

NAME

fd – floppy disk device

CONFIGURATION

Floppy drives are block devices with major number 2. Typically they are owned by root.floppy (i.e., user root, group floppy) and have either mode 0660 (access checking via group membership) or mode 0666 (everybody has access). The minor numbers encode the device type, drive number, and controller number. For each device type (that is, combination of density and track count) there is a base minor number. To this base number, add the drive's number on its controller and 128 if the drive is on the secondary controller. In the following device tables, *n* represents the drive number.

Warning: If you use formats with more tracks than supported by your drive, you may cause it mechanical damage. Trying once if more tracks than the usual 40/80 are supported should not damage it, but no warranty is given for that. Don't create device entries for those formats to prevent their usage if you are not sure.

Drive independent device files which automatically detect the media format and capacity:

Name	Base minor #
fdn	0

5.25 inch double density device files:

Name	Capac.	Cyl.	Sect.	Heads	Base minor #
fdnd360	360K	40	9	2	4

5.25 inch high density device files:

Name	Capac.	Cyl.	Sect.	Heads	Base minor #
fdnh360	360K	40	9	2	20
fdnh410	410K	41	10	2	48
fdnh420	420K	42	10	2	64
fdnh720	720K	80	9	2	24
fdnh880	880K	80	11	2	80
fdnh1200	1200K	80	15	2	8
fdnh1440	1440K	80	18	2	40
fdnh1476	1476K	82	18	2	56
fdnh1494	1494K	83	18	2	72
fdnh1600	1600K	80	20	2	92

3.5 inch double density device files:

Name	Capac.	Cyl.	Sect.	Heads	Base minor #
fdnD360	360K	80	9	1	12
fdnD720	720K	80	9	2	16
fdnD800	800K	80	10	2	120
fdnD1040	1040K	80	13	2	84
fdnD1120	1120K	80	14	2	88

3.5 inch high density device files:

Name	Capac.	Cyl.	Sect.	Heads	Base minor #
fdnH360	360K	40	9	2	12
fdnH720	720K	80	9	2	16
fdnH820	820K	82	10	2	52
fdnH830	830K	83	10	2	68
fdnH1440	1440K	80	18	2	28
fdnH1600	1600K	80	20	2	124
fdnH1680	1680K	80	21	2	44
fdnH1722	1722K	82	21	2	60

fdnH1743	1743K	83	21	2	76
fdnH1760	1760K	80	22	2	96
fdnH1840	1840K	80	23	2	116
fdnH1920	1920K	80	24	2	100

3.5 inch extra density device files:

Name	Capac.	Cyl.	Sect.	Heads	Base minor #
fdnE2880	2880K	80	36	2	32
fdnCompaQ	2880K	80	36	2	36
fdnE3200	3200K	80	40	2	104
fdnE3520	3520K	80	44	2	108
fdnE3840	3840K	80	48	2	112

DESCRIPTION

fd special files access the floppy disk drives in raw mode. The following **ioctl(2)** calls are supported by **fd** devices:

FDCLRPRM

clears the media information of a drive (geometry of disk in drive).

FDSETPRM

sets the media information of a drive. The media information will be lost when the media is changed.

FDDEFPRM

sets the media information of a drive (geometry of disk in drive). The media information will not be lost when the media is changed. This will disable autodetection. In order to re-enable autodetection, you have to issue an **FDCLRPRM**.

FDGETDRVTYPE

returns the type of a drive (name parameter). For formats which work in several drive types, **FDGETDRVTYPE** returns a name which is appropriate for the oldest drive type which supports this format.

FDFLUSH

invalidates the buffer cache for the given drive.

FDSETMAXERRS

sets the error thresholds for reporting errors, aborting the operation, recalibrating, resetting, and reading sector by sector.

FDGETMAXERRS

gets the current error thresholds.

FDGETDRVTYP

gets the internal name of the drive.

FDWERRORCLR

clears the write error statistics.

FDWERRORGET

reads the write error statistics. These include the total number of write errors, the location and disk of the first write error, and the location and disk of the last write error. Disks are identified by a generation number which is incremented at (almost) each disk change.

FDTWADDLE

Switch the drive motor off for a few microseconds. This might be needed in order to access a disk whose sectors are too close together.

FDSETDRVPRM

sets various drive parameters.

FDGETDRVPRM

reads these parameters back.

FDGETDRVSTAT

gets the cached drive state (disk changed, write protected et al.)

FDPOLLDRVSTAT

polls the drive and return its state.

FDGETFDCSTAT

gets the floppy controller state.

FDRESET

resets the floppy controller under certain conditions.

FDRAWCMD

sends a raw command to the floppy controller.

For more precise information, consult also the `<linux/fd.h>` and `<linux/fdreg.h>` include files, as well as the manual page for `floppycontrol`.

FILES

`/dev/fd*`

NOTES

The various formats allow to read and write many types of disks. However, if a floppy is formatted with a too small inter sector gap, performance may drop, up to needing a few seconds to access an entire track. To prevent this, use interleaved formats. It is not possible to read floppies which are formatted using GCR (group code recording), which is used by Apple II and Macintosh computers (800k disks). Reading floppies which are hard sectored (one hole per sector, with the index hole being a little skewed) is not supported. This used to be common with older 8 inch floppies.

SEE ALSO

chown(1), **floppycontrol(1)**, **getfdprm(1)**, **mknod(1)**, **superformat(1)**, **mount(8)**, **setfdprm(8)**

COLOPHON

This page is part of release 3.22 of the Linux *man-pages* project. A description of the project, and information about reporting bugs, can be found at <http://www.kernel.org/doc/man-pages/>.