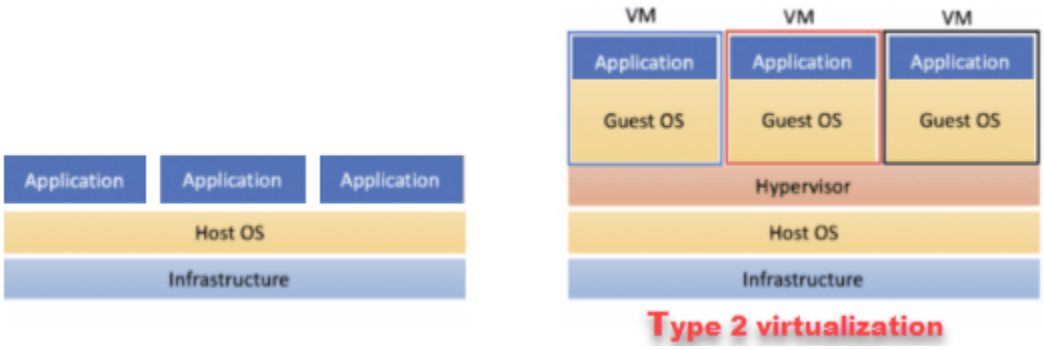
Installation

Virtualisation

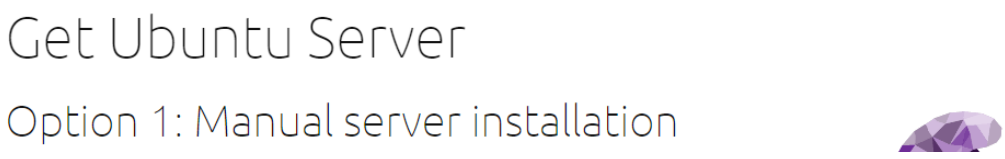
To install servers that offer services (such as a minecraft server!) you will need a server with a public IP address. Usually you would go to a cloud provider where you can rent a server for a fixed fee / month. For this course we will simulate this process by using a virtual machine.

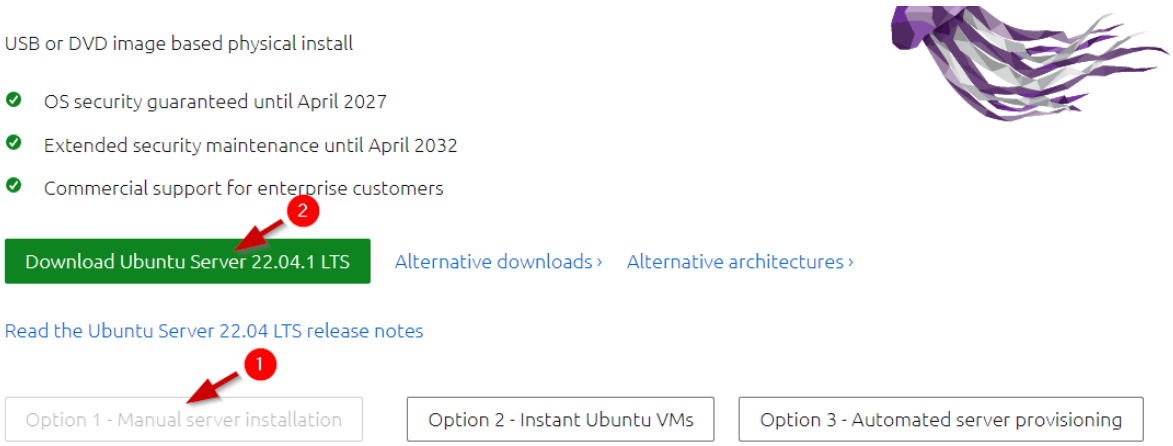
Virtualisation is a concept where you can run a computer system with an operating system virtually on another system. This makes it possible to have multiple *guest operating systems* with their own virtual hardware on one *host system*.



For this course we want to use and install the operating system Ubuntu server in a virtual environment. For this course we will use a debian based distro.

> ☰ *Download the `.iso` file for Ubuntu server using this link. A `.iso` file is an exact copy of a CD/DVD. You will use this later to install the operating system in your virtual machine.*





Virtualisation software

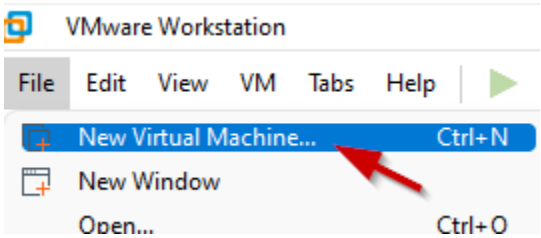
To use virtualisation there are several options. The most common virtualisation software is:

- VMware Workstation
- Virtualbox
- Hyper-V

In this course we will use and support VMware Workstation but the other software packages have the same purpose. Students of PXL University College will get a free educational license to use VMware Workstation pro through BrightSpace.

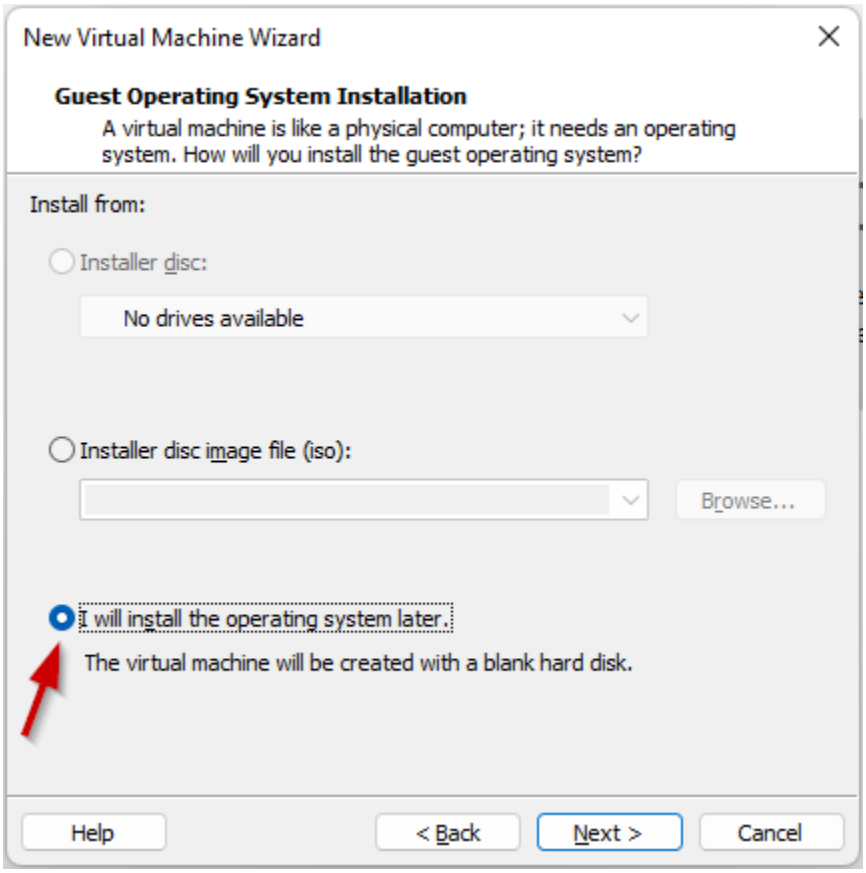
Create a new VM

To create a new virtual machine (VM) in VMWare you go to the menu `file` > `New virtual machine` . The wizard to create a new VM will appear.

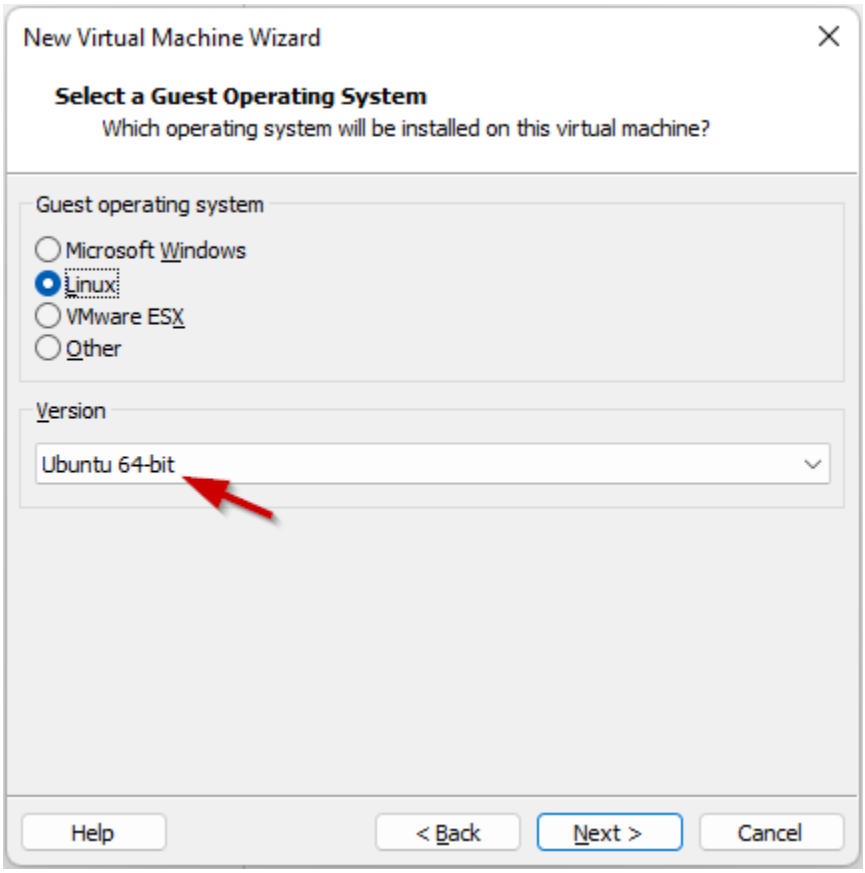


In the first screen we select the option `Typical` :

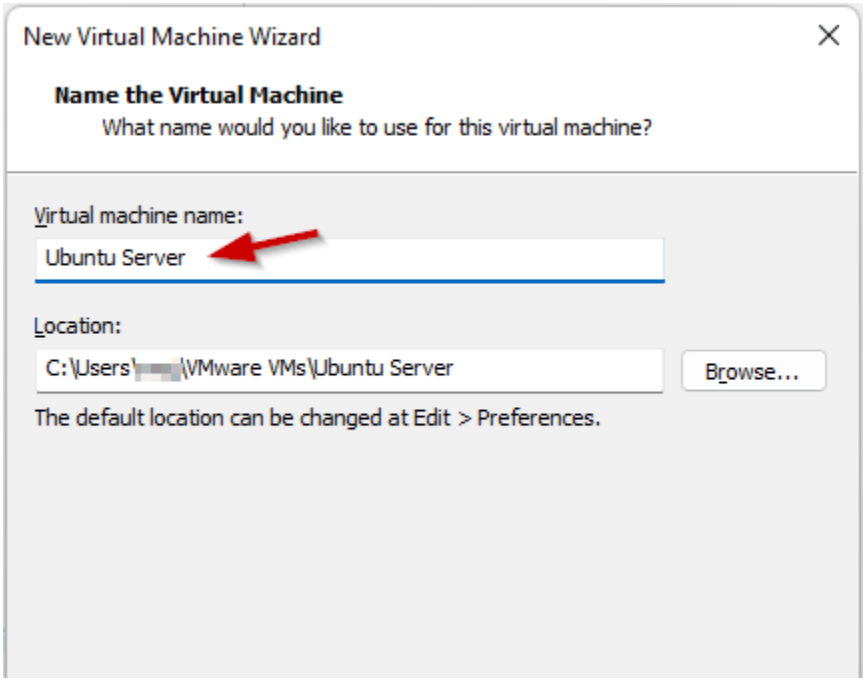
Next we choose to `install the operating system later` :

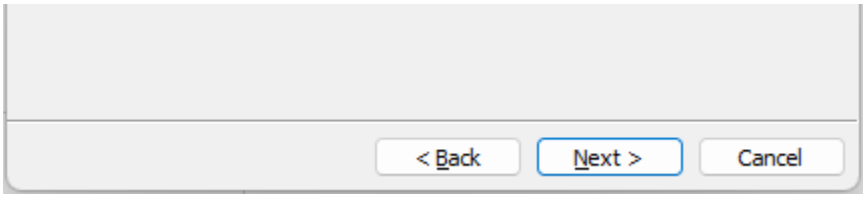


Next we choose the operating system `Linux`. In the version dropdown we select `Ubuntu 64 bit`. This is the Linux distribution that we will use during this course.

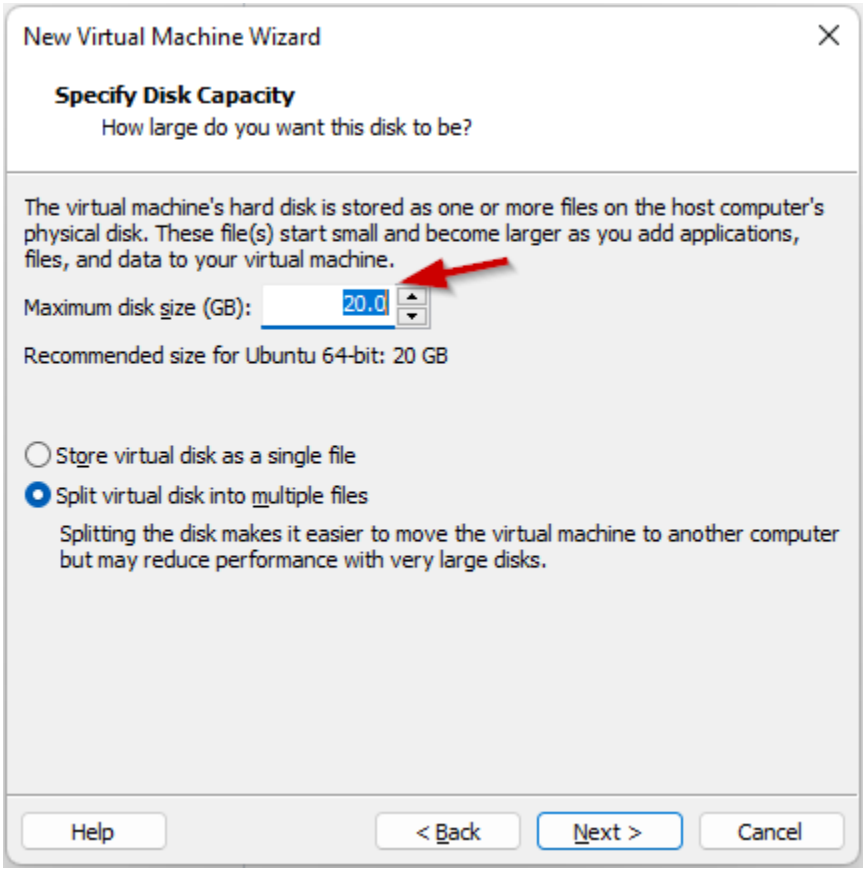


In the next screen we give the virtual machine a name. You can also specify a different folder to store the virtual machine on your computer.

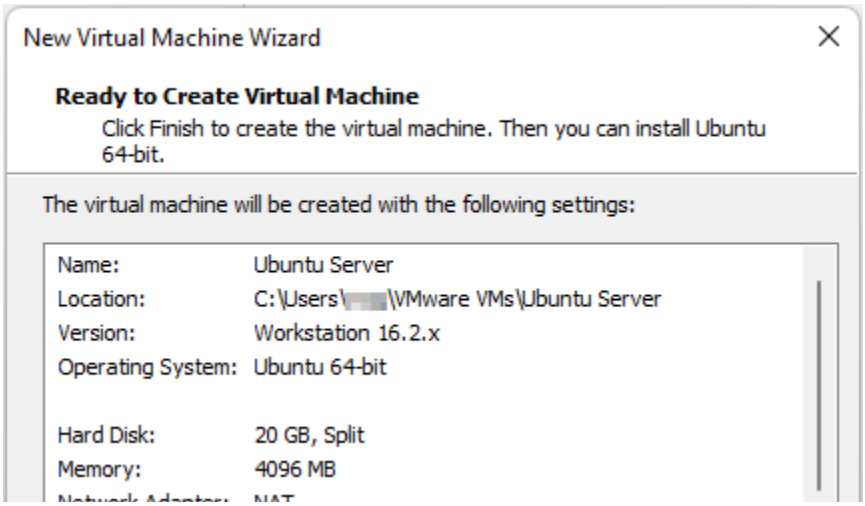


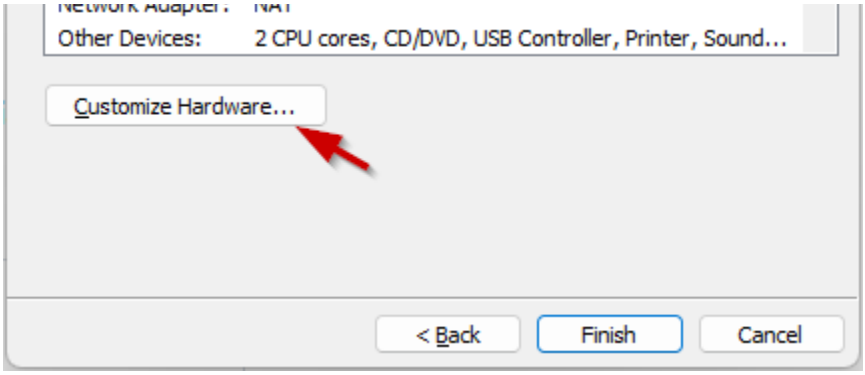


In the next screen we configure the virtual harddisk size for the VM. We will create a disk that has 20GB storage. We can expand this later if needed:

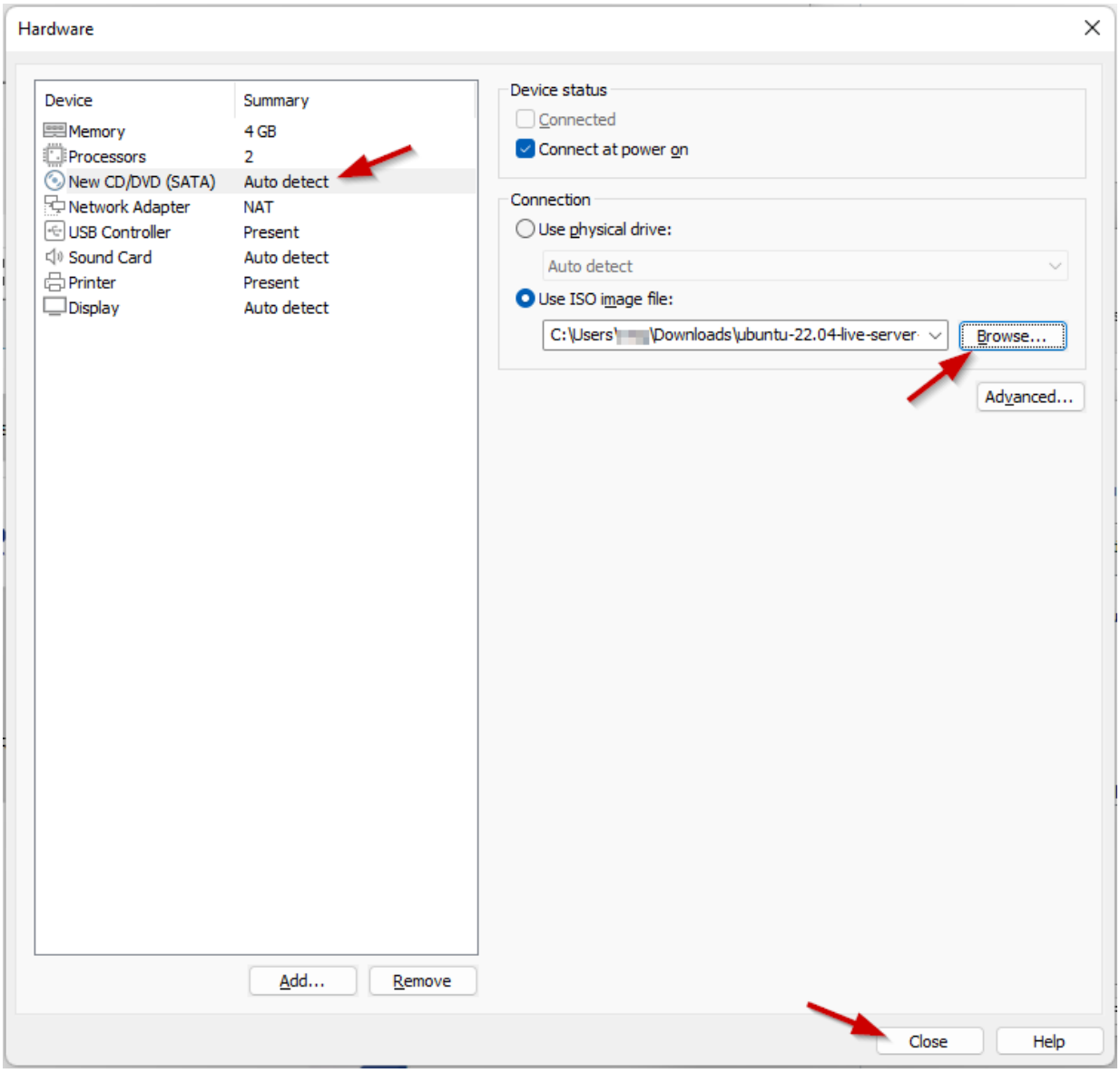


We have to click on `Customize Hardware` to configure the virtual machine a little more:

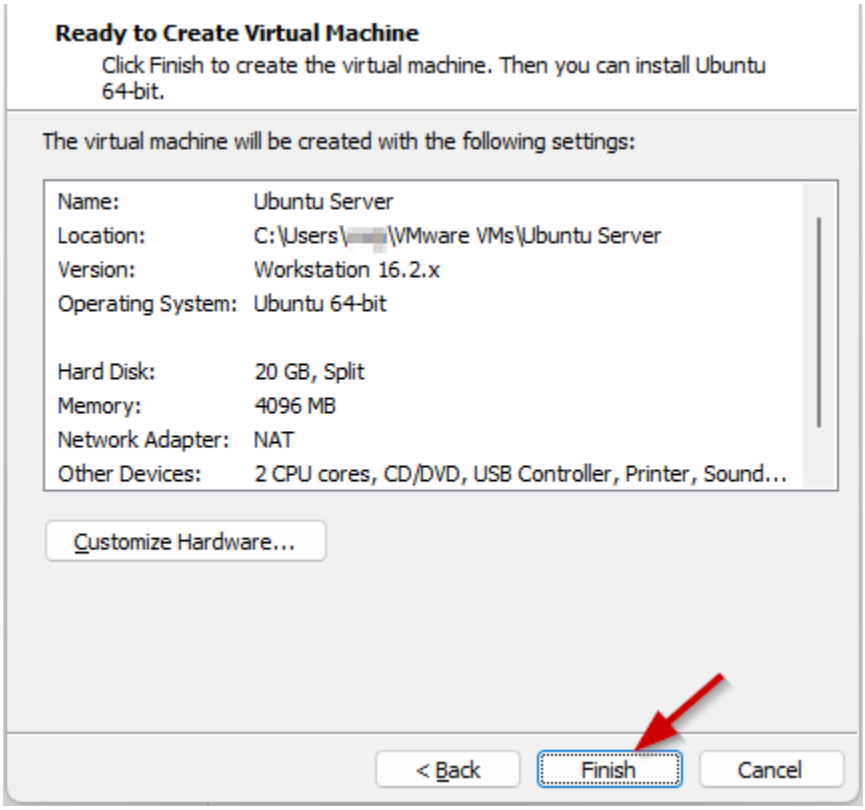




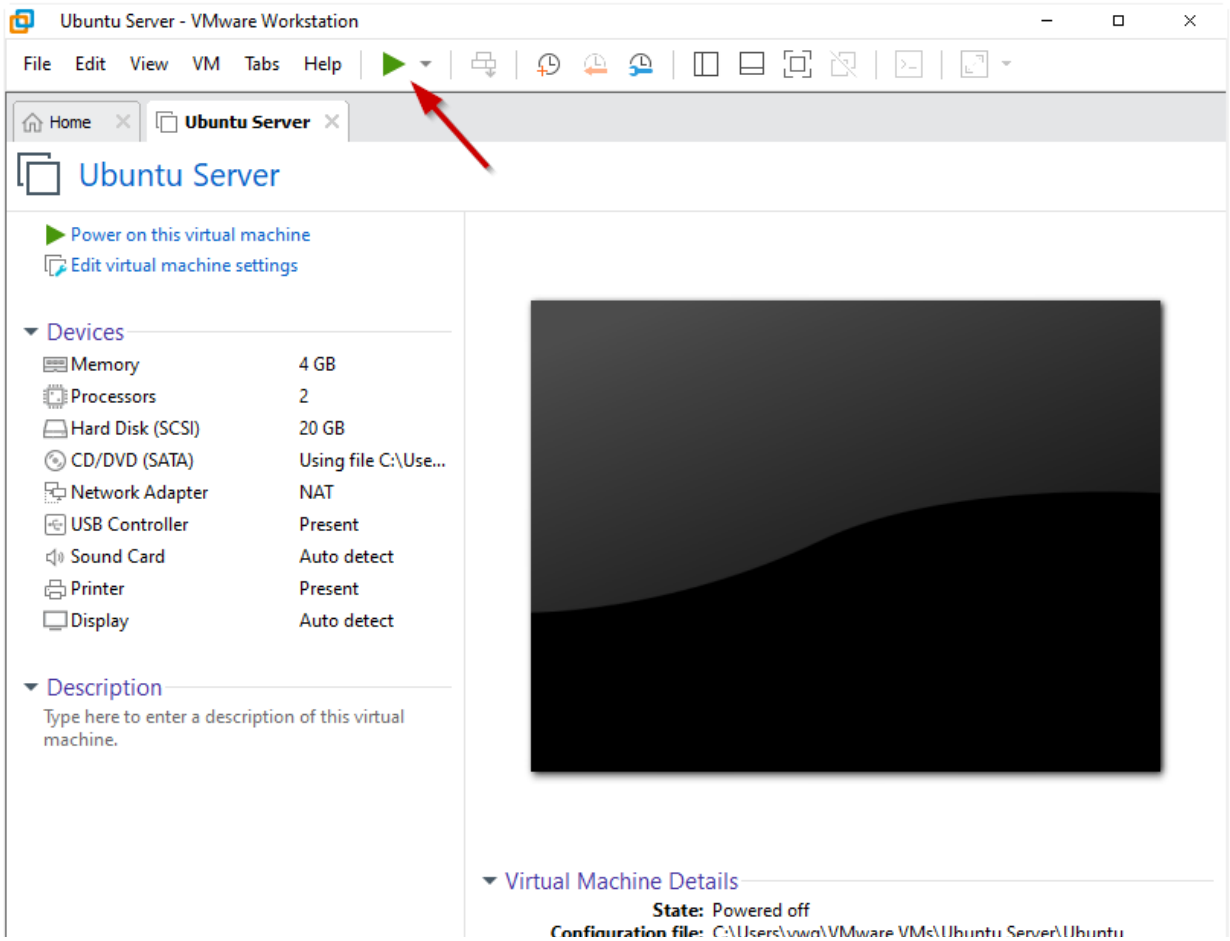
We still need to link the Ubuntu-server ISO file to the virtual CD-rom drive. We do this by selecting `New CD/DVD` and browsing to the downloaded `iso` file:

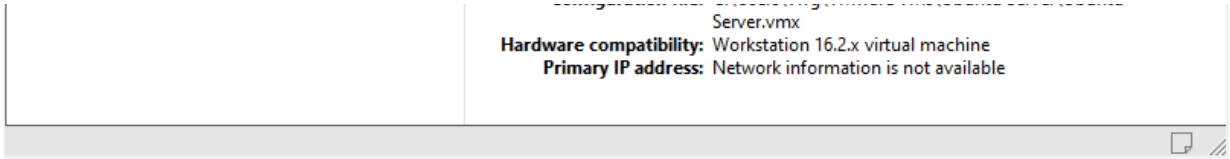


Click on `Finish` and the virtual machine will be created.



You can now boot the VM by clicking the green arrow icon. This will boot the virtual machine and run the installation process.





Installation Ubuntu server

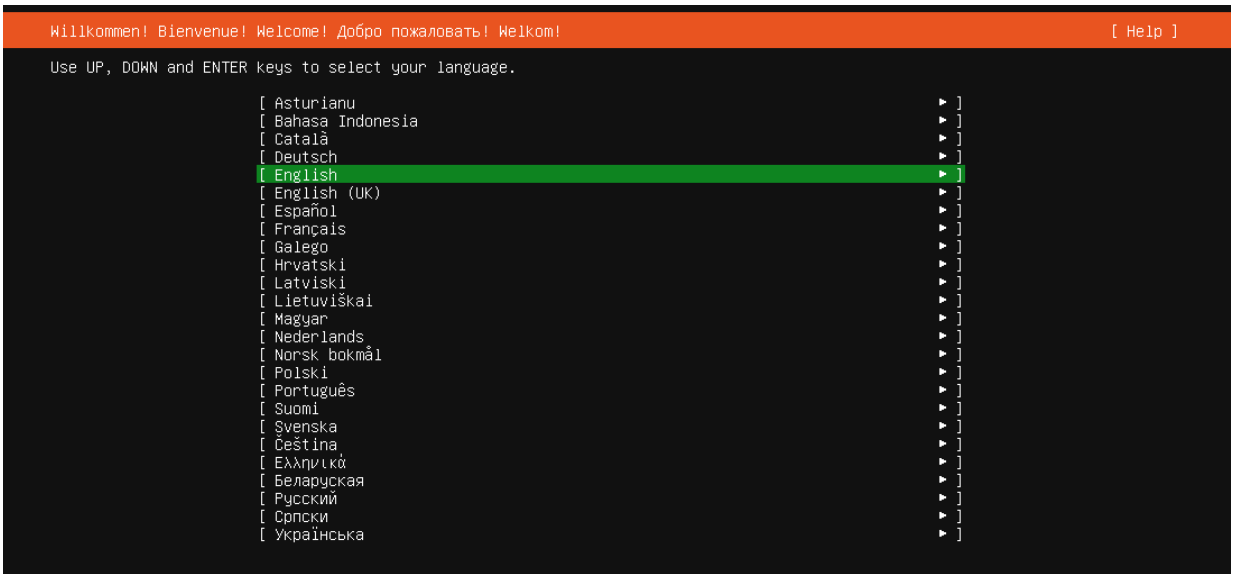
As described before we will use the distro Ubuntu. After creating and booting the virtual machine there will be an installation process that we need to run through. You will notice that there is no mouse pointer available. We will use the keypoint arrow keys & enter key to navigate through the steps.

ℹ Does booting the VM result in the error `This host supports Intel VT-x, but Intel VT-x is diabled` ? You will have to activate the VT-X option in the BIOS of your laptop. More information can be found in this article.

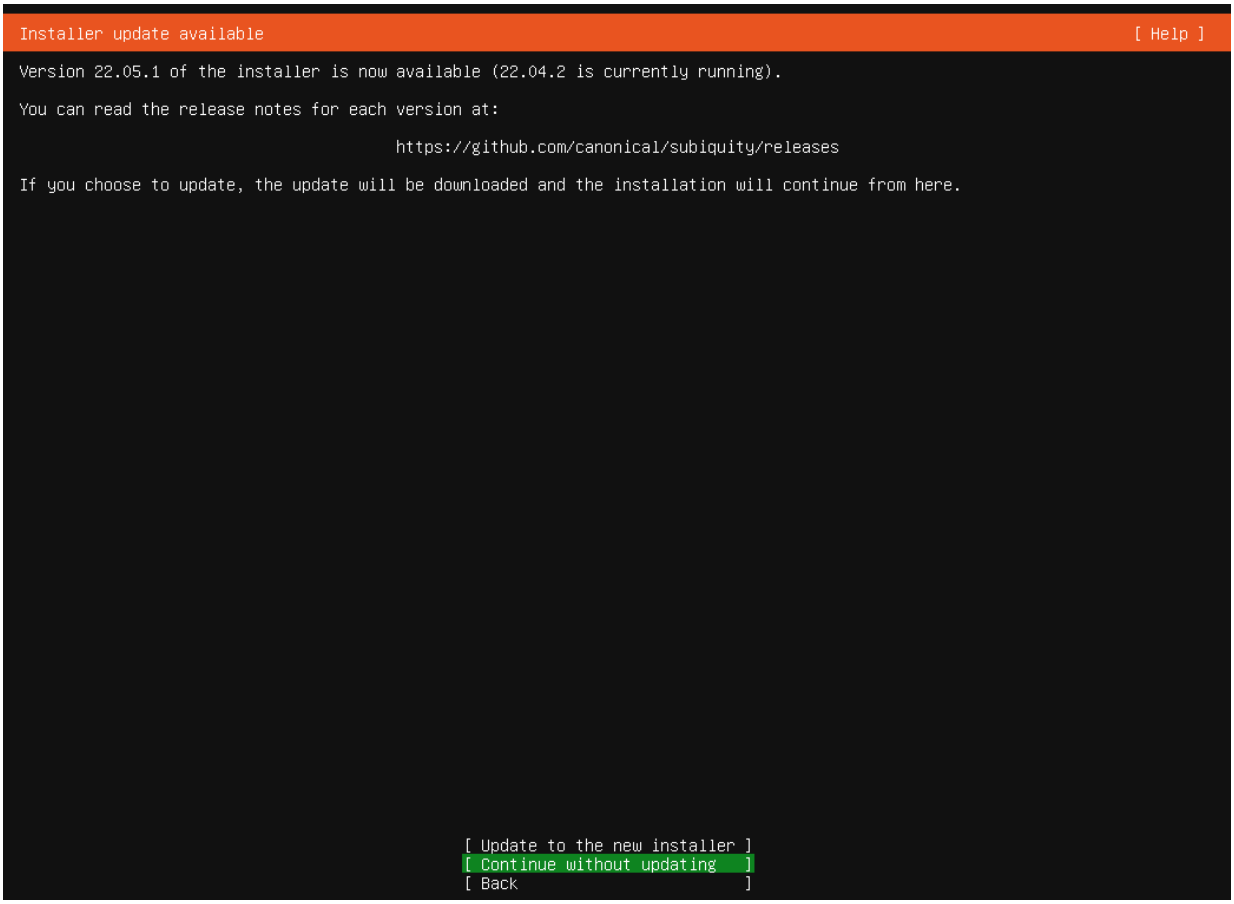
ℹ If you want to leave your VM and get your mouse back in the OS of your laptop (=Windows) you'll have to press `CTRL+ALT` !

We make the choice to Try or Install:

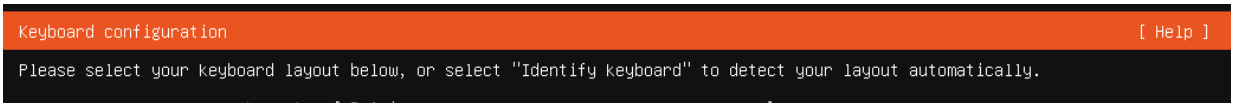
We start the installation process by selecting the language. We choose English:

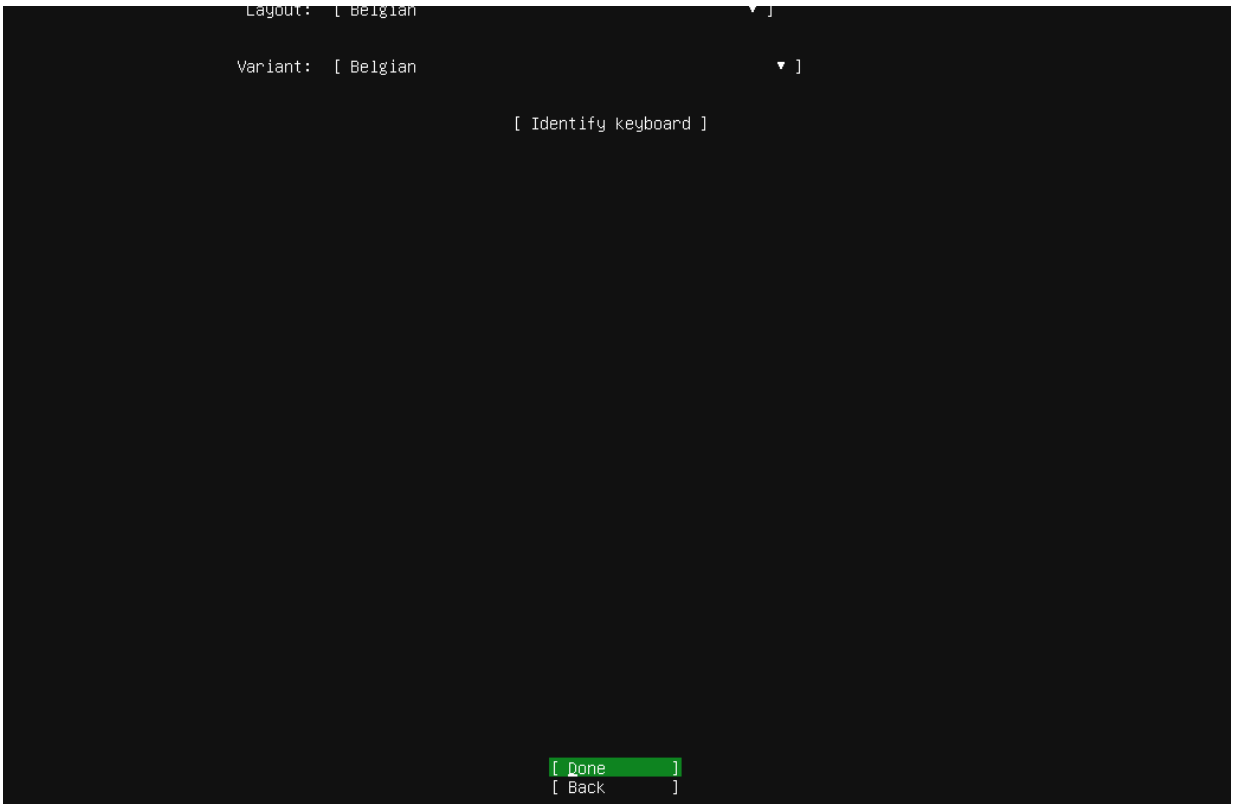


We skip the installer update:

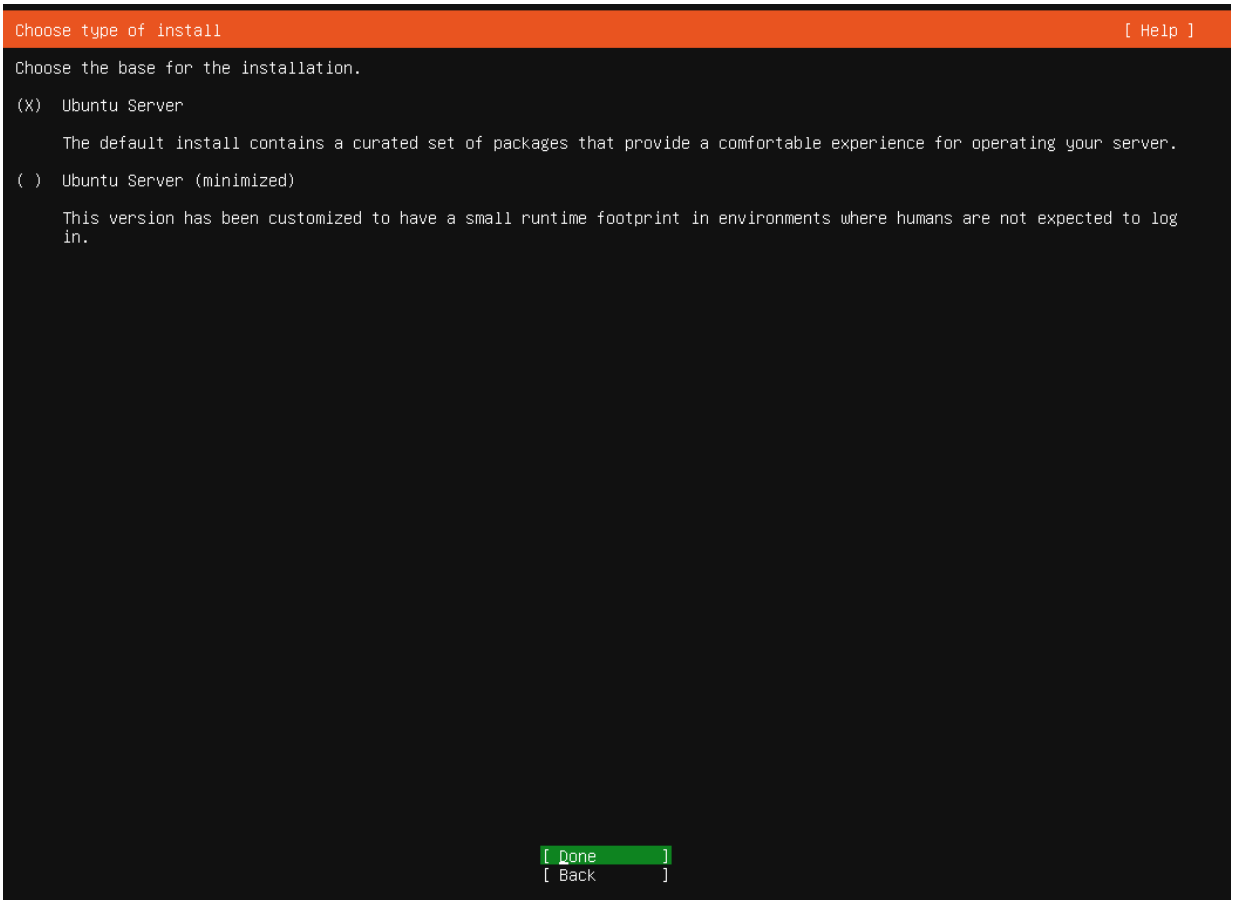


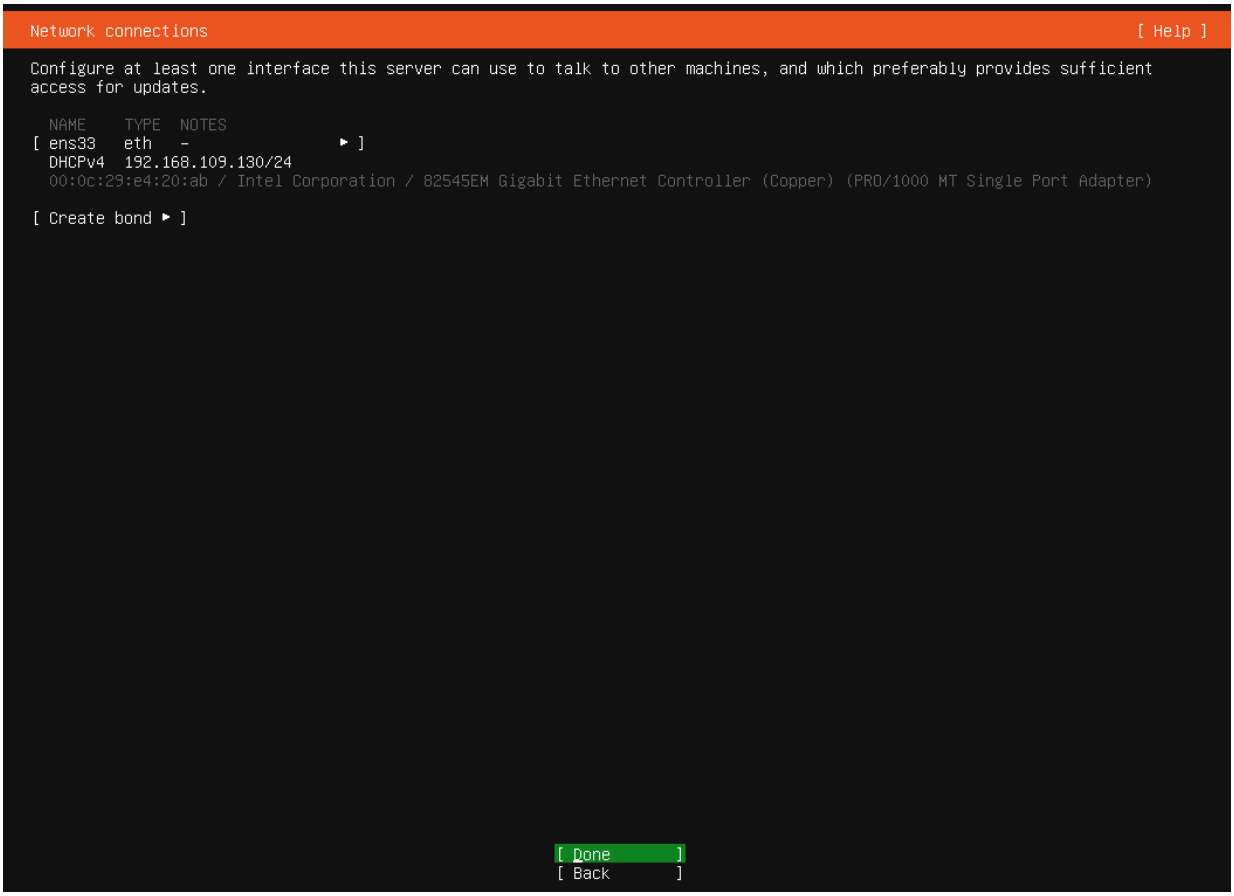
Choose the correct keyboard layout. For `azerty` select `Belgian` :

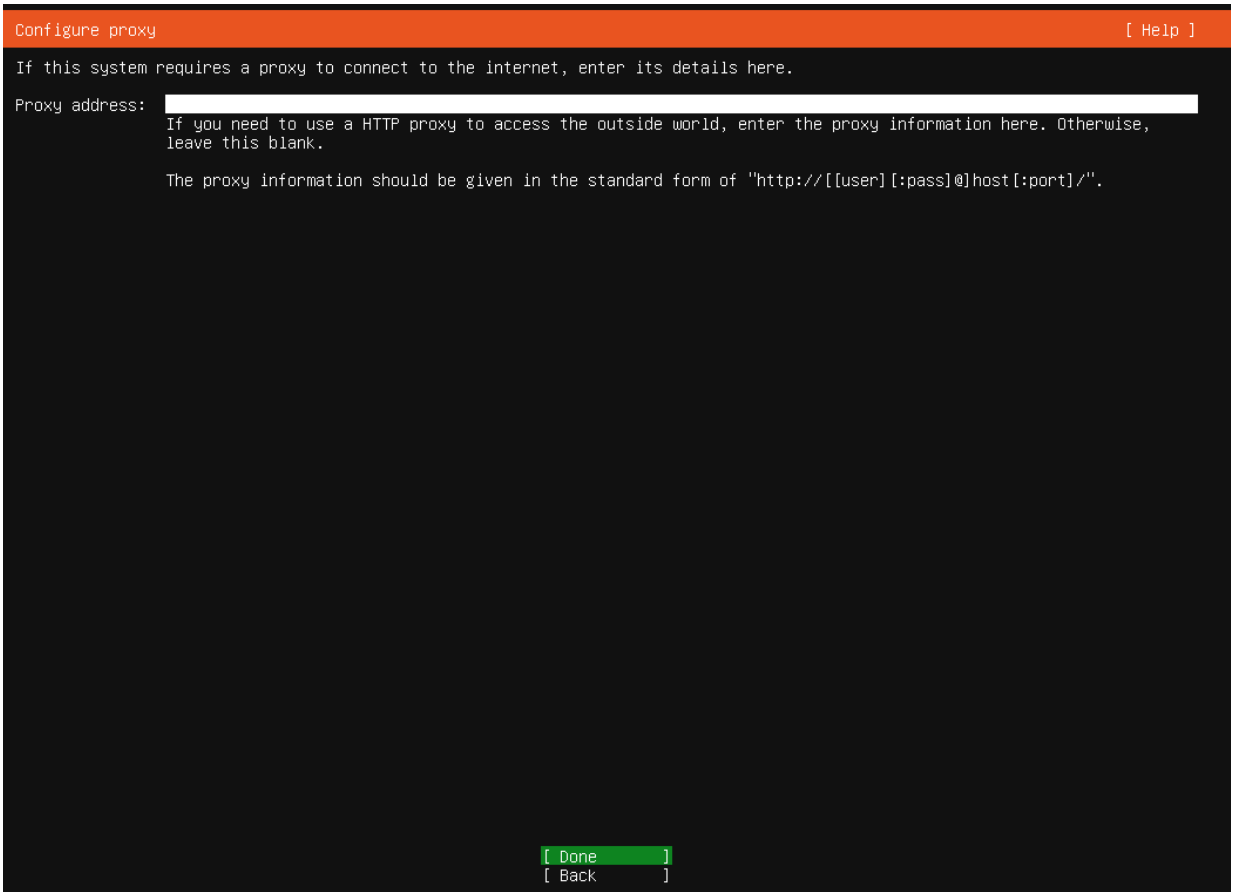




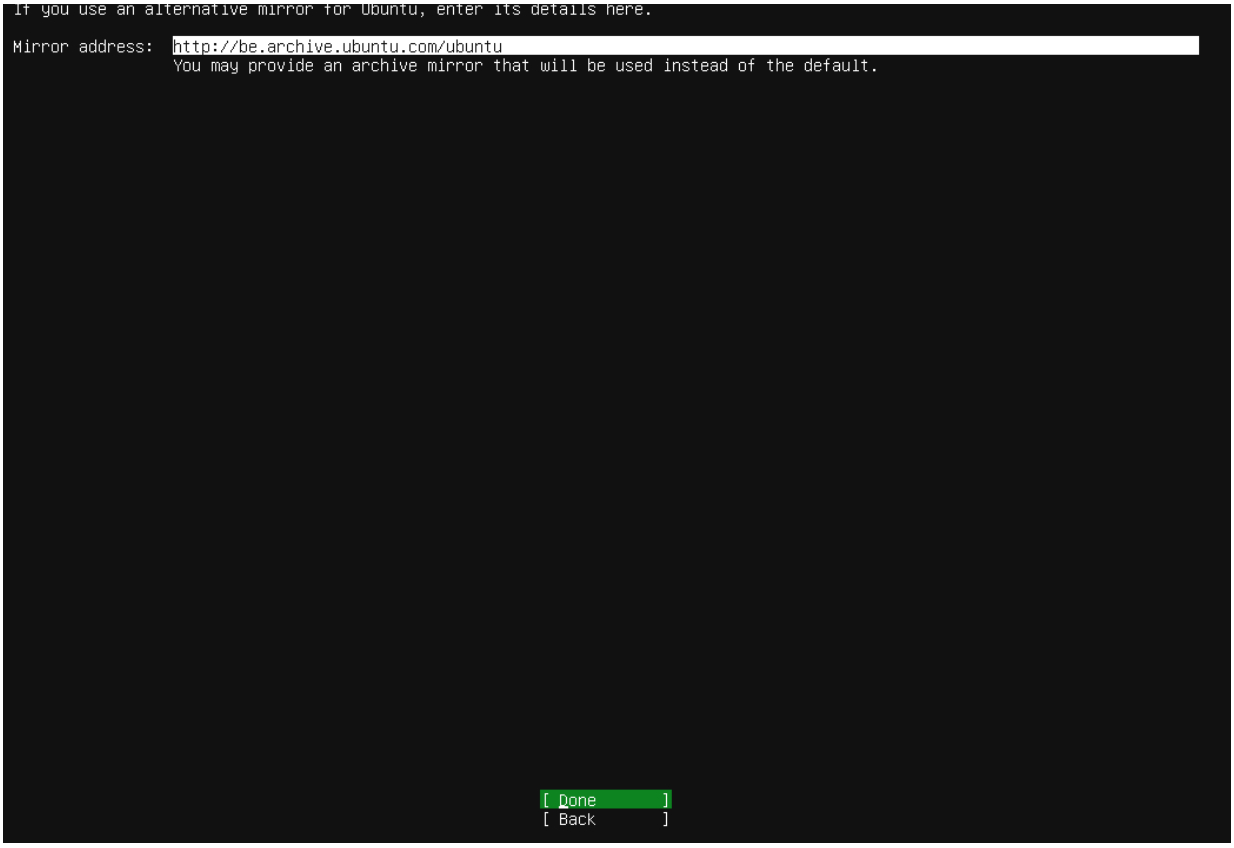
In the next 7 steps we dont make any changes. We just press **Done** or **Continue** :

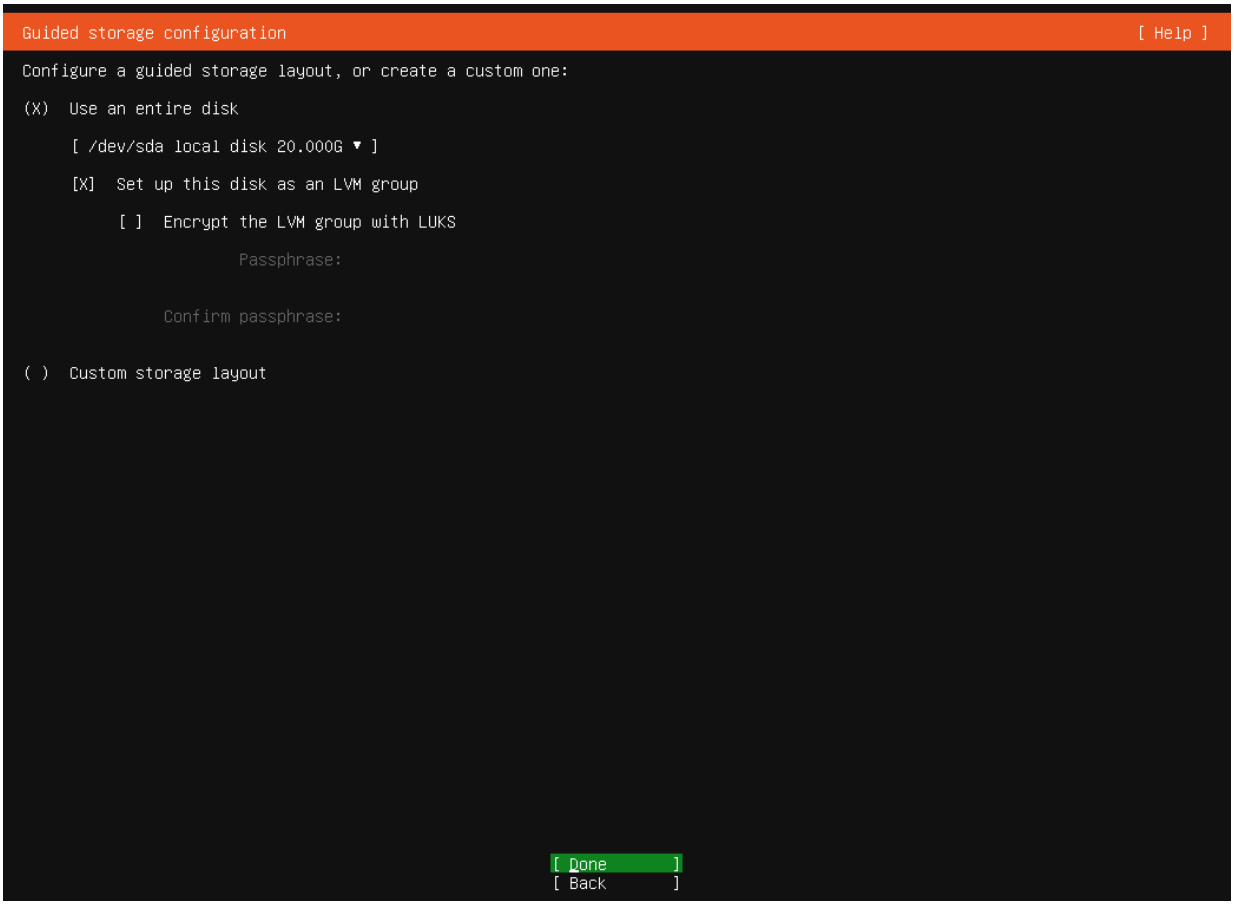



Network connections
[Help]
Configure at least one interface this server can use to talk to other machines, and which preferably provides sufficient access for updates.
NAME TYPE NOTES
[ens33 eth - ▸]
DHCPv4 192.168.109.130/24
00:0c:29:e4:20:ab / Intel Corporation / 82545EM Gigabit Ethernet Controller (Copper) (PRO/1000 MT Single Port Adapter)
[Create bond ▸]
[Done]
[Back]

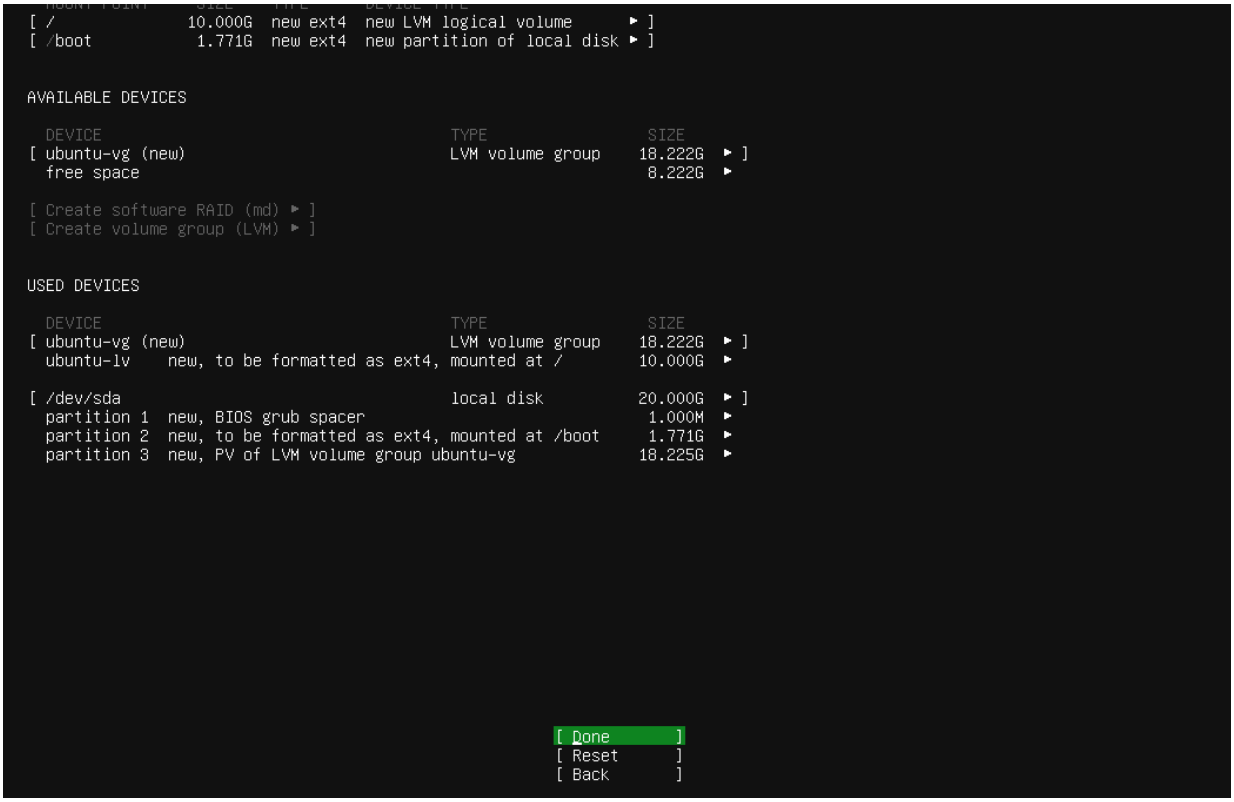

Configure proxy
[Help]
If this system requires a proxy to connect to the internet, enter its details here.
Proxy address:
If you need to use a HTTP proxy to access the outside world, enter the proxy information here. Otherwise, leave this blank.
The proxy information should be given in the standard form of "http://[[user][:pass]@]host[:port]/".
[Done]
[Back]

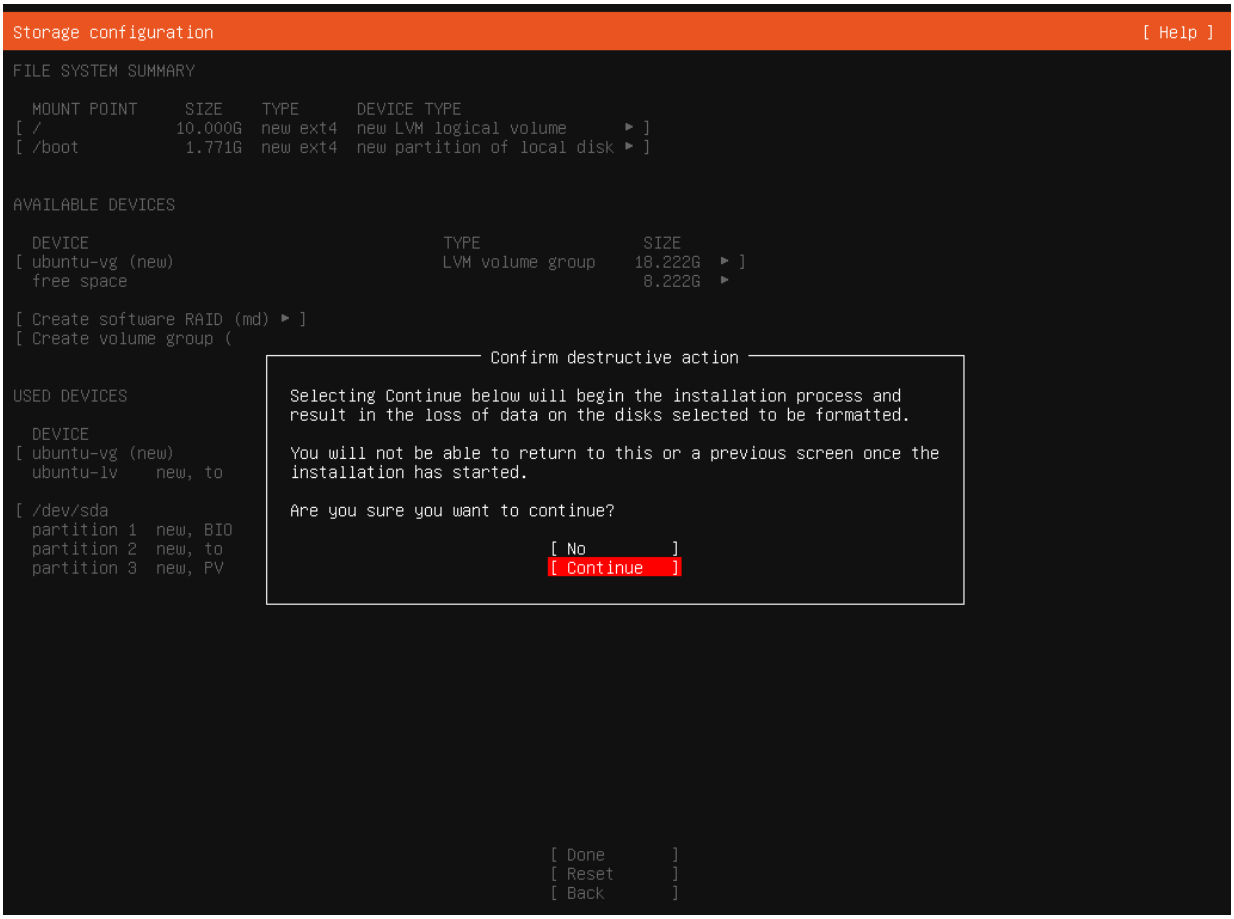

Configure Ubuntu archive mirror
[Help]


If you use an alternative mirror for Ubuntu, enter its details here.
Mirror address: http://be.archive.ubuntu.com/ubuntu
You may provide an archive mirror that will be used instead of the default.
[Done]
[Back]


Guided storage configuration
[Help]
Configure a guided storage layout, or create a custom one:
(X) Use an entire disk
[/dev/sda local disk 20.000G ▾]
[X] Set up this disk as an LVM group
[ ] Encrypt the LVM group with LUKS
Passphrase:
Confirm passphrase:
( ) Custom storage layout
[Done]
[Back]


Storage configuration
[Help]
FILE SYSTEM SUMMARY



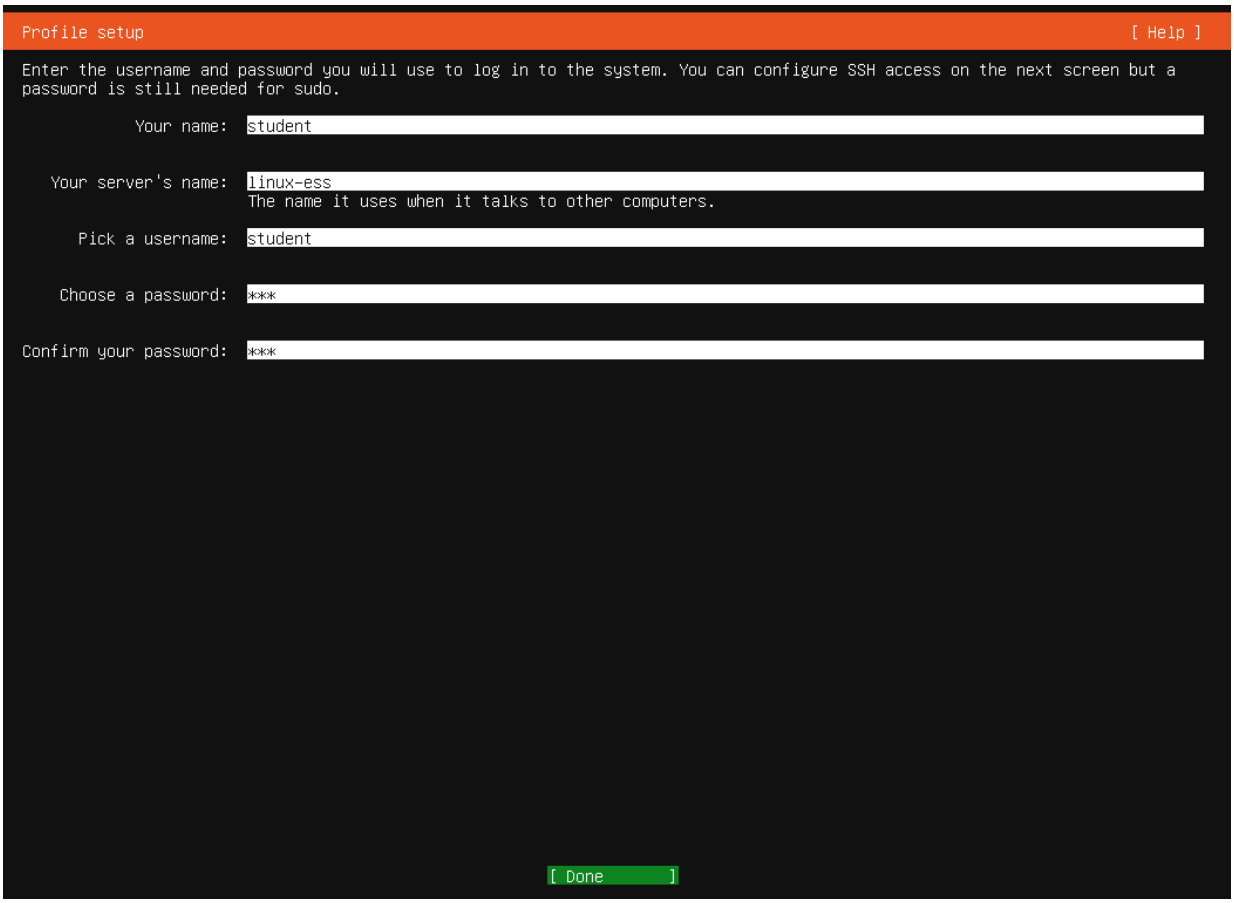


Next up we create a user account that we use to login to the operating system. We use following credentials:

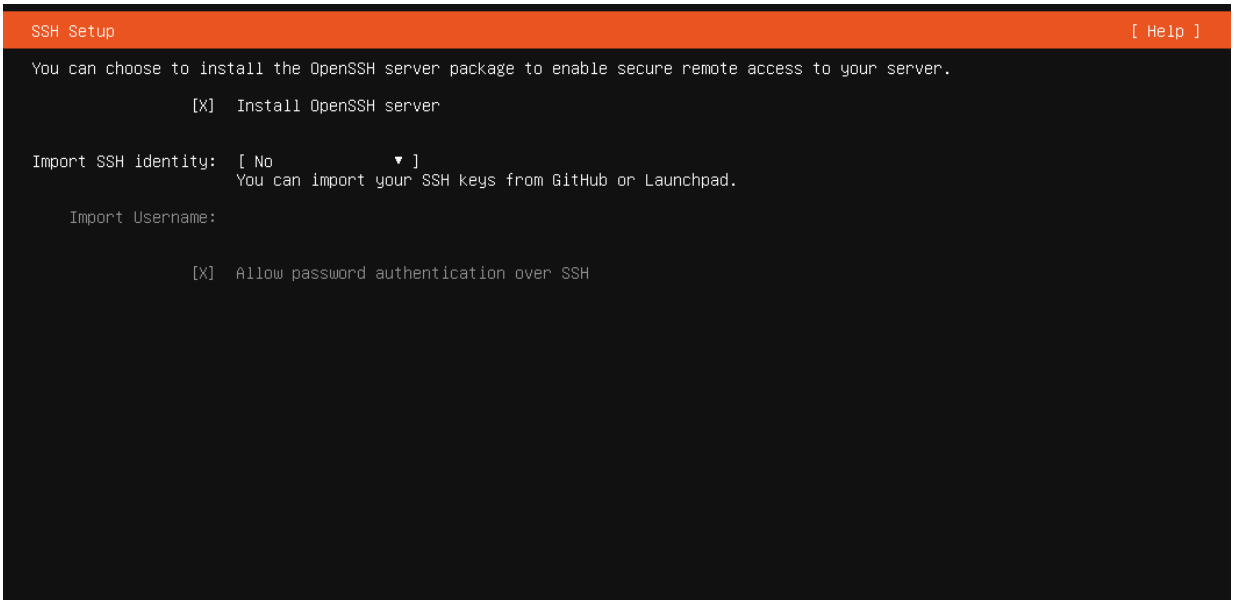
username: student

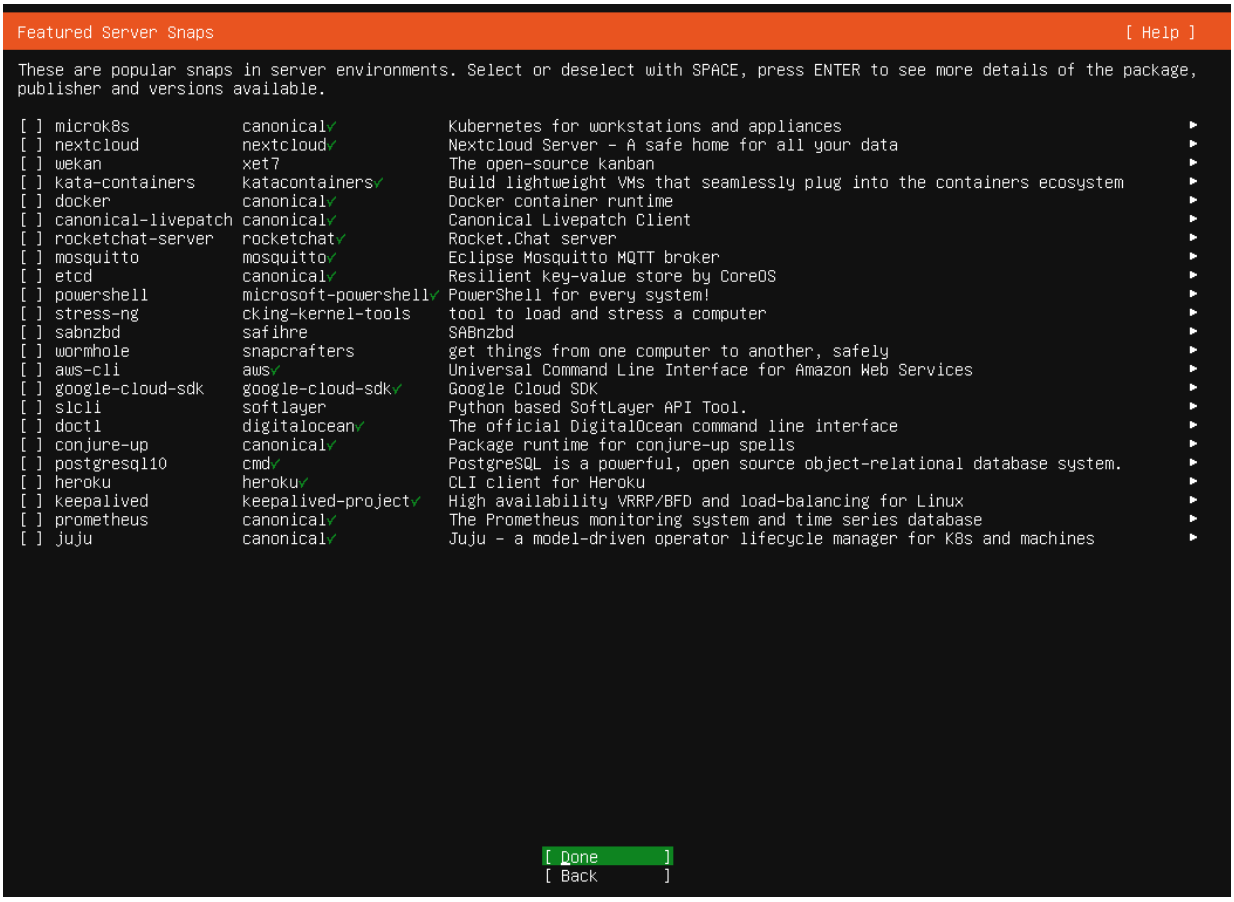
server name: linux-ess

password: pxl

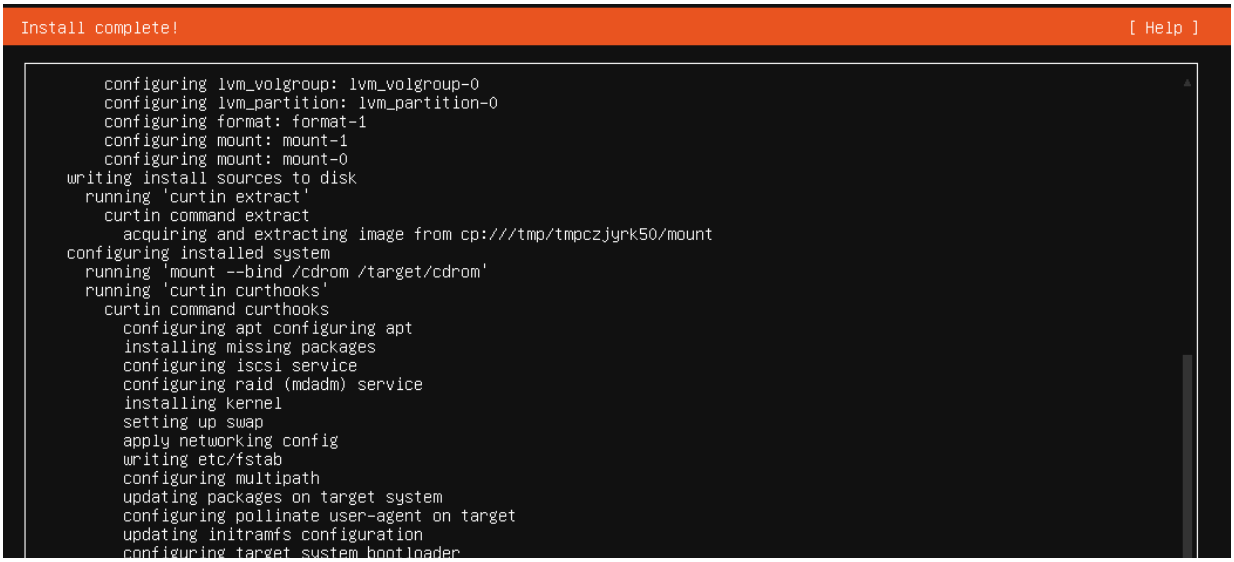


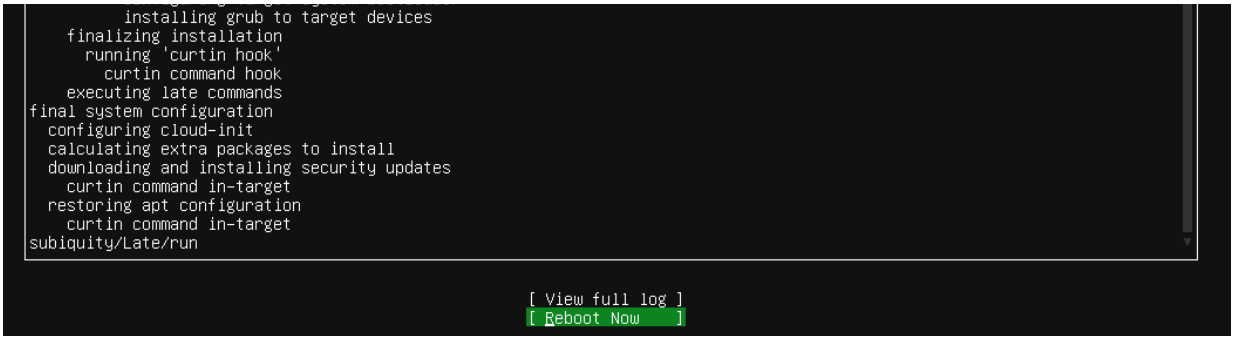
For Extra Packages we will only opt to install `SSH server` :



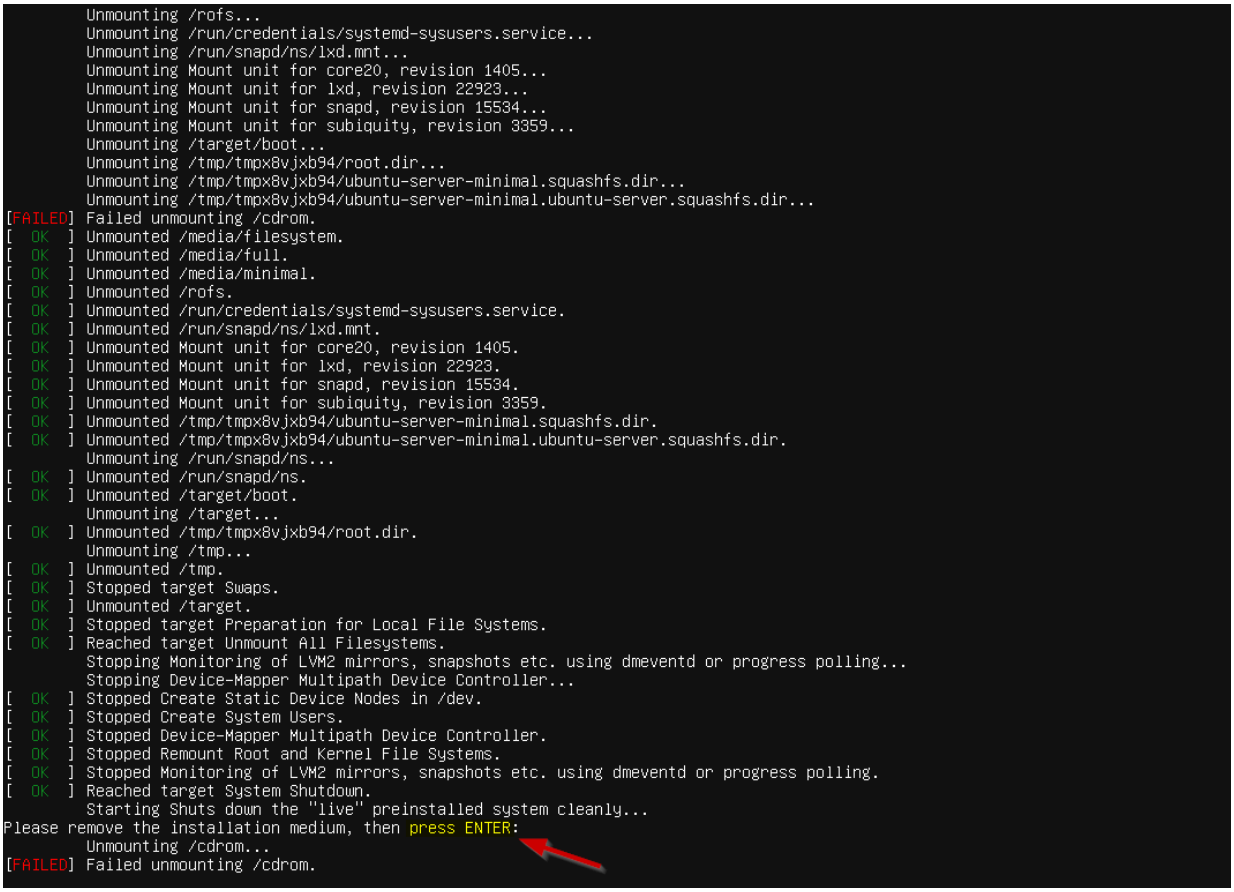


The operating system will be installed and configured. After a while the `Reboot now` option will appear. This indicates that the installation is complete:

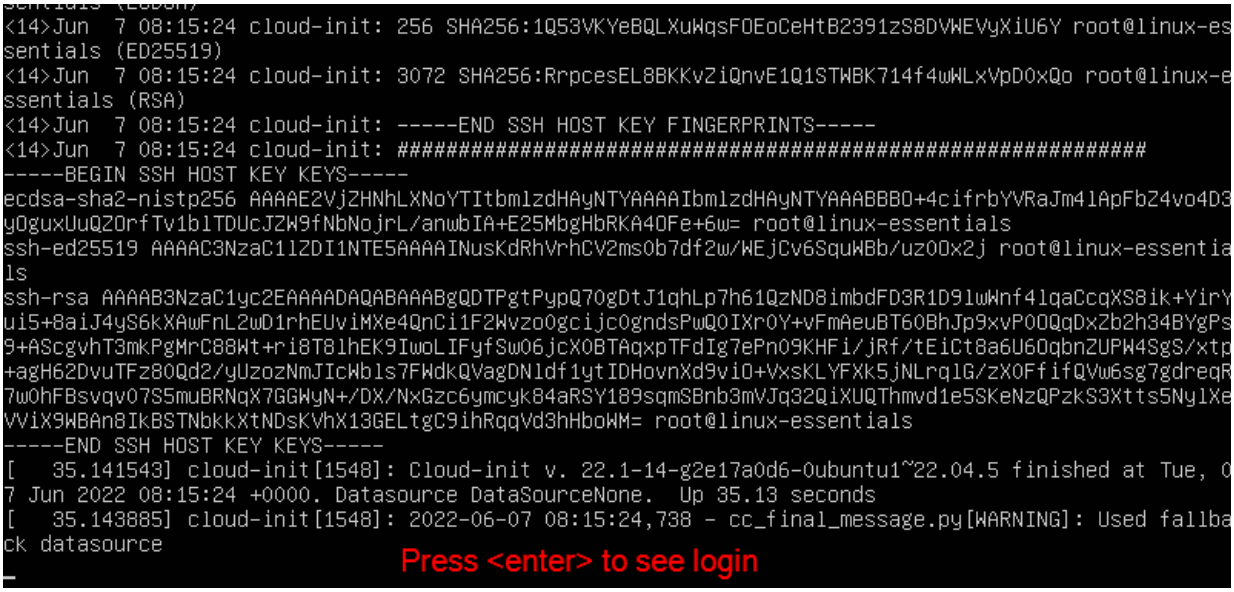




During the Reboot process you will have to press the **enter** key on your keyboard :



Once the server is rebooted, you will have to press the **enter** key again to see the login prompt.



Previous
1 Introduction

Next
Lab