

**Task 1:- The Home Base - Lab Setup & Networking Fundamentals**

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**DOMAIN:- Cyber Security**

**Aim:-**

To configure network settings for Kali Linux and Metasploitable virtual machines and verify connectivity between them using networking commands.

**Objective :-**

The objective of this task was to set up a safe and controlled virtual lab environment using virtualization software and to understand fundamental networking concepts such as IP addressing, connectivity testing, and communication between machines.

**Introduction :-**

Cybersecurity testing should never be performed on real or production systems. Therefore, a virtual lab environment was created using virtualization software. This lab allows multiple virtual machines (VMs) to run safely on a single physical computer.

In this setup:

- Kali Linux was used as the attacker machine.
- Metasploitable 2 was used as the vulnerable target machine.
- A private internal network was configured so both machines could communicate without affecting the host or external network.

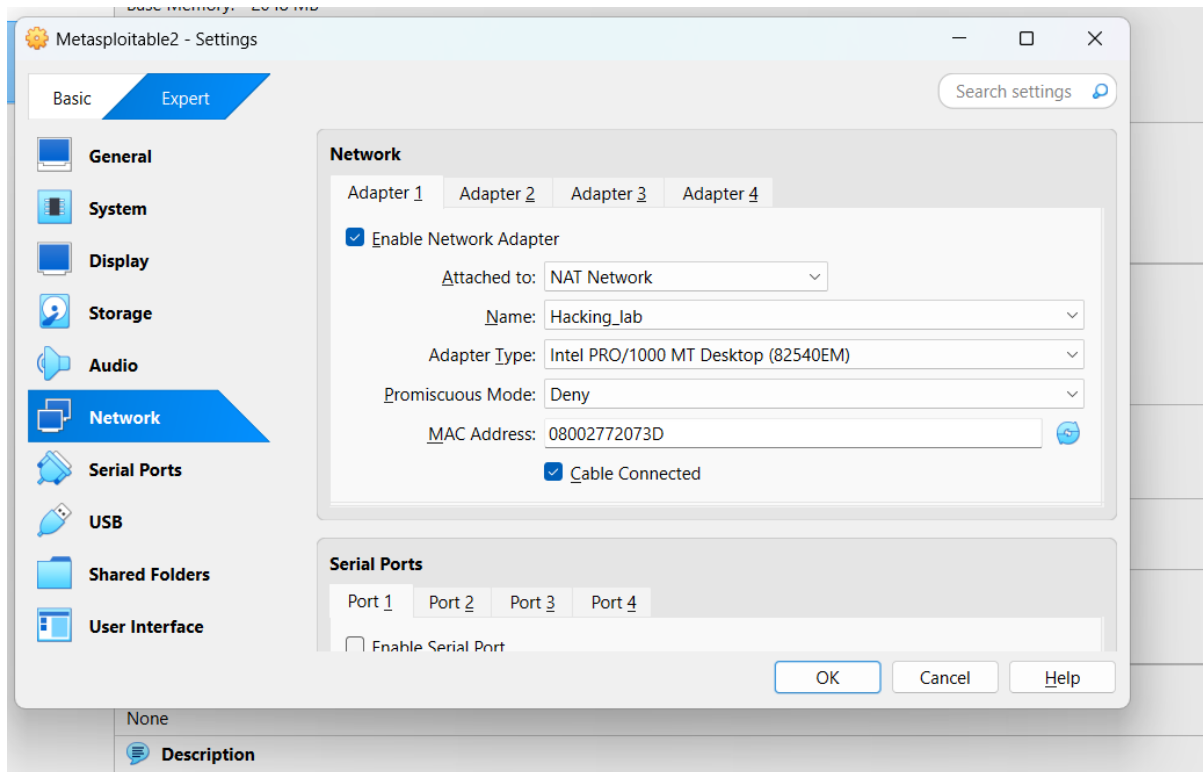
**Tools Used :-**

- Oracle VirtualBox
- Kali Linux
- Metasploitable 2
- Linux Terminal Commands (ping, ifconfig)

### **Procedure :-**

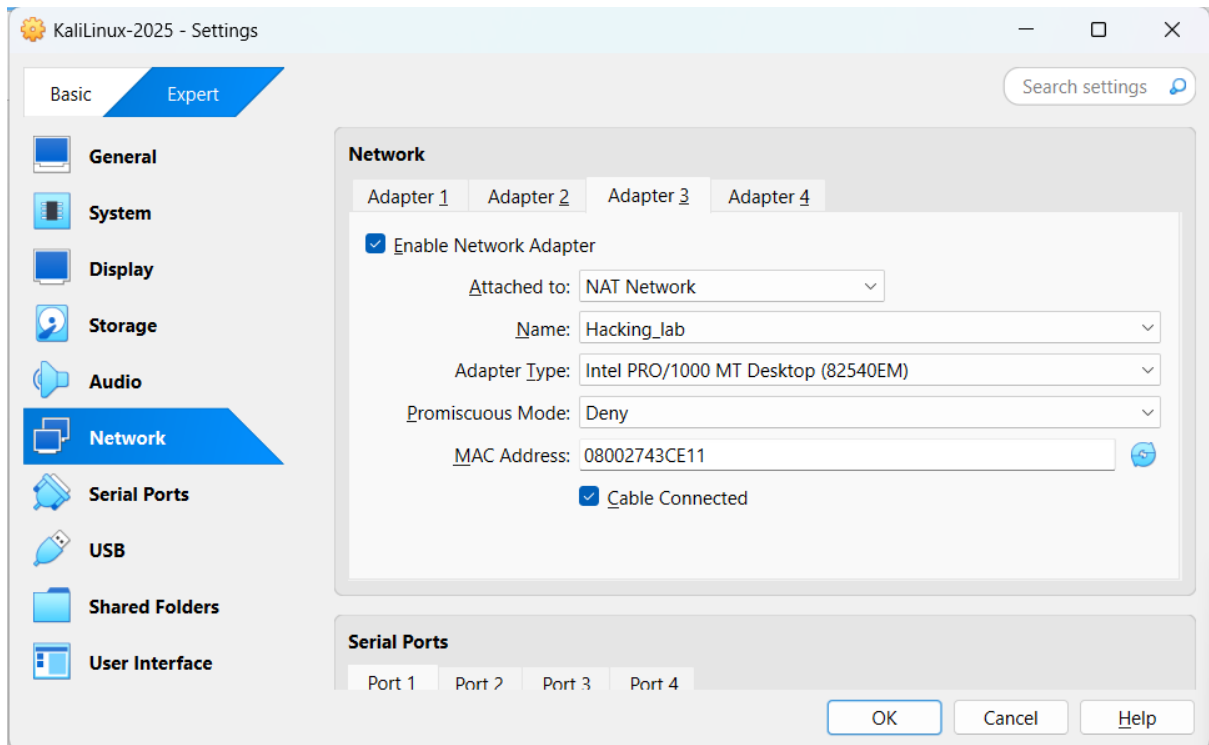
#### **Step 1: Configure Network in Metasploitable**

- Open VirtualBox
- Select Metasploitable 2
- Go to Settings → Network
- Enable Network Adapter
- Attached to: NAT Network
- Name: Hacking\_lab
- Cable Connected: ✓



## Step 2: Configure Network in Kali Linux

- Open VirtualBox
- Select Kali Linux
- Go to Settings → Network
- Attached to: NAT Network
- Name: Hacking\_lab
- Cable Connected: ✓

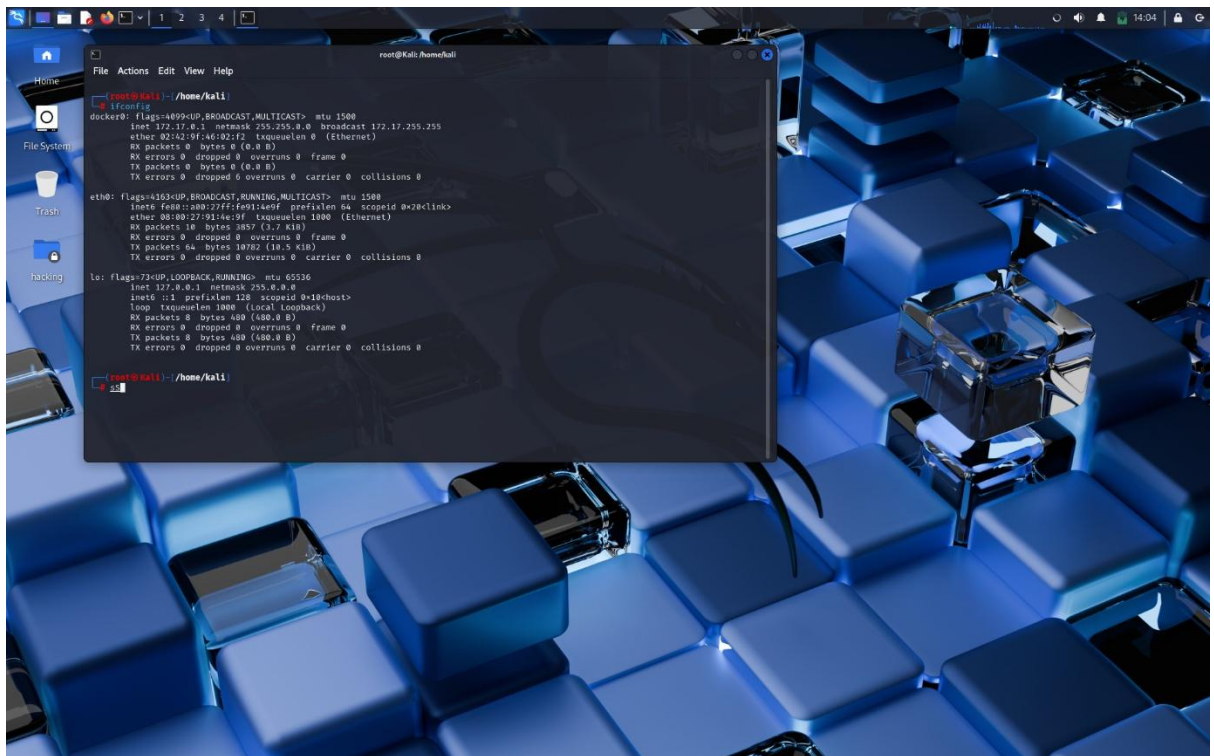


### Step 3: Verify Network Interface in Kali

Open terminal and type:

➔ `ifconfig`

This command shows IP address and network interface details.



#### Step 4: Test Connectivity to Target Machine

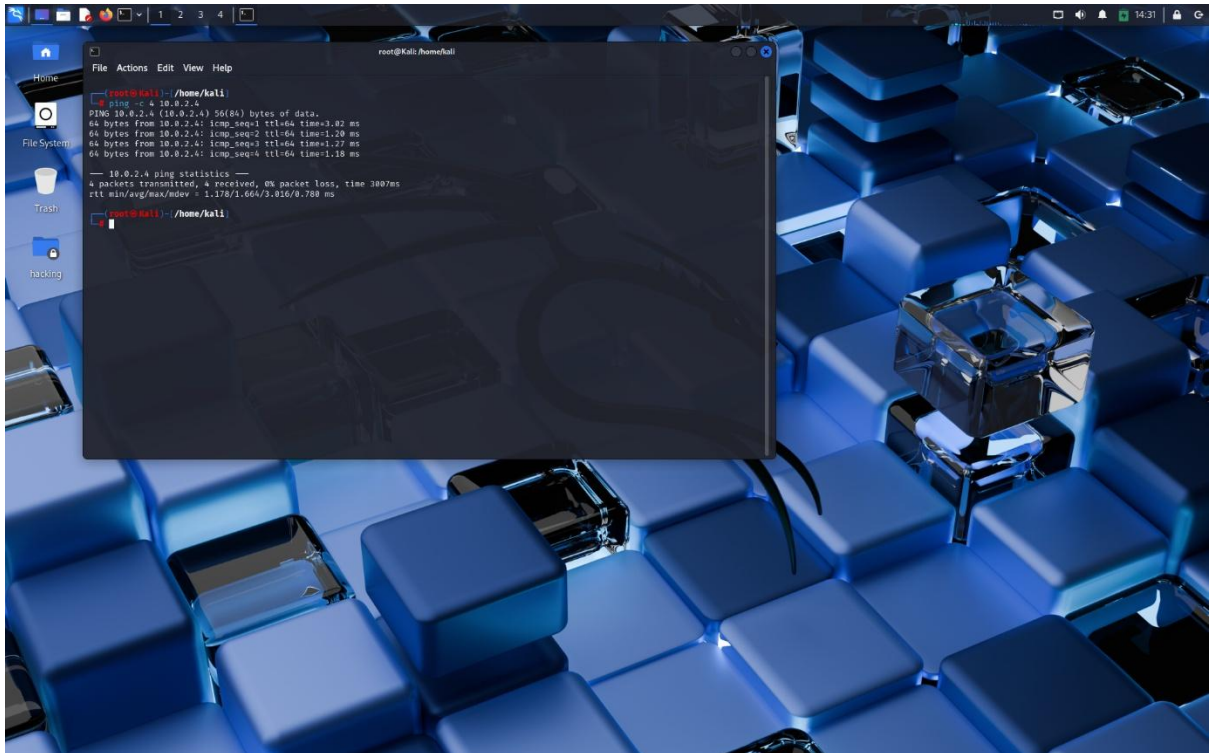
From Kali, run:

ping 10.0.2.4

Result:

- 4 packets transmitted
- 4 packets received
- 0% packet loss

This confirms successful communication.

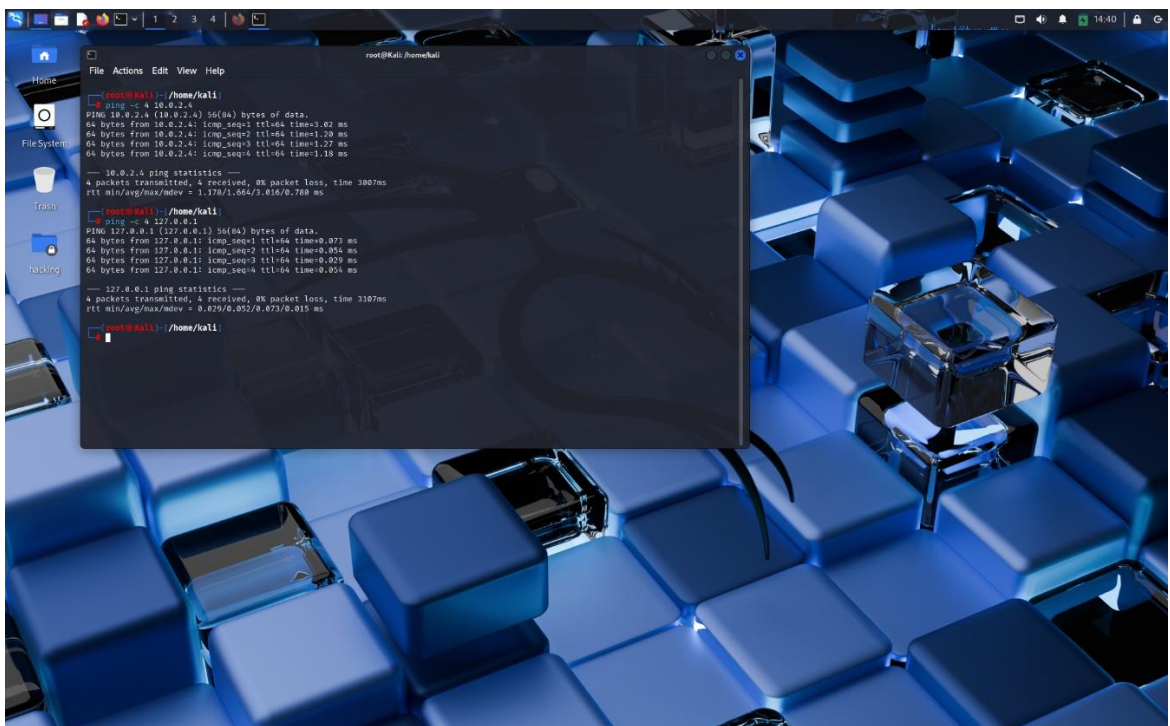


## Step 5: Test Localhost

Run:

ping 127.0.0.1

This verifies internal loopback connectivity.



**Result :-**

The network between Kali Linux and Metasploitable was successfully configured. Connectivity was verified using the ping command with 0% packet loss.

**Conclusion :-**

The virtual lab environment was successfully configured, and communication between Kali Linux and Metasploitable 2 was verified using networking commands.