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SEMESTER: ODD SEMESTER 5

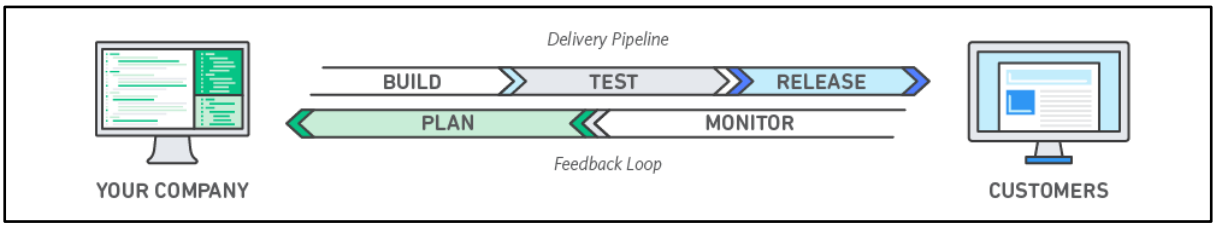
COURSE: Advance DevOPs (ITL504)

DATE: 20-07-2022

EXPERIMENT 1

1. What is DevOPs?

DevOps is the combination of cultural philosophies, practices, and tools that increases an organization's ability to deliver applications and services at high velocity: evolving and improving products at a faster pace than organizations using traditional software development and infrastructure management processes. This speed enables organizations to better serve their customers and compete more effectively in the market.



2. What is AWS EC2? Why EC2?

Amazon Elastic Compute Cloud (Amazon EC2) provides scalable computing capacity in the Amazon Web Services (AWS) Cloud. Using Amazon EC2 eliminates your need to invest in hardware up front, so you can develop and deploy applications faster. You can use Amazon EC2 to launch as many or as few virtual servers as you need, configure security and networking, and manage storage. Amazon EC2 enables you to scale up or down to handle changes in requirements or spikes in popularity, reducing your need to forecast traffic.

Amazon EC2 provides the following features:

- Virtual computing environments, known as instances
- Preconfigured templates for your instances, known as Amazon Machine Images (AMIs), that package the bits you need for your server (including the operating system and additional software)
- Various configurations of CPU, memory, storage, and networking capacity for your instances, known as instance types
- Secure login information for your instances using key pairs (AWS stores the public key, and you store the private key in a secure place)
- Storage volumes for temporary data that's deleted when you stop, hibernate, or terminate your instance, known as instance store volumes
- Persistent storage volumes for your data using Amazon Elastic Block Store (Amazon EBS), known as Amazon EBS volumes
- Multiple physical locations for your resources, such as instances and Amazon EBS volumes, known as Regions and Availability Zones

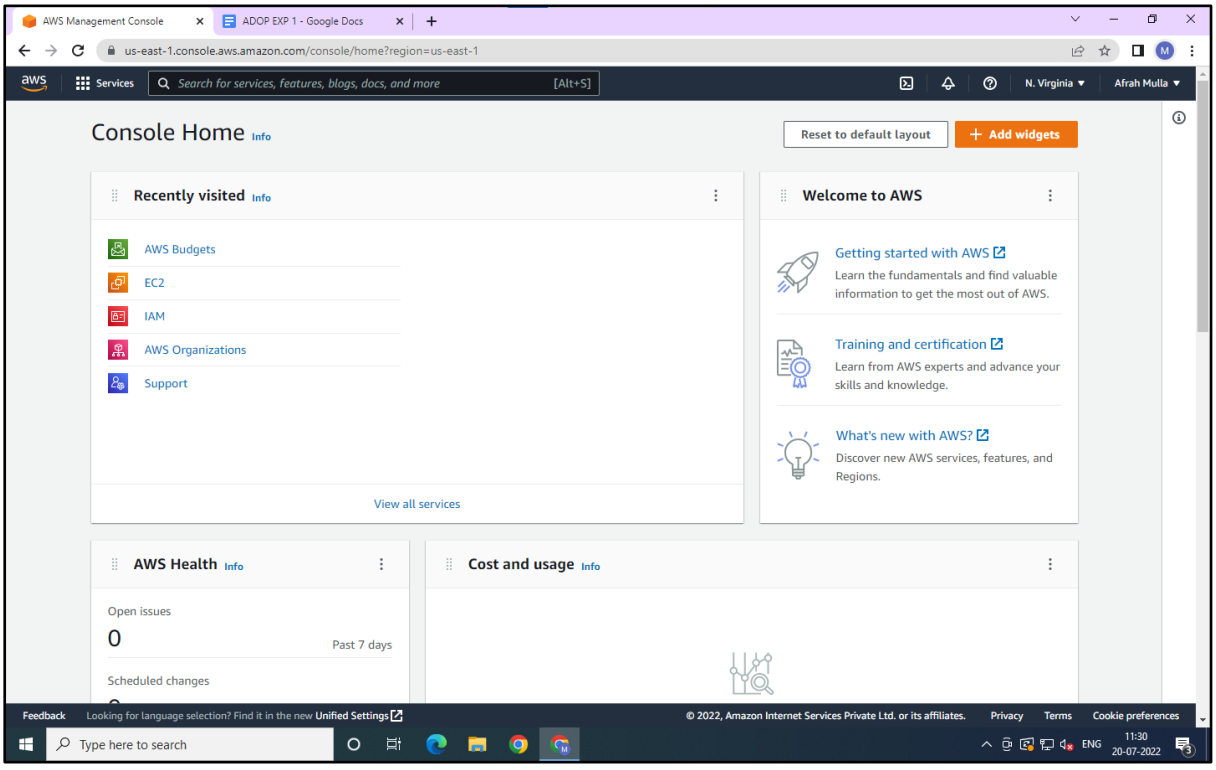
- A firewall that enables you to specify the protocols, ports, and source IP ranges that can reach your instances using security groups
- Static IPv4 addresses for dynamic cloud computing, known as Elastic IP addresses
- Metadata, known as tags, that you can create and assign to your Amazon EC2 resources
- Virtual networks you can create that are logically isolated from the rest of the AWS Cloud, and that you can optionally connect to your own network, known as virtual private clouds (VPCs)

3. Launch two instances of AWS EC2, one windows another ubuntu. Get connected to instances using RDP and MobaXterm client software. Explain each step of EC2 creation and launching with the help of screenshots.

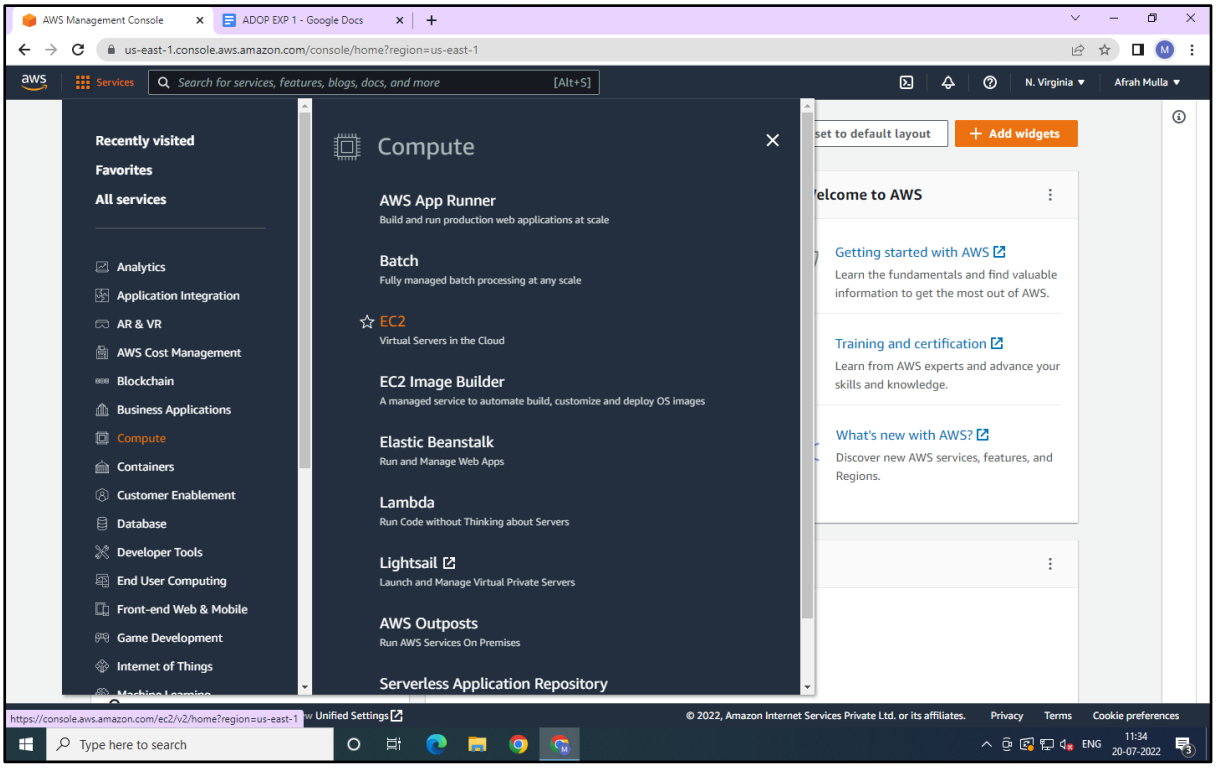
Open google.com from both the instances, search your own name.

Windows Instance

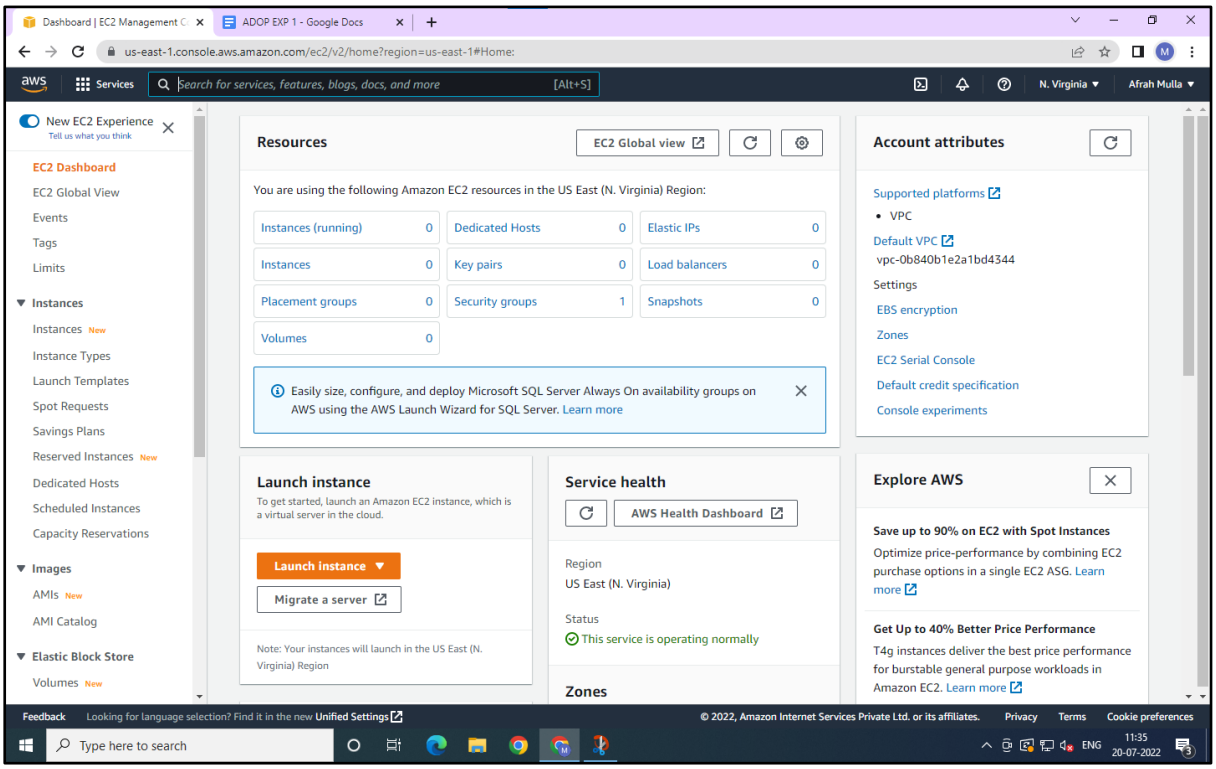
Step 1: AWS Management Console Dashboard



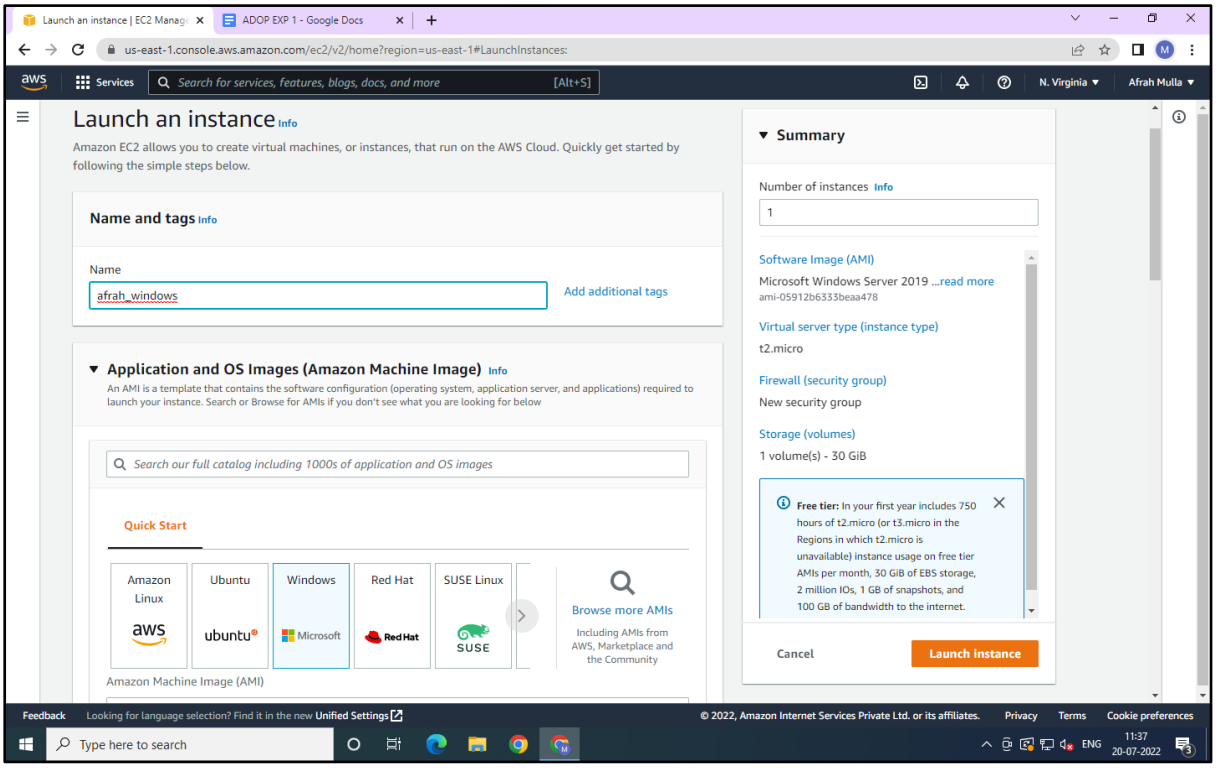
Step 2: Click on Service -> Compute -> EC2



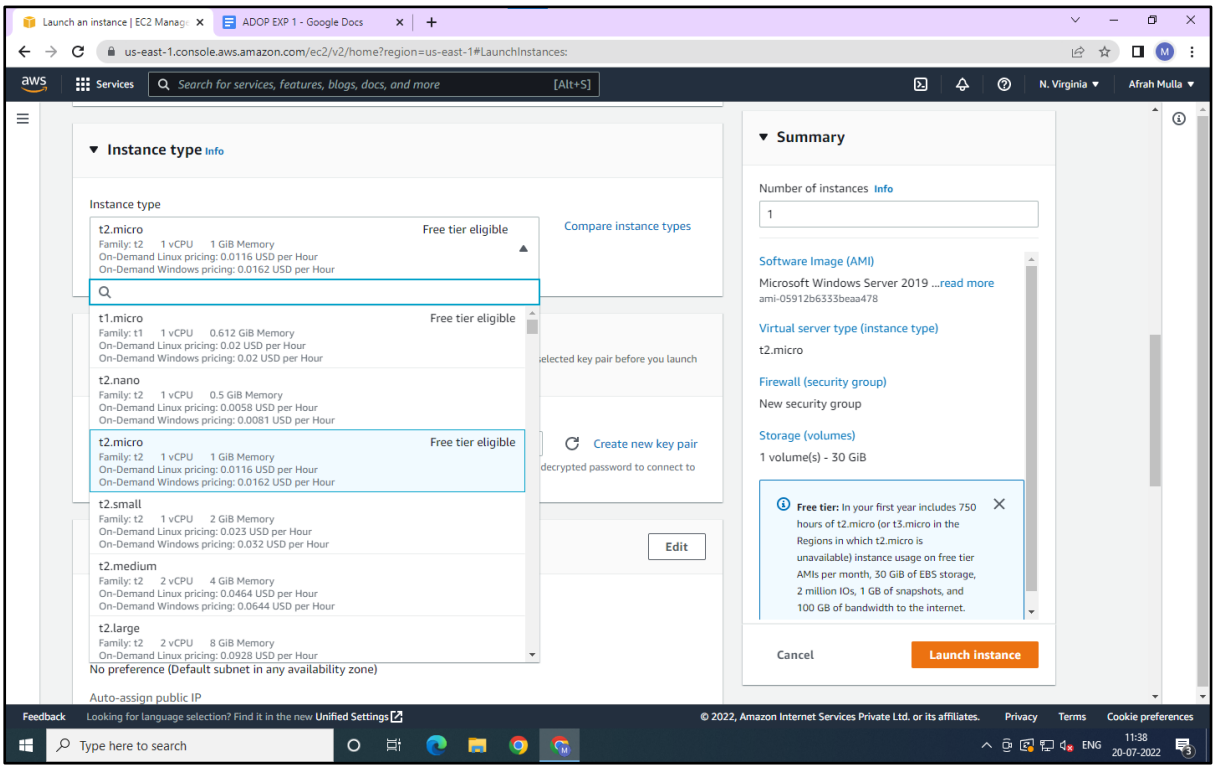
Step 3: Launch instance



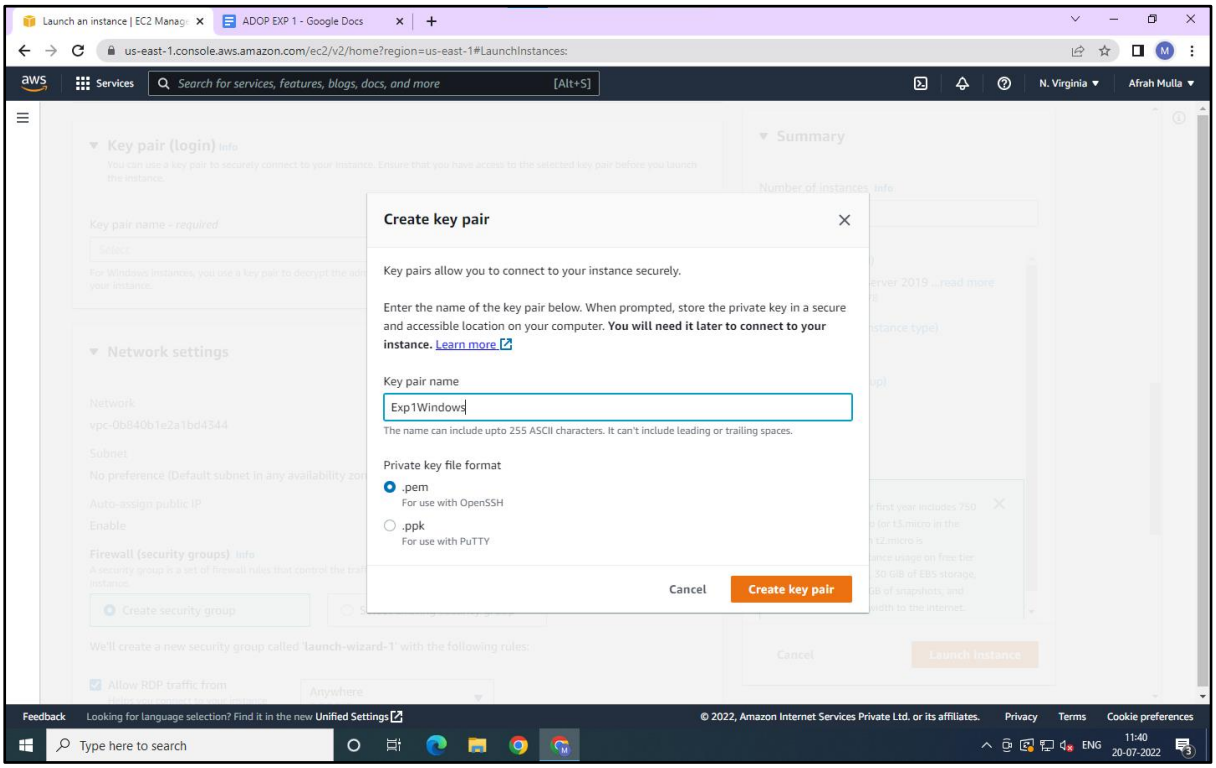
Step 4: Select Windows



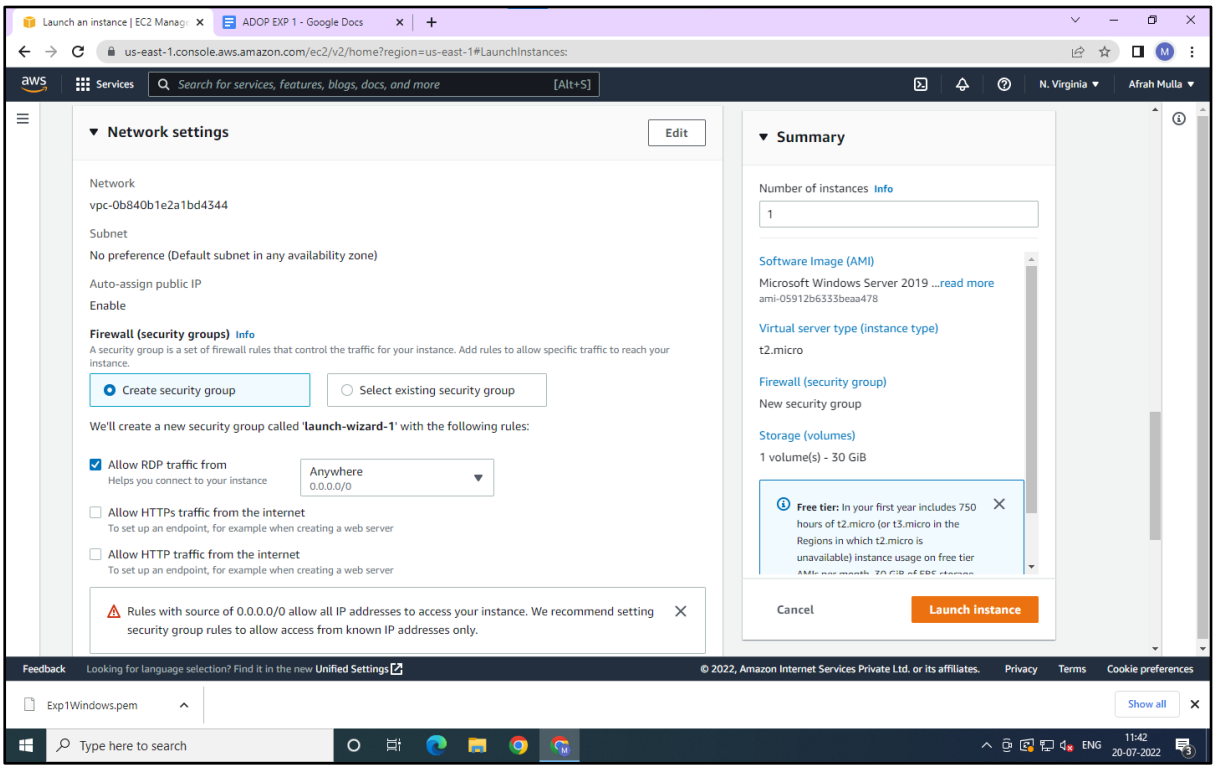
Step 5: Select instance type with free tier eligibility (t2.micro)



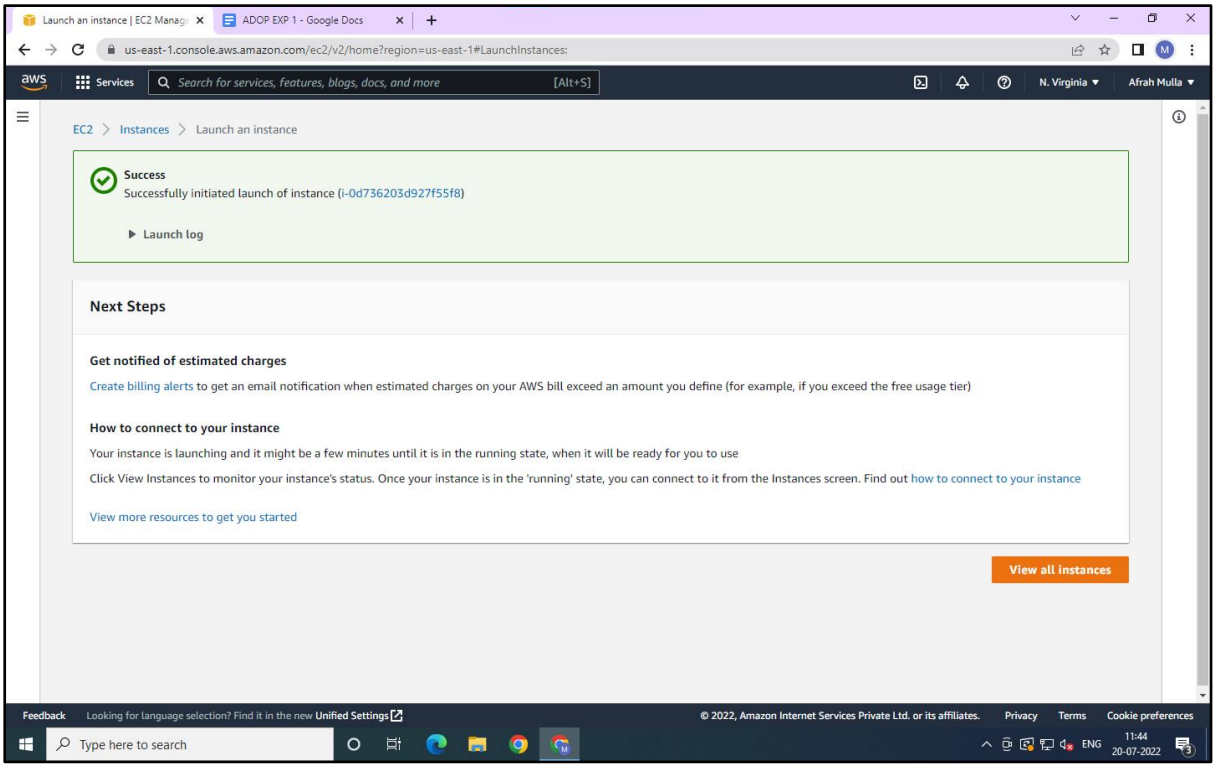
Step 6: Create key pair. A .pem file will be downloaded which will be later used to connect to the instance



Step 7: Network Settings: Select ‘Allow RDP Traffic from’ Anywhere. Then Launch Instance

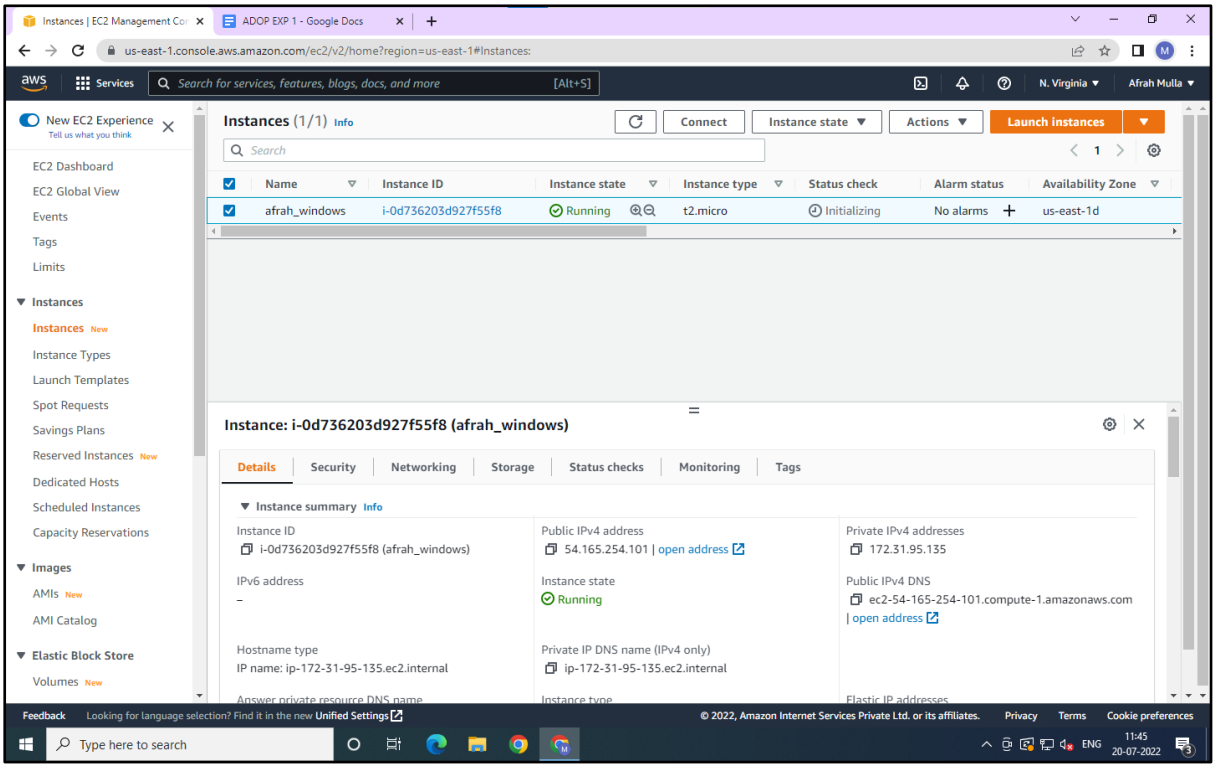


Success message will be shown after successful creation of instance

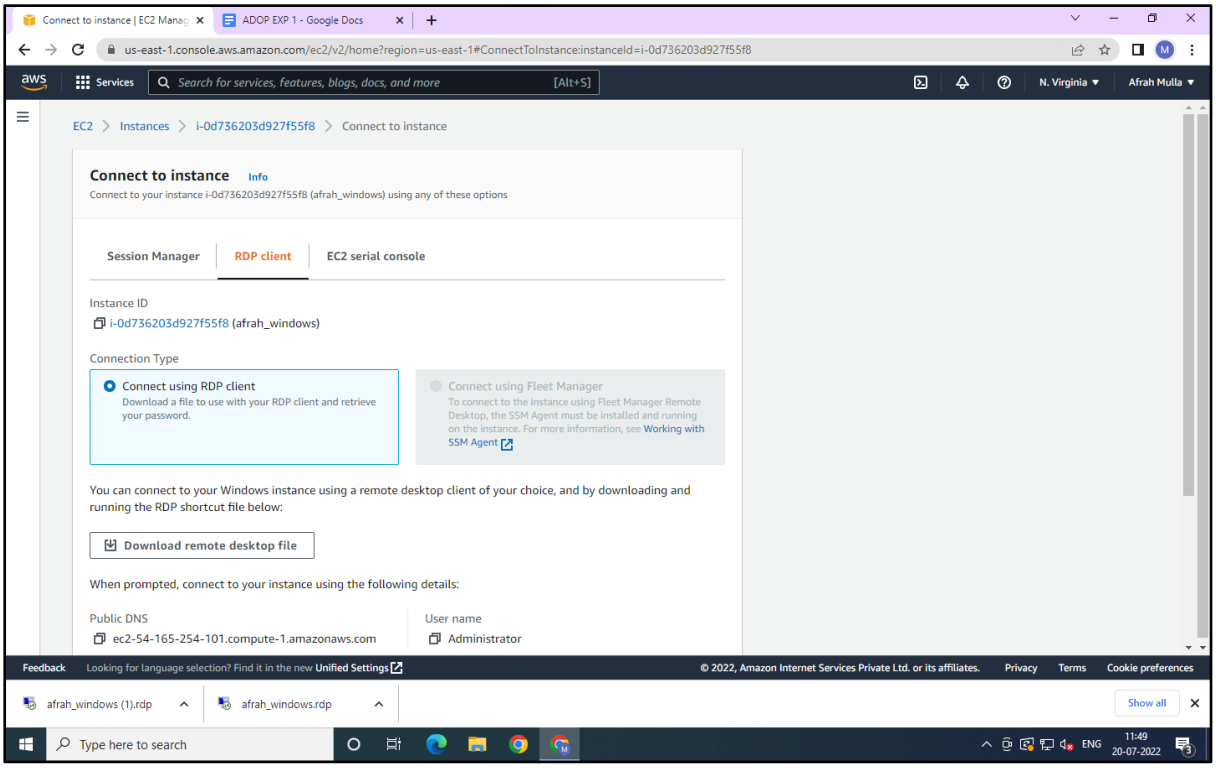


Step 8: RDP Connection

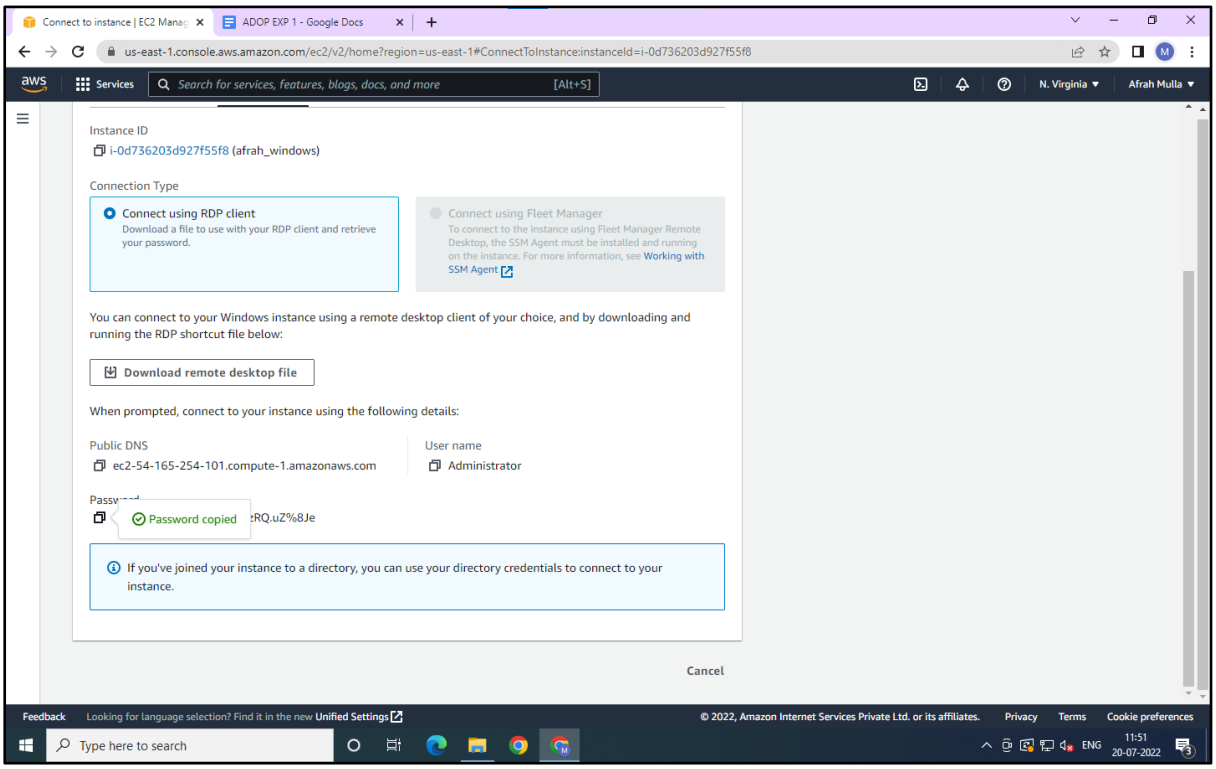
We have to download Remote Desktop File to connect to the instance.



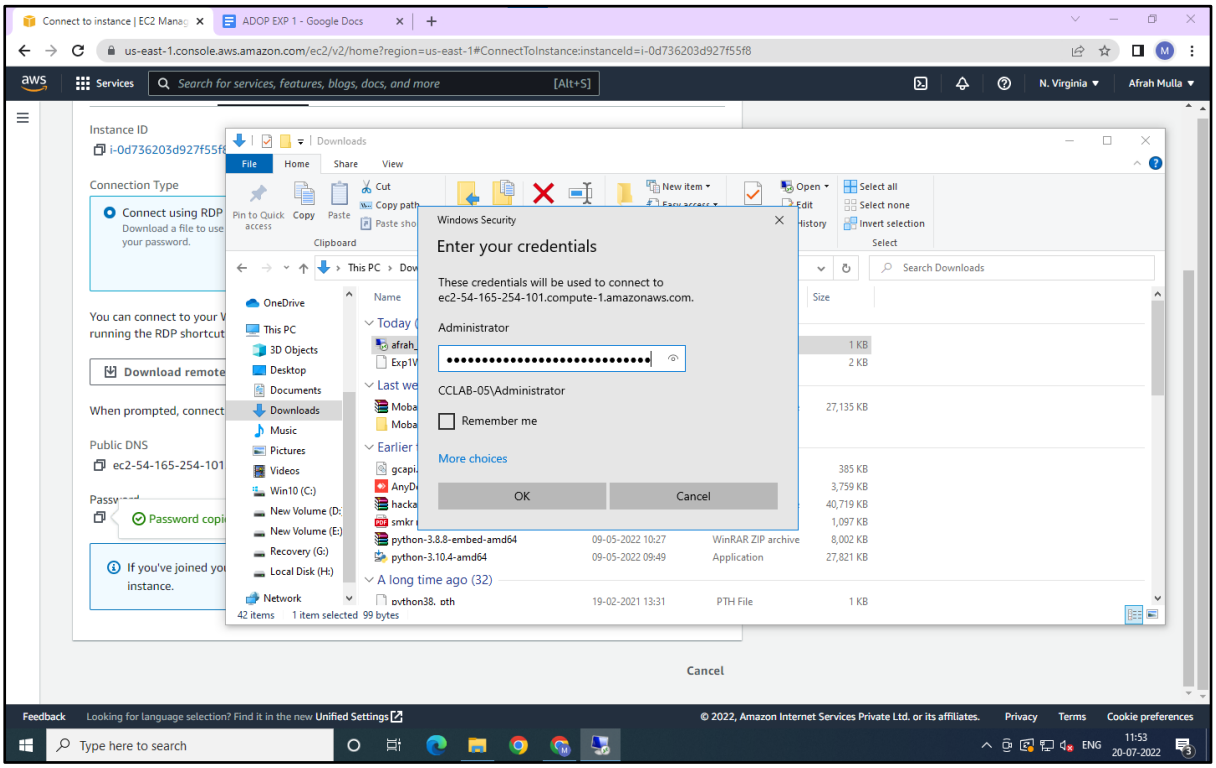
Go to RDP Client to download the Remote Desktop File



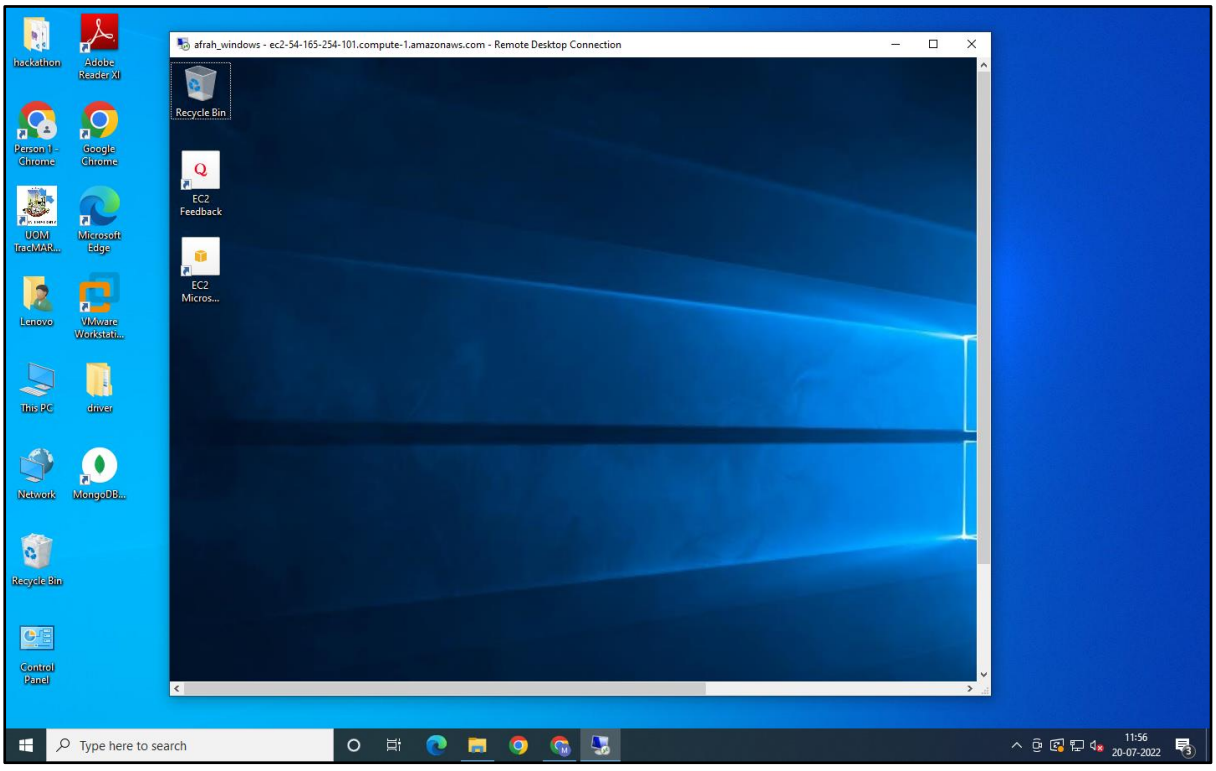
Using the .pem file downloaded earlier, decrypt the password and copy it



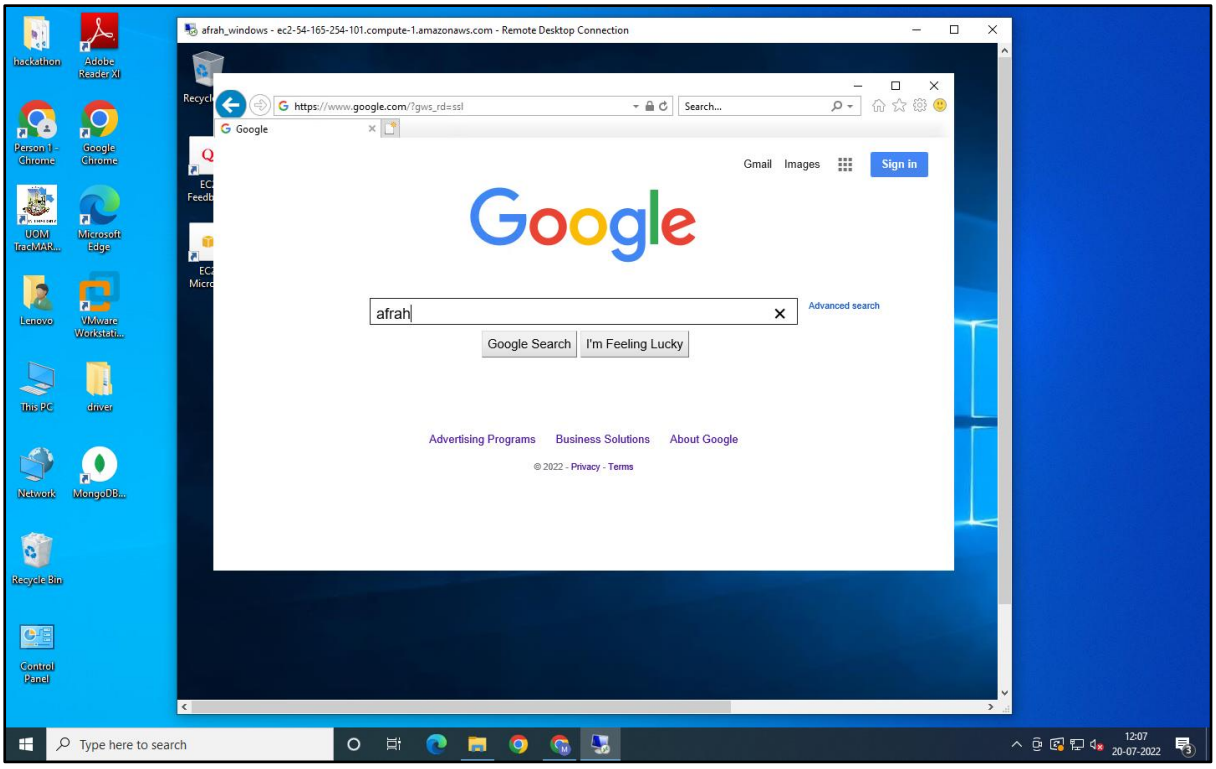
Now, run the Remote Desktop File and put the decrypted password copied earlier



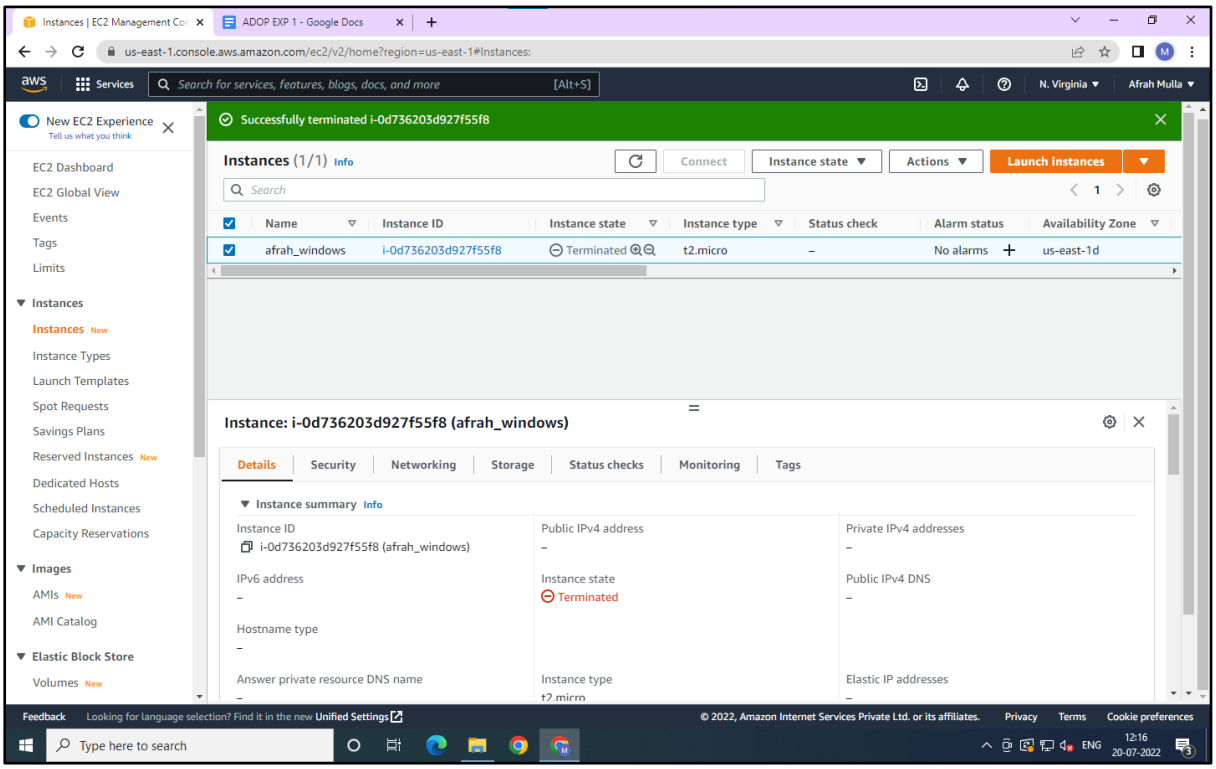
Your Windows Instance will start running



Step 9: Open google.com to search your name

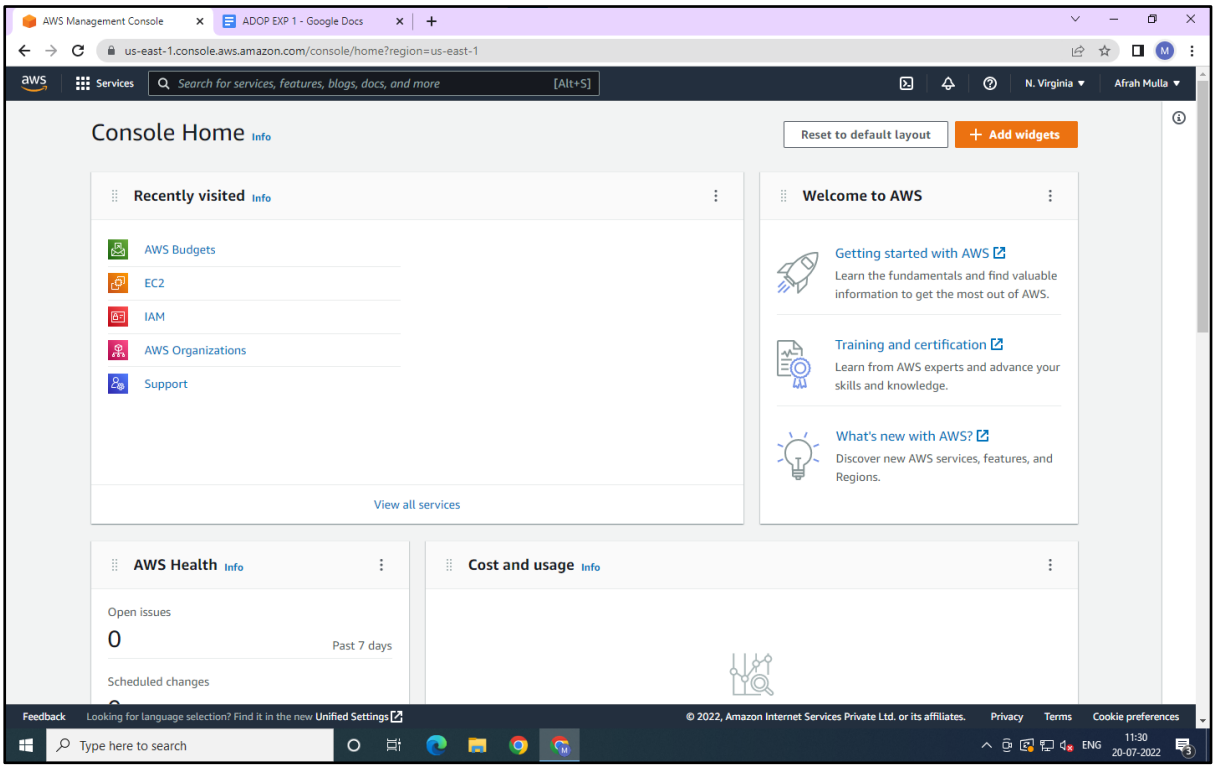


Step 10: Terminate the instance if you don't wish to use it again

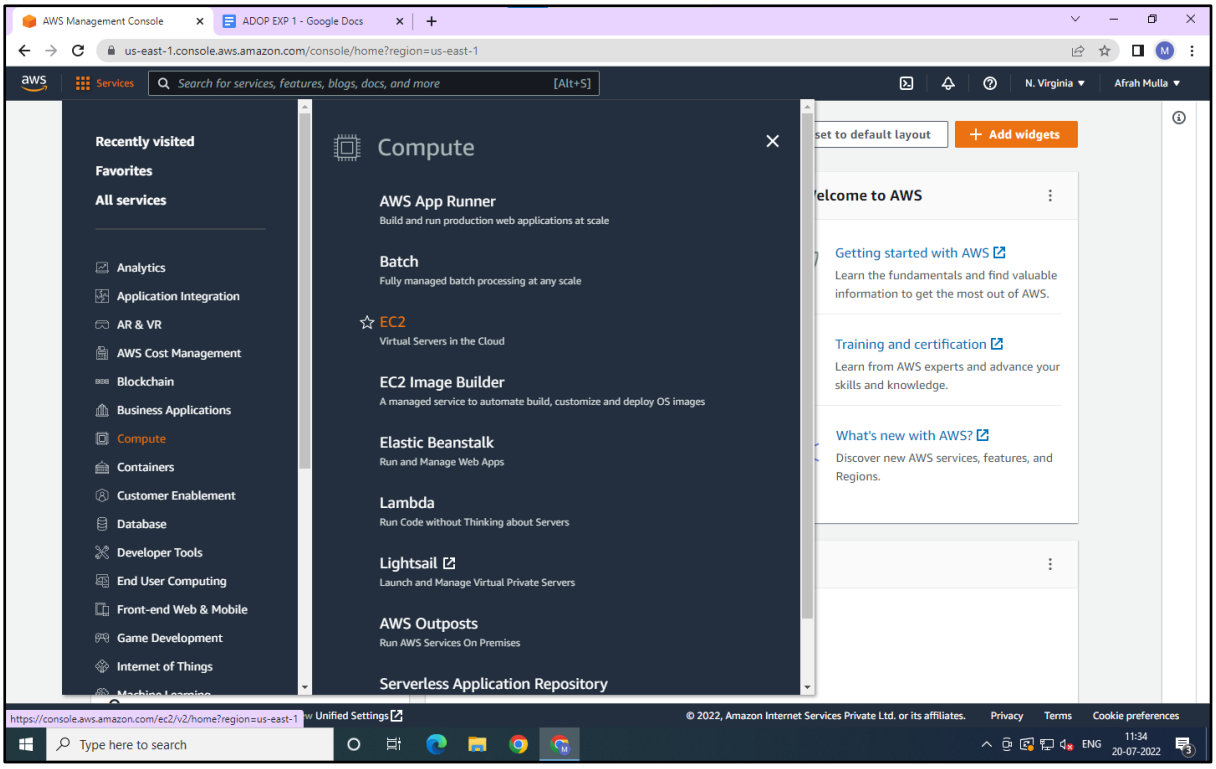


Ubuntu Instance

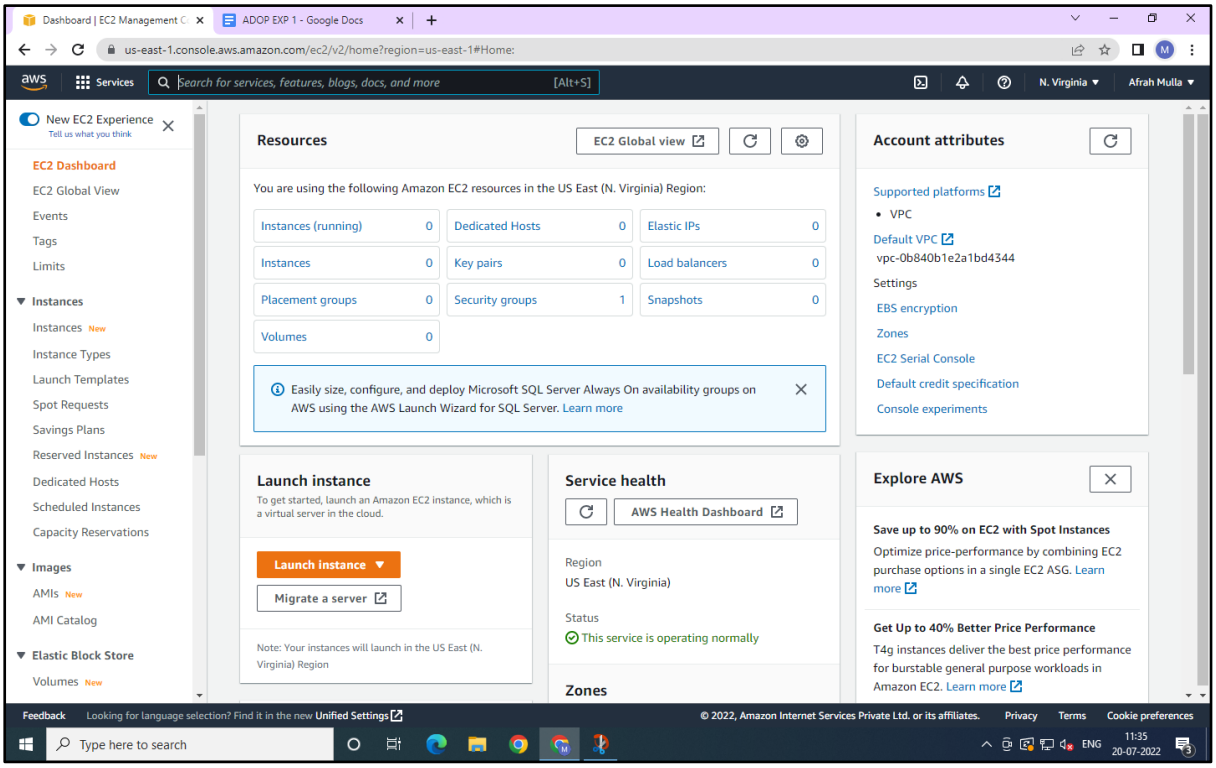
Step 1: AWS Management Console Dashboard



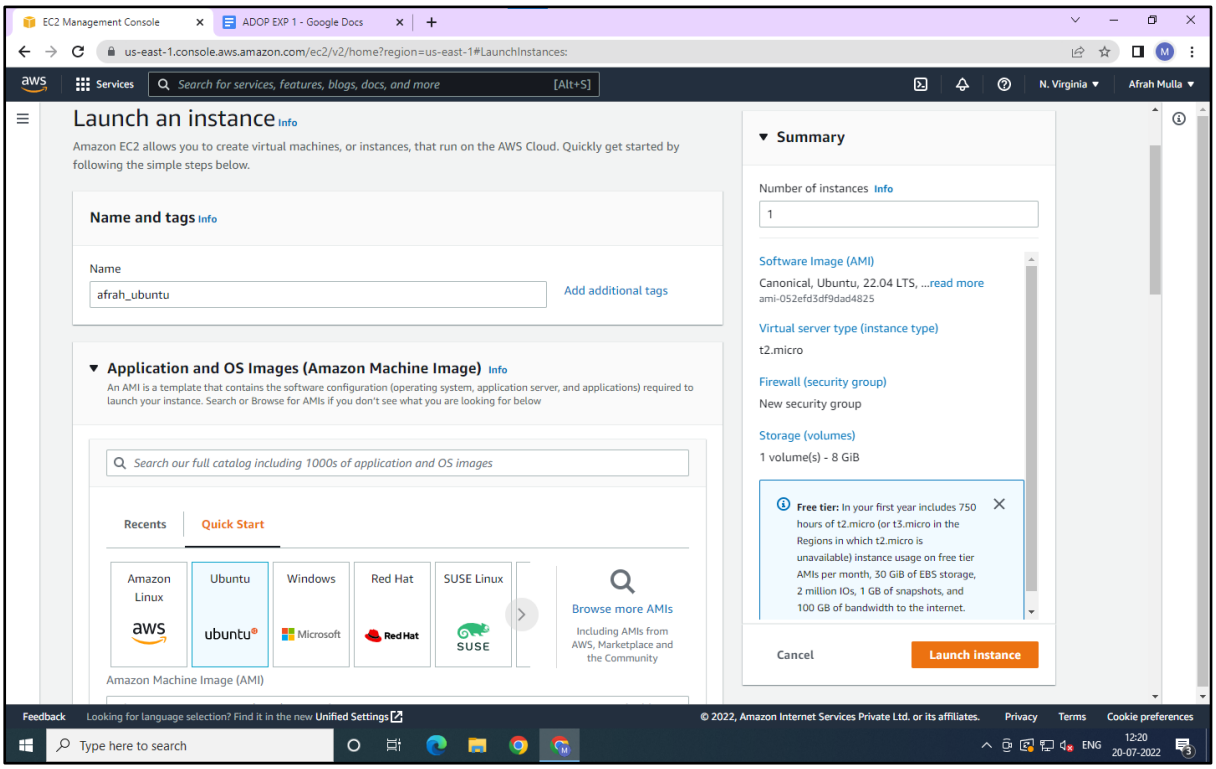
Step 2: Click on Service -> Compute -> EC2



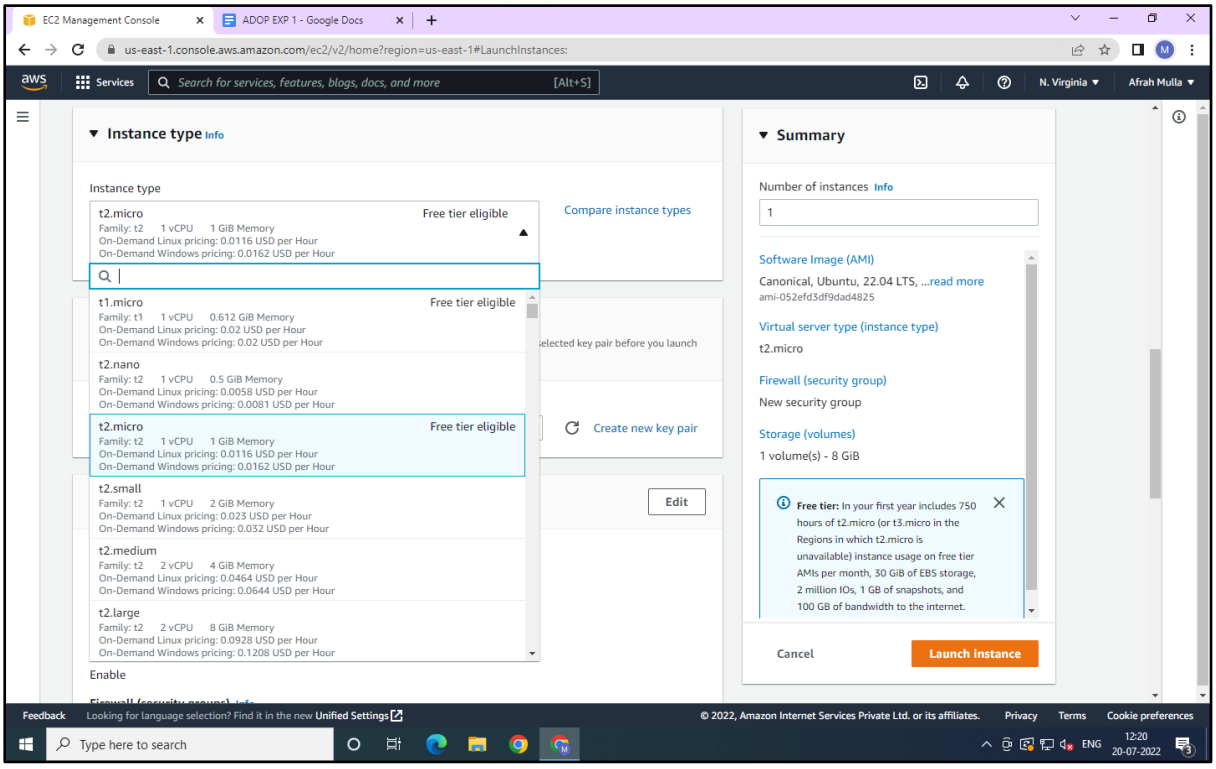
Step 3: Launch instance



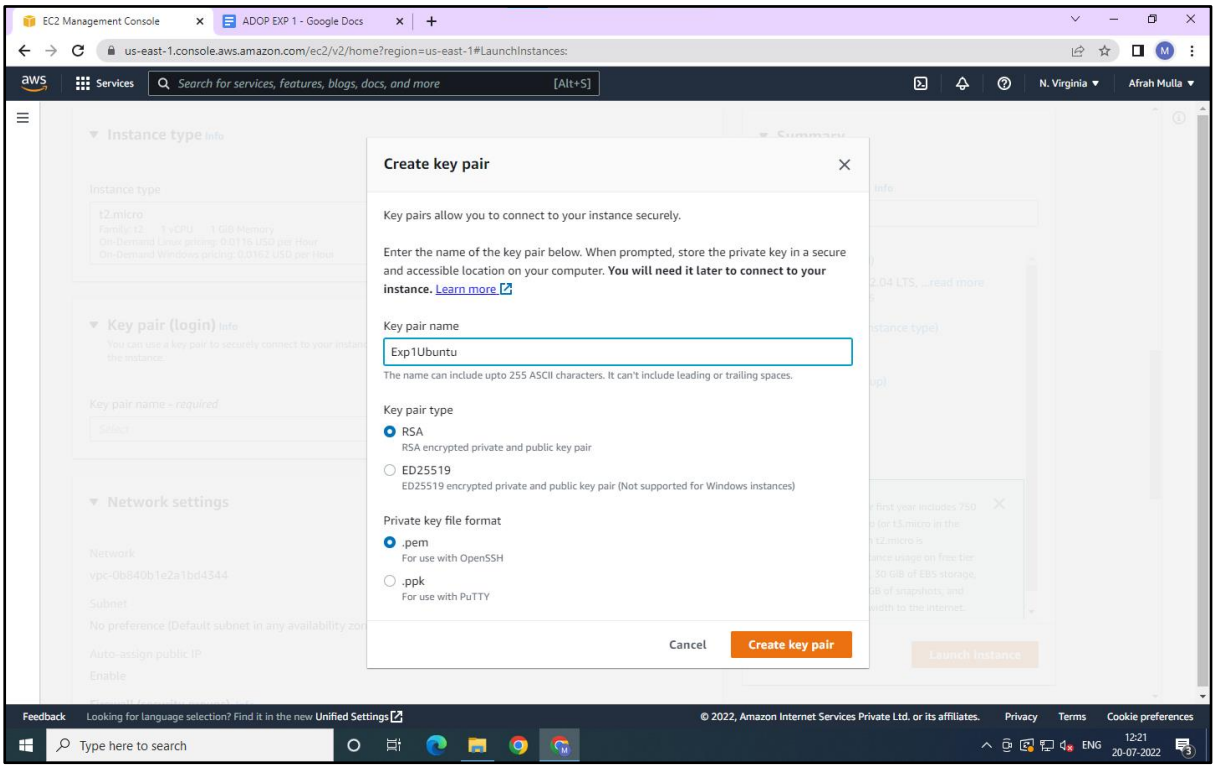
Step 4: Select Ubuntu



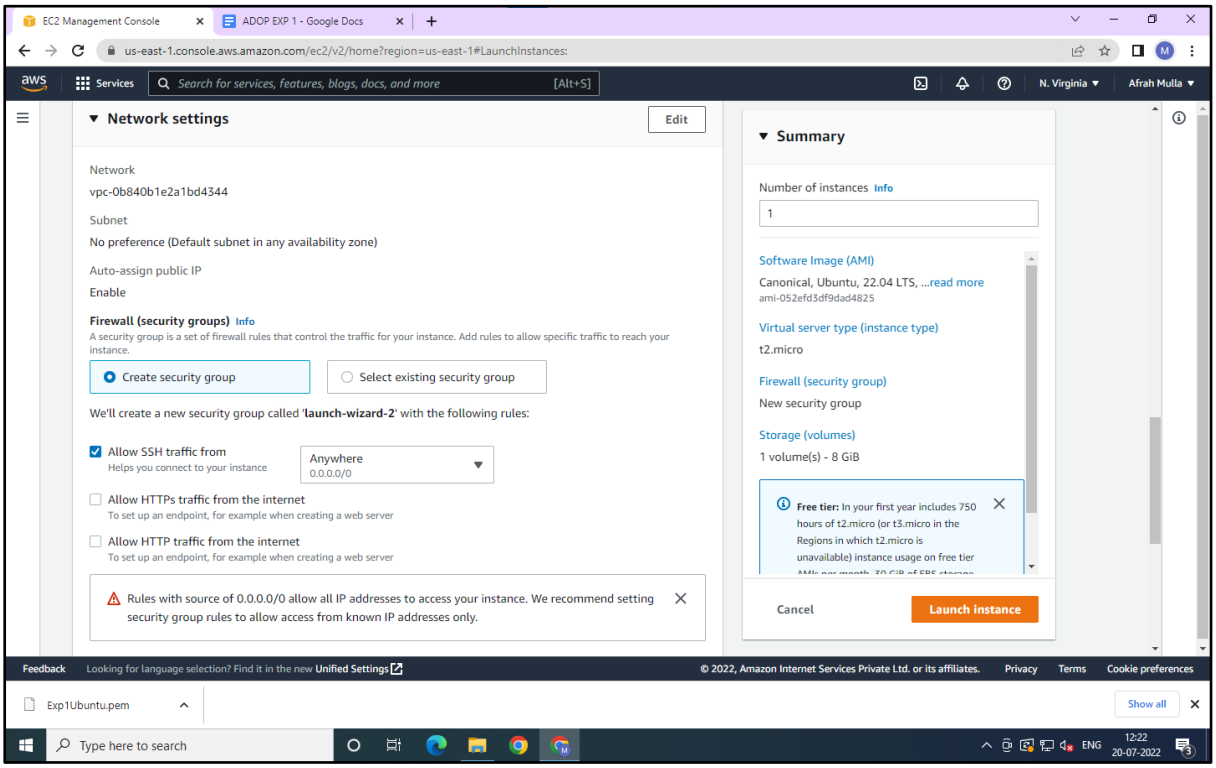
Step 5: Select instance type with free tier eligibility (t2.micro)



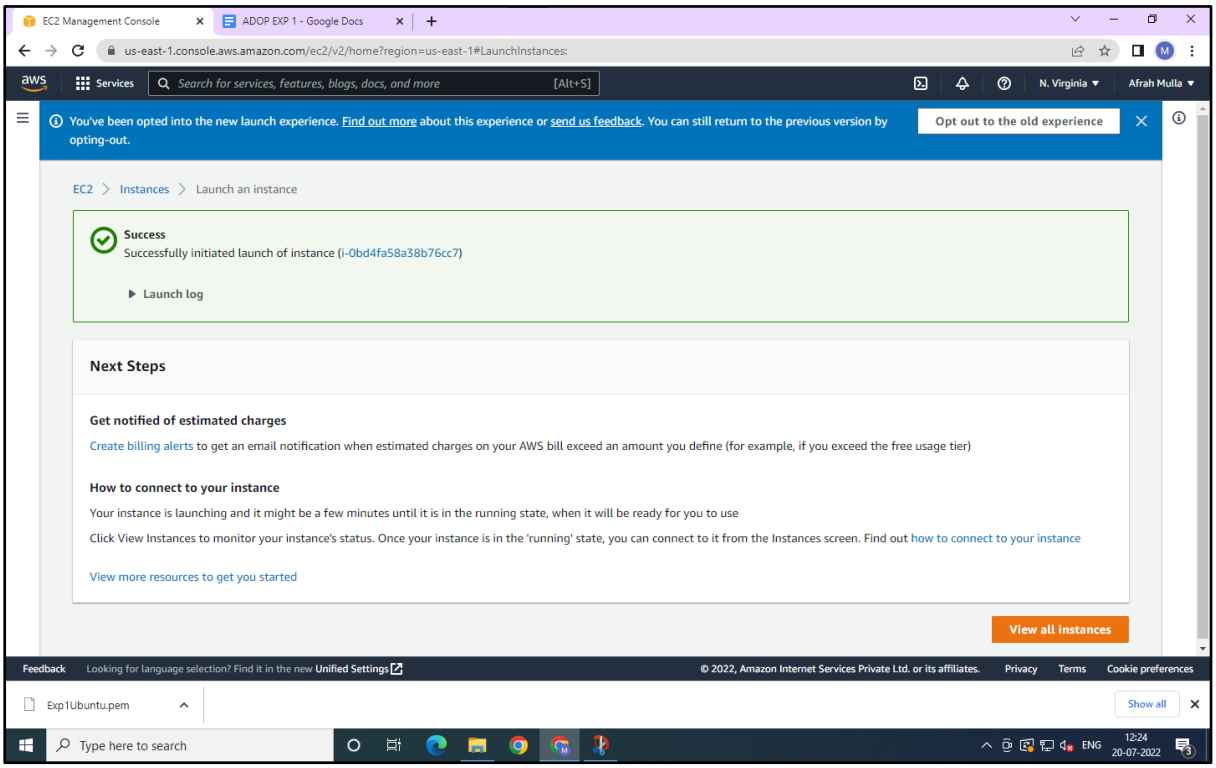
Step 6: Create key pair. A .pem file will be downloaded which will be later used to connect to the instance



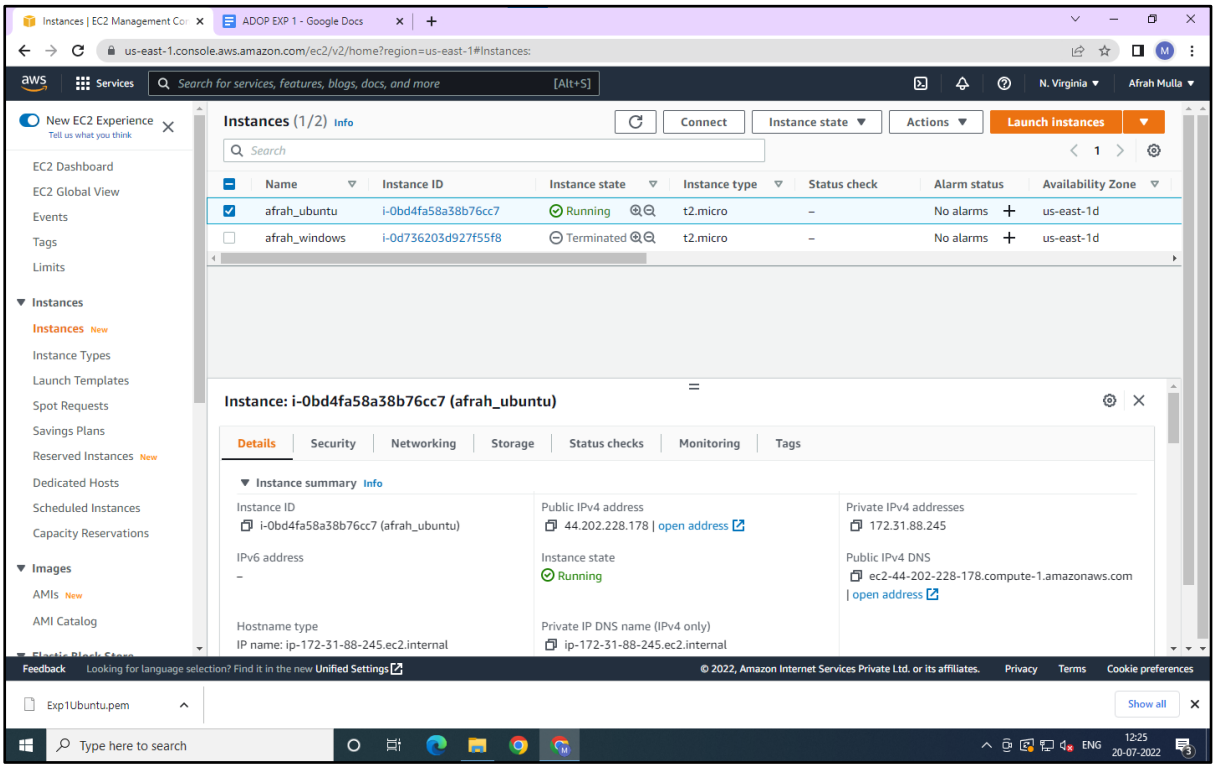
Step 7: Network Settings: Select ‘Allow SSH Traffic from’ Anywhere. Then Launch Instance



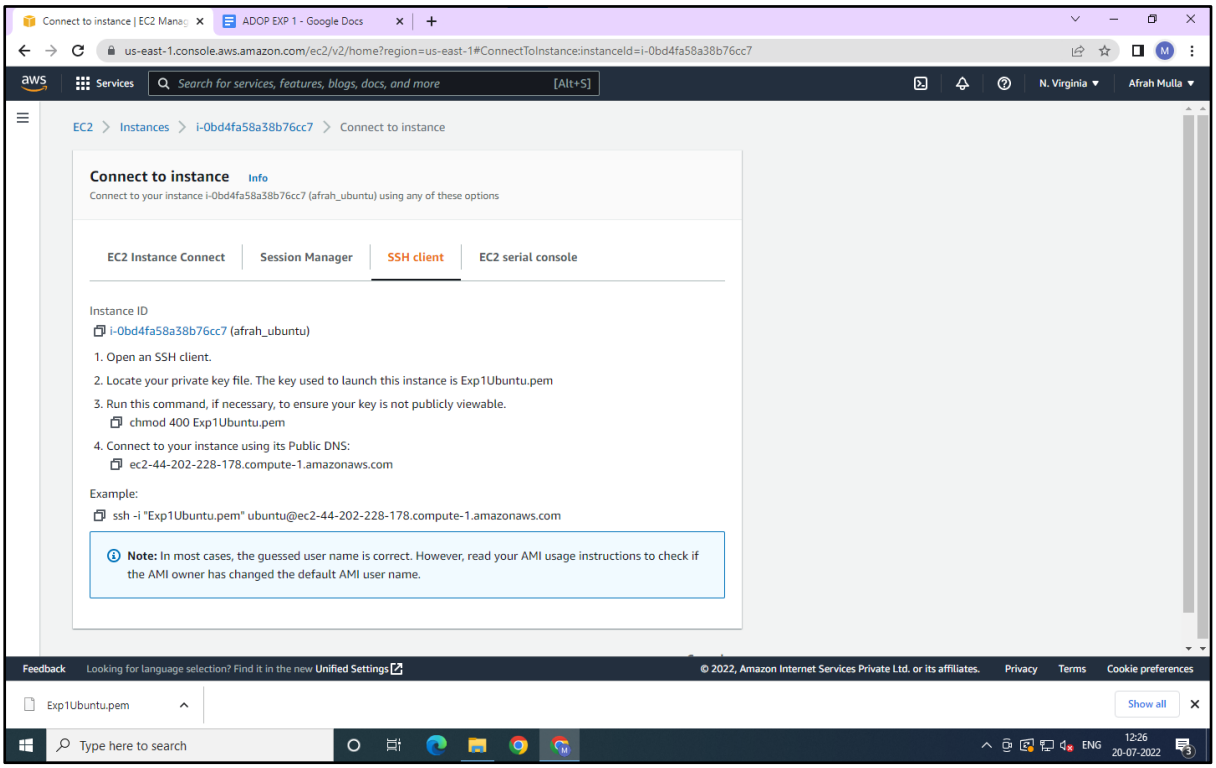
Success message will be shown after successful creation of instance



Step 8: Launch Ubuntu instance to get the remote host and username for SSH in MobaXterm

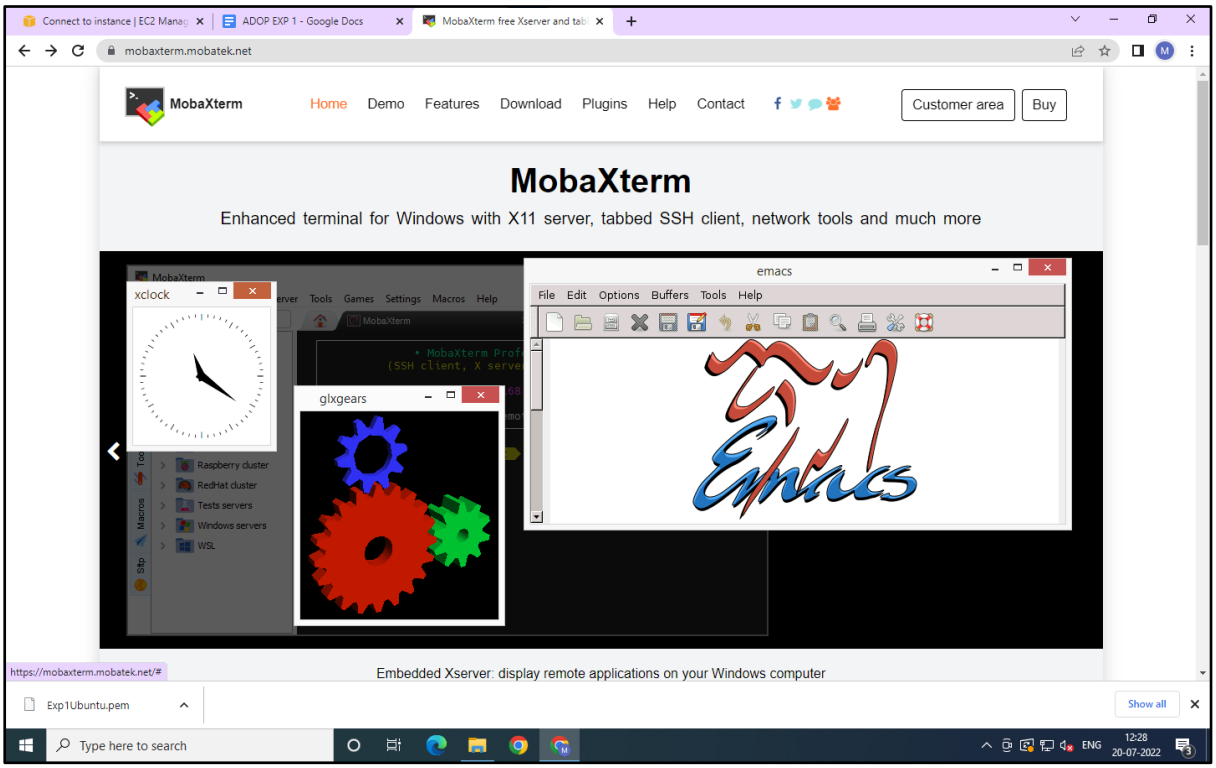


Go to SSH Client to get the remote host and username

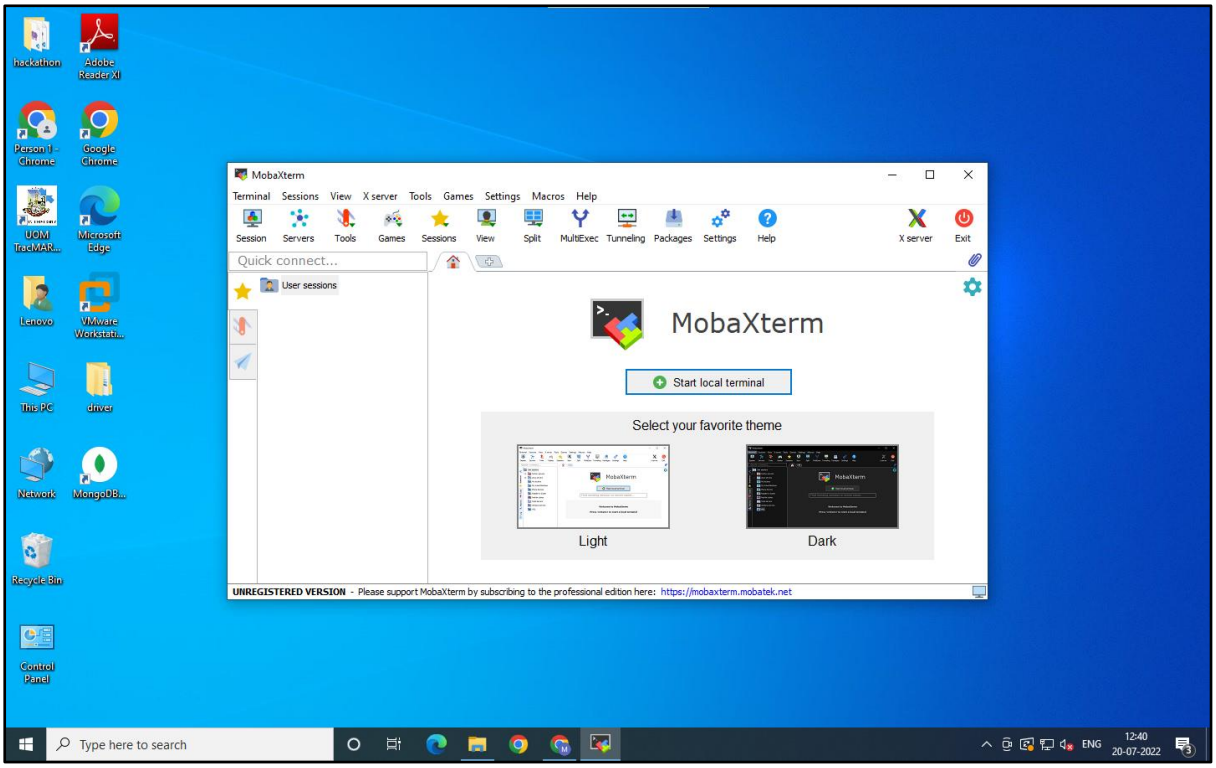


Copy the Public DNS which is your remote host and the username is the word before '@'

Step 9: Download MobaXterm to connect the instance



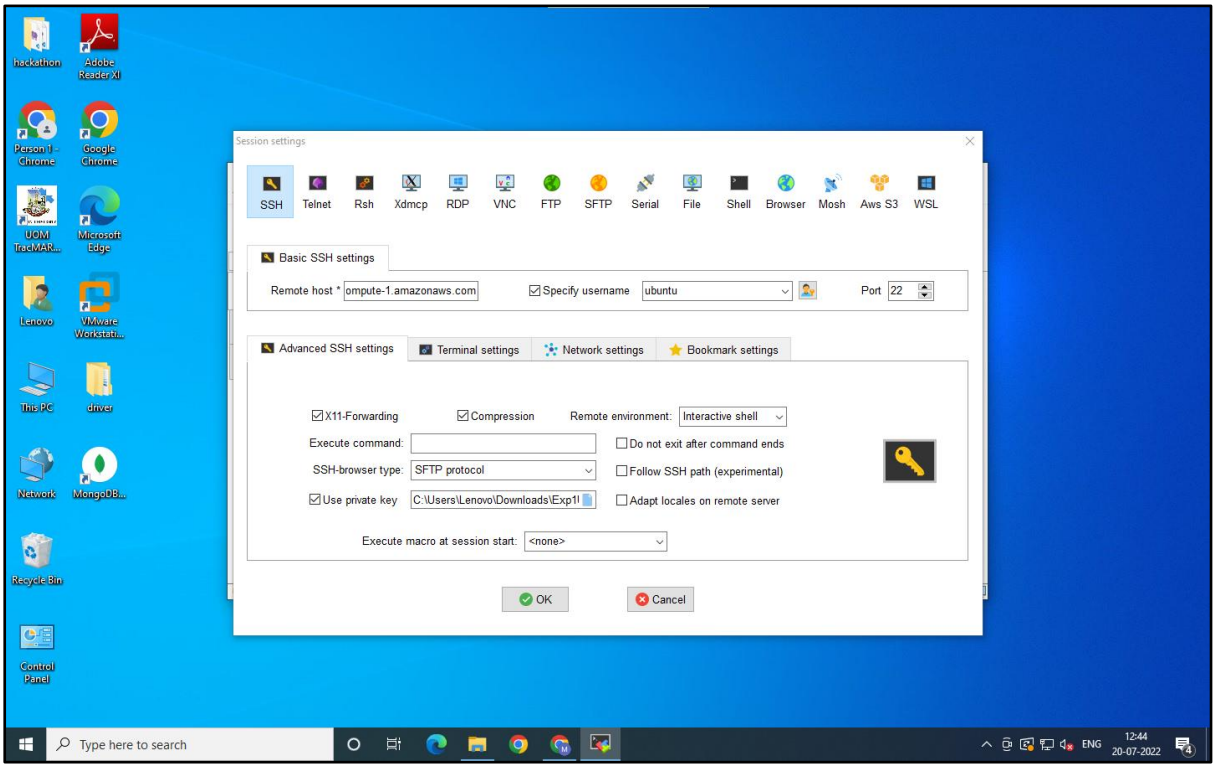
Run MobaXterm. Go to Sessions -> New Session



Then select SSH

Fill the basic SSH settings and attach the .pem file downloaded earlier in advanced SSH settings ‘Use private key’ section

Then OK

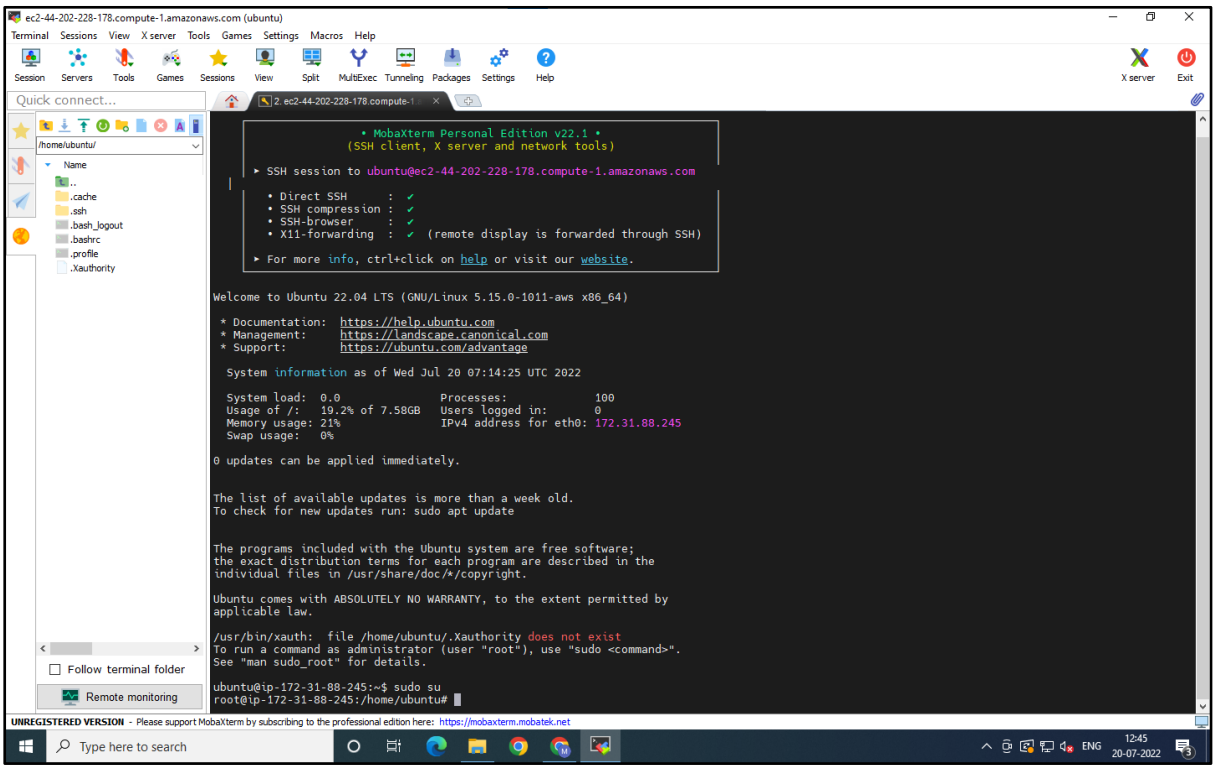


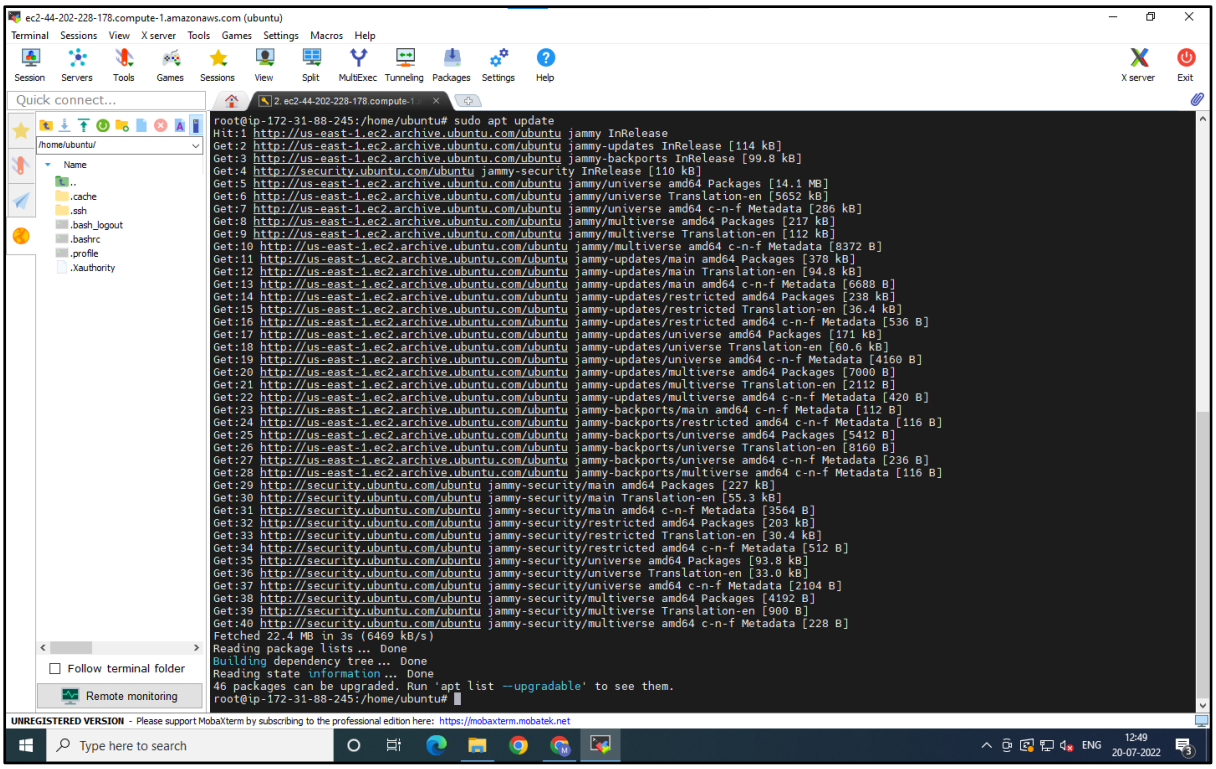
Your Ubuntu Instance will be running

Execute few commands as follows –

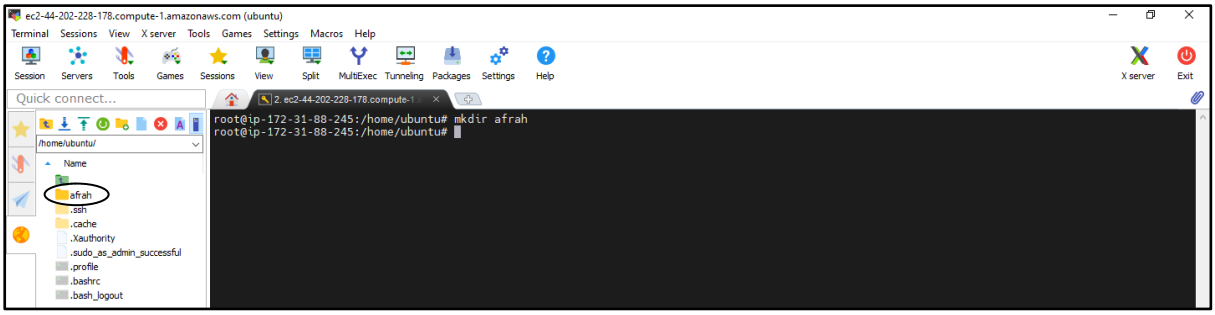
sudo su

sudo apt update





Create a directory of your name



Step 10: Terminate the instance if you don't wish to use it again