Week Report 2

The basic of virtualization

- Virtualization is basically recreate hardware in a virtual environment.
- Different types of virtualization: Server-side virtualization anb client virtualization.

Server-side virtualization

Virtual Desktop Infrastructure (VDI).

- Thick client or fat client
- Thin client
- Zero client

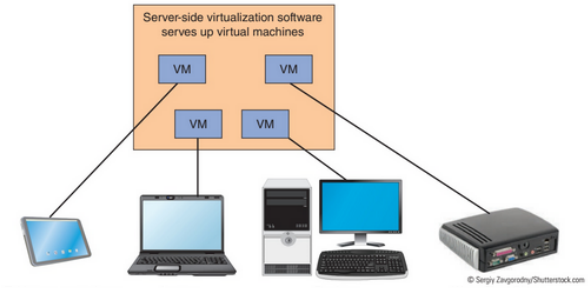


Figure 20-1 Server-side virtualization provides a virtual desktop to each user

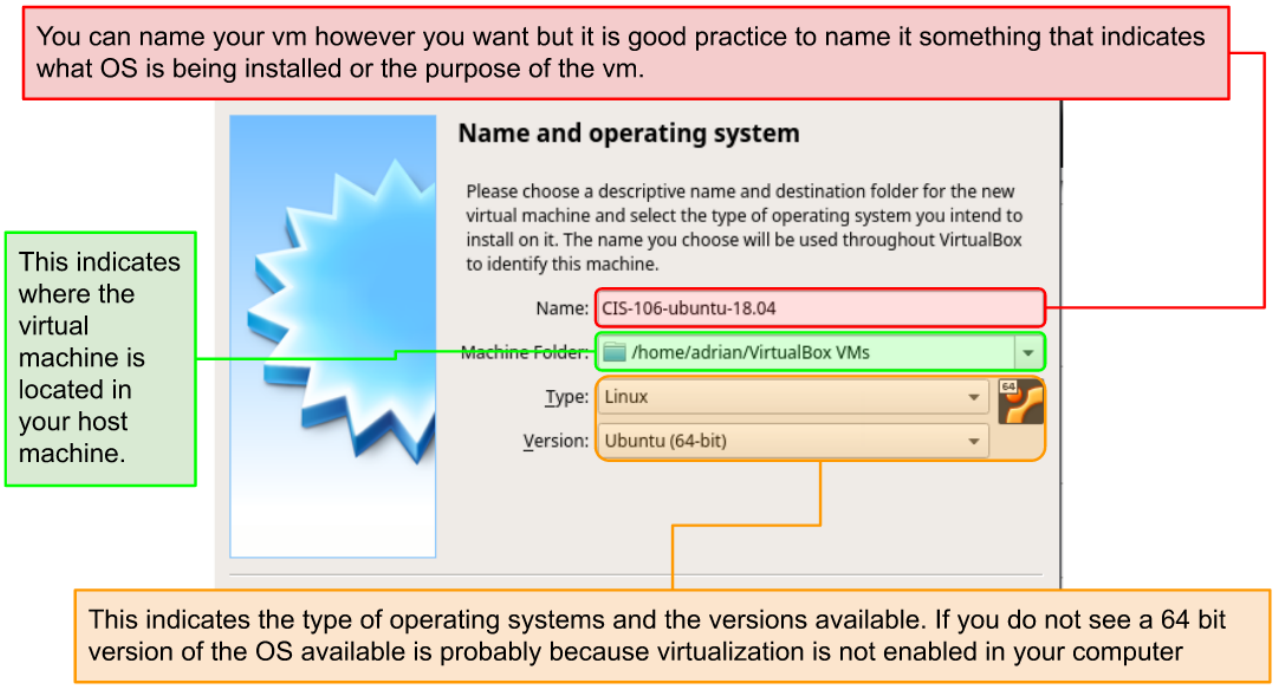
Client-side virtualization

- Software installed on a computer to manage virtual machines
- Each VM has its own operating system installed
- For client-side virtualization, the computer needs:
  - A hypervisor (Software that allows the management of virtual machines)
  - Hardware support
    - capable CPU
    - Enough RAM
    - Enough storage

Benefits of virtualization:

- Allow running multiple machines on it.
- Reduce cost by reducing the physical hardware.
- Offers the capability of test without risk of malware of viruses.

Installing ubuntu in virtual box



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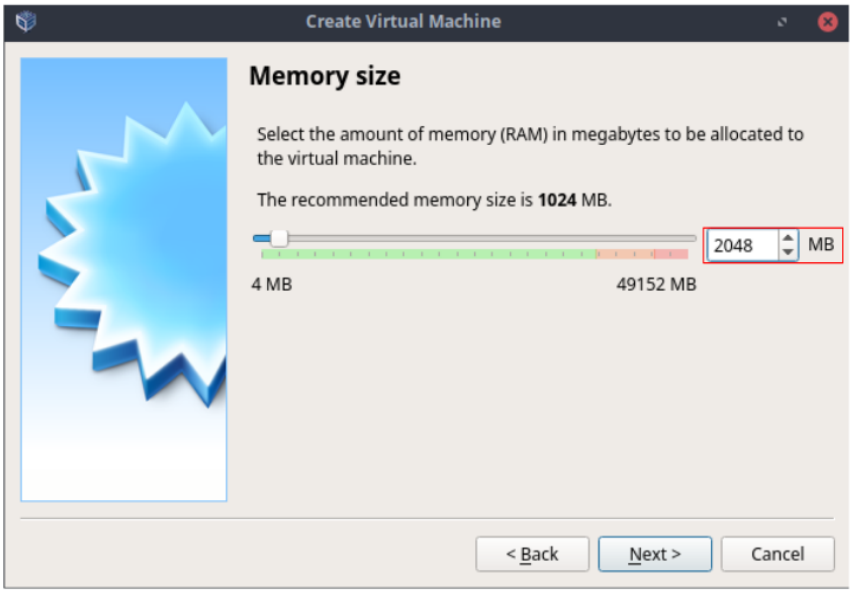
Ubuntu Desktop requires at least 2GB of RAM but if you have more than 8GB of RAM you can increase the amount of RAM you give the virtual machine without diminishing your host OS performance significantly.



Here is a tip.

- If you plan to run only 1 virtual machine at a time and you have 8GB of RAM. You can give your vm 4GB of RAM and your PC will still be fast.
- If you have 4GB of RAM. Do not give your VM more than 2GB of RAM.

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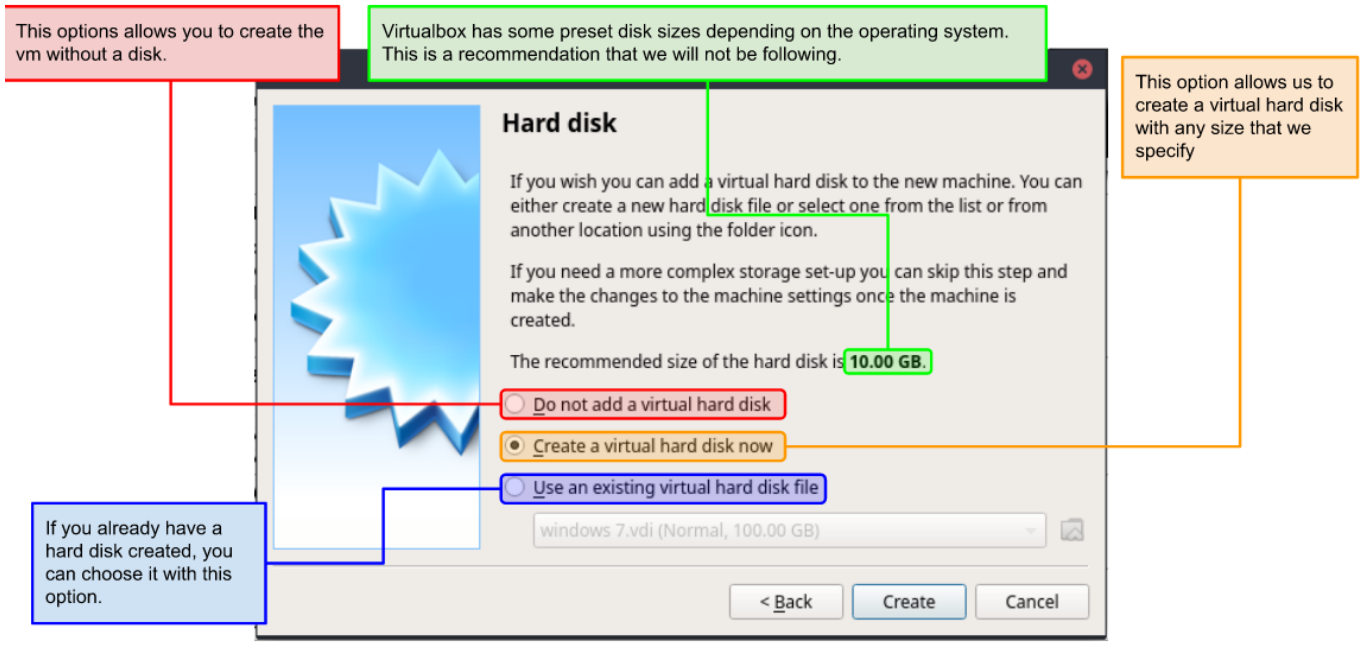
This options allows you to create the vm without a disk.
Virtualbox has some preset disk sizes depending on the operating system. This is a recommendation that we will not be following.
This option allows us to create a virtual hard disk with any size that we specify
If you already have a hard disk created, you can choose it with this option.
Hard disk
If you wish you can add a virtual hard disk to the new machine. You can either create a new hard disk file or select one from the list or from another location using the folder icon.
If you need a more complex storage set-up you can skip this step and make the changes to the machine settings once the machine is created.
The recommended size of the hard disk is 10.00 GB.
Do not add a virtual hard disk
Create a virtual hard disk now
Use an existing virtual hard disk file
windows 7.vdi (Normal, 100.00 GB)
< Back
Create
Cancel

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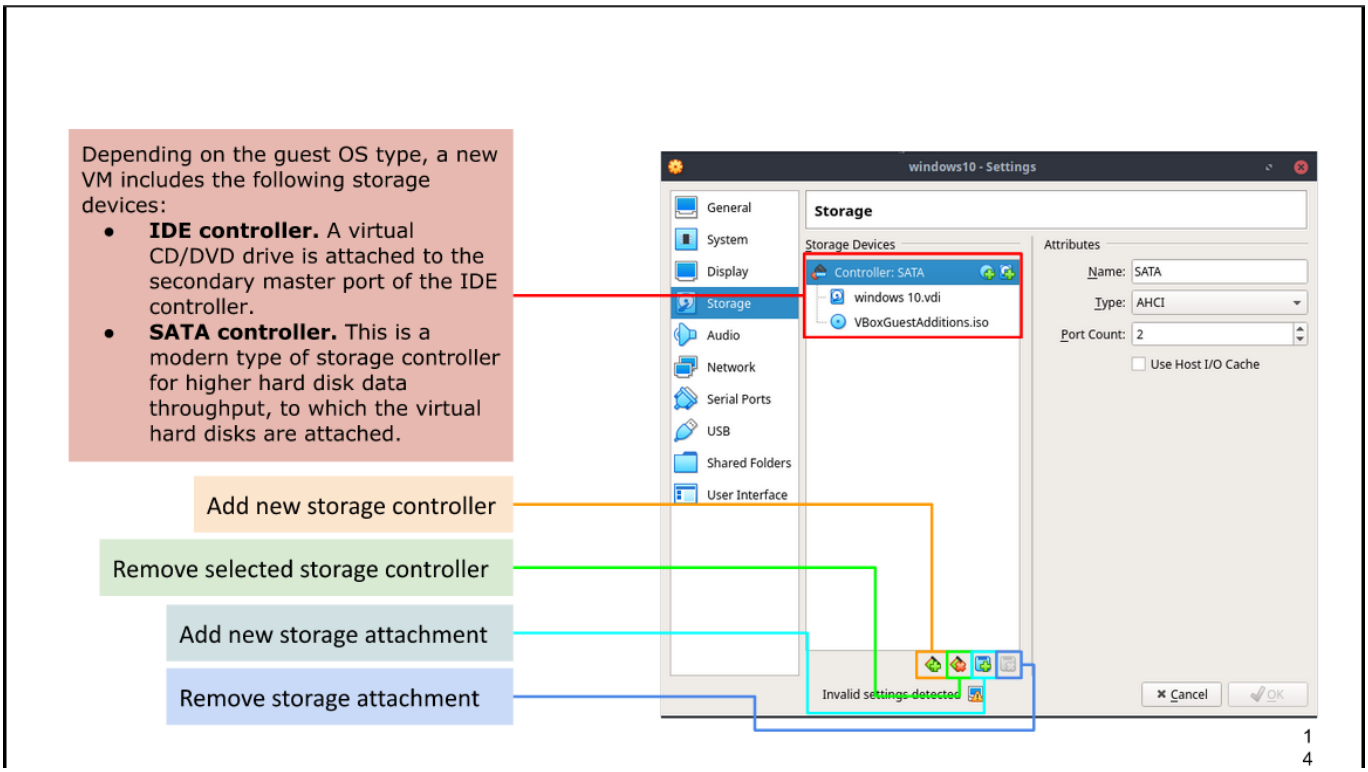
Depending on the guest OS type, a new VM includes the following storage devices:
IDE controller. A virtual CD/DVD drive is attached to the secondary master port of the IDE controller.
SATA controller. This is a modern type of storage controller for higher hard disk data throughput, to which the virtual hard disks are attached.
Add new storage controller
Remove selected storage controller
Add new storage attachment
Remove storage attachment
windows10 - Settings
General
System
Display
Storage
Audio
Network
Serial Ports
USB
Shared Folders
User Interface
Storage
Storage Devices
Controller: SATA
windows 10.vdi
VBoxGuestAdditions.iso
Attributes
Name: SATA
Type: AHCI
Port Count: 2
Use Host I/O Cache
Invalid settings detected
Cancel
OK

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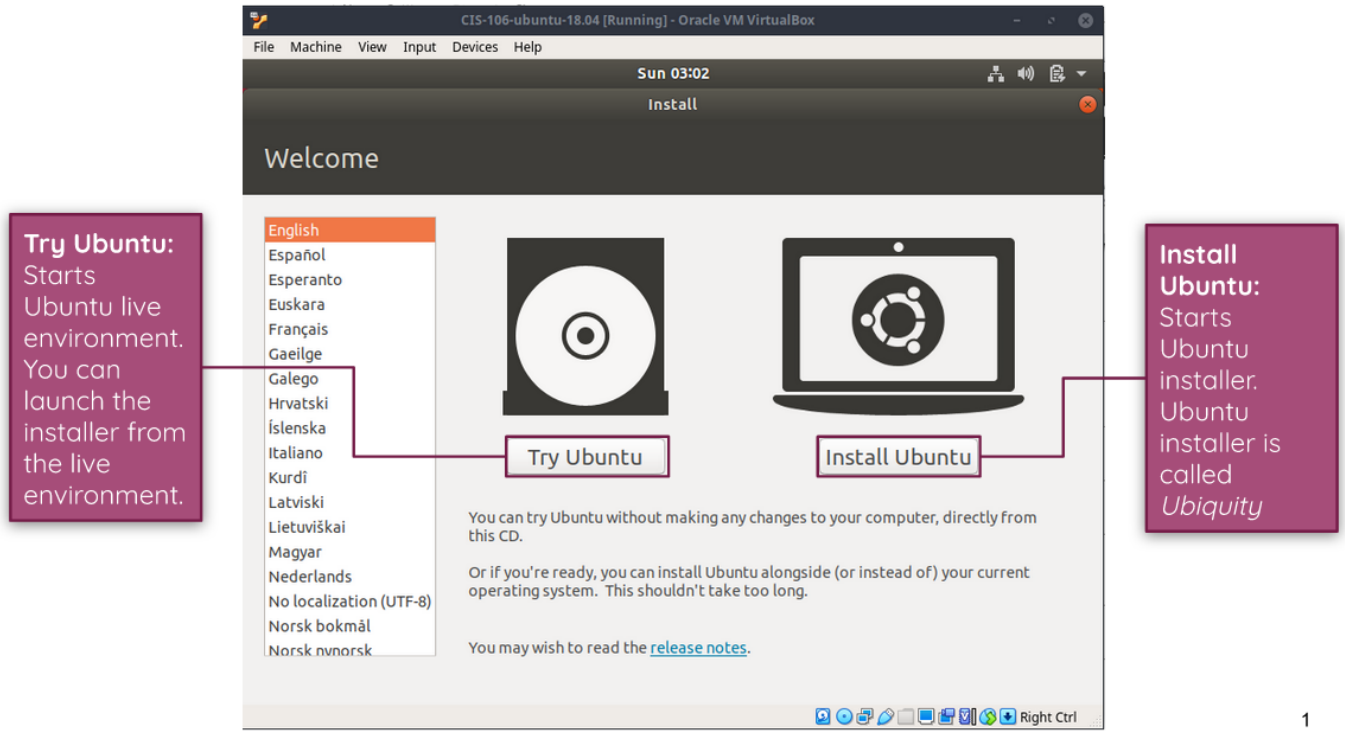

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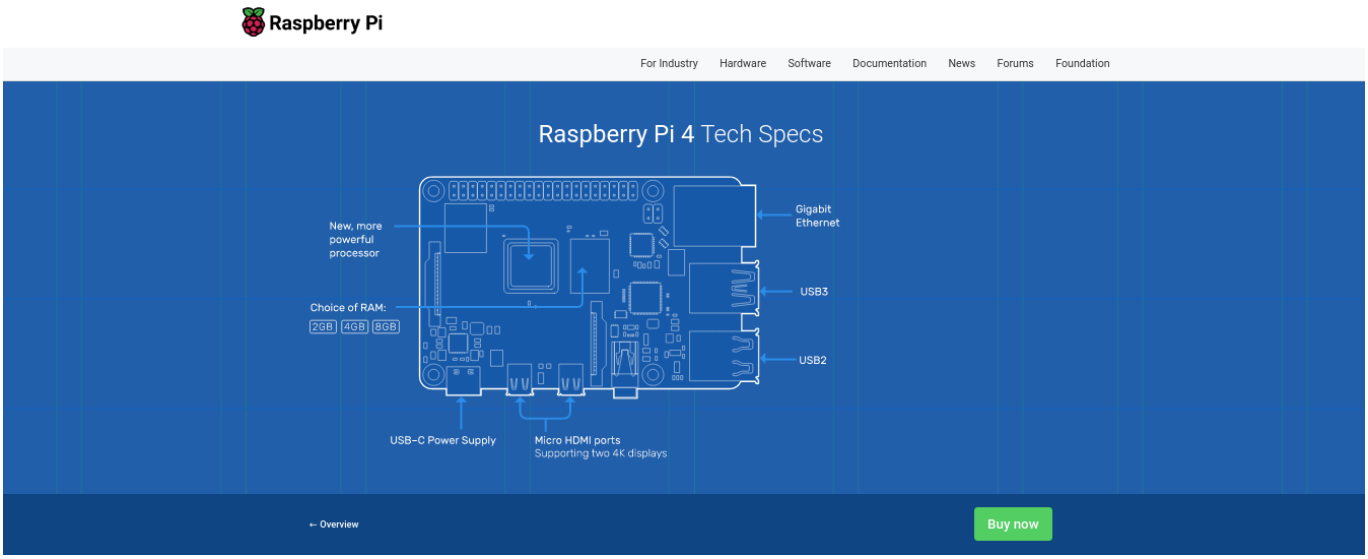
What is raspberry pi

- A super tiny computer with the potential of do anything you can imagine.
- Raspberry pi can be use for education of adult and child's of computer science.

Specs of PI 4:



Specifications

Broadcom BCM2711, Quad core Cortex-A72 (ARM v8) 64-bit SoC @ 1.5GHz
2GB, 4GB or 8GB LPDDR4-3200 SDRAM (depending on model)
2.4 GHz and 5.0 GHz IEEE 802.11ac wireless, Bluetooth 5.0, BLE
Gigabit Ethernet
2 USB 3.0 ports; 2 USB 2.0 ports.
Raspberry Pi standard 40 pin GPIO header (fully backwards compatible with previous boards)
2 × micro-HDMI ports (up to 4kp60 supported)
2-lane MIPI DSI display port
2-lane MIPI CSI camera port
4-pole stereo audio and composite video port
H.265 (4kp60 decode), H264 (1080p60 decode, 1080p30 encode)
OpenGL ES 3.1, Vulkan 1.0
Micro-SD card slot for loading operating system and data storage
5V DC via USB-C connector (minimum 3A*)
5V DC via GPIO header (minimum 3A*)
Power over Ethernet (PoE) enabled (requires separate PoE HAT)
Operating temperature: 0 – 50 degrees C ambient

* A good quality 2.5A power supply can be used if downstream USB peripherals consume less than 500mA in total.

MODELS OF RASPBERRY PI:

- Raspberry Pi Zero
- Raspberry Pi Zero WH
- Raspberry Pi Zero W
- Raspberry Pi 3 B+
- Raspberry Pi 4B(2GB)
- Raspberry Pi 4B(4GB)
- Raspberry Pi 4B(8GB)

5 Projects you can do with raspberry PI:

1. Replace Your Desktop PC With a Raspberry Pi
2. Cut the Cord With Kodi: A Raspberry Pi Media Center.
3. Build a Minecraft Game Server
4. Build a Stop Motion Camera
5. A Home Automation System With Arduino