NAME

vcs, vcsa - virtual console memory

DESCRIPTION

/dev/vcs0 is a character device with major number 7 and minor number 0, usually of mode 0644 and owner 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 owner root.tty. */dev/vcsa[0-63]* are the same, but using *unsigned short*s (in host byte order) that include attributes, and prefixed 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 returned in the *unsigned short* pointed to by the third ioctl(2) argument.

These devices replace the screendump ioctl(2) operations of console_ioctl(4), so the system administrator can control access using filesystem 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.

EXAMPLE

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 processing may be required, like in

```
fold -w 81 /dev/vcs3 | lpr
```

or (horrors)

```
xetterm -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>

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 ch, attrib;

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), 0);
(void) read(fd, &s, 2);
ch = s & 0xff;
if (attrib & mask)
ch |= 0x100;
attrib = ((s & ~mask) >> 8);
printf("ch='%c' attrib=0x%02x\n", ch, attrib);
attrib ^= 0x10;
(void) lseek(fd, -1, 1);
(void) write(fd, &attrib, 1);
exit(EXIT_SUCCESS);
}
```

SEE ALSO

console_ioctl(4), tty(4), ttyS(4), **gpm(8)**

COLOPHON

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