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Red Hat Enterprise Linux Release 9.2 Manual Pages on 'vmsplice.2' command

$ 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 per? formance.

SEE ALSO

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

COLOPHON

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