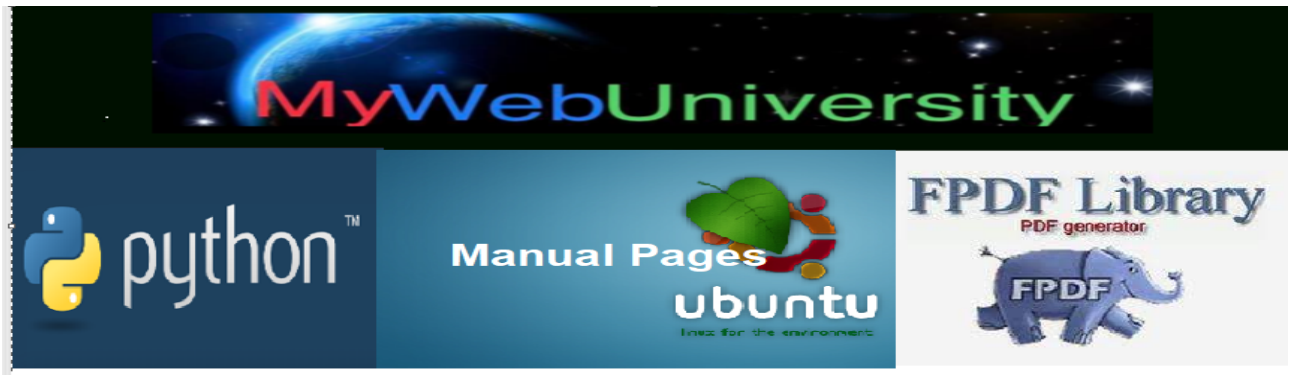

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Linux Ubuntu 26.04 Manual Pages on command 'strtoull.3'

$ man strtoull.3

strtoul(3) Library Functions Manual strtoul(3)

NAME

strtoul, strtoull, strtouq - convert a string to an unsigned long integer

LIBRARY

Standard C library (libc, -lc)

SYNOPSIS

```
#include <stdlib.h>

unsigned long strtoul(const char *restrict nptr,
                      char **_Nullable restrict endptr, int base);

unsigned long long strtoull(const char *restrict nptr,
                      char **_Nullable restrict endptr, int base);
```

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

strtoull():

_ISOC99_SOURCE

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

DESCRIPTION

The strtoul() function converts the initial part of the string in nptr to an unsigned long value according to the given base, which must be between 2 and 36 inclusive, or be the spe? cial value 0.

The string may begin with an arbitrary amount of white space (as determined by isspace(3)) followed by a single optional '+' or '-' sign. If base is zero or 16, the string may then include a "0x" or "0X" prefix, and the number will be read in base 16; if base is zero or 2, the string may then include a "0b" or "0B" prefix, and the number will be read in base 2;

otherwise, a zero base is taken as 10 (decimal) unless the next character is '0', in which case it is taken as 8 (octal).

The remainder of the string is converted to an unsigned long value in the obvious manner, stopping at the first character which is not a valid digit in the given base. (In bases above 10, the letter 'A' in either uppercase or lowercase represents 10, 'B' represents 11, and so forth, with 'Z' representing 35.)

If endptr is not NULL, and the base is supported, strtoul() stores the address of the first invalid character in *endptr. If there were no digits at all, strtoul() stores the original value of nptr in *endptr (and returns 0). In particular, if *nptr is not '\0' but **endptr is '\0' on return, the entire string is valid.

The strtoull() function works just like the strtoul() function but returns an unsigned long long value.

RETURN VALUE

The strtoul() function returns either the result of the conversion, or, if there was a lead?ing minus sign, the negation of the result of the conversion represented as an unsigned value, unless the original (nonnegated) value would overflow; in the latter case, strtoul() returns ULONG_MAX and sets errno to ERANGE. Precisely the same holds for strtoull() (with ULLONG_MAX instead of ULONG_MAX).

ERRORS

This function does not modify errno on success.

EINVAL (not in C99) The given base contains an unsupported value.

ERANGE The resulting value was out of range.

The implementation may also set errno to EINVAL in case no conversion was performed (no dig?its seen, and 0 returned).

ATTRIBUTES

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

Interface	Attribute	Value
strtoul(), strtoull(), strtouq()	Thread safety	MT-Safe locale

VERSIONS

In locales other than the "C" locale, other strings may be accepted. (For example, the

thousands separator of the current locale may be supported.)

BSD also has

u_quad_t strtouq(const char *nptr, char **endptr, int base);

with completely analogous definition. Depending on the wordsize of the current architec? ture, this may be equivalent to strtoull() or to strtoul().

STANDARDS

C23, POSIX.1-2024.

HISTORY

strtoul()

POSIX.1-2001, C89, SVr4.

strtoull()

POSIX.1-2001, C99.

"0b", "0B"

C23. glibc 2.38. (Not in POSIX.)

CAVEATS

Since strtoul() can legitimately return 0 or ULONG_MAX (ULLONG_MAX for strtoull()) on both success and failure, the calling program should set errno to 0 before the call, and then de? termine if an error occurred by checking whether errno has a nonzero value after the call.

BUGS

Signed numbers

Some negative values are considered valid input and are silently converted to unsigned long.

White space

These functions silently accept leading whitespace.

isalnum(3)

To reject white space and/or a sign, call isalnum(3) before strtoul().

EXAMPLES

See the example on the strtol(3) manual page; the use of the functions described in this manual page is similar.

SEE ALSO

a64l(3), atof(3), atoi(3), atol(3), strtod(3), strtol(3), strtoumax(3)