Full credit is given to the above companies including the OS that this PDF file was generated!

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

$ man connect.3p

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

connect ? connect a socket

SYNOPSIS

```
#include <sys/socket.h>
int connect(int socket, const struct sockaddr *address,
    socklen_t address_len);
```

DESCRIPTION

The connect() function shall attempt to make a connection on a connec? tion-mode socket or to set or reset the peer address of a connection? less-mode socket. The function takes the following arguments:

socket Specifies the file descriptor associated with the socket.

address Points to a sockaddr structure containing the peer address. The length and format of the address depend on the address family of the socket.

address_len Specifies the length of the sockaddr structure pointed to by the address argument.

If the socket has not already been bound to a local address, connect()

shall bind it to an address which, unless the socket's address family is AF_UNIX, is an unused local address.

If the initiating socket is not connection-mode, then connect() shall set the socket's peer address, and no connection is made. For SOCK_DGRAM sockets, the peer address identifies where all datagrams are sent on subsequent send() functions, and limits the remote sender for subsequent recv() functions. If the sa_family member of address is AF_UNSPEC, the socket's peer address shall be reset. Note that despite no connection being made, the term ``connected'' is used to describe a connectionless-mode socket for which a peer address has been set.

If the initiating socket is connection-mode, then connect() shall at? tempt to establish a connection to the address specified by the address argument. If the connection cannot be established immediately and O_NONBLOCK is not set for the file descriptor for the socket, connect() shall block for up to an unspecified timeout interval until the connec? tion is established. If the timeout interval expires before the connec? tion is established, connect() shall fail and the connection attempt shall be aborted. If connect() is interrupted by a signal that is caught while blocked waiting to establish a connection, connect() shall fail and set errno to [EINTR], but the connection request shall not be aborted, and the connection shall be established asynchronously.

If the connection cannot be established immediately and O_NONBLOCK is set for the file descriptor for the socket, connect() shall fail and set errno to [EINPROGRESS], but the connection request shall not be aborted, and the connection shall be established asynchronously. Subse? quent calls to connect() for the same socket, before the connection is established, shall fail and set errno to [EALREADY].

When the connection has been established asynchronously, pselect(), se? lect(), and poll() shall indicate that the file descriptor for the socket is ready for writing.

The socket in use may require the process to have appropriate privi? leges to use the connect() function.

RETURN VALUE

Upon successful completion, connect() shall return 0; otherwise, -1 shall be returned and errno set to indicate the error.

ERRORS

The connect() function shall fail if:

EADDRNOTAVAIL

The specified address is not available from the local machine.

EAFNOSUPPORT

The specified address is not a valid address for the address family of the specified socket.

EALREADY

A connection request is already in progress for the specified socket.

EBADF The socket argument is not a valid file descriptor.

ECONNREFUSED

The target address was not listening for connections or refused the connection request.

EINPROGRESS

O_NONBLOCK is set for the file descriptor for the socket and the connection cannot be immediately established; the connection shall be established asynchronously.

EINTR The attempt to establish a connection was interrupted by deliv? ery of a signal that was caught; the connection shall be estab? lished asynchronously.

EISCONN

The specified socket is connection-mode and is already con? nected.

ENETUNREACH

No route to the network is present.

ENOTSOCK

The socket argument does not refer to a socket.

EPROTOTYPE

The specified address has a different type than the socket bound to the specified peer address.

ETIMEDOUT

The attempt to connect timed out before a connection was made.

If the address family of the socket is AF_UNIX, then connect() shall fail if:

EIO An I/O error occurred while reading from or writing to the file system.

ELOOP A loop exists in symbolic links encountered during resolution of the pathname in address.

ENAMETOOLONG

The length of a component of a pathname is longer than {NAME_MAX}.

ENOENT A component of the pathname does not name an existing file or the pathname is an empty string.

ENOTDIR

A component of the path prefix of the pathname in address names an existing file that is neither a directory nor a symbolic link to a directory, or the pathname in address contains at least one non-<slash> character and ends with one or more trailing <slash> characters and the last pathname component names an existing file that is neither a directory nor a symbolic link to a direc? tory.

The connect() function may fail if:

EACCES Search permission is denied for a component of the path prefix; or write access to the named socket is denied.

EADDRINUSE

Attempt to establish a connection that uses addresses that are already in use.

ECONNRESET

Remote host reset the connection request.

EHOSTUNREACH

The destination host cannot be reached (probably because the host is down or a remote router cannot reach it).

EINVAL The address_len argument is not a valid length for the address

family; or invalid address family in the sockaddr structure.

ELOOP More than {SYMLOOP_MAX} symbolic links were encountered during resolution of the pathname in address.

ENAMETOOLONG

The length of a pathname exceeds {PATH_MAX}, or pathname resolu? tion of a symbolic link produced an intermediate result with a length that exceeds {PATH_MAX}.

ENETDOWN

The local network interface used to reach the destination is down.

ENOBUFS

No buffer space is available.

EOPNOTSUPP

The socket is listening and cannot be connected.

The following sections are informative.

EXAMPLES

None.

APPLICATION USAGE

If connect() fails, the state of the socket is unspecified. Conforming applications should close the file descriptor and create a new socket before attempting to reconnect.

RATIONALE

None.

FUTURE DIRECTIONS

None.

SEE ALSO

accept(), bind(), close(), getsockname(), poll(), pselect(), send(), shutdown(), socket()

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

COPYRIGHT