

◆ Networking Commands

1. ping

- Tests connectivity to another machine by sending ICMP packets.
- Example:
- `ping google.com`

→ Sends packets, shows if host is reachable + round-trip time.

- Stop with Ctrl+C.
-

2. curl

- Transfers data from/to a URL (powerful for APIs, downloads).
- Example:
- `curl https://example.com`

→ Prints the HTML of the webpage.

- Useful for testing REST APIs.
-

3. wget

- Downloads files from the web.
- Example:
- `wget https://example.com/file.zip`

→ Saves file in the current directory.

4. netstat (legacy) / ss (modern replacement)

- Shows open network connections, listening ports, routing tables.
- Example with ss:
- `ss -tuln`

→ Show TCP/UDP listening ports.

◆ Package Management

Linux distros use package managers to install/update software.

1. APT (Debian/Ubuntu)

- Install package:
 - `sudo apt install htop`
 - Remove package:
 - `sudo apt remove htop`
 - Update package list:
 - `sudo apt update`
 - Upgrade installed packages:
 - `sudo apt upgrade`
-

2. YUM/DNF (RedHat/CentOS/Fedora)

- Install package:
 - `sudo dnf install htop`
 - Remove package:
 - `sudo dnf remove htop`
 - Update system:
 - `sudo dnf update`
-

◆ Why it matters

- Networking commands = **diagnose connectivity issues & test APIs/services**.
 - Package management = **install & maintain software** (no need to download binaries manually).
-

✅ Quick Exercise for students:

1. Ping a website (e.g., ping google.com).
2. Use curl to fetch its homepage.
3. Install a package (htop) using apt.
4. Run htop to monitor system processes.