# Week Report 2

## Summary of Presentations

### The Basics of Virtualization

#### What is Virtualization?

**Virtualization** - replication of hardware to simulate a virtual machine inside a physical machine

#### Types of Virtualization

- Server-side virtualization
- Client-side virtualization
- The basic difference between the two is **where the virtualizing takes place**

##### Server-side virtualization

Virtual Desktop Infrastructure (VDI)

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

##### Client-side virtualization

- Software installed on a computer to manage virtual machines
- For client-side virtualization, the computer needs:
    - **hypervisor** - software that allows the management of virtual machines)
    - Hardware support
        - capable CPU
        - enough RAM & storage

##### Type 1 vs Type 2 Hypervisor

- **Type 1** - runs on the hardware
- **Type 2** - runs on a host operating system

#### Benefits of Virtualization

- Allows running multiple OSs on one machine
- Allows applications to be tested before installing them on a host machine
- Reduces costs by decreasing the physical hardware that must be purchased for a network
- Offers the chance to experiment with untested programs without infecting host machines with viruses or other malware

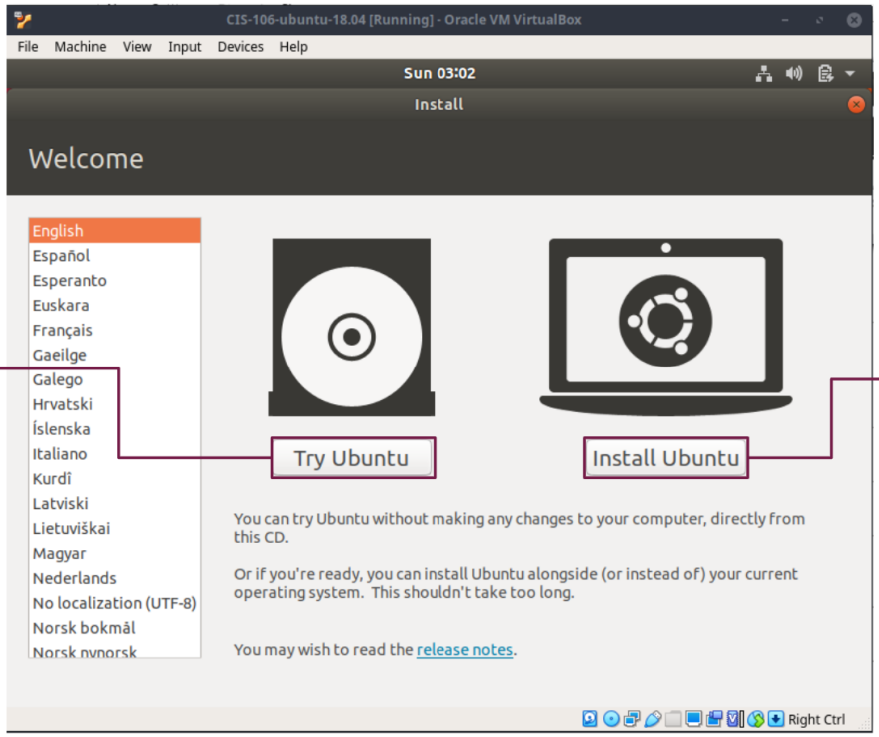
#### VirtualBox

**Virtualbox** - is a powerful type 2 virtualization product for enterprise as well as home use

**Computer Virtualization Requirements**

- AMD V or INTEL V compatible processor
- Dual core x64 processor with 1.3 GHz or faster 4GB of RAM
- Enough free hard drive space for installing guest OSs.

## Installing Ubuntu in Virtualbox

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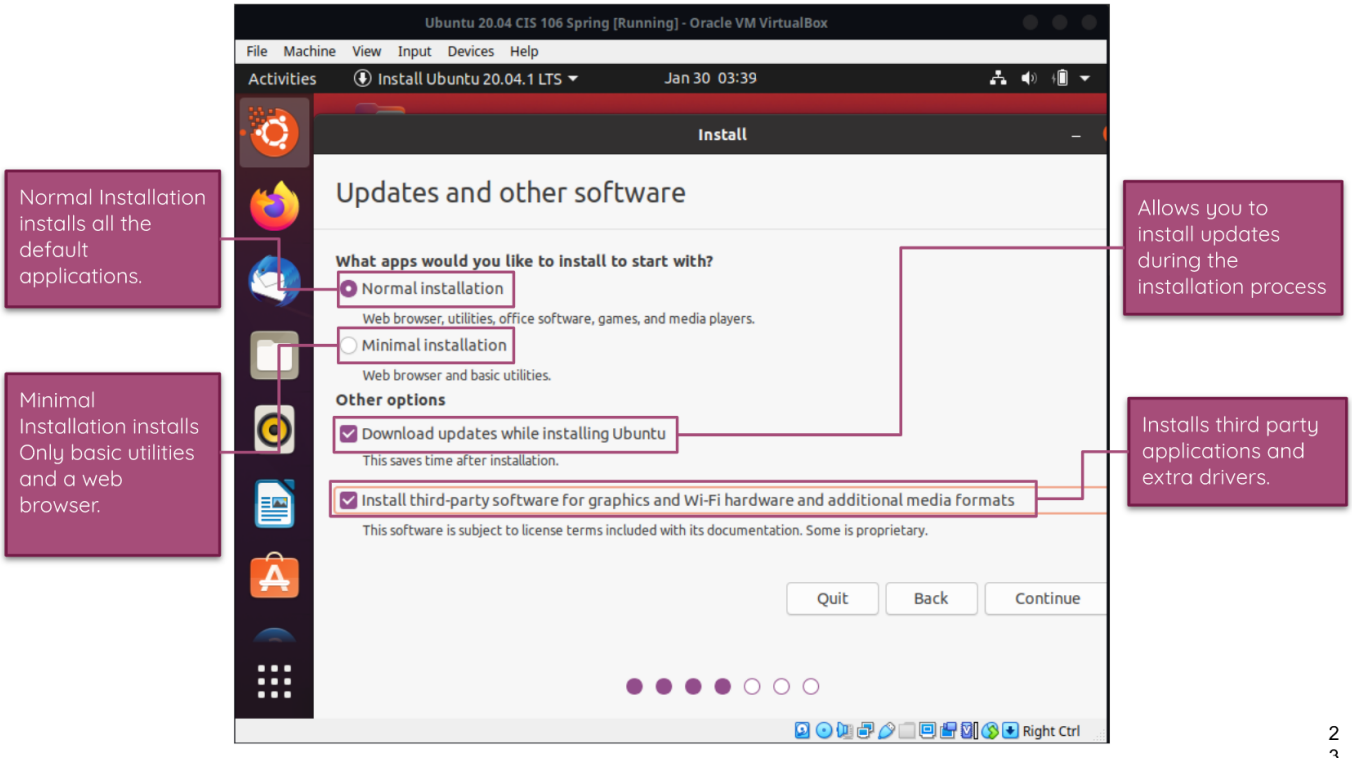


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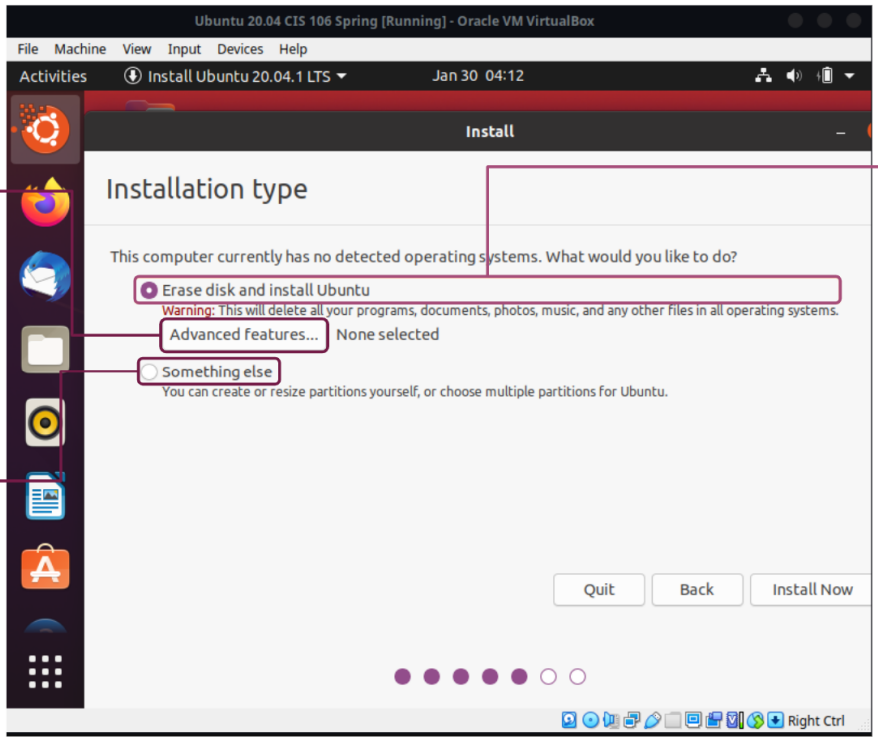
**Advance features** Allows you to use LVM, disk encryption, and ZFS as the file system.

**Something else** Allows you to partition your hard drive as you desire.




**Erase disk and install Ubuntu** will erase and format the virtual hard drive to use Ubuntu

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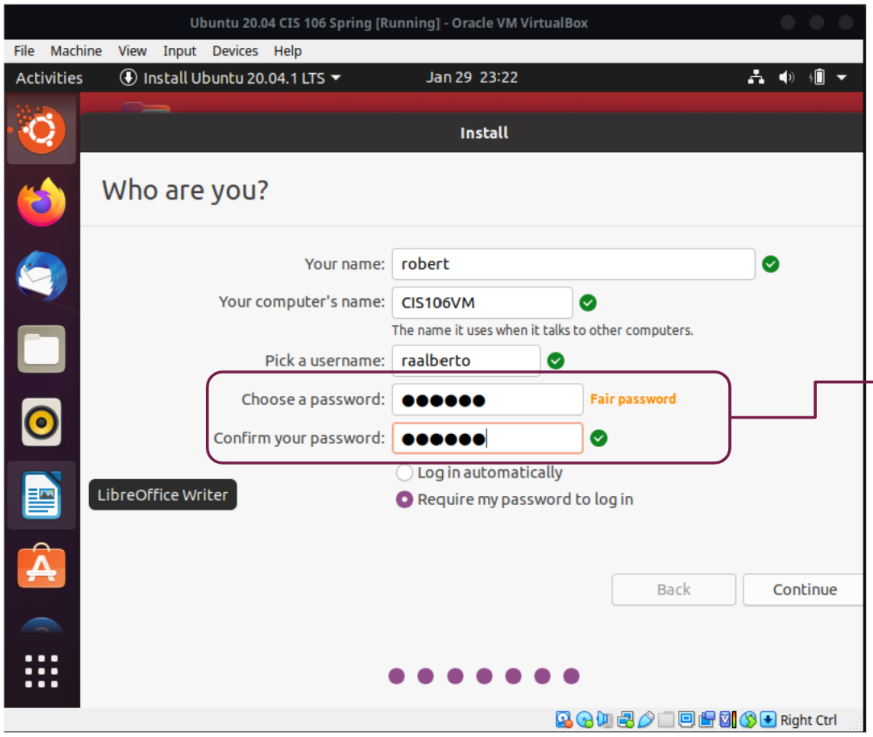
**Ubiquity's Who are you?** Screen allows you to enter your computer's information. Refer to slide 10 where you wrote down you username and password. To view this information you can click on machine > Settings > Details.




Notice that Ubiquity notifies you of the strength of your password.

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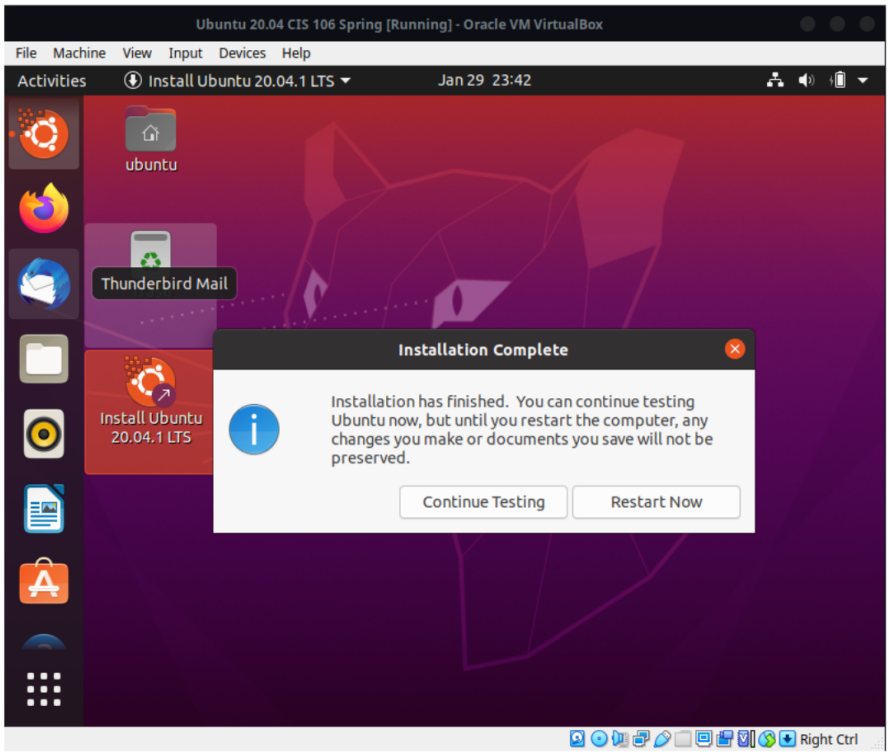
After the installation is complete, you can continue testing the Ubuntu or you can reboot to start using Ubuntu

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What is Raspberry Pi?

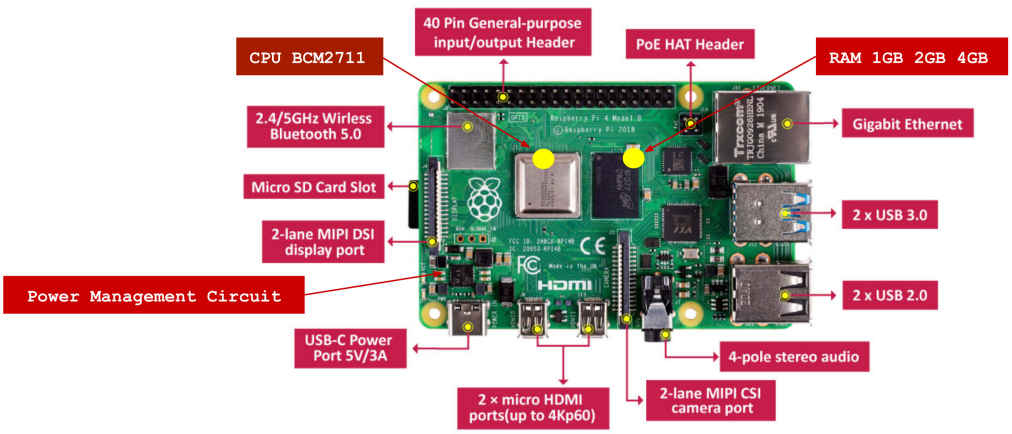
- Raspberry PI - a low cost, credit-card sized computer that plugs into a computer monitor or TV, and uses a standard keyboard and mouse.

**Raspberry Pi Foundation**

- The Raspberry Pi Foundation is a registered educational charity based in the UK, and their goal was to advance education in the field of computer science and related subjects.

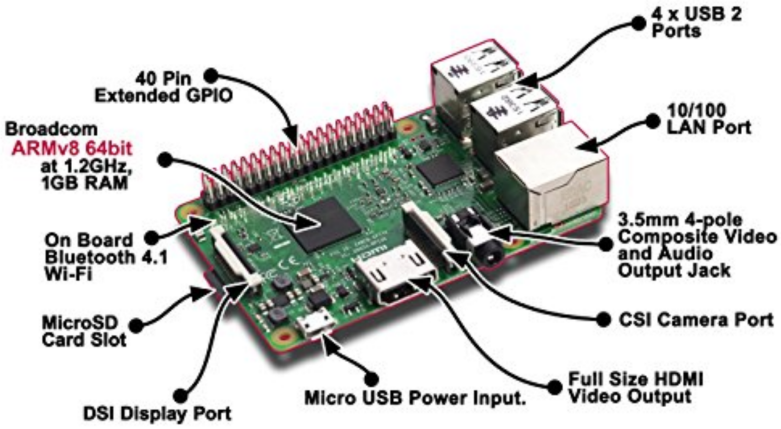
**Different Models of Raspberry Pi**

- **Raspberry Pi 4**



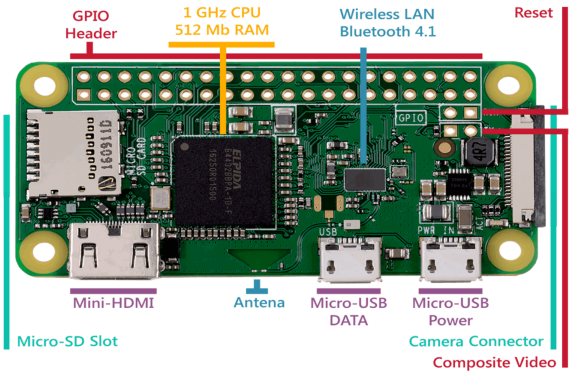
- **Raspberry Pi 3**

# The components of the Pi | Raspberry PI 3



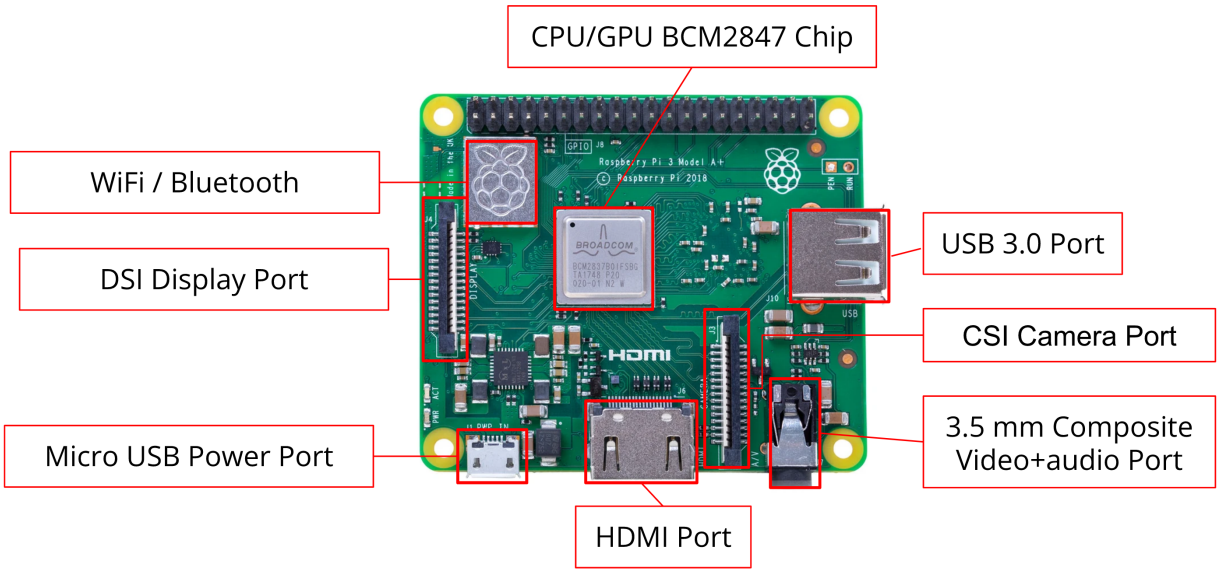

- **Pi Zero W**

# The components of the Pi Zero W




- **Pi 3 A+**

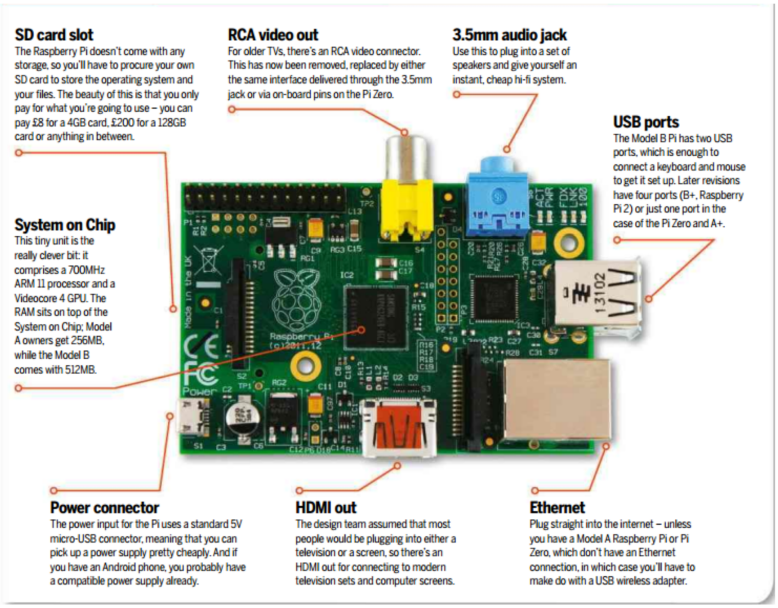
# The components of the Pi 3 A+




- **Raspberry Pi 400**
  - Has the same components as Raspberry Pi 4 placed inside a keyboard housing
  - Great choice for those who will be using Pi as an everyday computer.

**First Model of Raspberry Pi**

# A look at the first model of the Raspberry Pi




**Hardware That Is Needed for Raspberry Pi...**

Raspberry Pi

Pi Case

Pi Power Supply


Micro SD Card

HDMI Cable

Mouse and Keyboard

USB Micro USB Adapter

HDMI Adapters

Controller

USB Hub

Monitor

**Main Components are:**

- Raspberry Pi
- Pi Case
- Pi Power Supply
- Micro SD Card
- HDMI Cable

**Software That Is Needed for Raspberry Pi...**

- Raspberry Pi Imager

**Different Operating System for Raspberry Pi**

- Ubuntu
- Kali Linux

- Diet Pi
- Arch Linux
- Elementary OS
- Manjaro
- Windows 10
- Android

**Installation**

- Installing Ubuntu in Raspberry Pi

**5 Projects You Can Do With Raspberry Pi**

- Build a network game server
- Build a personal cloud
- Add a button to your Pi
- Make an old printer wireless
- Build a media center that plays files from a file server or media server