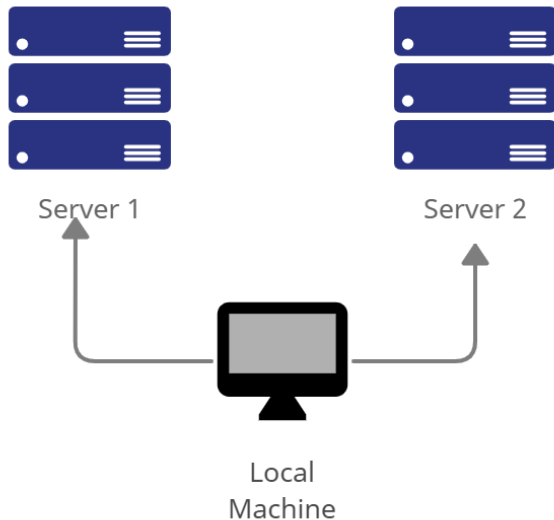


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<b>Course/Section:</b> CPE31S2	<b>Date Submitted:</b> 08/24/2024
<b>Instructor:</b> Engr. Robin Valenzuela	<b>Semester and SY:</b> 1 <sup>st</sup> Semester 2024-2025
<b>Activity 1: Configure Network using Virtual Machines</b>	
<b>1. Objectives:</b> 1.1. Create and configure Virtual Machines in Microsoft Azure or VirtualBox 1.2. Set-up a Virtual Network and Test Connectivity of VMs	
<b>2. Discussion:</b>  <b>Network Topology:</b> 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> ).	
	
<b>Task 1:</b> 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.	
1. Change the hostname using the command <i>sudo nano /etc/hostname</i> 1.1 Use server1 for Server 1	
<pre>liglig14@liglig14-VirtualBox:~\$ sudo nano /etc/hostname [sudo] password for liglig14: liglig14@liglig14-VirtualBox:~\$ cat /etc/hostname server1</pre>	

### 1.2 Use server2 for Server 2

```
liglig14@liglig14-VirtualBox:~$ sudo nano /etc/hostname
liglig14@liglig14-VirtualBox:~$ cat /etc/hostname
server2
```

### 1.3 Use workstation for the Local Machine

```
liglig14@liglig14-VirtualBox:~$ sudo nano /etc/hostname
liglig14@liglig14-VirtualBox:~$ cat /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

```
liglig14@liglig14-VirtualBox:~$ sudo nano /etc/hosts
liglig14@liglig14-VirtualBox:~$ cat /etc/hosts
127.0.0.1 server1
127.0.1.1 liglig14-VirtualBox
```

### 2.2 Type 127.0.0.1 server 2 for Server 2

```
liglig14@liglig14-VirtualBox:~$ sudo nano /etc/hosts
liglig14@liglig14-VirtualBox:~$ cat /etc/hosts
127.0.0.1 server2
127.0.1.1 liglig14-VirtualBox
```

### 2.3 Type 127.0.0.1 workstation for the Local Machine

```
liglig14@liglig14-VirtualBox:~$ sudo nano /etc/hosts
liglig14@liglig14-VirtualBox:~$ cat /etc/hosts
127.0.0.1 workstation
127.0.1.1 liglig14-VirtualBox
```

**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.

## LocalMachine:

```
liglig14@liglig14-VirtualBox:~$ sudo apt update && sudo apt upgrade -y
Hit:1 http://security.ubuntu.com/ubuntu noble-security InRelease
Hit:2 http://ph.archive.ubuntu.com/ubuntu noble InRelease
Hit:3 http://ph.archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:4 http://ph.archive.ubuntu.com/ubuntu noble-backports InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
152 packages can be upgraded. Run 'apt list --upgradable' to see them.
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done

The following upgrades have been deferred due to phasing:
  gnome-text-editor language-pack-gnome-en language-pack-gnome-en-base libzstd1 openssh-client python-apt-common
python3-apt zstd

The following packages will be upgraded:
  apparmor apport apport-core-dump-handler apport-gtk cloud-init dbus dbus-bin dbus-daemon dbus-session-bus-common
dbus-system-bus-common dbus-user-session dhcpcd-base dracut-install e2fsprogs e2fsprogs-l10n evolution-data-server
evolution-data-server-common gir1.2-gdesktopenums-3.0 gir1.2-javascriptcoregtk-4.1 gir1.2-javascriptcoregtk-6.0
gir1.2-mutter-14 gir1.2-webkit-6.0 gir1.2-webkit2-4.1 gnome-calculator gnome-initial-setup gnome-online-accounts
gnome-remote-desktop gnome-shell-extension-appindicator gnome-shell-extension-ubuntu-tiling-assistant
gsettings-desktop-schemas gstreamer1.0-pipewire initramfs-tools initramfs-tools-bin initramfs-tools-core
language-pack-en language-pack-en-base libapparmor1 libbz2-1.0 libcamel-1.2-64t64 libcom-err2 libcurl3t64-gnutls
libcurl4t64 libdbus-1-3 libdeflate0 libebook-1.2-21t64 libebook-contacts-1.2-4t64
```

Server 1:

```
liglig14@liglig14-VirtualBox:~$ sudo apt update && sudo apt upgrade -y
Hit:1 http://ph.archive.ubuntu.com/ubuntu noble InRelease
Hit:2 http://security.ubuntu.com/ubuntu noble-security InRelease
Hit:3 http://ph.archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:4 http://ph.archive.ubuntu.com/ubuntu noble-backports InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
152 packages can be upgraded. Run 'apt list --upgradable' to see them.
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
The following upgrades have been deferred due to phasing:
  gnome-text-editor language-pack-gnome-en language-pack-gnome-en-base libzstd1 openssh-client python-apt-common
  python3-apt zstd
The following packages will be upgraded:
  apparmor apport apport-core-dump-handler apport-gtk cloud-init dbus dbus-bin dbus-daemon dbus-session-bus-common
  dbus-system-bus-common dbus-user-session dhcpcd-base dracut-install e2fsprogs e2fsprogs-l10n evolution-data-server
  evolution-data-server-common gir1.2-gdesktopenums-3.0 gir1.2-javascriptcoregtk-4.1 gir1.2-javascriptcoregtk-6.0
  gir1.2-mutter-14 gir1.2-webkit-6.0 gir1.2-webkit2-4.1 gnome-calculator gnome-initial-setup gnome-online-accounts
  gnome-remote-desktop gnome-shell-extension-appindicator gnome-shell-extension-ubuntu-tiling-assistant
  gsettings-desktop-schemas gstreamer1.0-pipewire initramfs-tools initramfs-tools-bin initramfs-tools-core
  language-pack-en language-pack-en-base libapparmor1 libbz2-1.0 libcamel-1.2-64t64 libcom-err2 libcurl3t64-gnutls
  libcurl4t64 libdbus-1-3 libdeflate0 libebook-1.2-11t64 libebook-1.2-21t64 libebook-contacts-1.2-4t64
  libecal-2.0-3 libedata-book-1.2-27t64 libedata-cal-2.0-2t64 libedataserver-1.2-27t64 libedataserverui-1.2-4t64
```

Server 2:

```

liglig14@liglig14-VirtualBox:~$ sudo apt update && sudo apt upgrade -y
Hit:1 http://ph.archive.ubuntu.com/ubuntu noble InRelease
Hit:2 http://ph.archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:3 http://security.ubuntu.com/ubuntu noble-security InRelease
Hit:4 http://ph.archive.ubuntu.com/ubuntu noble-backports InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
152 packages can be upgraded. Run 'apt list --upgradable' to see them.
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
The following upgrades have been deferred due to phasing:
  gnome-text-editor language-pack-gnome-en language-pack-gnome-en-base libzstd1 openssh-client python-apt-common
  python3-apt zstd
The following packages will be upgraded:
  apparmor apport apport-core-dump-handler apport-gtk cloud-init dbus dbus-bin dbus-daemon dbus-session-bus-common
  dbus-system-bus-common dbus-user-session dhcpcd-base dracut-install e2fsprogs e2fsprogs-l10n evolution-data-server
  evolution-data-server-common gir1.2-gdesktopenums-3.0 gir1.2-javascriptcoregtk-4.1 gir1.2-javascriptcoregtk-6.0
  gir1.2-mutter-14 gir1.2-webkit-6.0 gir1.2-webkit2-4.1 gnome-calculator gnome-initial-setup gnome-online-accounts
  gnome-remote-desktop gnome-shell-extension-appindicator gnome-shell-extension-ubuntu-tiling-assistant
  gsettings-desktop-schemas gstreamer1.0-pipewire initramfs-tools initramfs-tools-bin initramfs-tools-core
  language-pack-en language-pack-en-base libapparmor1 libbz2-1.0 libcamel-1.2-64t64 libcom-err2 libcurl3t64-gnutls
  libcurl4t64 libdbus-1-3 libdeflate0 libebook-1.2-11t64 libebook-1.2-21t64 libebook-contacts-1.2-4t64
  libecal-2.0-3 libedata-book-1.2-27t64 libedata-cal-2.0-2t64 libedataserver-1.2-27t64 libedataserverui-1.2-4t64

```

2. Install the SSH server using the command *sudo apt install openssh-server*.

LocalMachine:

```

liglig14@liglig14-VirtualBox:~$ sudo apt install openssh-server -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  ncurses-term openssh-client openssh-sftp-server ssh-import-id
Suggested packages:
  keychain libpam-ssh monkeysphere ssh-askpass molly-guard
The following NEW packages will be installed:
  ncurses-term openssh-server openssh-sftp-server ssh-import-id
The following packages will be upgraded:
  openssh-client
1 upgraded, 4 newly installed, 0 to remove and 7 not upgraded.

```

Server 1:

```
liglig14@liglig14-VirtualBox:~$  
liglig14@liglig14-VirtualBox:~$ sudo apt install openssh-server -y  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
The following additional packages will be installed:  
  ncurses-term openssh-client openssh-sftp-server ssh-import-id  
Suggested packages:  
  keychain libpam-ssh monkeysphere ssh-askpass molly-guard  
The following NEW packages will be installed:  
  ncurses-term openssh-server openssh-sftp-server ssh-import-id  
The following packages will be upgraded:  
  openssh-client  
1 upgraded, 4 newly installed, 0 to remove and 7 not upgraded.
```

Server 2:

```
liglig14@liglig14-VirtualBox:~$ sudo apt install openssh-server -y  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
The following additional packages will be installed:  
  ncurses-term openssh-client openssh-sftp-server ssh-import-id  
Suggested packages:  
  keychain libpam-ssh monkeysphere ssh-askpass molly-guard  
The following NEW packages will be installed:  
  ncurses-term openssh-server openssh-sftp-server ssh-import-id  
The following packages will be upgraded:  
  openssh-client  
1 upgraded, 4 newly installed, 0 to remove and 7 not upgraded.
```

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*

LocalMachine:

```
liglig14@liglig14-VirtualBox:~$ sudo service ssh start
liglig14@liglig14-VirtualBox:~$ sudo systemctl status ssh
● ssh.service - OpenBSD Secure Shell server
   Loaded: loaded (/usr/lib/systemd/system/ssh.service; disabled; preset: enabled)
   Active: active (running) since Sun 2024-08-25 22:42:30 PST; 58s ago
 TriggeredBy: ● ssh.socket
       Docs: man:sshd(8)
              man:sshd_config(5)
    Process: 17236 ExecStartPre=/usr/sbin/sshd -t (code=exited, status=0/SUCCESS)
   Main PID: 17238 (sshd)
      Tasks: 1 (limit: 4615)
     Memory: 1.2M (peak: 1.4M)
        CPU: 28ms
      CGroup: /system.slice/ssh.service
              └─17238 "sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups"

Aug 25 22:42:30 liglig14-VirtualBox sshd[17238]: Server listening on :: port 22.
Aug 25 22:42:30 liglig14-VirtualBox systemd[1]: Started ssh.service - OpenBSD Secure Shell server.
```

#### Server 1:

```
liglig14@liglig14-VirtualBox:~$ sudo service ssh start
liglig14@liglig14-VirtualBox:~$ sudo systemctl status ssh
● ssh.service - OpenBSD Secure Shell server
   Loaded: loaded (/usr/lib/systemd/system/ssh.service; disabled; preset: enabled)
   Active: active (running) since Sun 2024-08-25 22:44:55 PST; 3min 24s ago
 TriggeredBy: ● ssh.socket
       Docs: man:sshd(8)
              man:sshd_config(5)
    Process: 17159 ExecStartPre=/usr/sbin/sshd -t (code=exited, status=0/SUCCESS)
   Main PID: 17160 (sshd)
      Tasks: 1 (limit: 4615)
     Memory: 1.2M (peak: 1.5M)
        CPU: 46ms
      CGroup: /system.slice/ssh.service
              └─17160 "sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups"

Aug 25 22:44:55 liglig14-VirtualBox systemd[1]: Starting ssh.service - OpenBSD Secure Shell server...
Aug 25 22:44:55 liglig14-VirtualBox sshd[17160]: Server listening on :: port 22.
Aug 25 22:44:55 liglig14-VirtualBox systemd[1]: Started ssh.service - OpenBSD Secure Shell server.
```

#### Server 2:

```
liglig14@liglig14-VirtualBox:~$ sudo service ssh start
liglig14@liglig14-VirtualBox:~$ sudo systemctl status ssh
● ssh.service - OpenBSD Secure Shell server
   Loaded: loaded (/usr/lib/systemd/system/ssh.service; disabled; preset: enabled)
   Active: active (running) since Sun 2024-08-25 22:51:11 PST; 56s ago
 TriggeredBy: ● ssh.socket
       Docs: man:sshd(8)
              man:sshd_config(5)
    Process: 17268 ExecStartPre=/usr/sbin/sshd -t (code=exited, status=0/SUCCESS)
   Main PID: 17270 (sshd)
      Tasks: 1 (limit: 4615)
     Memory: 1.2M (peak: 1.5M)
        CPU: 43ms
      CGroup: /system.slice/ssh.service
              └─17270 "sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups"

Aug 25 22:51:11 liglig14-VirtualBox systemd[1]: Starting ssh.service - OpenBSD Secure Shell server..
Aug 25 22:51:11 liglig14-VirtualBox sshd[17270]: Server listening on :: port 22.
Aug 25 22:51:11 liglig14-VirtualBox systemd[1]: Started ssh.service - OpenBSD Secure Shell server.
```

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

4.1 *sudo ufw allow ssh*



4.2 *sudo ufw enable*

4.3 *sudo ufw status*

LocalMachine:

```
liglig14@liglig14-VirtualBox:~$ sudo ufw allow ssh
```

```
Rules updated
```

```
Rules updated (v6)
```

```
liglig14@liglig14-VirtualBox:~$ sudo ufw enable
```

```
Firewall is active and enabled on system startup
```

```
liglig14@liglig14-VirtualBox:~$ sudo ufw status
```

```
Status: active
```

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

Server 1:

```
liglig14@liglig14-VirtualBox:~$ sudo ufw allow ssh
```

```
Rules updated
```

```
Rules updated (v6)
```

```
liglig14@liglig14-VirtualBox:~$ sudo ufw enable
```

```
Firewall is active and enabled on system startup
```

```
liglig14@liglig14-VirtualBox:~$ sudo ufw status
```

```
Status: active
```

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

Server 2:

```
liglig14@liglig14-VirtualBox:~$ sudo ufw allow ssh
Rules updated
Rules updated (v6)
liglig14@liglig14-VirtualBox:~$ sudo ufw enable
Firewall is active and enabled on system startup
liglig14@liglig14-VirtualBox:~$ sudo ufw status
Status: active
```

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

**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: 192.168.56.101

```
liglig14@liglig14-VirtualBox:~$ hostname -I
10.0.2.15 192.168.56.102
```

1.2 Server 2 IP address: 192.168.56.102

```
liglig14@liglig14-VirtualBox:~$ hostname -I
10.0.2.15 192.168.56.103
```

1.3 Server 3 IP address: 192.168.56.103

```
liglig14@liglig14-VirtualBox:~$ hostname -I
10.0.2.15 192.168.56.104
```

2. Make sure that they can ping each other.

2.1 Connectivity test for Local Machine 1 to Server 1: ☒ Successful ☐ Not Successful

```
liglig14@liglig14-VirtualBox:~$ 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=0.401 ms
64 bytes from 192.168.56.102: icmp_seq=2 ttl=64 time=0.294 ms
64 bytes from 192.168.56.102: icmp_seq=3 ttl=64 time=0.285 ms
64 bytes from 192.168.56.102: icmp_seq=4 ttl=64 time=0.263 ms
^C
--- 192.168.56.102 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3065ms
rtt min/avg/max/mdev = 0.263/0.310/0.401/0.053 ms
```



2.2 Connectivity test for Local Machine 1 to Server 2: ☒ Successful ☐ Not Successful

```
liglig14@liglig14-VirtualBox:~$ ping 192.168.56.103
PING 192.168.56.103 (192.168.56.103) 56(84) bytes of data.
```

```
64 bytes from 192.168.56.103: icmp_seq=1 ttl=64 time=0.465 ms
64 bytes from 192.168.56.103: icmp_seq=2 ttl=64 time=0.277 ms
64 bytes from 192.168.56.103: icmp_seq=3 ttl=64 time=0.243 ms
64 bytes from 192.168.56.103: icmp_seq=4 ttl=64 time=0.269 ms
64 bytes from 192.168.56.103: icmp_seq=5 ttl=64 time=0.243 ms
^C
--- 192.168.56.103 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4103ms
rtt min/avg/max/mdev = 0.243/0.299/0.465/0.083 ms
```

2.3 Connectivity test for Server 1 to Server 2: ☒ Successful ☐ Not Successful

```
liglig14@liglig14-VirtualBox:~$ ping 192.168.56.104
PING 192.168.56.104 (192.168.56.104) 56(84) bytes of data.
```

```
64 bytes from 192.168.56.103: icmp_seq=1 ttl=64 time=0.553 ms
64 bytes from 192.168.56.103: icmp_seq=2 ttl=64 time=0.267 ms
64 bytes from 192.168.56.103: icmp_seq=3 ttl=64 time=0.241 ms
64 bytes from 192.168.56.103: icmp_seq=4 ttl=64 time=0.218 ms
^C
--- 192.168.56.103 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3065ms
rtt min/avg/max/mdev = 0.218/0.319/0.553/0.135 ms
```

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

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`.

3. Do the same for Server 2.

```
ssh: Could not resolve hostname 192.16856.104: Name or service not known
```

```
The authenticity of host '192.168.56.102 (192.168.56.102)' can't be established.
ED25519 key fingerprint is SHA256:xk0n210kvzVAeVT41uGwez6YYk0nYEPG0ZGOQAavMQ.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? y
Please type 'yes', 'no' or the fingerprint: yes
Warning: Permanently added '192.168.56.102' (ED25519) to the list of known hosts.
penas@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

0 updates can be applied immediately.

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.
```

```
The authenticity of host '192.168.56.103 (192.168.56.103)' can't be established.
ED25519 key fingerprint is SHA256:CtdpWF59P9MFfek2KITZIIOnQye8ZOJscAIdQ32WZc.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '192.168.56.103' (ED25519) to the list of known hosts.
penas@192.168.56.103'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
```

```
0 updates can be applied immediately.
```

```
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.
```

```
The authenticity of host '192.168.56.104 (192.168.56.104)' can't be established.
ED25519 key fingerprint is SHA256:GA9uEr6wclZ/mcS1c2fE8uE60fKnCFJKA6yTEr4JZTc.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '192.168.56.104' (ED25519) to the list of known hosts.
penas@192.168.56.104'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
```

```
0 updates can be applied immediately.
```

```
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.
```

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)

4.3 Save the file and exit.

```
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
```

```
0 updates can be applied immediately.
```

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.

## Reflections:

Answer the following:

1. How are we able to use the hostname instead of IP address in SSH commands?

On the text file /etc/hosts, the student appended new information's in which inputting the entered hostname right beside the IP address will make it as another way to change or move from server to server due to its difficulties of remembering multiple IP address in set of

multiple network topology. Using this method will make the System Administrator to move another server or computer more efficiently, yet if the admin entered an unknown word, IP address and the information inside the /host text file was not listed will result into an error.

## **2. How secured is SSH?**

A kind of network communication protocol called Secure Shell, or SSH, permits two or more machines to communicate with one another, mostly via SSH Client and Server, and it provides security its information by encrypting its contents to prevent unwanted acts from unidentified sources, such as using the hash technique SHA-2, making it inaccessible and tappable.