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

$ man shmctl.3p

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

shmctl ? XSI shared memory control operations

SYNOPSIS

```
#include <sys/shm.h>
int shmctl(int shmid, int cmd, struct shmid_ds *buf);
```

DESCRIPTION

The shmctl() function operates on XSI shared memory (see the Base Defi? nitions 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 shmctl() function provides a variety of shared memory control oper? ations as specified by cmd. The following values for cmd are avail? able:

IPC_STAT Place the current value of each member of the shmid_ds data structure associated with shmid into the structure pointed to by buf. The contents of the structure are defined in <sys/shm.h>.

IPC_SET Set the value of the following members of the shmid_ds data structure associated with shmid to the corresponding value found in the structure pointed to by buf:

shm_perm.uid

shm_perm.gid

shm_perm.mode Low-order nine bits.

Also, the shm_ctime timestamp shall be set to the current time, as described in Section 2.7.1, IPC General Descrip? tion.

IPC_SET can only be executed by a process that has an ef? fective user ID equal to either that of a process with ap? propriate privileges or to the value of shm_perm.cuid or shm_perm.uid in the shmid_ds data structure associated with shmid.

IPC_RMID Remove the shared memory identifier specified by shmid from the system and destroy the shared memory segment and shmid_ds data structure associated with it. IPC_RMID can only be executed by a process that has an effective user ID equal to either that of a process with appropriate privi? leges or to the value of shm_perm.cuid or shm_perm.uid in the shmid_ds data structure associated with shmid.

RETURN VALUE

Upon successful completion, shmctl() shall return 0; otherwise, it shall return -1 and set errno to indicate the error.

ERRORS

The shmctl() function shall fail if:

EACCES The argument cmd is equal to IPC_STAT and the calling process does not have read permission; see Section 2.7, XSI Interprocess Communication.

EINVAL The value of shmid is not a valid shared memory identifier, or the value of cmd is not a valid command.

EPERM The argument cmd is equal to IPC_RMID or IPC_SET and the effec? tive user ID of the calling process is not equal to that of a

process with appropriate privileges and it is not equal to the value of shm_perm.cuid or shm_perm.uid in the data structure as? sociated with shmid.

The shmctl() function may fail if:

EOVERFLOW

The cmd argument is IPC_STAT and the gid or uid value is too large to be stored in the structure pointed to by the buf argu? ment.

The following sections are informative.

EXAMPLES

None.

APPLICATION USAGE

The POSIX Realtime Extension defines alternative interfaces for inter? process 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, shmat(), shmdt(), shmget(), shm_open(), shm_unlink()

The Base Definitions volume of POSIX.1?2017, Section 3.346, Shared Mem? ory Object, <sys_shm.h>

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