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## *Red Hat Enterprise Linux Release 9.2 Manual Pages on 'socketpair.3p' command*

***$ man socketpair.3p***

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

socketpair ? create a pair of connected sockets

SYNOPSIS

```
#include <sys/socket.h>
int socketpair(int domain, int type, int protocol,
    int socket_vector[2]);
```

DESCRIPTION

The socketpair() function shall create an unbound pair of connected sockets in a specified domain, of a specified type, under the protocol optionally specified by the protocol argument. The two sockets shall be identical. The file descriptors used in referencing the created sockets shall be returned in socket_vector[0] and socket_vector[1]. The file descriptors shall be allocated as described in Section 2.14, File De? scriptor Allocation.

The socketpair() function takes the following arguments:

domain Specifies the communications domain in which the sockets are to be created.

type Specifies the type of sockets to be created.

protocol Specifies a particular protocol to be used with the sock?
ets. Specifying a protocol of 0 causes socketpair() to use
an unspecified default protocol appropriate for the re?
quested socket type.

socket_vector
Specifies a 2-integer array to hold the file descriptors of
the created socket pair.

The type argument specifies the socket type, which determines the se?
mantics of communications over the socket. The following socket types
are defined; implementations may specify additional socket types:

SOCK_STREAM Provides sequenced, reliable, bidirectional, connection-
mode byte streams, and may provide a transmission mecha?
nism for out-of-band data.

SOCK_DGRAM Provides datagrams, which are connectionless-mode, unre?
liable messages of fixed maximum length.

SOCK_SEQPACKET
Provides sequenced, reliable, bidirectional, connection-
mode transmission paths for records. A record can be sent
using one or more output operations and received using
one or more input operations, but a single operation
never transfers part of more than one record. Record
boundaries are visible to the receiver via the MSG_EOR
flag.

If the protocol argument is non-zero, it shall specify a protocol that
is supported by the address family. If the protocol argument is zero,
the default protocol for this address family and type shall be used.
The protocols supported by the system are implementation-defined.
The process may need to have appropriate privileges to use the socket?
pair() function or to create some sockets.

RETURN VALUE

Upon successful completion, this function shall return 0; otherwise, -1
shall be returned and errno set to indicate the error, no file descrip?

tors shall be allocated, and the contents of socket_vector shall be left unmodified.

ERRORS

The socketpair() function shall fail if:

EAFNOSUPPORT

The implementation does not support the specified address family.

EMFILE All, or all but one, of the file descriptors available to the process are currently open.

ENFILE No more file descriptors are available for the system.

EOPNOTSUPP

The specified protocol does not permit creation of socket pairs.

EPROTONOSUPPORT

The protocol is not supported by the address family, or the protocol is not supported by the implementation.

EPROTOTYPE

The socket type is not supported by the protocol.

The socketpair() function may fail if:

EACCES The process does not have appropriate privileges.

ENOBUFS

Insufficient resources were available in the system to perform the operation.

ENOMEM Insufficient memory was available to fulfill the request.

The following sections are informative.

EXAMPLES

None.

APPLICATION USAGE

The documentation for specific address families specifies which protocols each address family supports. The documentation for specific protocols specifies which socket types each protocol supports.

The socketpair() function is used primarily with UNIX domain sockets and need not be supported for other domains.

RATIONALE

None.

FUTURE DIRECTIONS

None.

SEE ALSO

Section 2.14, File Descriptor Allocation, socket()

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