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 *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 **ioctl_console**(2), 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)
>
> ```
> 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>
>
> 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=0x%03x attrib=0x%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 5.05 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/.