Recon & Enumeration Lab Report

Objective:

To perform basic reconnaissance and enumeration between two virtual machines (Ubuntu as the target and Kali Linux as the attacker).

Environment Setup:

- Host OS: Windows (with VirtualBox)

- Target VM: Ubuntu (Apache Web Server)

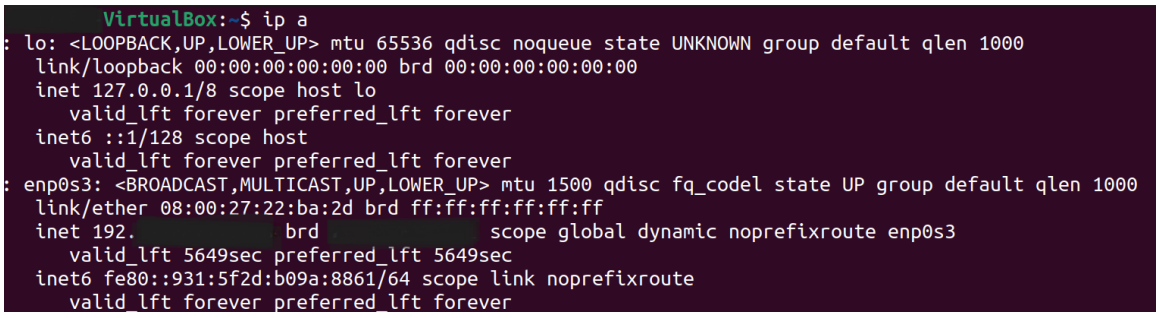
- Attacker VM: Kali Linux

- Network Mode: Bridged Adapter

Step 1: Configure Ubuntu (Target)

1. Open terminal and check the IP address:

$ ip a



2. Install Apache Web Server:

$ sudo apt install apache2

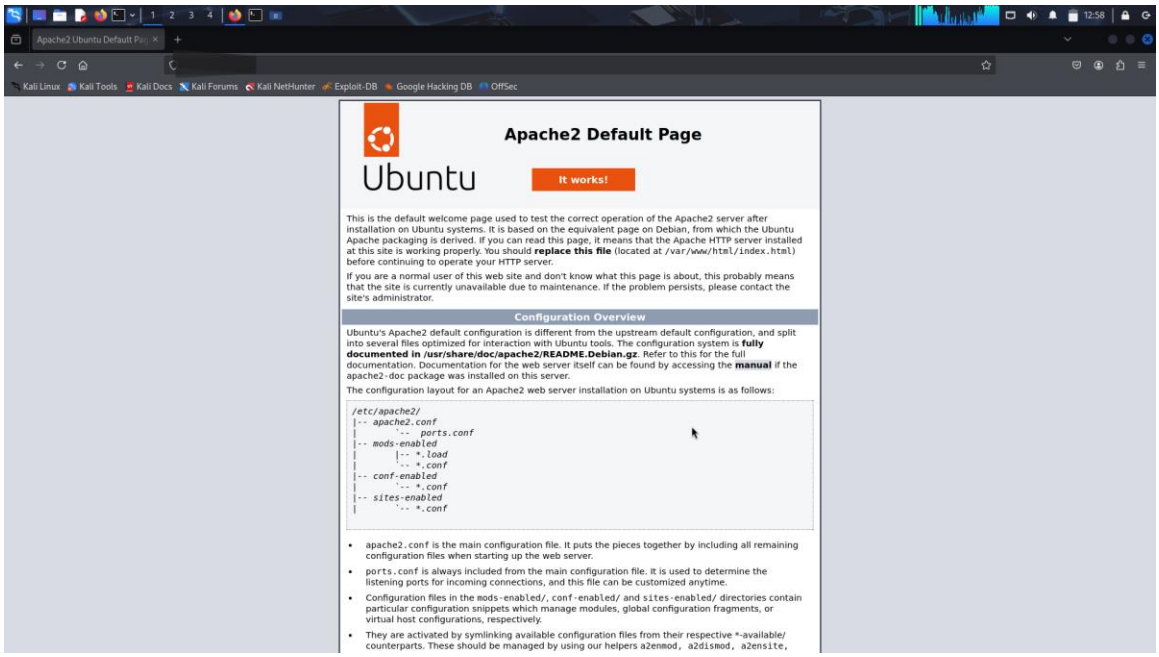
```
-VirtualBox:~$ sudo apt install apache2 -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer required:
  libqt5designer5 libqt5help5 libqt5sql5 libqt5sql5-sqlite libqt5test5 libqt5xml5 python3-gpg python3-packaging
  python3-pyqt5 python3-pyqt5.sip
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap
0 upgraded, 8 newly installed, 0 to remove and 229 not upgraded.
Need to get 1,922 kB of archives.
After this operation, 7,728 kB of additional disk space will be used.
Get:1 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libapr1 amd64 1.7.0-8ubuntu0.22.04.2 [108 kB]
Get:2 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libaprutil1 amd64 1.6.1-5ubuntu4.22.04.2 [92.8 kB]
Get:3 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libaprutil1-dbd-sqlite3 amd64 1.6.1-5ubuntu4.22.04.2 [1
1.3 kB]
Get:4 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libaprutil1-ldap amd64 1.6.1-5ubuntu4.22.04.2 [9,170 B]
Get:5 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 apache2-bin amd64 2.4.52-1ubuntu4.14 [1,349 kB]
Get:6 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 apache2-data all 2.4.52-1ubuntu4.14 [165 kB]
Get:7 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 apache2-utils amd64 2.4.52-1ubuntu4.14 [89.0 kB]
Get:8 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 apache2 amd64 2.4.52-1ubuntu4.14 [97.9 kB]
Fetched 1,922 kB in 3s (619 kB/s)
Selecting previously unselected package libapr1:amd64.
(Reading database ... 203105 files and directories currently installed.)
Preparing to unpack .../0-libapr1_1.7.0-8ubuntu0.22.04.2_amd64.deb ...
Unpacking libapr1:amd64 (1.7.0-8ubuntu0.22.04.2) ...
Selecting previously unselected package libaprutil1:amd64.
```

3. Start Apache Service:

$ sudo systemctl start apache2

```
        -VirtualBox:~$ sudo systemctl status apache2
● apache2.service - The Apache HTTP Server
     Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabled)
     Active: active (running) since Fri 2025-04-18 12:55:05 IST; 1min 18s ago
       Docs: https://httpd.apache.org/docs/2.4/
   Main PID: 3222 (apache2)
      Tasks: 55 (limit: 7019)
     Memory: 5.6M
        CPU: 155ms
     CGroup: /system.slice/apache2.service
             ├─3222 /usr/sbin/apache2 -k start
             ├─3223 /usr/sbin/apache2 -k start
             └─3224 /usr/sbin/apache2 -k start
```

4. Verify Apache is working by visiting http://<ubuntu-ip> in a browser.



Step 2: Configure Kali Linux (Attacker)

1. Ping Ubuntu to verify connectivity:

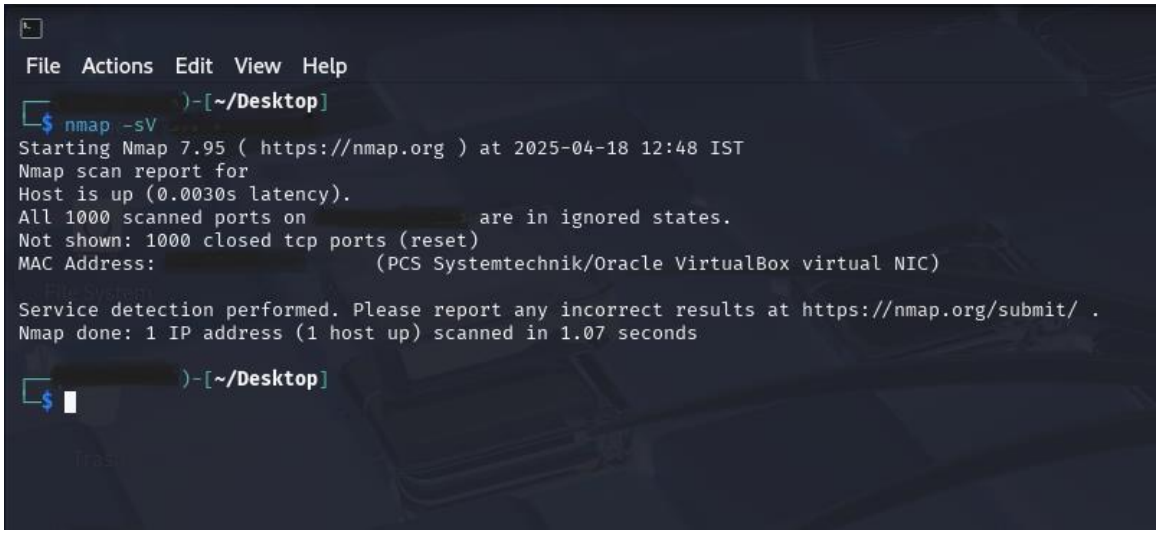
```
$ ping <ubuntu-ip>
```

2. Install Nmap (if not already installed):

```
$ sudo apt install nmap
```

3. Run Nmap scan on Ubuntu:

```
$ sudo nmap -sV <ubuntu-ip>
```



Summary:

Successfully set up a basic reconnaissance lab using Kali and Ubuntu. Scanned open ports and services running on Ubuntu using nmap and verified Apache web server via browser.