NAME

recvmmsg – receive multiple messages on a socket

SYNOPSIS

#define _GNU_SOURCE
#include <sys/socket.h>

int recvmmsg(int *sockfd***, struct mmsghdr ****msgvec***, unsigned int** *vlen***,**
    unsigned int *flags***, struct timespec ****timeout***);**

DESCRIPTION

The **recvmmsg**() system call is an extension of **recvmsg**(2) that allows the caller to receive multiple messages from a socket using a single system call. (This has performance benefits for some applications.) A further extension over **recvmsg**(2) is support for a timeout on the receive operation.

The *sockfd* argument is the file descriptor of the socket to receive data from.

The *msgvec* argument is a pointer to an array of *mmsghdr* structures. The size of this array is specified in *vlen*.

The *mmsghdr* structure is defined in *<sys/socket.h>* as:

```
struct mmsghdr {
  struct msghdr msg_hdr;  /* Message header */
  unsigned int  msg_len;  /* Number of received bytes for header */
};
```

The *msg_hdr* field is a *msghdr* structure, as described in **recvmsg**(2). The *msg_len* field is the number of bytes returned for the message in the entry. This field has the same value as the return value of a single **recvmsg**(2) on the header.

The *flags* argument contains flags ORed together. The flags are the same as documented for **recvmsg**(2), with the following addition:

MSG_WAITFORONE
    Turns on **MSG_DONTWAIT** after the first message has been received.

The *timeout* argument points to a *struct timespec* (see **clock_gettime**(2)) defining a timeout (seconds plus nanoseconds) for the receive operation. If *timeout* is *NULL* then the operation blocks indefinitely.

A blocking **recvmmsg**() call blocks until *vlen* messages have been received or until the timeout expires. A nonblocking call reads as many messages as are available (up to the limit specified by *vlen*) and returns immediately.

On return from **recvmmsg**(), successive elements of *msgvec* are updated to contain information about each received message: *msg_len* contains the size of the received message; the subfields of *msg_hdr* are updated as described in **recvmsg**(2). The return value of the call indicates the number of elements of *msgvec* that have been updated.

RETURN VALUE

On success, **recvmmsg**() returns the number of messages received in *msgvec*; on error, −1 is returned, and *errno* is set to indicate the error.

ERRORS

Errors are as for **recvmsg**(2). In addition, the following error can occur:

EINVAL
    timeout is invalid.

VERSIONS

The **recvmmsg**() system call was added in Linux 2.6.32. Support in glibc was added in version 2.12.

CONFORMING TO

recvmmsg() is Linux-specific.

SEE ALSO

clock_gettime(2), **recvmsg**(2), **sendmmsg**(2), **sendmsg**(2), **socket**(2), **socket**(7)