

## Deliverable 2

- Name: Shaimaa Husien
- Semester: Sp 2022
- Class: CIS 106

### What is Virtualization

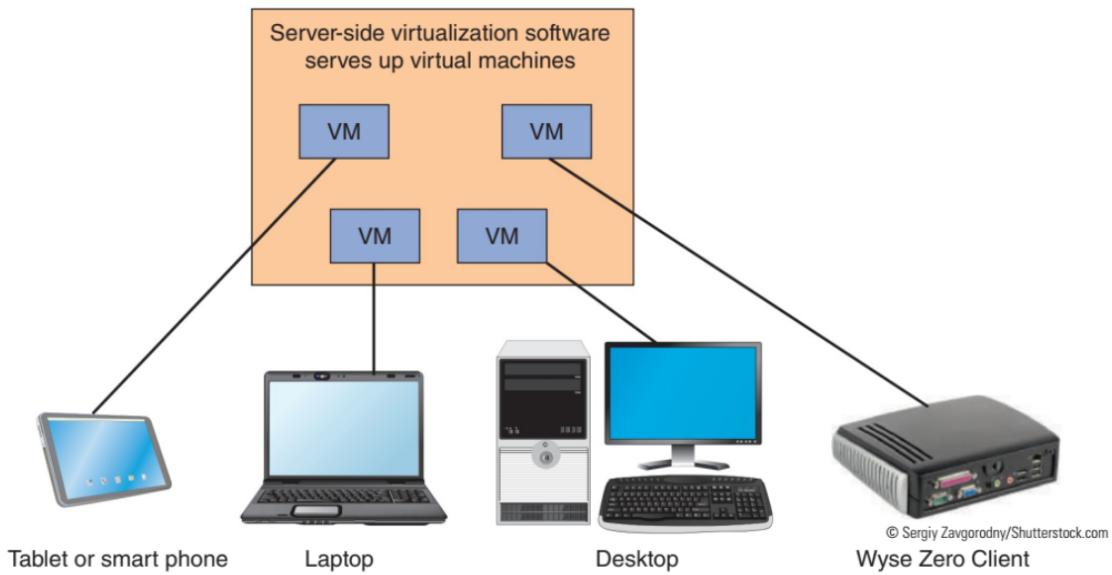


- Replication of hardware to simulate a virtual machine inside a physical machine.

Tow general types of virtualization:

server-side virtualization

- Virtual Desktop Infrastructure (VDI).
- Think client or fat client
- Thin client
- Zero client



**Figure 20-1** Server-side virtualization provides a virtual desktop to each user



#### client-side virtualization:

- Software installed on a computer virtual machines
- Each VM has its own operating system installed

- For client-side virtualization.the computer needs:



## Hypervisor :

- Software that allows the management of virtual machines
- Hardware support
- capable CPU
- Enough RAM
- Enough storage

## Types of Hypervisor

# Type 1 VS Type 2 Hypervisor

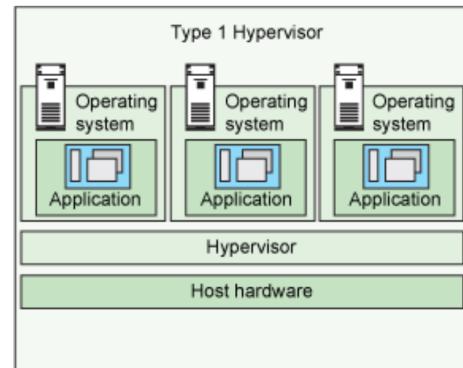
## Type 1

Runs on the hardware

Examples are:

VMware ESX and ESXi

Citrix XenServer



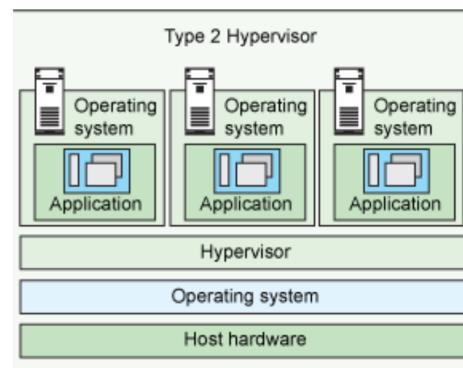
## Type 2

Runs on a Host Operating System

Examples are:

VMware Workstation Player/Pro

Oracle VirtualBox



SEE [HTTPS://VAPOUR-APPS.COM/WHAT-IS-HYPERVERSOR/](https://VAPOUR-APPS.COM/WHAT-IS-HYPERVERSOR/) FOR MORE INFORMATION

## Virtualbox

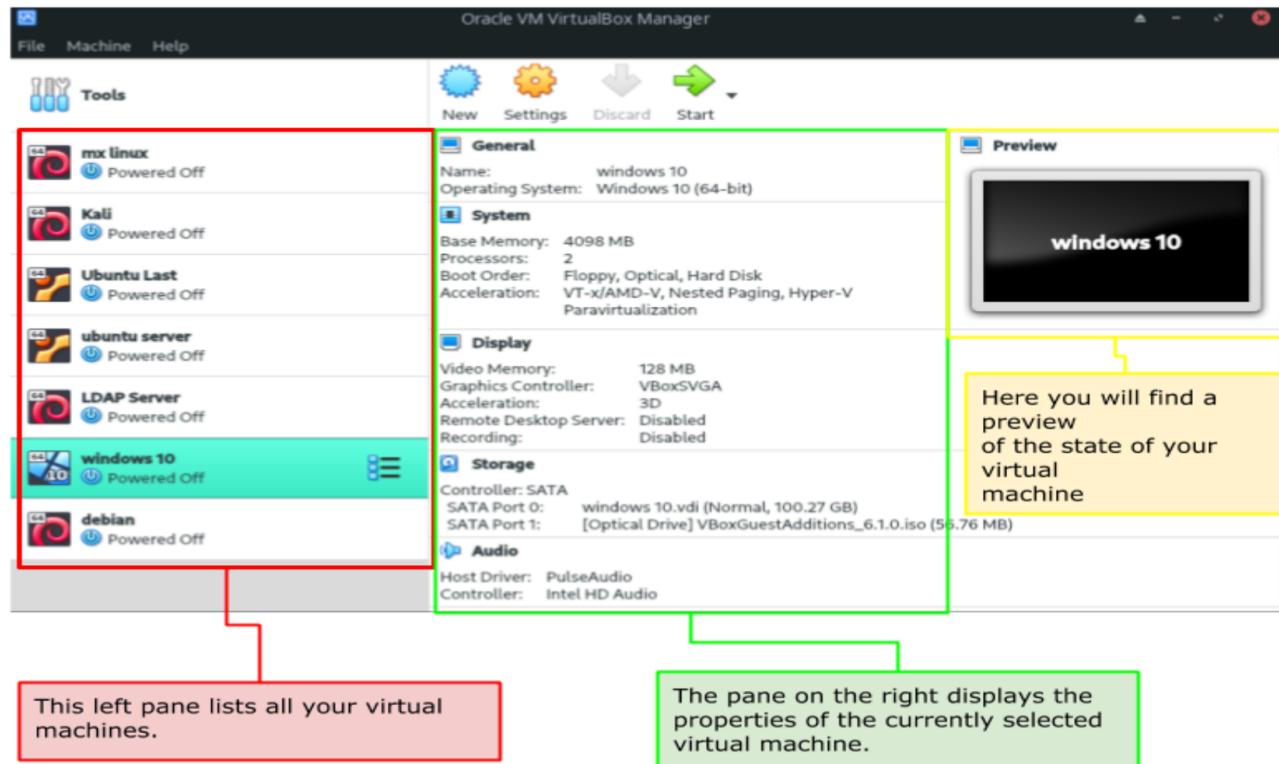


- VirtualBox is a powerful type 2 virtualization product for enterprise as well as home use.
- Open source software under GPLv2
- Runs on: windows \_ Linux \_ Macintosh \_ Solaris
- it supports a large number of guest operating systems.

## How to Install Virtualbox in Windows 10

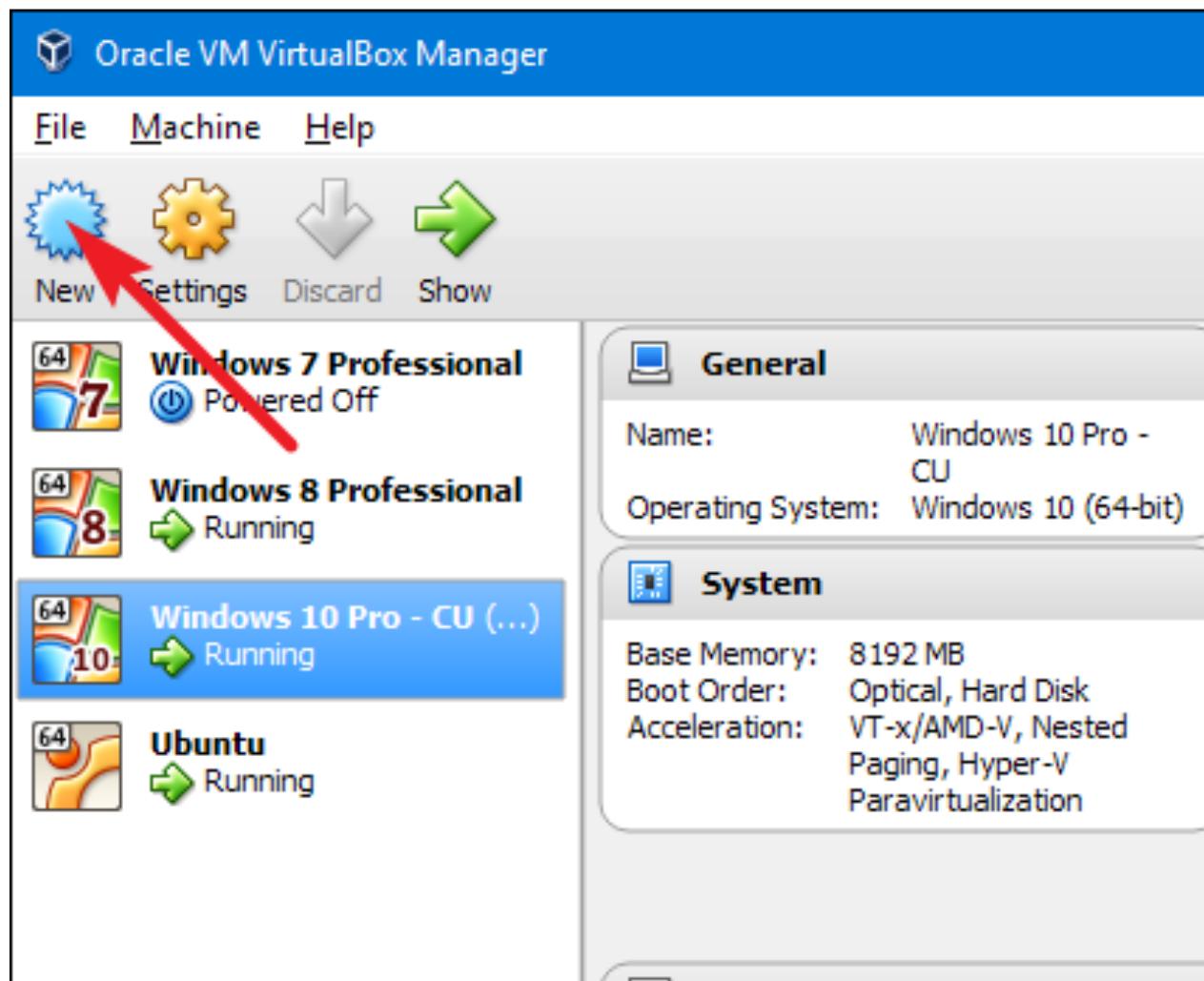
- Step 1 : Download Virtualbox: <https://www.virtualbox.org/wiki/Downloads> 1- Install VirtualBox 2- Get the Windows 10 Technical Preview ISO File. 3- Select the amount of RAM 4- Select a Virtual Hard Drive. 5- Create a virtual Hard Drive 6- Select your ISO as the startup disk 7- Finish

## installing windows 10 8- Turn on the start Menu.

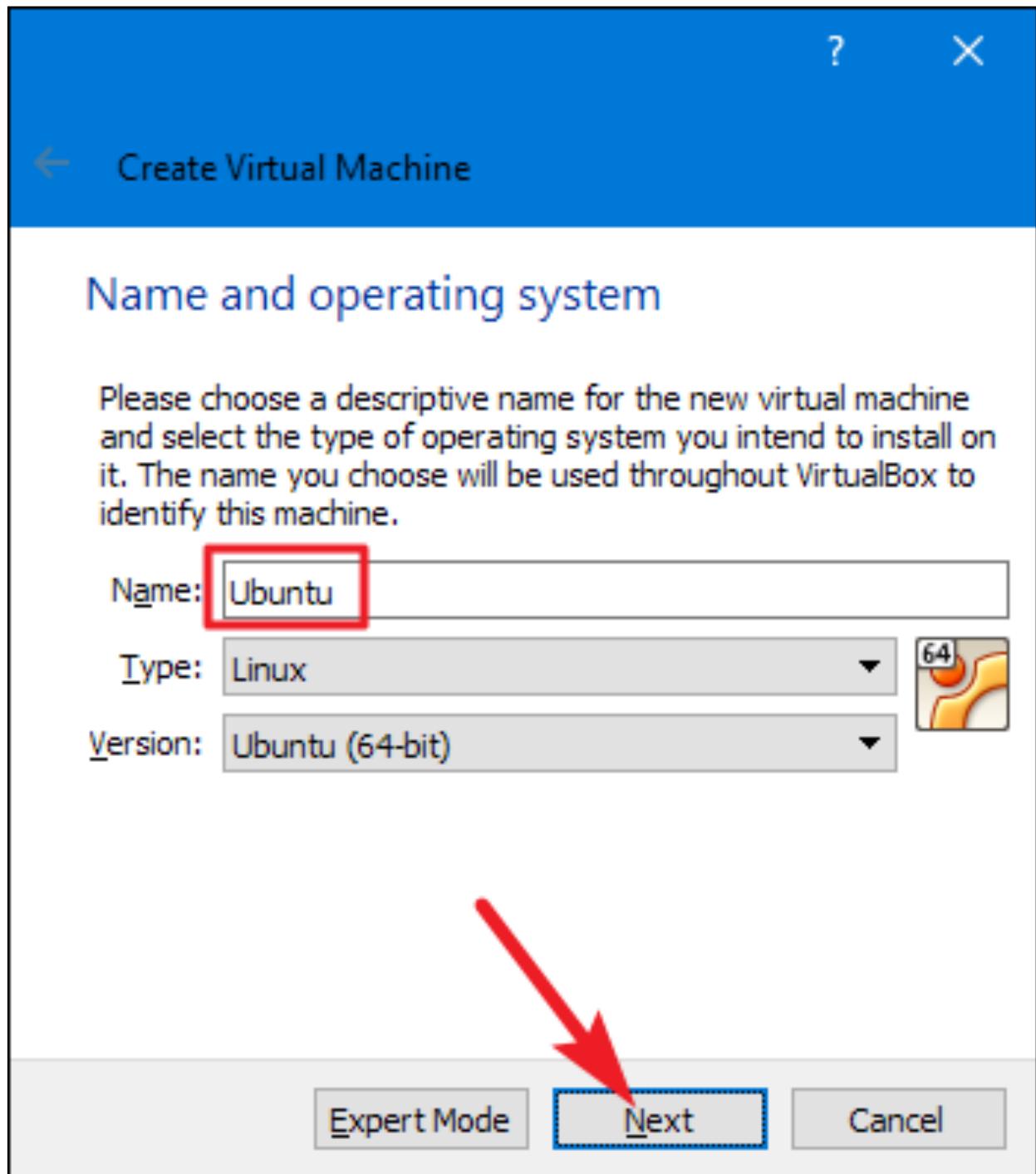


## Installing Ubuntu in a virtualBox

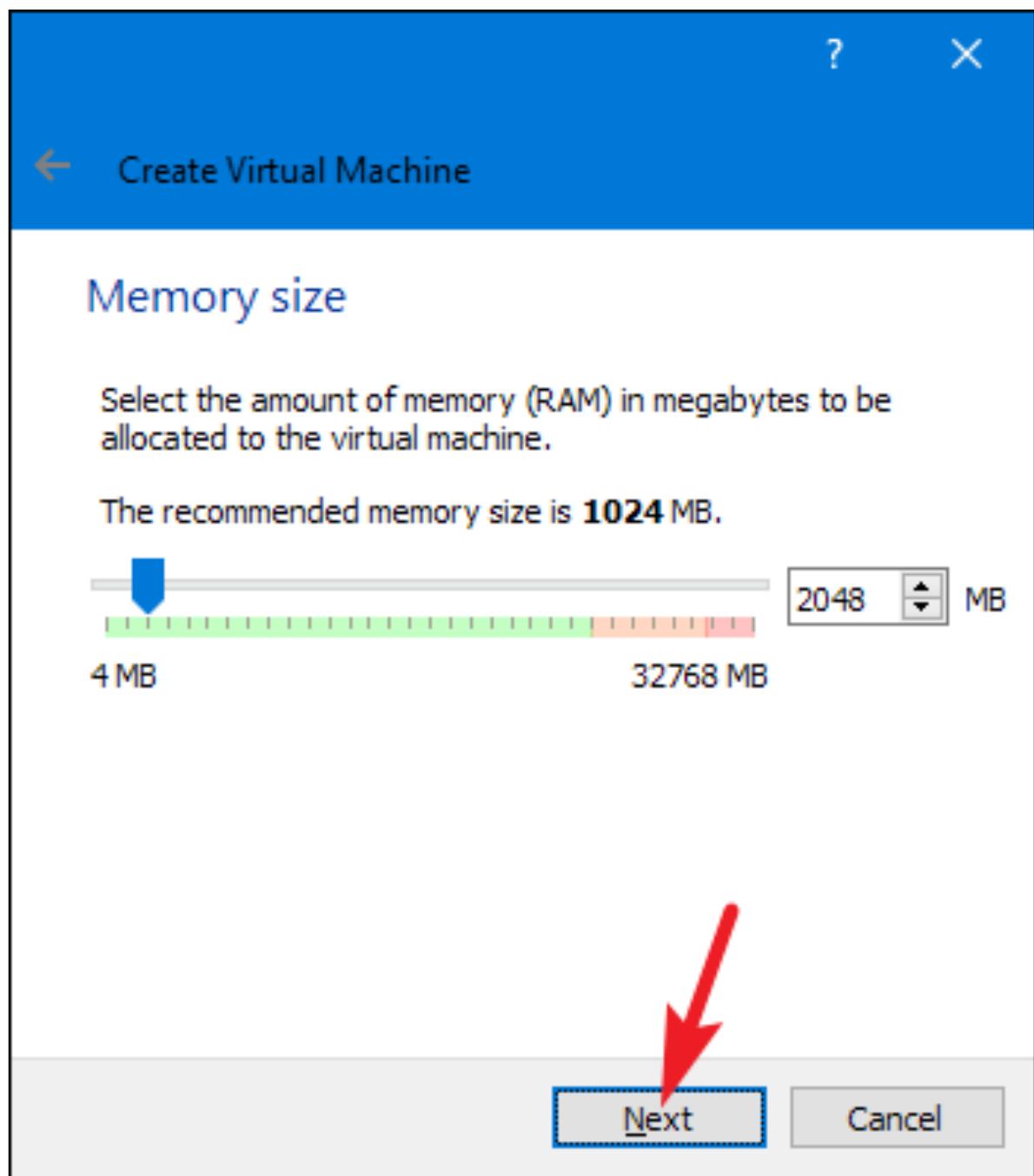
- Step 1: Open up your VM app and click the button to create a new virtual machine.



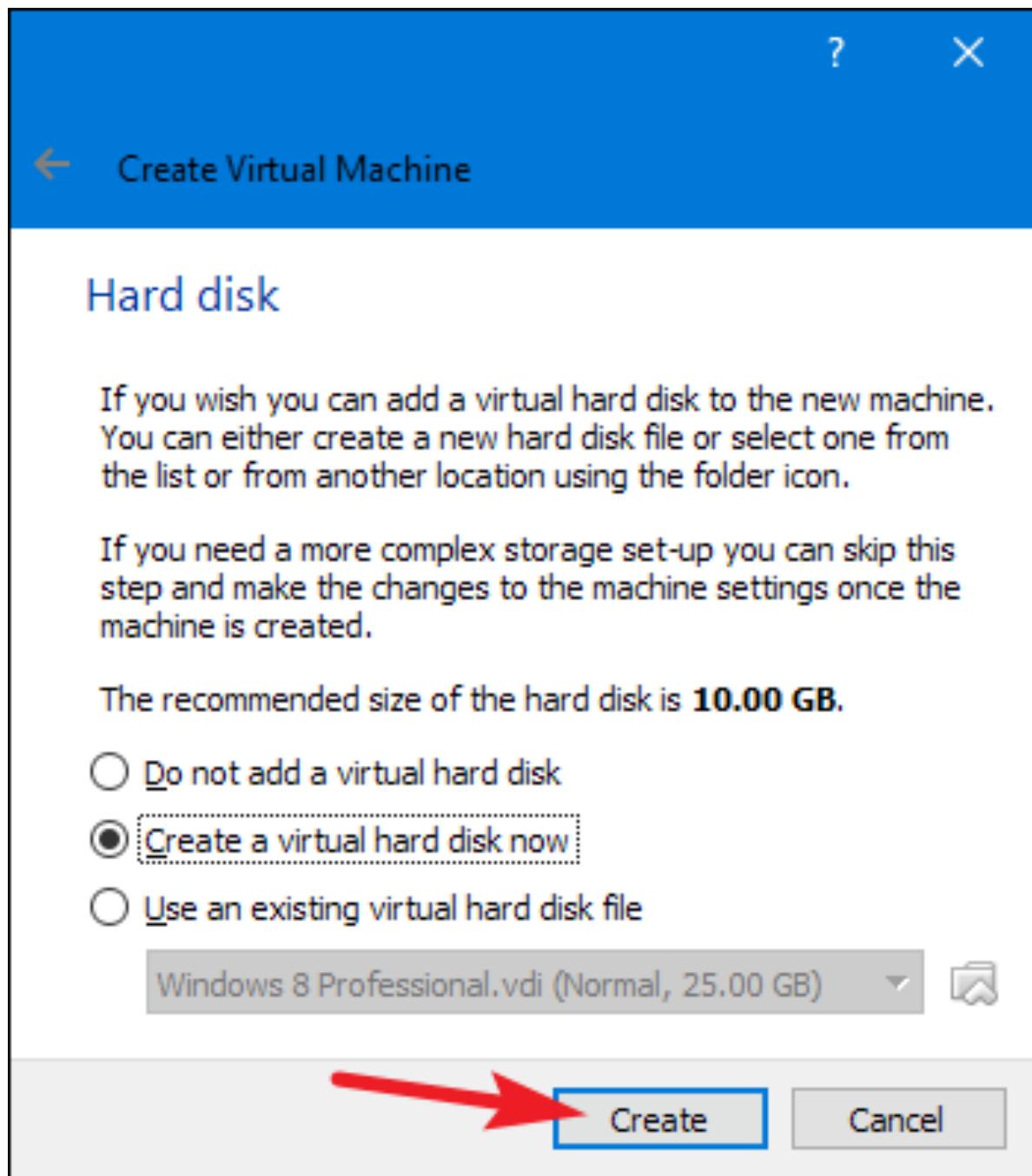
- You'll be guided through the process by a wizard that first asks which OS you'll be installing. If you type the name of the OS in the "Name" box, the app will most likely automatically select the type and version for the OS. If it doesn't—or it guesses wrong—select those items yourself from the dropdown menus. When you're done, click "Next."
- step 2: Name and Operating system then "next"



- step 3: Memory Size



- step 4: Hard disk "create"



- step 5: File Location and Size "create"

 Create Virtual Hard Disk

## File location and size

Please type the name of the new virtual hard disk file into the box below or click on the folder icon to select a different folder to create the file in.

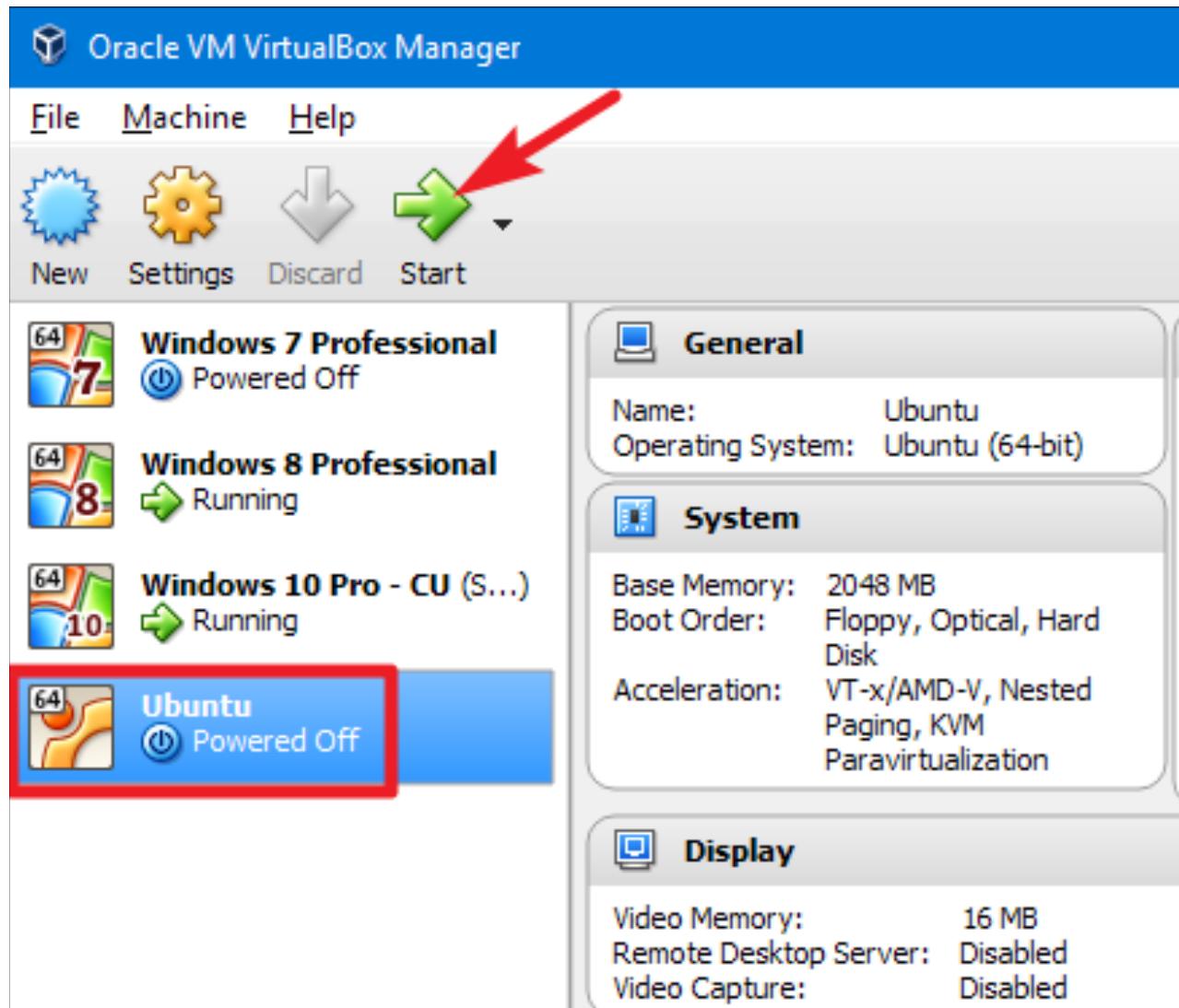
Ubuntu 17.04 

Select the size of the virtual hard disk in megabytes. This size is the limit on the amount of file data that a virtual machine will be able to store on the hard disk.

4.00 MB  10.00 GB  
2.00 TB

 Create Cancel

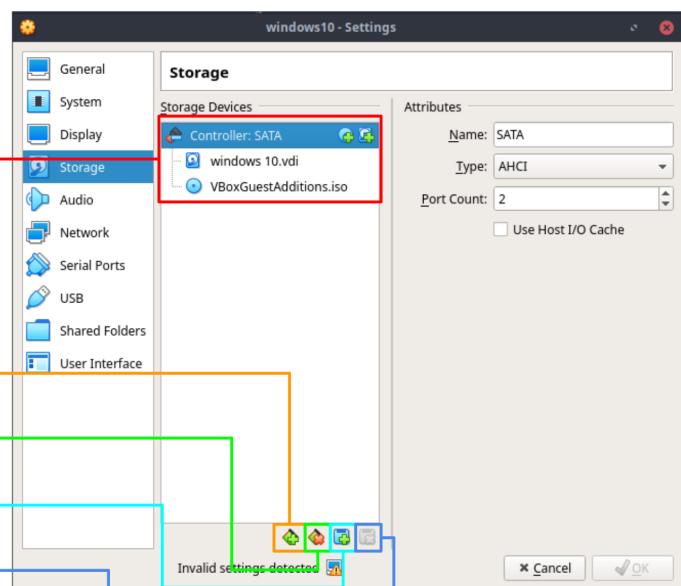
- step 6: After that, you're dumped back into the main VM app window, where your new VM should show up. Installation media you need is available to the machine—usually this involves pointing to an ISO file or real disc through the VM's settings. You can run your new VM by selecting it and hitting "Start."

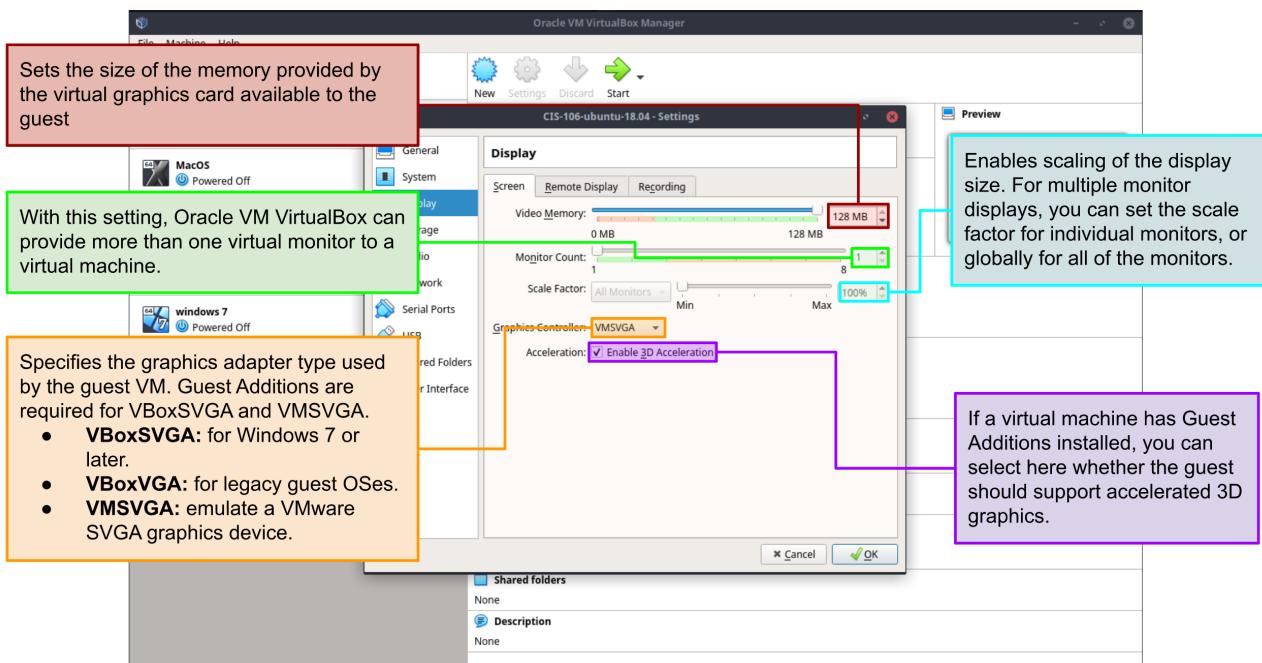


Depending on the guest OS type, a new VM includes the following storage devices:

- IDE controller.** A virtual CD/DVD drive is attached to the secondary master port of the IDE controller.
- SATA controller.** This is a modern type of storage controller for higher hard disk data throughput, to which the virtual hard disks are attached.

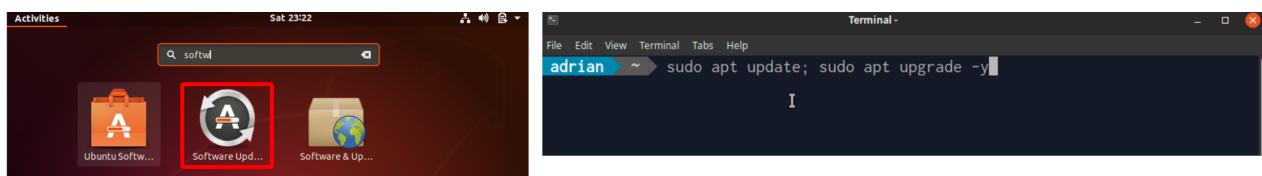
- Add new storage controller
- Remove selected storage controller
- Add new storage attachment
- Remove storage attachment





## ## Updating Ubuntu

- Two Ways:
- Using Ubuntu Software Update
- Using the command line
- Command : `sudo apt update; sudo apt upgrade -y; sudo apt full-upgrade -y`



## Installing software in Ubuntu

- `sudo+apt+install+package+name`

● To update any Debian distro:

Update is used to download package information from all configured sources.

By terminating every command with a ; you can run multiple commands in a single line.

The -y option passes a yes answer to any question. Without this option apt will ask you if you want to install the upgrade. Using -y is optional and you should use it only if you are 100% sure about the upgrade.

Managing software and updates requires root privileges. Sudo allows you to run any command as the root user.

Apt is the program that we are using to manage software and updates.

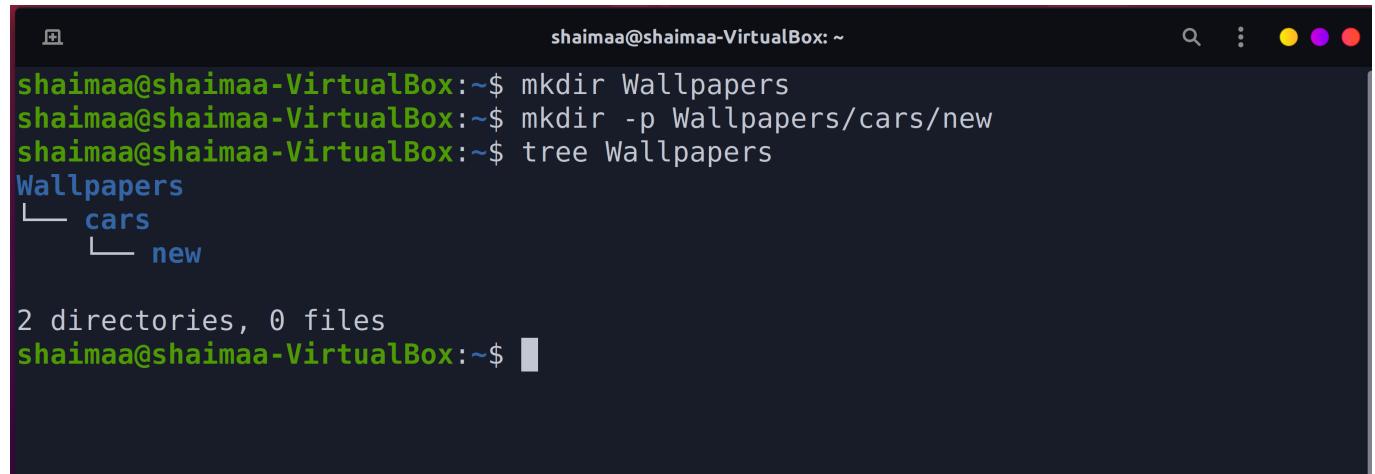
upgrade is used to install available upgrades of all packages currently installed on the system from the sources configured via sources.list

- the install option installs the specified package.
- to install several program in single command.

- `sudo apt install firefox flame shot caffeine -y`
- the remove option removes the specifies package. \*remove several program in single command
  - `sudo apt remove firefox flame shot caffeine -y`
- you can install and remove muliple program by adding the package name with a space between each package.
- you can add and remove package at the same time by using a +and -at the end each package.
- Searching for software
- search for all program that matches the next in quotes
  - `apt-search "web browser"`
- search for information about a given package including dependencies.
  - `apt-cache search firefox`
- search a package name only.
  - `apt search -n firefox`
- To remove and purge a package use:

```
sudo apt remove vlc
sudo apt purge vlc
sudo apt autoremove
```

## Basic linux commands



The screenshot shows a terminal window with a dark background and light-colored text. The prompt is `shaimaa@shaimaa-VirtualBox:~$`. The user runs three commands: `mkdir Wallpapers`, `mkdir -p Wallpapers/cars/new`, and `tree Wallpapers`. The output shows the creation of a `Wallpapers` directory containing a `cars` directory, which itself contains a `new` directory. A final count of 2 directories and 0 files is displayed.

```
shaimaa@shaimaa-VirtualBox:~$ mkdir Wallpapers
shaimaa@shaimaa-VirtualBox:~$ mkdir -p Wallpapers/cars/new
shaimaa@shaimaa-VirtualBox:~$ tree Wallpapers
Wallpapers
└── cars
    └── new

2 directories, 0 files
shaimaa@shaimaa-VirtualBox:~$
```

## Navigating the filesystem

- It's a program that takes in commands and passes them on to the computer's operating system to run. From the command line, you can navigate Filesystem. A filesystem organizes a computer's files and directories into a tree structure. The first directory in the filesystem is the root directory.

## Managing files and Directories

### `mkdir:`

Is used for creating directory or multiple directories.

### Example:

- create a directory in the present working directory
  - `mkdir wallpapers`
- create directory a in a different directory using relative path
  - `mkdir wallpapers/ocean`
- create a directory in a diffident directory using absolute path
  - `mkdir ~/wallpapers/forest`
- create a directory with a space in the name
  - `mkdir wallpapers/new\care`
  - `mkdir wallpapers/"cities usa"`
- create a directory with a single quote in the name
  - `mkdir wallpapers/"majora 's mask"`
- create multiple directories
  - `mkdir wallpapers /care wallpapers/cities * wallpapers/forst`
- create a directory with a parent directory at the same time
  - `mkdir -p wallpapers_others/movies`