LINUX NETWORKING COMMANDS

NETWORK INTERFACE & IP MANAGEMENT

Command	Description
ifconfig	Displays and configures network interfaces (deprecated, replaced by ip).
ip addr	Shows IP addresses assigned to all interfaces.
ip link	Displays and configures network interfaces (without IPs).
ip route	Shows and manages routing table.
ip neigh	Displays and manages ARP table entries.
ethtool <interface>	Displays and changes Ethernet interface settings (speed, duplex, etc.).
nmcli	Command-line interface for NetworkManager (view and configure connections).
hostname	Displays or sets the system's hostname.
hostname -I	Shows all assigned IP addresses (excluding loopback).

CONNECTIVITY TESTING

Command	Description
ping <host>	Sends ICMP echo requests to test connectivity.
traceroute <host>	Displays the route packets take to a destination.
tracepath <host>	Similar to traceroute, but requires no root privileges.
mtr <host>	Combines ping and traceroute for real-time route monitoring.

DNS & NAME RESOLUTION

Command	Description
nslookup <domain>	Queries DNS to resolve a domain to IP.
dig <domain>	Detailed DNS lookup tool.
host <domain>	Simple domain name lookup.
resolvectl	Checks and manages system DNS configuration (systemd).

SOCKET & PORT MANAGEMENT

Command	Description
netstat -tulnp	Shows listening ports and associated processes (deprecated, replaced by ss).
ss -tuln	Displays listening sockets (TCP/UDP).
lsof -i	Lists open network connections.
nc <host> <port>	Tests connectivity to a specific port (netcat).
nmap <host>	Network scanner for ports, services, and OS detection.

PACKET CAPTURE & ANALYSIS

Command	Description
tcpdump	Captures network packets for analysis.
wireshark	GUI packet analyzer (requires installation).

FILE TRANSFER & REMOTE ACCESS

Command	Description
scp <file> user@host:/path	Securely copies files between hosts.
rsync	Synchronizes files and directories over SSH or locally.
sftp	Secure FTP over SSH.
ftp	File Transfer Protocol client (insecure).
wget <url>	Downloads files from the web.
curl <url>	Transfers data to/from URLs.
ssh user@host	Connects to a remote server securely via SSH.

NETWORK STATISTICS & MONITORING

Command	Description
iftop	Real-time bandwidth usage by connection.
nload	Real-time network traffic graph.
vnstat	Logs and reports network traffic statistics.
sar -n DEV 1	Displays network statistics per second.

FIREWALL & SECURITY

Command	Description
iptables	Configures Linux firewall rules (legacy).
nft / nftables	Modern firewall rule configuration.
ufw	User-friendly firewall tool.
firewall-cmd	Manages firewall on systems with `firewalld`.