How to install a Linux server distribution

Introduction

This document will provide instructions on how to install a Linux server distribution onto a virtual machine using a Type 2 Hypervisor. The guide will be written with Ubuntu Server version 24.04.1 in mind.

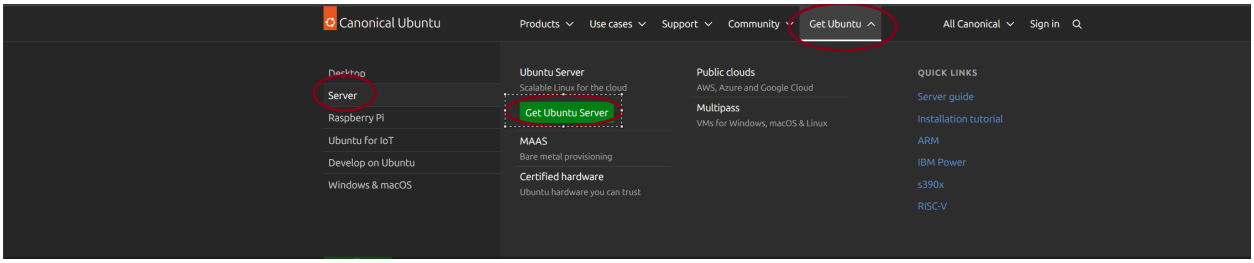
Prerequisites

- Tier 2 Hypervisor (Guide will be utilizing VMware Workstation 17)
- Internet access to download Ubuntu
- PuTTY or another SSH tool

Step 1: Download Ubuntu Server

1. The first and arguably most important step is to select your preferred server distribution or as some call it, your favorite flavor of Linux. The easiest way to do this is to go onto your favorite search engine and lookup the website for them. Today we will be using Ubuntu.

2. As we have selected Ubuntu, we will now head to the Ubuntu's website (https://ubuntu.com/) and then head to "Get Ubuntu" at the top and select Ubuntu Server

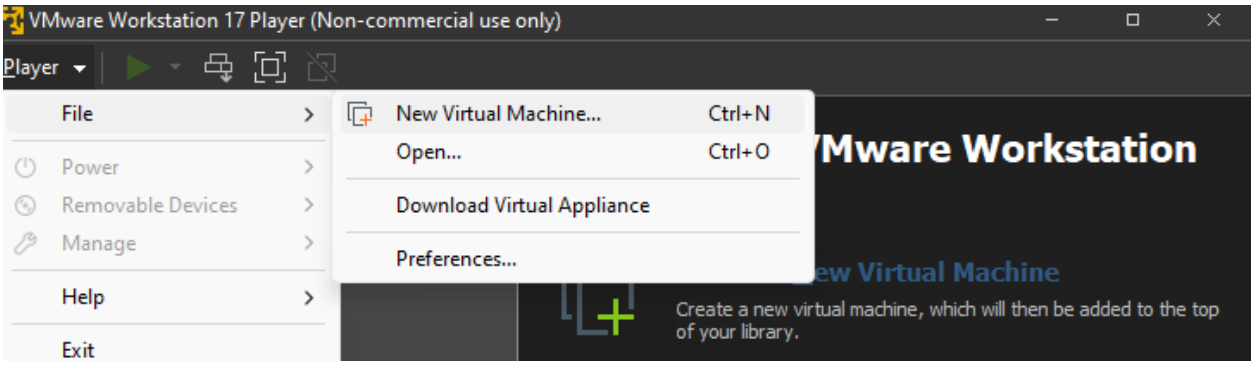


You will be brought to a page that will show you a downloadable link for the latest LTS (long term support) build of Ubuntu, click on download and the server file will begin downloading.

Step 2: Create a Virtual Machine with Ubuntu Server

1. Now that you have Ubuntu Server downloaded, you need to open your hypervisor which for the purpose of this guide will be VMware Workstation 17.

2. Once opened you will click on player > File > New Virtual Machine

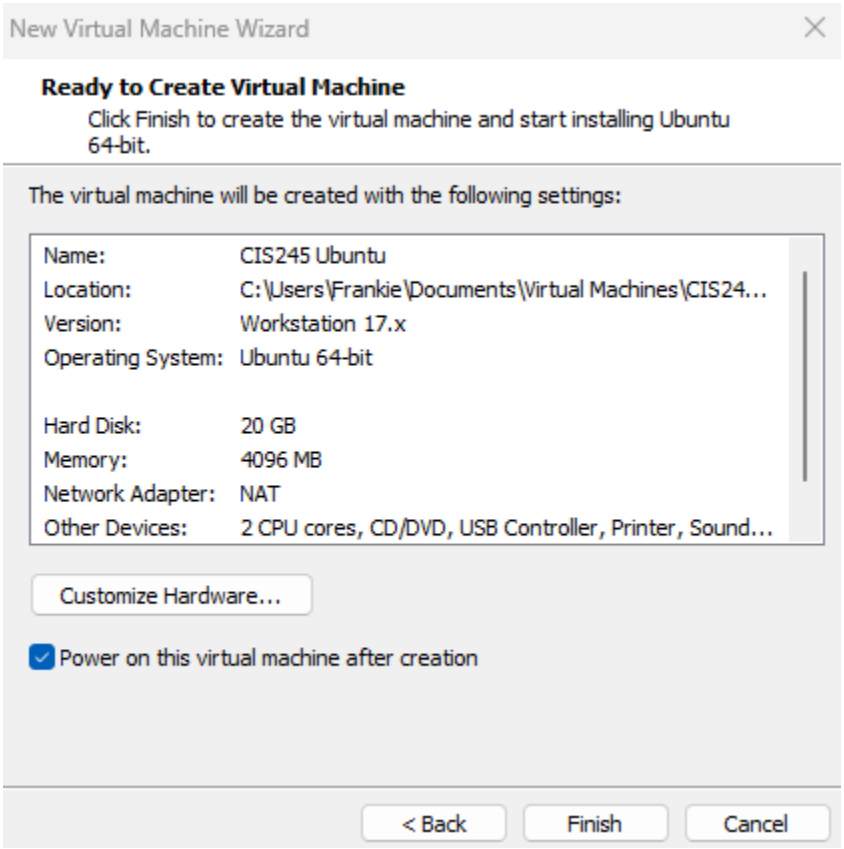


3. A window will appear asking for your installer disk image file. Head to the directory where you downloaded the Ubuntu Server file and select it. Once selected we will click next to head to the next step of the installation.

4. You will be prompted to name your VM, select a name that fits the purpose of the installation.

5. After naming, you will be asked to either split your vDisks into server files or a single file. For the purpose of this guide we will be storing the vDisk as a single file.

6. After selecting the vDisk style, you will be prompted to finish the server and have the option of powering on the virtual machine after it's creation. For the purpose of the guide, we will power on the virtual machine so tick the box that provides us the option and click finish.

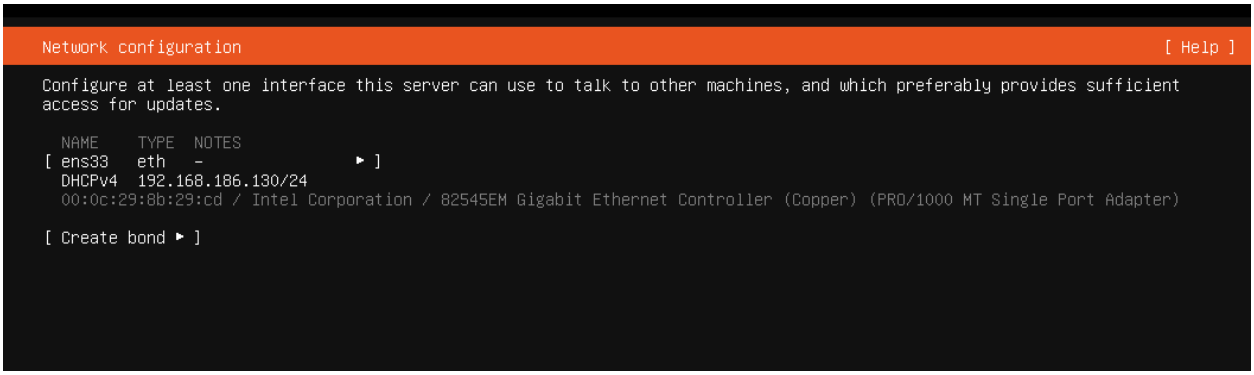


Step 3: Setup Ubuntu Server

1. Once the server is powered on, you will be prompted to select a language for your server. For the purpose of the guide and the language it's written in, we will be selecting English. After it will also ask the language of the keyboard configuration, we will also be selecting English there.

2. You will now be presented with an option of different installation types which in our case is Ubuntu Server or Ubuntu server (minimized). Ubuntu server minimized is meant for server operations where administrators aren't signing into the VM itself. As we plan to sign into this server often, we will choose the standard Ubuntu Server install

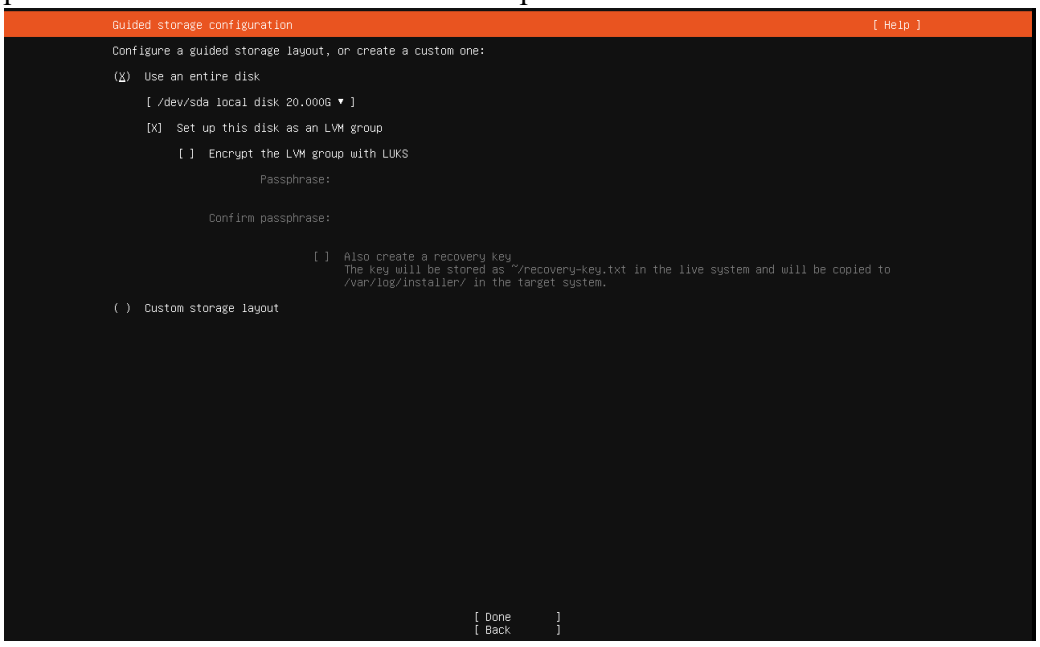
3. When you get to the network connection step, the vNIC (virtual Network Interface Card) will detect the internet connection from the computer you're running VMware Workstation on and create a tunnel out to the internet. As we can see here, Ubuntu Server has taken 192.168.186.130/24 address which provides this server with the ability to have up to 252 different IP addressable devices on it's subnet (192.168.186.x/24)



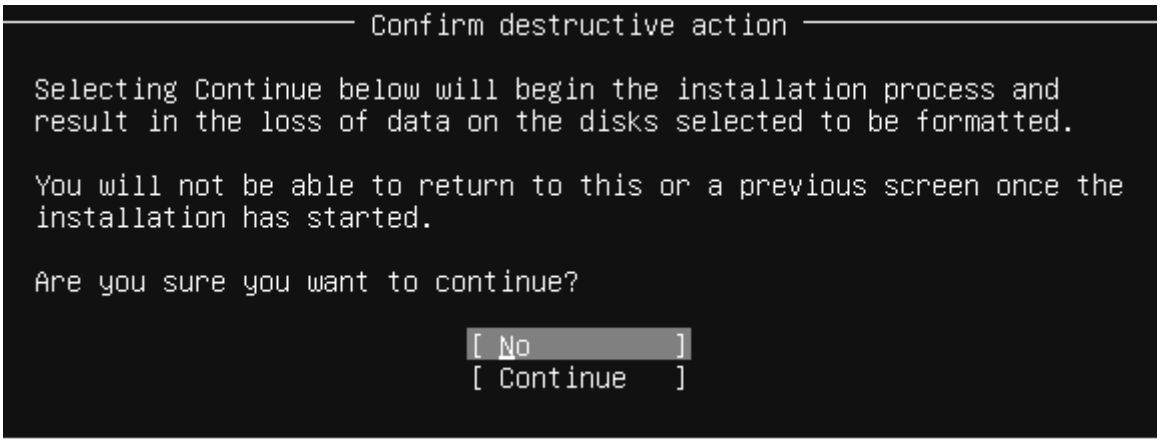
4. The next step is about a proxy configuration but we aren't using that so we can skip it by pressing enter on done.

5. The next step is about Ubuntu archive mirror configuration which is another functionality that we aren't using. Press enter on done to skip this.

6. The next step is about how our storage directories are setup. Keep the default options and press enter on done to head to the next option.



7. The next option is our storage configuration, however this one is a bit trickier. Ubuntu needs to format the drive so it can partition our disk for use. This means that anything on the disk will be erased and unrecoverable. That being said, when we mounted the image VMware Workstation created a directory for us that is unqiue to the server thus the formating will not cause any issues.



8. Profile configuration is the next step and is an incredibly crucial one that you get right. You must enter your name or whatever you want to be called, your server's name, and a username and password. It is critical that you both choose a strong and unique password but also have that password saved somewhere, such as a password manager, so that you do not get locked out of your server permanently.

9. The next step is about upgrading to Ubuntu pro which is beyond the scope of this guide, and we will not be upgrading. Press enter on continue to go to the next step.

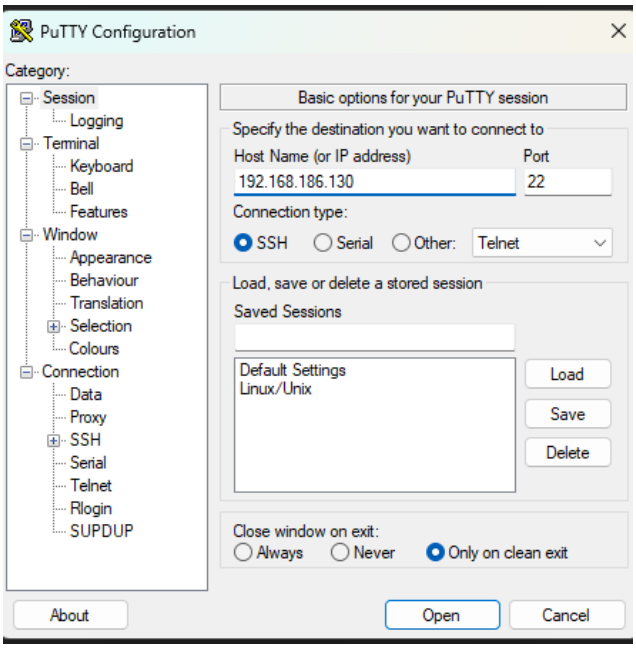
10. The next step is to install OpenSSH so that we may remote into the server using putty or another type of ssh tool. We will enable this and press enter on done.

11. The next step is to install common snapins for Ubuntu Server. However as these are beyond the scope of the guide, we will not be installing any. Press enter on done and the install will finish run and eventually finish.

12. Once finished installing you will press enter on the Reboot Now option and your Virtual Machine will be fully created with Ubuntu Server.

Step 4: Connecting to our Ubuntu Server

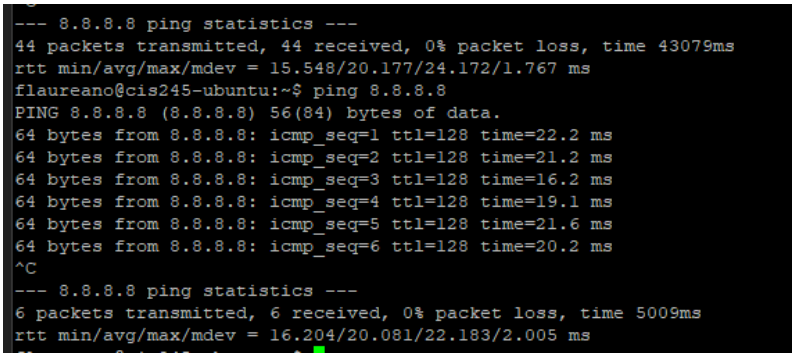
1. Now that the server is created and on we need to connect to it. Open PuTTY or whichever SSH tool you prefer and enter the IP address of your server. My server's IP address is 192.168.186.130 so that is the address we will type in the IP address bar and the port we will be using is port 22 (SSH).



2. PuTTY will now bring up the server login window where we will have to enter our username and password that we made earlier. Sign in correct and you will be greated with the login splash screen of your server.

Step 5: Testing Internet Connectivity

1. Now that we are connected to our server, lets see if we can access the internet with it. To do so, type ping 8.8.8.8. This action pings the Google DNS server to see if it can connect out. If you are successful, you will see packets received from 8.8.8.8 with no packet loss (press Control+C to end the ping test)



Step 6: Transferring a file from one server to another

1. To transfer a file, we must first have a file so lets create one. Type ‘touch hellolworld.txt’ and press enter. You have now created a simple text file that we are going to use to transfer to a server.

2. Now that we have our file, we will use SCP to transfer the file to another server with the IP of 192.168.186.131.

3. Enter the following command: scp /home/flaureano/helloworld.txt flaureano@192.168.186.131:/home/flaureano/ (replace the directory of the home and destination with your own server and the destination of your choice)

4. You will get a line asking if you want to trust the host as you have not connected before, type yes.

5. You will then be prompted to sign into the password of the user you are signing into. Enter the password and the file will transfer

```
flaureano@cis245-ubuntu:~$ scp /home/flaureano/helloworld.txt flaureano@192.168.186.131:/home/flaureano/
The authenticity of host '192.168.186.131 (192.168.186.131)' can't be established.
ED25519 key fingerprint is SHA256:ttvbw0Cgktm7c6q8GclPk9rKhnFpMw8ozKfVAo7VnAs.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '192.168.186.131' (ED25519) to the list of known hosts.
flaureano@192.168.186.131's password:
helloworld.txt                                                100%    0     0.0KB/s   00:00
```

6. Once transferred, check the other server to make sure that the file came over and you are finished!

```
[flaureano@localhost ~]$ ls -l
total 0
-rw-r--r--. 1 flaureano flaureano 0 Sep  8 22:47 helloworld.txt
-rw-r--r--. 1 flaureano flaureano 0 Sep  8 22:48 worldhello.txt
[flaureano@localhost ~]$
```

Final Review

Summary of actions taken:

- Installed Ubuntu without GUI on VMware Workstation 17
- Configured user account
- Enabled SSH and tested remote functionality with PuTTY
- Tested and confirmed internet connectivity by pinging Google DNS (8.8.8.8)
- Transferred files between two servers using SCP