**NAME**
>      msync − synchronize a file with a memory map

**SYNOPSIS**
>      **#include <sys/mman.h>**
>
>      **int msync(void \****addr***, size_t** *length***, int** *flags***);**

**DESCRIPTION**
>      **msync**() flushes changes made to the in-core copy of a file that was mapped into memory using **mmap**(2)
>      back to disk. Without use of this call there is no guarantee that changes are written back before **mun-**
>      **map**(2) is called. To be more precise, the part of the file that corresponds to the memory area starting at
>      *addr* and having length *length* is updated.
>
>      The *flags* argument may have the bits **MS_ASYNC**, **MS_SYNC**, and **MS_INVALIDATE** set, but not both
>      **MS_ASYNC** and **MS_SYNC**. **MS_ASYNC** specifies that an update be scheduled, but the call returns
>      immediately. **MS_SYNC** asks for an update and waits for it to complete. **MS_INVALIDATE** asks to
>      invalidate other mappings of the same file (so that they can be updated with the fresh values just written).

**RETURN VALUE**
>      On success, zero is returned. On error, −1 is returned, and *errno* is set appropriately.

**ERRORS**
>      **EBUSY**
>            **MS_INVALIDATE** was specified in *flags*, and a memory lock exists for the specified address
>            range.
>
>      **EINVAL**
>            *addr* is not a multiple of PAGESIZE; or any bit other than **MS_ASYNC** | **MS_INVALIDATE** |
>            **MS_SYNC** is set in *flags*; or both **MS_SYNC** and **MS_ASYNC** are set in *flags*.
>
>      **ENOMEM**
>            The indicated memory (or part of it) was not mapped.

**CONFORMING TO**
>      POSIX.1-2001.
>
>      This call was introduced in Linux 1.3.21, and then used **EFAULT** instead of **ENOMEM**. In Linux 2.4.19
>      this was changed to the POSIX value **ENOMEM**.

**AVAILABILITY**
>      On POSIX systems on which **msync**() is available, both **_POSIX_MAPPED_FILES** and **_POSIX_SYN-**
>      **CHRONIZED_IO** are defined in *<unistd.h>* to a value greater than 0. (See also **sysconf**(3).)

**SEE ALSO**
>      **mmap**(2)
>      B.O. Gallmeister, POSIX.4, O'Reilly, pp. 128-129 and 389-391.

**COLOPHON**
>      This page is part of release 3.22 of the Linux *man-pages* project. A description of the project, and informa-
>      tion about reporting bugs, can be found at http://www.kernel.org/doc/man-pages/.