NAME

mbrtowc, **mbrtoc16**, **mbrtoc32** - convert a character to a wide-character code (restartable)

LIBRARY

Standard C Library (libc, -lc)

SYNOPSIS

#include <wchar.h>

size_t
mbrtowc(*wchar_t * restrict pc*, *const char * restrict s*, *size_t n*, *mbstate_t * restrict ps*);

#include <uchar.h>

size_t
mbrtoc16(*char16_t * restrict pc*, *const char * restrict s*, *size_t n*, *mbstate_t * restrict ps*);

size_t
mbrtoc32(*char32_t * restrict pc*, *const char * restrict s*, *size_t n*, *mbstate_t * restrict ps*);

DESCRIPTION

The **mbrtowc**(), **mbrtoc16**() and **mbrtoc32**() functions inspect at most *n* bytes pointed to by *s* to determine the number of bytes needed to complete the next multibyte character. If a character can be completed, and *pc* is not NULL, the wide character which is represented by *s* is stored in the *wchar_t*, *char16_t* or *char32_t* it points to.

If *s* is NULL, these functions behave as if *pc* was NULL, *s* was an empty string ("") and *n* was 1.

The *mbstate_t* argument, *ps*, is used to keep track of the shift state. If it is NULL, these functions use an internal, static *mbstate_t* object, which is initialized to the initial conversion state at program startup.

As a single *char16_t* is not large enough to represent certain multibyte characters, the **mbrtoc16**() function may need to be invoked multiple times to convert a single multibyte character sequence.

RETURN VALUES

The **mbrtowc**(), **mbrtoc16**() and **mbrtoc32**() functions return:

0   The next *n* or fewer bytes represent the null wide character (L'\0').

>0   The next *n* or fewer bytes represent a valid character, these functions return the number of bytes

used to complete the multibyte character.

(*size_t*)-1
        An encoding error has occurred. The next *n* or fewer bytes do not contribute to a valid multibyte
        character.

(*size_t*)-2
        The next *n* contribute to, but do not complete, a valid multibyte character sequence, and all *n*
        bytes have been processed.

The **mbrtoc16**() function also returns:

(*size_t*)-3
        The next character resulting from a previous call has been stored. No bytes from the input have
        been consumed.

ERRORS
The **mbrtowc**(), **mbrtoc16**() and **mbrtoc32**() functions will fail if:

[EILSEQ]   An invalid multibyte sequence was detected.

[EINVAL]   The conversion state is invalid.

SEE ALSO
mbtowc(3), multibyte(3), setlocale(3), wcrtomb(3)

STANDARDS
The **mbrtowc**(), **mbrtoc16**() and **mbrtoc32**() functions conform to ISO/IEC 9899:2011 ("ISO C11").