**LAB0: Getting start**

Welcome student who enrolled in the Big Data Engineer class of 2025/1 semester. After every class, we will provide a LAB section: Hands-on guidelines, walkthrough for you. As we are going to learn big data tools, you need to know that most companies usually hire workers to use their tools and frameworks in production. So, **there's no need for knowing everything for the first time**. This LAB section also holds the fact. You don't need to know how to set up those complex frameworks. We expect you to be able to design workflows, select tools, and use the tools we've given inside Virtual Machine (VM).

Briefly, VM is a system which emulates another computer system (guest) inside your computer (Host). The guest system can use the physical hardware of the host such as CPU, RAM, ROM, etc. while both systems are independently running different OS and environments.

There are many desktop virtualization software vendors: Oracle, VMware, QEMU, etc. We **recommend** you to install VMware Workstation Pro (don't worry, It's free) for Windows/Linux users. The guideline below will show you how to install it. Moreover, we will tell you how to install a simple VM via ISO image files (.iso).
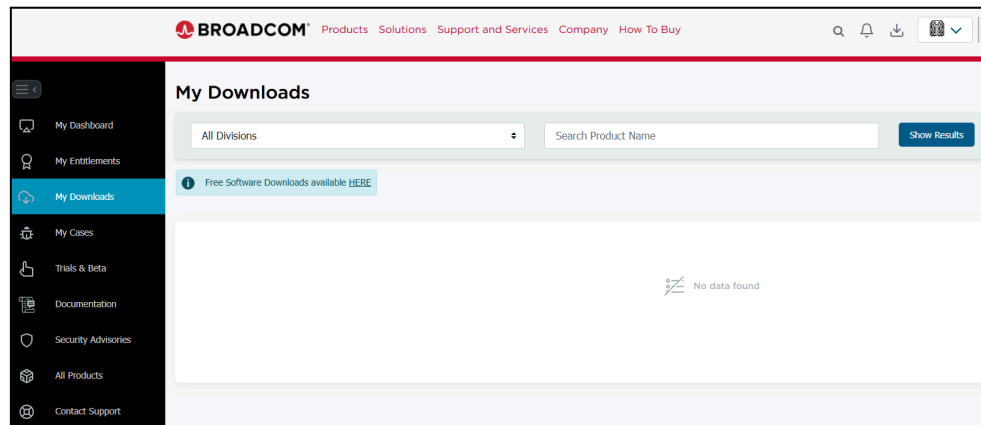
1. Go to this website: Fusion and Workstation | VMware and clicking "VMware Workstation Pro for PC"
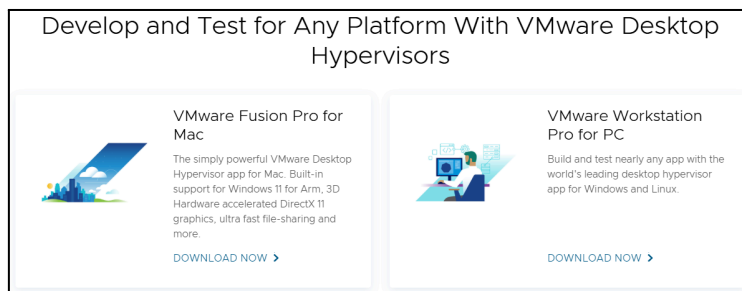

2. The website will redirect you to BROADCOM login. Register your account if you don't have one.
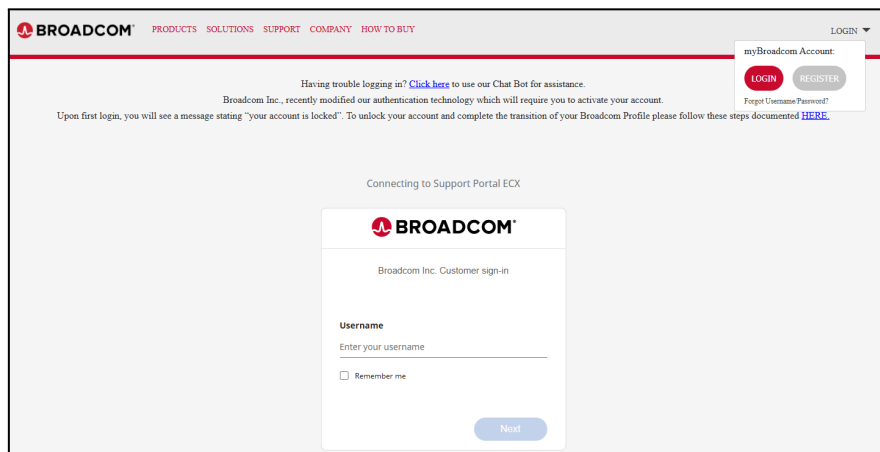
3. After you have registered and verified your account, you can click HERE at the "FREE software downloads" info box in the "My Downloads" page.


4. Click for VMware Workstation Pro and install the version that is compatible with your system. We recommend you to install stable version which has "Release level info"
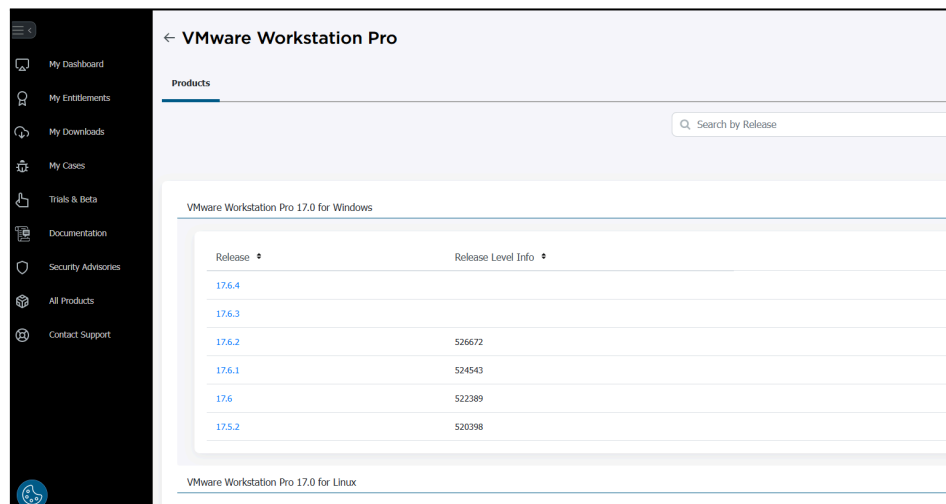

5. Read the terms and conditions and agree with them by checking the box. Then, you can download VMware workstation Pro (4XX MB). If you can't download VMware from registration failures or any problem, here's a spare .exe file.
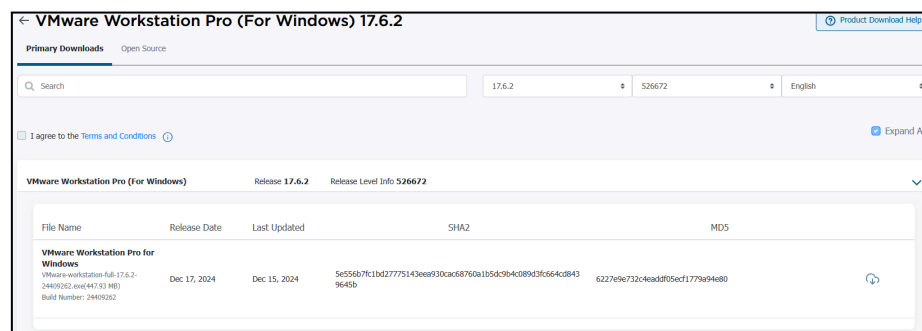
6. After downloading, you can install VMware workstation Pro via that executable file. We recommend you select a VM path location with plenty of disk space. Here's the first page of VMware workstation Pro
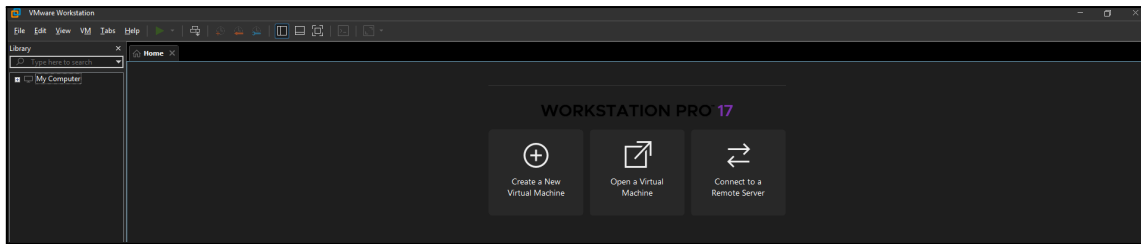
7. Download ISO image file which contains target OS data. For this subject, we will use Ubuntu 24.04.2 LTS (5.9 GB) from the official website.
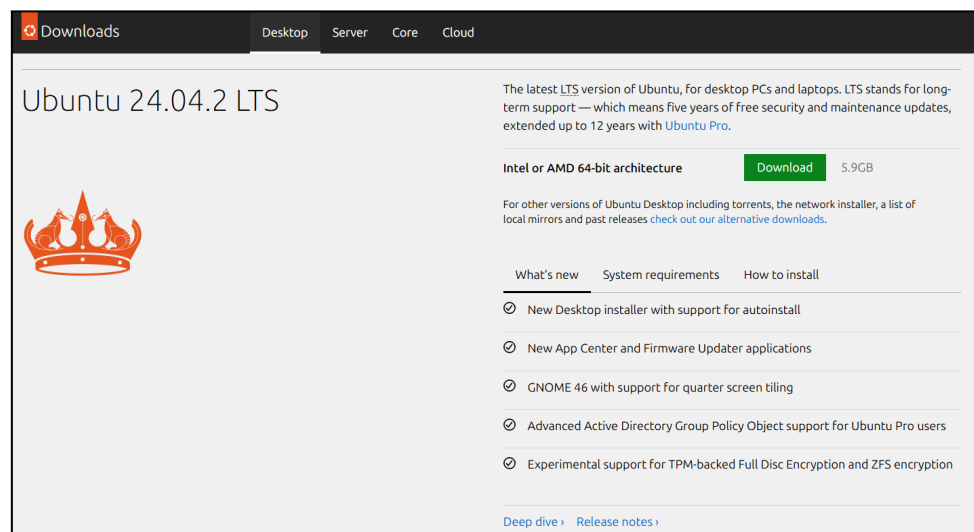
8. Click "create new virtual machine" on VMware. And then, continue the installation process until it finishes. The last steps of installation may ask for resource customization, you should give at least 2 Cores, 40 GB of ROM, and 4 GB of RAM to Ubuntu to prevent bottlenecks.
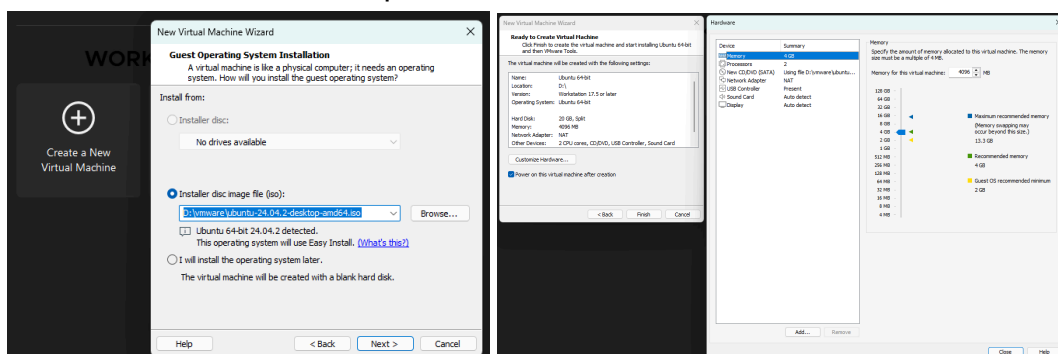

9. Now, you can start Ubuntu VM on VMware. You can run a VM to install dependencies, and practice for terminal commands such as "cd", "ls", "rm", etc.

Supplementary section (Homework, not graded)

For further labs, we may introduce you to our complete VM which contains all necessary and configuration. So, you can follow these steps to install our VM into your machine. (NOTE: Our VM named student.ovf and supported files are [here](). Please download them to your machine.)

1. Go to File -> Open… -> select environment files (student.ovf) to import the lab VM. This VM requires 100 GB Disk space, 8 GB RAM, and 2 cores. Please try to choose a computer/disk path which can afford these requirements.
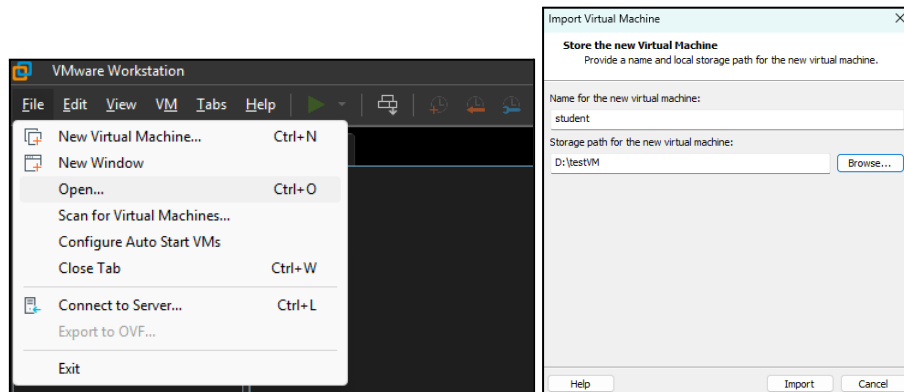
2. After clicking the Import button, you have to wait around 5-20 minutes to install the system. We recommend you to start the system and log in as user "student" with a password "kmutt" - testing it works. Then, you're good to go! :)