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Rocky Enterprise Linux 9.2 Manual Pages on command 'mq_timedreceive.3'

\$ man mq_timedreceive.3

MQ_RECEIVE(3) Linux Programmer's Manual MQ_RECEIVE(3)

NAME

mq_receive, mq_timedreceive - receive a message from a message queue

SYNOPSIS

```
#include <mqueue.h>

ssize_t mq_receive(mqd_t mqdes, char *msg_ptr,
                  size_t msg_len, unsigned int *msg_prio);

#include <time.h>

#include <mqueue.h>

ssize_t mq_timedreceive(mqd_t mqdes, 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_timedreceive():
    _POSIX_C_SOURCE >= 200112L
```

DESCRIPTION

mq_receive() removes the oldest message with the highest priority from

the message queue referred to by the message queue descriptor `mqdes`, and places it in the buffer pointed to by `msg_ptr`. The `msg_len` argument specifies the size of the buffer pointed to by `msg_ptr`; this must be greater than or equal to the `mq_msgsize` attribute of the queue (see `mq_getattr(3)`). If `msg_prio` is not `NULL`, then the buffer to which it points is used to return the priority associated with the received message.

If the queue is empty, then, by default, `mq_receive()` blocks until a message becomes available, or 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_timedreceive()` behaves just like `mq_receive()`, except that if the queue is empty 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 no message is available, and the timeout has already expired by the time of the call, `mq_timedreceive()` returns immediately.

RETURN VALUE

On success, `mq_receive()` and `mq_timedreceive()` return the number of bytes in the received message; on error, `-1` is returned, with `errno` set to indicate the error.

ERRORS

EAGAIN The queue was empty, 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 reading.

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 less 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).

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?Interface ? Attribute ? Value ?

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?mq_receive(), mq_timedreceive() ? Thread safety ? MT-Safe ?

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CONFORMING TO

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

NOTES

On Linux, mq_timedreceive() is a system call, and mq_receive() 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_send(3), mq_unlink(3), mq_overview(7), time(7)

COLOPHON

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