NAME

msgsnd - send a message to a message queue

LIBRARY

Standard C Library (libc, -lc)

SYNOPSIS

#include <sys/types.h>
#include <sys/ipc.h>
#include <sys/msg.h>

int
msgsnd(*int msqid*, *const void *msgp*, *size_t msgsz*, *int msgflg*);

DESCRIPTION

The **msgsnd**() function sends a message to the message queue specified in *msqid*. The *msgp* argument points to a structure containing the message. This structure should consist of the following members:

```
long mtype;    /* message type */
char mtext[1]; /* body of message */
```

mtype is an integer greater than 0 that can be used for selecting messages (see msgrcv(2)), *mtext* is an array of *msgsz* bytes. The argument *msgsz* can range from 0 to a system-imposed maximum, MSGMAX.

If the number of bytes already on the message queue plus *msgsz* is bigger than the maximum number of bytes on the message queue (*msg_qbytes*, see msgctl(2)), or the number of messages on all queues system-wide is already equal to the system limit, *msgflg* determines the action of **msgsnd**(). If *msgflg* has IPC_NOWAIT mask set in it, the call will return immediately. If *msgflg* does not have IPC_NOWAIT set in it, the call will block until:

⊕   The condition which caused the call to block does no longer exist. The message will be sent.

⊕   The message queue is removed, in which case -1 will be returned, and *errno* is set to EINVAL.

⊕   The caller catches a signal. The call returns with *errno* set to EINTR.

After a successful call, the data structure associated with the message queue is updated in the following way:

- ⊕ *msg_cbytes* is incremented by the size of the message.

- ⊕ *msg_qnum* is incremented by 1.

- ⊕ *msg_lspid* is set to the pid of the calling process.

- ⊕ *msg_stime* is set to the current time.

RETURN VALUES

The **msgsnd**() function returns the value 0 if successful; otherwise the value -1 is returned and the global variable *errno* is set to indicate the error.

ERRORS

The **msgsnd**() function will fail if:

[EINVAL]   The *msqid* argument is not a valid message queue identifier.

The message queue was removed while **msgsnd**() was waiting for a resource to become available in order to deliver the message.

The *msgsz* argument is greater than *msg_qbytes*.

The *mtype* argument is not greater than 0.

[EACCES]   The calling process does not have write access to the message queue.

[EAGAIN]   There was no space for this message either on the queue, or in the whole system, and IPC_NOWAIT was set in *msgflg*.

[EFAULT]   The *msgp* argument points to an invalid address.

[EINTR]   The system call was interrupted by the delivery of a signal.

HISTORY

Message queues appeared in the first release of AT&T Unix System V.

BUGS

NetBSD and FreeBSD do not define the EIDRM error value, which should be used in the case of a removed message queue.