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***Rocky Enterprise Linux 9.2 Manual Pages on command 'mq\_timedsend.3'***

***\$ man mq\_timedsend.3***

MQ\_SEND(3)                      Linux Programmer's Manual                      MQ\_SEND(3)

NAME

mq\_send, mq\_timedsend - send a message to a message queue

SYNOPSIS

```
#include <mqueue.h>

int mq_send(mqd_t mqdes, const char *msg_ptr,
            size_t msg_len, unsigned int msg_prio);

#include <time.h>

#include <mqueue.h>

int mq_timedsend(mqd_t mqdes, const char *msg_ptr,
                size_t msg_len, unsigned int msg_prio,
                const struct timespec *abs_timeout);
```

Link with -lrt.

Feature Test Macro Requirements for glibc (see feature\_test\_macros(7)):

```
mq_timedsend():
    _POSIX_C_SOURCE >= 200112L
```

DESCRIPTION

mq\_send() adds the message pointed to by msg\_ptr to the message queue referred to by the message queue descriptor mqdes. The msg\_len argument specifies the length of the message pointed to by msg\_ptr; this length must be less than or equal to the queue's mq\_msgsize attribute. Zero-length messages are allowed.

The msg\_prio argument is a nonnegative integer that specifies the priority of this message. Messages are placed on the queue in decreasing order of priority, with newer mes-

sages of the same priority being placed after older messages with the same priority. See `mq_overview(7)` for details on the range for the message priority.

If the message queue is already full (i.e., the number of messages on the queue equals the queue's `mq_maxmsg` attribute), then, by default, `mq_send()` blocks until sufficient space becomes available to allow the message to be queued, or until the call is interrupted by a signal handler. If the `O_NONBLOCK` flag is enabled for the message queue description, then the call instead fails immediately with the error `EAGAIN`.

`mq_timedsend()` behaves just like `mq_send()`, except that if the queue is full and the `O_NONBLOCK` flag is not enabled for the message queue description, then `abs_timeout` points to a structure which specifies how long the call will block. This value is an absolute timeout in seconds and nanoseconds since the Epoch, 1970-01-01 00:00:00 +0000 (UTC), specified in the following structure:

```
struct timespec {
    time_t tv_sec;    /* seconds */
    long tv_nsec;    /* nanoseconds */
};
```

If the message queue is full, and the timeout has already expired by the time of the call, `mq_timedsend()` returns immediately.

## RETURN VALUE

On success, `mq_send()` and `mq_timedsend()` return zero; on error, -1 is returned, with `errno` set to indicate the error.

## ERRORS

**EAGAIN** The queue was full, and the `O_NONBLOCK` flag was set for the message queue description referred to by `mqdes`.

**EBADF** The descriptor specified in `mqdes` was invalid or not opened for writing.

**EINTR** The call was interrupted by a signal handler; see `signal(7)`.

**EINVAL** The call would have blocked, and `abs_timeout` was invalid, either because `tv_sec` was less than zero, or because `tv_nsec` was less than zero or greater than 1000 million.

## EMSGSIZE

`msg_len` was greater than the `mq_msgsize` attribute of the message queue.

## ETIMEDOUT

The call timed out before a message could be transferred.

## ATTRIBUTES

For an explanation of the terms used in this section, see attributes(7).

??

?Interface           ? Attribute   ? Value   ?

??

?mq\_send(), mq\_timedsend() ? Thread safety ? MT-Safe ?

??

CONFORMING TO

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

NOTES

On Linux, mq\_timedsend() is a system call, and mq\_send() is a library function layered on top of that system call.

SEE ALSO

mq\_close(3), mq\_getattr(3), mq\_notify(3), mq\_open(3), mq\_receive(3), mq\_unlink(3),  
mq\_overview(7), time(7)

COLOPHON

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