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IEEE Std 1003.1-2017 (Revision of IEEE Std 1003.1-2008)
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NAME

mqueue.h – message queues (**REALTIME**)

SYNOPSIS

[MSG] ⊠ #include <mqueue.h> ⊠

DESCRIPTION

The *<mqueue.h>* header shall define the **mqd_t** type, which is used for message queue descriptors. This is not an array type.

The *<mqueue.h>* header shall define the **pthread_attr_t, size_t,** and **ssize_t** types as described in *<sys/types.h>*.

The *<mqueue.h>* header shall define the **struct timespec** structure as described in *<time.h>*.

The tag **sigevent** shall be declared as naming an incomplete structure type, the contents of which are described in the *<signal.h>* header.

The *<mqueue.h>* header shall define the **mq_attr** structure, which is used in getting and setting the attributes of a message queue. Attributes are initially set when the message queue is created. An **mq_attr** structure shall have at least the following fields:

```
long    mq_flags    Message queue flags.
long    mq_maxmsg   Maximum number of messages.
long    mq_msgsize  Maximum message size.
long    mq_curmsgs  Number of messages currently queued.
```

The following shall be declared as functions and may also be defined as macros. Function prototypes shall be provided.

```
int      mq_close(mqd_t);
int      mq_getattr(mqd_t, struct mq_attr *);
int      mq_notify(mqd_t, const struct sigevent *);
mqd_t    mq_open(const char *, int, ...);
ssize_t  mq_receive(mqd_t, char *, size_t, unsigned *);
int      mq_send(mqd_t, const char *, size_t, unsigned);
int      mq_setattr(mqd_t, const struct mq_attr *restrict,
             struct mq_attr *restrict);
ssize_t  mq_timedreceive(mqd_t, char *restrict, size_t,
             unsigned *restrict, const struct timespec *restrict);
int      mq_timedsend(mqd_t, const char *, size_t, unsigned,
             const struct timespec *);
int      mq_unlink(const char *);
```

Inclusion of the *<mqueue.h>* header may make visible symbols defined in the headers *<fcntl.h>*, *<signal.h>*, and *<time.h>*.

The following sections are informative.

APPLICATION USAGE

None.

RATIONALE

None.

FUTURE DIRECTIONS

None.

SEE ALSO

<fcntl.h>, *<signal.h>* , *<sys/types.h>*, *<time.h>*

XSH *mq_close*, *mq_getattr*, *mq_notify*, *mq_open*, *mq_receive*, *mq_send*, *mq_setattr*, *mq_unlink*

CHANGE HISTORY

First released in Issue 5. Included for alignment with the POSIX Realtime Extension.

Issue 6

The *<mqueue.h>* header is marked as part of the Message Passing option.

The *mq_timedreceive()* and *mq_timedsend()* functions are added for alignment with IEEE Std 1003.1d-1999.

The **restrict** keyword is added to the prototypes for *mq_setattr()* and *mq_timedreceive()*.

Issue 7

Type and structure declarations are added.

End of informative text.