

# V4L2 select()

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.. c:namespace:: V4L

## Name

v4l2-select - Synchronous I/O multiplexing

## Synopsis

```
#include <sys/time.h>
#include <sys/types.h>
#include <unistd.h>
```

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.. c:func:: int select( int nfds, fd\_set \*readfds, fd\_set \*writefds, fd\_set \*exceptfds, struct timeval

## Arguments

`nfds`

The highest-numbered file descriptor in any of the three sets, plus 1.

`readfds`

File descriptions to be watched if a read() call won't block.

`writefds`

File descriptions to be watched if a write() won't block.

`exceptfds`

File descriptions to be watched for V4L2 events.

`timeout`

Maximum time to wait.

## Description

With the `c:func:'select()'` function applications can suspend execution until the driver has captured data or is ready to accept data for output.

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When streaming I/O has been negotiated this function waits until a buffer has been filled or displayed and can be dequeued with the `ref:'VIDIOC_DQBUF <VIDIOC_QBUF>' ioctl`. When buffers are already in the outgoing queue of the driver the function returns immediately.

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On success `c:func:'select()'` returns the total number of bits set in `fd_set`. When the function timed out it returns a value of zero. On failure it returns -1 and the `errno` variable is set appropriately. When the application did not call `ref:'VIDIOC_QBUF'` or `ref:'VIDIOC_STREAMON'` yet the `c:func:'select()'` function succeeds, setting the bit of the file descriptor in `readfds` or `writefds`, but subsequent `ref:'VIDIOC_DQBUF <VIDIOC_QBUF>'` calls will fail. [\[1\]](#)

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master\Documentation\userspace-api\media\v41\linux-master] [Documentation] [userspace-api] [media] [v41] func-select.rst, line 56); [backlink](#)

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When use of the `c:func:read()` function has been negotiated and the driver does not capture yet, the `c:func:select()` function starts capturing. When that fails, `c:func:select()` returns successful and a subsequent `c:func:read()` call, which also attempts to start capturing, will return an appropriate error code. When the driver captures continuously (as opposed to, for example, still images) and data is already available the `c:func:select()` function returns immediately.

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When use of the `c:func:write()` function has been negotiated the `c:func:select()` function just waits until the driver is ready for a non-blocking `c:func:write()` call.

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All drivers implementing the `:c:func:'read()'` or `:c:func:'write()'` function or streaming I/O must also support the `:c:func:'select()'` function.

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For more details see the `:c:func:'select()'` manual page.

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## Return Value

On success, `:c:func:'select()'` returns the number of descriptors contained in the three returned descriptor sets, which will be zero if the timeout expired. On error -1 is returned, and the `errno` variable is set appropriately; the sets and `timeout` are undefined. Possible error codes are:

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EBADF

One or more of the file descriptor sets specified a file descriptor that is not open.

EBUSY

The driver does not support multiple read or write streams and the device is already in use.

EFAULT

The `readfds`, `writfds`, `exceptfds` or `timeout` pointer references an inaccessible memory area.

EINTR

The call was interrupted by a signal.

EINVAL

The `nfds` argument is less than zero or greater than `FD_SETSIZE`.

[1] The Linux kernel implements `:c:func:'select()'` like the `:c:func:'poll()'` function, but `:c:func:'select()'` cannot return a `POLLERR`.

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