

Homework #4: Basic Network Management

Objective:

Learn how to view, configure, and troubleshoot network settings using CLI and TUI tools (`nmcli`, `nmtui`, etc.) on a Linux system.

Tasks:

1. Network Interfaces & IP Addresses

- a. Display all network interfaces and their IP addresses.
- b. Identify your system's main IP address and interface name.

2. DNS Configuration

- a. View the contents of `/etc/resolv.conf`.
- b. Add Google's DNS (`8.8.8.8`) temporarily using a text editor.
- c. Test DNS resolution using `dig` or `nslookup`.

3. Hostname Setup

- a. Set the system hostname to `mystudent-pc`.
- b. Confirm the new hostname is applied.

4. Check Open Ports and Services

- a. Use `ss -tulin` to list listening services.
- b. Find out which service is using port 22.

5. Test Connectivity

- a. Use `ping` to check if `google.com` is reachable.
- b. Use `traceroute` to trace the path to `google.com`.

6. Test Web Requests

- a. Use `curl` or `wget` to download the homepage of `example.com`.
- b. Explain the difference between `curl` and `wget`.

7. Use `nmcli` to View Connections

- a. List all available network connections.
- b. Identify which connection is active.

8. Use `nmcli` to Modify a Connection

- a. Change the IP address of a connection (temporarily) using `nmccli`.
- b. Restore it to DHCP afterward.

Note: Use a secondary interface or test safely in a VM.

9. Use `nmtui` for Configuration

- a. Open `nmtui`.
- b. Take screenshots (or describe the steps) for:
 - Activating/deactivating a connection
 - Editing a connection (e.g., change hostname or IP)

10. Enable/Disable a Network Connection

- a. Use `nmccli` to turn off a connection.
- b. Re-enable it, and confirm it's working.

Submission:

Submit a report (student_id.pdf, exported from a md file) including:

- All commands used and output screenshots
- Descriptions for each step