

## Networking Commands

### 1. IP Configuration Commands:

- **ipconfig (Windows)** – Displays IP address, subnet mask, and default gateway.
- **ifconfig (Linux/Unix)** – Displays or configures network interfaces (older systems, replaced by ip).
- **ip addr (Linux/Unix)** – Displays or configures IP addresses for network interfaces.
- **hostname** – Displays or sets the system's hostname.
- **ip route** – Shows or manipulates the IP routing table.

### 2. Network Diagnostics Commands:

- **ping** – Tests the reachability of a host on an IP network.
- **tracert (Windows) / traceroute (Linux/Unix)** – Traces the path packets take to a destination host.
- **netstat** – Displays network connections, routing tables, interface statistics, and more.
- **nslookup** – Queries DNS servers to obtain domain name or IP address mapping.
- **arp** – Displays or modifies the Address Resolution Protocol (ARP) cache.
- **route** – Displays or modifies the network routing table.
- **mtr** – A network diagnostic tool combining the functionality of ping and traceroute.

### 3. Network Configuration Commands:

- **sudo ip link set (Linux)** – Brings a network interface up or down.
- **nmcli (Linux)** – Command-line tool for NetworkManager to manage network interfaces.
- **systemctl restart network (Linux)** – Restarts the network service to apply changes.
- **netsh interface ipv4 (Windows)** – Configures IPv4 network interfaces in Windows.
- **sudo dhclient (Linux)** – Configures a network interface using DHCP.

### 4. Firewall and Security Commands:

- **iptables (Linux)** – Configures the Linux firewall.
- **ufw (Linux)** – Frontend for managing firewall rules on Ubuntu systems.
- **firewall-cmd (Linux)** – Command for managing firewalld settings in Linux.
- **netstat -an** – Displays active connections and their listening ports.

## 5. Connection Management:

- **telnet** – Connects to remote systems via Telnet protocol (less secure).
- **ssh** – Connects to remote systems via Secure Shell (SSH).
- **ftp** – Transfers files between systems using the File Transfer Protocol.
- **scp** – Securely copies files between systems using SSH.