

**NAME**

getpwnam, getpwnam\_r, getpwuid, getpwuid\_r - get password file entry

**SYNOPSIS**

```
#include <sys/types.h>
#include <pwd.h>

struct passwd *getpwnam(const char *name);

struct passwd *getpwuid(uid_t uid);

int getpwnam_r(const char *name, struct passwd *pwd,
               char *buf, size_t buflen, struct passwd **result);

int getpwuid_r(uid_t uid, struct passwd *pwd,
               char *buf, size_t buflen, struct passwd **result);
```

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

```
getpwnam_r(), getpwuid_r():
    _POSIX_C_SOURCE >= 1 || _XOPEN_SOURCE || _BSD_SOURCE || _SVID_SOURCE ||
    _POSIX_SOURCE
```

**DESCRIPTION**

The **getpwnam()** function returns a pointer to a structure containing the broken-out fields of the record in the password database (e.g., the local password file */etc/passwd*, NIS, and LDAP) that matches the username *name*.

The **getpwuid()** function returns a pointer to a structure containing the broken-out fields of the record in the password database that matches the user ID *uid*.

The *passwd* structure is defined in *<pwd.h>* as follows:

```
struct passwd {
    char *pw_name; /* username */
    char *pw_passwd; /* user password */
    uid_t pw_uid; /* user ID */
    gid_t pw_gid; /* group ID */
    char *pw_gecos; /* user information */
    char *pw_dir; /* home directory */
    char *pw_shell; /* shell program */
};
```

See [passwd\(5\)](#) for more information about these fields.

The **getpwnam\_r()** and **getpwuid\_r()** functions obtain the same information as **getpwnam()** and **getpwuid()**, but store the retrieved *passwd* structure in the space pointed to by *pwd*. The string fields pointed to by the members of the *passwd* structure are stored in the buffer *buf* of size *buflen*. A pointer to the result (in case of success) or NULL (in case no entry was found or an error occurred) is stored in *\*result*.

The call

```
sysconf(_SC_GETPW_R_SIZE_MAX)
```

returns either -1, without changing *errno*, or an initial suggested size for *buf*. (If this size is too small, the call fails with **ERANGE**, in which case the caller can retry with a larger buffer.)

**RETURN VALUE**

The **getpwnam()** and **getpwuid()** functions return a pointer to a *passwd* structure, or NULL if the matching entry is not found or an error occurs. If an error occurs, *errno* is set appropriately. If one wants to check *errno* after the call, it should be set to zero before the call.

The return value may point to a static area, and may be overwritten by subsequent calls to

[getpwent\(3\)](#), [getpwnam\(\)](#), or [getpwuid\(\)](#). (Do not pass the returned pointer to [free\(3\)](#).)

On success, [getpwnam\\_r\(\)](#) and [getpwuid\\_r\(\)](#) return zero, and set *\*result* to *pwd*. If no matching password record was found, these functions return 0 and store NULL in *\*result*. In case of error, an error number is returned, and NULL is stored in *\*result*.

## ERRORS

**0** or **ENOENT** or **ESRCH** or **EBADF** or **EPERM** or ...

The given *name* or *uid* was not found.

**EINTR**

A signal was caught.

**EIO** I/O error.

**EMFILE**

The maximum number (**OPEN\_MAX**) of files was open already in the calling process.

**ENFILE**

The maximum number of files was open already in the system.

**ENOMEM**

Insufficient memory to allocate *passwd* structure.

**ERANGE**

Insufficient buffer space supplied.

## NOTE

The user password database mostly refers to */etc/passwd*. However, with recent systems it also refers to network wide databases using NIS, LDAP and other local files as configured in */etc/nsswitch.conf*.

## FILES

*/etc/passwd*

local password database file

*/etc/nsswitch.conf*

System Databases and Name Service Switch configuration file

## ATTRIBUTES

**Multithreading (see [pthreads\(7\)](#))**

The [getpwnam\(\)](#) and [getpwuid\(\)](#) functions are not thread-safe.

The [getpwnam\\_r\(\)](#) and [getpwuid\\_r\(\)](#) functions are thread-safe.

## CONFORMING TO

SVr4, 4.3BSD, POSIX.1-2001. The *pw\_gecos* field is not specified in POSIX, but is present on most implementations.

## NOTES

The formulation given above under RETURN VALUE is from POSIX.1-2001. It does not call not found an error, and hence does not specify what value *errno* might have in this situation. But that makes it impossible to recognize errors. One might argue that according to POSIX *errno* should be left unchanged if an entry is not found. Experiments on various UNIX-like systems show that lots of different values occur in this situation: 0, ENOENT, EBADF, ESRCH, EWOULDBLOCK, EPERM, and probably others.

The *pw\_dir* field contains the name of the initial working directory of the user. Login programs use the value of this field to initialize the **HOME** environment variable for the login shell. An application that wants to determine its user's home directory should inspect the value of **HOME** (rather than the value [getpwuid\(getuid\(\)\)->pw\\_dir](#)) since this allows the user to modify their notion of the home directory during a login session. To determine the (initial) home directory of another user, it is necessary to use [getpwnam\(username\)->pw\\_dir](#) or similar.

**EXAMPLE**

The program below demonstrates the use of `getpwnam_r()` to find the full username and user ID for the username supplied as a command-line argument.

```
#include <pwd.h>
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
#include <errno.h>

int
main(int argc, char *argv[])
{
    struct passwd pwd;
    struct passwd *result;
    char *buf;
    size_t bufsize;
    int s;

    if (argc != 2) {
        fprintf(stderr, Usage: %s usernamen, argv[0]);
        exit(EXIT_FAILURE);
    }

    bufsize = sysconf(_SC_GETPW_R_SIZE_MAX);
    if (bufsize == -1) /* Value was indeterminate */
        bufsize = 16384; /* Should be more than enough */

    buf = malloc(bufsize);
    if (buf == NULL) {
        perror(malloc);
        exit(EXIT_FAILURE);
    }

    s = getpwnam_r(argv[1], &pwd, buf, bufsize, &result);
    if (result == NULL) {
        if (s == 0)
            printf(Not foundn);
        else {
            errno = s;
            perror(getpwnam_r);
        }
        exit(EXIT_FAILURE);
    }

    printf(Name: %s; UID: %ldn, pwd.pw_gecos, (long) pwd.pw_uid);
    exit(EXIT_SUCCESS);
}
```

**SEE ALSO**

[endpwent\(3\)](#), [fgetpwent\(3\)](#), [getgrnam\(3\)](#), [getpw\(3\)](#), [getpwent\(3\)](#), [getspnam\(3\)](#), [putpwent\(3\)](#), [setpwent\(3\)](#), [nsswitch.conf\(5\)](#), [passwd\(5\)](#)

**COLOPHON**

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