



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

\$ man tolower.3

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

NAME

toupper, tolower, toupper_l, tolower_l - convert uppercase or lowercase

SYNOPSIS

```
#include <ctype.h>

int toupper(int c);

int tolower(int c);

int toupper_l(int c, locale_t locale);

int tolower_l(int c, locale_t locale);
```

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

toupper_l(), tolower_l():

Since glibc 2.10:

```
_XOPEN_SOURCE >= 700
```

Before glibc 2.10:

```
_GNU_SOURCE
```

DESCRIPTION

These functions convert lowercase letters to uppercase, and vice versa.

If c is a lowercase letter, toupper() returns its uppercase equivalent,

if an uppercase representation exists in the current locale. Otherwise, it returns c. The toupper_l() function performs the same task, but uses the locale referred to by the locale handle locale.

If c is an uppercase letter, tolower() returns its lowercase equivalent, if a lowercase representation exists in the current locale. Otherwise, it returns c. The tolower_l() function performs the same task, but uses the locale referred to by the locale handle locale.

If c is neither an unsigned char value nor EOF, the behavior of these functions is undefined.

The behavior of toupper_l() and tolower_l() is undefined if locale is the special locale object LC_GLOBAL_LOCALE (see duplocale(3)) or is not a valid locale object handle.

RETURN VALUE

The value returned is that of the converted letter, or c if the conversion was not possible.

ATTRIBUTES

For an explanation of the terms used in this section, see attributes(7).

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?Interface ? Attribute ? Value ?

??

?toupper(), tolower(), ? Thread safety ? MT-Safe ?

?toupper_l(), tolower_l() ? ? ?

??

CONFORMING TO

toupper(), tolower(): C89, C99, 4.3BSD, POSIX.1-2001, POSIX.1-2008.

toupper_l(), tolower_l(): POSIX.1-2008.

NOTES

The standards require that the argument c for these functions is either EOF or a value that is representable in the type unsigned char. If the argument c is of type char, it must be cast to unsigned char, as in the following example:

```
char c;
```

...

```
res = toupper((unsigned char) c);
```

This is necessary because `char` may be the equivalent signed `char`, in which case a byte where the top bit is set would be sign extended when converting to `int`, yielding a value that is outside the range of unsigned `char`.

The details of what constitutes an uppercase or lowercase letter depend on the locale. For example, the default "C" locale does not know about umlauts, so no conversion is done for them.

In some non-English locales, there are lowercase letters with no corresponding uppercase equivalent; the German sharp `s` is one example.

SEE ALSO

`isalpha(3)`, `newlocale(3)`, `setlocale(3)`, `tolower(3)`, `toupper(3)`, `uselocale(3)`, `locale(7)`

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/>.

GNU

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