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Red Hat Enterprise Linux Release 9.2 Manual Pages on 'inet_ntop.3p' command

$ man inet_ntop.3p

INET_NTOP(3P) POSIX Programmer's Manual INET_NTOP(3P)

PROLOG

This manual page is part of the POSIX Programmer's Manual. The Linux implementation of this interface may differ (consult the corresponding Linux manual page for details of Linux behavior), or the interface may not be implemented on Linux.

NAME

inet_ntop, inet_pton ? convert IPv4 and IPv6 addresses between binary and text form

SYNOPSIS

```
#include <arpa/inet.h>
const char *inet_ntop(int af, const void *restrict src,
   char *restrict dst, socklen_t size);
int inet_pton(int af, const char *restrict src, void *restrict dst);
```

DESCRIPTION

The inet_ntop() function shall convert a numeric address into a text string suitable for presentation. The af argument shall specify the family of the address. This can be AF_INET or AF_INET6. The src argu? ment points to a buffer holding an IPv4 address if the af argument is AF_INET, or an IPv6 address if the af argument is AF_INET6; the address must be in network byte order. The dst argument points to a buffer where the function stores the resulting text string; it shall not be NULL. The size argument specifies the size of this buffer, which shall

be large enough to hold the text string (INET_ADDRSTRLEN characters for IPv4, INET6_ADDRSTRLEN characters for IPv6).

The inet_pton() function shall convert an address in its standard text presentation form into its numeric binary form. The af argument shall specify the family of the address. The AF_INET and AF_INET6 address families shall be supported. The src argument points to the string be?ing passed in. The dst argument points to a buffer into which the func?tion stores the numeric address; this shall be large enough to hold the numeric address (32 bits for AF_INET, 128 bits for AF_INET6).

If the af argument of inet_pton() is AF_INET, the src string shall be in the standard IPv4 dotted-decimal form:

ddd.ddd.ddd.ddd

where "ddd" is a one to three digit decimal number between 0 and 255 (see inet_addr()). The inet_pton() function does not accept other for?mats (such as the octal numbers, hexadecimal numbers, and fewer than four numbers that inet_addr() accepts).

If the af argument of inet_pton() is AF_INET6, the src string shall be in one of the following standard IPv6 text forms:

1. The preferred form is "x:x:x:x:x:x:x:x", where the 'x's are the hexadecimal values of the eight 16-bit pieces of the address. Leading zeros in individual fields can be omitted, but there shall be one to four hexadecimal digits in every field.
2. A string of contiguous zero fields in the preferred form can be shown as "::". The "::" can only appear once in an address. Un?specified addresses ("0:0:0:0:0:0:0:0") may be represented simply as "::".
3. A third form that is sometimes more convenient when dealing with a mixed environment of IPv4 and IPv6 nodes is "x:x:x:x:x:x:d.d.d.d", where the 'x's are the hexadecimal values of the six high-order 16-bit pieces of the address, and the 'd's are the decimal values of the four low-order 8-bit pieces of the address (standard IPv4 representation).

Note: A more extensive description of the standard representations

of IPv6 addresses can be found in RFC 2373.

RETURN VALUE

The inet_ntop() function shall return a pointer to the buffer containing the text string if the conversion succeeds, and NULL otherwise, and set errno to indicate the error.

The inet_pton() function shall return 1 if the conversion succeeds, with the address pointed to by dst in network byte order. It shall return 0 if the input is not a valid IPv4 dotted-decimal string or a valid IPv6 address string, or -1 with errno set to [EAFNOSUPPORT] if the af argument is unknown.

ERRORS

The inet_ntop() and inet_pton() functions shall fail if:

EAFNOSUPPORT

The af argument is invalid.

ENOSPC The size of the inet_ntop() result buffer is inadequate.

The following sections are informative.

EXAMPLES

None.

APPLICATION USAGE

None.

RATIONALE

None.

FUTURE DIRECTIONS

None.

SEE ALSO

The Base Definitions volume of POSIX.1?2017, <arpa_inet.h>

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