

Deliverable 1

Tutorial can be found [here](#)

Concepts I don't understand:

- **Apache:** The web server that processes requests and serves web assets and content via HTTP
- **UFW Firewall:** Uncomplicated Firewall is a program for managing a netfilter firewall designed to be easy to use.
- **Systemd:** A software suite that provides an array of system components for Linux operating systems.
- **Systemctl:** A utility which is responsible for examining and controlling the systemd system and service manager
- **a2ensite:** A script that enables the specified site (which contains a block) within the apache2 configuration.
- **LogLevel:** A piece of information telling how important a given log message is.

What is a web server? Hardware and software side

- Web sever can refer to hardware or software, or both of them working together.
 - For Hardware web sever is a computer that helps stores web sever software and a website's component files such as (HTML documents, images, CSS stylesheets, and javascript). A web sever also connects to the internet to support physical data and interchange with other devices connected to it.
 - For Software web servers include several different parts that control how users access hosted files such as HTTP. An HTTP sever is a software that understands URLs and HTTP which is the protocols that your browser uses to view different webpages. HTTP can be accessed through the domain names of the websites it stores, and delivers the content of these hosted websites to the end user's device.

What are some different web server applications?

- Some of the different web sever applications are Apache, Nginx, Caddy, Lighttpd, Monkey server, OpenLiteSpeed, Cherokee.

Apache

- It was an early entry and it made it easy deployment of PHP and installing apache was all you needed to do for developing with PHP.



Nginx

- It can be used to design complicated and distributed systems with powerful caching, proxying and load balancing, besides using Nginx to serve static files with several optimization directly.



Caddy

- It is simplified to a pleasant extreme. For instance, if you Encrypt integration for SSL can be done in a mere three lines of configuration.



Lighttpd

- It is capable, single-threaded web sever that can easily handle a request per second and still go easy



on system resources.

Monkey sever

- It can be used to run large scale applications on powerful machines. It has much more active and vibrant community then other alternative web server, so you're never lost if you need help.



OpenLiteSpeed

- It makes more sense for WordPress-based content-driven websites, as page optimizations are already part of the server. Since its had fine-tuned for PHP performance, PHP based codebase and projects can benefit immensely.



Cherokee

- It is a friendly web-based interface comes packaged and is a delight to use for those who prefer the point-and-click method of getting things done.



What is virtualization?

- Virtualizations is the process of running a virtual instance of a computer system in a layer abstracted from the actual hardware.

What is virtualbox?

- It is an open-source software for virtualizing the x86 computing architecture. it acts as a hypervisor,



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creating a VM where the user can run another OS.

What is a virtual machine?

- It is a virtual environment that functions as a virtual computer system with its own CPU, memory, network interface, and storage, created on a physical hardware system.

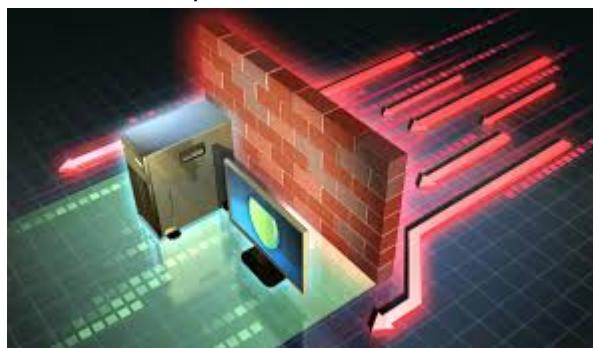


What is Ubuntu Server?

- It is an open-source software, are alternatives to various types of licensed products. It includes the replacement of a graphical user interface with a character-based interface for installation, as well as other changes to the interface.

What is a firewall?

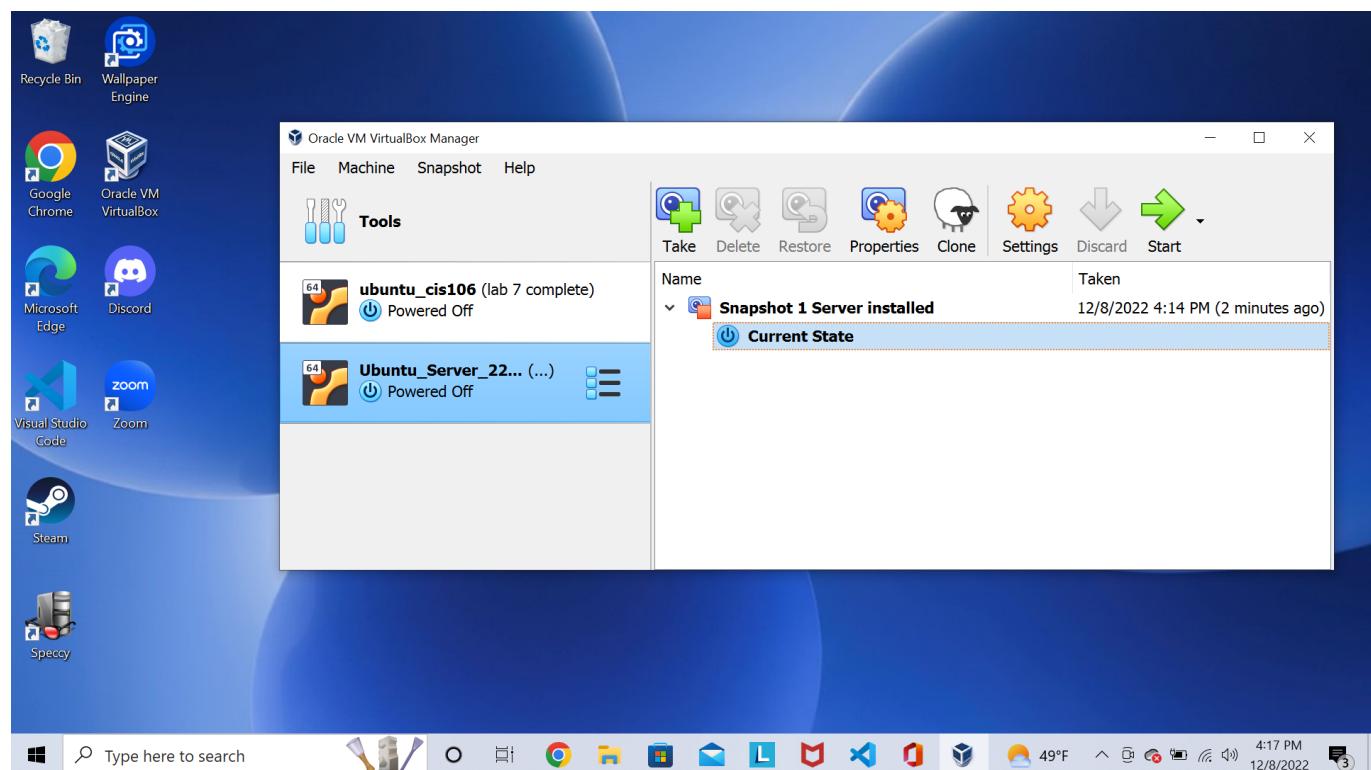
- It is a networking security device that monitors incoming and outgoing network traffic and permits or blocks data packets based on a set of security rules.



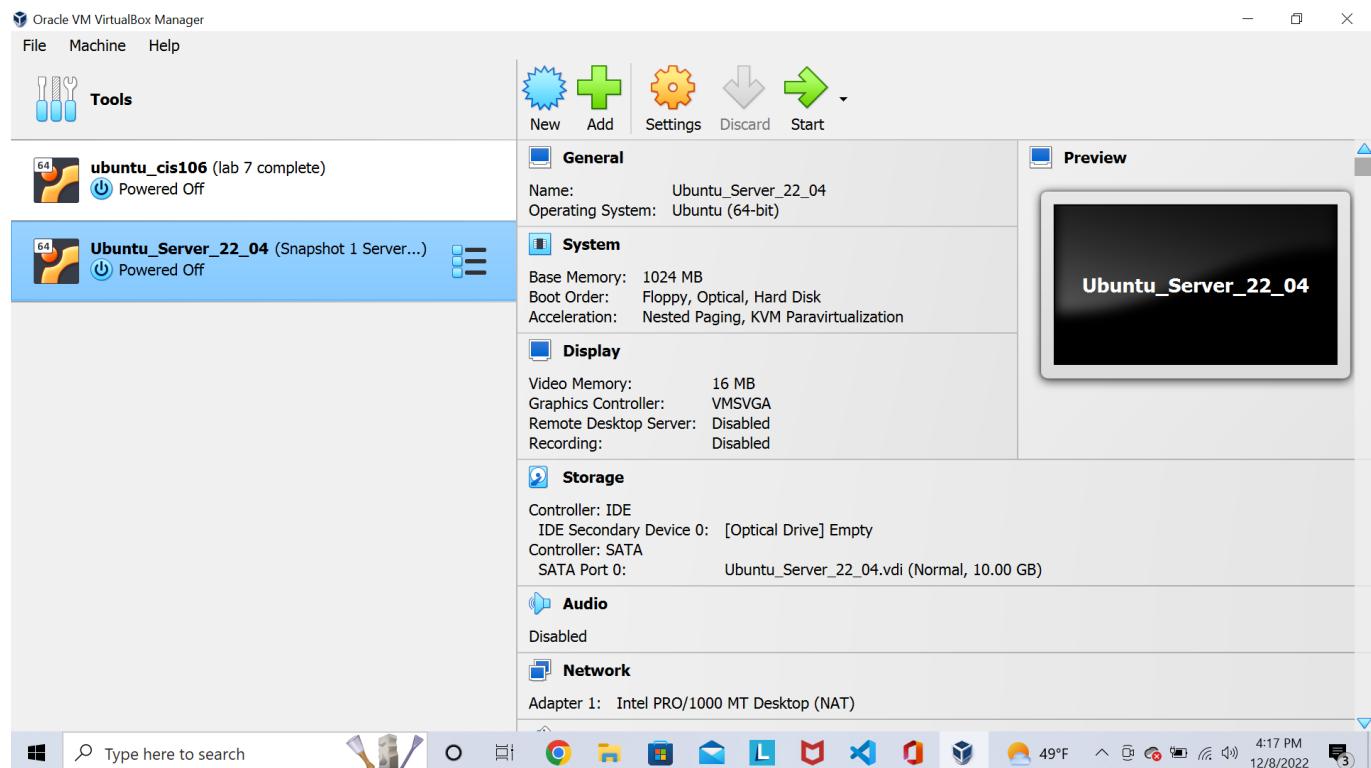
What is SSH?

SSH can be known as Secure Shell or Secure Socket Shell, is a network protocol that gives users, particularly system administrators, a secure way to access a computer over an unsecured network.

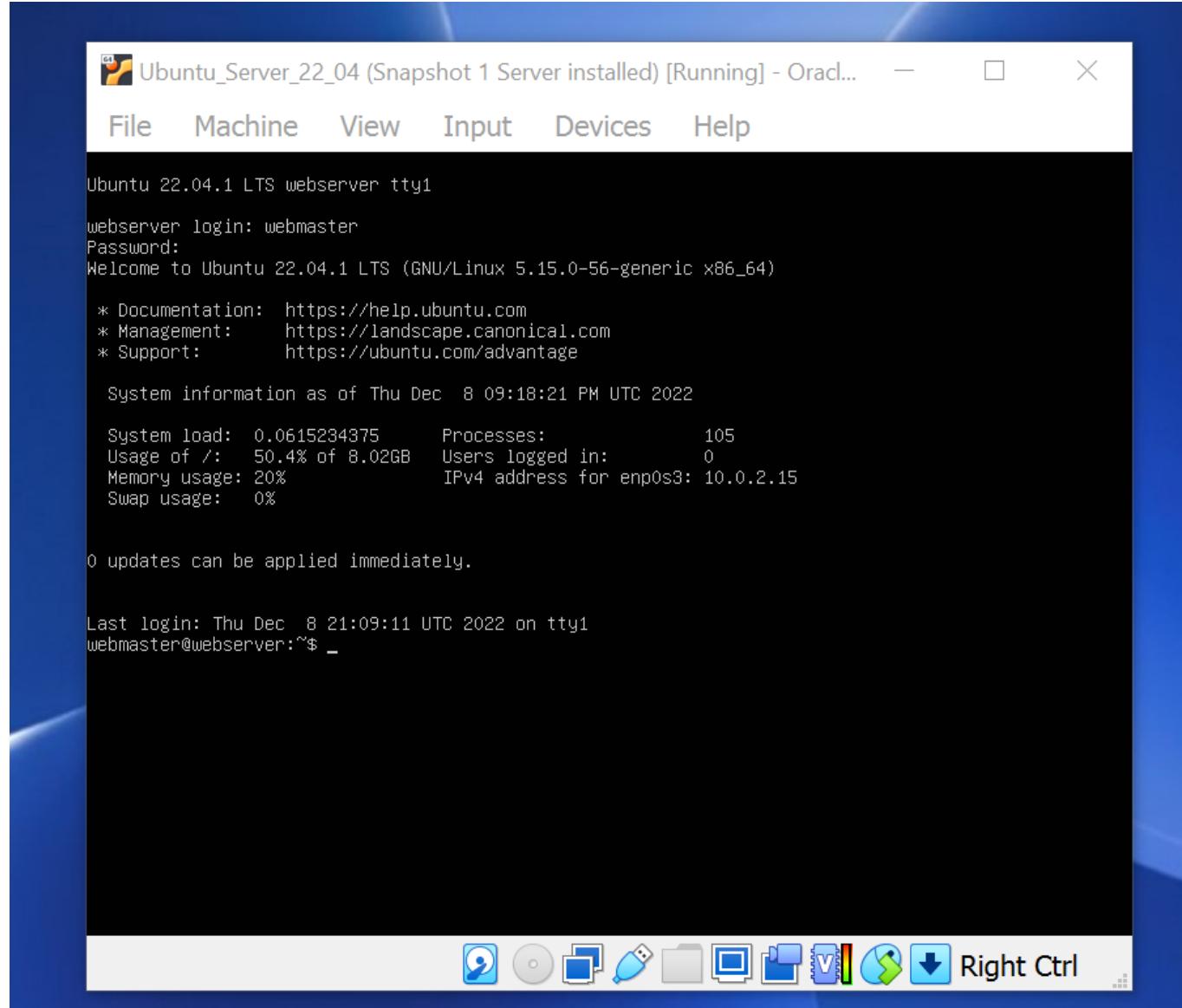
Deliverable 2



In this image as you can see we had to install the Ubuntu server to get it up and running in order for us to start the process for the website

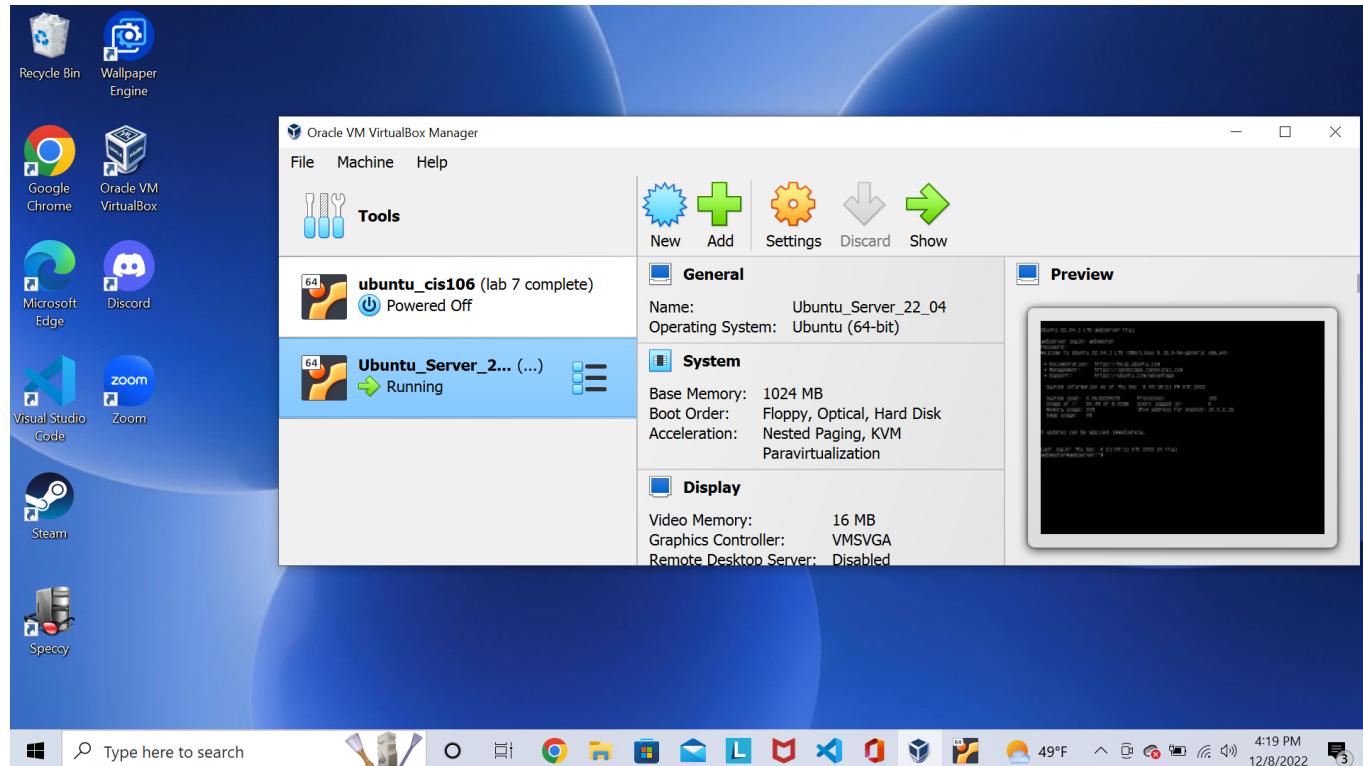


Here I am displaying all the information of the up and running sever. As well of showing the specs of the VM.

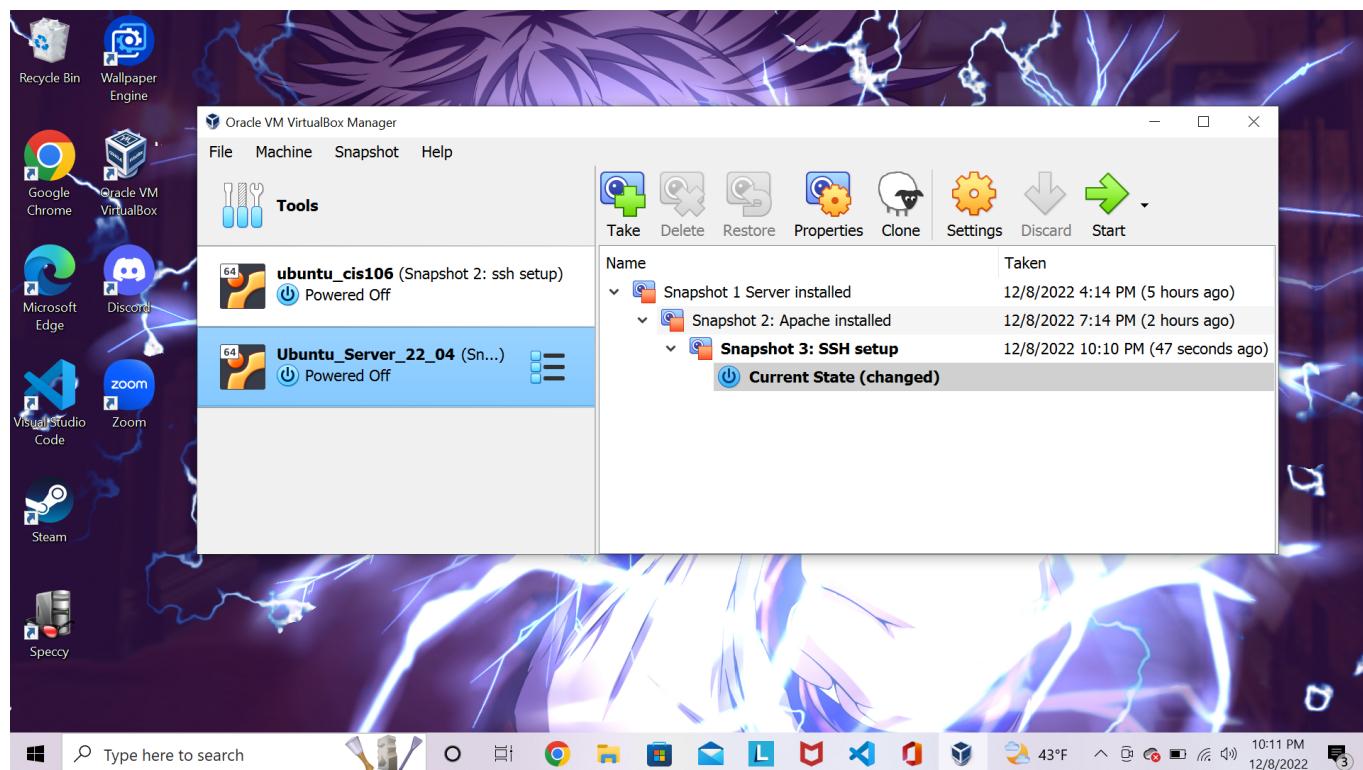


```
Ubuntu_Server_22_04 (Snapshot 1 Server installed) [Running] - Oracle VM VirtualBox  
File Machine View Input Devices Help  
Ubuntu 22.04.1 LTS webserver tty1  
webserver login: webmaster  
Password:  
Welcome to Ubuntu 22.04.1 LTS (GNU/Linux 5.15.0-56-generic x86_64)  
* Documentation: https://help.ubuntu.com  
* Management: https://landscape.canonical.com  
* Support: https://ubuntu.com/advantage  
System information as of Thu Dec  8 09:18:21 PM UTC 2022  
System load: 0.0615234375 Processes: 105  
Usage of /: 50.4% of 8.02GB Users logged in: 0  
Memory usage: 20% IPv4 address for enp0s3: 10.0.2.15  
Swap usage: 0%  
0 updates can be applied immediately.  
Last login: Thu Dec  8 21:09:11 UTC 2022 on tty1  
webmaster@webserver:~$ _
```

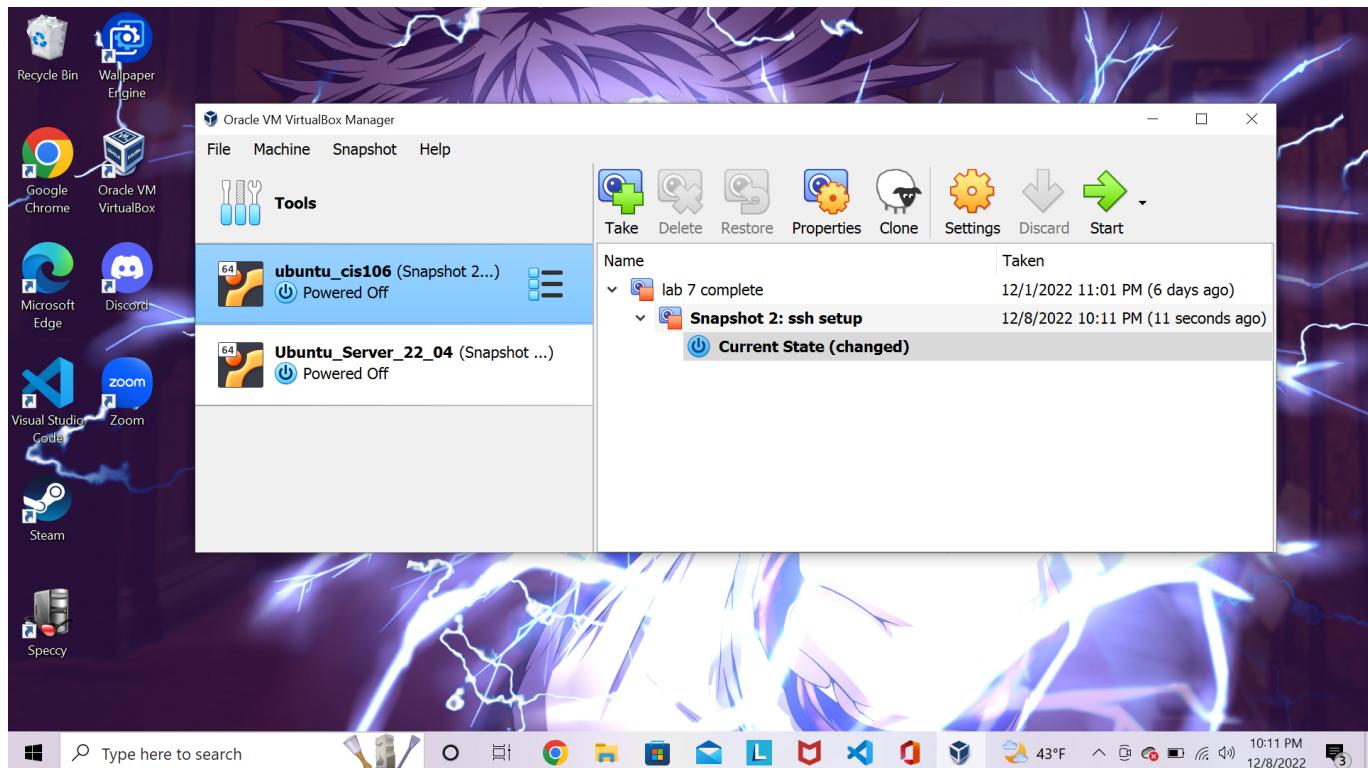
Displays the login for the server and the software we are running for the server.



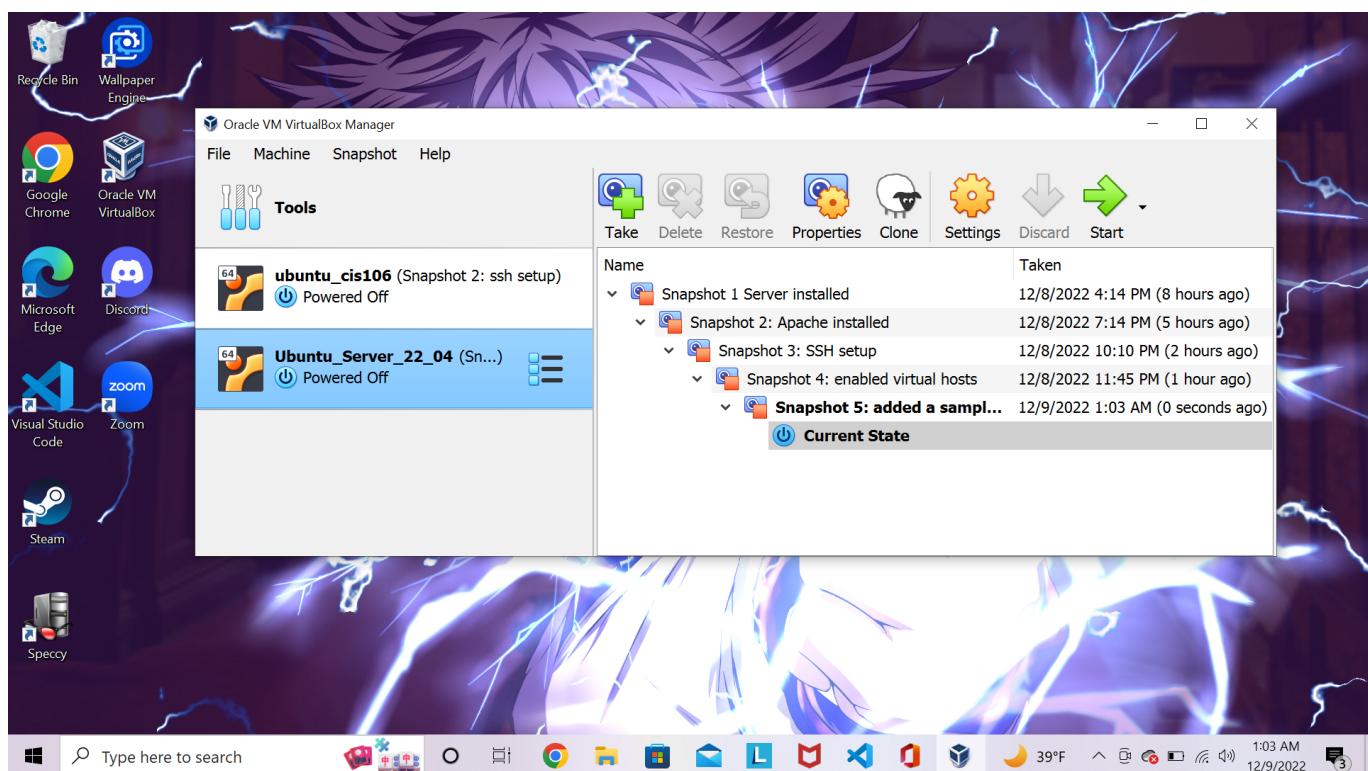
In the middle of install Apache which allows scripts to turn into web pages.



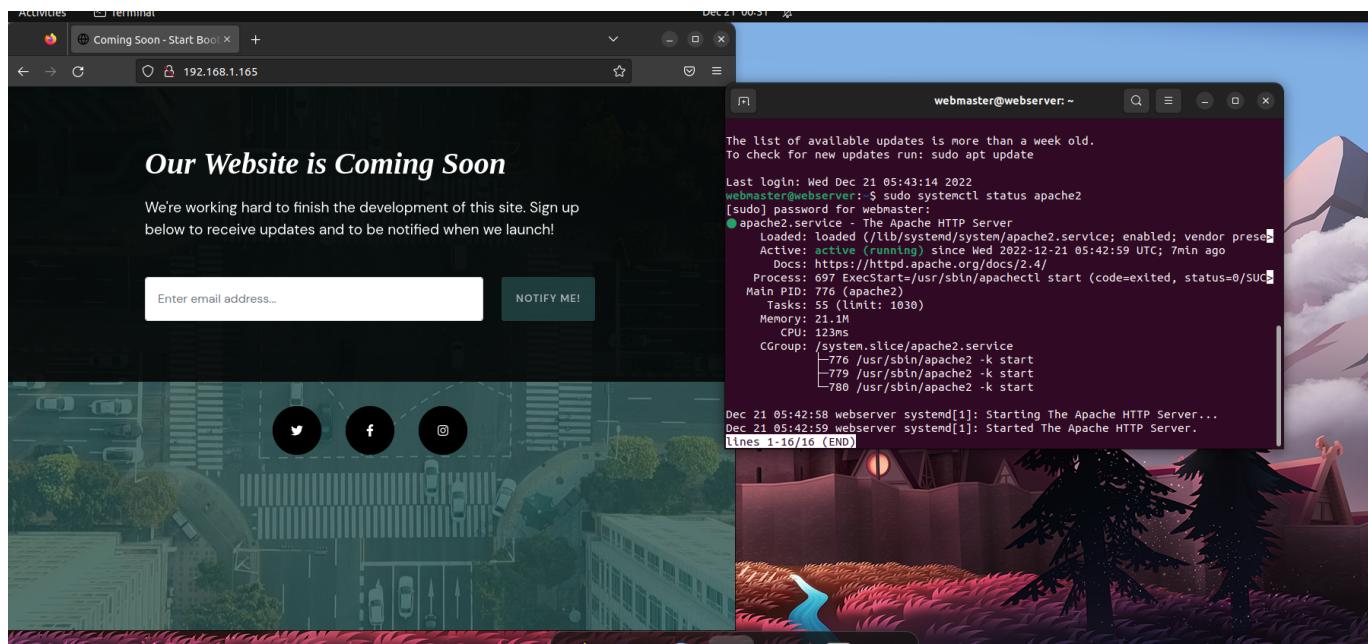
Here you can see that we had just installed Apache and set up SSH for the server and had saved the snapshot.



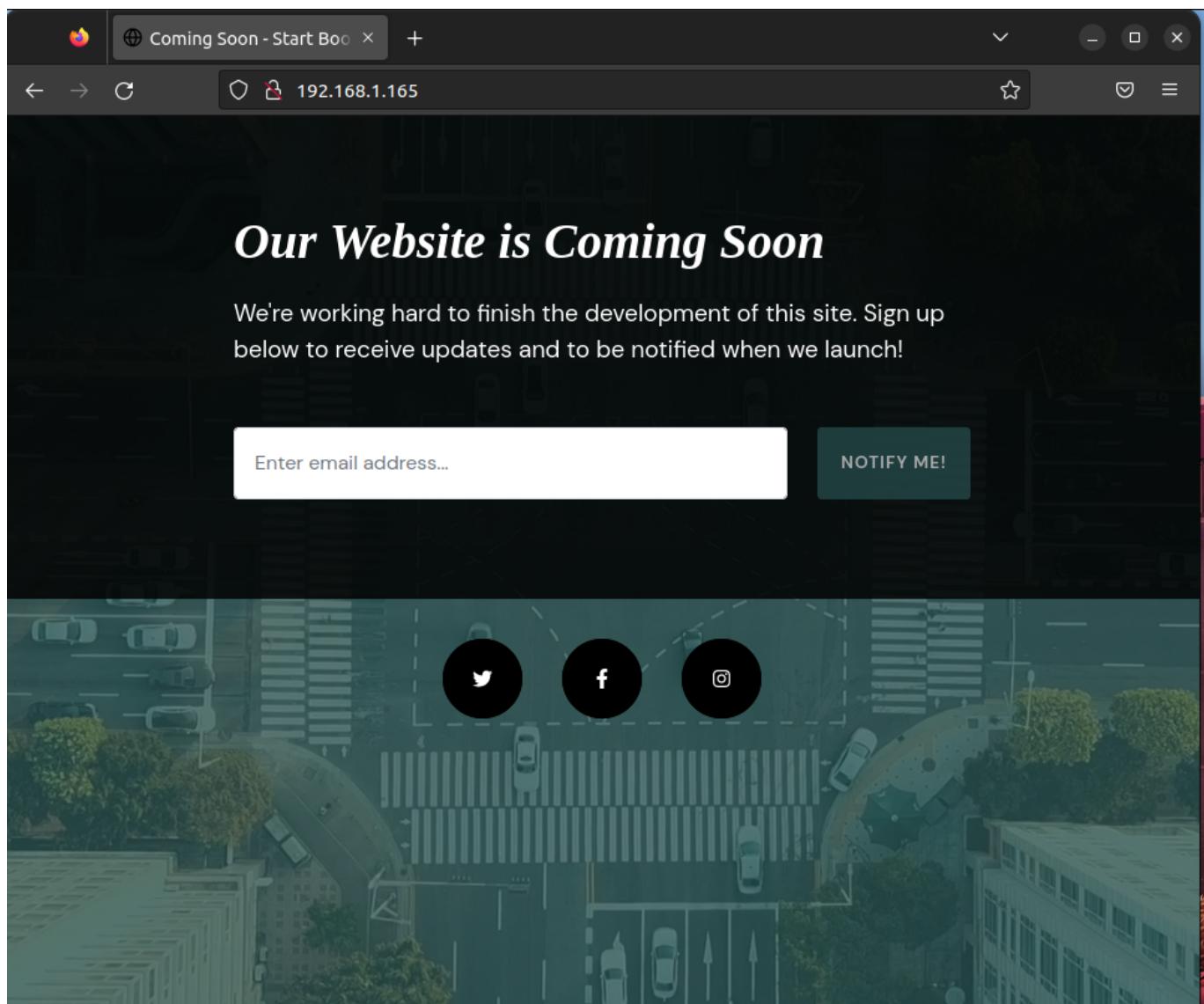
We end up going into our regular vm machine and making sure ssh is set up and ready to go so we can start making sure our own website is up and running.



Lastly we enabled virtual host so that way we can set up our sample site. Every time we search up our ip address it will display the sample site.



Here I am checking to make sure that Apache is running smoothly and the website is up and running.



As you can see the website is fully functional and displays what's to come.