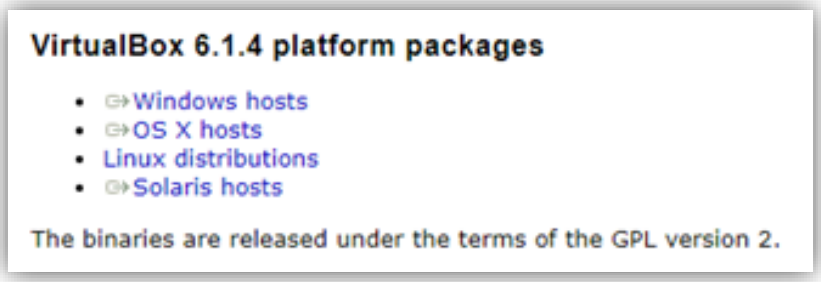
TEK5030 Virtual Machine setup

Step 1: Download and install Oracle VM VirtualBox with Extension Pack

Go to https://www.virtualbox.org/wiki/Downloads.

Choose and download the appropriate VirtualBox installer for your computer.



Also download the Oracle VM VirtualBox Extension Pack.

The following youtube video explains in detail, for Windows 10, how to get VirtualBox up and running, how to activate the Extension Pack in VirtualBox and how to make the program VBoxManage available from the windows command line.

Install Oracle Virtualbox 6, Extension Pack and VBoxManage on Windows 10

Step 2: Download the installation iso

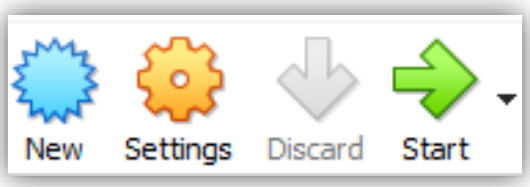
Download the virtual machine installation iso from the TEK5030 sharepoint site.

Save the file somewhere convenient.

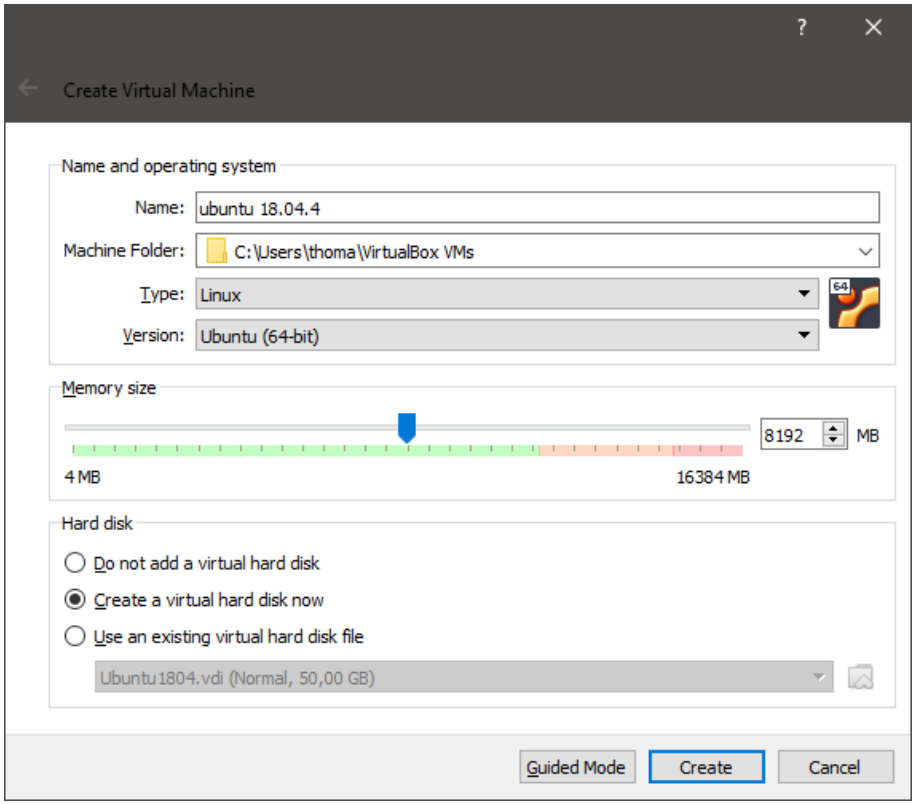
We will use this to set up our virtual machine.

Step 3: Create a virtual machine and mount the .iso file

In Oracle VM VirtualBox Manager.

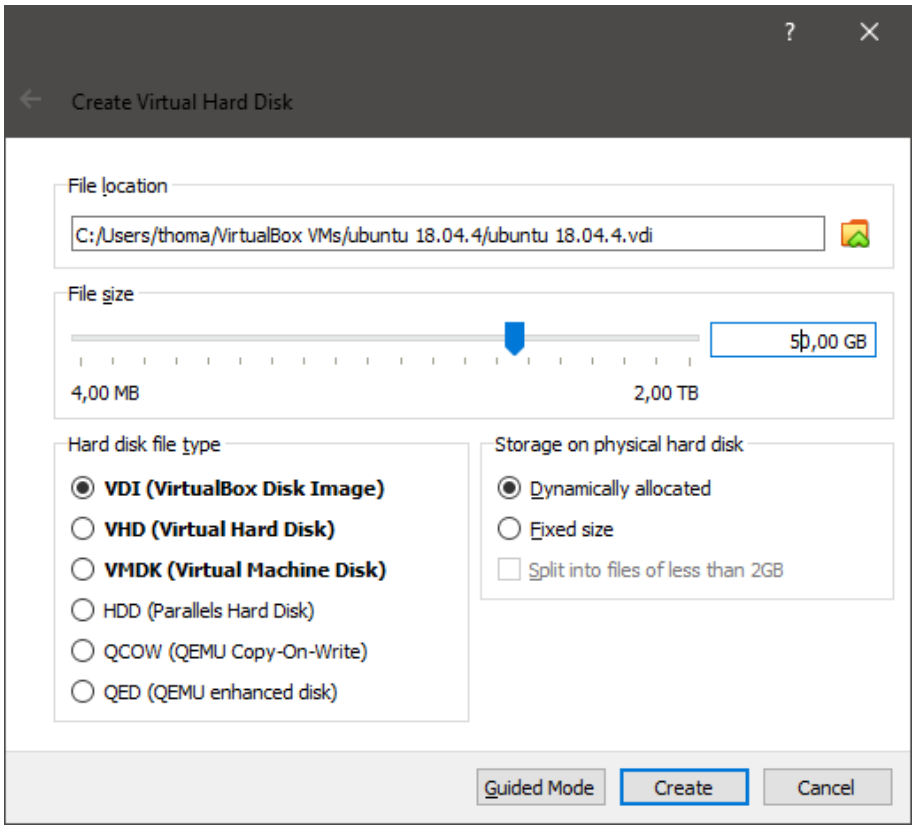


Press “New” and “Expert Mode” to create a new virtual machine.

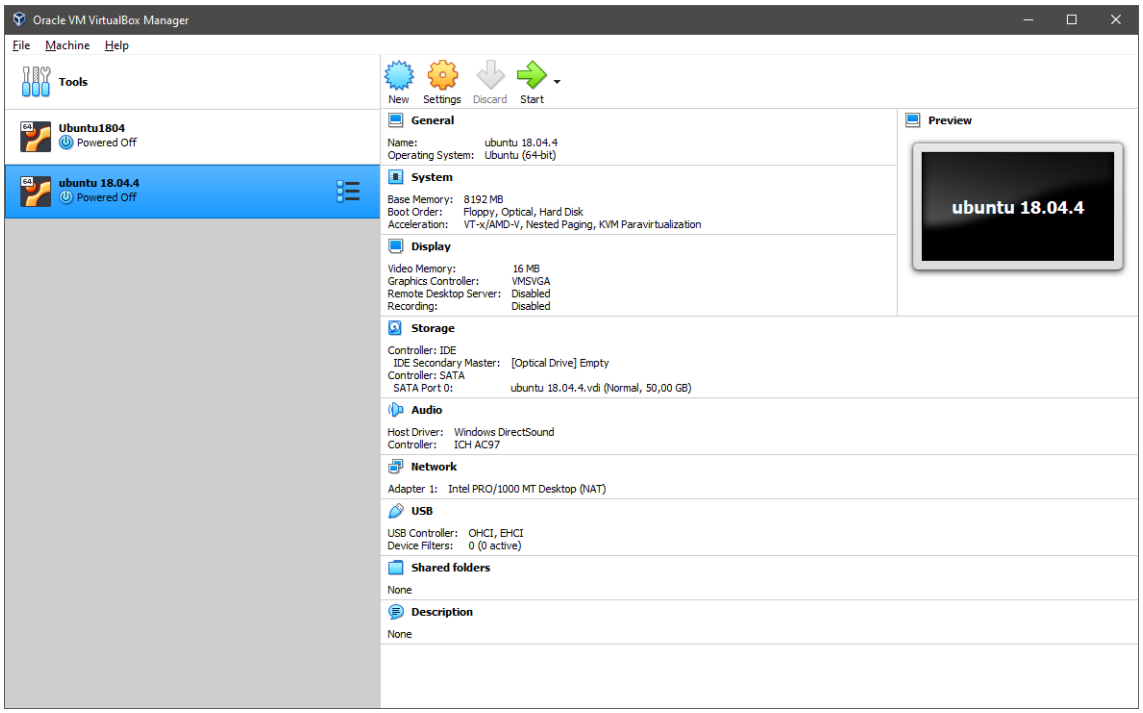


Give the VM a suitable name like “ubuntu 18.04.4”, chose its type to be “Linux” and version to be “Ubuntu (64-bit)”. Set the amount of RAM that should be available to this VM (does not have to be 8192MB).

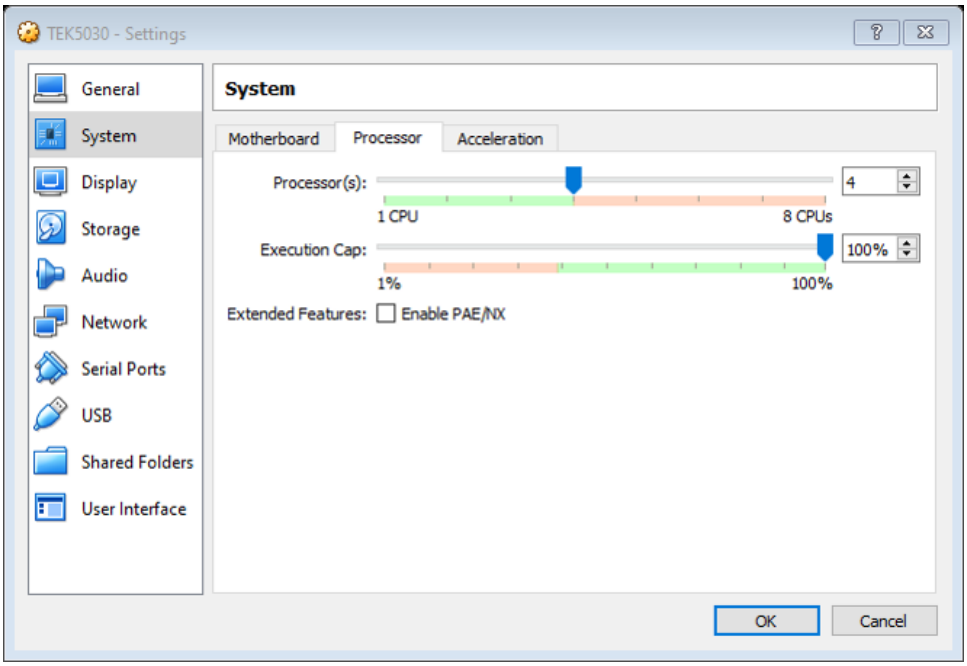
Then press “Create”.



Increase the “File size” from the default 10GB to at least 30GB. Continue by pressing “Create” and your newly created VM should appear in the Manager.



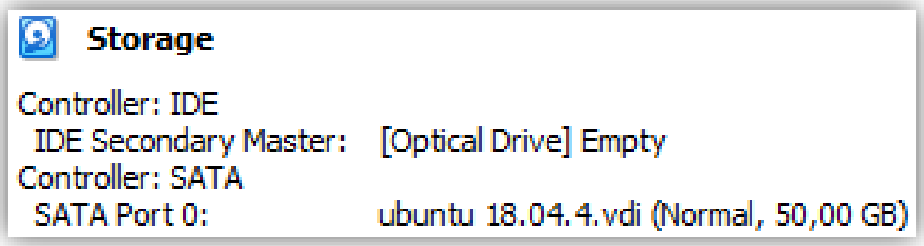
Choose “Settings” for your virtual machine, and then “System”, “Processor”.



Choose the number of processors, at least 2. We have used 4.

Next, we want to boot the virtual machine we created with the downloaded .iso file.

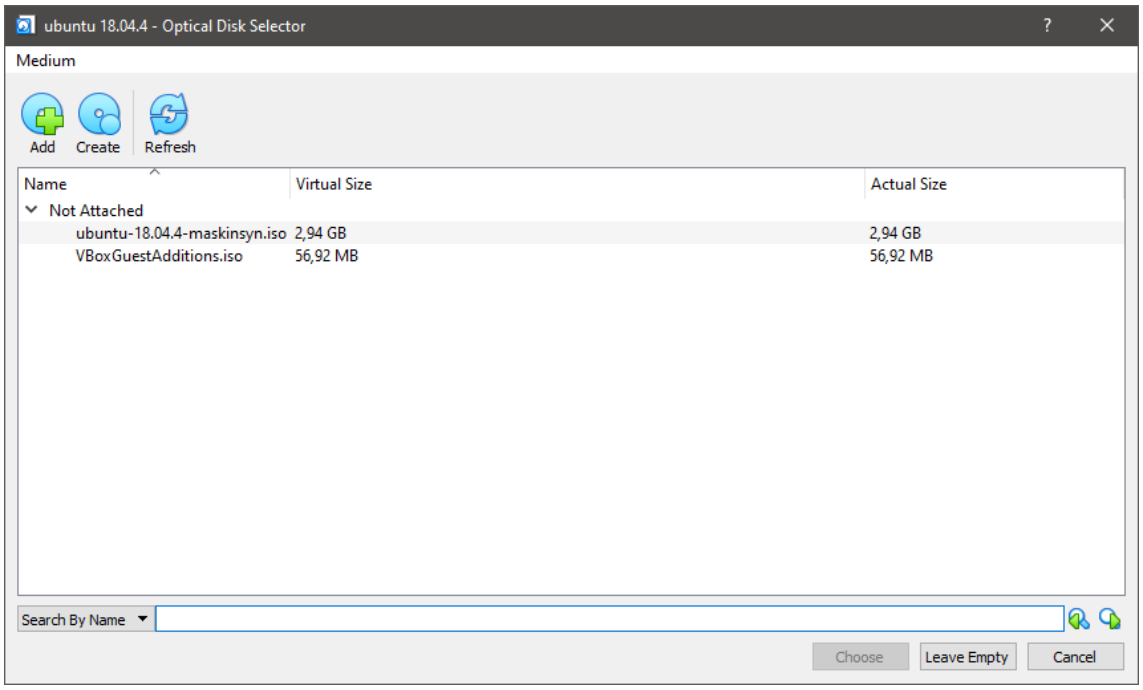
The Oracle VM VirtualBox Manager displays several fields describing the virtual machine. One of these are “Storage”.



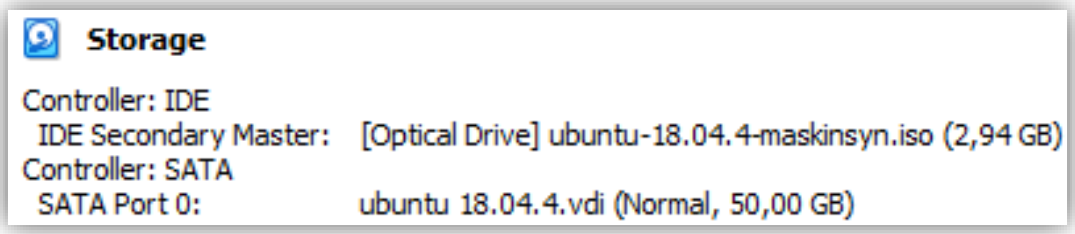
Left click on the text “[Optical Drive] Empty”.

This opens a small menu where we can click “Choose/Create a disk image…”.

This opens the “Optical Disk Selector” where we can “Add” and “Choose” the .iso file we downloaded in **Step 2**.

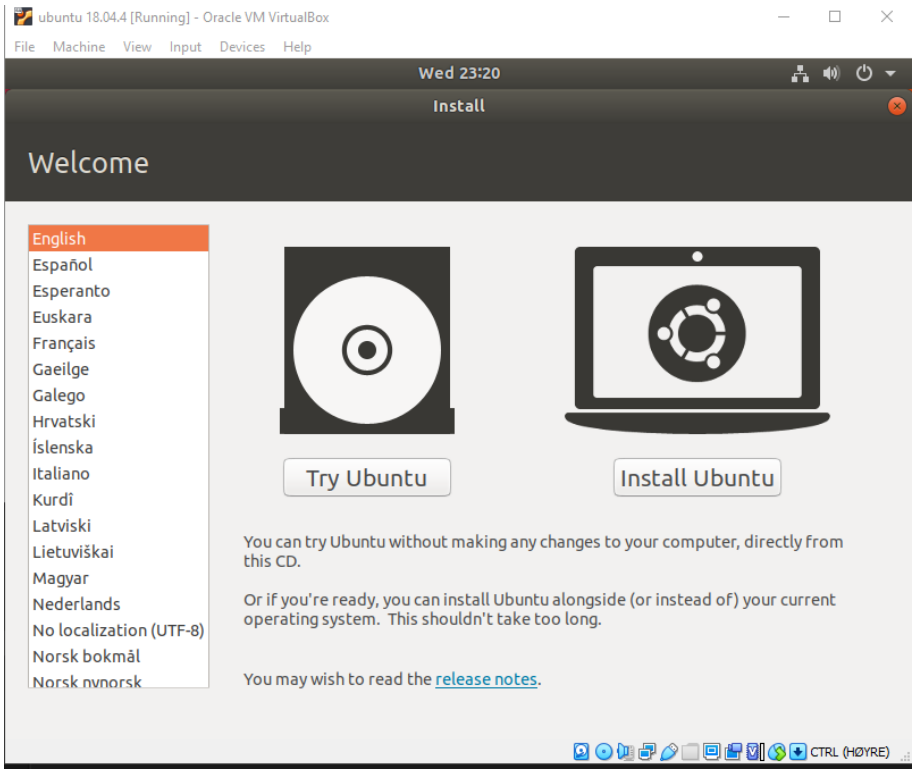


After clicking “Choose” the Storage field in the VM Manager should look like this:



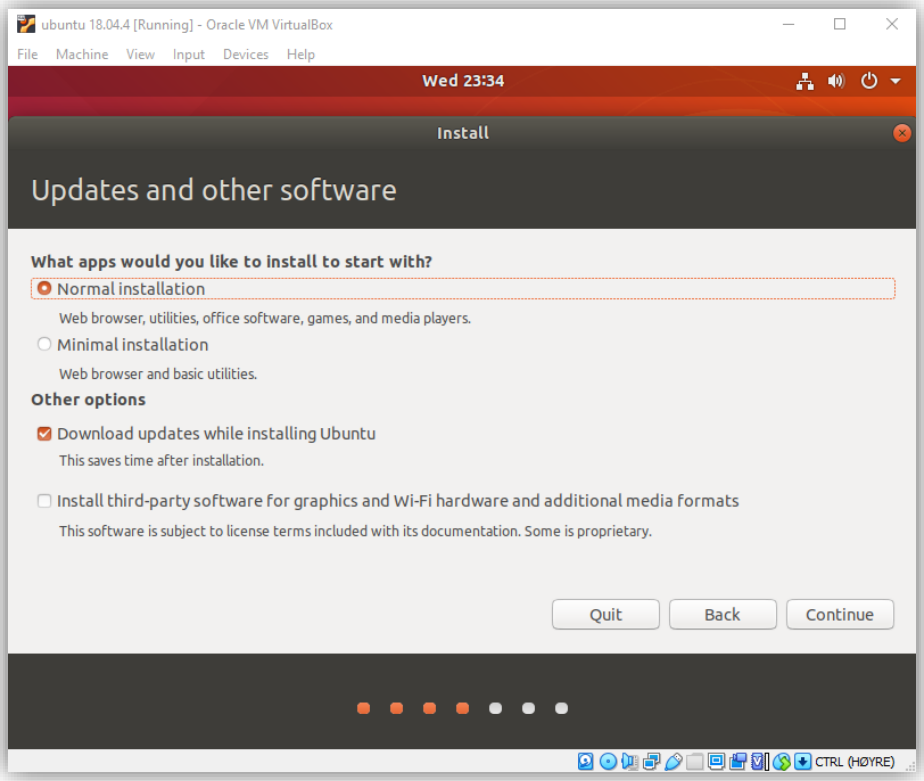
Now we can Start our virtual machine.

Feel free to close the popup notifications about “Auto capture keyboard” and “mouse pointer integration”. After a little while you should get to the installation window.

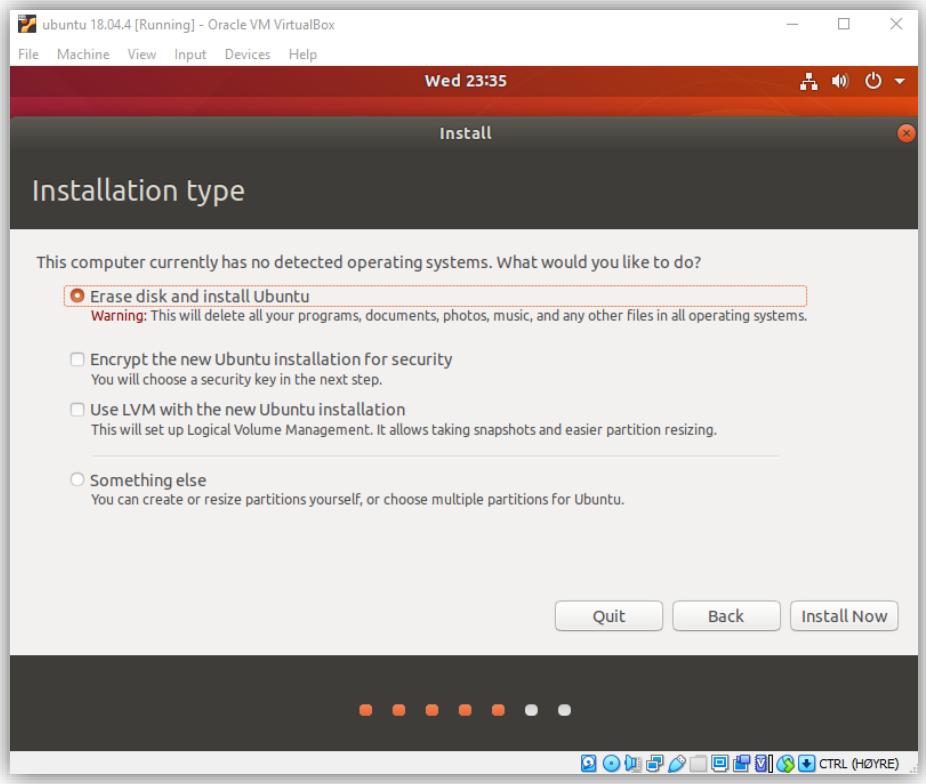


Choose “Install Ubuntu”.

In the next window, feel free to choose Norwegian keyboard layout and continue.

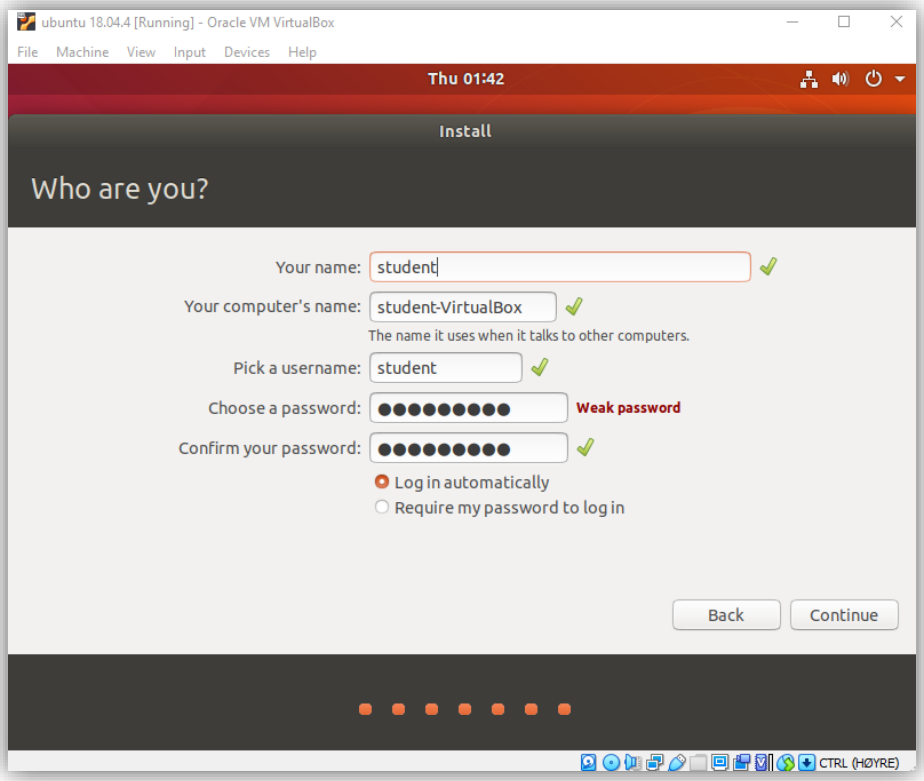


Press “Continue”.



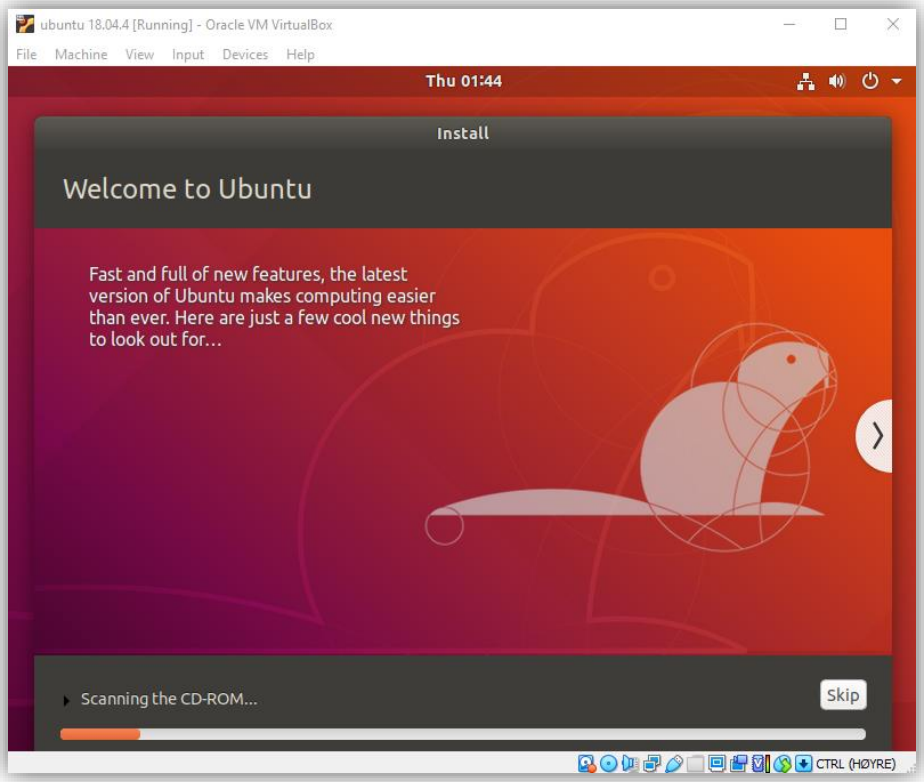
Press “Install Now” and “Continue” when questioned “Write the changes to disks?”.

In the next window choose your timezone and continue.

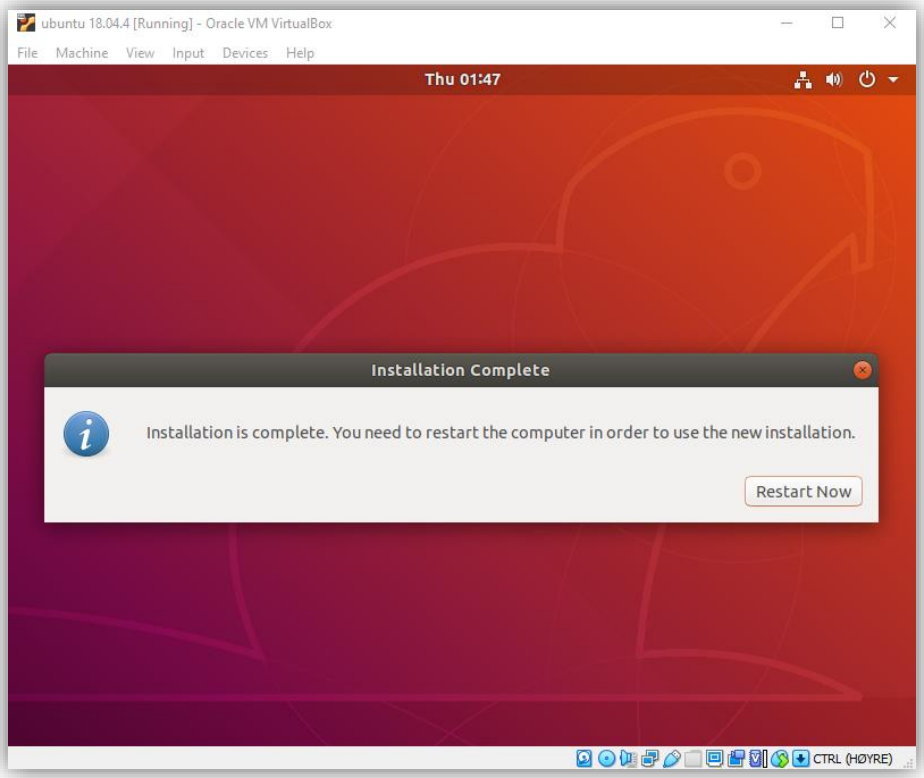


Enter your name, your computer's name, username and password.

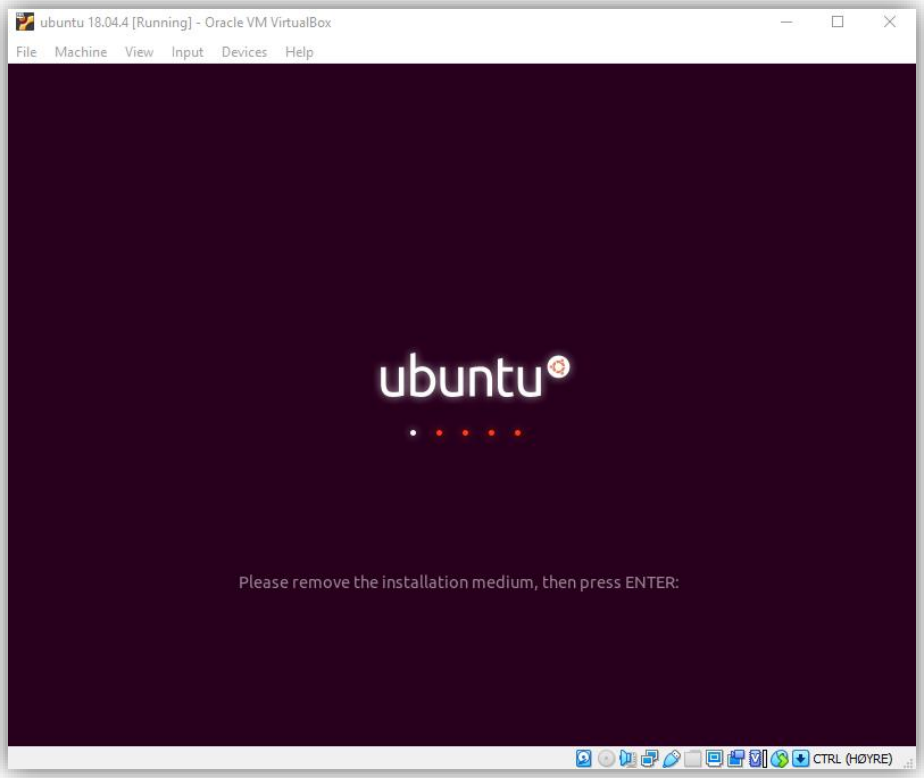
Press continue and the installation starts.



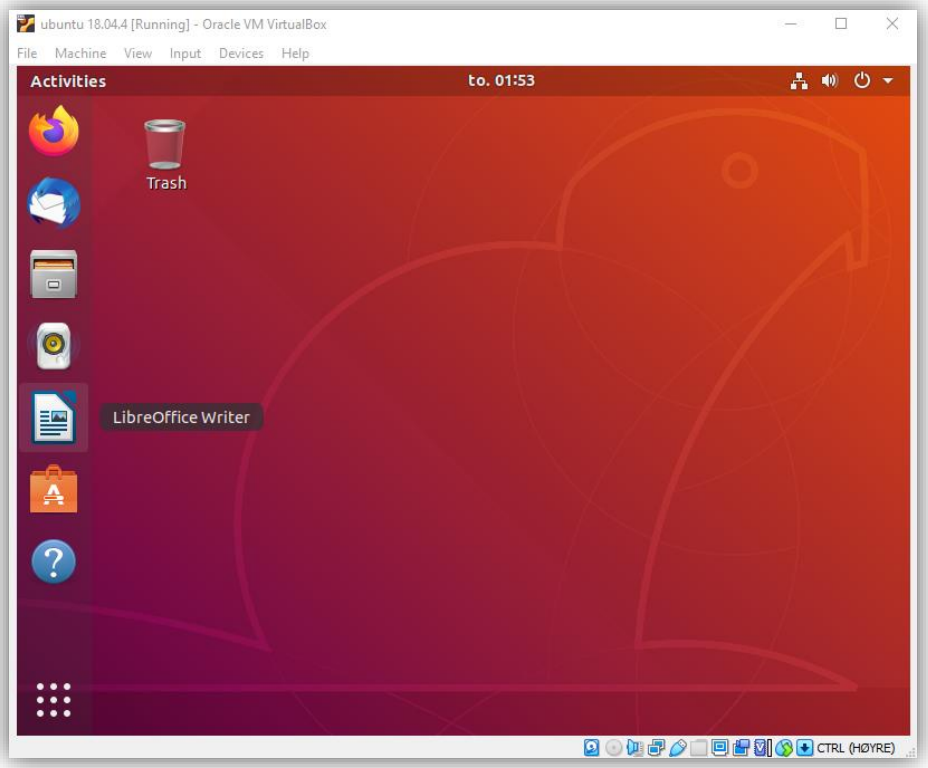
After a while, you will be requested to restart.



Press “Restart Now”.

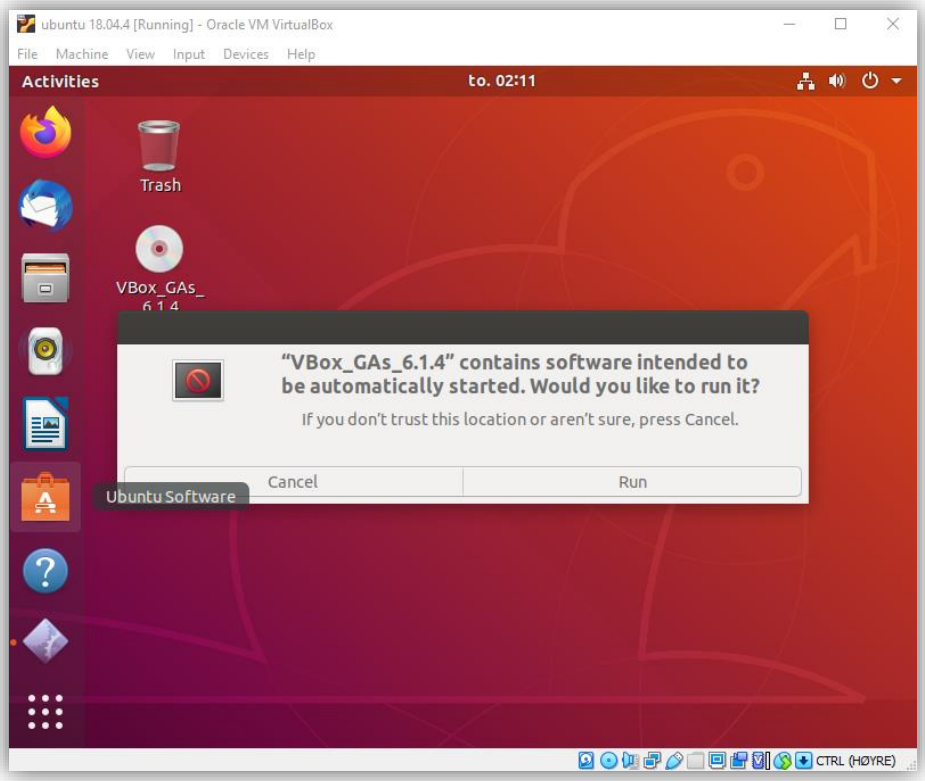


Just press enter and ubuntu should start up. After you click through the initial setup you should get to



Step 4 (Optional): Enable resizing of the VM window, if this does not work

In the virtual machine, at the bottom of the “Devices” panel click “Insert Guest Additions CD Image…”.



./

Click "Run" and enter your chosen password to install.

Now you should be able to resize the virtual machine window as you please.

Step 5: Attach a USB camera to your virtual machine

In windows this can be done from the command prompt using the VBoxManage program that was installed as part of the Extension Pack in **Step 1**.

The command
`VBoxManage list webcams`
will list up webcameras on your computer:

```
C:\Users>VBoxManage list webcams
Video Input Devices: 2
.1 "HD Pro Webcam C920"
\\?\usb#vid_046d&pid_082d&mi_00#6&22ecdcf8&0&0000#{65e8773d-8f56-11d0-a3b9-00a0c9223196}\global
.2 "Logi Capture"
@device:sw:{860BB310-5D01-11D0-BD3B-00A0C911CE86}\{4A2FEA90-B0A0-438E-8BC3-D84157660D0A}

C:\Users>
```

The command
`VboxManage controlvm "ubuntu 18.04.4" webcam attach .1`
enables our virtual machine "ubuntu 18.04.4" to operate the webcamera:

```
C:\Users>VboxManage controlvm "ubuntu 18.04.4" webcam attach .1

C:\Users>
```

Note that the virtual machine must be up and running for this to work.

See also https://scribles.net/using-webcam-in-virtualbox-guest-os-on-windows-host/

Step 6: Get started programming

To get started with labs, download and install CLion and download labs from UiO GitHub.