Rocky Enterprise Linux 9.2 Manual Pages on command 'ip-netns.8'

C:\>man ip-netns.8

IP-NETNS(8) Linux IP-NETNS(8)

NAME

ip-netns - process network namespace management

SYNOPSIS

ip [OPTIONS] netns { COMMAND | help }

ip netns [list]

ip netns add NETNSNAME

ip netns attach NETNSNAME PID

ip [-all] netns del [NETNSNAME]

ip netns set NETNSNAME NETNSID

NETNSID := auto | POSITIVE-INT

ip netns identify [PID]

ip netns pids NETNSNAME

ip [-all] netns exec [NETNSNAME] command...

ip netns monitor

ip netns list-id [target-nsid POSITIVE-INT] [nsid POSITIVE-INT]

DESCRIPTION

A network namespace is logically another copy of the network stack, with its own

routes, firewall rules, and network devices.

By default a process inherits its network namespace from its parent. Initially all

the processes share the same default network namespace from the init process.

By convention a named network namespace is an object at /var/run/netns/NAME that

can be opened. The file descriptor resulting from opening /var/run/netns/NAME refers to the specified network namespace. Holding that file descriptor open keeps the network namespace alive. The file descriptor can be used with the setns(2) sys? tem call to change the network namespace associated with a task.

For applications that are aware of network namespaces, the convention is to look for global network configuration files first in /etc/netns/NAME/ then in /etc/.

For example, if you want a different version of /etc/resolv.conf for a network namespace used to isolate your vpn you would name it /etc/netns/myvpn/resolv.conf.

ip netns exec automates handling of this configuration, file convention for network namespace unaware applications, by creating a mount namespace and bind mounting all of the per network namespace configure files into their traditional location in /etc.

ip netns list - show all of the named network namespaces

This command displays all of the network namespaces in /var/run/netns

ip netns add NAME - create a new named network namespace

If NAME is available in /var/run/netns/ this command creates a new network namespace and assigns NAME.

ip netns attach NAME PID - create a new named network namespace

If NAME is available in /var/run/netns/ this command attaches the network namespace of the process PID to NAME as if it were created with ip netns.

ip [-all] netns delete [NAME] - delete the name of a network namespace(s)

If NAME is present in /var/run/netns it is umounted and the mount point is removed. If this is the last user of the network namespace the network name? space will be freed and all physical devices will be moved to the default one, otherwise the network namespace persists until it has no more users. ip netns delete may fail if the mount point is in use in another mount name? space.

If -all option was specified then all the network namespace names will be removed.

It is possible to lose the physical device when it was moved to netns and then this netns was deleted with a running process:

$ ip netns add net0

$ ip link set dev eth0 netns net0

$ ip netns exec net0 SOME_PROCESS_IN_BACKGROUND

$ ip netns del net0

and eth0 will appear in the default netns only after SOME_PROCESS_IN_BACK?

GROUND will exit or will be killed. To prevent this the processes running in

net0 should be killed before deleting the netns:

$ ip netns pids net0 | xargs kill

$ ip netns del net0

ip netns set NAME NETNSID - assign an id to a peer network namespace

This command assigns a id to a peer network namespace. This id is valid only

in the current network namespace. If the keyword "auto" is specified an

available nsid will be chosen. This id will be used by the kernel in some

netlink messages. If no id is assigned when the kernel needs it, it will be

automatically assigned by the kernel. Once it is assigned, it's not possi?

ble to change it.

ip netns identify [PID] - Report network namespaces names for process

This command walks through /var/run/netns and finds all the network name?

space names for network namespace of the specified process, if PID is not

specified then the current process will be used.

ip netns pids NAME - Report processes in the named network namespace

This command walks through proc and finds all of the process who have the

named network namespace as their primary network namespace.

ip [-all] netns exec [NAME] cmd ... - Run cmd in the named network namespace

This command allows applications that are network namespace unaware to be

run in something other than the default network namespace with all of the

configuration for the specified network namespace appearing in the customary

global locations. A network namespace and bind mounts are used to move files

from their network namespace specific location to their default locations

without affecting other processes.

If -all option was specified then cmd will be executed synchronously on the

each named network namespace even if cmd fails on some of them. Network

namespace name is printed on each cmd executing.

ip netns monitor - Report as network namespace names are added and deleted

This command watches network namespace name addition and deletion events and

prints a line for each event it sees.

ip netns list-id [target-nsid POSITIVE-INT] [nsid POSITIVE-INT] - list network namespace ids (nsid)

Network namespace ids are used to identify a peer network namespace. This command displays nsids of the current network namespace and provides the corresponding iproute2 netns name (from /var/run/netns) if any.

The target-nsid option enables to display nsids of the specified network namespace instead of the current network namespace. This target-nsid is a nsid from the current network namespace.

The nsid option enables to display only this nsid. It is a nsid from the current network namespace. In combination with the target-nsid option, it enables to convert a specific nsid from the current network namespace to a nsid of the target-nsid network namespace.

EXAMPLES

ip netns list

Shows the list of current named network namespaces

ip netns add vpn

Creates a network namespace and names it vpn

ip netns exec vpn ip link set lo up

Bring up the loopback interface in the vpn network namespace.

ip netns add foo

ip netns add bar

ip netns set foo 12

ip netns set bar 13

ip -n foo netns set foo 22

ip -n foo netns set bar 23

ip -n bar netns set foo 32

ip -n bar netns set bar 33

ip netns list-id target-nsid 12

Shows the list of nsids from the network namespace foo.

ip netns list-id target-nsid 12 nsid 13

Get nsid of bar from the network namespace foo (result is 23).

SEE ALSO

ip(8)

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