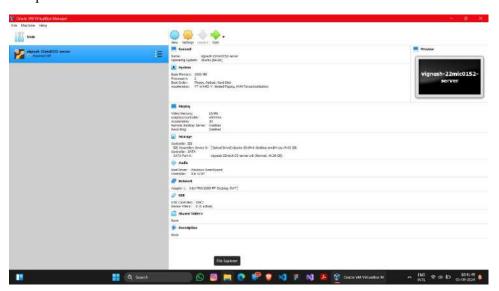
CLOUD COMPUTING LAB

NAME: VIGNESH S

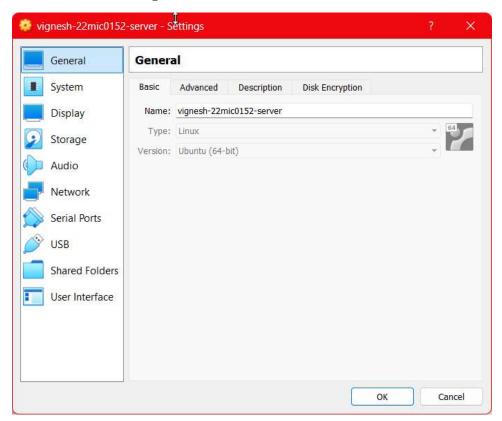
REGNO: 22MIC0152

QUESTION 1: Install virtual box and host two VMs while one acts as a server and the other as client, so you should be able to view the webpage hosted in the Server VM through Client VM?

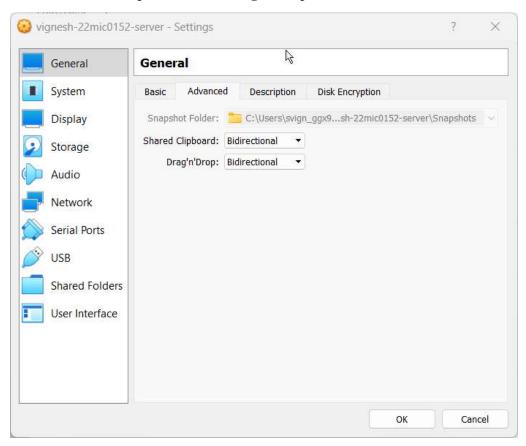
1: Open the Virtual Box Create a New VM:



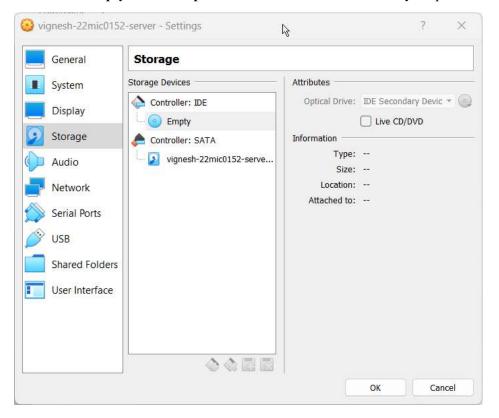
2. Customize the Setting:



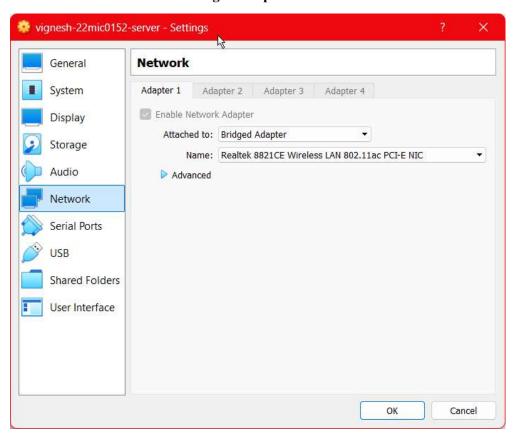
3: Make "Shared Clipboard" and "Drag'n'Drop" both as "Bidirectional":



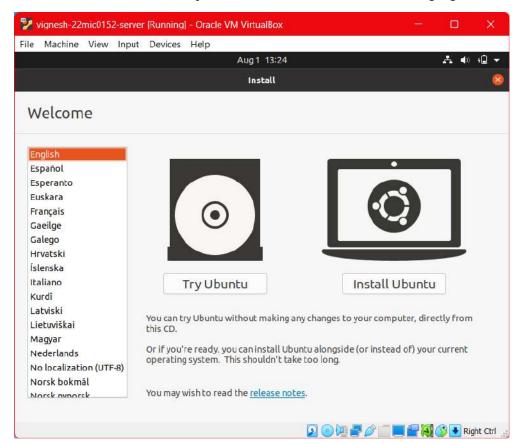
4: Click on Empty and set "Optical Drive" to the Ubuntu file in your pc:



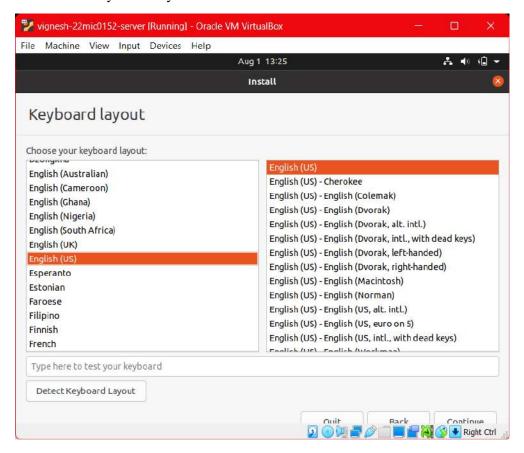
5: Set the "Attached to" to "Bridged Adapter" and click "ok":



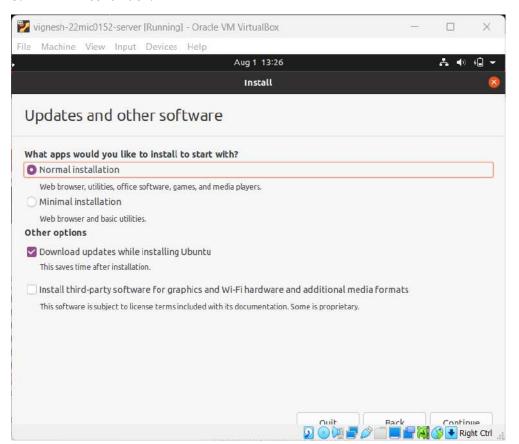
6: Now **Start** the **VM** and setup the Ubuntu in the **VM**, Select the Language:



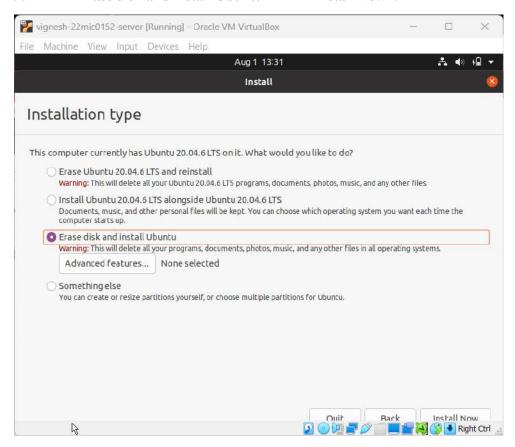
7: select the Keyboard Layout:



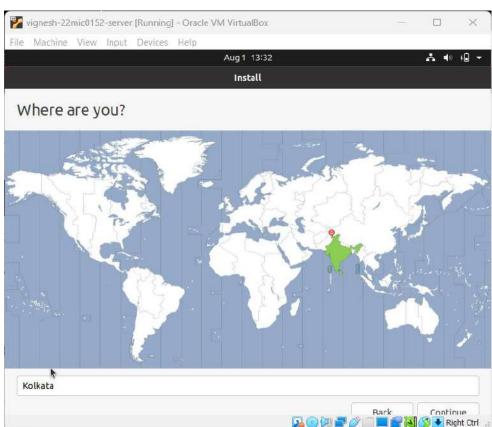
8: Click on "continue":



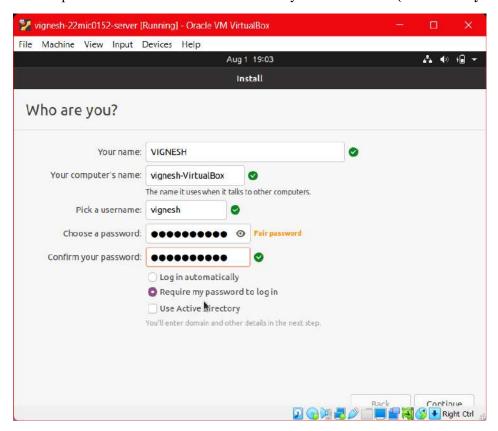
9: Select "Erase disk and install Ubuntu" click "Install Now":



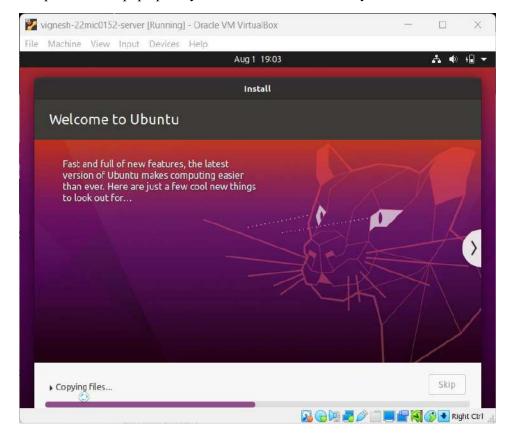
10: Select your Time Zone (Kolkata) and your country (India):



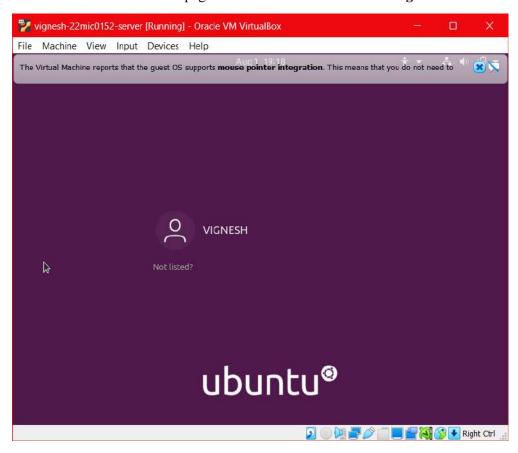
11: Setup a new Username and Password for your Ubuntu VM (Remember your Password):



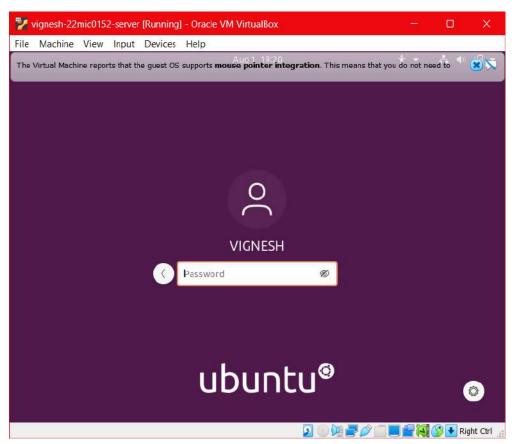
12: Let the Installation process complete (It may take a While) be patient and let the process complete and the pop up ask you for a "Restart". Restart your Ubuntu:



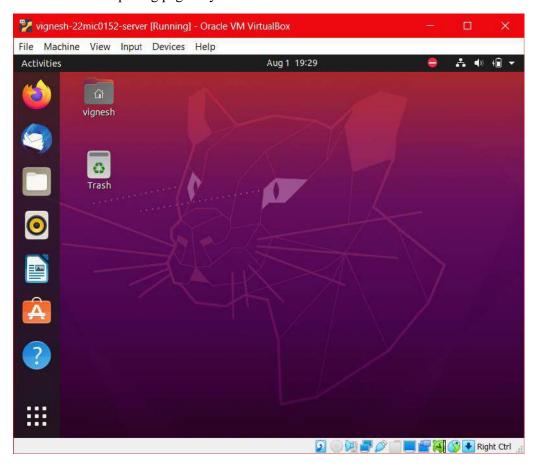
13: After the Restart the first page will be Your Authentication Page:



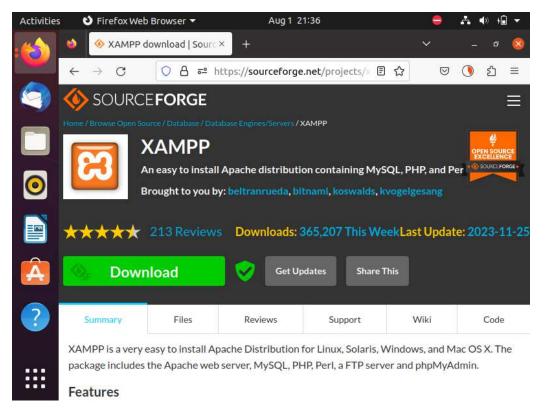
14: Enter your Password:



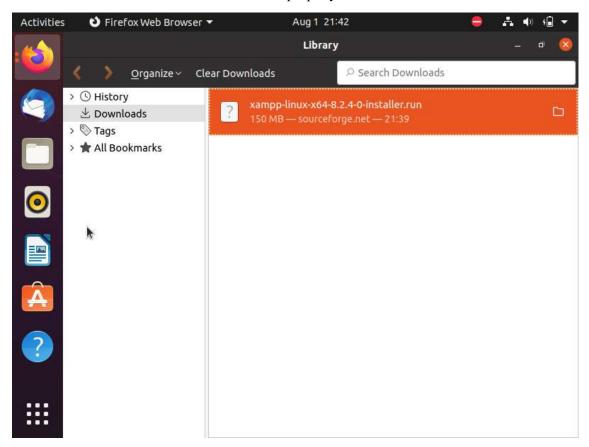
15: This is Your opening page of your Ubuntu:



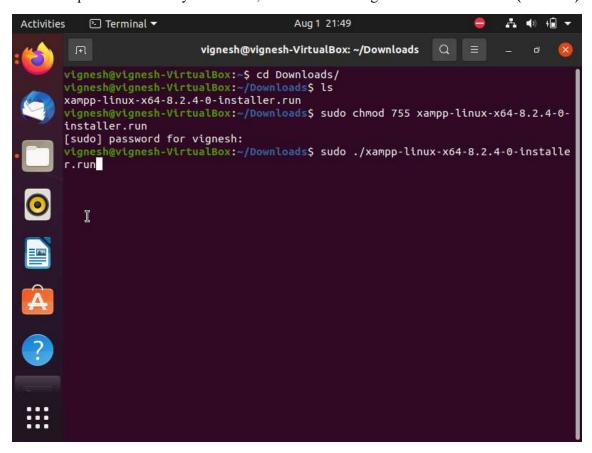
16: Open your Firefox in VM and Download XAMPP-Linux-x64-8.2.4-0-installer.run (Download XAMPP for Linux):



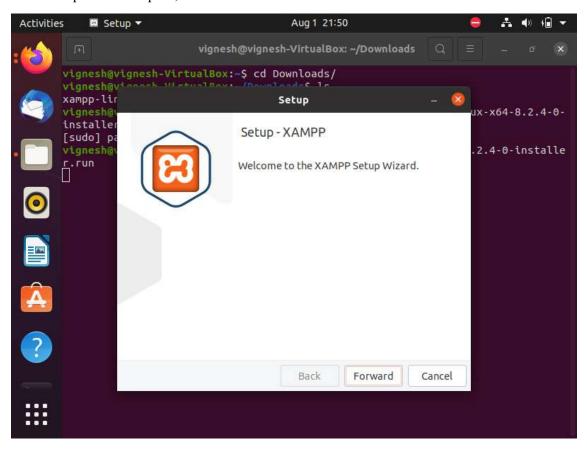
17: Cross check once **XAMPP** is downloaded properly:



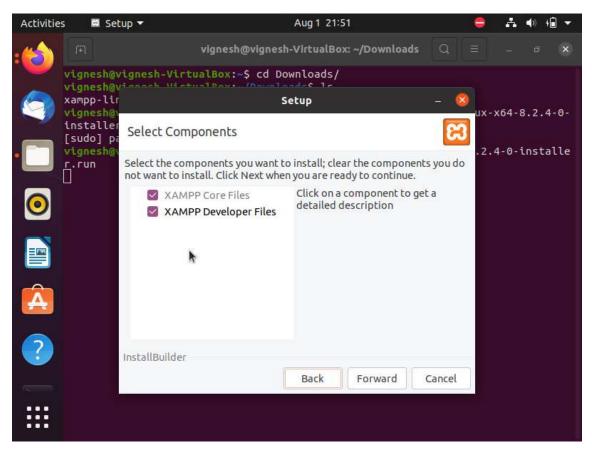
18: To setup the XAMPP in your Ubuntu, Enter the following codes in the Terminal (in Linux):



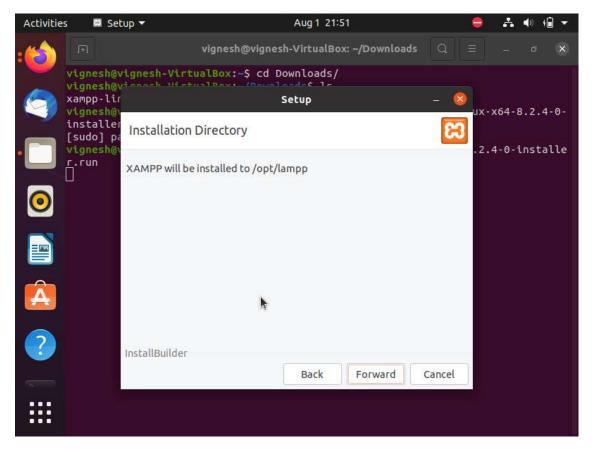
19: A Setup Window Opens, click on "Forword":



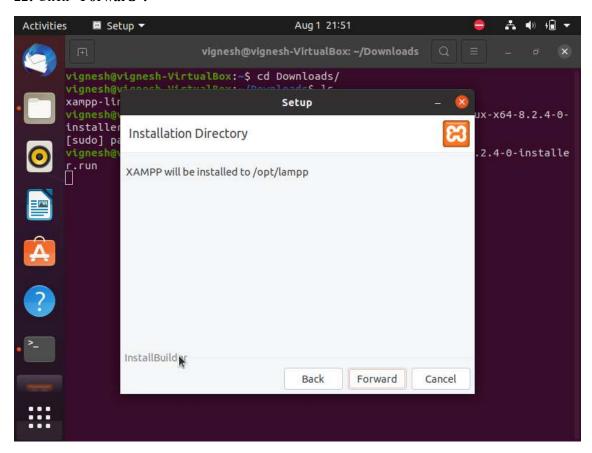
20: Click "Forward":



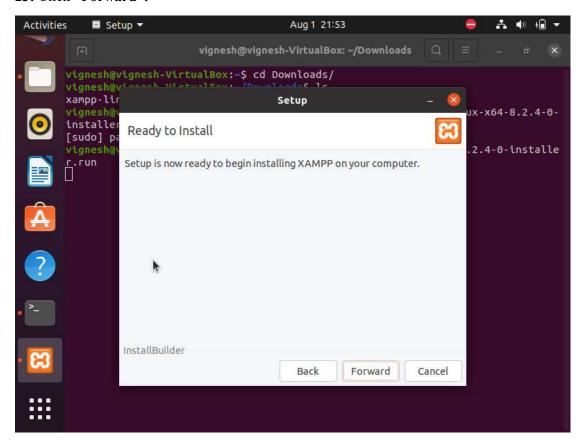
21: Click "Forward":



22: Click "Forward":



23: Click "Forward":



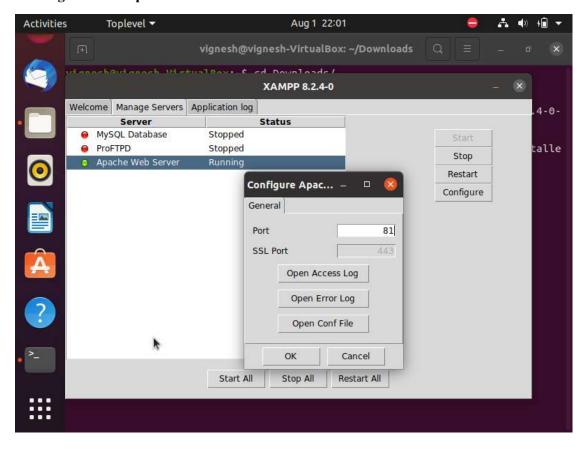
24: Let the Installation Process complete. Once the installation completed **XAMPP** window for the ubuntu will be opened automatically:



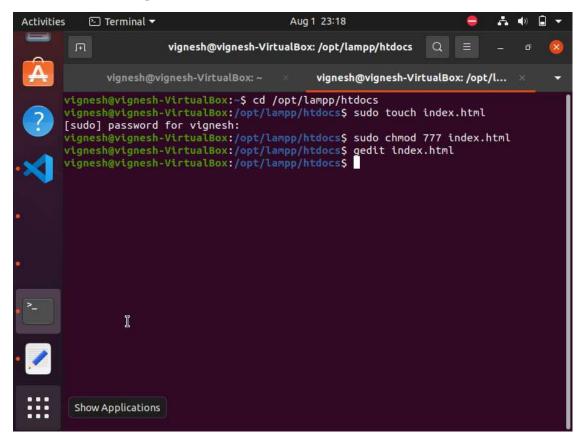
25: This the Welcome page of XAMPP. Click on the "Get Started":



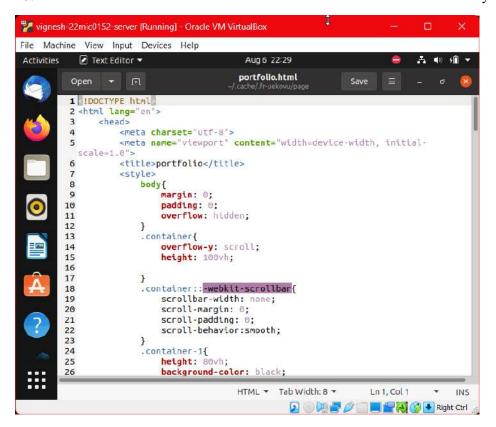
26: Set all the status as "Stopped" except "Apache Web Server" as "Running" and click "Configure" for "Apache Web Server" set the "Port" as 81:



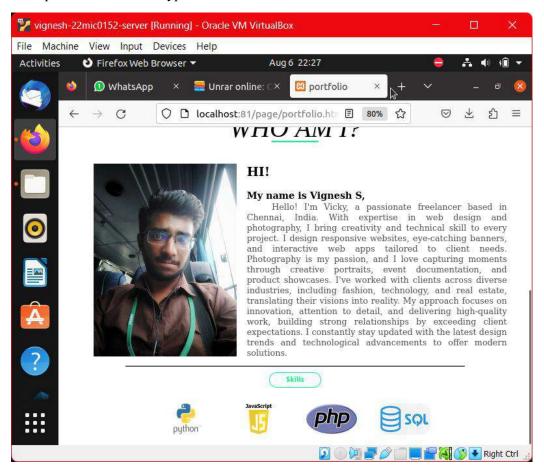
27: Enter the following Code in the **Ubuntu Terminal** to open the html file in the "htdocs" of the Ubuntu to make it to open over the network:



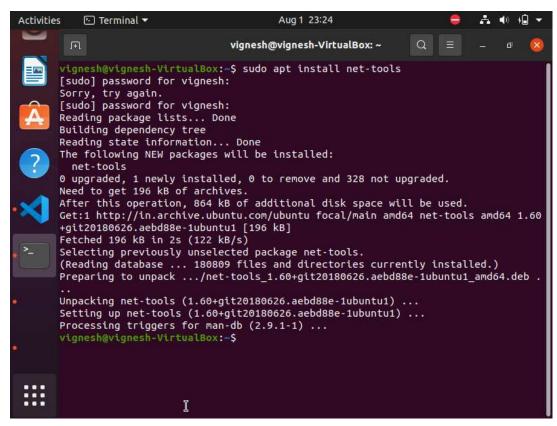
28: A new html text area will be available on the Screen to text the html doc of your Profile:



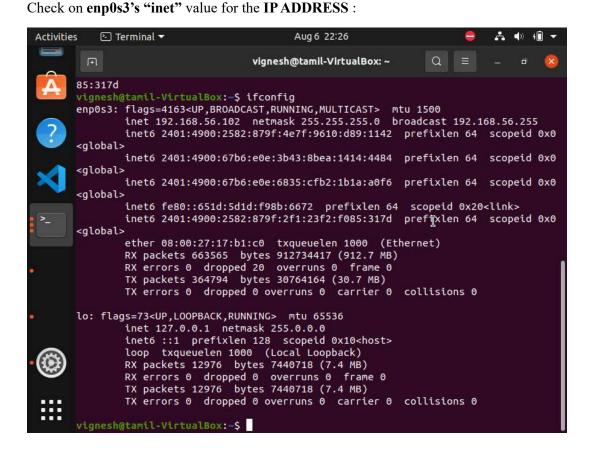
29: Open the Firefox and type "localhost:81" or "localhost:81/<file-name>/" to check the page:



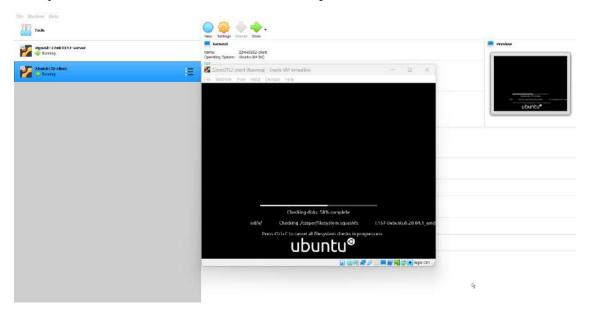
30: Download the **net-tools** using the following code in **Terminal (in Linux)**:



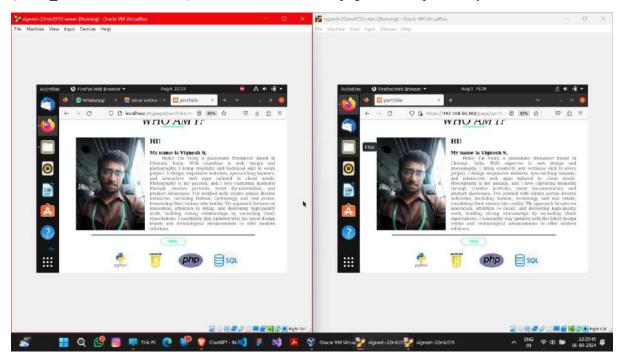
31: Type "ifconfig" in the Terminal to check the IP Address of the Server (IP: 192.168.46.183)



32: Open a new VM as "Client" and follow the Step 2-15 for the Client:



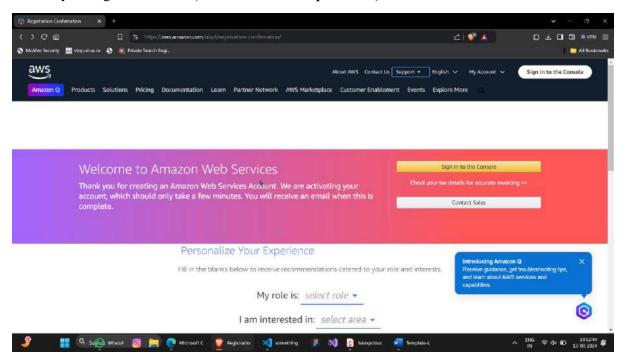
33: Open Firefox in your Client and Enter the IP Address of your Server with your html doc name (ie: IP_Address/<file-name>) in the search. Your html page will be opened in your Client VM:



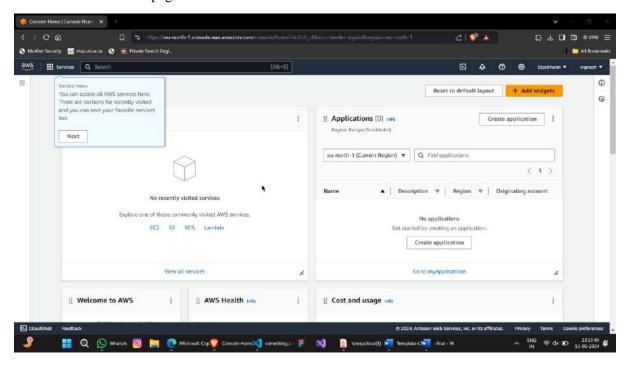
(NOTE: CHECK YOUR INTERNET CONNECTION FOR THIS STEP)

QUESTION 2: Create and manage EC2 instances on AWS. Launch an application on an EC2 instance in one region and then migrate that instance to another region. Additionally, set up another EC2 instance to install MySQL, create a database (e.g., student or employee database), and perform basic SQL operations.

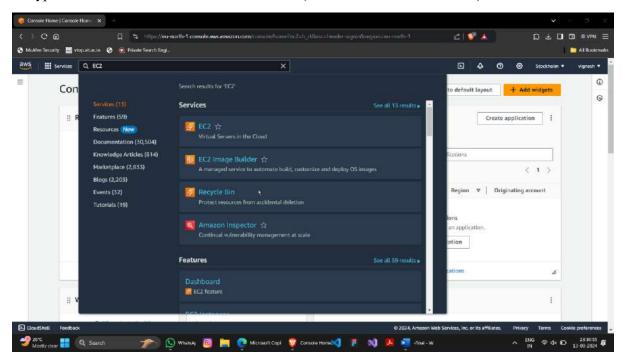
1: Open an AWS login page and click on "Sign in to the Console" to login in to your AWS account. Provide your login credentials (email account and password):



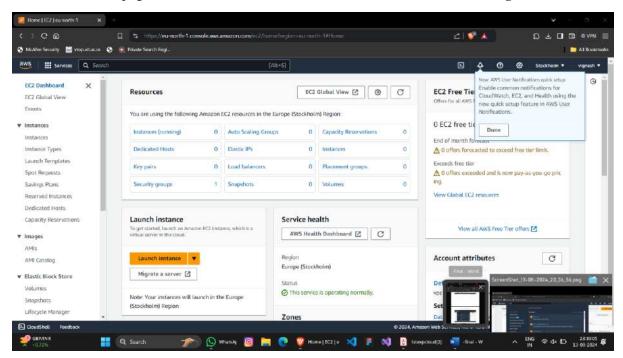
2: This is the welcome page of the **AWS** account:



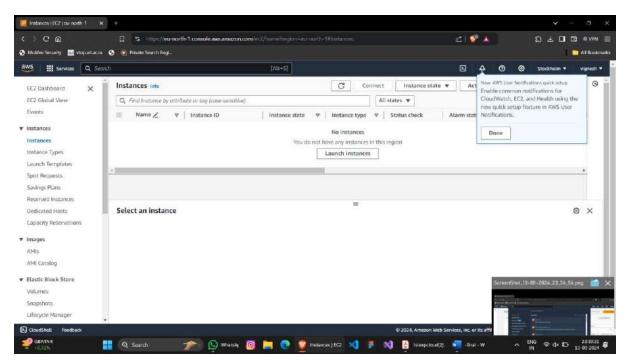
3: Type EC2 in the search and Click on the EC2 (Virtual servers in the cloud):



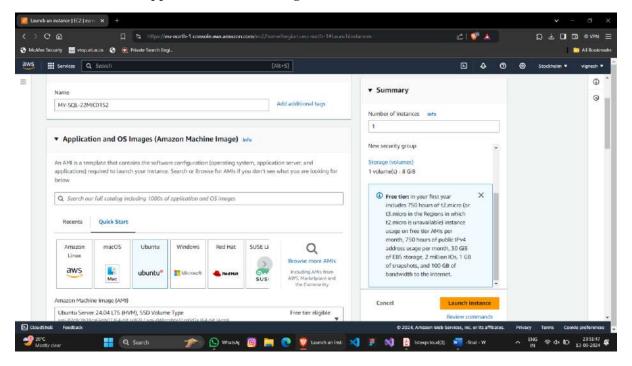
4: In the welcome page of the EC2 click on the "Instances" available on the "Navigation menu":



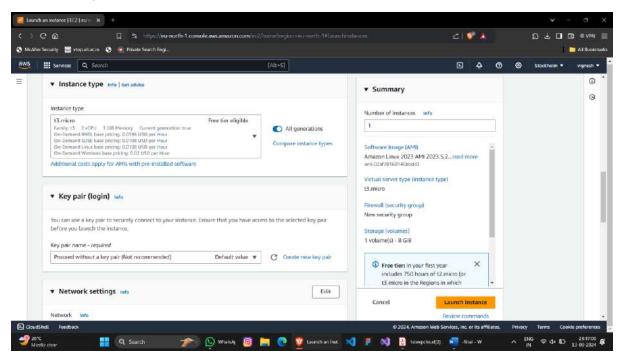
5: Click on the "Launch Instances" avaliable on the **Top-Right** corner of the Page to launch a new instance:



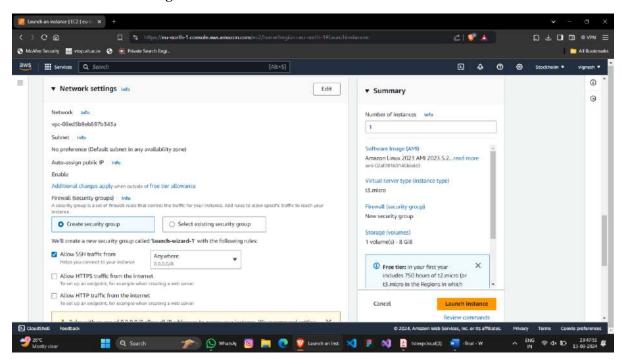
6: Give the instance a Name (ie... "MY-SQL-22MIC0152") and select the Ubuntu in the "Quick Start" avaliable on "Application and OS Image":



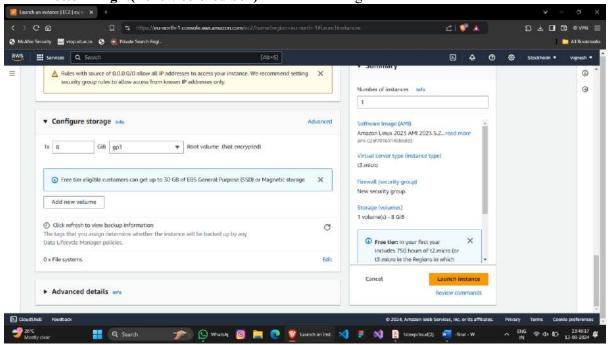
7: Scroll down to change the **Instance type** to "t3.micro" and select the **Key pair(login)** to "**Proceed without a Key Pair (Not Recommended)**":



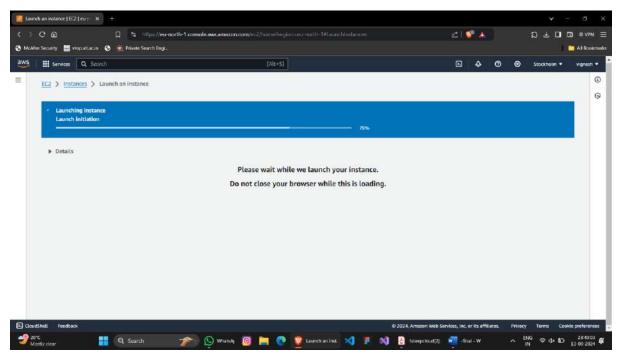
8: Let the Network settings be the Default values:



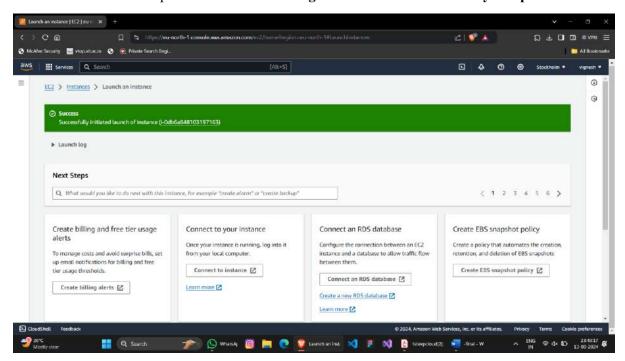
9: Let the **Configure storage** values be **Default values.** Then clik on the **Launch Instance** avaliable on the **Bottom-Right(Yellow colored box)** corner of the Page:



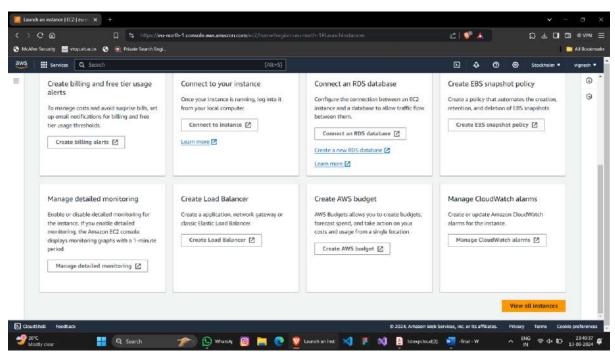
10: Launching an instance take a while, be patient till the process completes:



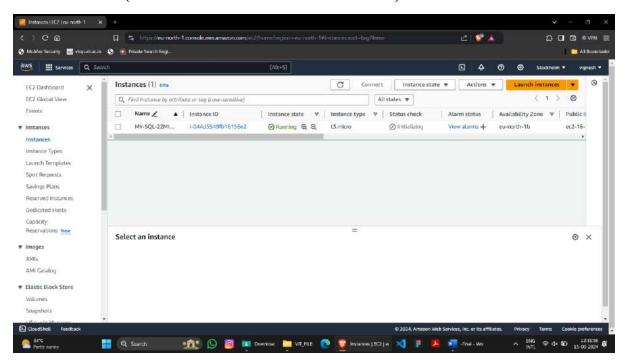
11: A Success window opens when the Launching of a instance is Successfully completed:



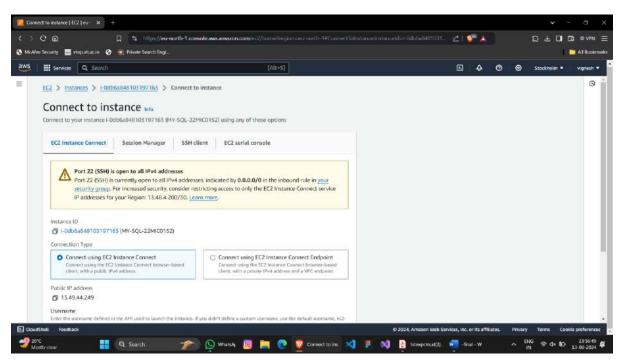
12: Scroll down a in a Success page and click on the View all instances avaliable on the Bottom-Right corner of the page:



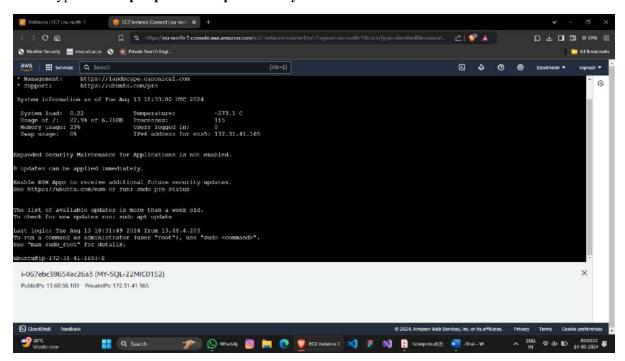
13: Once a new Instance is created, Select the instance needed to be operated and click on the "Connect" button (Avaliable once an Instance is been selected):



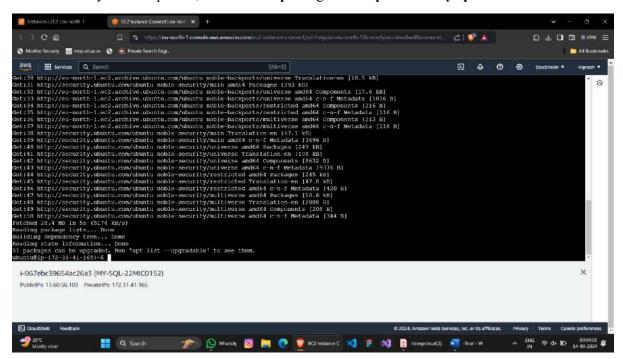
14: A Connect to instance portal opens. Select the Connection Type to "Connect using EC2 Instance Connect":



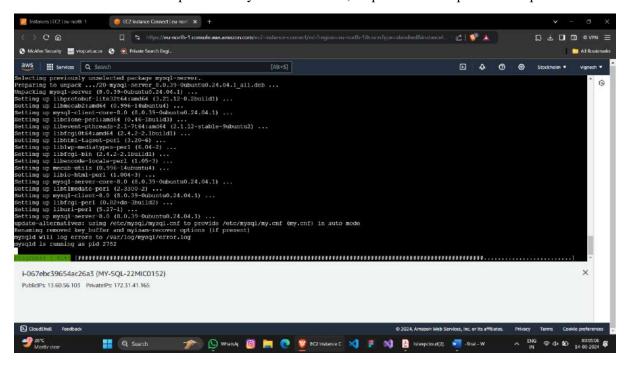
15: Once the previous step is completed the AWS will redirect you to another page of Ubuntu, where type "sudo apt update" to update the system:



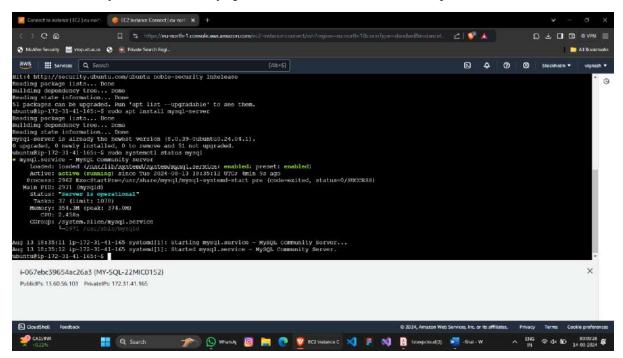
16: Once the system is updated, Install MYSql using "sudo apt install mysql-server":



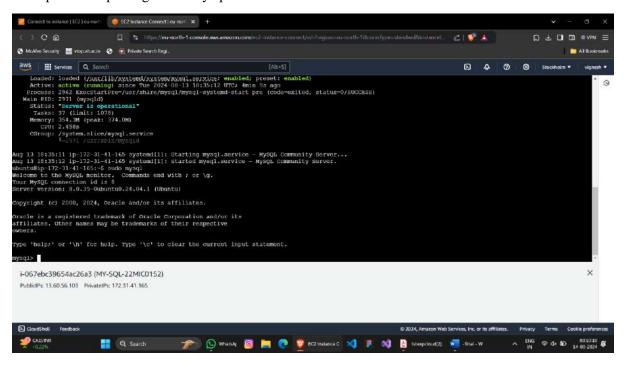
17: The installation a MYSql server may take some time, be patient till the process complete:



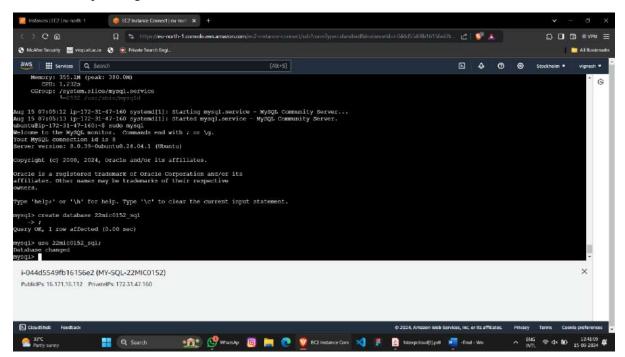
18: Use "sudo systemctl status mysql" to check the Status of the MYSql:



19: Open MYSql using "sudo mysql":

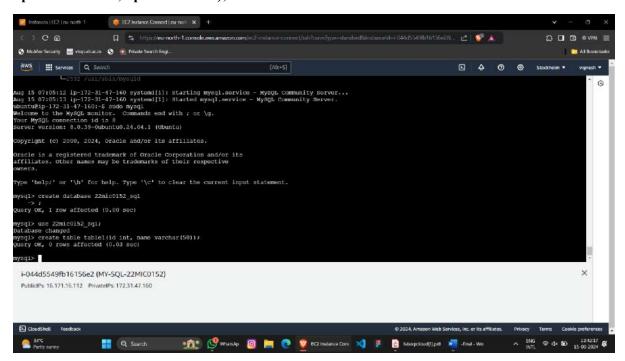


20: Create a Database using "create database <database-name>;" and "use <database-name>;" for the MYSql testing whether the installation is successfull:

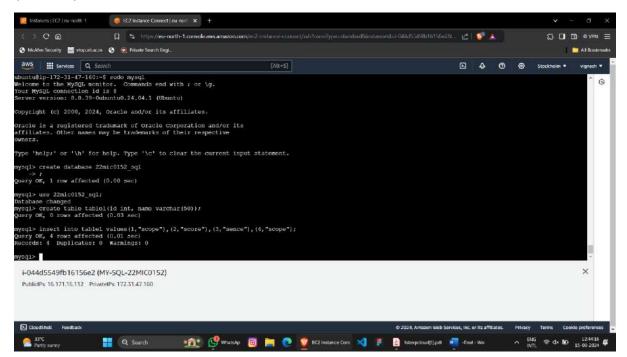


(NOTE: Terminate all MYSql codes with ";")

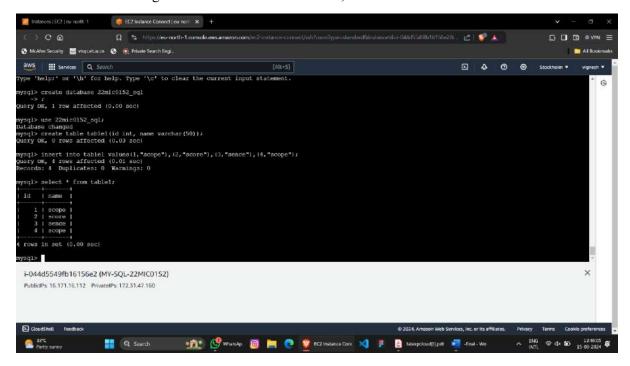
21: Create a table (ie... "table1") using "create table <table-name> (<parameter1>, <parameter2>..., <parameter'n');":



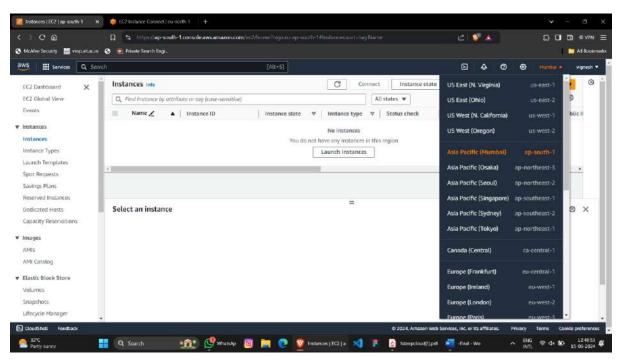
22: Insert values in the created table using "insert into <table-name> values (value 1), (value 2), ... (value 'n');":



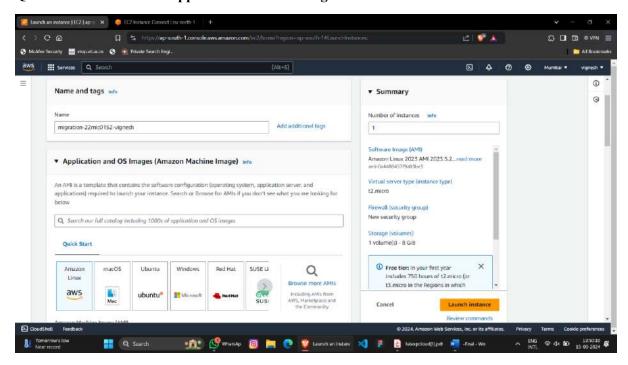
23: View the table using "select * from <table-name>;"



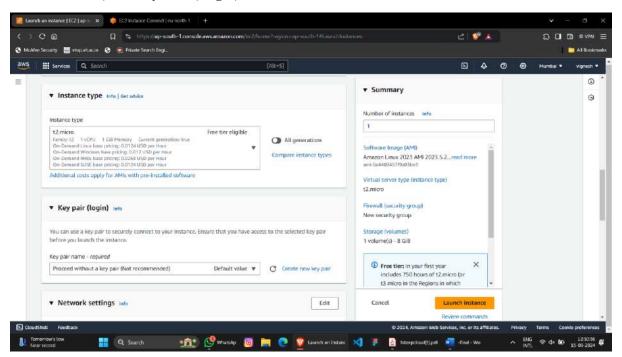
24: Go to the Instance window in the previous tab and click on the Location menu available in the Top-Right of the page, and select the location to "Asia Pacific (Mumbai)" from "Stockholm". Then click on "Launch Instance" to create new instance in the Mumbai Server:



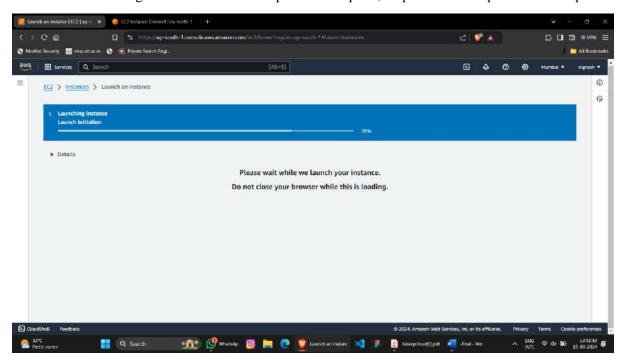
25: Provide a Name (ie... "migration-22mic0152-vignesh") for the instance you create and set the Quick Start available on Application and OS Images to "Amazon Linux":



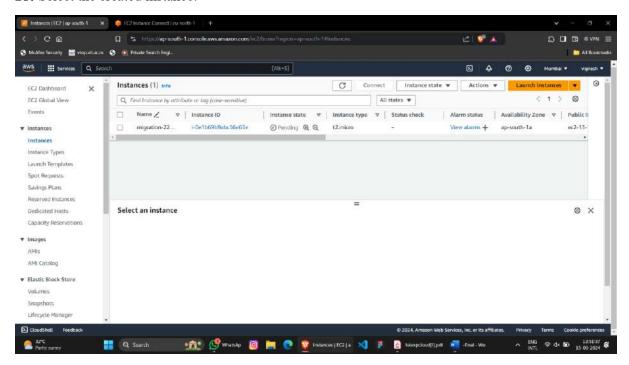
26: Set the Instance type to "t2.micro" and select "Proceed without a key pair (Not Recommended)" in Key Pair (Login):



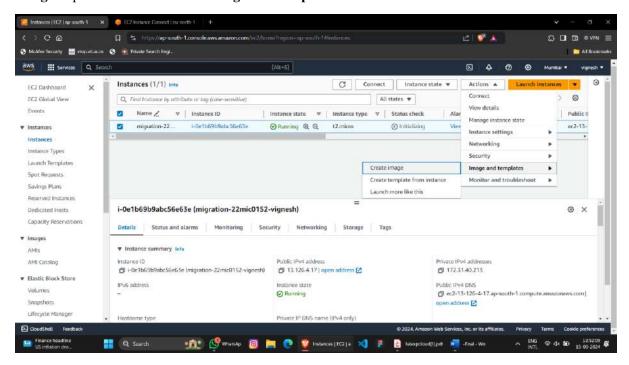
27: Let the Launching instance initialization process complete, be patient till the process to complete:



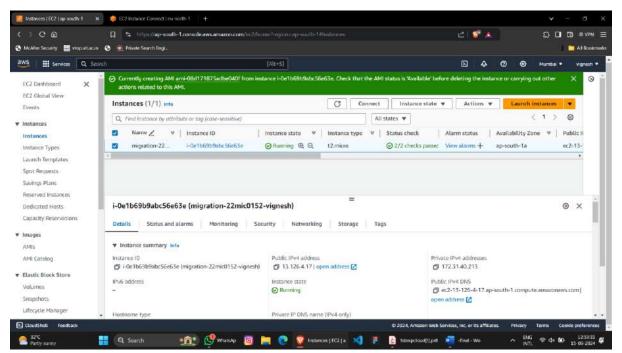
28: Select the created instance:



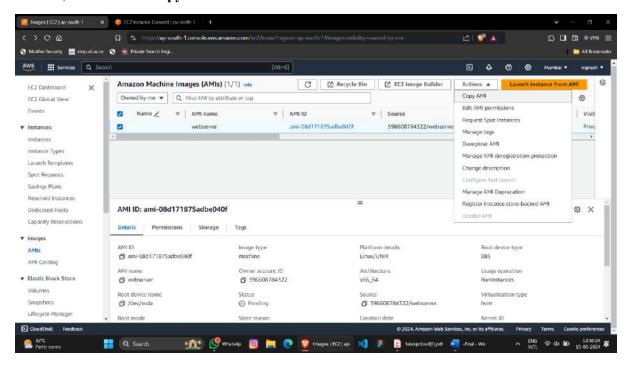
29: Select the Actions available on the Top-Right corner of the Window and select the "Create Image" option available under "Image and templates":



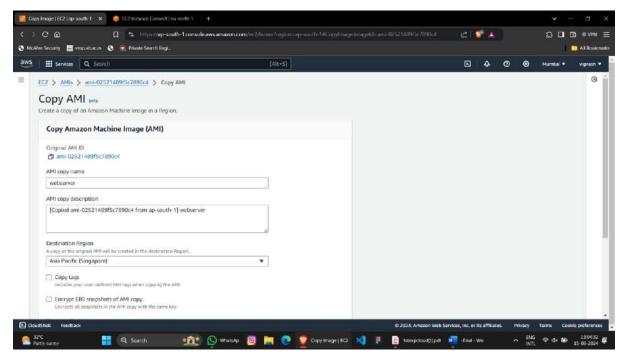
30: The previous Step opens a tab where you provide **Image name** and **Image Description** and click on the "**create image**" option available on the bottom of the menu:



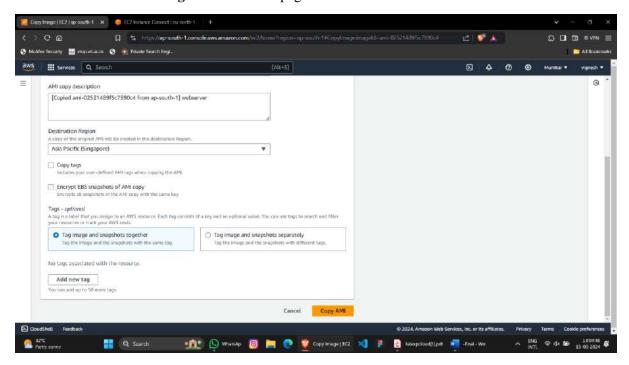
31: Select the **AMIs** available on the **Navigation panel**. And select the instance available and Go to **Actions**, click on the "**Copy AMI**":



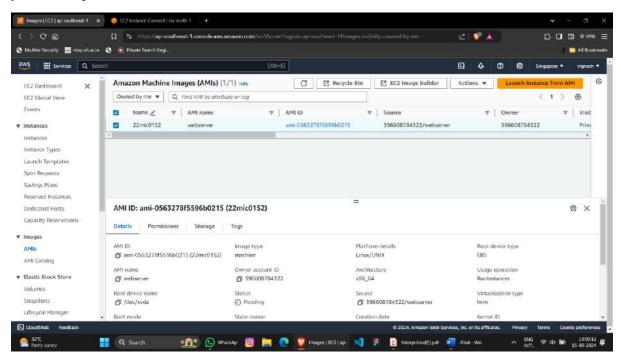
32: A Copy AMI tab opens and give the AMI copy name and select the Destination Region as "Asia Pacific (Singapore)":



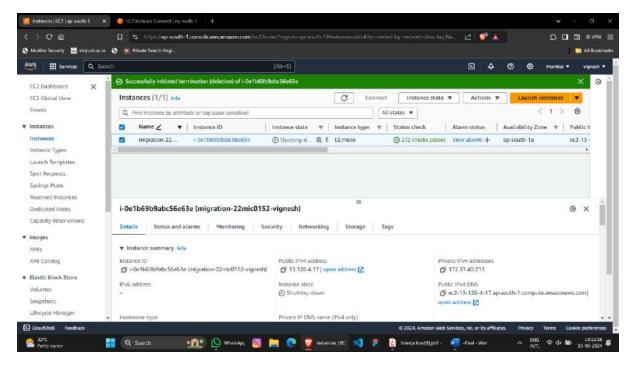
33: Select the Tags as "Tag image and snapshots together" and click on the "Copy AMI" option available on the Bottom-Right corner of the page:



34: Make sure You are in **Singapore server** and then you will be available with the copy of an **AMI** you have copied in the **Mumbai server:**



35: Terminate the instances created using the "Terminate instance" option available on the Instance state:



(NOTE: Terminate all instances created in (Stockholm, Mumbai and Singapore) locations)