

# Lab Setup Report: Kali Linux & Metasploitable2 Virtual Lab

## 1. Introduction

The purpose of this lab is to set up a virtual environment for ethical hacking practice. The lab consists of:

- **Kali Linux:** Attack machine for penetration testing.
- **Metasploitable2:** Vulnerable target machine for testing exploits.
- **Host-Only Network:** Private network for safe communication between VMs.
- **Optional NAT:** Internet access for Kali.

## 2. Lab Environment

Component	Version / Details
VirtualBox	7.2.0
Kali Linux	2023.4 (or your version)
Metasploitable2	v2.0
Host-Only Adapter IP	192.168.56.1
Kali Host-Only IP	192.168.56.101
Metasploitable2 Host-Only IP	192.168.56.102
NAT IP for Kali	10.0.2.15 (if NAT enabled)

## 3. Installation and Setup Steps

### Step 1: VirtualBox Installation

1. Installed VirtualBox 7.2.0.

2. Installed VirtualBox Extension Pack 7.2.2.
3. Ran VirtualBox as Administrator to enable network adapters.

### Step 2: Import/Install VMs

- Kali Linux ISO imported/installed as a new VM.
- Metasploitable2 OVA imported into VirtualBox.

### Step 3: Network Configuration

1. Both VMs connected to Host-Only Adapter.
2. Kali additionally connected to NAT Adapter for internet access.
3. Verified IPs:
  - Kali: 192.168.56.101
  - Metasploitable2: 192.168.56.102

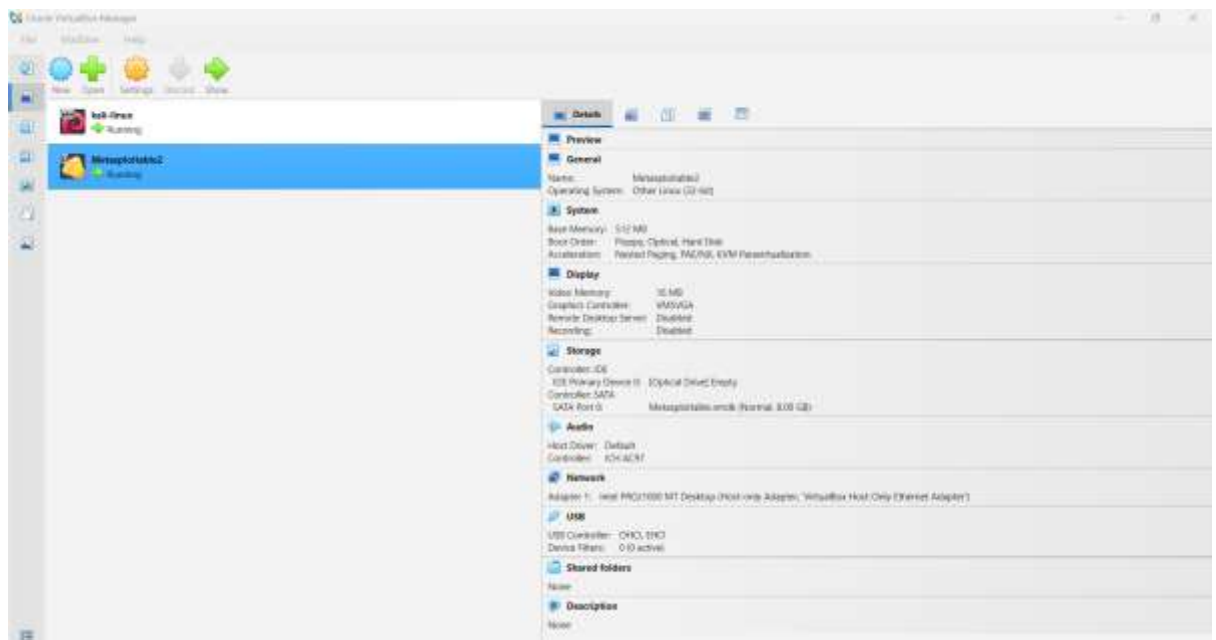
### Step 4: Verify Connectivity

- Ping from Kali → Metasploitable2
- Ping successful.

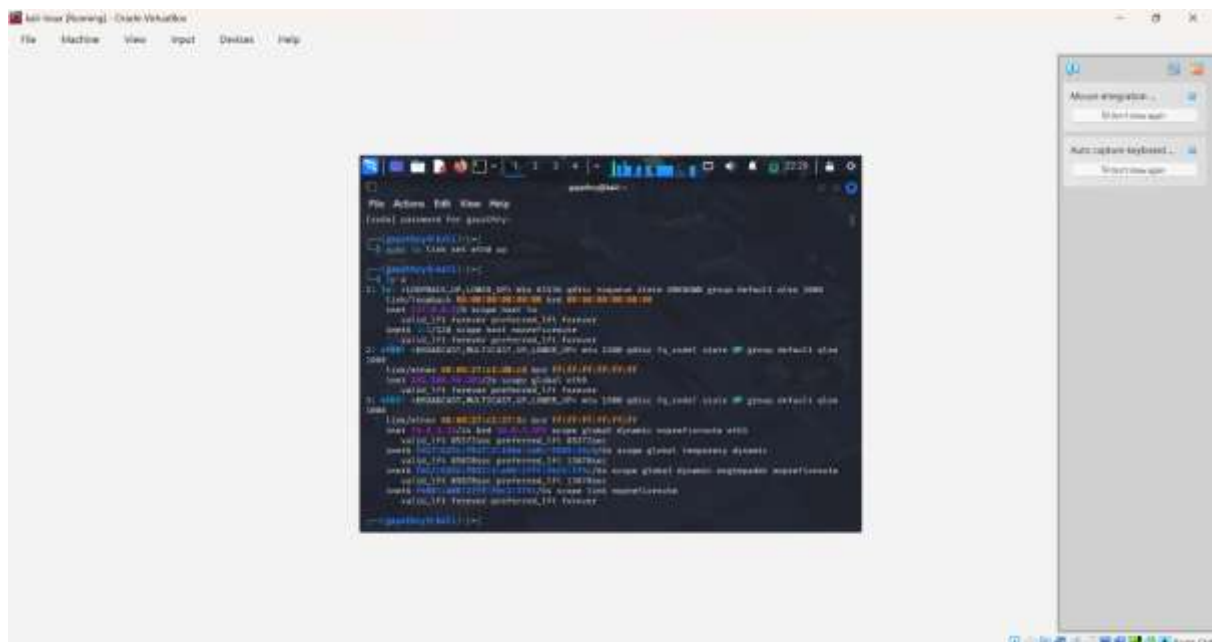
## **4. Wireshark Capture**

1. Installed Wireshark on Kali:  
`sudo apt update && sudo apt install wireshark -y`
2. Added user to Wireshark group and restarted session.
3. Started capture on Host-Only interface (eth0 / enp0s3).
4. Pings between Kali and Metasploitable2 were captured.

## 5. Screenshots



VirtualBox Manager showing both VMs running



Kali terminal with ip a output



Metasploitable2 terminal with ifconfig output



Ping result from Kali → Metasploitable2.



## **6. Lab Verification**

- Both VMs running successfully.
- Host-Only network working correctly.
- Kali can ping Metasploitable2 and capture traffic in Wireshark.

## **7. Conclusion**

The virtual lab is successfully set up for ethical hacking exercises. Kali Linux can communicate with Metasploitable2 over a private Host-Only network, and Wireshark captures confirm traffic between them. This environment can now be used safely for penetration testing practice.