

Linux Networking Commands with Examples & Explanations

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IP Address & Interface Management

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- Show IP addresses:

`ip addr / ip addr show`

-> Displays IP addresses and network interface info.

- Add IP to eth0:

`ip addr add 192.168.1.100/24 dev eth0`

-> Adds the IP 192.168.1.100 with subnet mask /24 to eth0.

- Bring eth0 up/down:

`ip link set eth0 up`

`ip link set eth0 down`

-> Enables or disables the network interface eth0.

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Routing

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- Show routing table:

`ip route / ip route show`

-> Displays the current routing table.

- Add default gateway:

`ip route add default via 192.168.1.1`

-> Adds 192.168.1.1 as the default gateway.

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DNS Lookups

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- `dig example.com`

-> Queries DNS for detailed information about a domain.

- `nslookup example.com`

-> Basic DNS query tool.

- `host example.com`

-> Simple DNS lookup to resolve a domain.

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Hostname Management

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- hostname

-> Shows the current hostname.

- hostname myhost

-> Temporarily sets the hostname to 'myhost'.

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Network Statistics

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- netstat -tuln

-> Displays listening TCP/UDP ports.

- netstat -r

-> Shows the kernel routing table.

- ss -tuln

-> Shows active sockets (like netstat but faster).

- ss -i

-> Provides detailed socket statistics.

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Interface Bandwidth Monitoring

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- iftop -i eth0

-> Shows real-time bandwidth usage for eth0.

- iftop -n

-> Runs iftop without resolving IP addresses to names.

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Packet Capture

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- tcpdump -i eth0

-> Captures network packets on interface eth0.

- tcpdump -n port 80

-> Captures traffic on port 80 (HTTP) without DNS resolution.

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Network Troubleshooting

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- ping google.com

-> Sends ICMP echo requests to check connectivity.

- traceroute google.com

-> Shows the path packets take to reach the destination.

- tracepath google.com

-> Simplified traceroute that doesn't require root privileges.

- mtr google.com

-> Combines ping and traceroute for detailed network diagnostics.

- whois example.com

-> Shows domain registration information.

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ARP Table Management

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- arp -n

-> Shows the ARP table with IP addresses.

- arp -d 192.168.1.100

-> Deletes the ARP entry for 192.168.1.100.

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Routing with route command

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- route -n

-> Displays the routing table with numeric IPs.

- route add default gw 192.168.1.1

-> Adds default gateway manually.

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Wireless Network Management

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- iwconfig wlan0

-> Displays wireless interface information.

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Cable Connection Check

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- ifplugstatus eth0

-> Checks if the network cable is connected to eth0.

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Download Files

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- wget http://example.com/file.zip

-> Downloads a file from the internet using wget.

- curl -O http://example.com/file.zip

-> Downloads a file from the internet using curl.