Lab 19 – Using ifconfig to view and modify network information on Linux

Big Picture: What is this lab about?

- In Windows, you use a tool called `ipconfig` to see your computer's network info.
- In **Linux**, the tool is called **`ifconfig`**.
- So, **`ifconfig` = Linux version of Windows `ipconfig`**.

You use it to **see** and **change** information about how your computer is connected to the internet or network.

Tools Needed:

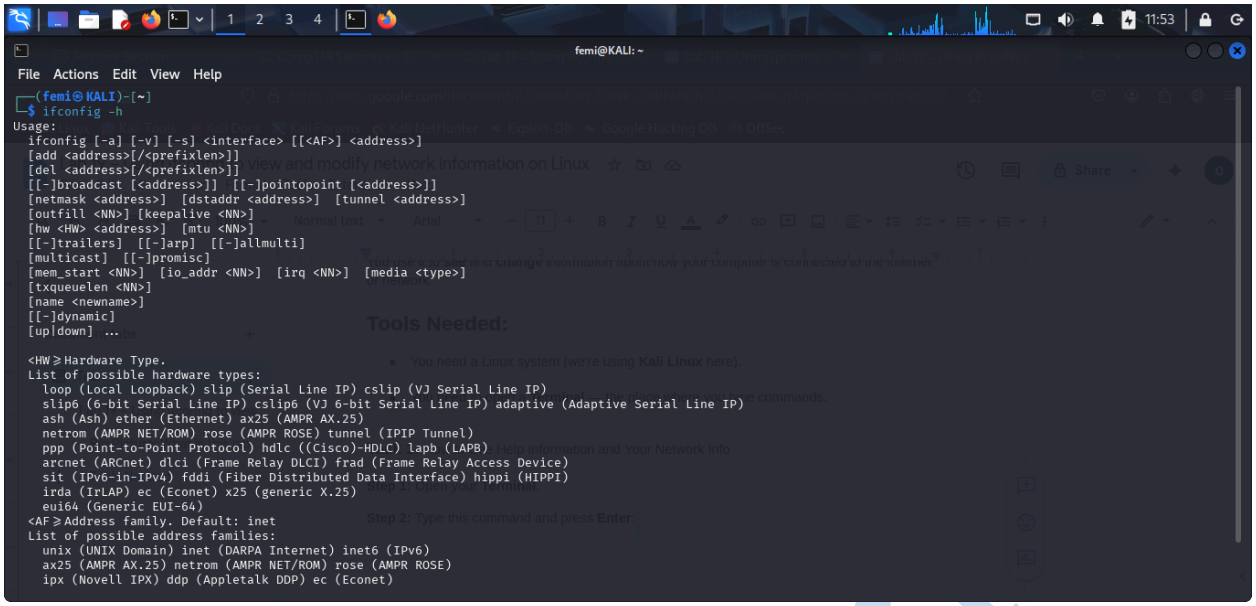
- You need a Linux system (we're using **Kali Linux** here).
- You need to open a **Terminal** — the place where you type commands.

Task 1: How to See Help Information and Your Network Info

Step 1: Open your **Terminal**.

Step 2: Type this command and press **Enter**: ifconfig -h

The `-h` means **help**.
This shows you a short list of options you can use with `ifconfig`.

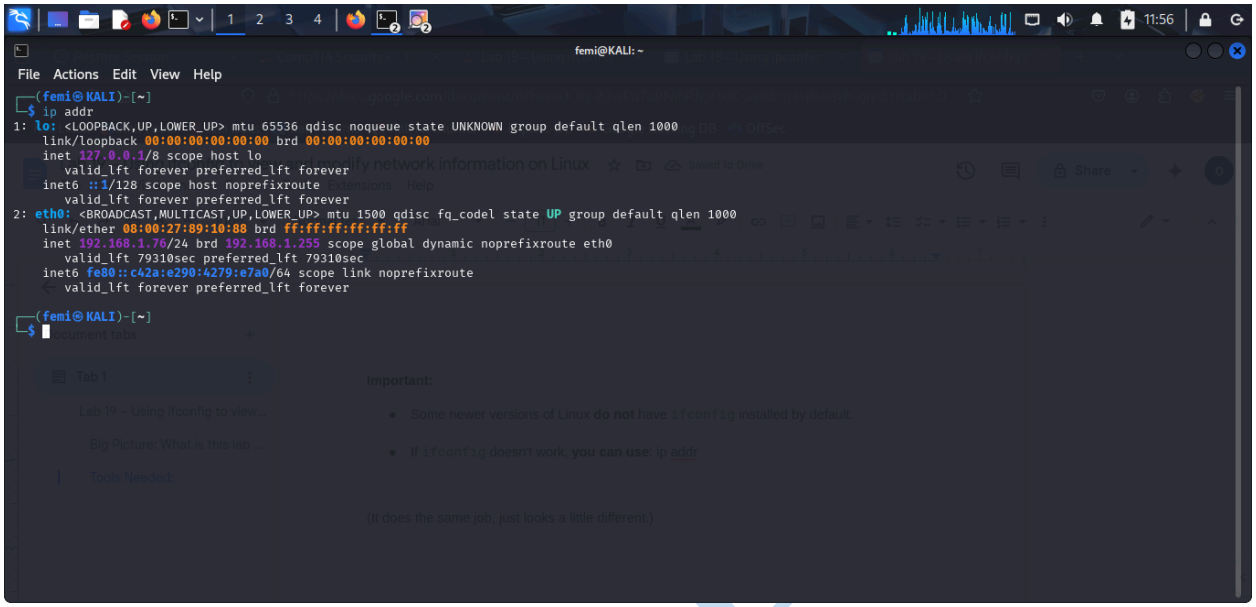


Step 3: Now, type this and press **Enter**: ifconfig

- This will **show you your computer's network information**.
- You'll see:
    - **IP address** (this is your "home address" on the internet)
    - **MAC address** (this is your network card's fingerprint, a unique number)
    - **Network Interfaces** like `eth0`, `wlan0` (these are your wired or wireless connections)

Important:

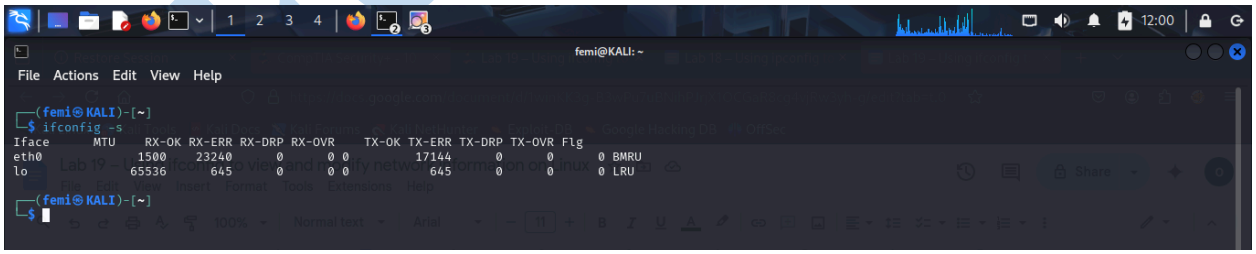
- Some newer versions of Linux **do not** have `ifconfig` installed by default.
- If `ifconfig` doesn't work, **you can use**: ip addr



(It does the same job, just looks a little different.)

Task 2: How to See a Shorter List of Your Network Info

Step 1: Type this command: ifconfig -s



`-s` stands for **short**.

This gives you a **simpler, easier-to-read** list of your network interfaces without too many details.

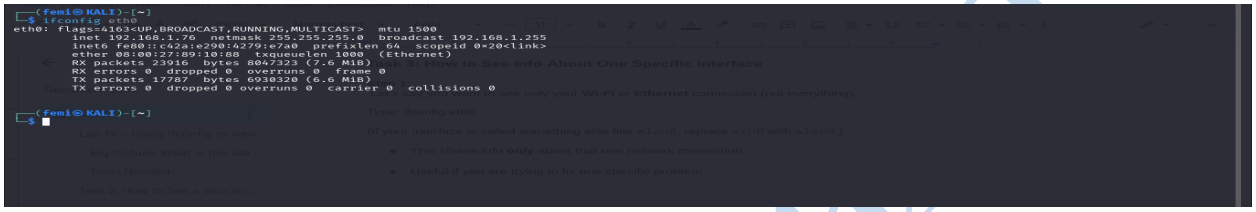
Task 3: How to See Info About One Specific Interface

Step 1:
Let's say you want to see only your **Wi-Fi** or **Ethernet** connection (not everything).

Type: ifconfig eth0

(If your interface is called something else like `wlan0`, replace `eth0` with `wlan0`.)

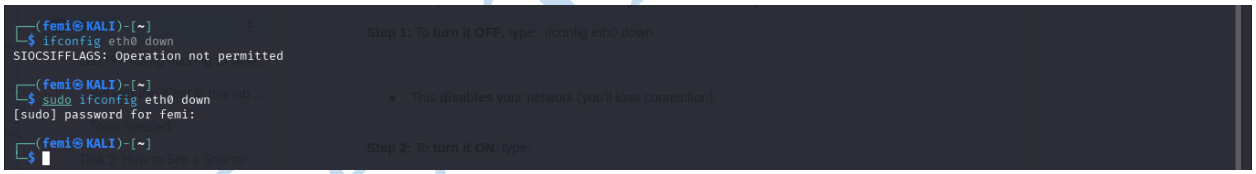
- This shows info **only** about that one network connection.
- Useful if you are trying to fix one specific problem.



Task 4: How to Turn a Network Connection On or Off

Sometimes you need to **turn off** or **turn on** your network manually.

Step 1: To **turn it OFF**, type: sudo ifconfig eth0 down



- This **disables** your network (you'll lose connection).

Step 2: To **turn it ON**, type: sudo ifconfig eth0 up

- This **enables** your network again (you'll reconnect).

Tip:
This is useful when you're troubleshooting problems!

Task 5: How to Put the Interface in Promiscuous Mode

Promiscuous Mode sounds complicated, but it's simple:

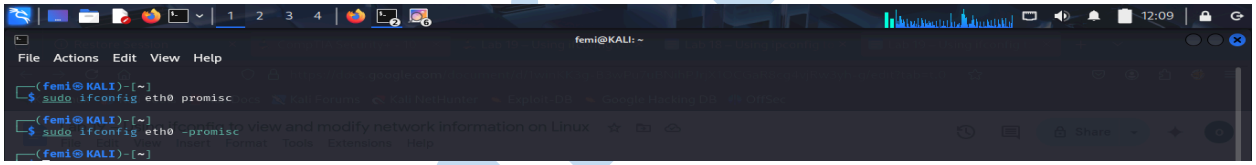
- Normally, your computer **only listens** to network traffic meant for it.
- In **Promiscuous Mode**, your computer **listens to ALL network traffic**, even if it's not meant for you.

This is useful for things like:

- **Network monitoring**
- **Security testing**
- **Packet sniffing**

Step 1: To **enable Promiscuous Mode**, type: ifconfig eth0 promisc

Step 2: To **disable Promiscuous Mode**, type: ifconfig eth0 -promisc



Note: You need a **special network card** that can support this mode.

Task 6: How to Change Your MAC Address

What is a MAC Address?

- It's a **special unique ID** for your network card (like a serial number).
- Sometimes you might want to **change it** (for privacy or security reasons).

Step 1: To **change your MAC address**, type: ifconfig eth0 hw ether 66:3e:7f:60:f2:1f

(Replace `eth0` with your interface name, and replace the numbers with the MAC address you want.)

Important:

- A MAC address looks like this: `66:3e:7f:60:f2:1f`
- It is **6 pairs** of letters and numbers, separated by colons `:`.

Extra Tip: There are **safe ranges** of MAC addresses you can use:

Start With	Example
`2`	2A:11:22:33:44:55
`6`	6B:22:33:44:55:66
`A`	AA:33:44:55:66:77
`E`	EA:44:55:66:77:88

These ranges avoid conflicts with real hardware devices.

Making the MAC Address Change Permanent

Right now, if you **restart** your computer, the MAC address change will disappear.

To **make it permanent**:

Step 1: Open your network settings file with this command: nano /etc/network/interfaces

Step 2: Add this line under your interface settings: pre-up ifconfig eth0 hw ether AA:22:33:44:55:66

(Replace with your correct interface name and new MAC address.)

Step 3: Save and exit the file.

Step 4: Restart your computer!

✅ Now your MAC address will stay even after a reboot.