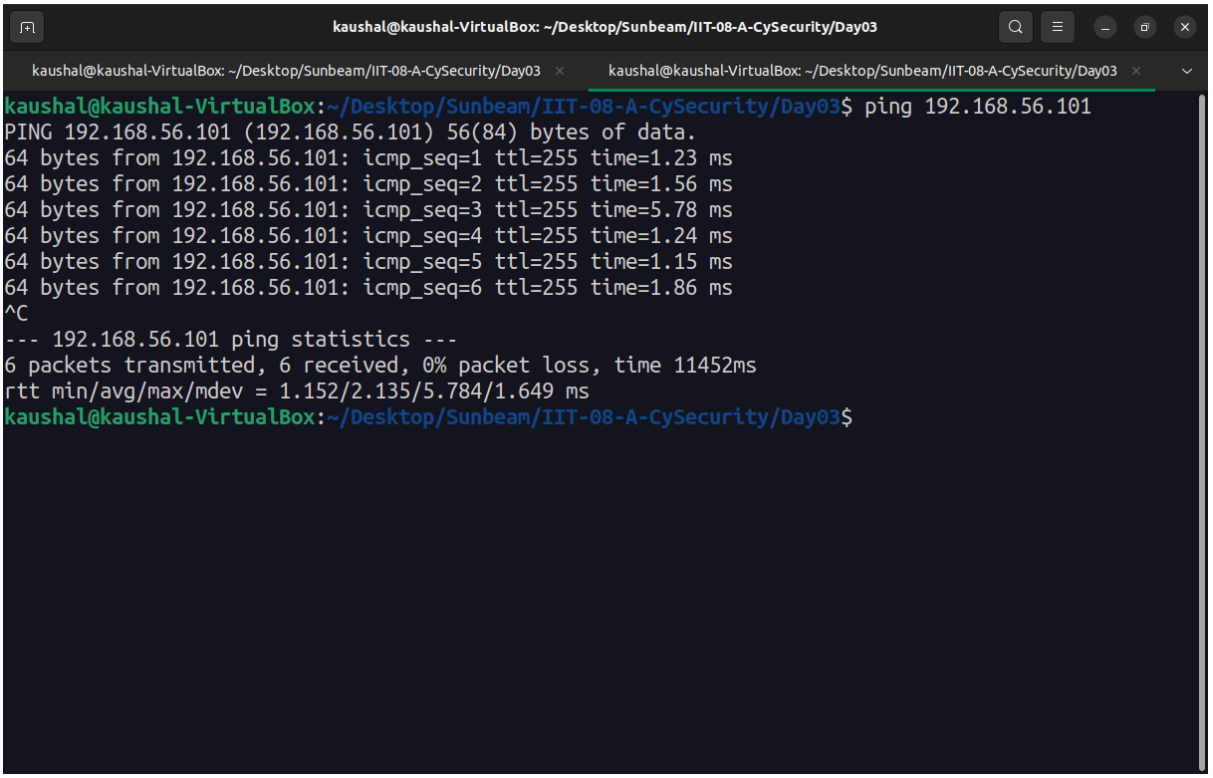
VM Assignment (12 Dec 2025)

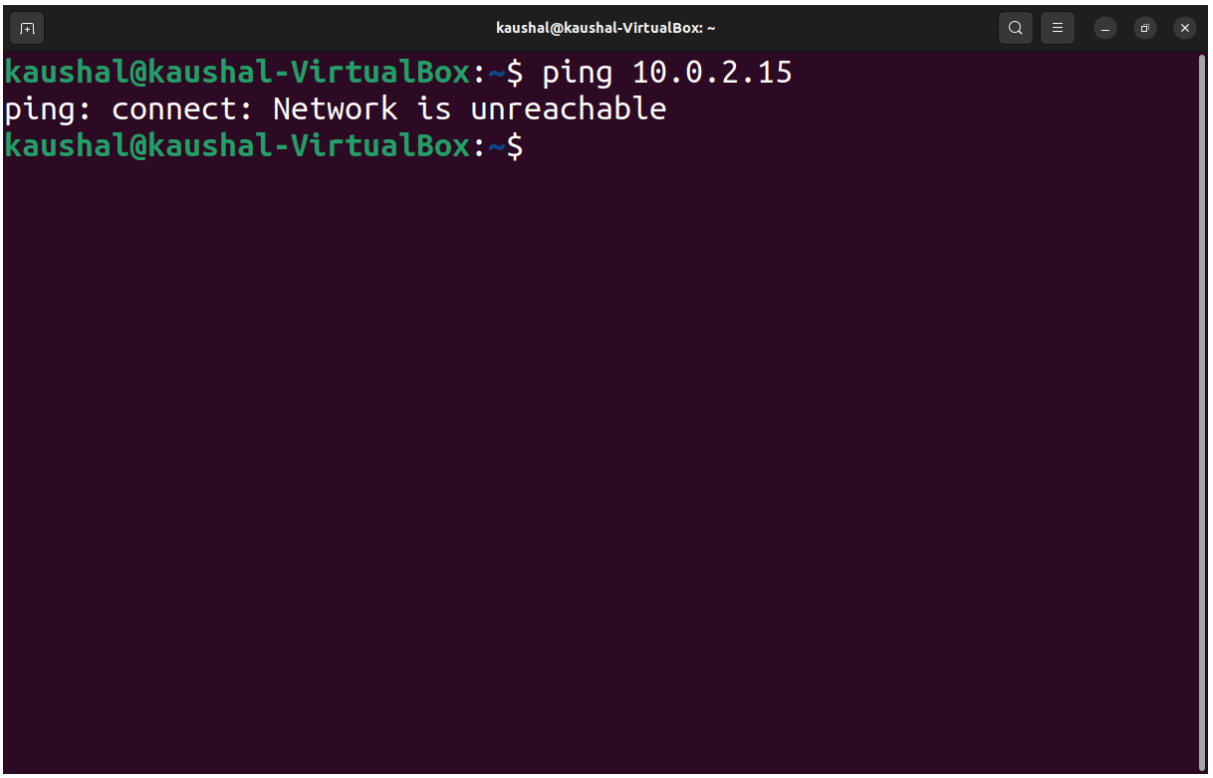
Q1 - Create 2 VMs (NAT + Host-Only) & Test Connectivity

1. IP address of VM-1 (NAT): 10.0.2.15
2. IP address of VM-2 (Host-Only): 192.168.56.101

3a.

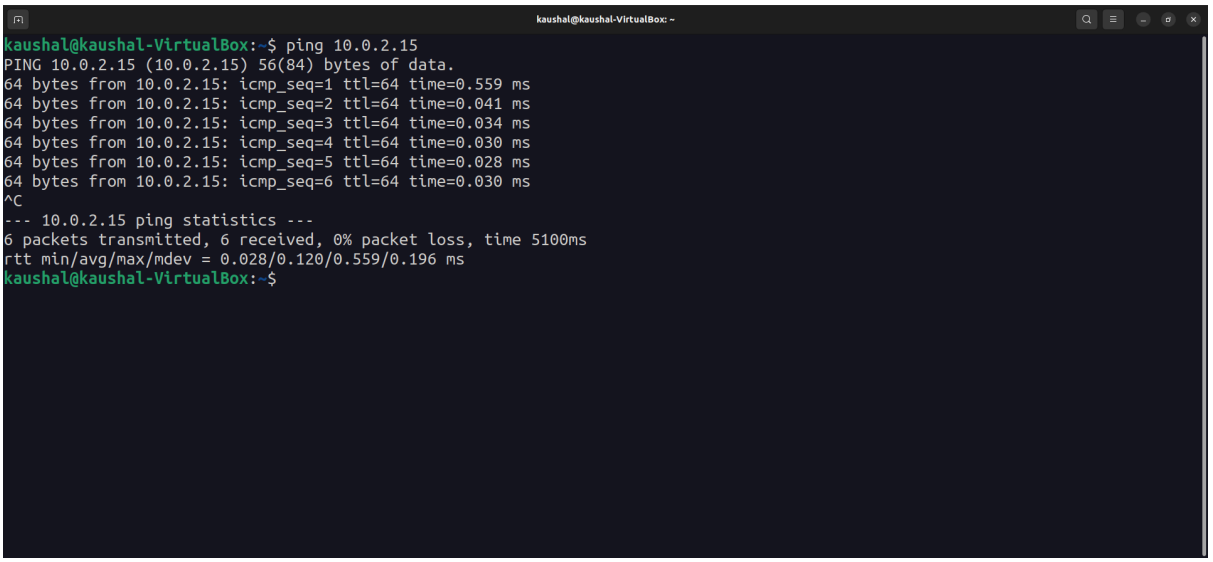


3b.

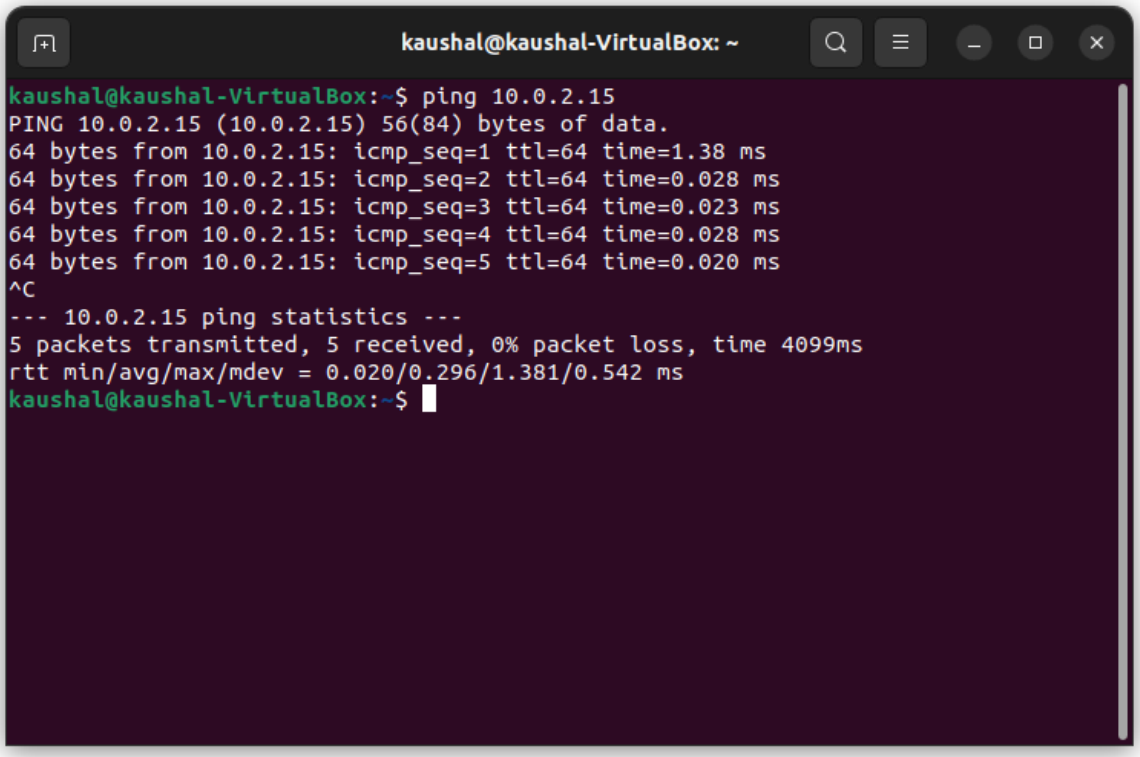


4. NAT and Host-only do not communicate with each other, because both have their different purpose and both are isolated, NAT (Network Address Transmission) uses private ip address to access the internet via host ip address and host-only creates an isolated network where only the host and VM can communicate.

Q2 - Create 2 VMs in NAT Mode & Test Connectivity
1a. IP address of VM-1 (NAT): 10.0.2.15
1b. IP address of VM-2 (NAT): 10.0.2.15
2a.

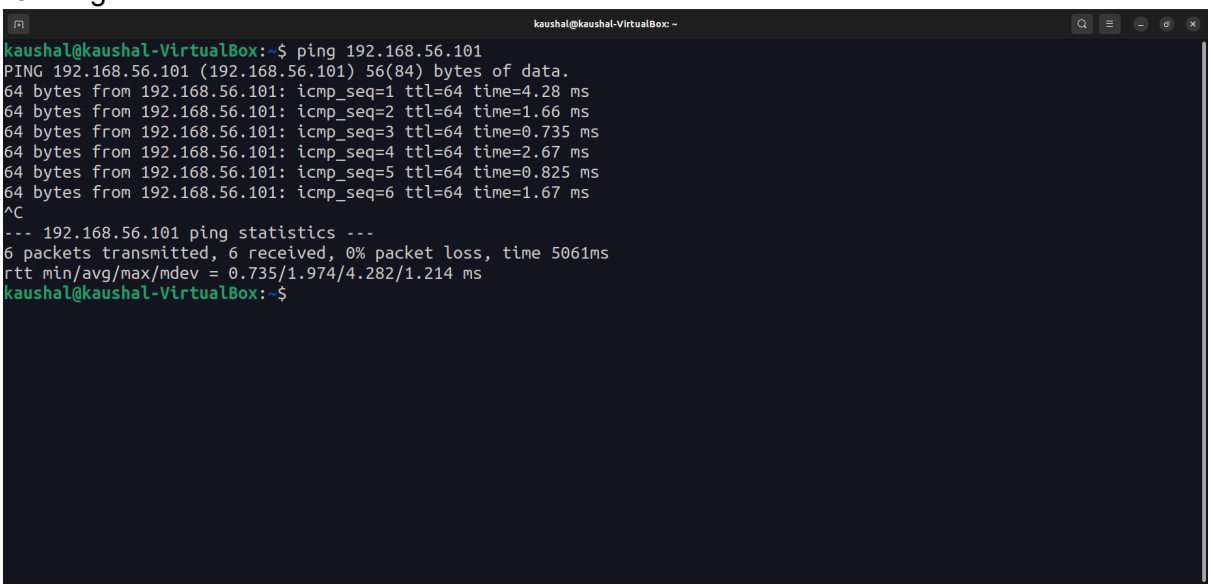


2b.

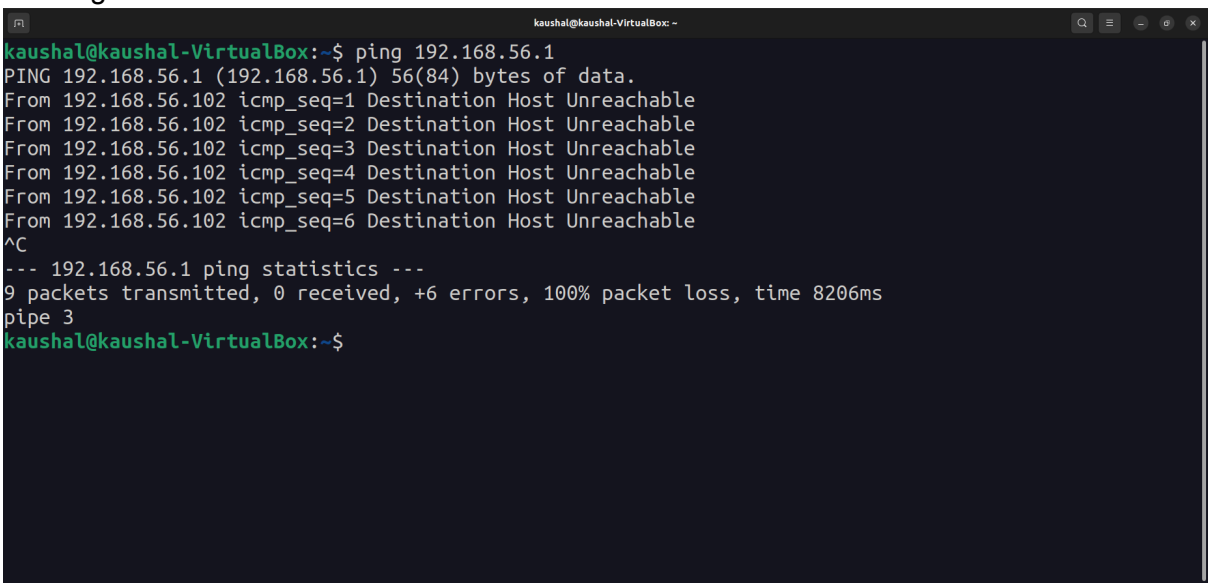


3. In NAT mode, VMs cannot communicate with each other by default within the virtual network

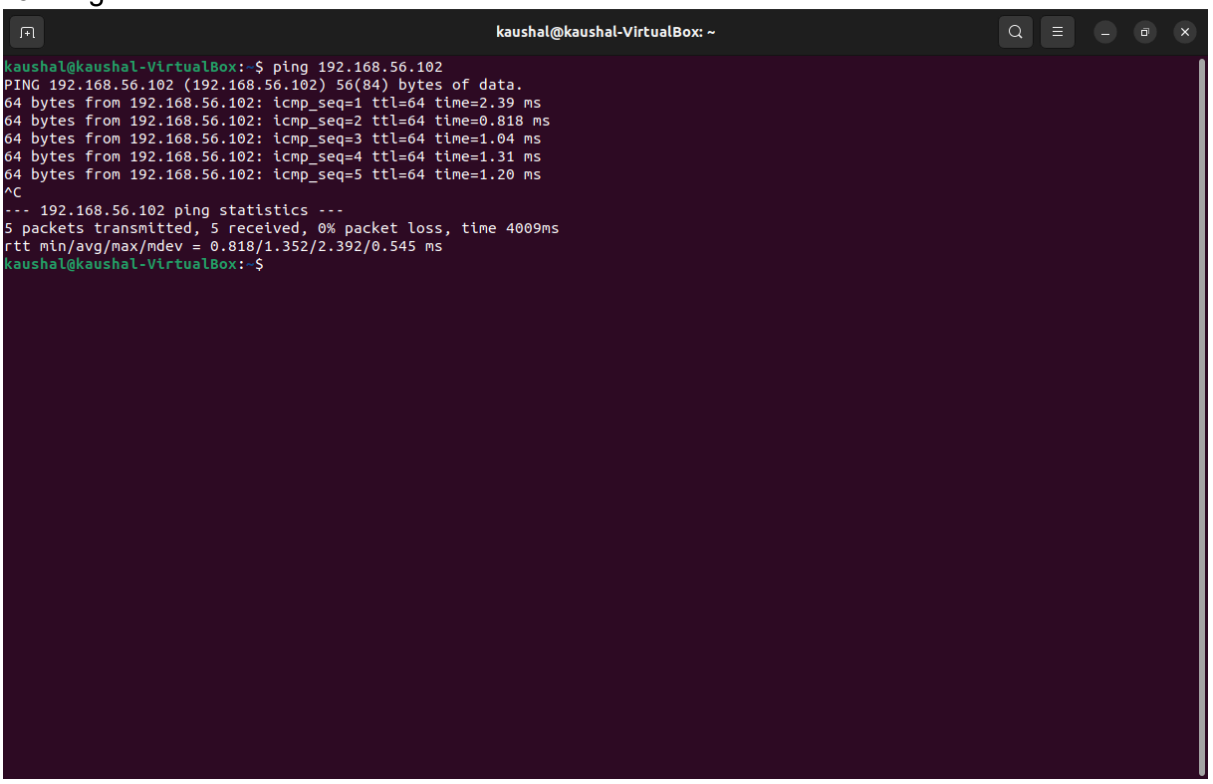
Q3 - Create 2 VMs in Host-Only Mode
1a. IP address of VM-1 (Host-only): 192.168.56.102
1b. IP address of VM-2 (Host-only): 192.168.56.101
1c. IP address of Host: 192.168.56.1
2a. Ping VM1 -> VM2



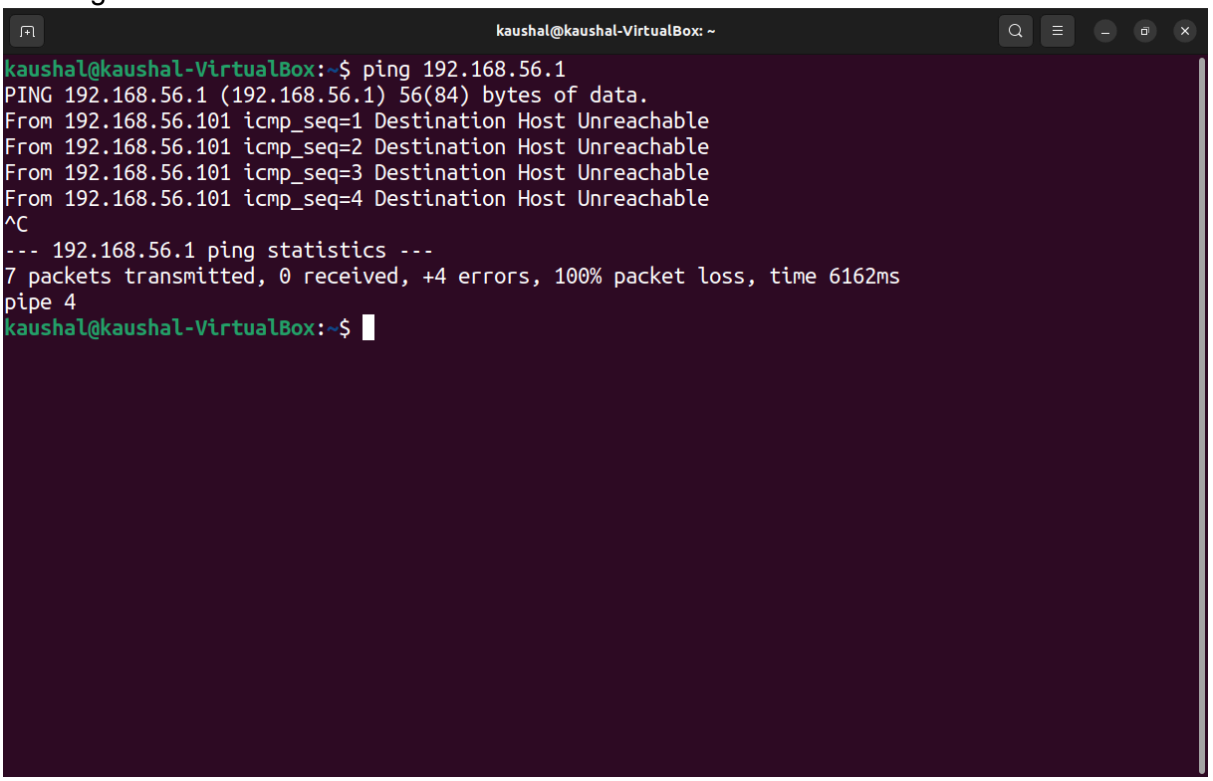
2b. Ping VM1 -> Host



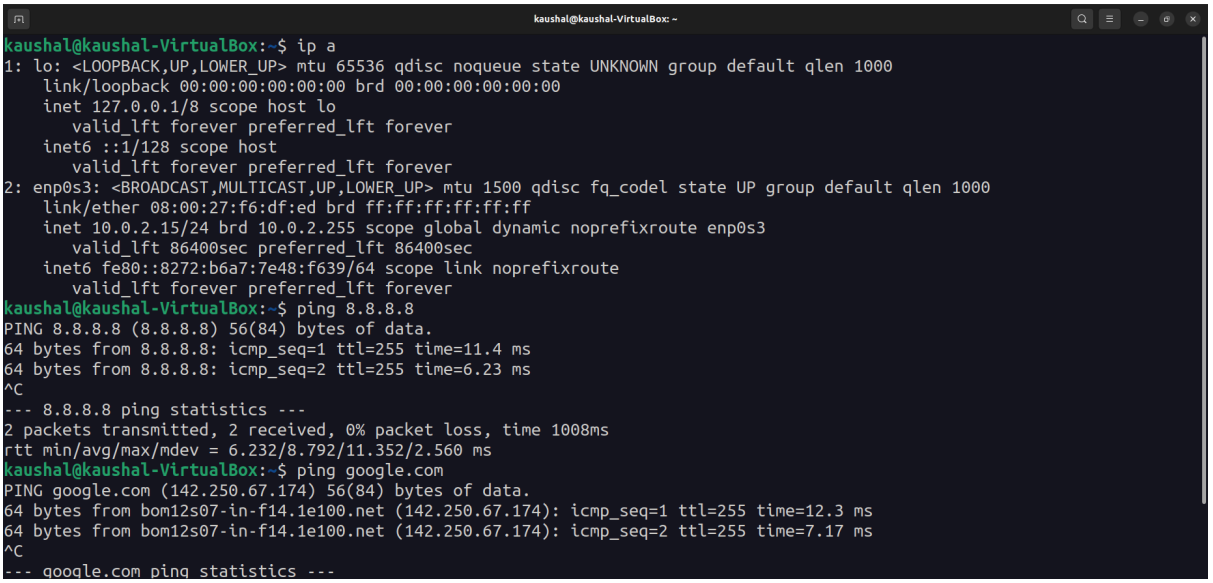
2c. Ping VM2 -> VM1



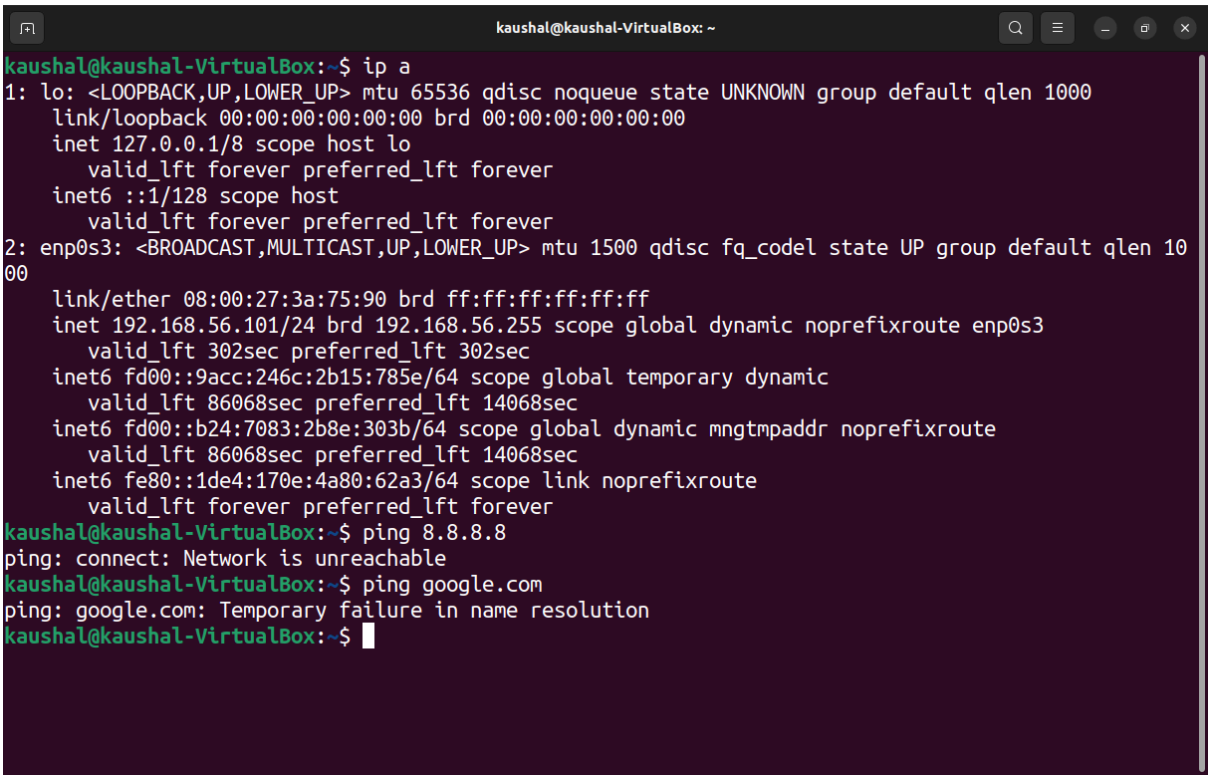
2d. Ping VM2 -> Host



Q4 - Internet Connectivity Test (Different Modes
1a. IP address of VM-1 (NAT): 10.0.2.15
1b. IP address of VM-2 (Host-only): 192.168.56.101
2a. VM1



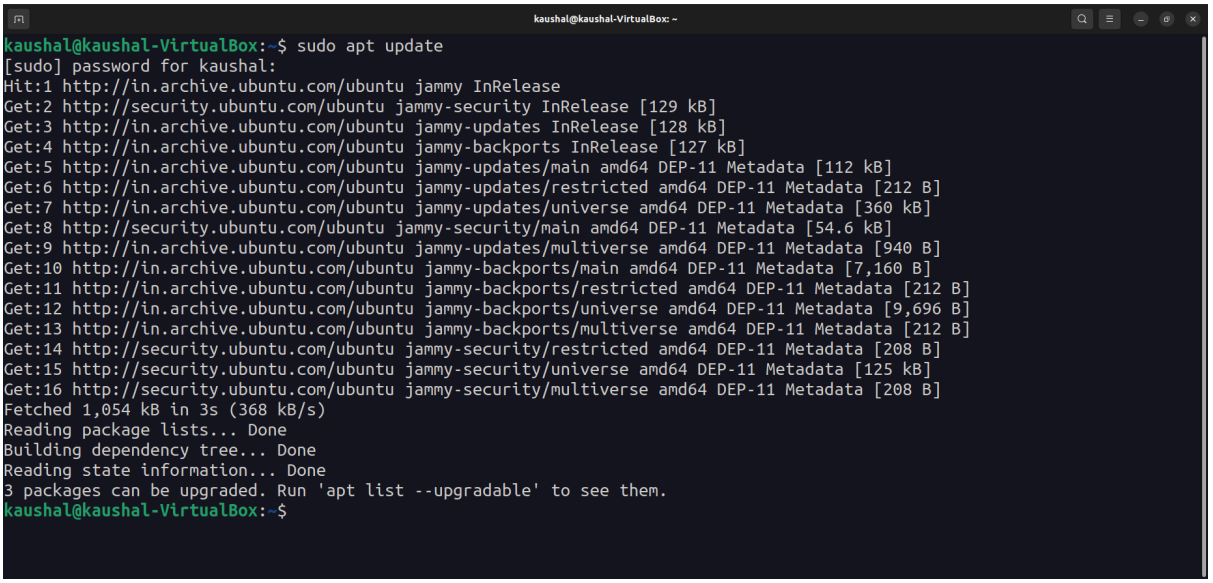
2b. VM2



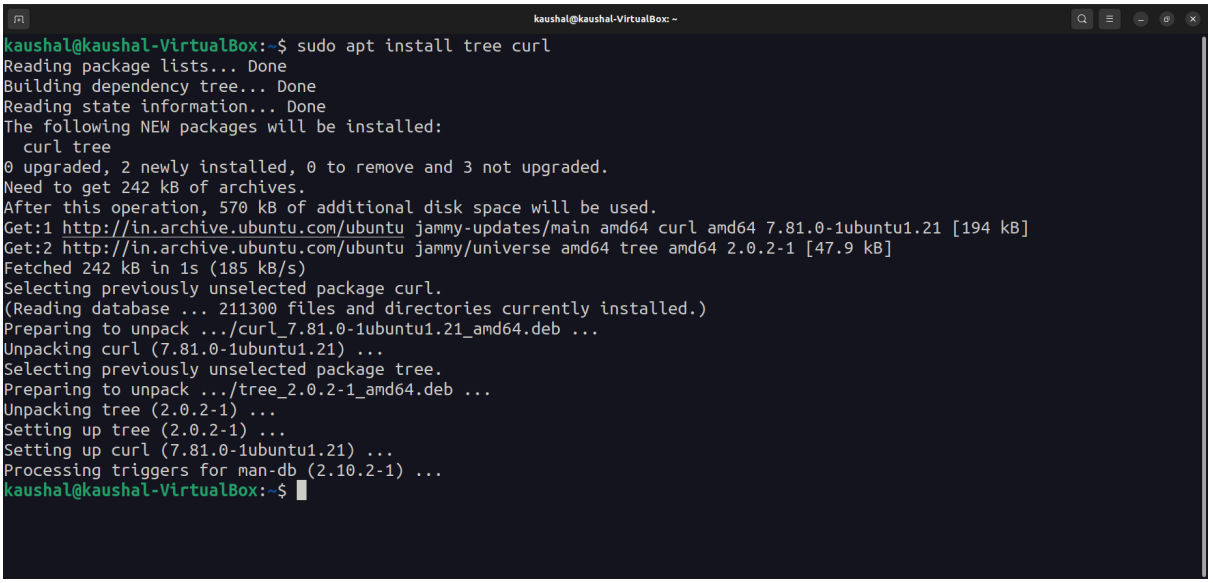
3. No Internet for Host-only Adapter

Q5 - Install Basic Utility Packages

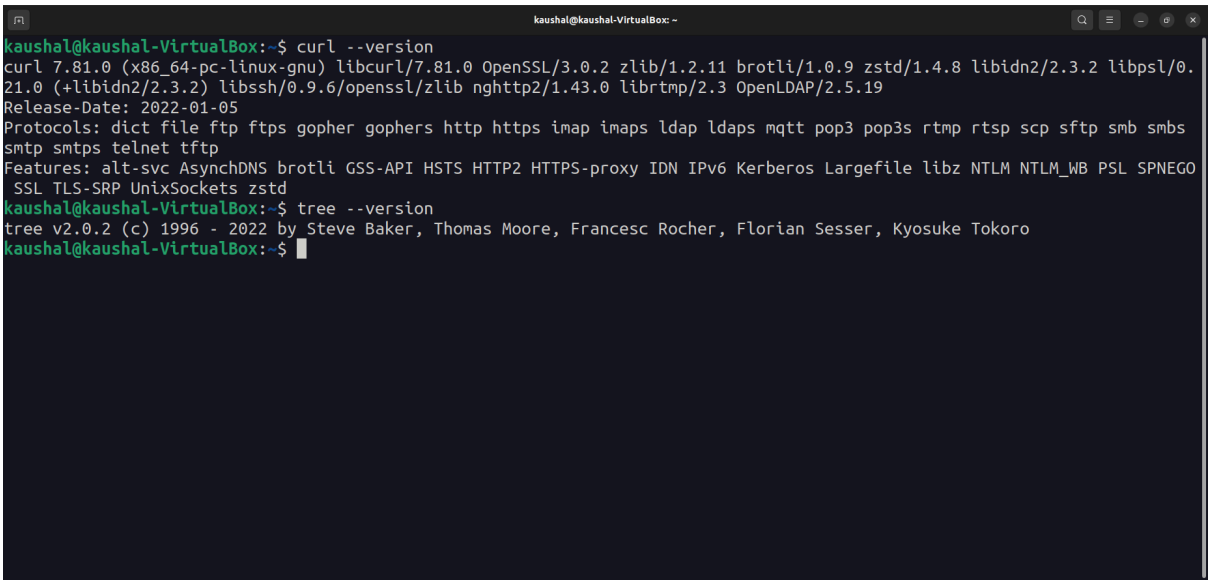
1a.



1b.

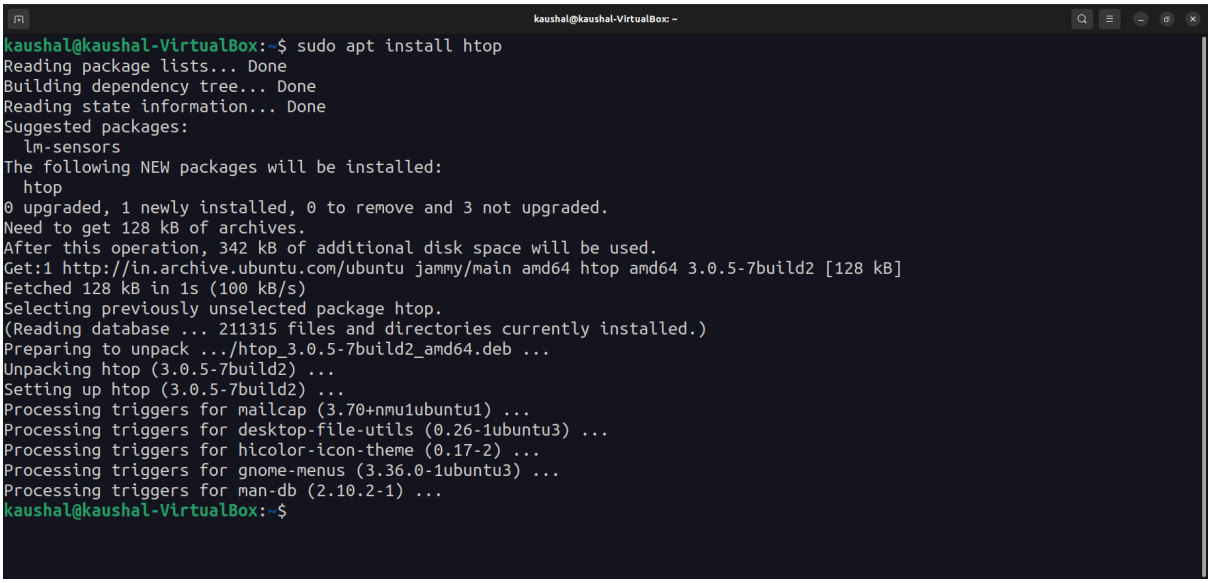


2.

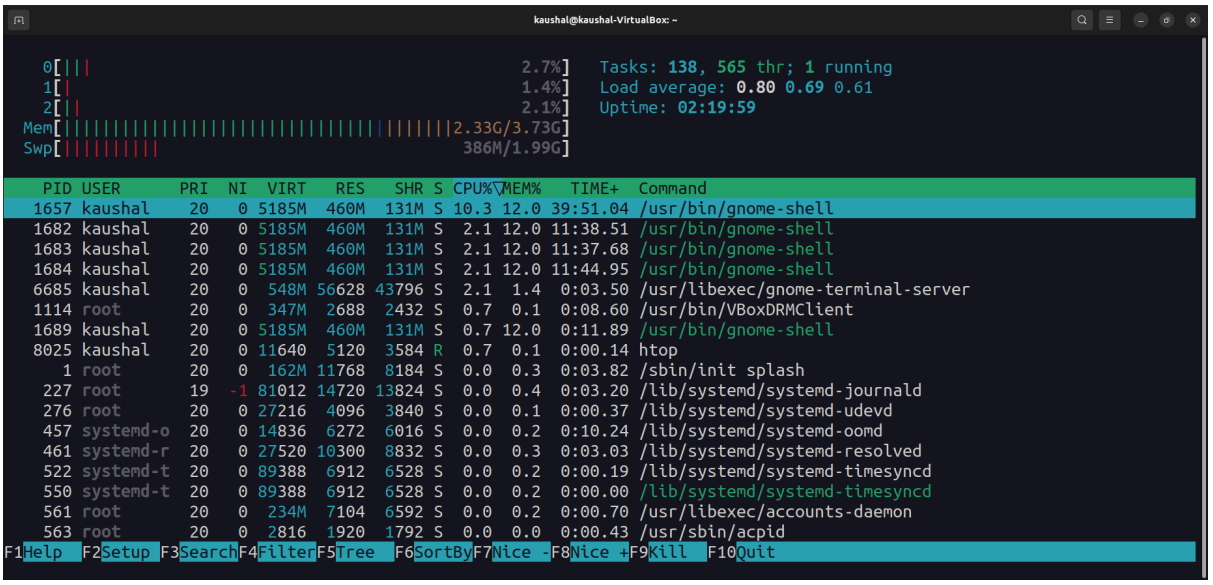


Q6 - Install a Package

1.

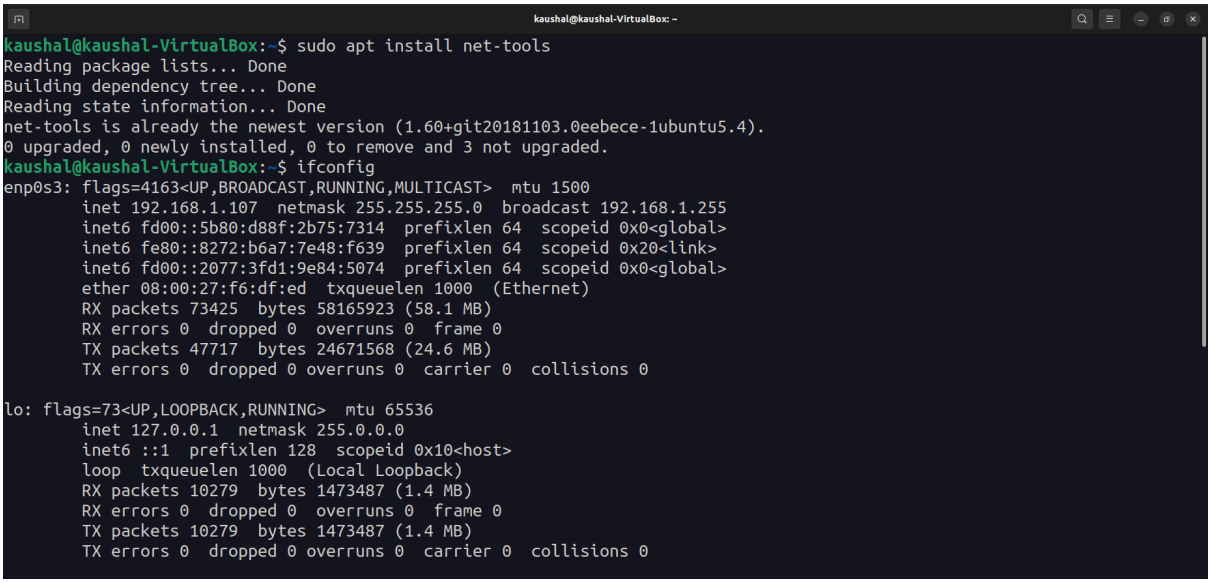


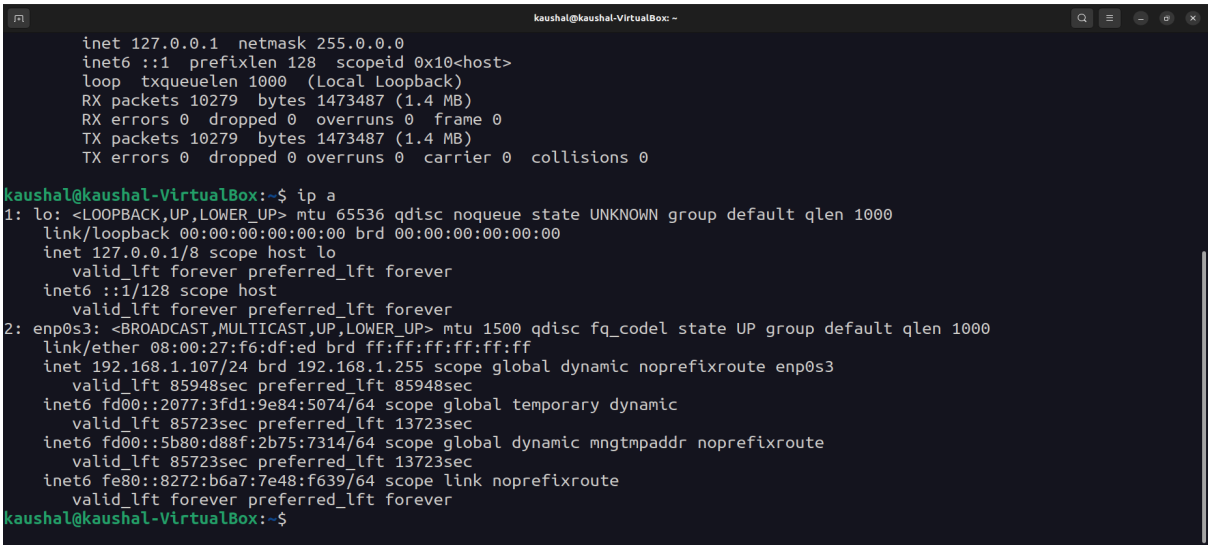
2.



Q7 - Install Net-tools & Compare with ip Command

1 and 2.





3. Difference
    a. Interface Names:
        - ifconfig: Shows interface enp0s3 and lo with additional flags
        - ip a: Also shows enp0s3 and lo, with more detailed interface information

    b. IPv4 Address:
        - ifconfig: Displays inet 192.168.1.107 for enp0s3
        - ip a: Displays inet 192.168.1.107/24 for enp0s3 (with CIDR notation)

    c. IPv6 Addresses:
        - ifconfig: Shows multiple inet6 addresses under enp0s3
        - ip a: Lists the same inet6 addresses but with more detail on their types