Documentation for /proc/sys/net/* kernel version 2.4.0-test11-pre4

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This file contains the documentation for the sysctl files in
/proc/sys/net and is valid for Linux kernel version 2.4.0-test11-pre4.

The interface to the networking parts of the kernel is located in
/proc/sys/net. The following table shows all possible subdirectories.You may
see only some of them, depending on your kernel's configuration.

Table : Subdirectories in /proc/sys/net

Directory	Content	Directory	Content
core	General parameter	appletalk	Appletalk protocol
unix	Unix domain sockets	netrom	NET/ROM
802	E802 protocol	ax25	AX25
ethernet	Ethernet protocol	rose	X.25 PLP layer
ipv4	IP version 4	x25	X.25 protocol
ipx	IPX	token-ring	IBM token ring
bridge	Bridging	decnet	DEC net
ipv6	IP version 6		

1. /proc/sys/net/core - Network core options
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rmem_default

The default setting of the socket receive buffer in bytes.

rmem_max

The maximum receive socket buffer size in bytes.

wmem_default

The default setting (in bytes) of the socket send buffer.

wmem_max

The maximum send socket buffer size in bytes.

message_burst and message_cost

These parameters are used to limit the warning messages written to the kernel log from the networking code. They enforce a rate limit to make a denial-of-service attack impossible. A higher message_cost factor, results in fewer messages that will be written. Message_burst controls when messages will be dropped. The default settings limit warning messages to one every five seconds.

warnings

This controls console messages from the networking stack that can occur because of problems on the network like duplicate address or bad checksums. Normally, this should be enabled, but if the problem persists the messages can be disabled.

netdev_budget

Maximum number of packets taken from all interfaces in one polling cycle (NAPI poll). In one polling cycle interfaces which are registered to polling are probed in a round-robin manner. The limit of packets in one such probe can be set per-device via sysfs class/net/<device>/weight .

netdev_max_backlog

Maximum number of packets, queued on the INPUT side, when the interface receives packets faster than kernel can process them.

netdev_tstamp_prequeue

If set to 0, RX packet timestamps can be sampled after RPS processing, when the target CPU processes packets. It might give some delay on timestamps, but permit to distribute the load on several cpus.

If set to 1 (default), timestamps are sampled as soon as possible, before queueing.

optmem_max

Maximum ancillary buffer size allowed per socket. Ancillary data is a sequence of struct cmsghdr structures with appended data.

2. /proc/sys/net/unix - Parameters for Unix domain sockets

There is only one file in this directory.
unix_dgram_qlen limits the max number of datagrams queued in Unix domain socket's buffer. It will not take effect unless PF_UNIX flag is specified.

3. /proc/sys/net/ipv4 - IPV4 settings

Please see: Documentation/networking/ip-sysctl.txt and ipvs-sysctl.txt for descriptions of these entries.

4. Appletalk

The /proc/sys/net/appletalk directory holds the Appletalk configuration data when Appletalk is loaded. The configurable parameters are:

aarp-expiry-time

The amount of time we keep an ARP entry before expiring it. Used to age out old hosts.

aarp-resolve-time

The amount of time we will spend trying to resolve an Appletalk address.

aarp-retransmit-limit

The number of times we will retransmit a query before giving up.

aarp-tick-time

Controls the rate at which expires are checked.

The directory /proc/net/appletalk holds the list of active Appletalk sockets on a machine.

The fields indicate the DDP type, the local address (in network:node format) the remote address, the size of the transmit pending queue, the size of the received queue (bytes waiting for applications to read) the state and the uid owning the socket.

/proc/net/atalk_iface lists all the interfaces configured for appletalk.It shows the name of the interface, its Appletalk address, the network range on that address (or network number for phase 1 networks), and the status of the interface.

/proc/net/atalk_route lists each known network route. It lists the target (network) that the route leads to, the router (may be directly connected), the route flags, and the device the route is using.

5. IPX

The IPX protocol has no tunable values in proc/sys/net.

The IPX protocol does, however, provide proc/net/ipx. This lists each IPX socket giving the local and remote addresses in Novell format (that is

network:node:port). In accordance with the strange Novell tradition, everything but the port is in hex. Not_Connected is displayed for sockets that are not tied to a specific remote address. The Tx and Rx queue sizes indicate the number of bytes pending for transmission and reception. The state indicates the state the socket is in and the uid is the owning uid of the socket.

The /proc/net/ipx_interface file lists all IPX interfaces. For each interface it gives the network number, the node number, and indicates if the network is the primary network. It also indicates which device it is bound to (or Internal for internal networks) and the Frame Type if appropriate. Linux supports 802.3, 802.2, 802.2 SNAP and DIX (Blue Book) ethernet framing for IPX.

The /proc/net/ipx_route table holds a list of IPX routes. For each route it gives the destination network, the router node (or Directly) and the network address of the router (or Connected) for internal networks.