NAME

led - API for manipulating LED's, lamps and other annunciators

SYNOPSIS

#include <dev/led/led.h>

typedef void led_t(void *priv, int onoff);

struct cdev *
led_create_state(*led_t *func*, *void *priv*, *char const *name*, *int state*);

struct cdev *
led_create(*led_t *func*, *void *priv*, *char const *name*);

void
led_destroy(*struct cdev **);

DESCRIPTION

The **led** driver provides generic support for handling LEDs, lamps and other annunciators.

The hardware driver must supply a function to turn the annunciator on and off and the device *name* of the annunciator relative to */dev/led/*. The *priv* argument is passed back to this on/off function and can be used however the hardware driver sees fit.

The lamp can be controlled by opening and writing ASCII strings to the */dev/led/bla* device.

In the following, we will use this special notation to indicate the resulting output of the annunciator:

    *   The annunciator is on for 1/10th second.

    _   The annunciator is off for 1/10th second.

State can be set directly, and since the change happens immediately, it is possible to flash the annunciator with very short periods and synchronize it with program events. It should be noted that there is a non-trivial overhead, so this may not be usable for benchmarking or measuring short intervals.

    0   Turn the annunciator off immediately.

    1   Turn the annunciator on immediately.

Flashing can be set with a given period. The pattern continues endlessly.

f	_*
f1	_*
f2	__**
f3	___***
...	
f9	_____*********

Three high-level commands are available:

d%d   Numbers. Each digit is blinked out at 1/10th second, zero as ten pulses. Between digits a one second pause and after the last digit a two second pause after which the sequence is repeated.

s%s   String. This gives full control over the annunciator. Letters 'A' ... 'J' turn the annunciator on for from 1/10th to one full second. Letters 'a' ... 'j' turn the annunciator off for 1/10th to one full second. Letters 'u' and 'U' turn the annunciator off and on respectively when the next UTC second starts. Unless terminated with a '.', the sequence is immediately repeated.

m%s   Morse.

'.'	becomes '_*'
'-'	becomes '_***'
' '	becomes '__'
'\n'	becomes '____'

The sequence is repeated after a one second pause.

FILES
/dev/led/*

EXAMPLES
A 'd12' flashes the lamp

    *_____*_*_____

A 'sAaAbBa' flashes

    *_*__*_*__**_

/usr/bin/morse -l "Soekris rocks" > /dev/led/error

SEE ALSO

morse(6)

HISTORY

The **led** driver first appeared in FreeBSD 5.2.

AUTHORS

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