



## ***Rocky Enterprise Linux 9.2 Manual Pages on command 'isprint\_1.3'***

**C:\>man isprint\_1.3**

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

### NAME

isalnum, isalpha, isascii, isblank, iscntrl, isdigit, isgraph, islower, isprint, ispunct, isspace, isupper, isxdigit, isalnum\_l, isalpha\_l, isascii\_l, isblank\_l, iscntrl\_l, isdigit\_l, isgraph\_l, islower\_l, isprint\_l, ispunct\_l, isspace\_l, isupper\_l, isxdigit\_l - character classification functions

### SYNOPSIS

```
#include <ctype.h>

int isalnum(int c);
int isalpha(int c);
int iscntrl(int c);
int isdigit(int c);
int isgraph(int c);
int islower(int c);
int isprint(int c);
int ispunct(int c);
int isspace(int c);
int isupper(int c);
int isxdigit(int c);
int isascii(int c);
int isblank(int c);
int isalnum_l(int c, locale_t locale);
```

```
int isalpha_(int c, locale_t locale);
int isblank_(int c, locale_t locale);
int iscntrl_(int c, locale_t locale);
int isdigit_(int c, locale_t locale);
int isgraph_(int c, locale_t locale);
int islower_(int c, locale_t locale);
int isprint_(int c, locale_t locale);
int ispunct_(int c, locale_t locale);
int isspace_(int c, locale_t locale);
int isupper_(int c, locale_t locale);
int isxdigit_(int c, locale_t locale);
int isascii_(int c, locale_t locale);
```

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

`isascii()`:

```
_XOPEN_SOURCE
|| /* Glibc since 2.19: */ _DEFAULT_SOURCE
|| /* Glibc versions <= 2.19: */ _SVID_SOURCE
```

`isblank()`:

```
_ISOC99_SOURCE || _POSIX_C_SOURCE >= 200112L
```

`isalnum_()`, `isalpha_()`, `isblank_()`, `iscntrl_()`, `isdigit_()`, `isgraph_()`, `is?`

`lower_()`, `isprint_()`, `ispunct_()`, `isspace_()`, `isupper_()`, `isxdigit_()`:

Since glibc 2.10:

```
_XOPEN_SOURCE >= 700
```

Before glibc 2.10:

```
_GNU_SOURCE
```

`isascii_()`:

Since glibc 2.10:

```
_XOPEN_SOURCE >= 700 && (_SVID_SOURCE || _BSD_SOURCE)
```

Before glibc 2.10:

```
_GNU_SOURCE
```

## DESCRIPTION

These functions check whether `c`, which must have the value of an unsigned char or EOF, falls into a certain character class according to the specified locale. The

functions without the "\_l" suffix perform the check based on the current locale.

The functions with the "\_l" suffix perform the check based on the locale specified by the locale object locale. The behavior of these functions is undefined if locale is the special locale object LC\_GLOBAL\_LOCALE (see duplocale(3)) or is not a valid locale object handle.

The list below explains the operation of the functions without the "\_l" suffix; the functions with the "\_l" suffix differ only in using the locale object locale instead of the current locale.

isalnum()

checks for an alphanumeric character; it is equivalent to (isalpha(c) || isdigit(c)).

isalpha()

checks for an alphabetic character; in the standard "C" locale, it is equivalent to (isupper(c) || islower(c)). In some locales, there may be additional characters for which isalpha() is true? letters which are neither uppercase nor lowercase.

isascii()

checks whether c is a 7-bit unsigned char value that fits into the ASCII character set.

isblank()

checks for a blank character; that is, a space or a tab.

isctrnl()

checks for a control character.

isdigit()

checks for a digit (0 through 9).

isgraph()

checks for any printable character except space.

islower()

checks for a lowercase character.

isprint()

checks for any printable character including space.

ispunct()

checks for any printable character which is not a space or an alphanumeric

character.

isspace()

checks for white-space characters. In the "C" and "POSIX" locales, these are: space, form-feed ('\f'), newline ('\n'), carriage return ('\r'), horizontal tab ('\t'), and vertical tab ('\v').

isupper()

checks for an uppercase letter.

isxdigit()

checks for hexadecimal digits, that is, one of  
0 1 2 3 4 5 6 7 8 9 a b c d e f A B C D E F.

### RETURN VALUE

The values returned are nonzero if the character c falls into the tested class, and zero if not.

### VERSIONS

isalnum\_l(), isalpha\_l(), isblank\_l(), iscntrl\_l(), isdigit\_l(), isgraph\_l(), islower\_l(), isprint\_l(), ispunct\_l(), isspace\_l(), isupper\_l(), isxdigit\_l(), and isascii\_l() are available since glibc 2.3.

### ATTRIBUTES

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

??

?Interface                    ? Attribute   ? Value   ?

??

?isalnum(), isalpha(), isascii(), ? Thread safety ? MT-Safe ?

?isblank(), iscntrl(), isdigit(), ?            ?        ?

?isgraph(), islower(), isprint(), ?            ?        ?

?ispunct(), isspace(), isupper(), ?            ?        ?

?isxdigit()                    ?            ?        ?

??

### CONFORMING TO

C89 specifies isalnum(), isalpha(), iscntrl(), isdigit(), isgraph(), islower(), isprint(), ispunct(), isspace(), isupper(), and isxdigit(), but not isascii() and isblank(). POSIX.1-2001 also specifies those functions, and also isascii() (as an XSI extension) and isblank(). C99 specifies all of the preceding functions, except

isascii().

POSIX.1-2008 marks isascii() as obsolete, noting that it cannot be used portably in a localized application.

POSIX.1-2008 specifies isalnum\_l(), isalpha\_l(), isblank\_l(), iscntrl\_l(), isdigit\_l(), isgraph\_l(), islower\_l(), isprint\_l(), ispunct\_l(), isspace\_l(), isupper\_l(), and isxdigit\_l().

isascii\_l() is a GNU extension.

## 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 of 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 characters belong to which class depend on the locale. For example, `isupper()` will not recognize an A-umlaut (ä) as an uppercase letter in the default C locale.

## SEE ALSO

iswalnum(3), iswalph(3), iswblank(3), iswcntrl(3), iswdigit(3), iswgraph(3), iswlower(3), iswprint(3), iswpunct(3), iswspace(3), iswupper(3), iswxdigit(3), newlocale(3), setlocale(3), toascii(3), tolower(3), toupper(3),uselocale(3), ascii(7), locale(7)

## COLOPHON

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