Rocky Enterprise Linux 9.2 Manual Pages on command 'msgget.2'

$ man msgget.2

MSGGET(2)   Linux Programmer's Manual   MSGGET(2)

NAME

  msgget - get a System V message queue identifier

SYNOPSIS

  #include <sys/types.h>

  #include <sys/ipc.h>

  #include <sys/msg.h>

  int msgget(key_t key, int msgflg);

DESCRIPTION

  The msgget() system call returns the System V message queue identifier

  associated with the value of the key argument. It may be used either

  to obtain the identifier of a previously created message queue (when

  msgflg is zero and key does not have the value IPC_PRIVATE), or to cre?

  ate a new set.

  A new message queue is created if key has the value IPC_PRIVATE or key

  isn't IPC_PRIVATE, no message queue with the given key key exists, and

  IPC_CREAT is specified in msgflg.

  If msgflg specifies both IPC_CREAT and IPC_EXCL and a message queue al?

ready exists for key, then msgget() fails with errno set to EEXIST.
(This is analogous to the effect of the combination O_CREAT | O_EXCL for open(2).)

Upon creation, the least significant bits of the argument msgflg define the permissions of the message queue. These permission bits have the same format and semantics as the permissions specified for the mode ar‐ gument of open(2). (The execute permissions are not used.)

If a new message queue is created, then its associated data structure msqid_ds (see msgctl(2)) is initialized as follows:

? msg_perm.cuid and msg_perm.uid are set to the effective user ID of the calling process.

? msg_perm.cgid and msg_perm.gid are set to the effective group ID of the calling process.

? The least significant 9 bits of msg_perm.mode are set to the least significant 9 bits of msgflg.

? msg_qnum, msg_lspid, msg_lrpid, msg_stime, and msg_rtime are set to 0.

? msg_ctime is set to the current time.

? msg_qbytes is set to the system limit MSGMNB.

If the message queue already exists the permissions are verified, and a check is made to see if it is marked for destruction.

RETURN VALUE

If successful, the return value will be the message queue identifier (a nonnegative integer), otherwise -1 with errno indicating the error.

ERRORS

On failure, errno is set to one of the following values:

EACCES A message queue exists for key, but the calling process does not have permission to access the queue, and does not have the CAP_IPC_OWNER capability in the user namespace that governs its IPC namespace.

EEXIST IPC_CREAT and IPC_EXCL were specified in msgflg, but a message queue already exists for key.

ENOENT No message queue exists for key and msgflg did not specify

IPC_CREAT.

ENOMEM A message queue has to be created but the system does not have

enough memory for the new data structure.

ENOSPC A message queue has to be created but the system limit for the

maximum number of message queues (MSGMNI) would be exceeded.

CONFORMING TO

POSIX.1-2001, POSIX.1-2008, SVr4.

NOTES

The inclusion of <sys/types.h> and <sys/ipc.h> isn't required on Linux

or by any version of POSIX. However, some old implementations required

the inclusion of these header files, and the SVID also documented their

inclusion. Applications intended to be portable to such old systems

may need to include these header files.

IPC_PRIVATE isn't a flag field but a key_t type. If this special value

is used for key, the system call ignores everything but the least sig?

nificant 9 bits of msgflg and creates a new message queue (on success).

The following is a system limit on message queue resources affecting a

msgget() call:

MSGMNI System-wide limit on the number of message queues. Before Linux

3.19, the default value for this limit was calculated using a

formula based on available system memory. Since Linux 3.19, the

default value is 32,000. On Linux, this limit can be read and

modified via /proc/sys/kernel/msgmni.

Linux notes

Until version 2.3.20, Linux would return EIDRM for a msgget() on a mes?

sage queue scheduled for deletion.

BUGS

The name choice IPC_PRIVATE was perhaps unfortunate, IPC_NEW would more

clearly show its function.

SEE ALSO

msgctl(2), msgrcv(2), msgsnd(2), ftok(3), capabilities(7), mq_over?

view(7), sysvipc(7)

COLOPHON

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