

# TASK 1: Virtual Cybersecurity Lab Report

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## Student Information

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Course: Cybersecurity Capstone

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## Objective

The objective of this task is to set up a virtual cybersecurity lab using VirtualBox, install Kali Linux and Windows 10 VMs, configure an internal network between them, assign manual static IP addresses, and perform a successful ping test between both systems.

## Tools & Platforms Used

| Tool/Platform | Purpose                        |
|---------------|--------------------------------|
| VirtualBox    | Virtualization environment     |
| Kali Linux    | Attacker/analyst machine       |
| Windows 10    | Target machine                 |
| ip / ipconfig | IP configuration and ping test |
| ping          | Test network connectivity      |

## Lab Configuration Steps

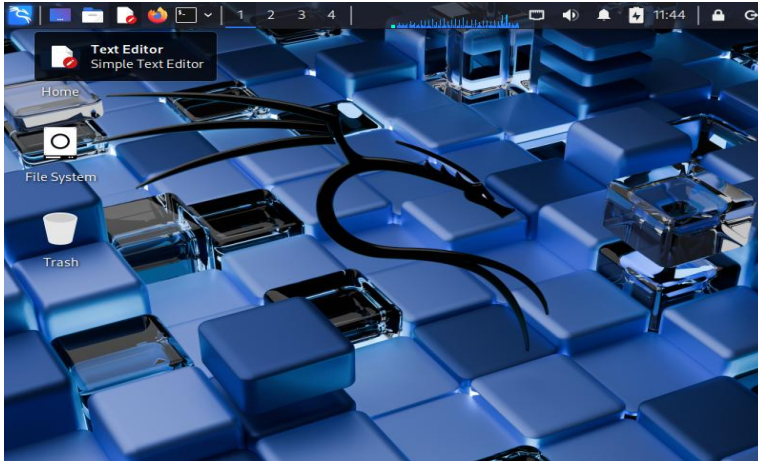
1. Created two virtual machines (Kali Linux and Windows 10) in VirtualBox.
2. Assigned each VM 1GB of RAM and 20–25 GB virtual storage.
3. Set network adapters to 'Internal Network' with the same name: IntNet.
4. Enabled Promiscuous Mode (Allow VMs) and Cable Connected.
5. Manually assigned static IPs as follows:

| VM   | IP Address     | Subnet Mask   |
|------|----------------|---------------|
| Kali | 192.168.56.101 | 255.255.255.0 |

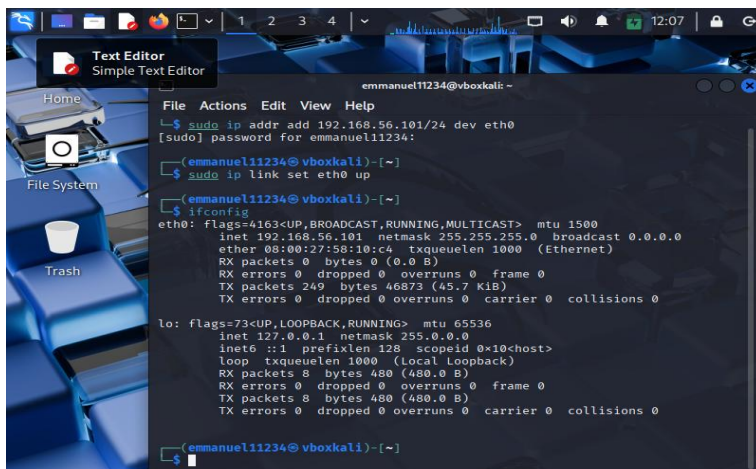
|         |                |               |
|---------|----------------|---------------|
| Windows | 192.168.56.102 | 255.255.255.0 |
|---------|----------------|---------------|

## Screenshot of lab1 task

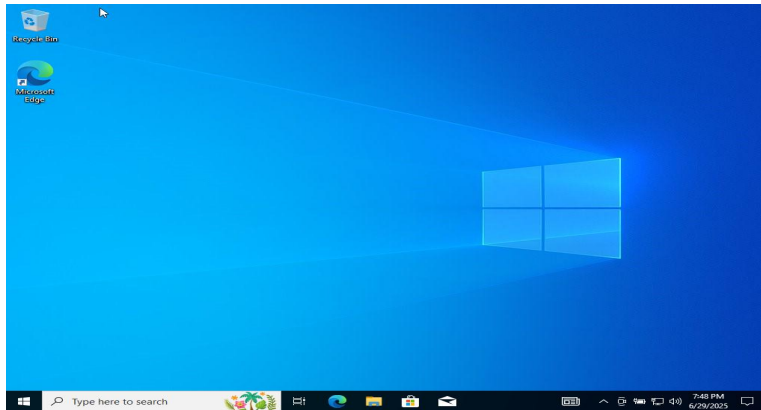
[Insert Screenshot: Kali Desktop]



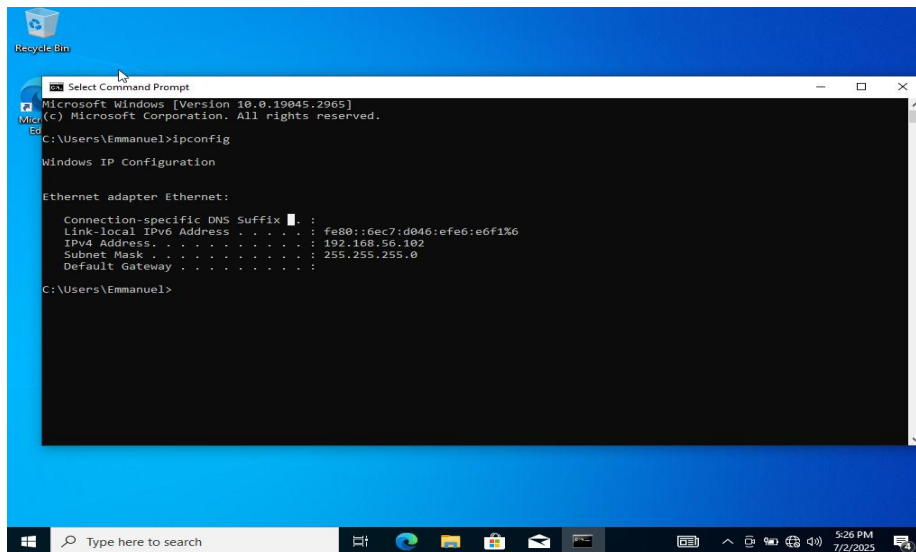
[ Screenshot of manually assigned Kali IP Address ('ip a')]



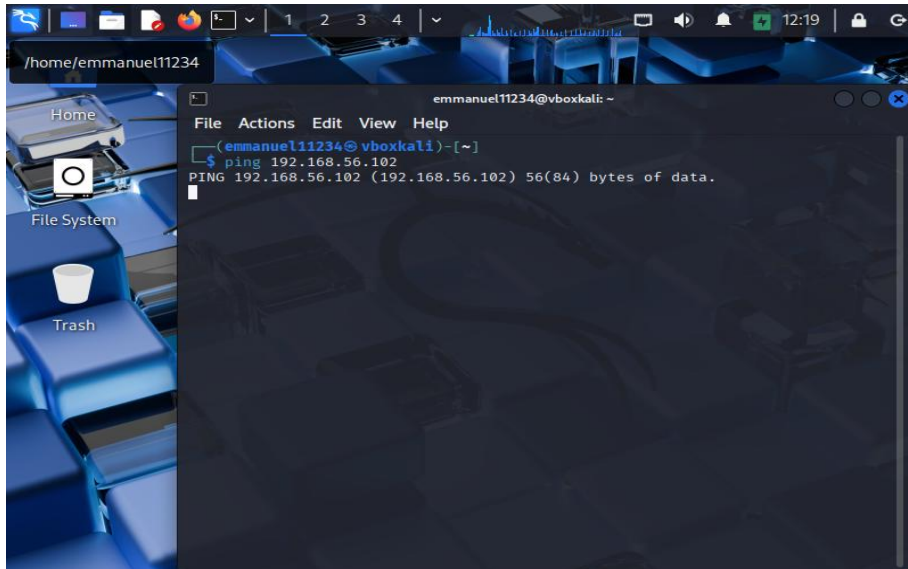
[ Screenshot of Windows Desktop]



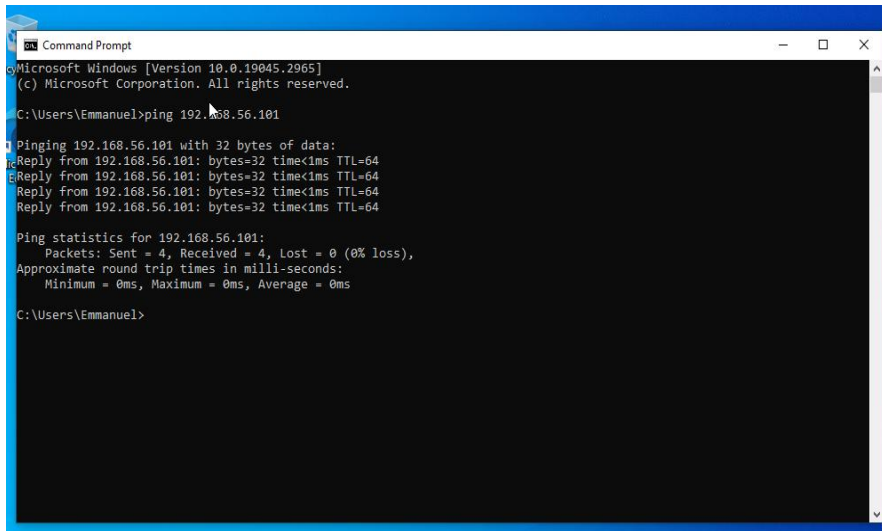
[screenshot of Windows IP Address (`ipconfig`)]



[Here is my Ping from Kali to Windows]



[Here is my Ping from Windows to Kali]

A screenshot of a Windows Command Prompt window. The title bar reads "Command Prompt". The window content shows the following text:

```
Microsoft Windows [Version 10.0.19045.2965]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Emmanuel>ping 192.168.56.101

Pinging 192.168.56.101 with 32 bytes of data:
Reply from 192.168.56.101: bytes=32 time<1ms TTL=64
Reply from 192.168.56.101: bytes=32 time<1ms TTL=64
Reply from 192.168.56.101: bytes=32 time<1ms TTL=64
Reply from 192.168.56.101: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.56.101:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Users\Emmanuel>
```

## Conclusion

The virtual cybersecurity lab setup was successful. Kali Linux and Windows 10 VMs were able to communicate with each other through an internal VirtualBox network using manually assigned IP addresses. The ping tests verified bidirectional connectivity, completing the foundational setup for future cyber defense and forensic analysis labs.