NAME

iopl − change I/O privilege level

SYNOPSIS

#include <sys/io.h>

int iopl(int *level***);**

DESCRIPTION

iopl() changes the I/O privilege level of the calling process, as specified by the two least significant bits in *level*.

This call is necessary to allow 8514-compatible X servers to run under Linux. Since these X servers require access to all 65536 I/O ports, the **ioperm**(2) call is not sufficient.

In addition to granting unrestricted I/O port access, running at a higher I/O privilege level also allows the process to disable interrupts. This will probably crash the system, and is not recommended.

Permissions are not inherited by the child process created by **fork**(2) and are not preserved across **execve**(2) (but see NOTES).

The I/O privilege level for a normal process is 0.

This call is mostly for the i386 architecture. On many other architectures it does not exist or will always return an error.

RETURN VALUE

On success, zero is returned. On error, −1 is returned, and *errno* is set appropriately.

ERRORS

EINVAL

level is greater than 3.

ENOSYS

This call is unimplemented.

EPERM

The calling process has insufficient privilege to call **iopl**(); the **CAP_SYS_RAWIO** capability is required to raise the I/O privilege level above its current value.

CONFORMING TO

iopl() is Linux-specific and should not be used in programs that are intended to be portable.

NOTES

Glibc2 has a prototype both in *<sys/io.h>* and in *<sys/perm.h>*. Avoid the latter, it is available on i386 only.

Prior to Linux 3.7, on some architectures (such as i386), permissions *were* inherited by the child produced by **fork**(2) and were preserved across **execve**(2). This behavior was inadvertently changed in Linux 3.7, and won't be reinstated.

SEE ALSO

ioperm(2), **outb**(2), **capabilities**(7)

COLOPHON

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