Rocky Enterprise Linux 9.2 Manual Pages on command 'route.8'

$ man route.8

ROUTE(8) Linux System Administrator's Manual ROUTE(8)

NAME

route - show / manipulate the IP routing table

SYNOPSIS

route [-CFvnNee] [-A family |-4|-6]

route [-v] [-A family |-4|-6] add [-net|-host] target [netmask Nm] [gw Gw] [metric N] [mss M] [window W] [irtt I] [reject] [mod] [dyn] [reinstate] [[dev] If]

route [-v] [-A family |-4|-6] del [-net|-host] target [gw Gw] [netmask Nm] [metric M] [[dev] If]

route [-V] [--version] [-h] [--help]

NOTE

This program is obsolete. For replacement check ip route.

DESCRIPTION

Route manipulates the kernel's IP routing tables. Its primary use is to set up static routes to specific hosts or networks via an interface after it has been configured with the ifconfig(8) program.

When the add or del options are used, route modifies the routing ta?

bles. Without these options, route displays the current contents of the routing tables.

OPTIONS

-A family

use the specified address family (eg `inet'). Use route --help for a full list. You can use -6 as an alias for --inet6 and -4 as an alias for -A inet

-F operate on the kernel's FIB (Forwarding Information Base) rout? ing table. This is the default.

-C operate on the kernel's routing cache.

-v select verbose operation.

-n show numerical addresses instead of trying to determine symbolic host names. This is useful if you are trying to determine why the route to your nameserver has vanished.

-e use netstat(8)-format for displaying the routing table. -ee will generate a very long line with all parameters from the routing table.

del delete a route.

add add a new route.

target the destination network or host. You can provide an addresses or symbolic network or host name. Optionally you can use /prefixlen notation instead of using the netmask option.

-net the target is a network.

-host the target is a host.

netmask NM

when adding a network route, the netmask to be used.

gw GW route packets via a gateway.

NOTE: The specified gateway must be reachable first. This usu? ally means that you have to set up a static route to the gateway beforehand. If you specify the address of one of your local in? terfaces, it will be used to decide about the interface to which the packets should be routed to. This is a BSDism compatibility hack.

metric M

set the metric field in the routing table (used by routing dae?
mons) to M. If this option is not specified the metric for inet6
(IPv6) address family defaults to '1', for inet (IPv4) it de?
faults to '0'. You should always specify an explicit metric
value to not rely on those defaults - they also differ from
iproute2.

mss M sets MTU (Maximum Transmission Unit) of the route to M bytes.
Note that the current implementation of the route command does
not allow the option to set the Maximum Segment Size (MSS).

window W

set the TCP window size for connections over this route to W
bytes. This is typically only used on AX.25 networks and with
drivers unable to handle back to back frames.

irtt I set the initial round trip time (irtt) for TCP connections over
this route to I milliseconds (1-12000). This is typically only
used on AX.25 networks. If omitted the RFC 1122 default of 300ms
is used.

reject install a blocking route, which will force a route lookup to
fail. This is for example used to mask out networks before us?
ing the default route. This is NOT for firewalling.

mod, dyn, reinstate

install a dynamic or modified route. These flags are for diag?
nostic purposes, and are generally only set by routing daemons.

dev If force the route to be associated with the specified device, as
the kernel will otherwise try to determine the device on its own
(by checking already existing routes and device specifications,
and where the route is added to). In most normal networks you
won't need this.

If dev If is the last option on the command line, the word dev
may be omitted, as it's the default. Otherwise the order of the
route modifiers (metric netmask gw dev) doesn't matter.

EXAMPLES

route add -net 127.0.0.0 netmask 255.0.0.0 metric 1024 dev lo

adds the normal loopback entry, using netmask 255.0.0.0 and as? sociated with the "lo" device (assuming this device was previ? ously set up correctly with ifconfig(8)).

route add -net 192.56.76.0 netmask 255.255.255.0 metric 1024 dev eth0

adds a route to the local network 192.56.76.x via "eth0". The word "dev" can be omitted here.

route del default

deletes the current default route, which is labeled "default" or 0.0.0.0 in the destination field of the current routing table.

route add default gw mango

adds a default route (which will be used if no other route matches). All packets using this route will be gatewayed through the address of a node named "mango". The device which will actually be used for that route depends on how we can reach "mango" - "mango" must be on directly reachable route.

route add mango sl0

Adds the route to the host named "mango" via the SLIP interface (assuming that "mango" is the SLIP host).

route add -net 192.57.66.0 netmask 255.255.255.0 gw mango

This command adds the net "192.57.66.x" to be gatewayed through the former route to the SLIP interface.

route add -net 224.0.0.0 netmask 240.0.0.0 dev eth0

This is an obscure one documented so people know how to do it. This sets all of the class D (multicast) IP routes to go via "eth0". This is the correct normal configuration line with a multicasting kernel.

route add -net 10.0.0.0 netmask 255.0.0.0 metric 1024 reject

This installs a rejecting route for the private network "10.x.x.x."

route -6 add 2001:0002::/48 metric 1 dev eth0

This adds a IPv6 route with the specified metric to be directly reachable via eth0.

OUTPUT

The output of the kernel routing table is organized in the following columns

Destination

The destination network or destination host.

Gateway

The gateway address or '*' if none set.

Genmask

The netmask for the destination net; '255.255.255.255' for a host destination and '0.0.0.0' for the default route.

Flags Possible flags include

U (route is up)

H (target is a host)

G (use gateway)

R (reinstate route for dynamic routing)

D (dynamically installed by daemon or redirect)

M (modified from routing daemon or redirect)

A (installed by addrconf)

C (cache entry)

! (reject route)

Metric The 'distance' to the target (usually counted in hops).

Ref Number of references to this route. (Not used in the Linux ker? nel.)

Use Count of lookups for the route. Depending on the use of -F and -C this will be either route cache misses (-F) or hits (-C).

Iface Interface to which packets for this route will be sent.

MSS Default maximum segment size for TCP connections over this route.

Window Default window size for TCP connections over this route.

irtt Initial RTT (Round Trip Time). The kernel uses this to guess about the best TCP protocol parameters without waiting on (pos? sibly slow) answers.

HH (cached only)

The number of ARP entries and cached routes that refer to the hardware header cache for the cached route. This will be -1 if a hardware address is not needed for the interface of the cached route (e.g. lo).

Arp (cached only)

Whether or not the hardware address for the cached route is up to date.

FILES

/proc/net/ipv6_route

/proc/net/route

/proc/net/rt_cache

SEE ALSO

ip(8)

HISTORY

Route for Linux was originally written by Fred N. van Kempen, <waltje@uwalt.nl.mugnet.org> and then modified by Johannes Stille and Linus Torvalds for pl15. Alan Cox added the mss and window options for Linux 1.1.22. irtt support and merged with netstat from Bernd Ecken? fels.

AUTHOR

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