



Linux Ubuntu 26.04 Manual Pages on command 'vmsplice.2'

\$ man vmsplice.2

vmsplice(2) System Calls Manual vmsplice(2)

NAME

vmsplice - splice user pages to/from a pipe

LIBRARY

Standard C library (libc, -lc)

SYNOPSIS

```
#define _GNU_SOURCE      /* See feature_test_macros(7) */
#include <fcntl.h>

ssize_t vmsplice(int fd, const struct iovec *iov,
                 size_t 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 described in `iovec(3type)`.

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.

STANDARDS

Linux.

HISTORY

Linux 2.6.17, glibc 2.5.

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 user space. 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)`