

Table Of Contents

Table Of Contents 1

Task: View / Display Routing Table 2

 Task: Set a Route to the Locally Connected Network eth0 2

 Task: Set a default route 2

 Task: Delete route from table 2

How do I save routing information to a configuration file? 3

 Recommended readings: 3

[Home](#) > [Faq](#) > [CentOS](#)

Linux Set Up Routing with ip Command

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Q. Can you explain ip command to setup routing? How do I use the ip command to configure the routing table of the Linux kernel?

A.. ip command can be used for the following tasks :

=> Show / manipulate routing

=> Show / manipulate devices

=> Policy routing

=> Tunnels



[1]

Task: View / Display Routing Table

Type the following command:

```
$ ip route show
```

Output:

```
10.0.31.18 dev ppp0 proto kernel scope link src 10.1.3.103
192.168.2.0/24 dev eth0 proto kernel scope link src 192.168.2.1
192.168.1.0/24 dev ra0 proto kernel scope link src 192.168.1.106
169.254.0.0/16 dev eth0 scope link metric 1000
10.0.0.0/8 dev ppp0 scope link
default via 192.168.1.1 dev ra0 metric 100
```

Each entry is nothing but an entry in the routing table (Linux kernel routing table). For example, following line represents the route for the local network. All network packets to a system in the same network are sent directly through the device ra0:

```
192.168.1.0/24 dev ra0 proto kernel scope link src 192.168.1.106
```

Our default route is set via ra0 interface i.e. all network packets that cannot be sent according to the previous entries of the routing table are sent through the gateway defined in this entry i.e **192.168.1.1 is our default gateway**.

Task: Set a Route to the Locally Connected Network eth0

Type the following command to sent all packets to the local network 192.168.1.0 directly through the device eth0, enter:

```
# ip route add 192.168.1.0/24 dev eth0
```

Task: Set a default route

All network packets that cannot be sent according to the previous entries of the routing table are sent through the following default gateway

```
# ip route add default via 192.168.1.254
```

Task: Delete route from table

Type the following command

```
# ip route delete 192.168.1.0/24 dev eth0
```

How do I save routing information to a configuration file?

All routing settings made with the ip tool (route command) are lost when you reboot Linux server. See our previous article about [configuring static routes in Debian or Red Hat Linux systems](#) ^[2]

Recommended readings:

- [Debian Linux Configure Network Interface Cards - IP address and Netmasks](#) ^[3]
- [CentOS / Redhat Enterprise Linux 5 configure network interface card](#) ^[4]
- [How to setup Linux as a router \(iptables configuration\)](#) ^[5]

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[1] Image: <http://www.cyberciti.biz/faq/faq/category/networking/>

[2] configuring static routes in Debian or Red Hat Linux systems: <http://www.cyberciti.biz/tips/configuring-static-routes-in-debian-or-red-hat-linux-systems.html>

[3] Debian Linux Configure Network Interface Cards - IP address and Netmasks: <http://www.cyberciti.biz/faq/howto-configuring-network-interface-cards-on-debian/>

[4] CentOS / Redhat Enterprise Linux 5 configure network interface card: <http://www.cyberciti.biz/faq/rhel-centos-fedoracore-linux-network-card-configuration/>

[5] How to setup Linux as a router (iptables configuration): <http://www.cyberciti.biz/tips/linux-as-router-for-dsl-t1-line-etc.html>