Networking commands

🌐 1. ifconfig — Interface Configuration

Purpose: Displays and configures network interfaces (IP, MAC, etc.)

Syntax:

```
ifconfig [interface] [options]
```

Common Options:
ifconfig = Shows all active network interfaces
ifconfig eth0 = Displays details of eth0 interface
ifconfig eth0 up = Activates the eth0 interface
ifconfig eth0 down = Deactivates the interface
ifconfig eth0 192.168.1.10 netmask 255.255.255.0 = Assigns IP to interface

⚙ 2. systemctl — Manage Systemd Services

Purpose: Controls and manages system and network services

Syntax:

```
systemctl [option] [service]
```

Common Options:
systemctl start network = Starts the network service
systemctl stop NetworkManager = Stops the NetworkManager service
systemctl restart ssh = Restarts the SSH service
systemctl status ssh = Displays the status of SSH service
systemctl enable ssh = Enables SSH service at startup
systemctl disable ssh = Disables SSH service from auto-start

🔒 3. ss — Check Open Ports and Sockets

Purpose: Displays open sockets, listening ports, and active connections

Syntax:

```
ss [options]
```

Common Options:
ss -tuln **= Shows all TCP & UDP listening ports**
ss -tuna **= Shows all TCP & UDP connections**
sudo ss -lptn **= Displays listening ports with process IDs**

🌏 4. ping — Test Network Connectivity

Purpose: Checks connectivity between host and remote server

Syntax:

```
ping [options] [hostname/IP]
```

Common Options:
ping -c 4 google.com **= Sends 4 ICMP packets to Google**
ping -i 2 8.8.8.8 **= Sends packets every 2 seconds**
ping -t 8.8.8.8 **= Pings continuously until stopped**

🧭 5. traceroute — Trace Route of Packets

Purpose: Shows the route packets take to reach a destination host

Syntax:

```
traceroute [options] [hostname/IP]
```

Common Options:
traceroute -n google.com **= Shows only IP addresses (no DNS lookup)**
traceroute -I 8.8.8.8 **= Uses ICMP echo instead of UDP**
traceroute -m 20 google.com **= Limits the maximum hops to 20**