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Red Hat Enterprise Linux Release 9.2 Manual Pages on 'shmget.3p' command

\$ man shmget.3p

SHMGET(3P) POSIX Programmer's Manual SHMGET(3P)

PROLOG

This manual page is part of the POSIX Programmer's Manual. The Linux implementation of this interface may differ (consult the corresponding Linux manual page for details of Linux behavior), or the interface may not be implemented on Linux.

NAME

shmget ? get an XSI shared memory segment

SYNOPSIS

```
#include <sys/shm.h>

int shmget(key_t key, size_t size, int shmflg);
```

DESCRIPTION

The shmget() function operates on XSI shared memory (see the Base Definitions volume of POSIX.1?2017, Section 3.346, Shared Memory Object).

It is unspecified whether this function interoperates with the realtime interprocess communication facilities defined in Section 2.8, Realtime.

The shmget() function shall return the shared memory identifier associated with key.

A shared memory identifier, associated data structure, and shared memory segment of at least size bytes (see <sys/shm.h>) are created for key if one of the following is true:

- * The argument key is equal to IPC_PRIVATE.
- * The argument key does not already have a shared memory identifier

associated with it and (shmflg &IPC_CREAT) is non-zero.

Upon creation, the data structure associated with the new shared memory identifier shall be initialized as follows:

- * The values of shm_perm.cuid, shm_perm.uid, shm_perm.cgid, and shm_perm.gid are set to the effective user ID and effective group ID, respectively, of the calling process.
- * The low-order nine bits of shm_perm.mode are set to the low-order nine bits of shmflg.
- * The value of shm_segsz is set to the value of size.
- * The values of shm_lpid, shm_nattch, shm_atime, and shm_dtime are set to 0.
- * The value of shm_ctime is set to the current time, as described in Section 2.7.1, IPC General Description.

When the shared memory segment is created, it shall be initialized with all zero values.

RETURN VALUE

Upon successful completion, shmget() shall return a non-negative integer, namely a shared memory identifier; otherwise, it shall return -1 and set errno to indicate the error.

ERRORS

The shmget() function shall fail if:

EACCES A shared memory identifier exists for key but operation permission as specified by the low-order nine bits of shmflg would not be granted; see Section 2.7, XSI Interprocess Communication.

EEXIST A shared memory identifier exists for the argument key but (shmflg &IPC_CREAT) &&(shmflg &IPC_EXCL) is non-zero.

EINVAL A shared memory segment is to be created and the value of size is less than the system-imposed minimum or greater than the system-imposed maximum.

EINVAL No shared memory segment is to be created and a shared memory segment exists for key but the size of the segment associated with it is less than size.

ENOENT A shared memory identifier does not exist for the argument key

and (shmflg &IPC_CREAT) is 0.

ENOMEM A shared memory identifier and associated shared memory segment are to be created, but the amount of available physical memory is not sufficient to fill the request.

ENOSPC A shared memory identifier is to be created, but the system-imposed limit on the maximum number of allowed shared memory identifiers system-wide would be exceeded.

The following sections are informative.

EXAMPLES

None.

APPLICATION USAGE

The POSIX Realtime Extension defines alternative interfaces for interprocess communication. Application developers who need to use IPC should design their applications so that modules using the IPC routines described in Section 2.7, XSI Interprocess Communication can be easily modified to use the alternative interfaces.

RATIONALE

None.

FUTURE DIRECTIONS

None.

SEE ALSO

Section 2.7, XSI Interprocess Communication, Section 2.8, Realtime, ftok(), shmat(), shmctl(), shmdt(), shm_open(), shm_unlink()

The Base Definitions volume of POSIX.1-2017, Section 3.346, Shared Memory Object, <sys_shm.h>

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