

NAME

tcsendbreak, tcdrain, tcflush, tcflow - line control functions

LIBRARY

Standard C Library (libc, -lc)

SYNOPSIS

```
#include <termios.h>
```

int

```
tcdrain(int fd);
```

int

```
tcflow(int fd, int action);
```

int

```
tcflush(int fd, int action);
```

int

```
tcsendbreak(int fd, int len);
```

DESCRIPTION

The **tcdrain()** function waits until all output written to the terminal referenced by *fd* has been transmitted to the terminal.

The **tcflow()** function suspends transmission of data to or the reception of data from the terminal referenced by *fd* depending on the value of *action*. The value of *action* must be one of the following:

TCOOFF

Suspend output.

TCOON Restart suspended output.

TCIOFF Transmit a STOP character, which is intended to cause the terminal to stop transmitting data to the system. (See the description of IXOFF in the ‘Input Modes’ section of `termios(4)`).

TCION Transmit a START character, which is intended to cause the terminal to start transmitting data to the system. (See the description of IXOFF in the ‘Input Modes’ section of `termios(4)`).

The **tcflush()** function discards any data written to the terminal referenced by *fd* which has not been

transmitted to the terminal, or any data received from the terminal but not yet read, depending on the value of *action*. The value of *action* must be one of the following:

TCIFLUSH Flush data received but not read.

TCOFLUSH Flush data written but not transmitted.

TCIOFLUSH Flush both data received but not read and data written but not transmitted.

The **tcsendbreak()** function transmits a continuous stream of zero-valued bits for four-tenths of a second to the terminal referenced by *fd*. The *len* argument is ignored in this implementation.

RETURN VALUES

Upon successful completion, all of these functions return a value of zero.

ERRORS

If any error occurs, a value of -1 is returned and the global variable *errno* is set to indicate the error, as follows:

[EBADF] The *fd* argument is not a valid file descriptor.

[EINVAL] The *action* argument is not a proper value.

[ENOTTY] The file associated with *fd* is not a terminal.

[EINTR] A signal interrupted the **tcdrain()** function.

[EWOULDBLOCK] The configured timeout expired before the **tcdrain()** function could write all buffered output.

SEE ALSO

tcsetattr(3), termios(4), tty(4), comcontrol(8)

STANDARDS

The **tcsendbreak()**, **tcf flush()** and **tcf low()** functions are expected to be compliant with the IEEE Std 1003.1-1988 ("POSIX.1") specification.

The **tcdrain()** function is expected to be compliant with IEEE Std 1003.1-1988 ("POSIX.1") when the drain wait value is set to zero with **comcontrol(8)**, or with **ioctl(2)** *TIOCS DRAINWAIT*, or with **sysctl(8)** *kern.tty_drainwait*. A non-zero drain wait value can result in **tcdrain()** returning

EWOULDBLOCK without writing all output. The default value for *kern.tty_drainwait* is 300 seconds.