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Red Hat Enterprise Linux Release 9.2 Manual Pages on 'address_families.7' command

\$ man address_families.7

ADDRESS_FAMILIES(7) Linux Programmer's Manual ADDRESS_FAMILIES(7)

NAME

address_families - socket address families (domains)

SYNOPSIS

```
#include <sys/types.h>      /* See NOTES */
#include <sys/socket.h>

int socket(int domain, int type, int protocol);
```

DESCRIPTION

The domain argument of the socket(2) specifies a communication domain; this selects the protocol family which will be used for communication. These families are defined in <sys/socket.h>. The formats currently understood by the Linux kernel include:

AF_UNIX, AF_LOCAL

Local communication For further information, see unix(7).

AF_INET

IPv4 Internet protocols. For further information, see ip(7).

AF_AX25

Amateur radio AX.25 protocol. For further information, see ax25(4).

AF_IPX IPX - Novell protocols.

AF_APPLETALK

AppleTalk For further information, see ddp(7).

AF_NETROM

AX.25 packet layer protocol. For further information, see [netrom\(4\)](https://www.tldp.org/HOWTO/AX25-HOWTO/x61.html), [The Packet Radio Protocols and Linux ?https://www.tldp.org/HOWTO/AX25-HOWTO/x61.html?](https://www.tldp.org/HOWTO/AX25-HOWTO/x61.html) and the AX.25, NET/ROM, and ROSE network programming chapters of the Linux Amateur Radio AX.25 HOWTO [?https://www.tldp.org/HOWTO/AX25-HOWTO/x2107.html?](https://www.tldp.org/HOWTO/AX25-HOWTO/x2107.html).

AF_BRIDGE

Can't be used for creating sockets; mostly used for bridge links in [rtnetlink\(7\)](#) protocol commands.

AF_ATMPVC

Access to raw ATM Permanent Virtual Circuits (PVCs). For further information, see the [ATM on Linux HOWTO ?https://www.tldp.org/HOWTO/text/ATM-Linux-HOWTO?](https://www.tldp.org/HOWTO/text/ATM-Linux-HOWTO/).

AF_X25 ITU-T X.25 / ISO-8208 protocol. For further information, see [x25\(7\)](#).

AF_INET6

IPv6 Internet protocols. For further information, see [ipv6\(7\)](#).

AF_ROSE

RATS (Radio Amateur Telecommunications Society) Open Systems environment (ROSE) AX.25 packet layer protocol. For further information, see the resources listed for [AF_NETROM](#).

AF_DECnet

DECnet protocol sockets. See [Documentation/networking/dechnet.txt](#) in the Linux kernel source tree for details.

AF_NETBEUI

Reserved for "802.2LLC project"; never used.

AF_SECURITY

This was a short-lived (between Linux 2.1.30 and 2.1.99pre2) protocol family for firewall upcalls.

AF_KEY Key management protocol, originally developed for usage with IPsec (since Linux 2.1.38). This has no relation to [keyctl\(2\)](#) and the in-kernel key storage facility. See [RFC 2367 PF_KEY Key Management API, Version 2 ?https://tools.ietf.org/html/rfc2367?](https://tools.ietf.org/html/rfc2367)

for details.

AF_NETLINK

Kernel user interface device For further information, see [netlink\(7\)](#).

AF_PACKET

Low-level packet interface. For further information, see [packet\(7\)](#).

AF_ECONET

Acorn Econet protocol (removed in Linux 3.5). See the Econet documentation [?http://www.8bs.com/othrdnld/manuals/econet.shtml?](http://www.8bs.com/othrdnld/manuals/econet.shtml) for details.

AF_ATMSVC

Access to ATM Switched Virtual Circuits (SVCs) See the ATM on Linux HOWTO [?https://www.tldp.org/HOWTO/text/ATM-Linux-HOWTO?](https://www.tldp.org/HOWTO/text/ATM-Linux-HOWTO?) for details.

AF_RDS Reliable Datagram Sockets (RDS) protocol (since Linux 2.6.30).

RDS over RDMA has no relation to AF_SMC or AF_XDP. For further information see [rds\(7\)](#), [rds-rdma\(7\)](#), and [Documentation/networking/rds.txt](#) in the Linux kernel source tree.

AF_IRDA

Socket interface over IrDA (moved to staging in Linux 4.14, re? moved in Linux 4.17). For further information see [irda\(7\)](#).

AF_PPPOX

Generic PPP transport layer, for setting up L2 tunnels (L2TP and PPPoE). See [Documentation/networking/l2tp.txt](#) in the Linux kernel source tree for details.

AF_WANPIPE

Legacy protocol for wide area network (WAN) connectivity that was used by Sangoma WAN cards (called "WANPIPE"); removed in Linux 2.6.21.

AF_LLC Logical link control (IEEE 802.2 LLC) protocol, upper part of

data link layer of ISO/OSI networking protocol stack (since Linux 2.4); has no relation to AF_PACKET. See [chapter 13.5.3](#).

Logical Link Control in Understanding Linux Kernel Internals (O'Reilly Media, 2006) and IEEE Standards for Local Area Networks: Logical Link Control (The Institute of Electronics and Electronics Engineers, Inc., New York, New York, 1985) for details. See also some historical notes [?https://wiki.linuxfoundation.org/networking/llc?](https://wiki.linuxfoundation.org/networking/llc) regarding its development.

AF_IB InfiniBand native addressing (since Linux 3.11).

AF_MPLS

Multiprotocol Label Switching (since Linux 4.1); mostly used for configuring MPLS routing via netlink(7), as it doesn't expose ability to create sockets to user space.

AF_CAN Controller Area Network automotive bus protocol (since Linux 2.6.25). See Documentation/networking/can.rst in the Linux kernel source tree for details.

AF_TIPC

TIPC, "cluster domain sockets" protocol (since Linux 2.6.16). See TIPC Programmer's Guide [?http://tipc.io/programming.html?](http://tipc.io/programming.html) and the protocol description [?http://tipc.io/protocol.html?](http://tipc.io/protocol.html) for details.

AF_BLUETOOTH

Bluetooth low-level socket protocol (since Linux 3.11). See Bluetooth Management API overview [?https://git.kernel.org/pub/scm/bluetooth/bluez.git/tree/doc/mgmt-api.txt?](https://git.kernel.org/pub/scm/bluetooth/bluez.git/tree/doc/mgmt-api.txt) and An Introduction to Bluetooth Programming by Albert Huang [?https://people.csail.mit.edu/albert/bluez-intro/?](https://people.csail.mit.edu/albert/bluez-intro/) for details.

AF_IUCV

IUCV (inter-user communication vehicle) z/VM protocol for hypervisor-guest interaction (since Linux 2.6.21); has no relation to AF_VSOCK and/or AF_SMC See IUCV protocol overview [?https://www.ibm.com/support/knowledgecenter/en/SSB27U_6.4.0/com.ibm.zvm.v640.hcpb4/iucv.htm?](https://www.ibm.com/support/knowledgecenter/en/SSB27U_6.4.0/com.ibm.zvm.v640.hcpb4/iucv.htm) for details.

AF_RXRPC

Rx, Andrew File System remote procedure call protocol (since Linux 2.6.22). See Documentation/networking/rxrpc.txt in the Linux kernel source tree for details.

AF_ISDN

New "modular ISDN" driver interface protocol (since Linux 2.6.27). See the mISDN wiki [?http://www.misdn.eu/wiki/Main_Page/?](http://www.misdn.eu/wiki/Main_Page/) for details.

AF_PHONET

Nokia cellular modem IPC/RPC interface (since Linux 2.6.31). See Documentation/networking/phonet.txt in the Linux kernel source tree for details.

AF_IEEE802154

IEEE 802.15.4 WPAN (wireless personal area network) raw packet protocol (since Linux 2.6.31). See Documentation/networking/ieee802154.txt in the Linux kernel source tree for details.

AF_CAIF

Ericsson's Communication CPU to Application CPU interface (CAIF) protocol (since Linux 2.6.36). See Documentation/networking/caif/Linux-CAIF.txt in the Linux kernel source tree for details.

AF_ALG Interface to kernel crypto API (since Linux 2.6.38). See Documentation/crypto/userspace-if.rst in the Linux kernel source tree for details.

AF_VSOCK

VMWare VSockets protocol for hypervisor-guest interaction (since Linux 3.9); has no relation to AF_IUCV and AF_SMC. For further information, see vsock(7).

AF_KCM KCM (kernel connection multiplexer) interface (since Linux 4.6).

See Documentation/networking/kcm.txt in the Linux kernel source tree for details.

AF_QIPCRTR

Qualcomm IPC router interface protocol (since Linux 4.7).

AF_SMC SMC-R (shared memory communications over RDMA) protocol (since

Linux 4.11), and SMC-D (shared memory communications, direct memory access) protocol for intra-node z/VM quest interaction (since Linux 4.19); has no relation to AF_RDS, AF_IUCV or AF_VSOCK. See RFC 7609 IBM's Shared Memory Communications over RDMA (SMC-R) Protocol [?https://tools.ietf.org/html/rfc7609?](https://tools.ietf.org/html/rfc7609) for details regarding SMC-R. See SMC-D Reference Information [?https://www-01.ibm.com/software/network/commsserver/SMC-D/index.html?](https://www-01.ibm.com/software/network/commsserver/SMC-D/index.html) for details regarding SMC-D.

AF_XDP XDP (express data path) interface (since Linux 4.18). See Documentation/networking/af_xdp.rst in the Linux kernel source tree for details.

SEE ALSO

socket(2), socket(7)

COLOPHON

This page is part of release 5.10 of the Linux man-pages project. A description of the project, information about reporting bugs, and the latest version of this page, can be found at <https://www.kernel.org/doc/man-pages/>.

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