



Linux Ubuntu 26.04 Manual Pages on command 'setsockopt.2'

\$ man setsockopt.2

getsockopt(2) System Calls Manual getsockopt(2)

NAME

getsockopt, setsockopt - get and set options on sockets

LIBRARY

Standard C library (libc, -lc)

SYNOPSIS

```
#include <sys/socket.h>

int getsockopt(socklen_t *restrict optlen;
               int sockfd, int level, int optname,
               void optval[_Nullable restrict *optlen],
               socklen_t *restrict optlen);

int setsockopt(socklen_t optlen;
               int sockfd, int level, int optname,
               const void optval[optlen],
               socklen_t optlen);
```

DESCRIPTION

getsockopt() and setsockopt() manipulate options for the socket referred to by the file descriptor sockfd. Options may exist at multiple protocol levels; they are always present at the uppermost socket level.

When manipulating socket options, the level at which the option resides and the name of the option must be specified. To manipulate options at the sockets API level, level is specified as SOL_SOCKET. To manipulate options at any other level the protocol number of the appropriate protocol controlling the option is supplied. For example, to indicate that an op?

tion is to be interpreted by the TCP protocol, level should be set to the protocol number of TCP; see `getprotoent(3)`.

The arguments `optval` and `optlen` are used to access option values for `setsockopt()`. For `getsockopt()` they identify a buffer in which the value for the requested option(s) are to be returned. For `getsockopt()`, `optlen` is a value-result argument, initially containing the size of the buffer pointed to by `optval`, and modified on return to indicate the actual size of the value returned. If no option value is to be supplied or returned, `optval` may be `NULL`.

`Optname` and any specified options are passed uninterpreted to the appropriate protocol module for interpretation. The include file `<sys/socket.h>` contains definitions for socket level options, described below. Options at other protocol levels vary in format and name; consult the appropriate entries in section 4 of the manual.

Most socket-level options utilize an `int` argument for `optval`. For `setsockopt()`, the argument should be nonzero to enable a boolean option, or zero if the option is to be disabled. For a description of the available socket options see `socket(7)` and the appropriate protocol man pages.

RETURN VALUE

On success, zero is returned for the standard options. On error, -1 is returned, and `errno` is set to indicate the error.

Netfilter allows the programmer to define custom socket options with associated handlers; for such options, the return value on success is the value returned by the handler.

ERRORS

EBADF The argument `sockfd` is not a valid file descriptor.

EFAULT The address pointed to by `optval` is not in a valid part of the process address space.

For `getsockopt()`, this error may also be returned if `optlen` is not in a valid part of the process address space.

EINVAL `optlen` invalid in `setsockopt()`. In some cases this error can also occur for an invalid value in `optval` (e.g., for the `IP_ADD_MEMBERSHIP` option described in `ip(7)`).

ENOPROTOOPT

The option is unknown at the level indicated.

ENOTSOCK

The file descriptor `sockfd` does not refer to a socket.

STANDARDS

POSIX.1-2024.

HISTORY

POSIX.1-2001, SVr4, 4.4BSD (first appeared in 4.2BSD).

BUGS

Several of the socket options should be handled at lower levels of the system.

SEE ALSO

ioctl(2), socket(2), getprotoent(3), protocols(5), ip(7), packet(7), socket(7), tcp(7),
udp(7), unix(7)

Linux man-pages 6.17

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