## NAME

ioctl − control device

## SYNOPSIS

**#include <sys/ioctl.h>**

**int ioctl(int** *fd***, unsigned long** *request***, ...);**

## DESCRIPTION

The **ioctl**() system call manipulates the underlying device parameters of special files. In particular, many operating characteristics of character special files (e.g., terminals) may be controlled with **ioctl**() requests. The argument *fd* must be an open file descriptor.

The second argument is a device-dependent request code. The third argument is an untyped pointer to memory. It's traditionally **char** ***argp** (from the days before **void *** was valid C), and will be so named for this discussion.

An **ioctl**() *request* has encoded in it whether the argument is an *in* parameter or *out* parameter, and the size of the argument *argp* in bytes. Macros and defines used in specifying an **ioctl**() *request* are located in the file *<sys/ioctl.h>*.

## RETURN VALUE

Usually, on success zero is returned. A few **ioctl**() requests use the return value as an output parameter and return a nonnegative value on success. On error, −1 is returned, and *errno* is set appropriately.

## ERRORS

**EBADF** *fd* is not a valid file descriptor.

**EFAULT** *argp* references an inaccessible memory area.

**EINVAL** *request* or *argp* is not valid.

**ENOTTY** *fd* is not associated with a character special device.

**ENOTTY** The specified request does not apply to the kind of object that the file descriptor *fd* references.

## CONFORMING TO

No single standard. Arguments, returns, and semantics of **ioctl**() vary according to the device driver in question (the call is used as a catch-all for operations that don't cleanly fit the UNIX stream I/O model). See **ioctl_list**(2) for a list of many of the known **ioctl**() calls. The **ioctl**() system call appeared in Version 7 AT&T UNIX.

## NOTES

In order to use this call, one needs an open file descriptor. Often the **open**(2) call has unwanted side effects, that can be avoided under Linux by giving it the **O_NONBLOCK** flag.

## SEE ALSO

**execve**(2), **fcntl**(2), **ioctl_console**(2), **ioctl_fat**(2), **ioctl_ficlonerange**(2), **ioctl_fideduperange**(2), **ioctl_getfsmap**(2), **ioctl_iflags**(2), **ioctl_list**(2), **ioctl_ns**(2), **ioctl_tty**(2), **ioctl_userfaultfd**(2), **open**(2), **sd**(4), **tty**(4)

## COLOPHON

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