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Rocky Enterprise Linux 9.2 Manual Pages on command 'vmsplice.2'

\$ man vmsplice.2

VMSPLICE(2) Linux Programmer's Manual VMSPLICE(2)

NAME

vmsplice - splice user pages to/from a pipe

SYNOPSIS

```
#define _GNU_SOURCE        /* See feature_test_macros(7) */
#include <fcntl.h>
#include <sys/uio.h>
ssize_t vmsplice(int fd, const struct iovec *iov,
                  unsigned long nr_segs, unsigned int flags);
```

DESCRIPTION

If `fd` is opened for writing, the `vmsplice()` system call maps `nr_segs` ranges of user memory described by `iov` into a pipe. If `fd` is opened for reading, the `vmsplice()` system call fills `nr_segs` ranges of user memory described by `iov` from a pipe. The file descriptor `fd` must refer to a pipe.

The pointer `iov` points to an array of `iovec` structures as defined in `<sys/uio.h>`:

```
struct iovec {
```

```
void *iov_base;    /* Starting address */
size_t iov_len;   /* Number of bytes */
};
```

The flags argument is a bit mask that is composed by ORing together zero or more of the following values:

SPLICE_F_MOVE

Unused for `vmsplice()`; see `splice(2)`.

SPLICE_F_NONBLOCK

Do not block on I/O; see `splice(2)` for further details.

SPLICE_F_MORE

Currently has no effect for `vmsplice()`, but may be implemented in the future; see `splice(2)`.

SPLICE_F_GIFT

The user pages are a gift to the kernel. The application may not modify this memory ever, otherwise the page cache and on-disk data may differ. Gifting pages to the kernel means that a subsequent `splice(2)` `SPLICE_F_MOVE` can successfully move the pages; if this flag is not specified, then a subsequent `splice(2)` `SPLICE_F_MOVE` must copy the pages. Data must also be properly page aligned, both in memory and length.

RETURN VALUE

Upon successful completion, `vmsplice()` returns the number of bytes transferred to the pipe. On error, `vmsplice()` returns -1 and `errno` is set to indicate the error.

ERRORS

`EAGAIN` `SPLICE_F_NONBLOCK` was specified in flags, and the operation would block.

`EBADF` fd either not valid, or doesn't refer to a pipe.

`EINVAL` `nr_segs` is greater than `IOV_MAX`; or memory not aligned if `SPLICE_F_GIFT` set.

`ENOMEM` Out of memory.

VERSIONS

The `vmsplice()` system call first appeared in Linux 2.6.17; library sup?

port was added to glibc in version 2.5.

CONFORMING TO

This system call is Linux-specific.

NOTES

`vmsplice()` follows the other vectorized read/write type functions when it comes to limitations on the number of segments being passed in. This limit is `IOV_MAX` as defined in `<limits.h>`. Currently, this limit is 1024.

`vmsplice()` really supports true splicing only from user memory to a pipe. In the opposite direction, it actually just copies the data to userspace. But this makes the interface nice and symmetric and enables people to build on `vmsplice()` with room for future improvement in performance.

SEE ALSO

`splice(2)`, `tee(2)`, `pipe(7)`

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/>.

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