

**NAME**

ioctl – control device

**SYNOPSIS**

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

```
int ioctl(int d, int request, ...);
```

**DESCRIPTION**

The **ioctl()** function 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 *d* 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 non-negative value on success. On error, `-1` is returned, and *errno* is set appropriately.

**ERRORS**

**EBADF** *d* is not a valid descriptor.

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

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

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

**ENOTTY** The specified request does not apply to the kind of object that the descriptor *d* 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()** function 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\_list(2)**, **open(2)**, **sd(4)**, **tty(4)**

**COLOPHON**

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