Guide to the listed Linux network commands with suitable options:

---

a. ifconfig

Displays or configures network interfaces.

- `ifconfig -a`: Show all interfaces, including inactive ones.
- `ifconfig eth0 up`: Bring the interface up.

---

b. traceroute

Traces packet routes to a destination.

- `traceroute google.com`: Trace the route to Google.
- `traceroute -n google.com`: Display numeric addresses only.

---

c. ping

Sends ICMP packets to test connectivity.

- `ping google.com`: Continuously ping a host.
- `ping -c 4 google.com`: Ping a host 4 times.

---

d. dig

Queries DNS servers.

- `dig google.com`: Query the DNS for `google.com`.
- `dig +short google.com`: Get a concise output.

---

e. telnet

Connects to a remote host using TCP.

- `telnet google.com 80`: Test connection to port 80.

---

f. nslookup

Queries DNS to resolve domain names.

- `nslookup google.com`: Resolve `google.com`.

---

g. netstat

Displays network connections and statistics.

- `netstat -tuln`: Show listening ports.
- `netstat -p`: Display the process associated with connections.

---

h. scp

Securely copy files between systems.

- `scp file.txt user@remote:/path`: Copy a file to a remote system.

---

i. w

Displays logged-in users and their activities.

- `w`: Show who is logged in.

---

j. nmap

Scans networks for open ports and services.

- `nmap -sV target_ip`: Identify services on open ports.

---

k. ifup/ifdown

Bring network interfaces up or down.

- `ifup eth0`: Bring the interface up.
- `ifdown eth0`: Bring the interface down.

---

l. route

Displays and modifies routing tables.

- `route -n`: Show routing table with numeric IPs.

---

m. host

DNS lookup tool.

- `host google.com`: Get IP of `google.com`.

---

n. arp

Displays or manipulates the ARP table.

- `arp -a`: Show all entries in the ARP table.

---

o. ethtool

Displays or changes Ethernet device settings.

- `ethtool eth0`: Show Ethernet settings.

---

p. iwconfig

Configure wireless network interfaces.

- `iwconfig wlan0 essid "MyNetwork"`: Connect to a specific network.

---

q. system-config-network

Text-based network configuration utility.

---

r. bmon

Bandwidth monitor tool.

- `bmon`: Display network bandwidth usage.

---

s. ssh

Securely connect to remote systems.

- `ssh user@remote_host`: Connect to a remote system.

---

t. tcpdump

Capture and analyze network traffic.

- `tcpdump -i eth0`: Capture packets on `eth0`.

---

u. dstat

Displays resource usage (including network).

- `dstat -n`: Show network statistics.

---

v. dhclient

Dynamic IP configuration tool.

- `dhclient eth0`: Request an IP for `eth0`.

---

w. nload

Network usage monitor.

- `nload`: Display network traffic.

---

x. iftop

Shows real-time bandwidth usage by connection.

- `iftop`: View network usage per host.

---

y. ip

Shows/manages network interfaces and routes.

- `ip addr`: Show IP addresses.
- `ip link set eth0 up`: Bring an interface up.

---

z. route

View and manipulate routing tables (deprecated in favor of `ip`).

---

aa. iptables

Configures packet filtering rules.

- `iptables -L`: List current rules.

---

bb. sftp

Secure File Transfer Protocol tool.

- `sftp user@host`: Start SFTP session.

---

cc. socat

Multipurpose relay tool for sockets.

- `socat TCP4-LISTEN:1234,fork TCP4:target:5678`: Forward connections.

---

dd. rsync

Efficient file transfer tool.

- `rsync -av source/ dest/`: Sync files between directories.

---

ee. wget

Download files from URLs.

- `wget http://example.com/file.zip`: Download a file.

---

ff. curl

Transfer data from URLs.

- `curl http://example.com`: Fetch a URL.
- `curl -O http://example.com/file.zip`: Save the file locally.
