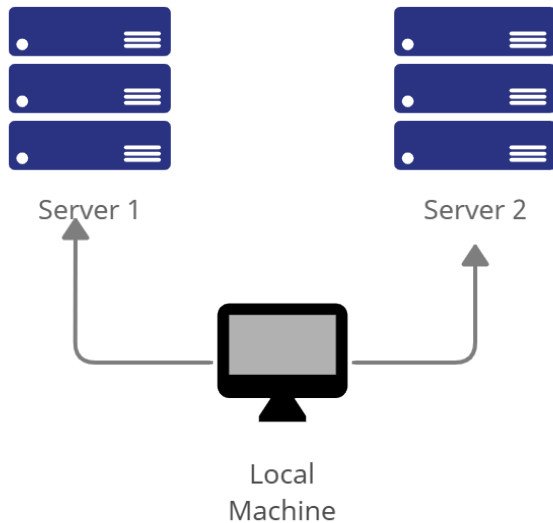
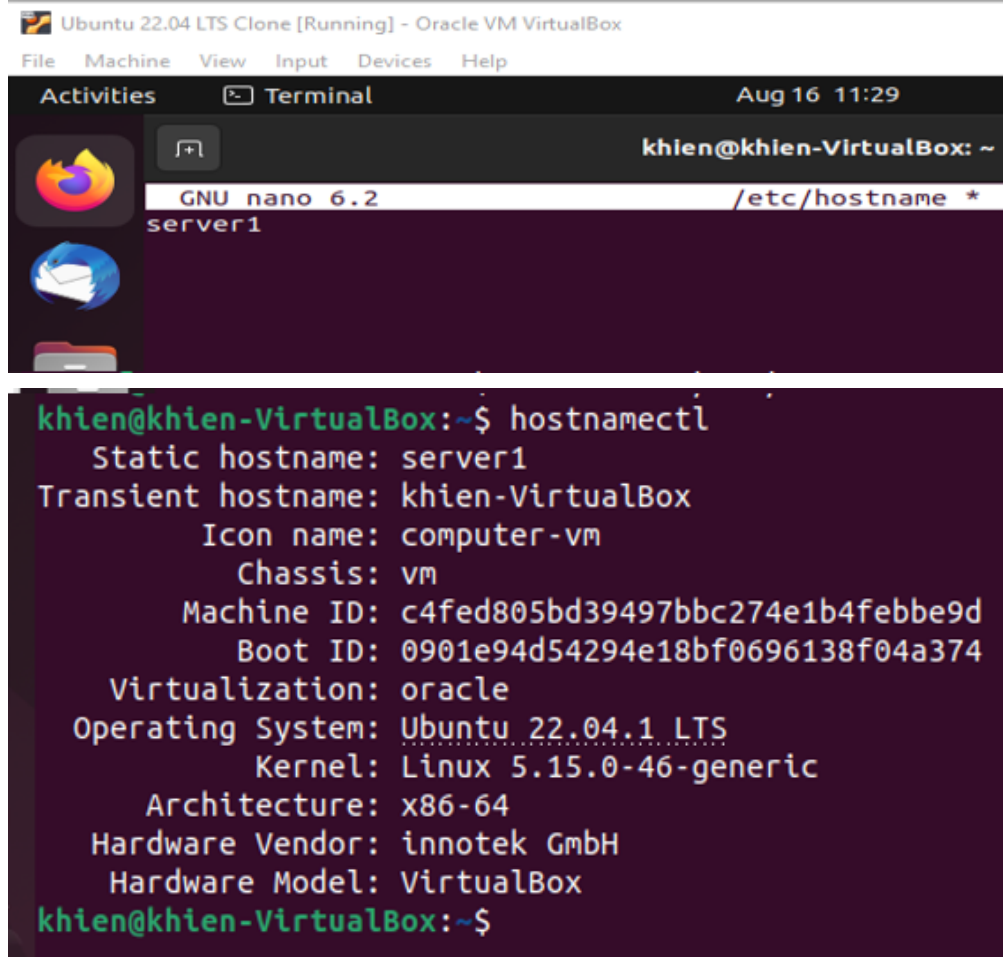


Name: Edgardo Kenneth D. Cordero	Date Performed: 8/16/2022
Course/Section: CPE 232 - CPE31S22	Date Submitted: 8/23/2022
Instructor: Dr. Jonathan Taylar	Semester and SY: 1ST SEMESTER
Activity 1: Configure Network using Virtual Machines	
1. Objectives: 1.1. Create and configure Virtual Machines in Microsoft Azure or VirtualBox 1.2. Set-up a Virtual Network and Test Connectivity of VMs	
2. Discussion: Network Topology: Assume that you have created the following network topology in Virtual Machines, <i>provide screenshots for each task.</i> (Note: <i>it is assumed that you have the prior knowledge of cloning and creating snapshots in a virtual machine</i>).	
 <pre> graph TD LocalMachine[Local Machine] --> Server1[Server 1] LocalMachine --> Server2[Server 2] </pre> <p>The diagram illustrates a network topology. At the bottom center is a computer icon labeled "Local Machine". Two lines extend upwards from the Local Machine, each ending in an arrow pointing to a server icon. The server on the left is labeled "Server 1" and the server on the right is labeled "Server 2". Each server icon consists of three stacked blue rectangles with a white dot and three horizontal lines on the right side.</p>	
Task 1: Do the following on Server 1, Server 2, and Local Machine. In editing the file using nano command, press control + O to write out (save the file). Press enter when asked for the name of the file. Press control + X to end. <ol style="list-style-type: none"> Change the hostname using the command <i>sudo nano /etc/hostname</i> 	

1.1 Use server1 for Server 1



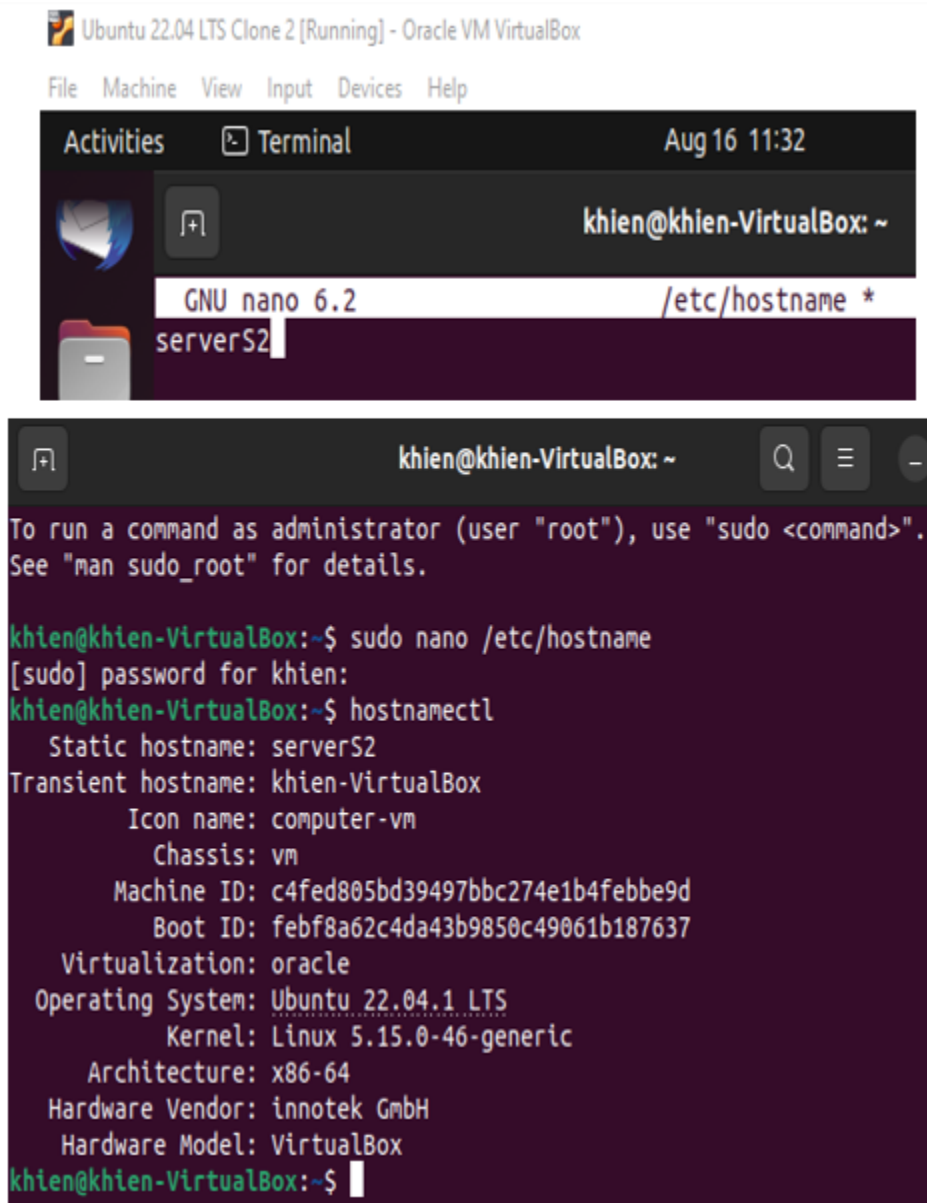
The screenshot shows a VirtualBox window titled "Ubuntu 22.04 LTS Clone [Running] - Oracle VM VirtualBox". The interface includes a menu bar (File, Machine, View, Input, Devices, Help) and a toolbar with "Activities" and "Terminal" buttons. The terminal window is titled "khien@khien-VirtualBox: ~" and shows the following content:

```
GNU nano 6.2 /etc/hostname *
server1
```

Below the terminal window, the output of the `hostnamectl` command is displayed:

```
khien@khien-VirtualBox:~$ hostnamectl
  Static hostname: server1
Transient hostname: khien-VirtualBox
        Icon name: computer-vm
        Chassis: vm
      Machine ID: c4fed805bd39497bbc274e1b4febbe9d
        Boot ID: 0901e94d54294e18bf0696138f04a374
    Virtualization: oracle
  Operating System: Ubuntu 22.04.1 LTS
           Kernel: Linux 5.15.0-46-generic
    Architecture: x86-64
   Hardware Vendor: innotek GmbH
   Hardware Model: VirtualBox
khien@khien-VirtualBox:~$
```

1.2 Use server2 for Server 2

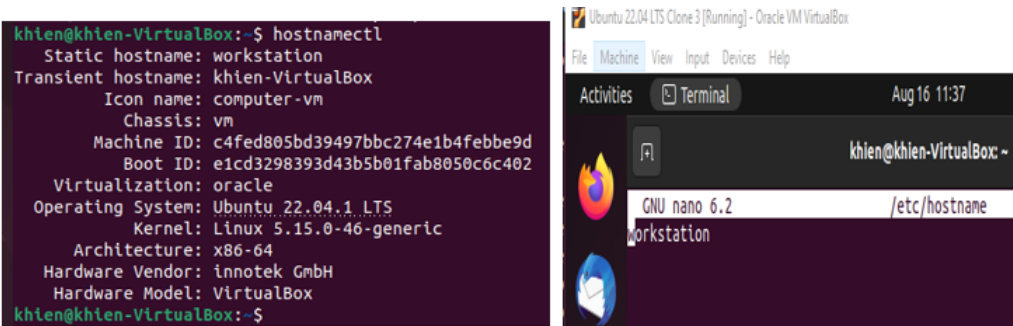


```
Ubuntu 22.04 LTS Clone 2 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Activities Terminal Aug 16 11:32
khien@khien-VirtualBox: ~
GNU nano 6.2 /etc/hostname *
serverS2

khien@khien-VirtualBox: ~
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

khien@khien-VirtualBox:~$ sudo nano /etc/hostname
[sudo] password for khien:
khien@khien-VirtualBox:~$ hostnamectl
  Static hostname: serverS2
  Transient hostname: khien-VirtualBox
  Icon name: computer-vm
  Chassis: vm
  Machine ID: c4fed805bd39497bbc274e1b4febbe9d
  Boot ID: febf8a62c4da43b9850c49061b187637
  Virtualization: oracle
  Operating System: Ubuntu 22.04.1 LTS
  Kernel: Linux 5.15.0-46-generic
  Architecture: x86_64
  Hardware Vendor: innotek GmbH
  Hardware Model: VirtualBox
khien@khien-VirtualBox:~$
```

1.3 Use workstation for the Local Machine



```
khien@khien-VirtualBox:~$ hostnamectl
  Static hostname: workstation
  Transient hostname: khien-VirtualBox
  Icon name: computer-vm
  Chassis: vm
  Machine ID: c4fed805bd39497bbc274e1b4febbe9d
  Boot ID: e1cd3298393d43b5b01fab8050c6c402
  Virtualization: oracle
  Operating System: Ubuntu 22.04.1 LTS
  Kernel: Linux 5.15.0-46-generic
  Architecture: x86_64
  Hardware Vendor: innotek GmbH
  Hardware Model: VirtualBox
khien@khien-VirtualBox:~$

Ubuntu 22.04 LTS Clone 3 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Activities Terminal Aug 16 11:37
khien@khien-VirtualBox: ~
GNU nano 6.2 /etc/hostname
workstation
```

2. Edit the hosts using the command `sudo nano /etc/hosts`. Edit the second line.

2.1 Type 127.0.0.1 server 1 for Server 1

Ubuntu 22.04 LTS Clone [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

```
Activities Terminal Aug 16 11:41
khien@khien-VirtualBox: ~
GNU nano 6.2 /etc/hosts *
127.0.0.1 localhost
127.0.0.1 server1
# The following lines are desirable for IPv6 capable hosts
::1 ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters
```

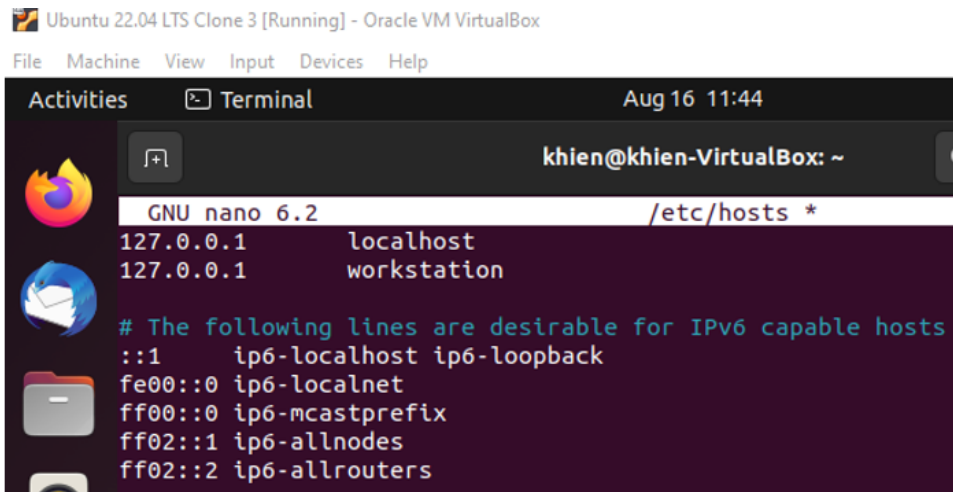
2.2 Type 127.0.0.1 server 2 for Server 2

Ubuntu 22.04 LTS Clone 2 [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

```
Activities Terminal Aug 16 11:43
khien@khien-VirtualBox: ~
GNU nano 6.2 /etc/hosts *
127.0.0.1 localhost
127.0.0.1 serverS2
# The following lines are desirable for IPv6 capable hosts
::1 ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters
```

2.3 Type 127.0.0.1 workstation for the Local Machine

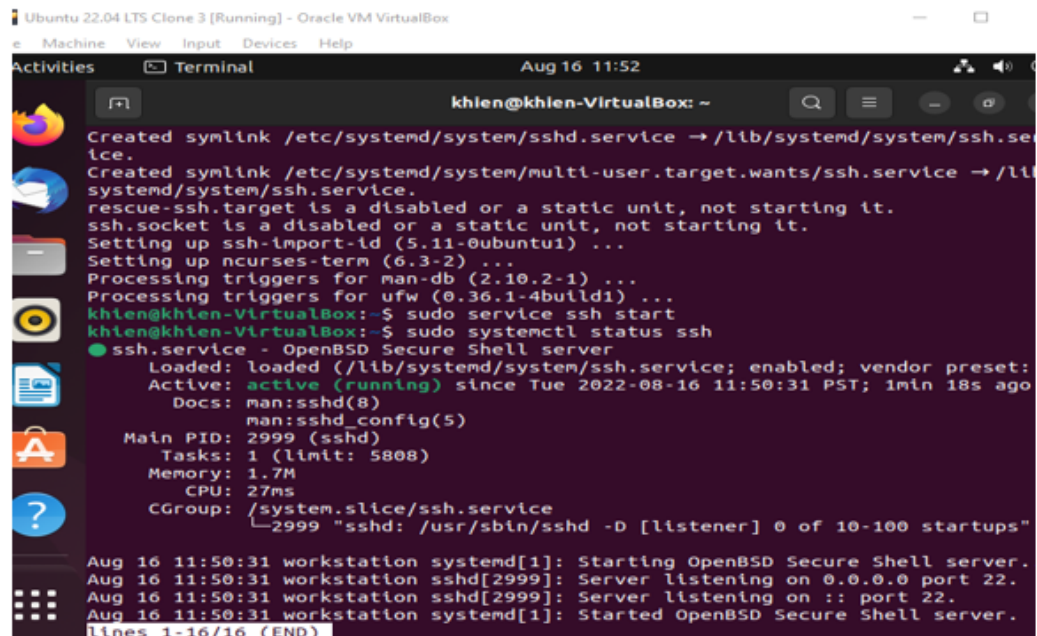


```
Ubuntu 22.04 LTS Clone 3 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Activities Terminal Aug 16 11:44
khien@khien-VirtualBox: ~
GNU nano 6.2 /etc/hosts *
127.0.0.1 localhost
127.0.0.1 workstation
# The following lines are desirable for IPv6 capable hosts
::1 ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters
```

Task 2: Configure SSH on Server 1, Server 2, and Local Machine. Do the following:

1. Upgrade the packages by issuing the command *sudo apt update* and *sudo apt upgrade* respectively.
2. Install the SSH server using the command *sudo apt install openssh-server*.
3. Verify if the SSH service has started by issuing the following commands:

3.1 sudo service ssh start
3.2 sudo systemctl status ssh



```
Ubuntu 22.04 LTS Clone 3 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Activities Terminal Aug 16 11:52
khien@khien-VirtualBox: ~
Created symlink /etc/systemd/system/ssh.service → /lib/systemd/system/ssh.service.
Created symlink /etc/systemd/system/multi-user.target.wants/ssh.service → /lib/systemd/system/ssh.service.
rescue-ssh.target is a disabled or a static unit, not starting it.
ssh.socket is a disabled or a static unit, not starting it.
Setting up ssh-import-id (5.11-0ubuntu1) ...
Setting up ncurses-term (6.3-2) ...
Processing triggers for man-db (2.10.2-1) ...
Processing triggers for ufw (0.36.1-4build1) ...
khien@khien-VirtualBox:~$ sudo service ssh start
khien@khien-VirtualBox:~$ sudo systemctl status ssh
● ssh.service - OpenBSD Secure Shell server
   Loaded: loaded (/lib/systemd/system/ssh.service; enabled; vendor preset:
   Active: active (running) since Tue 2022-08-16 11:50:31 PST; 1min 18s ago
     Docs: man:sshd(8)
           man:sshd_config(5)
    Main PID: 2999 (sshd)
      Tasks: 1 (limit: 5808)
    Memory: 1.7M
       CPU: 27ms
    CGroup: /system.slice/ssh.service
            └─2999 "sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups"

Aug 16 11:50:31 workstation systemd[1]: Starting OpenBSD Secure Shell server.
Aug 16 11:50:31 workstation sshd[2999]: Server listening on 0.0.0.0 port 22.
Aug 16 11:50:31 workstation sshd[2999]: Server listening on :: port 22.
Aug 16 11:50:31 workstation systemd[1]: Started OpenBSD Secure Shell server.
lines 1-16/16 (END)
```

Workstation

```
khien@khien-VirtualBox: ~
Created symlink /etc/systemd/system/ssh.service → /lib/systemd/system/ssh.service.
Created symlink /etc/systemd/system/multi-user.target.wants/ssh.service → /lib/systemd/system/ssh.service.
rescue-ssh.target is a disabled or a static unit, not starting it.
ssh.socket is a disabled or a static unit, not starting it.
Setting up ssh-import-id (5.11-0ubuntu1) ...
Setting up ncurses-term (6.3-2) ...
Processing triggers for man-db (2.10.2-1) ...
Processing triggers for ufw (0.36.1-4build1) ...
khien@khien-VirtualBox:~$ sudo service ssh start
khien@khien-VirtualBox:~$ sudo systemctl status ssh
● ssh.service - OpenBSD Secure Shell server
   Loaded: loaded (/lib/systemd/system/ssh.service; enabled; vendor preset: enabled)
   Active: active (running) since Tue 2022-08-16 11:51:42 PST; 4min 29s ago
     Docs: man:sshd(8)
           man:sshd_config(5)
   Main PID: 2906 (sshd)
      Tasks: 1 (limit: 5808)
    Memory: 1.7M
       CPU: 24ms
   CGroup: /system.slice/ssh.service
           └─2906 "sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups"

Aug 16 11:51:42 serverS2 systemd[1]: Starting OpenBSD Secure Shell server...
Aug 16 11:51:42 serverS2 sshd[2906]: Server listening on 0.0.0.0 port 22.
Aug 16 11:51:42 serverS2 sshd[2906]: Server listening on :: port 22.
Aug 16 11:51:42 serverS2 systemd[1]: Started OpenBSD Secure Shell server.
lines 1-16/16 (END)
```

serverS2

```
khien@khien-VirtualBox:~$ sudo service ssh start
khien@khien-VirtualBox:~$ sudo systemctl status ssh
● ssh.service - OpenBSD Secure Shell server
   Loaded: loaded (/lib/systemd/system/ssh.service; enabled; vendor preset: enabled)
   Active: active (running) since Tue 2022-08-16 11:51:05 PST; 1min 11s ago
     Docs: man:sshd(8)
           man:sshd_config(5)
   Main PID: 2936 (sshd)
      Tasks: 1 (limit: 5808)
    Memory: 1.7M
       CPU: 26ms
   CGroup: /system.slice/ssh.service
           └─2936 "sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups"

Aug 16 11:51:05 server1 systemd[1]: Starting OpenBSD Secure Shell server: sshd.
Aug 16 11:51:05 server1 sshd[2936]: Server listening on 0.0.0.0 port 22.
Aug 16 11:51:05 server1 sshd[2936]: Server listening on :: port 22.
Aug 16 11:51:05 server1 systemd[1]: Started OpenBSD Secure Shell server: sshd.
lines 1-16/16 (END)
```

Server1

4. Configure the firewall to all port 22 by issuing the following commands:

4.1 sudo ufw allow ssh

```
khien@khien-VirtualBox:~$ sudo ufw allow ssh
Rules updated
Rules updated (v6)
```


4.2 `sudo ufw enable`

```
Rules updated (v6)
khien@khien-VirtualBox:~$ sudo ufw enable
Firewall is active and enabled on system startup
```

4.3 `sudo ufw status`

```
khien@khien-VirtualBox:~$ sudo ufw status
Status: active

To Action From
--
22/tcp ALLOW Anywhere
22/tcp (v6) ALLOW Anywhere

khien@khien-VirtualBox:~$
```

Task 3: Verify network settings on Server 1, Server 2, and Local Machine. On each device, do the following:

1. Record the ip address of Server 1, Server 2, and Local Machine. Issue the command `ifconfig` and check network settings. Note that the ip addresses of all the machines are in this network 192.168.56.XX.
 - 1.1 Server 1 IP address: 192.168.56.102
 - 1.2 Server 2 IP address: 192.168.56.101
 - 1.3 Server 3 IP address: 192.168.56.108
2. Make sure that they can ping each other.

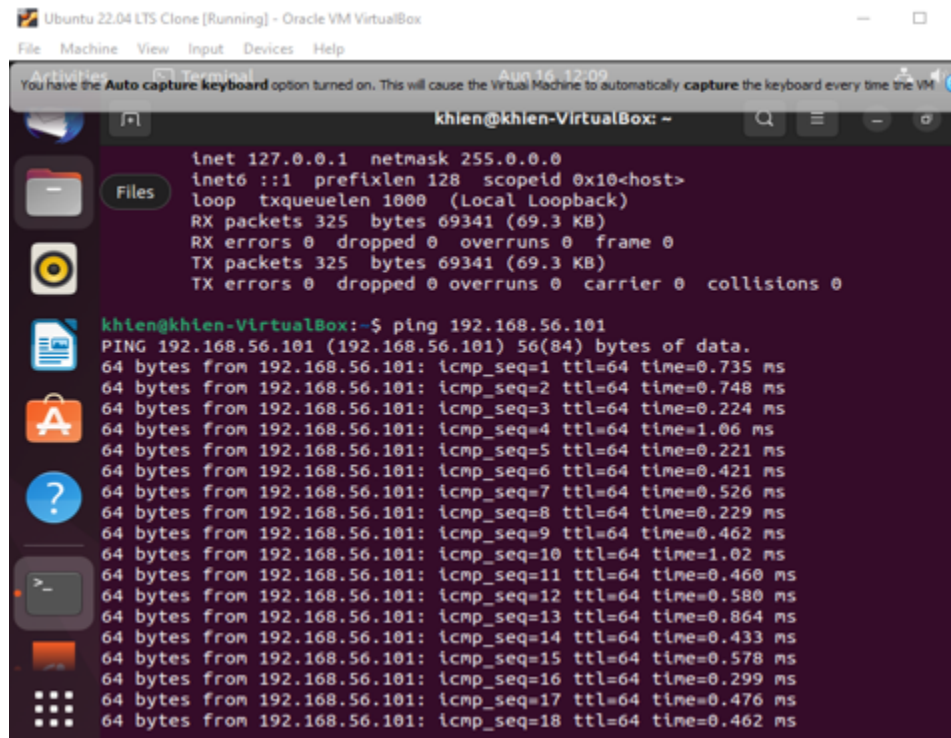
2.1 Connectivity test for Local Machine 1 to Server 1: Successful

```
khien@serverS2:~$ ping 192.168.56.102
PING 192.168.56.102 (192.168.56.102) 56(84) bytes of data.
64 bytes from 192.168.56.102: icmp_seq=1 ttl=64 time=0.409 ms
64 bytes from 192.168.56.102: icmp_seq=2 ttl=64 time=0.309 ms
64 bytes from 192.168.56.102: icmp_seq=3 ttl=64 time=0.435 ms
64 bytes from 192.168.56.102: icmp_seq=4 ttl=64 time=0.274 ms
64 bytes from 192.168.56.102: icmp_seq=5 ttl=64 time=0.426 ms
64 bytes from 192.168.56.102: icmp_seq=6 ttl=64 time=0.265 ms
64 bytes from 192.168.56.102: icmp_seq=7 ttl=64 time=0.289 ms
64 bytes from 192.168.56.102: icmp_seq=8 ttl=64 time=0.393 ms
64 bytes from 192.168.56.102: icmp_seq=9 ttl=64 time=0.337 ms
64 bytes from 192.168.56.102: icmp_seq=10 ttl=64 time=0.402 ms
64 bytes from 192.168.56.102: icmp_seq=11 ttl=64 time=0.396 ms
64 bytes from 192.168.56.102: icmp_seq=12 ttl=64 time=0.392 ms
64 bytes from 192.168.56.102: icmp_seq=13 ttl=64 time=0.240 ms
64 bytes from 192.168.56.102: icmp_seq=14 ttl=64 time=0.700 ms
64 bytes from 192.168.56.102: icmp_seq=15 ttl=64 time=0.612 ms
64 bytes from 192.168.56.102: icmp_seq=16 ttl=64 time=0.372 ms
64 bytes from 192.168.56.102: icmp_seq=17 ttl=64 time=0.365 ms
64 bytes from 192.168.56.102: icmp_seq=18 ttl=64 time=0.347 ms
^C
--- 192.168.56.102 ping statistics ---
18 packets transmitted, 18 received, 0% packet loss, time 17408ms
rtt min/avg/max/mdev = 0.240/0.386/0.700/0.111 ms
```

2.2 Connectivity test for Local Machine 1 to Server 2: Successful

```
khien@serverS2:~$ ping 192.168.56.101
PING 192.168.56.101 (192.168.56.101) 56(84) bytes of data.
64 bytes from 192.168.56.101: icmp_seq=1 ttl=64 time=0.454 ms
64 bytes from 192.168.56.101: icmp_seq=2 ttl=64 time=0.485 ms
64 bytes from 192.168.56.101: icmp_seq=3 ttl=64 time=0.380 ms
64 bytes from 192.168.56.101: icmp_seq=4 ttl=64 time=0.497 ms
64 bytes from 192.168.56.101: icmp_seq=5 ttl=64 time=0.424 ms
64 bytes from 192.168.56.101: icmp_seq=6 ttl=64 time=0.374 ms
64 bytes from 192.168.56.101: icmp_seq=7 ttl=64 time=0.527 ms
64 bytes from 192.168.56.101: icmp_seq=8 ttl=64 time=0.245 ms
64 bytes from 192.168.56.101: icmp_seq=9 ttl=64 time=0.366 ms
64 bytes from 192.168.56.101: icmp_seq=10 ttl=64 time=0.457 ms
64 bytes from 192.168.56.101: icmp_seq=11 ttl=64 time=0.255 ms
64 bytes from 192.168.56.101: icmp_seq=12 ttl=64 time=0.387 ms
64 bytes from 192.168.56.101: icmp_seq=13 ttl=64 time=0.428 ms
64 bytes from 192.168.56.101: icmp_seq=14 ttl=64 time=0.311 ms
^C
--- 192.168.56.101 ping statistics ---
14 packets transmitted, 14 received, 0% packet loss, time 13314ms
rtt min/avg/max/mdev = 0.245/0.399/0.527/0.082 ms
khien@serverS2:~$
```


2.3 Connectivity test for Server 1 to Server 2: Successful



```
Ubuntu 22.04 LTS Clone [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Activities
You have the Auto capture keyboard option turned on. This will cause the Virtual Machine to automatically capture the keyboard every time the VM is active.
khlen@khlen-VirtualBox: ~
inet 127.0.0.1 netmask 255.0.0.0
inet6 ::1 prefixlen 128 scopeid 0x10<host>
loop txqueuelen 1000 (Local Loopback)
RX packets 325 bytes 69341 (69.3 KB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 325 bytes 69341 (69.3 KB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

khlen@khlen-VirtualBox:~$ ping 192.168.56.101
PING 192.168.56.101 (192.168.56.101) 56(84) bytes of data.
64 bytes from 192.168.56.101: icmp_seq=1 ttl=64 time=0.735 ms
64 bytes from 192.168.56.101: icmp_seq=2 ttl=64 time=0.748 ms
64 bytes from 192.168.56.101: icmp_seq=3 ttl=64 time=0.224 ms
64 bytes from 192.168.56.101: icmp_seq=4 ttl=64 time=1.06 ms
64 bytes from 192.168.56.101: icmp_seq=5 ttl=64 time=0.221 ms
64 bytes from 192.168.56.101: icmp_seq=6 ttl=64 time=0.421 ms
64 bytes from 192.168.56.101: icmp_seq=7 ttl=64 time=0.526 ms
64 bytes from 192.168.56.101: icmp_seq=8 ttl=64 time=0.229 ms
64 bytes from 192.168.56.101: icmp_seq=9 ttl=64 time=0.462 ms
64 bytes from 192.168.56.101: icmp_seq=10 ttl=64 time=1.02 ms
64 bytes from 192.168.56.101: icmp_seq=11 ttl=64 time=0.460 ms
64 bytes from 192.168.56.101: icmp_seq=12 ttl=64 time=0.580 ms
64 bytes from 192.168.56.101: icmp_seq=13 ttl=64 time=0.864 ms
64 bytes from 192.168.56.101: icmp_seq=14 ttl=64 time=0.433 ms
64 bytes from 192.168.56.101: icmp_seq=15 ttl=64 time=0.578 ms
64 bytes from 192.168.56.101: icmp_seq=16 ttl=64 time=0.299 ms
64 bytes from 192.168.56.101: icmp_seq=17 ttl=64 time=0.476 ms
64 bytes from 192.168.56.101: icmp_seq=18 ttl=64 time=0.462 ms
```

Task 4: Verify SSH connectivity on Server 1, Server 2, and Local Machine.

Server 1 IP address: 192.168.56.102

Server 2 IP address: 192.168.56.101

Server 3 IP address: 192.168.56.108

1. On the Local Machine, issue the following commands:

1.1 `ssh username@ip_address_server1` for example, `ssh jvtaylor@192.168.56.120`

1.2 Enter the password for server 1 when prompted

1.3 Verify that you are in server 1. The user should be in this format `user@server1`.

For example, `jvtaylor@server1`

2. Logout of Server 1 by issuing the command *control + D*.

```
khien@serverS2:~$ ssh khien@192.168.56.102
The authenticity of host '192.168.56.102 (192.168.56.102)' can't be established
.
ED25519 key fingerprint is SHA256:QOwFH0nIPtRqCNFhtphT3XdTCv3FGR1s7a8PYfgPM28.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '192.168.56.102' (ED25519) to the list of known host
s.
khien@192.168.56.102's password:
Welcome to Ubuntu 22.04.1 LTS (GNU/Linux 5.15.0-46-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

9 updates can be applied immediately.
To see these additional updates run: apt list --upgradable

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

khien@server1:~$
```

3. Do the same for Server 2.

```
khien@serverS2:~$ ssh khien@192.168.56.101
The authenticity of host '192.168.56.101 (192.168.56.101)' can't be established
.
ED25519 key fingerprint is SHA256:SKGmbTFNVtz1084DhuDbTA/3l75Qv6+TcrNjcyMFUic.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '192.168.56.101' (ED25519) to the list of known host
s.
khien@192.168.56.101's password:
Welcome to Ubuntu 22.04.1 LTS (GNU/Linux 5.15.0-46-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

13 updates can be applied immediately.
4 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

khien@serverS2:~$ logout
Connection to 192.168.56.101 closed.
```

4. Edit the hosts of the Local Machine by issuing the command *sudo nano /etc/hosts*. Below all texts type the following:

4.1 *IP_address server 1* (provide the ip address of server 1 followed by the hostname)

4.2 **IP_address server 2** (provide the ip address of server 2 followed by the hostname)

```
GNU nano 6.2 /etc/hosts *
127.0.0.1    localhost
127.0.0.1    workstation

# The following lines are desirable for IPv6 capable hosts
::1          ip6-localhost ip6-loopback
fe00::0      ip6-localnet
ff00::0      ip6-mcastprefix
ff02::1      ip6-allnodes
ff02::2      ip6-allrouters

192.168.56.102 server1 khien
192.168.56.101 serverS2 khien
```

4.3 Save the file and exit.

5. On the local machine, verify that you can do the SSH command but this time, use the hostname instead of typing the IP address of the servers. For example, try to do **ssh jvtaylor@server1**. Enter the password when prompted. Verify that you have entered Server 1. Do the same for Server 2.

```

khien@server2:~$ ssh khien@server1
The authenticity of host 'server1 (192.168.56.102)' can't be established.
ED25519 key fingerprint is SHA256:Q0wFH0nIPtRqCNFhtphT3XdTCv3FGR1s7a8PYfg
This host key is known by the following other names/addresses:
    ~/.ssh/known_hosts:1: [hashed name]
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'server1' (ED25519) to the list of known hosts
khien@server1's password:
Welcome to Ubuntu 22.04.1 LTS (GNU/Linux 5.15.0-46-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

9 updates can be applied immediately.
To see these additional updates run: apt list --upgradable

Last login: Tue Aug 23 08:53:28 2022 from 192.168.56.108
khien@server1:~$

```

```

khien@server2:~$ sudo nano /etc/hosts
khien@server2:~$ ssh khien@server2
The authenticity of host 'server2 (192.168.56.101)' can't be established.
ED25519 key fingerprint is SHA256:SKGMBTFNVtz1084DhuDbTA/3i75Qv6+TcrNjcyM
This host key is known by the following other names/addresses:
    ~/.ssh/known_hosts:4: [hashed name]
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'server2' (ED25519) to the list of known hosts
khien@server2's password:
Welcome to Ubuntu 22.04.1 LTS (GNU/Linux 5.15.0-46-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

13 updates can be applied immediately.
4 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

Last login: Tue Aug 23 09:06:50 2022 from 192.168.56.108
khien@server2:~$

```

Reflections:

Answer the following:

- How are we able to use the hostname instead of IP address in SSH commands?
To be able to use the hostname instead of IP address in SSH commands you need to use the local machine and edit the the hosts by using the commands of `sudo nano /etc/hosts` and put the ip address of the server and the server name and the user and the format for that is (ip address) (server name) (user name)
- How secured is SSH?
The security of SSH is one of the highly secured of the standard security precautions. It is the most significant application because it is a remote login and

command line execution. It is also considered as a secure alternative to unsecured remote shell protocols that can utilize the client server paradigm in which it has a secure channel.