

**NAME**

basename, dirname – parse pathname components

**SYNOPSIS**

```
#include <libgen.h>
```

```
char *dirname(char *path);
```

```
char *basename(char *path);
```

**DESCRIPTION**

Warning: there are two different functions **basename()** - see below.

The functions **dirname()** and **basename()** break a null-terminated pathname string into directory and file-name components. In the usual case, **dirname()** returns the string up to, but not including, the final '/', and **basename()** returns the component following the final '/'. Trailing '/' characters are not counted as part of the pathname.

If *path* does not contain a slash, **dirname()** returns the string "." while **basename()** returns a copy of *path*. If *path* is the string "/", then both **dirname()** and **basename()** return the string "/". If *path* is a null pointer or points to an empty string, then both **dirname()** and **basename()** return the string ".".

Concatenating the string returned by **dirname()**, a "/", and the string returned by **basename()** yields a complete pathname.

Both **dirname()** and **basename()** may modify the contents of *path*, so it may be desirable to pass a copy when calling one of these functions.

These functions may return pointers to statically allocated memory which may be overwritten by subsequent calls. Alternatively, they may return a pointer to some part of *path*, so that the string referred to by *path* should not be modified or freed until the pointer returned by the function is no longer required.

The following list of examples (taken from SUSv2) shows the strings returned by **dirname()** and **basename()** for different paths:

path	dirname	basename
/usr/lib	/usr	lib
/usr/	/	usr
usr	.	usr
/	/	/
.	.	.
..	.	..

**RETURN VALUE**

Both **dirname()** and **basename()** return pointers to null-terminated strings. (Do not pass these pointers to **free(3)**.)

**ATTRIBUTES**

**Multithreading (see pthreads(7))**

The **basename()** and **dirname()** functions are thread-safe.

**CONFORMING TO**

POSIX.1-2001.

**NOTES**

There are two different versions of **basename()** - the POSIX version described above, and the GNU version, which one gets after

```
#define _GNU_SOURCE    /* See feature_test_macros(7) */
#include <string.h>
```

The GNU version never modifies its argument, and returns the empty string when *path* has a trailing slash, and in particular also when it is `"/`. There is no GNU version of **dirname()**.

With glibc, one gets the POSIX version of **basename()** when `<libgen.h>` is included, and the GNU version otherwise.

## BUGS

In the glibc implementation of the POSIX versions of these functions they modify their argument, and segfault when called with a static string like `"/usr/"`. Before glibc 2.2.1, the glibc version of **dirname()** did not correctly handle pathnames with trailing `'` characters, and generated a segfault if given a NULL argument.

## EXAMPLE

```
char *dirc, *basec, *bname, *dname;
char *path = "/etc/passwd";

dirc = strdup(path);
basec = strdup(path);
dname = dirname(dirc);
bname = basename(basec);
printf("dirname=%s, basename=%s\n", dname, bname);
```

## SEE ALSO

**basename(1)**, **dirname(1)**

## COLOPHON

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