

**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 <i>msqid</i> argument is not a valid message queue identifier.<br><br>The message queue was removed while <b>msgsnd()</b> was waiting for a resource to become available in order to deliver the message.<br><br>The <i>msgsz</i> argument is greater than <i>msg_qbytes</i> .<br><br>The <i>mtype</i> 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 <i>msgflg</i> .   |
| [EFAULT] | The <i>msgp</i> 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.