



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

\$ man getutent_r.3

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

NAME

getutent, getutid, getutline, pututline, setutent, endutent, utmpname -
access utmp file entries

SYNOPSIS

```
#include <utmp.h>

struct utmp *getutent(void);

struct utmp *getutid(const struct utmp *ut);

struct utmp *getutline(const struct utmp *ut);

struct utmp *pututline(const struct utmp *ut);

void setutent(void);

void endutent(void);

int utmpname(const char *file);
```

DESCRIPTION

New applications should use the POSIX.1-specified "utmpx" versions of these functions; see CONFORMING TO.

utmpname() sets the name of the utmp-format file for the other utmp functions to access. If utmpname() is not used to set the filename be?

for the other functions are used, they assume `_PATH_UTMP`, as defined in `<paths.h>`.

`setutent()` rewinds the file pointer to the beginning of the `utmp` file.

It is generally a good idea to call it before any of the other functions.

`endutent()` closes the `utmp` file. It should be called when the user code is done accessing the file with the other functions.

`getutent()` reads a line from the current file position in the `utmp` file. It returns a pointer to a structure containing the fields of the line. The definition of this structure is shown in `utmp(5)`.

`getutid()` searches forward from the current file position in the `utmp` file based upon `ut`. If `ut->ut_type` is one of `RUN_LVL`, `BOOT_TIME`, `NEW_TIME`, or `OLD_TIME`, `getutid()` will find the first entry whose `ut_type` field matches `ut->ut_type`. If `ut->ut_type` is one of `INIT_PROCESS`, `LOGIN_PROCESS`, `USER_PROCESS`, or `DEAD_PROCESS`, `getutid()` will find the first entry whose `ut_id` field matches `ut->ut_id`.

`getutline()` searches forward from the current file position in the `utmp` file. It scans entries whose `ut_type` is `USER_PROCESS` or `LOGIN_PROCESS` and returns the first one whose `ut_line` field matches `ut->ut_line`.

`pututline()` writes the `utmp` structure `ut` into the `utmp` file. It uses `getutid()` to search for the proper place in the file to insert the new entry. If it cannot find an appropriate slot for `ut`, `pututline()` will append the new entry to the end of the file.

RETURN VALUE

`getutent()`, `getutid()`, and `getutline()` return a pointer to a struct `utmp` on success, and `NULL` on failure (which includes the "record not found" case). This struct `utmp` is allocated in static storage, and may be overwritten by subsequent calls.

On success `pututline()` returns `ut`; on failure, it returns `NULL`.

`utmpname()` returns 0 if the new name was successfully stored, or -1 on failure.

In the event of an error, these functions set `errno` to indicate the cause.

ERRORS

ENOMEM Out of memory.

ESRCH Record not found.

setutent(), pututline(), and the getut*() functions can also fail for the reasons described in open(2).

FILES

/var/run/utmp

database of currently logged-in users

/var/log/wtmp

database of past user logins

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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?getutent()	? Thread safety	? MT-Unsafe	init race:utent	?
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?	?	? race:utentbuf	sig:ALRM	timer	?
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?getutid()	? Thread safety	? MT-Unsafe	init race:utent	?
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?getutline()	?	? sig:ALRM	timer	?
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?pututline()	? Thread safety	? MT-Unsafe	race:utent	?
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?	?	? sig:ALRM	timer	?
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?setutent()	? Thread safety	? MT-Unsafe	race:utent	?
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?endutent()	?	?	?
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?utmpname()	?	?	?
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??

In the above table, utent in race:utent signifies that if any of the functions setutent(), getutent(), getutid(), getutline(), pututline(), utmpname(), or endutent() are used in parallel in different threads of a program, then data races could occur.

CONFORMING TO

XPG2, SVr4.

In XPG2 and SVID 2 the function `pututline()` is documented to return `void`, and that is what it does on many systems (AIX, HP-UX). HP-UX introduces a new function `_pututline()` with the prototype given above for `pututline()`.

All these functions are obsolete now on non-Linux systems.

POSIX.1-2001 and POSIX.1-2008, following SUSv1, does not have any of these functions, but instead uses

```
#include <utmpx.h>

struct utmpx *getutxent(void);

struct utmpx *getutxid(const struct utmpx *);

struct utmpx *getutxline(const struct utmpx *);

struct utmpx *pututxline(const struct utmpx *);

void setutxent(void);

void endutxent(void);
```

These functions are provided by glibc, and perform the same task as their equivalents without the "x", but use `struct utmpx`, defined on Linux to be the same as `struct utmp`. For completeness, glibc also provides `utmpxname()`, although this function is not specified by POSIX.1. On some other systems, the `utmpx` structure is a superset of the `utmp` structure, with additional fields, and larger versions of the existing fields, and parallel files are maintained, often `/var/*/utmpx` and `/var/*/wtmpx`.

Linux glibc on the other hand does not use a parallel `utmpx` file since its `utmp` structure is already large enough. The "x" functions listed above are just aliases for their counterparts without the "x" (e.g., `getutxent()` is an alias for `getutent()`).

NOTES

Glibc notes

The above functions are not thread-safe. Glibc adds reentrant versions

```
#include <utmp.h>
```

```
int getutent_r(struct utmp *ubuf, struct utmp **ubufp);
```

```
int getutid_r(struct utmp *ut,
              struct utmp *ubuf, struct utmp **ubufp);

int getutline_r(struct utmp *ut,
                struct utmp *ubuf, struct utmp **ubufp);
```

Feature Test Macro Requirements for glibc (see `feature_test_macros(7)`):

`getutent_r()`, `getutid_r()`, `getutline_r()`:

```
_GNU_SOURCE

|| /* since glibc 2.19: */ _DEFAULT_SOURCE

|| /* glibc <= 2.19: */ _SVID_SOURCE || _BSD_SOURCE
```

These functions are GNU extensions, analogs of the functions of the same name without the `_r` suffix. The `ubuf` argument gives these functions a place to store their result. On success, they return 0, and a pointer to the result is written in `*ubufp`. On error, these functions return -1. There are no `utmpx` equivalents of the above functions. (POSIX.1 does not specify such functions.)

EXAMPLES

The following example adds and removes a `utmp` record, assuming it is run from within a pseudo terminal. For usage in a real application, you should check the return values of `getpwuid(3)` and `ttyname(3)`.

```
#include <string.h>
#include <stdlib.h>
#include <pwd.h>
#include <unistd.h>
#include <utmp.h>
#include <time.h>

int
main(int argc, char *argv[])
{
    struct utmp entry;

    system("echo before adding entry::who");

    entry.ut_type = USER_PROCESS;

    entry.ut_pid = getpid();

    strcpy(entry.ut_line, ttyname(STDIN_FILENO) + strlen("/dev/"));
```

```

/* only correct for ptys named /dev/tty[pqr][0-9a-z] */
strcpy(entry.ut_id, ttyname(STDIN_FILENO) + strlen("/dev/tty"));
time(&entry.ut_time);
strcpy(entry.ut_user, getpwuid(getuid())->pw_name);
memset(entry.ut_host, 0, UT_HOSTSIZE);
entry.ut_addr = 0;
setutent();
pututline(&entry);
system("echo after adding entry::who");
entry.ut_type = DEAD_PROCESS;
memset(entry.ut_line, 0, UT_LINESIZE);
entry.ut_time = 0;
memset(entry.ut_user, 0, UT_NAMESIZE);
setutent();
pututline(&entry);
system("echo after removing entry::who");
endutent();
exit(EXIT_SUCCESS);
}

```

SEE ALSO

getutmp(3), utmp(5)

COLOPHON

This page is part of release 5.10 of the Linux man-pages project. A description of the project, information about reporting bugs, and the latest version of this page, can be found at <https://www.kernel.org/doc/man-pages/>.

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