USING IFCONFIG TO VIEW AND MODIFY NETWORK INFORMATION ON LINUX.

TOOL: KALI LINUX

`ifconfig` is a command-line tool used to view and modify network interface configurations on Linux systems. Although it is gradually being replaced by `ip` in many distributions, `ifconfig` remains widely used. Below, are ways you can use `ifconfig` to view and modify network information:

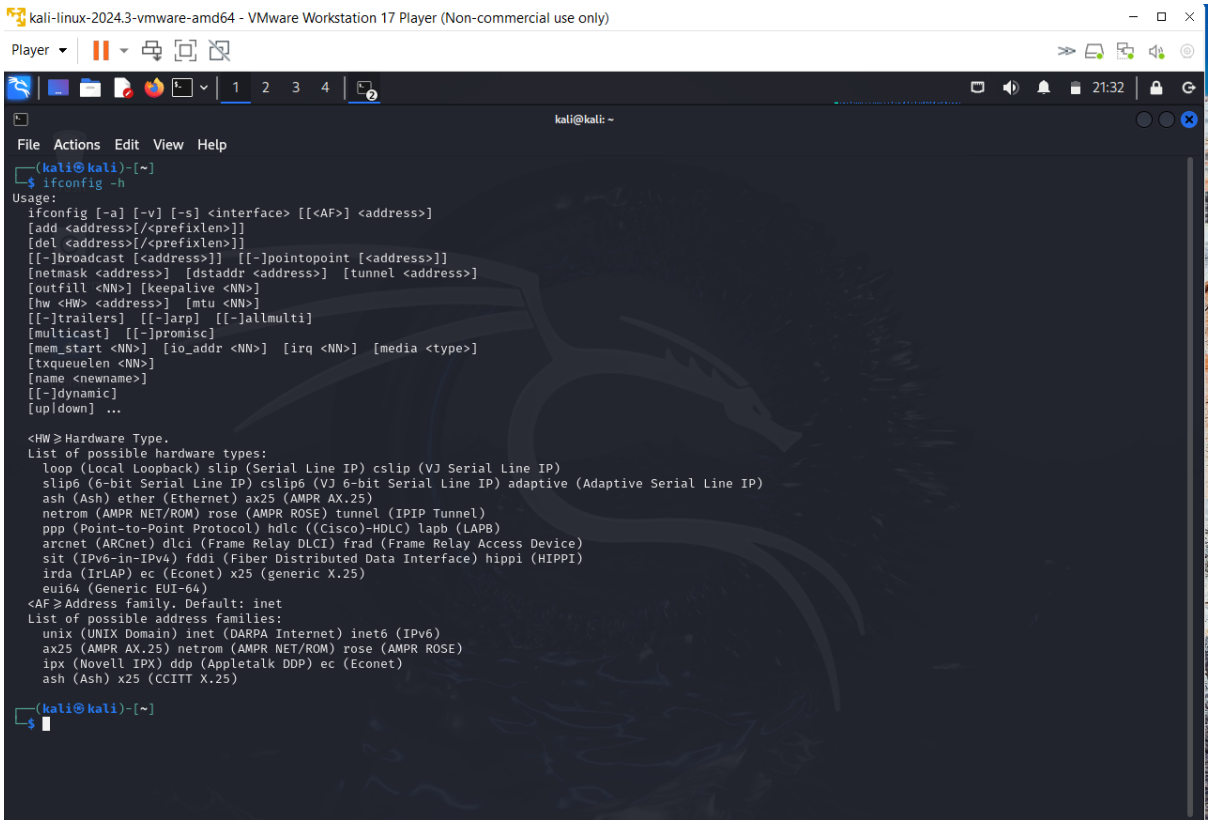
1. Viewing Network Information

To view the current network configuration, simply run:

```
ifconfig
```

This will display information about all active network interfaces. For each interface (such as `eth0`, `wlan0`, `lo`, etc.), you'll see details such as:

- **IP Address**: `inet`
- **MAC Address**: `ether`
- **Subnet Mask**: `netmask`
- **Broadcast Address**: `broadcast`
- **RX/TX bytes**: Data sent/received by the interface
- **MTU**: Maximum transmission unit



If you want to see the details for a specific interface, specify its name:

```
ifconfig eth0
```

2. Activating/Deactivating an Interface

You can use `ifconfig` to bring an interface up or down.

- To bring an interface **up** (activate it):

  ```
  sudo ifconfig eth0 up
  ```

- To bring an interface **down** (deactivate it):

  ```
  sudo ifconfig eth0 down
  ```

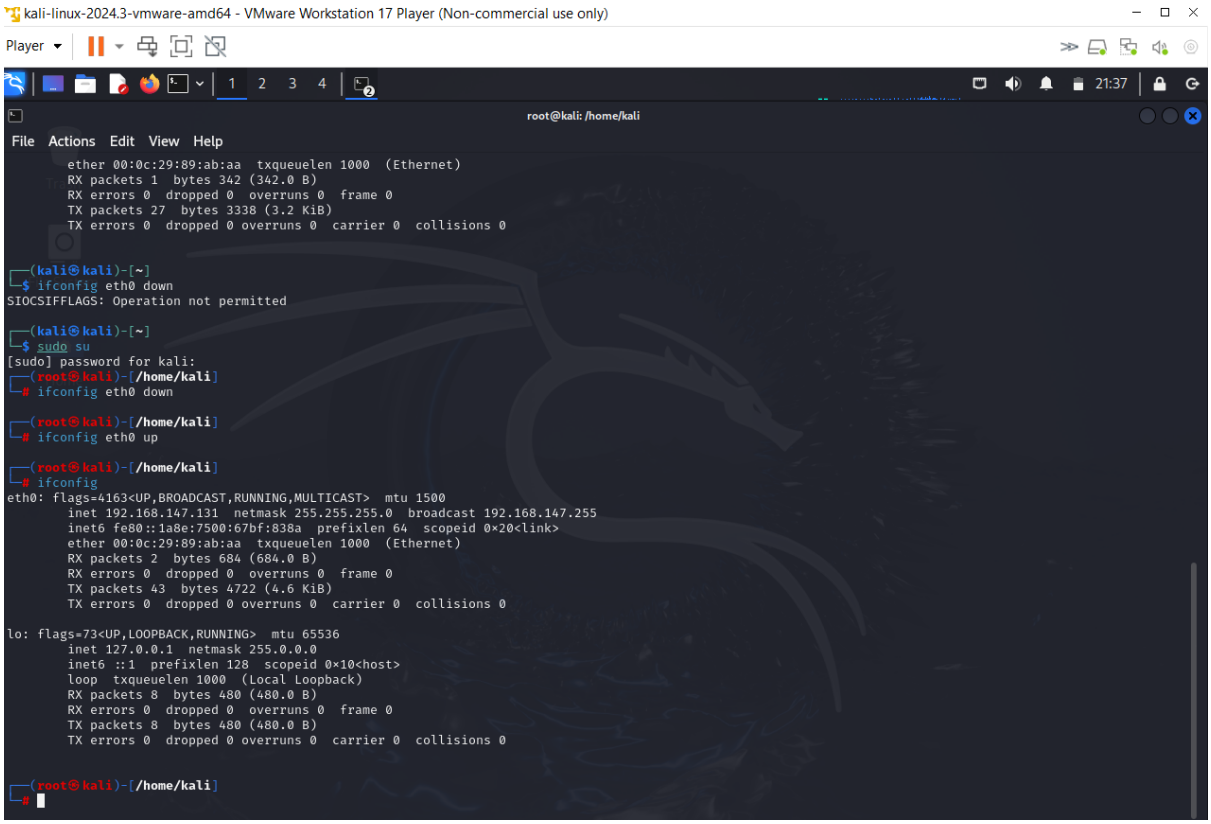
3. Assigning an IP Address

You can assign a static IP address to a network interface with `ifconfig`

```
sudo ifconfig eth0 192.168.1.100 netmask 255.255.255.0
```

This assigns the IP `192.168.1.100` to the `eth0` interface with the specified netmask. The broadcast address will be set automatically, but you can specify it as well if needed:

```
sudo ifconfig eth0 192.168.1.100 netmask 255.255.255.0 broadcast
192.168.1.255
```



4. Changing the MAC Address

To change the MAC address of a network interface, you can use the `hw` option:

```
sudo ifconfig eth0 hw ether 00:11:22:33:44:55
```

This changes the MAC address of `eth0` to `00:11:22:33:44:55`.

5. Setting MTU (Maximum Transmission Unit)

To change the MTU for an interface, use the following command:

```
sudo ifconfig eth0 mtu 1500
```

This sets the MTU of `eth0` to 1500 bytes.

6. Viewing Interface Statistics

For detailed statistics like the number of packets transmitted/received, errors, and drops:

```
ifconfig eth0
```

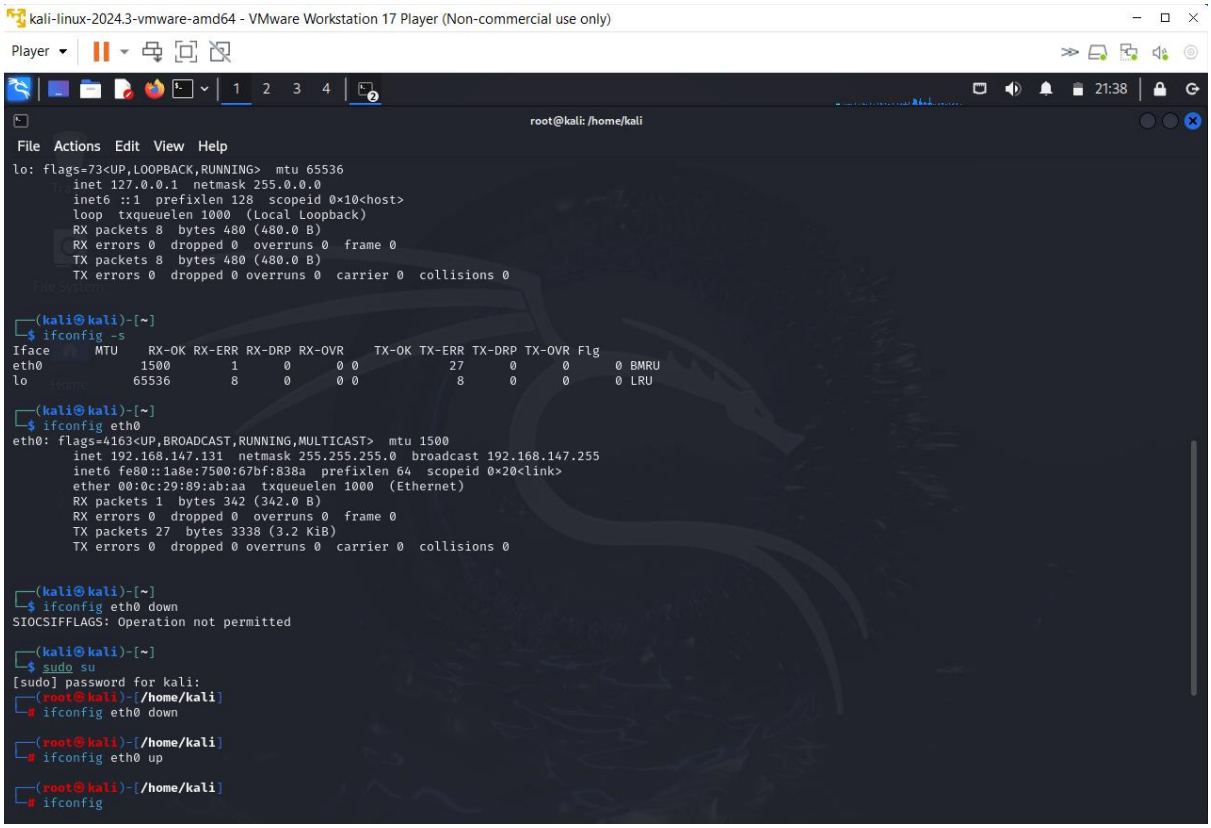
This will show information about packets sent and received, including any errors or collisions.

7. Displaying or Modifying IPv6 Address

You can also view or modify IPv6 addresses using `ifconfig`. To assign an IPv6 address

```
sudo ifconfig eth0 inet6 add 2001:0db8::1
```

This assigns the IPv6 address `2001:0db8::1` to the interface `eth0`.



8. Adding or Removing Aliases (Virtual Interfaces)

If you need to add virtual interfaces (aliases) to a physical interface, you can use `ifconfig` like:

- To add an alias:

  ```
  sudo ifconfig eth0:0 192.168.1.101
  ```

- To remove an alias:

```
sudo ifconfig eth0:0 down
```

9. Viewing Routing Information

Although `ifconfig` doesn't provide full routing information, you can use it to see the network interface associated with the default route:

```
ifconfig
```

For a more complete routing table, you would typically use the `route` or `ip route` commands.

Summary

- **View network interfaces**: `ifconfig`
- **Activate interface**: `sudo ifconfig eth0 up`
- **Deactivate interface**: `sudo ifconfig eth0 down`
- **Set IP address**: `sudo ifconfig eth0 192.168.1.100 netmask 255.255.255.0`
- **Change MAC address**: `sudo ifconfig eth0 hw ether 00:11:22:33:44:55`
- **Change MTU**: `sudo ifconfig eth0 mtu 1500`