

**NAME**

`ftok` - convert a pathname and a project identifier to a System V IPC key

**SYNOPSIS**

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

```
key_t ftok(const char *pathname, int proj_id);
```

**DESCRIPTION**

The `ftok()` function uses the identity of the file named by the given *pathname* (which must refer to an existing, accessible file) and the least significant 8 bits of *proj\_id* (which must be nonzero) to generate a *key\_t* type System V IPC key, suitable for use with [msgget\(2\)](#), [semget\(2\)](#), or [shmget\(2\)](#).

The resulting value is the same for all pathnames that name the same file, when the same value of *proj\_id* is used. The value returned should be different when the (simultaneously existing) files or the project IDs differ.

**RETURN VALUE**

On success, the generated *key\_t* value is returned. On failure -1 is returned, with *errno* indicating the error as for the [stat\(2\)](#) system call.

**ATTRIBUTES**

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

The `ftok()` function is thread-safe.

**CONFORMING TO**

POSIX.1-2001.

**NOTES**

On some ancient systems, the prototype was:

```
key_t ftok(char *pathname, char proj_id);
```

Today, *proj\_id* is an *int*, but still only 8 bits are used. Typical usage has an ASCII character *proj\_id*, that is why the behavior is said to be undefined when *proj\_id* is zero.

Of course, no guarantee can be given that the resulting *key\_t* is unique. Typically, a best-effort attempt combines the given *proj\_id* byte, the lower 16 bits of the inode number, and the lower 8 bits of the device number into a 32-bit result. Collisions may easily happen, for example between files on */dev/hda1* and files on */dev/sda1*.

**SEE ALSO**

[msgget\(2\)](#), [semget\(2\)](#), [shmget\(2\)](#), [stat\(2\)](#), [svipc\(7\)](#)

**COLOPHON**

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