Rocky Enterprise Linux 9.2 Manual Pages on command 'vcs.4'

$ man vcs.4

VCS(4)   Linux Programmer's Manual   VCS(4)

NAME

    vcs, vcsa - virtual console memory

DESCRIPTION

    /dev/vcs0 is a character device with major number 7 and minor number 0,

    usually with mode 0644 and ownership root:tty. It refers to the memory

    of the currently displayed virtual console terminal.

    /dev/vcs[1-63] are character devices for virtual console terminals,

    they have major number 7 and minor number 1 to 63, usually mode 0644

    and ownership root:tty.   /dev/vcsa[0-63] are the same, but using un?

    signed shorts (in host byte order) that include attributes, and pre?

    fixed with four bytes giving the screen dimensions and cursor position:

    lines, columns, x, y. (x = y = 0 at the top left corner of the

    screen.)

    When a 512-character font is loaded, the 9th bit position can be

    fetched by applying the ioctl(2) VT_GETHIFONTMASK operation (available

    in Linux kernels 2.6.18 and above) on /dev/tty[1-63]; the value is re?

    turned in the unsigned short pointed to by the third ioctl(2) argument.

These devices replace the screendump ioctl(2) operations of ioctl_con?

sole(2), so the system administrator can control access using filesys?

tem permissions.

The devices for the first eight virtual consoles may be created by:

```
for x in 0 1 2 3 4 5 6 7 8; do

    mknod -m 644 /dev/vcs$x c 7 $x;

    mknod -m 644 /dev/vcsa$x c 7 $[$x+128];

done

chown root:tty /dev/vcs*
```

No ioctl(2) requests are supported.

FILES

/dev/vcs[0-63]

/dev/vcsa[0-63]

VERSIONS

Introduced with version 1.1.92 of the Linux kernel.

EXAMPLES

You may do a screendump on vt3 by switching to vt1 and typing

cat /dev/vcs3 >foo

Note that the output does not contain newline characters, so some pro?

cessing may be required, like in

fold -w 81 /dev/vcs3 | lpr

or (horrors)

setterm -dump 3 -file /proc/self/fd/1

The /dev/vcsa0 device is used for Braille support.

This program displays the character and screen attributes under the

cursor of the second virtual console, then changes the background color

there:

```
#include <unistd.h>

#include <stdlib.h>

#include <stdio.h>

#include <fcntl.h>

#include <sys/ioctl.h>

#include <linux/vt.h>
```

```c
int
main(void)
{
    int fd;
    char *device = "/dev/vcsa2";
    char *console = "/dev/tty2";
    struct {unsigned char lines, cols, x, y;} scrn;
    unsigned short s;
    unsigned short mask;
    unsigned char attrib;
    int ch;
    fd = open(console, O_RDWR);
    if (fd < 0) {
        perror(console);
        exit(EXIT_FAILURE);
    }
    if (ioctl(fd, VT_GETHIFONTMASK, &mask) < 0) {
        perror("VT_GETHIFONTMASK");
        exit(EXIT_FAILURE);
    }
    (void) close(fd);
    fd = open(device, O_RDWR);
    if (fd < 0) {
        perror(device);
        exit(EXIT_FAILURE);
    }
    (void) read(fd, &scrn, 4);
    (void) lseek(fd, 4 + 2*(scrn.y*scrn.cols + scrn.x), SEEK_SET);
    (void) read(fd, &s, 2);
    ch = s & 0xff;
    if (s & mask)
        ch |= 0x100;
    attrib = ((s & ~mask) >> 8);
```

```
    printf("ch=%#03x attrib=%#02x\n", ch, attrib);

    s ^= 0x1000;

    (void) lseek(fd, -2, SEEK_CUR);

    (void) write(fd, &s, 2);

    exit(EXIT_SUCCESS);

}
```

SEE ALSO

    ioctl_console(2), tty(4), ttyS(4), gpm(8)

COLOPHON

    This page is part of release 5.10 of the Linux man-pages project. A

    description of the project, information about reporting bugs, and the

    latest   version   of   this   page, can   be   found   at

    https://www.kernel.org/doc/man-pages/.

Linux   2020-11-01   VCS(4)