

#### Assignment 4:

1. Install and configure a virtual machine (e.g., using VirtualBox or VMware) with a Linux distribution of your choice.

- **Choose Language:** Select the language for the installation.
- **Keyboard Layout:** Choose the keyboard layout (usually "English (US)" works).
- **Installation Type:** Choose the default installation options. For a simple setup, select "Erase disk and install Ubuntu" (don't worry, this will only affect the virtual hard disk, not your actual physical disk).
- **Set User Info:** Enter your name, desired username, and password.
- **Wait for Installation:** The installation will proceed. This may take a few minutes.
- **Finish Installation:** Once completed, you'll be asked to reboot the VM. Make sure to remove the ISO file from the virtual CD drive to avoid booting into the installer again.

#### Download a Linux ISO:

- Go to the **Ubuntu website:** [Ubuntu Downloads](#) and download an ISO image (e.g., ubuntu-20.04.3-desktop-amd64.iso).

#### Mount the ISO to the VM:

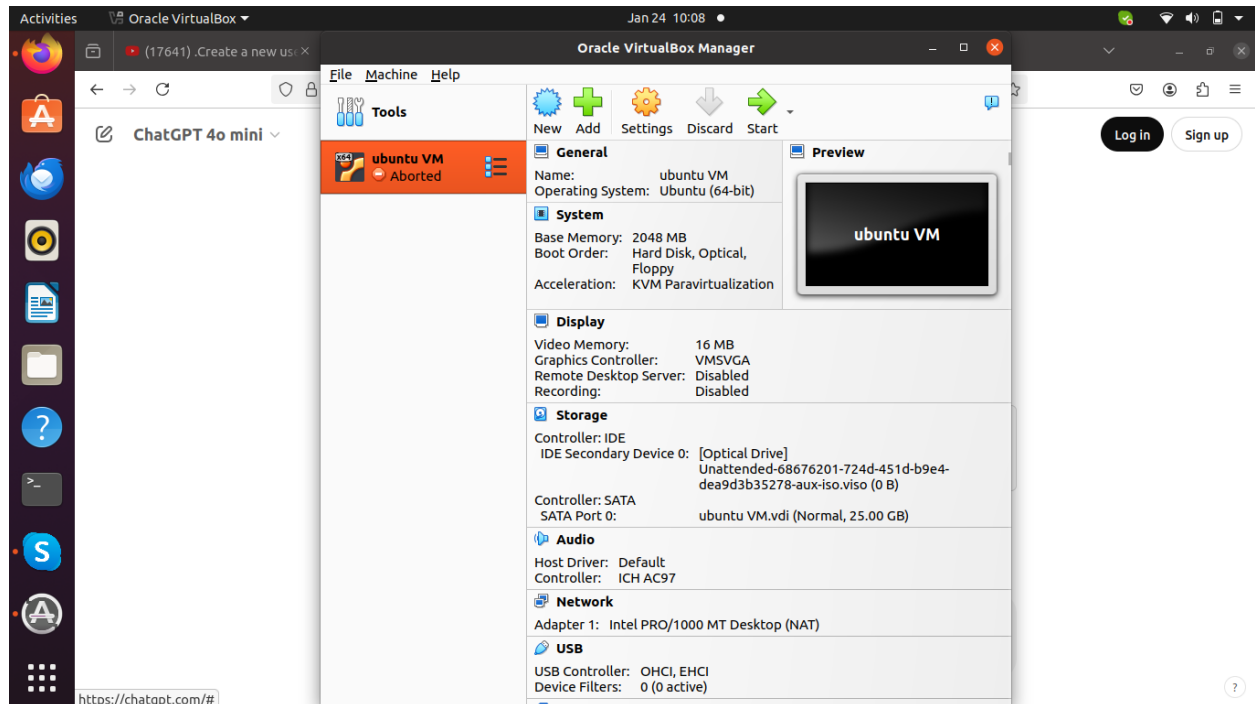
- Select your new virtual machine in the VirtualBox window and click **Settings**.
- Go to **Storage** in the left sidebar.
- Under **Controller: IDE**, click on **Empty** and then click the disk icon on the right side.
- Choose **Choose a disk file** and select the ISO file you downloaded (e.g., ubuntu-20.04.3-desktop-amd64.iso).
- Click **OK** to save the settings.
- **Create a New Virtual Machine:**
- Click **New** at the top left of the VirtualBox window.
- Choose a name for your virtual machine (e.g., "Ubuntu\_VM").
- Select the type of OS and version. For example, for Ubuntu, select **Linux** and **Ubuntu (64-bit)**.
- Click **Next**.
- **Allocate Memory (RAM):**
- Decide how much RAM you want to allocate to the VM. For Ubuntu, it's recommended to allocate at least **2 GB** (2048 MB) of RAM.
- Click **Next**.

## Create a Virtual Hard Disk:

- Select **Create a virtual hard disk now** and click **Create**.
- Choose the disk file type (default is **VDI**).
- Select **Dynamically allocated** (this allows the virtual disk to grow in size as needed).
- Set the size of the virtual hard disk. **20 GB** should be enough for most Linux installations.
- Click **Create**.

## Start the Virtual Machine:

- Click **Start** at the top of the VirtualBox window to boot the virtual machine.
- The VM will boot from the ISO file and begin the installation process.



2. Create a user named vmuser and enable SSH access to the virtual machine.

## Create the User

Run the following command to create the user vmuser:

```
sudo adduser vmuser
```

You will be prompted to:

- Set a password for the user.
- Provide optional information (e.g., full name). You can press **Enter** to skip these fields.

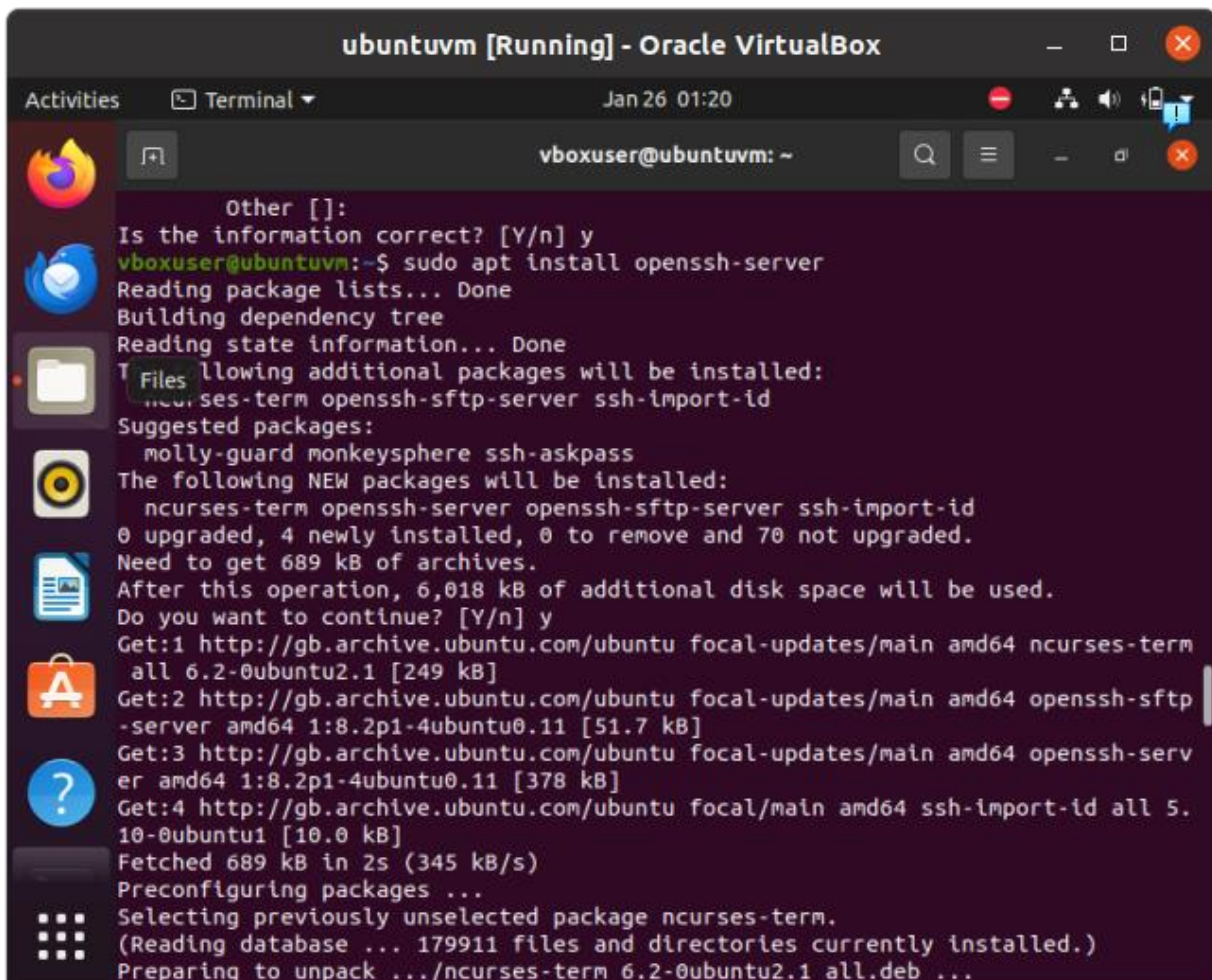
Ensure the SSH server is installed and running:

```
sudo apt update
```

```
sudo apt install openssh-server
```

```
sudo systemctl enable ssh
```

```
sudo systemctl start ssh
```



The screenshot shows a terminal window titled "ubuntuvvm [Running] - Oracle VirtualBox" with a timestamp of "Jan 26 01:20". The user is "vboxuser@ubuntuvvm: ~". The terminal output shows the command "sudo apt install openssh-server" being executed. The system reads package lists, builds a dependency tree, and reads state information. It then lists additional packages to be installed: ncurses-term, openssh-sftp-server, and ssh-import-id. Suggested packages include molly-guard, monkeysphere, and ssh-askpass. The terminal shows that 4 new packages will be installed, requiring 689 kB of archives and 6,018 kB of additional disk space. The user confirms the installation with "y". The terminal then shows the download progress for four packages from the Ubuntu archive, totaling 689 kB. Finally, it shows the preconfiguration of packages, including selecting the previously unselected package ncurses-term.

```
Other []:
Is the information correct? [Y/n] y
vboxuser@ubuntuvvm:~$ sudo apt install openssh-server
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  ncurses-term openssh-sftp-server ssh-import-id
Suggested packages:
  molly-guard monkeysphere ssh-askpass
The following NEW packages will be installed:
  ncurses-term openssh-server openssh-sftp-server ssh-import-id
0 upgraded, 4 newly installed, 0 to remove and 70 not upgraded.
Need to get 689 kB of archives.
After this operation, 6,018 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://gb.archive.ubuntu.com/ubuntu focal-updates/main amd64 ncurses-term
  all 6.2-0ubuntu2.1 [249 kB]
Get:2 http://gb.archive.ubuntu.com/ubuntu focal-updates/main amd64 openssh-sftp
  -server amd64 1:8.2p1-4ubuntu0.11 [51.7 kB]
Get:3 http://gb.archive.ubuntu.com/ubuntu focal-updates/main amd64 openssh-serv
  er amd64 1:8.2p1-4ubuntu0.11 [378 kB]
Get:4 http://gb.archive.ubuntu.com/ubuntu focal/main amd64 ssh-import-id all 5.
  10-0ubuntu1 [10.0 kB]
Fetched 689 kB in 2s (345 kB/s)
Preconfiguring packages ...
Selecting previously unselected package ncurses-term.
(Reading database ... 179911 files and directories currently installed.)
Preparing to unpack .../ncurses-term_6.2-0ubuntu2.1_all.deb ...
```

ubuntuvvm [Running] - Oracle VirtualBox

Activities Terminal Jan 26 01:20

vboxuser@ubuntuvvm: ~

Files

```
vboxuser@ubuntuvvm:~$ sudo systemctl status ssh
● ssh.service - OpenBSD Secure Shell server
   Loaded: loaded (/lib/systemd/system/ssh.service; enabled; vendor preset:
   Active: active (running) since Sun 2025-01-26 00:18:56 IST; 3min 29s ago
     Docs: man:sshd(8)
           man:sshd_config(5)
    Main PID: 120116 (sshd)
      Tasks: 1 (limit: 2247)
     Memory: 1.0M
    CGroup: /system.slice/ssh.service
            └─120116 sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups

Jan 26 00:18:56 ubuntuvvm systemd[1]: Starting OpenBSD Secure Shell server...
Jan 26 00:18:56 ubuntuvvm sshd[120116]: Server listening on 0.0.0.0 port 22.
Jan 26 00:18:56 ubuntuvvm sshd[120116]: Server listening on :: port 22.
Jan 26 00:18:56 ubuntuvvm systemd[1]: Started OpenBSD Secure Shell server.

vboxuser@ubuntuvvm:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group defau
lt qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
```