bytes which can be written without blocking to a pipe
   when the pipe has been reported as ready for writing by :func:`~select.select`,
   :func:`poll` or another interface in this module.  This doesn't apply
   to other kind of file-like objects such as sockets.

   This value is guaranteed by POSIX to be at least 512.

   .. availability:: Unix

   .. versionadded:: 3.2
```

`/dev/poll` Polling Objects

Solaris and derivatives have `/dev/poll`. While :c:func:`select` is O(highest file descriptor) and :c:func:`poll` is O(number of file descriptors), `/dev/poll` is O(active file descriptors).

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 186); *backlink*

Unknown interpreted text role "c:func".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 186); *backlink*

Unknown interpreted text role "c:func".

`/dev/poll` behaviour is very close to the standard :c:func:`poll` object.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 190); *backlink*

Unknown interpreted text role "c:func".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 194)

Unknown directive type "method".

```
.. method:: devpoll.close()

   Close the file descriptor of the polling object.

   .. versionadded:: 3.4
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 201)

Unknown directive type "attribute".

```
.. attribute:: devpoll.closed

   ``True`` if the polling object is closed.

   .. versionadded:: 3.4
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 208)

Unknown directive type "method".

```
.. method:: devpoll.fileno()

   Return the file descriptor number of the polling object.

   .. versionadded:: 3.4
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 215)

Unknown directive type "method".

```
.. method:: devpoll.register(fd[, eventmask])

   Register a file descriptor with the polling object.  Future calls to the
   :meth:`poll` method will then check whether the file descriptor has any
   pending I/O events.  *fd* can be either an integer, or an object with a
   :meth:`~io.IOBase.fileno` method that returns an integer.  File objects
   implement :meth:`!fileno`, so they can also be used as the argument.

   *eventmask* is an optional bitmask describing the type of events you want to
   check for. The constants are the same that with :c:func:`poll`
   object. The default value is a combination of the constants :const:`POLLIN`,
   :const:`POLLPRI`, and :const:`POLLOUT`.

   .. warning::

      Registering a file descriptor that's already registered is not an
      error, but the result is undefined. The appropriate action is to
      unregister or modify it first. This is an important difference
      compared with :c:func:`poll`.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 236)

Unknown directive type "method".

```
.. method:: devpoll.modify(fd[, eventmask])
```

```
This method does an :meth:`unregister` followed by a
:meth:`register`. It is (a bit) more efficient that doing the same
explicitly.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 243)

Unknown directive type "method".

```
.. method:: devpoll.unregister(fd)

   Remove a file descriptor being tracked by a polling object.  Just like the
   :meth:`register` method, *fd* can be an integer or an object with a
   :meth:`~io.IOBase.fileno` method that returns an integer.

   Attempting to remove a file descriptor that was never registered is
   safely ignored.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 253)

Unknown directive type "method".

```
.. method:: devpoll.poll([timeout])

   Polls the set of registered file descriptors, and returns a possibly-empty list
   containing ``(fd, event)`` 2-tuples for the descriptors that have events or
   errors to report. *fd* is the file descriptor, and *event* is a bitmask with
   bits set for the reported events for that descriptor --- :const:`POLLIN` for
   waiting input, :const:`POLLOUT` to indicate that the descriptor can be written
   to, and so forth. An empty list indicates that the call timed out and no file
   descriptors had any events to report. If *timeout* is given, it specifies the
   length of time in milliseconds which the system will wait for events before
   returning. If *timeout* is omitted, -1, or :const:`None`, the call will
   block until there is an event for this poll object.

   .. versionchanged:: 3.5
      The function is now retried with a recomputed timeout when interrupted by
      a signal, except if the signal handler raises an exception (see
      :pep:`475` for the rationale), instead of raising
      :exc:`InterruptedError`.
```

Edge and Level Trigger Polling (epoll) Objects

https://linux.die.net/man/4/epoll

eventmask

Constant	Meaning
:const:`EPOLLIN` **System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 286); *backlink*** Unknown interpreted text role "const".	Available for read

Constant	Meaning
:const:`EPOLLOUT` **System Message: ERROR/3** (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 288); *backlink* Unknown interpreted text role "const".	Available for write
:const:`EPOLLPRI` **System Message: ERROR/3** (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 290); *backlink* Unknown interpreted text role "const".	Urgent data for read
:const:`EPOLLERR` **System Message: ERROR/3** (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 292); *backlink* Unknown interpreted text role "const".	Error condition happened on the assoc. fd

Constant	Meaning
:const:`EPOLLHUP` **System Message: ERROR/3** (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 294); *backlink* Unknown interpreted text role "const".	Hang up happened on the assoc. fd
:const:`EPOLLET` **System Message: ERROR/3** (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 296); *backlink* Unknown interpreted text role "const".	Set Edge Trigger behavior, the default is Level Trigger behavior
:const:`EPOLLONESHOT` **System Message: ERROR/3** (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 299); *backlink* Unknown interpreted text role "const".	Set one-shot behavior. After one event is pulled out, the fd is internally disabled
:const:`EPOLLEXCLUSIVE` **System Message: ERROR/3** (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 302); *backlink* Unknown interpreted text role "const".	Wake only one epoll object when the associated fd has an event. The default (if this flag is not set) is to wake all epoll objects polling on a fd.

Constant	Meaning
:const:`EPOLLRDHUP` **System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 307); *backlink*** Unknown interpreted text role "const".	Stream socket peer closed connection or shut down writing half of connection.
:const:`EPOLLRDNORM` **System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 310); *backlink*** Unknown interpreted text role "const".	Equivalent to :const:`EPOLLIN` **System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 310); *backlink*** Unknown interpreted text role "const".
:const:`EPOLLRDBAND` **System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 312); *backlink*** Unknown interpreted text role "const".	Priority data band can be read.

Constant	Meaning
:const:`EPOLLWRNORM` **System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 314); *backlink*** Unknown interpreted text role "const".	Equivalent to :const:`EPOLLOUT` **System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 314); *backlink*** Unknown interpreted text role "const".
:const:`EPOLLWRBAND` **System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 316); *backlink*** Unknown interpreted text role "const".	Priority data may be written.
:const:`EPOLLMSG` **System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 318); *backlink*** Unknown interpreted text role "const".	Ignored.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 320)

Unknown directive type "versionadded".

```
.. versionadded:: 3.6
   :const:`EPOLLEXCLUSIVE` was added.  It's only supported by Linux Kernel 4.5
   or later.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 324)

Unknown directive type "method".

```
.. method:: epoll.close()
```

```
   Close the control file descriptor of the epoll object.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 329)

Unknown directive type "attribute".

```
.. attribute:: epoll.closed

   ``True`` if the epoll object is closed.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 334)

Unknown directive type "method".

```
.. method:: epoll.fileno()

   Return the file descriptor number of the control fd.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 339)

Unknown directive type "method".

```
.. method:: epoll.fromfd(fd)

   Create an epoll object from a given file descriptor.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 344)

Unknown directive type "method".

```
.. method:: epoll.register(fd[, eventmask])

   Register a fd descriptor with the epoll object.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 349)

Unknown directive type "method".

```
.. method:: epoll.modify(fd, eventmask)

   Modify a registered file descriptor.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 354)

Unknown directive type "method".

```
.. method:: epoll.unregister(fd)

   Remove a registered file descriptor from the epoll object.

   .. versionchanged:: 3.9
      The method no longer ignores the :data:`~errno.EBADF` error.
```

System Message: ERROR/3 (`D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst`, line 362)

Unknown directive type "method".

```
.. method:: epoll.poll(timeout=None, maxevents=-1)

   Wait for events. timeout in seconds (float)

   .. versionchanged:: 3.5
      The function is now retried with a recomputed timeout when interrupted by
      a signal, except if the signal handler raises an exception (see
      :pep:`475` for the rationale), instead of raising
      :exc:`InterruptedError`.
```

Polling Objects

The :c:func:`poll` system call, supported on most Unix systems, provides better scalability for network servers that service many, many clients at the same time. :c:func:`poll` scales better because the system call only requires listing the file descriptors of interest, while :c:func:`select` builds a bitmap, turns on bits for the fds of interest, and then afterward the whole bitmap has to be linearly scanned again. :c:func:`select` is O(highest file descriptor), while :c:func:`poll` is O(number of file descriptors).

System Message: ERROR/3 (`D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst`, line 378); *backlink*

Unknown interpreted text role "c:func".

System Message: ERROR/3 (`D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst`, line 378); *backlink*

Unknown interpreted text role "c:func".

System Message: ERROR/3 (`D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst`, line 378); *backlink*

Unknown interpreted text role "c:func".

System Message: ERROR/3 (`D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst`, line 378); *backlink*

Unknown interpreted text role "c:func".

System Message: ERROR/3 (`D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst`, line 378); *backlink*

Unknown interpreted text role "c:func".

System Message: ERROR/3 (`D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst`, line 387)

Unknown directive type "method".

```
.. method:: poll.register(fd[, eventmask])

   Register a file descriptor with the polling object.  Future calls to the
   :meth:`poll` method will then check whether the file descriptor has any
   pending I/O events.  *fd* can be either an integer, or an object with a
   :meth:`~io.IOBase.fileno` method that returns an integer.  File objects
   implement :meth:`!fileno`, so they can also be used as the argument.

   *eventmask* is an optional bitmask describing the type of events you want to
   check for, and can be a combination of the constants :const:`POLLIN`,
   :const:`POLLPRI`, and :const:`POLLOUT`, described in the table below.  If not
   specified, the default value used will check for all 3 types of events.

   +-------------------+------------------------------------------+
   | Constant          | Meaning                                  |
   +===================+==========================================+
   | :const:`POLLIN`   | There is data to read                    |
```

```
   +-------------------+-----------------------------------------+
   | :const:`POLLPRI`  | There is urgent data to read            |
   +-------------------+-----------------------------------------+
   | :const:`POLLOUT`  | Ready for output: writing will not block |
   +-------------------+-----------------------------------------+
   | :const:`POLLERR`  | Error condition of some sort            |
   +-------------------+-----------------------------------------+
   | :const:`POLLHUP`  | Hung up                                 |
   +-------------------+-----------------------------------------+
   | :const:`POLLRDHUP`| Stream socket peer closed connection, or |
   |                   | shut down writing half of connection    |
   +-------------------+-----------------------------------------+
   | :const:`POLLNVAL` | Invalid request: descriptor not open    |
   +-------------------+-----------------------------------------+

   Registering a file descriptor that's already registered is not an error, and has
   the same effect as registering the descriptor exactly once.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 423)

Unknown directive type "method".

```
.. method:: poll.modify(fd, eventmask)

   Modifies an already registered fd. This has the same effect as
   ``register(fd, eventmask)``.  Attempting to modify a file descriptor
   that was never registered causes an :exc:`OSError` exception with errno
   :const:`ENOENT` to be raised.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 431)

Unknown directive type "method".

```
.. method:: poll.unregister(fd)

   Remove a file descriptor being tracked by a polling object.  Just like the
   :meth:`register` method, *fd* can be an integer or an object with a
   :meth:`~io.IOBase.fileno` method that returns an integer.

   Attempting to remove a file descriptor that was never registered causes a
   :exc:`KeyError` exception to be raised.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 441)

Unknown directive type "method".

```
.. method:: poll.poll([timeout])

   Polls the set of registered file descriptors, and returns a possibly-empty list
   containing ``(fd, event)`` 2-tuples for the descriptors that have events or
   errors to report. *fd* is the file descriptor, and *event* is a bitmask with
   bits set for the reported events for that descriptor --- :const:`POLLIN` for
   waiting input, :const:`POLLOUT` to indicate that the descriptor can be written
   to, and so forth. An empty list indicates that the call timed out and no file
   descriptors had any events to report. If *timeout* is given, it specifies the
   length of time in milliseconds which the system will wait for events before
   returning. If *timeout* is omitted, negative, or :const:`None`, the call will
   block until there is an event for this poll object.

   .. versionchanged:: 3.5
      The function is now retried with a recomputed timeout when interrupted by
      a signal, except if the signal handler raises an exception (see
      :pep:`475` for the rationale), instead of raising
      :exc:`InterruptedError`.
```

Kqueue Objects

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 466)

Unknown directive type "method".

```
.. method:: kqueue.close()

   Close the control file descriptor of the kqueue object.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 471)

Unknown directive type "attribute".

```
.. attribute:: kqueue.closed

   ``True`` if the kqueue object is closed.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 476)

Unknown directive type "method".

```
.. method:: kqueue.fileno()

   Return the file descriptor number of the control fd.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 481)

Unknown directive type "method".

```
.. method:: kqueue.fromfd(fd)

   Create a kqueue object from a given file descriptor.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 486)

Unknown directive type "method".

```
.. method:: kqueue.control(changelist, max_events[, timeout]) -> eventlist

   Low level interface to kevent

   - changelist must be an iterable of kevent objects or ``None``
   - max_events must be 0 or a positive integer
   - timeout in seconds (floats possible); the default is ``None``,
     to wait forever

   .. versionchanged:: 3.5
      The function is now retried with a recomputed timeout when interrupted by
      a signal, except if the signal handler raises an exception (see
      :pep:`475` for the rationale), instead of raising
      :exc:`InterruptedError`.
```

Kevent Objects

https://www.freebsd.org/cgi/man.cgi?query=kqueue&sektion=2

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 509)

Unknown directive type "attribute".

```
.. attribute:: kevent.ident

   Value used to identify the event. The interpretation depends on the filter
   but it's usually the file descriptor. In the constructor ident can either
   be an int or an object with a :meth:`~io.IOBase.fileno` method. kevent
   stores the integer internally.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 516)

Unknown directive type "attribute".

```
.. attribute:: kevent.filter

   Name of the kernel filter.

   +---------------------------+-----------------------------------------+
   | Constant                  | Meaning                                 |
   +===========================+=========================================+
   | :const:`KQ_FILTER_READ`   | Takes a descriptor and returns whenever |
   |                           | there is data available to read         |
   +---------------------------+-----------------------------------------+
   | :const:`KQ_FILTER_WRITE`  | Takes a descriptor and returns whenever |
   |                           | there is data available to write        |
   +---------------------------+-----------------------------------------+
   | :const:`KQ_FILTER_AIO`    | AIO requests                            |
   +---------------------------+-----------------------------------------+
   | :const:`KQ_FILTER_VNODE`  | Returns when one or more of the requested |
   |                           | events watched in *fflag* occurs        |
   +---------------------------+-----------------------------------------+
   | :const:`KQ_FILTER_PROC`   | Watch for events on a process id        |
   +---------------------------+-----------------------------------------+
   | :const:`KQ_FILTER_NETDEV` | Watch for events on a network device    |
   |                           | [not available on macOS]                |
   +---------------------------+-----------------------------------------+
   | :const:`KQ_FILTER_SIGNAL` | Returns whenever the watched signal is  |
   |                           | delivered to the process                |
   +---------------------------+-----------------------------------------+
   | :const:`KQ_FILTER_TIMER`  | Establishes an arbitrary timer          |
   +---------------------------+-----------------------------------------+
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 545)

Unknown directive type "attribute".

```
.. attribute:: kevent.flags

   Filter action.

   +---------------------------+-----------------------------------------+
   | Constant                  | Meaning                                 |
   +===========================+=========================================+
   | :const:`KQ_EV_ADD`        | Adds or modifies an event               |
   +---------------------------+-----------------------------------------+
   | :const:`KQ_EV_DELETE`     | Removes an event from the queue         |
   +---------------------------+-----------------------------------------+
   | :const:`KQ_EV_ENABLE`     | Permitscontrol() to returns the event   |
   +---------------------------+-----------------------------------------+
   | :const:`KQ_EV_DISABLE`    | Disablesevent                           |
   +---------------------------+-----------------------------------------+
   | :const:`KQ_EV_ONESHOT`    | Removes event after first occurrence    |
   +---------------------------+-----------------------------------------+
   | :const:`KQ_EV_CLEAR`      | Reset the state after an event is retrieved |
   +---------------------------+-----------------------------------------+
   | :const:`KQ_EV_SYSFLAGS`   | internal event                          |
   +---------------------------+-----------------------------------------+
   | :const:`KQ_EV_FLAG1`      | internal event                          |
   +---------------------------+-----------------------------------------+
   | :const:`KQ_EV_EOF`        | Filter specific EOF condition           |
   +---------------------------+-----------------------------------------+
   | :const:`KQ_EV_ERROR`      | See return values                       |
   +---------------------------+-----------------------------------------+
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 574)

Unknown directive type "attribute".

```
.. attribute:: kevent.fflags

   Filter specific flags.

   :const:`KQ_FILTER_READ` and  :const:`KQ_FILTER_WRITE` filter flags:

   +-----------------------------+----------------------------------------------+
   | Constant                    | Meaning                                      |
   +=============================+==============================================+
   | :const:`KQ_NOTE_LOWAT`      | low water mark of a socket buffer            |
   +-----------------------------+----------------------------------------------+

   :const:`KQ_FILTER_VNODE` filter flags:

   +-----------------------------+----------------------------------------------+
   | Constant                    | Meaning                                      |
   +=============================+==============================================+
   | :const:`KQ_NOTE_DELETE`     | *unlink()* was called                        |
   +-----------------------------+----------------------------------------------+
   | :const:`KQ_NOTE_WRITE`      | a write occurred                             |
   +-----------------------------+----------------------------------------------+
   | :const:`KQ_NOTE_EXTEND`     | the file was extended                        |
   +-----------------------------+----------------------------------------------+
   | :const:`KQ_NOTE_ATTRIB`     | an attribute was changed                     |
   +-----------------------------+----------------------------------------------+
   | :const:`KQ_NOTE_LINK`       | the link count has changed                   |
   +-----------------------------+----------------------------------------------+
   | :const:`KQ_NOTE_RENAME`     | the file was renamed                         |
   +-----------------------------+----------------------------------------------+
   | :const:`KQ_NOTE_REVOKE`     | access to the file was revoked               |
   +-----------------------------+----------------------------------------------+

   :const:`KQ_FILTER_PROC` filter flags:

   +-----------------------------+----------------------------------------------+
   | Constant                    | Meaning                                      |
   +=============================+==============================================+
   | :const:`KQ_NOTE_EXIT`       | the process has exited                       |
   +-----------------------------+----------------------------------------------+
   | :const:`KQ_NOTE_FORK`       | the process has called *fork()*              |
   +-----------------------------+----------------------------------------------+
   | :const:`KQ_NOTE_EXEC`       | the process has executed a new process       |
   +-----------------------------+----------------------------------------------+
   | :const:`KQ_NOTE_PCTRLMASK`  | internal filter flag                         |
   +-----------------------------+----------------------------------------------+
   | :const:`KQ_NOTE_PDATAMASK`  | internal filter flag                         |
   +-----------------------------+----------------------------------------------+
   | :const:`KQ_NOTE_TRACK`      | follow a process across *fork()*             |
   +-----------------------------+----------------------------------------------+
   | :const:`KQ_NOTE_CHILD`      | returned on the child process for            |
   |                             | *NOTE_TRACK*                                 |
   +-----------------------------+----------------------------------------------+
   | :const:`KQ_NOTE_TRACKERR`   | unable to attach to a child                  |
   +-----------------------------+----------------------------------------------+

   :const:`KQ_FILTER_NETDEV` filter flags (not available on macOS):

   +-----------------------------+----------------------------------------------+
   | Constant                    | Meaning                                      |
   +=============================+==============================================+
   | :const:`KQ_NOTE_LINKUP`     | link is up                                   |
   +-----------------------------+----------------------------------------------+
   | :const:`KQ_NOTE_LINKDOWN`   | link is down                                 |
   +-----------------------------+----------------------------------------------+
   | :const:`KQ_NOTE_LINKINV`    | link state is invalid                        |
   +-----------------------------+----------------------------------------------+
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst, line 642)

Unknown directive type "attribute".

```
.. attribute:: kevent.data
```

Filter specific data.

System Message: ERROR/3 (`D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]select.rst`, line 647)

Unknown directive type "attribute".

```
.. attribute:: kevent.udata

   User defined value.
```