



**Passerelles
numériques**
A Gateway for Life



OS & Maintenance

Chapter 4 – Windows Installation



Objectives



- ❑ **Things you need to know before setup Operating system**
 - ✓ Understanding Windows 10 Editions
 - ✓ Understanding Windows Licenses
 - ✓ System requirement for Windows 10
 - ✓ Get to know Administrator User
- ❑ **Understand how to install windows on a Computer**
 - ✓ Install Windows 10 using CD
 - ✓ Install windows 10 using USB
- ❑ **Understand how to install windows on VirtualBox (Virtualization)**

Things you need to know before setup OS



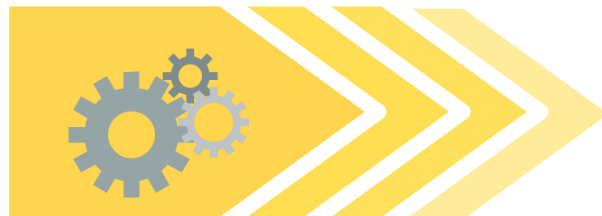
Understanding Windows 10 Editions

Windows 10 Home, Enterprise, Professional



Understanding Windows Licenses

How to buy license, license pricing, checking license



System Requirement for Windows 10

RAM, Hard disk space, CPU,...



Get to know Administrator User

Managing user, Administrator, Root



Understanding Windows 10 Editions

Commonly, there are *5 editions* of Windows 10:



The best
Windows
ever keeps
getting better



A solid
foundation for
every
business



Designed for
people with
advanced
workloads or
data needs.



The foundation
for businesses
and enterprises
who need
security,
reliability and
management
controls



For
organizations
with advanced
security and
management
needs

LICENSED

Understanding Windows Licenses

Microsoft Windows has two different type of License

- Windows **Client** License
- Windows **Server** License



Windows Client License

There are three type of Windows Client Licenses:

- Retail License
- OEM License
- Volume License

LICENSED



Understanding Windows Licenses



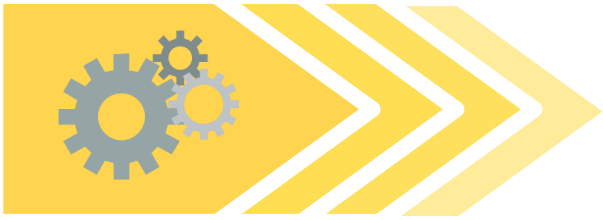
Retail: This license is called Full Packaged Product (FPP), commonly known as a “boxed copy”. This license type has one license key (product key). You can use this key on another computer as long as you deactivate the old device.



OEM (Original Equipment Manufacturer): Provided by the system manufacturer. This license type **cannot use it on another computer**. Also, if this Windows version is Windows 8 or Windows 10, the license key is embedded in **UEFI/BIOS firmware chip**.



Volume: This type of license is an institutional license type, such as schools and government offices. These non-resale licenses provide common use. This means that Windows is activated on **multiple computers** with **a single license key**.



System Requirement for Windows 10

System requirement for installing windows 10:

Processor:	1 gigahertz (GHz) or faster processor
RAM:	1GB for 32-bit OS or 2GB for 64-bit OS
Hard drive space:	16GB for 32-bit OS 32GB for 64-bit OS



Get to know Administrator User

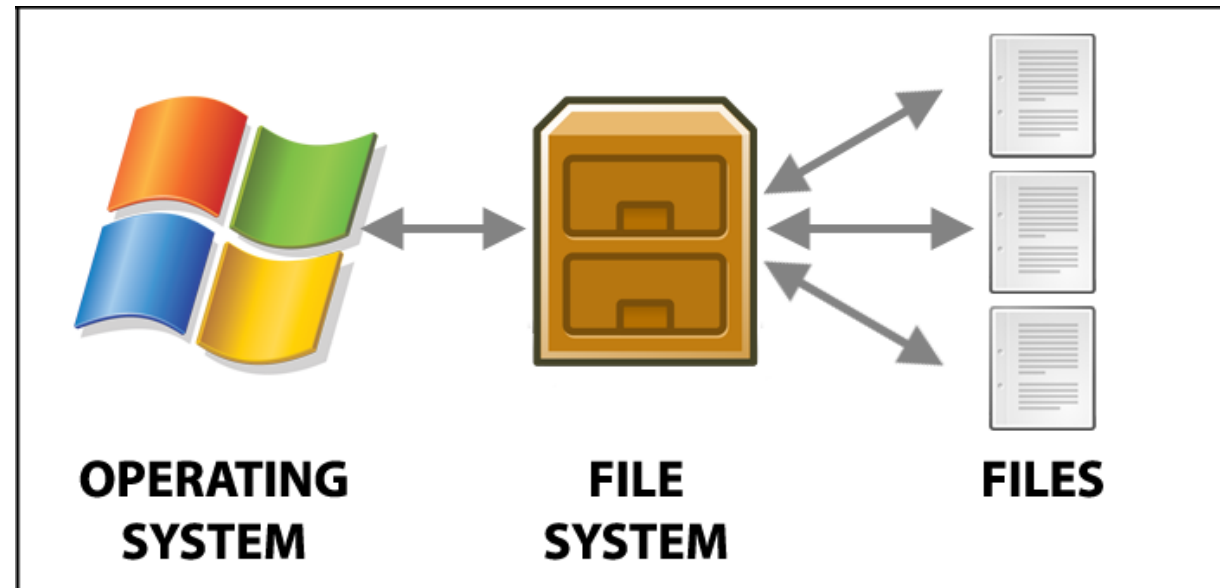


Each Operating System always has special user accounts used for System Administration. Depending on the operating system, the actual name of this account might be: **root**, **administrator**.

- ✓ **Administrator account** is to allow making system wide changes to the computer (Windows).
- ✓ **Root** is the conventional name of the user who has all rights or permissions (to all files and programs) in whole systems (Linux).

Understanding File System

- ❖ In a computer, a **file system** (sometimes written *filesystem*) is the way in which files are named and where they are placed logically for storage and retrieval.
- ❖ There are many types of file system such as EXT2, EXT3, EXT4, FAT, NTFS....
- ❖ There are some file systems that Windows support natively: FAT, FAT32, NTFS.....



Understand how to install Windows on a Computer



Materials needed for setup new OS on a laptop/desktop:

- Bootable media (USB Flash, CD, DVD...)
- Laptop/desktop

Step to setup new OS on computer:

1. Connect bootable media to computer
2. Change boot option on computer to boot from bootable media instead of HDD
3. After that start to install a new OS to computer hard disk drive



How to install Windows on **VirtualBOX**

What is VirtualBox?



VirtualBox is a free virtualization product for enterprise and home use, that allow users to easily run multiple *guest operating systems (virtual machine)* on a *single host*.

VirtualBox runs on many platforms such as Windows, Linux, and Macintosh (Mac) Operating system.



How to install Windows on VirtualBOX

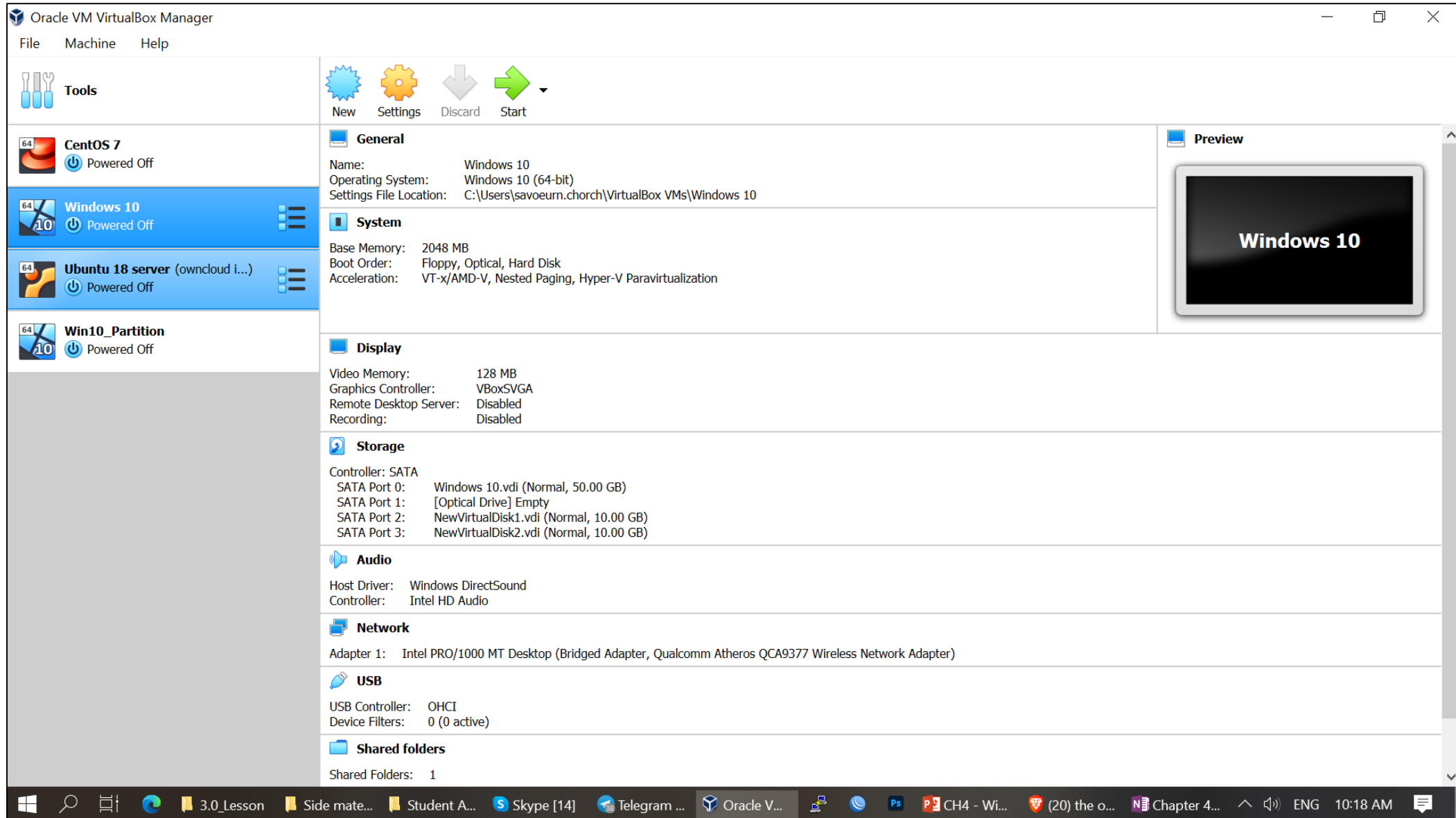
Materials needed for setup new OS on VirtualBox Software:

- A Laptop/desktop with VirtualBox installed
- Windows OS image file (ISO)
- Internet (optional)

Step to setup new OS on VirtualBox:

1. Open VirtualBox software on your computer
2. Create new virtual machine then select type of OS that you want (Windows, Linux, Mac etc...)
3. Define system properties of virtual machine (RAM, HDD, CPU, Network...)
4. Attach OS image file to that virtual machine for booting process
5. Turn on the virtual machine, then start setup the OS into that virtual machine

How to install Windows on VirtualBOX



The screenshot shows the Oracle VM VirtualBox Manager interface. On the left, a list of virtual machines is displayed: CentOS 7, Windows 10 (selected), Ubuntu 18 server, and Win10_Partition. The main pane shows the configuration for the selected Windows 10 VM, organized into several sections:

- General:** Name: Windows 10, Operating System: Windows 10 (64-bit), Settings File Location: C:\Users\savoeurn.chorch\VirtualBox VMs\Windows 10.
- System:** Base Memory: 2048 MB, Boot Order: Floppy, Optical, Hard Disk, Acceleration: VT-x/AMD-V, Nested Paging, Hyper-V Paravirtualization.
- Display:** Video Memory: 128 MB, Graphics Controller: VBoxSVGA, Remote Desktop Server: Disabled, Recording: Disabled.
- Storage:** Controller: SATA, SATA Port 0: Windows 10.vdi (Normal, 50.00 GB), SATA Port 1: [Optical Drive] Empty, SATA Port 2: NewVirtualDisk1.vdi (Normal, 10.00 GB), SATA Port 3: NewVirtualDisk2.vdi (Normal, 10.00 GB).
- Audio:** Host Driver: Windows DirectSound, Controller: Intel HD Audio.
- Network:** Adapter 1: Intel PRO/1000 MT Desktop (Bridged Adapter, Qualcomm Atheros QCA9377 Wireless Network Adapter).
- USB:** USB Controller: OHCI, Device Filters: 0 (0 active).
- Shared folders:** Shared Folders: 1.

On the right, a preview window shows the Windows 10 installation screen. The bottom of the image shows the Windows taskbar with various open applications like 3.0_Lesson, Side mate..., Student A..., Skype [14], Telegram, Oracle V..., CH4 - Wi..., (20) the o..., and Chapter 4...

Activity –Team work

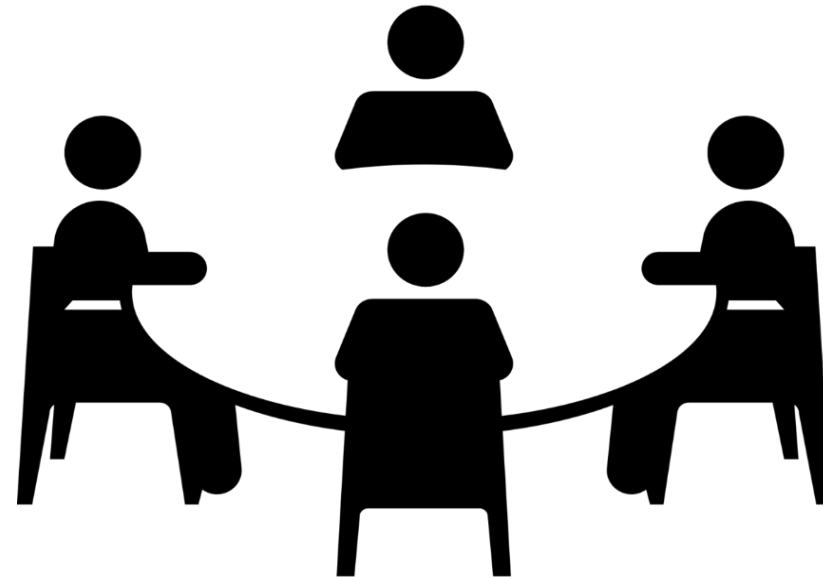
- ❖ Divide students to work with pairs
- ❖ Let all students with their pairs to discuss about how to install Windows Operating System from DVD and USB.



Technical words

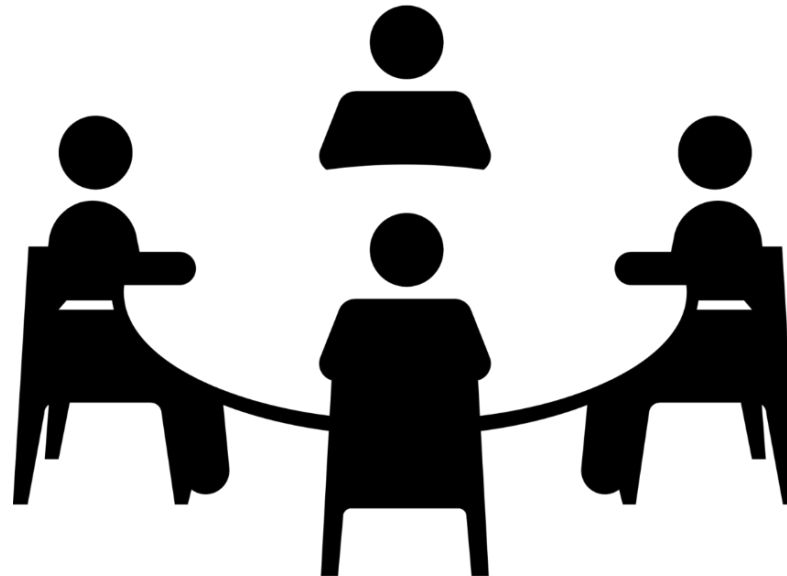
Discuss and explain all these key words with your classmates:

- ☐ Partitioning
- ☐ File System
- ☐ License
- ☐ Virtual Machine
- ☐ Host Machine
- ☐ Administrator
- ☐ Primary partition
- ☐ Extended partition



Practice

- ❑ Divide students into 5 groups
- ❑ Request 5 Laptops for students practice in the real work
- ❑ Request CD and USB flash for students create bootable



Any Questions?

