

Experiment 1

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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 (EC2) is a part of Amazon.com's cloud-computing platform, Amazon Web Services, that allows users to rent virtual computers on which to run their own computer applications.

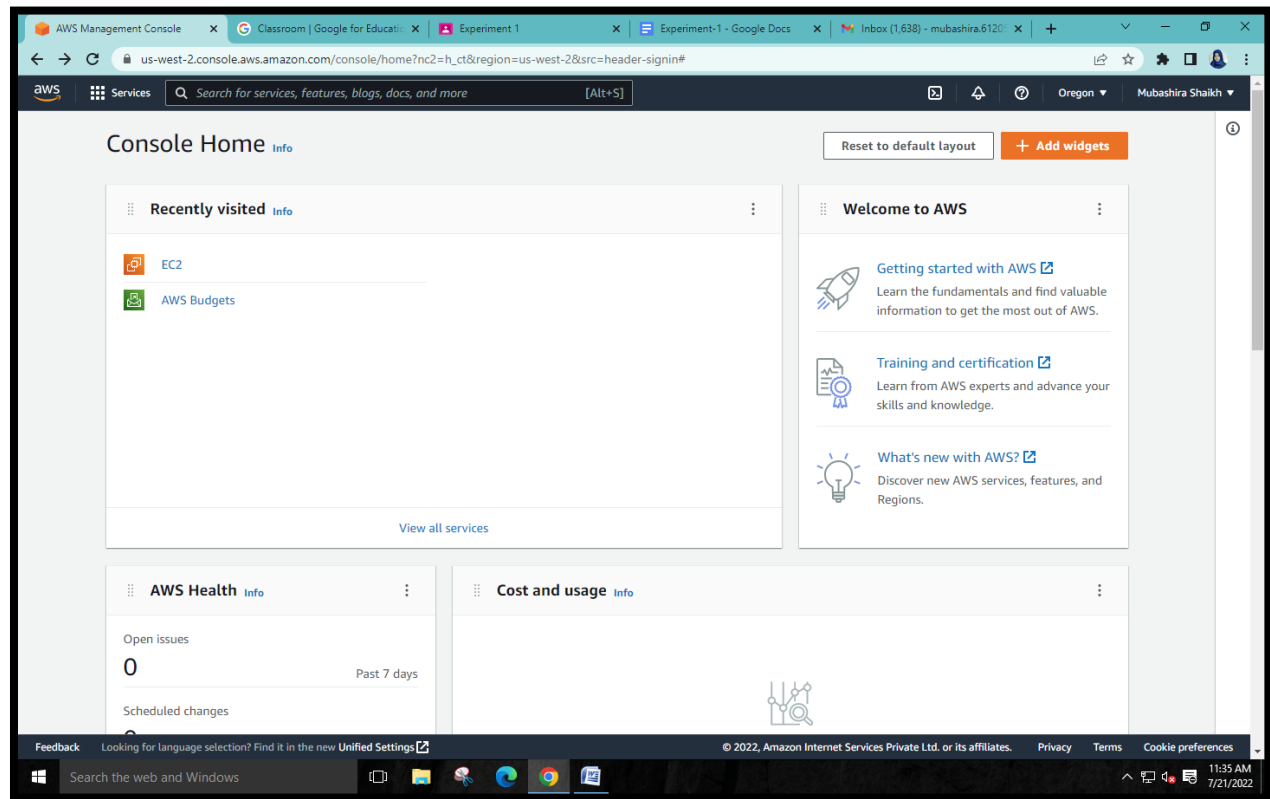
Amazon EC2 provides the following features:

- 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)

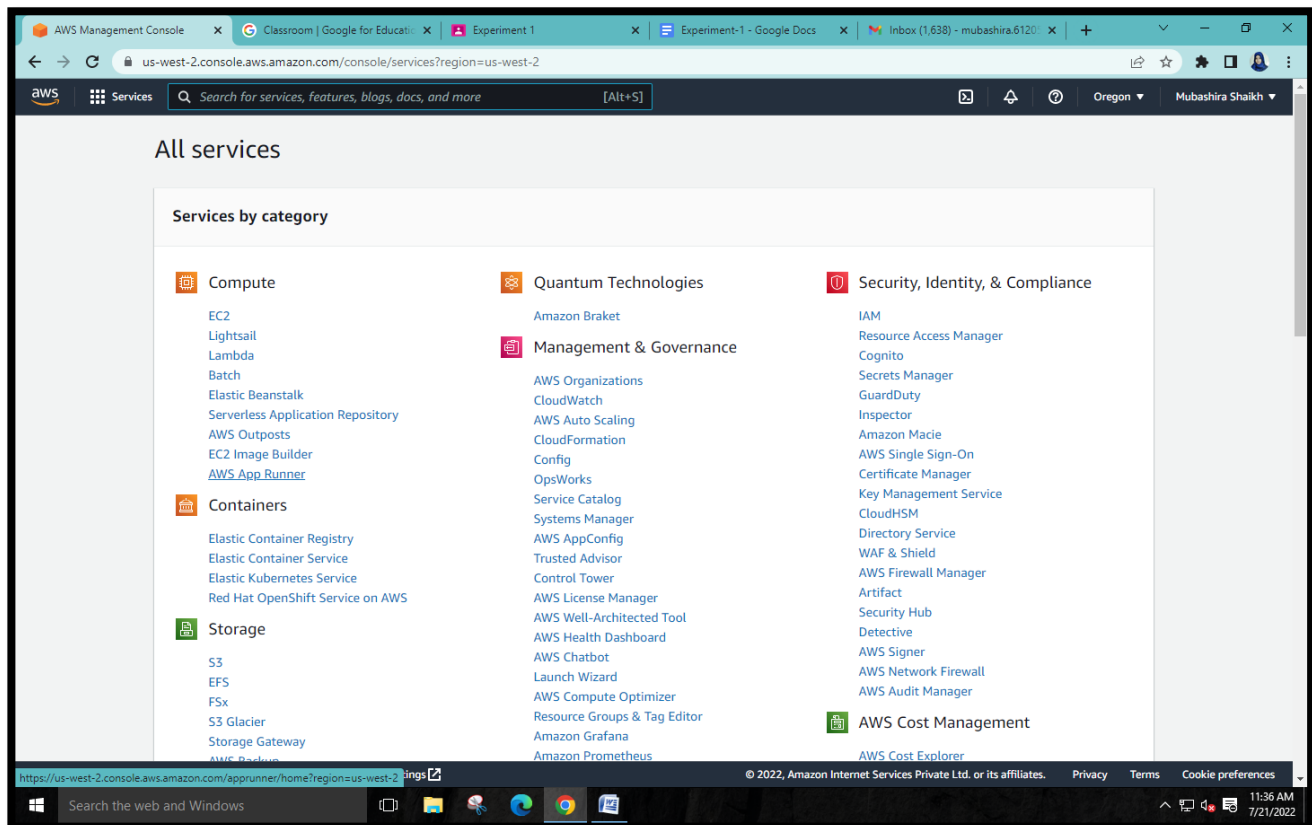
3. Launch two instances of AWS EC2, one in windows and another in ubuntu . Get connected to instances using RDP and MobaXterm client software. Explain each step of EC2 creation and launching with the help of screenshots. Open google.com from both the instances ,search your own name .

(A) For Windows:

Step 1: Management Console Dashboard



Step 2: Click on view all services and then click on EC2



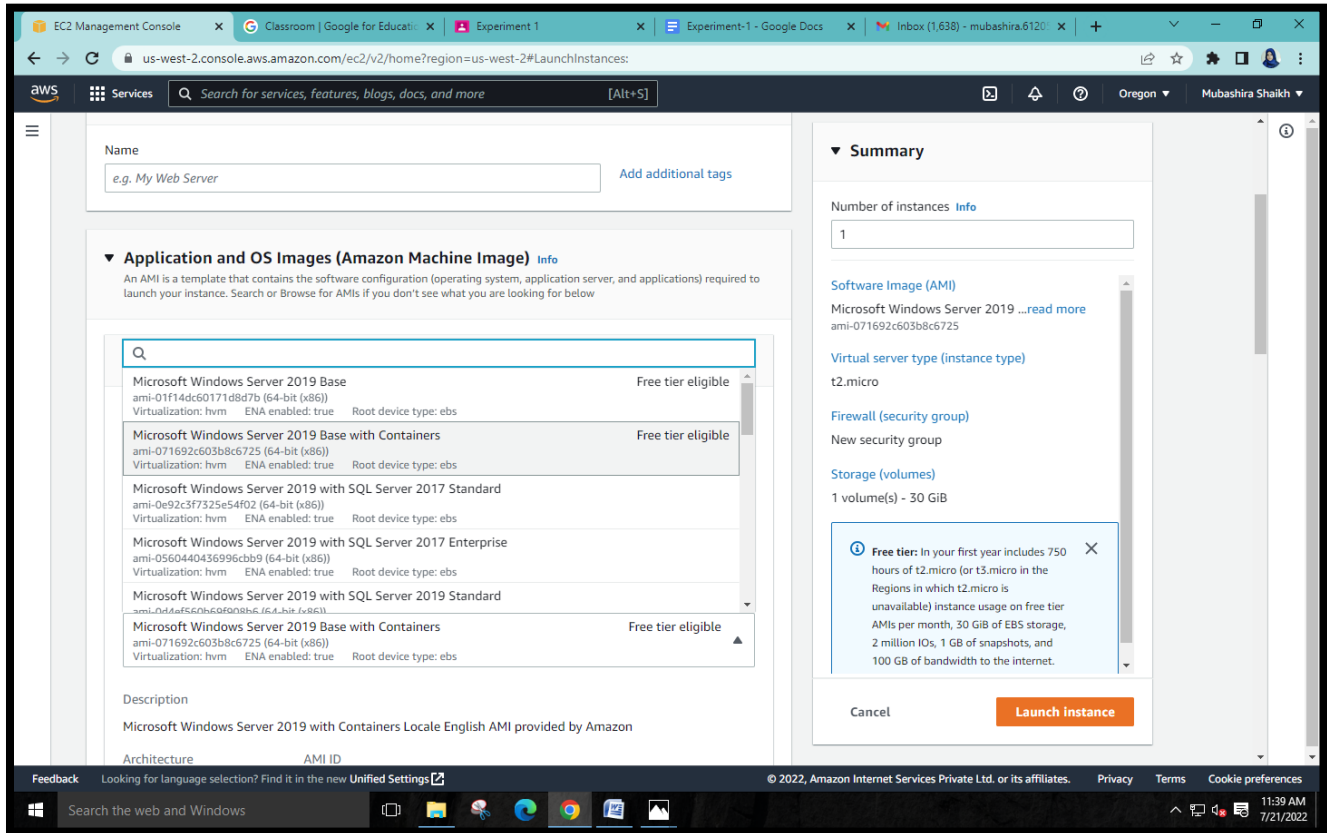
Step 3: Launch instance

The screenshot shows the AWS Management Console for the 'us-west-2' region. The left sidebar contains navigation links for 'EC2 Dashboard', 'EC2 Global View', 'Events', 'Tags', 'Limits', 'Instances', 'Instance Types', 'Launch Templates', 'Spot Requests', 'Savings Plans', 'Reserved Instances', 'Dedicated Hosts', 'Scheduled Instances', 'Capacity Reservations', 'Images', 'AMI Catalog', and 'Elastic Block Store'. The main content area is titled 'Resources' and shows a summary of EC2 resources in the 'US West (Oregon)' region: 0 running instances, 0 dedicated hosts, 0 elastic IPs, 0 instances, 0 key pairs, 0 load balancers, 0 placement groups, 1 security group, 0 snapshots, and 0 volumes. A 'Launch instance' button is prominently displayed. Below it, a note states: 'Note: Your instances will launch in the US West (Oregon) Region'. To the right, the 'Account attributes' section shows supported platforms (VPC), default VPC (vpc-05ab2525596177f07), settings (EBS encryption, Zones, EC2 Serial Console, Default credit specification, Console experiments), and an 'Explore AWS' section with links to '10 Things You Can Do Today to Reduce AWS Costs' and 'Get Up to 40% Better Price Performance'.

Step 4: Select Windows

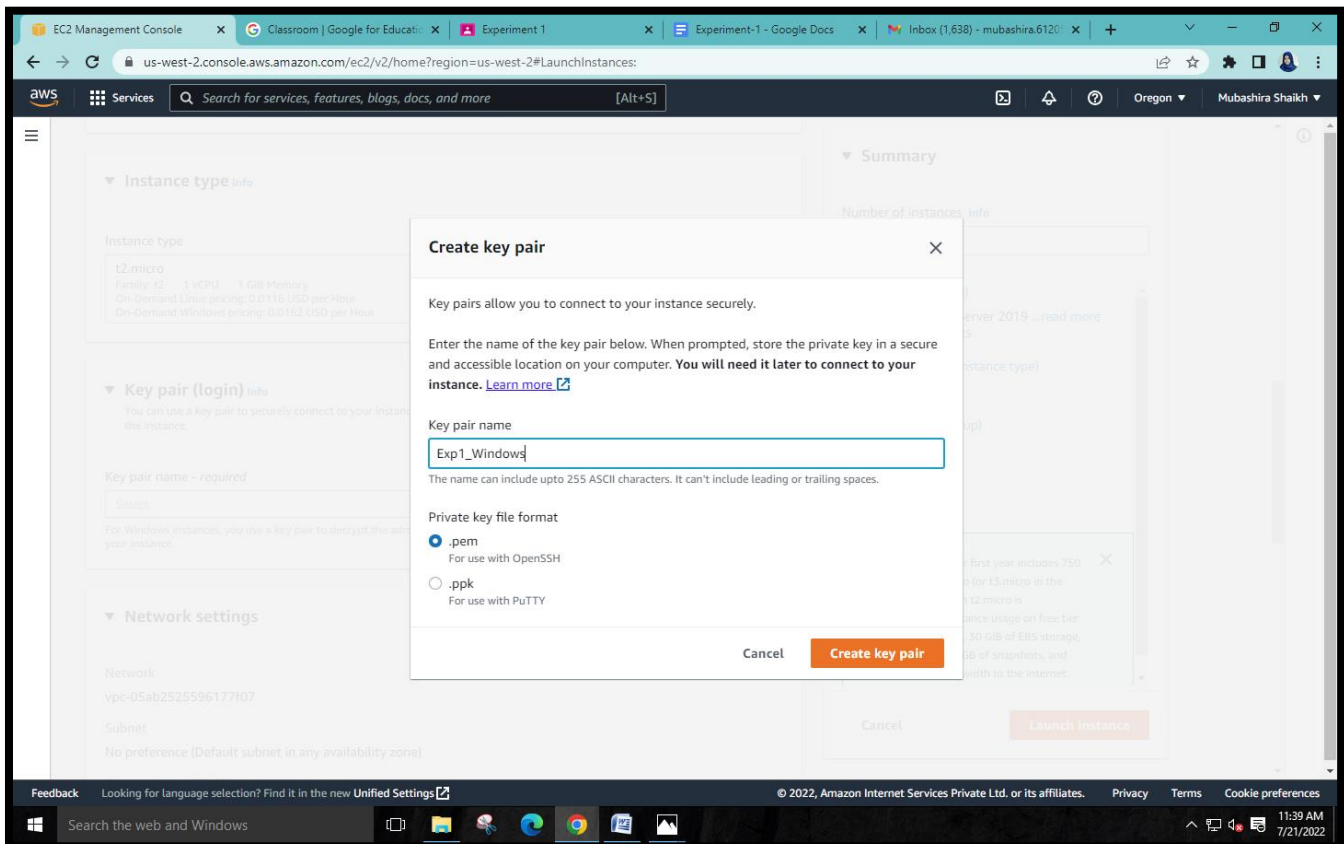
The screenshot shows the 'Select Windows' page in the AWS Management Console. The left sidebar is the same as in Step 3. The main content area is titled 'Application and OS Images (Amazon Machine Image)' and shows a search bar and a 'Quick Start' section with buttons for 'Amazon Linux', 'Ubuntu', 'Windows', 'Red Hat', and 'SUSE Linux'. The 'Windows' button is selected. Below the buttons, the 'Amazon Machine Image (AMI)' section shows the 'Microsoft Windows Server 2019 Base' AMI (ami-01f14dc60171d8d7b) with a 'Free tier eligible' badge. The 'Description' section shows: 'Microsoft Windows Server 2019 with Desktop Experience Locale English AMI provided by Amazon', 'Architecture: 64-bit (x86)', and 'AMI ID: ami-01f14dc60171d8d7b'. On the right, the 'Summary' section shows: 'Number of instances: 1', 'Software Image (AMI): Microsoft Windows Server 2019 ...read more', 'Virtual server type (instance type): t2.micro', 'Firewall (security group): New security group', and 'Storage (volumes): 1 volume(s) - 30 GiB'. A 'Free tier' notice is displayed: 'Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.' At the bottom, there are 'Cancel' and 'Launch Instance' buttons.

Step 5: Select instance with free tier

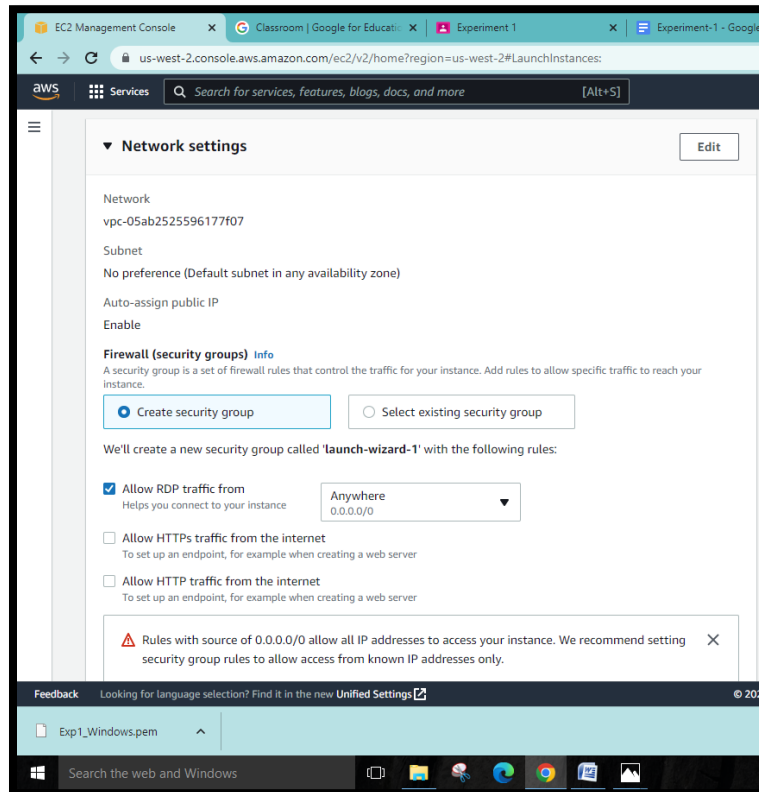


Step 6: Login key

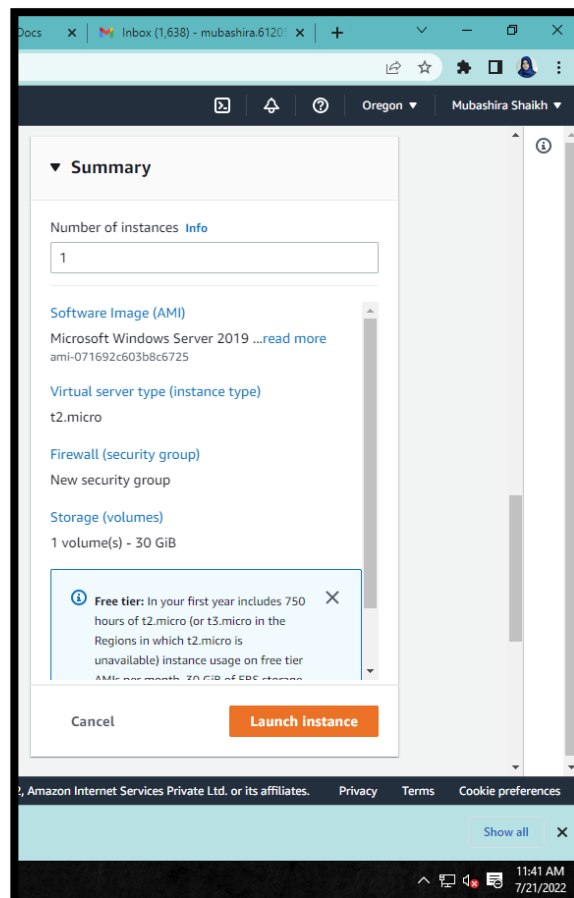
Create a login key which is required for logging in to the instance



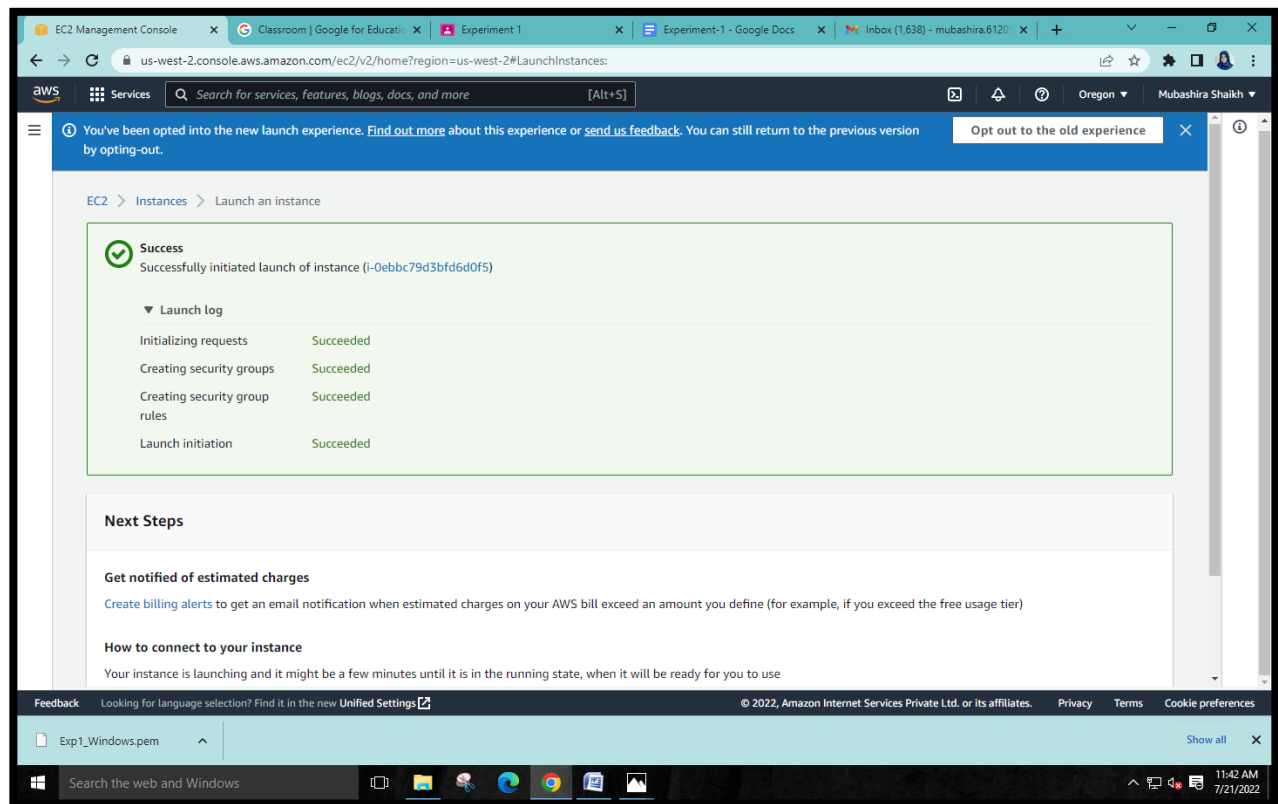
Step 7: Security: Anywhere should be selected so we can access the instance from any ip address



Step 8: Launch instance

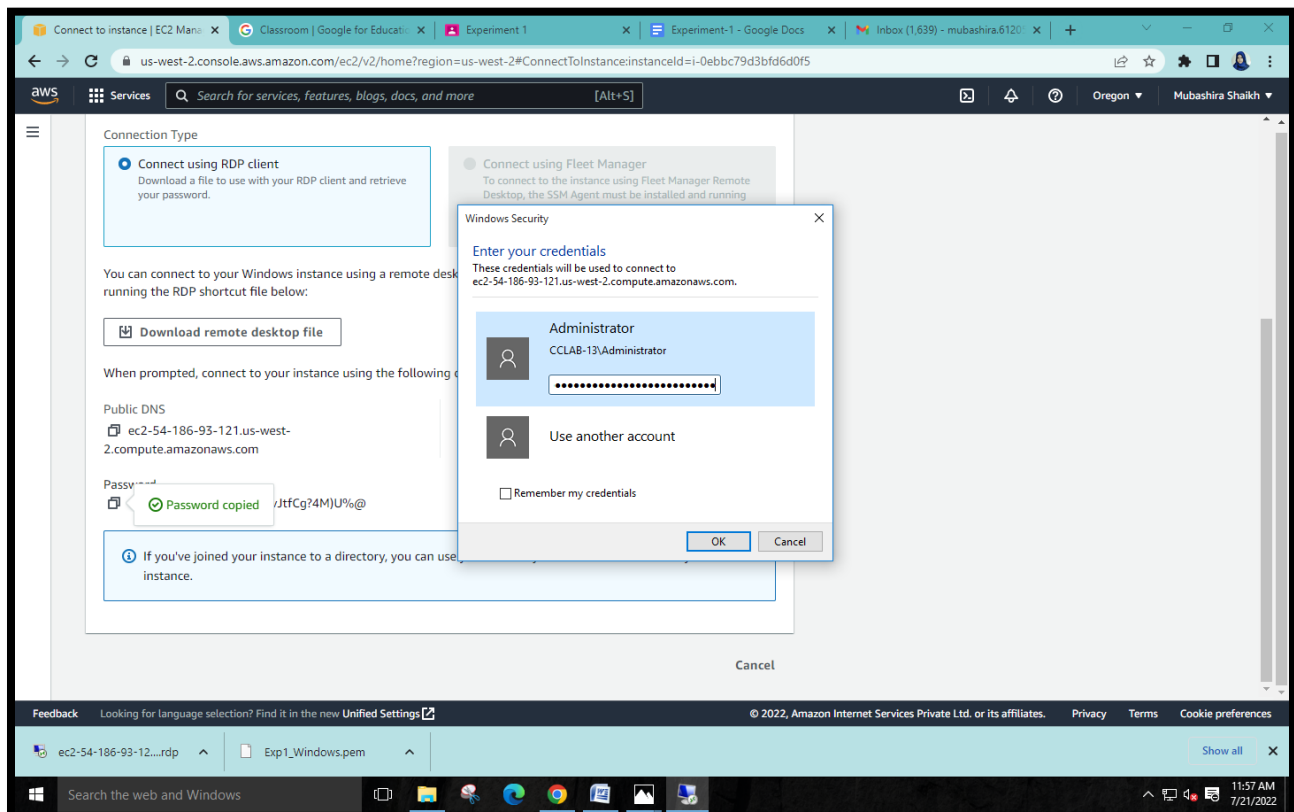


*** Success msg will be shown after succuessfull creation of instance**

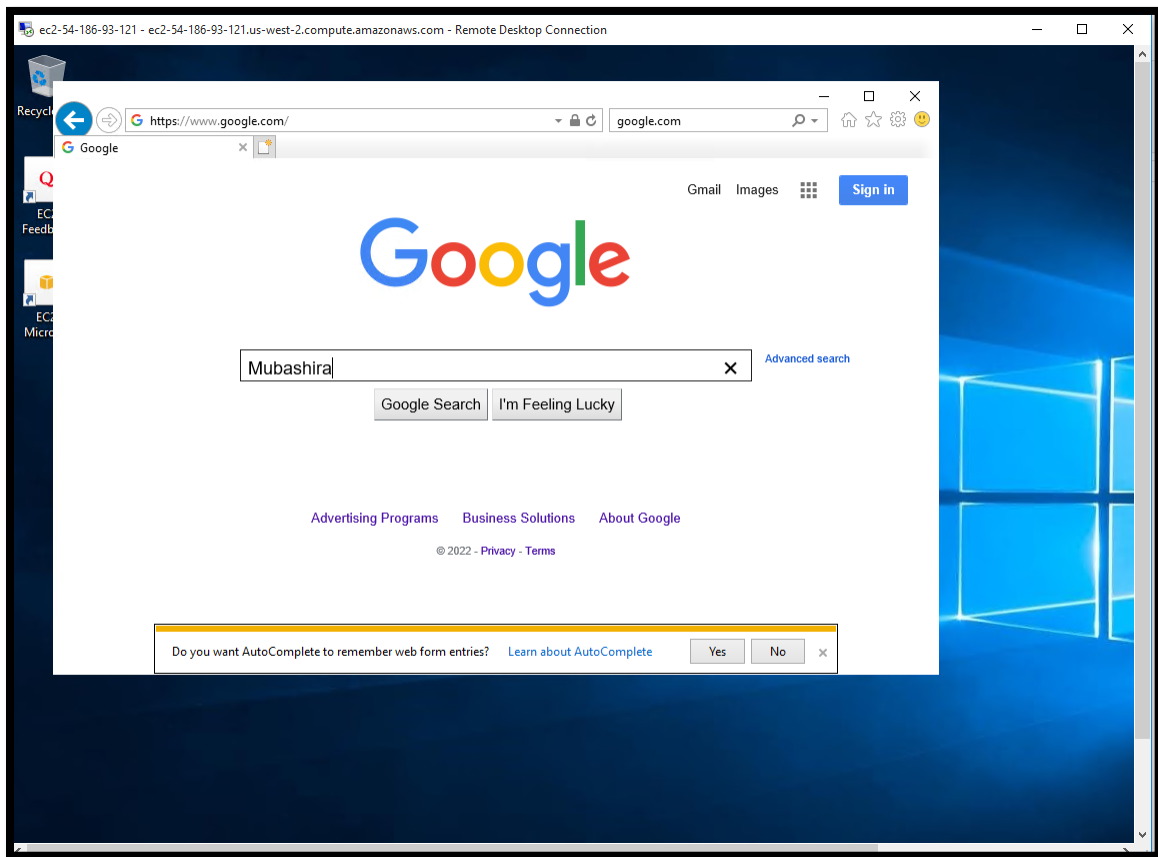


Step 9: RDP connection :

**For connection we have to download the desktop file as shown in the image below
And have to decrypt the password which we downloaded by login key in the form of .pem
file After that simply run the desktop file . the instance will start running.**

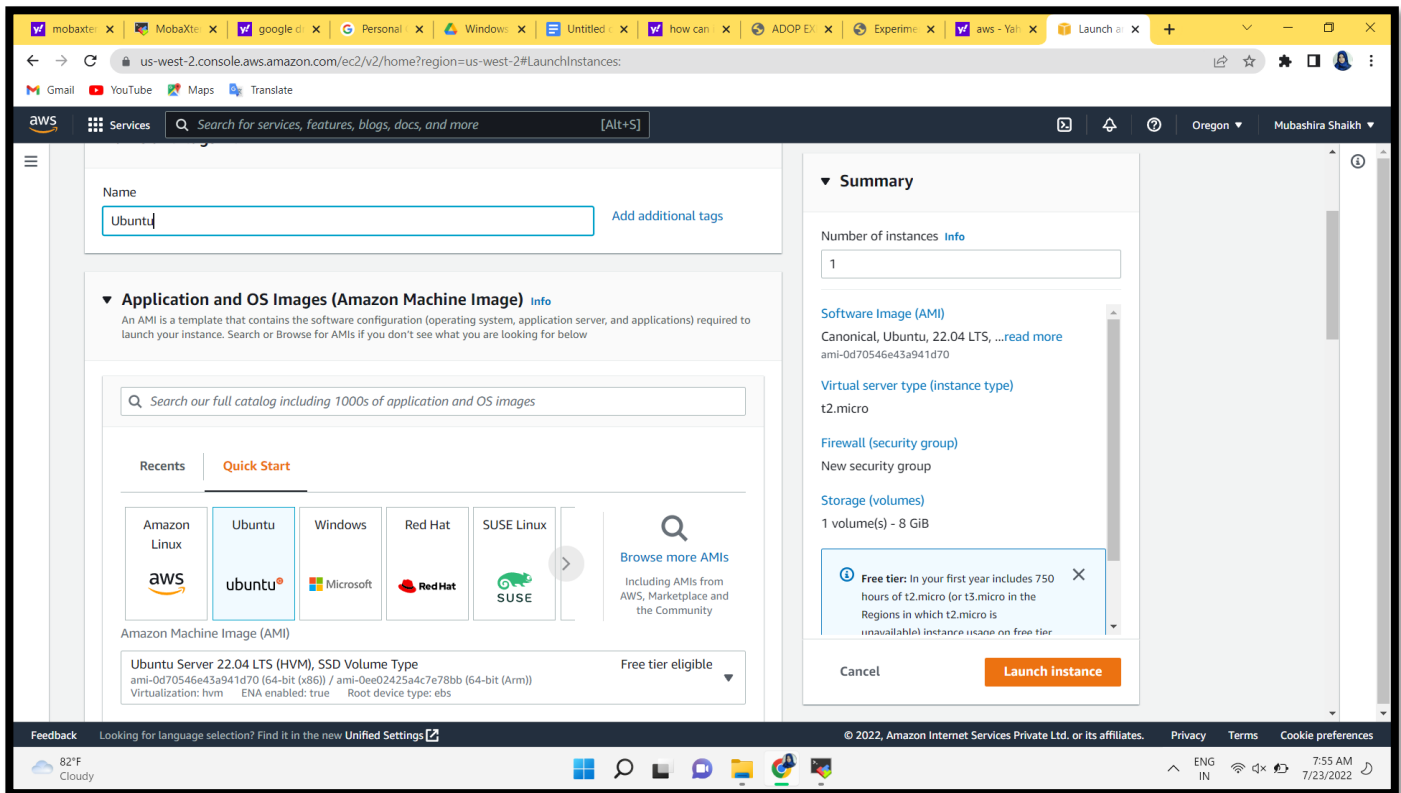


Step 10: Opening google.com to search name

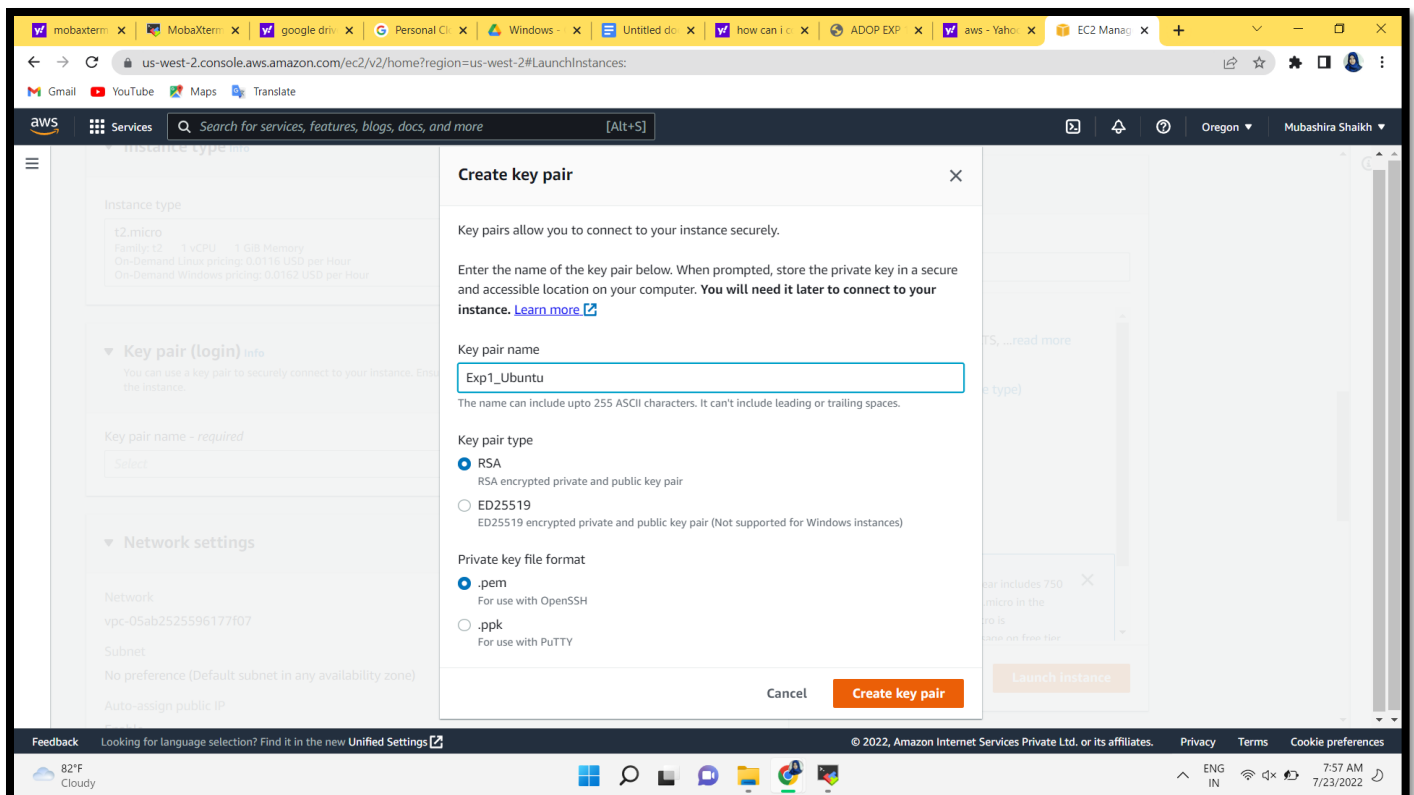


(B)For Ubuntu:

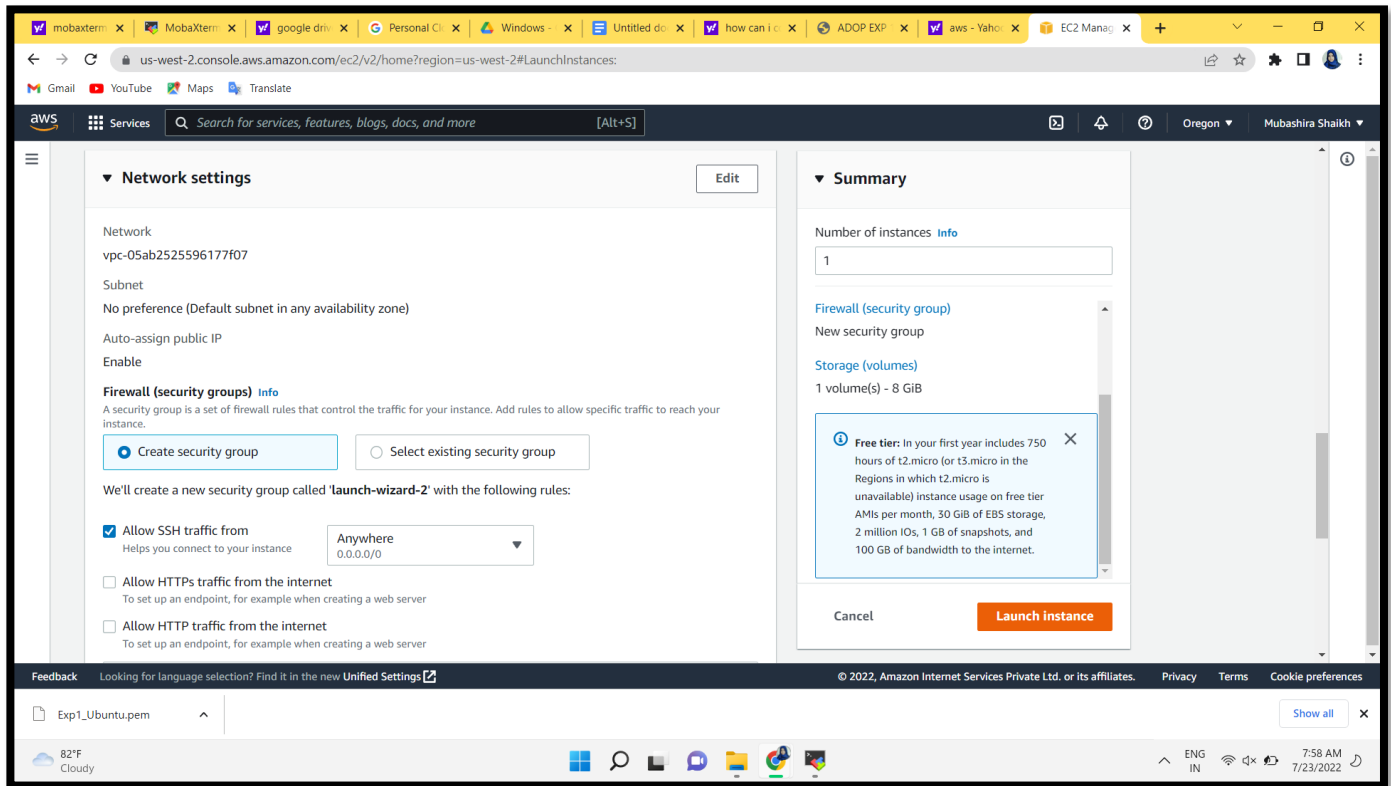
Step 1: Select ubuntu



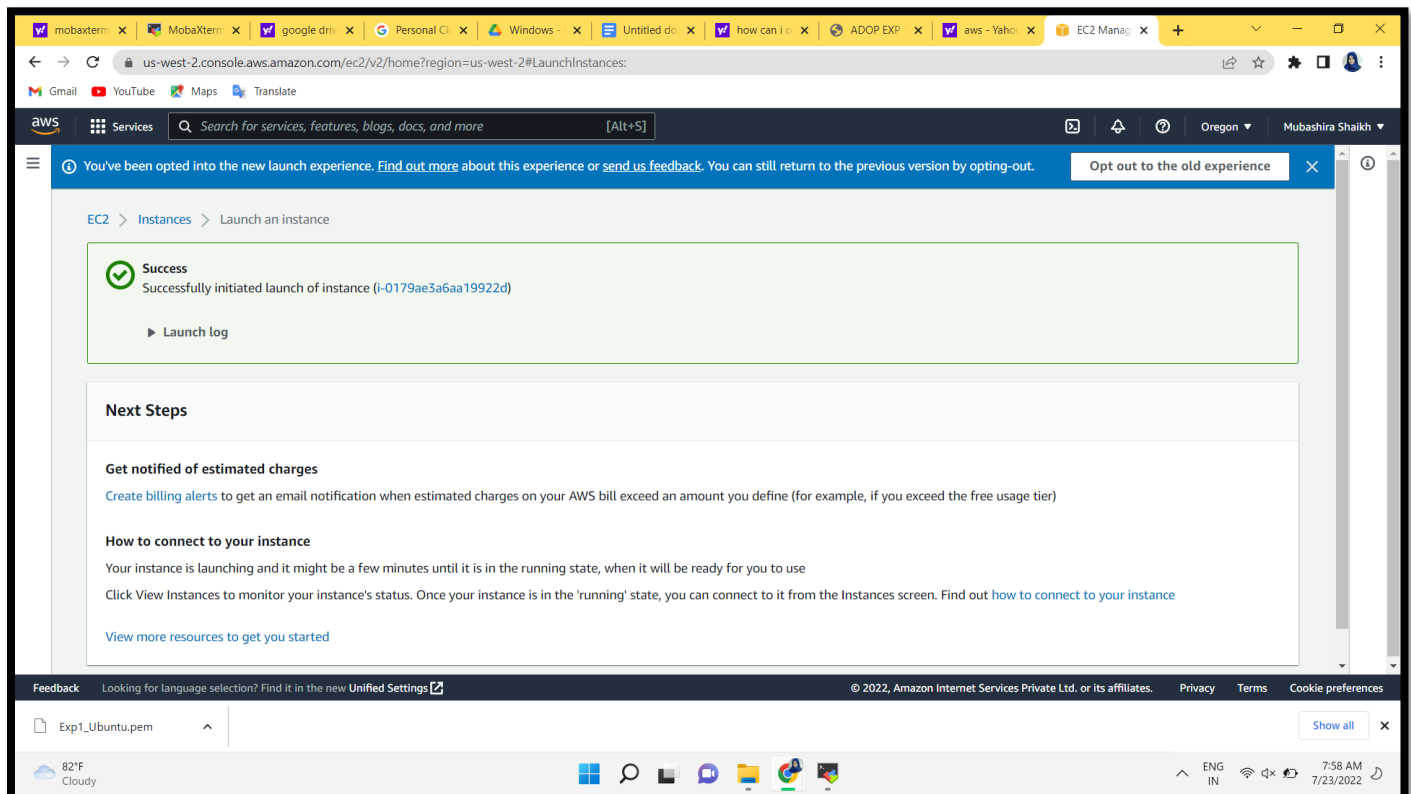
Step 2: Login key



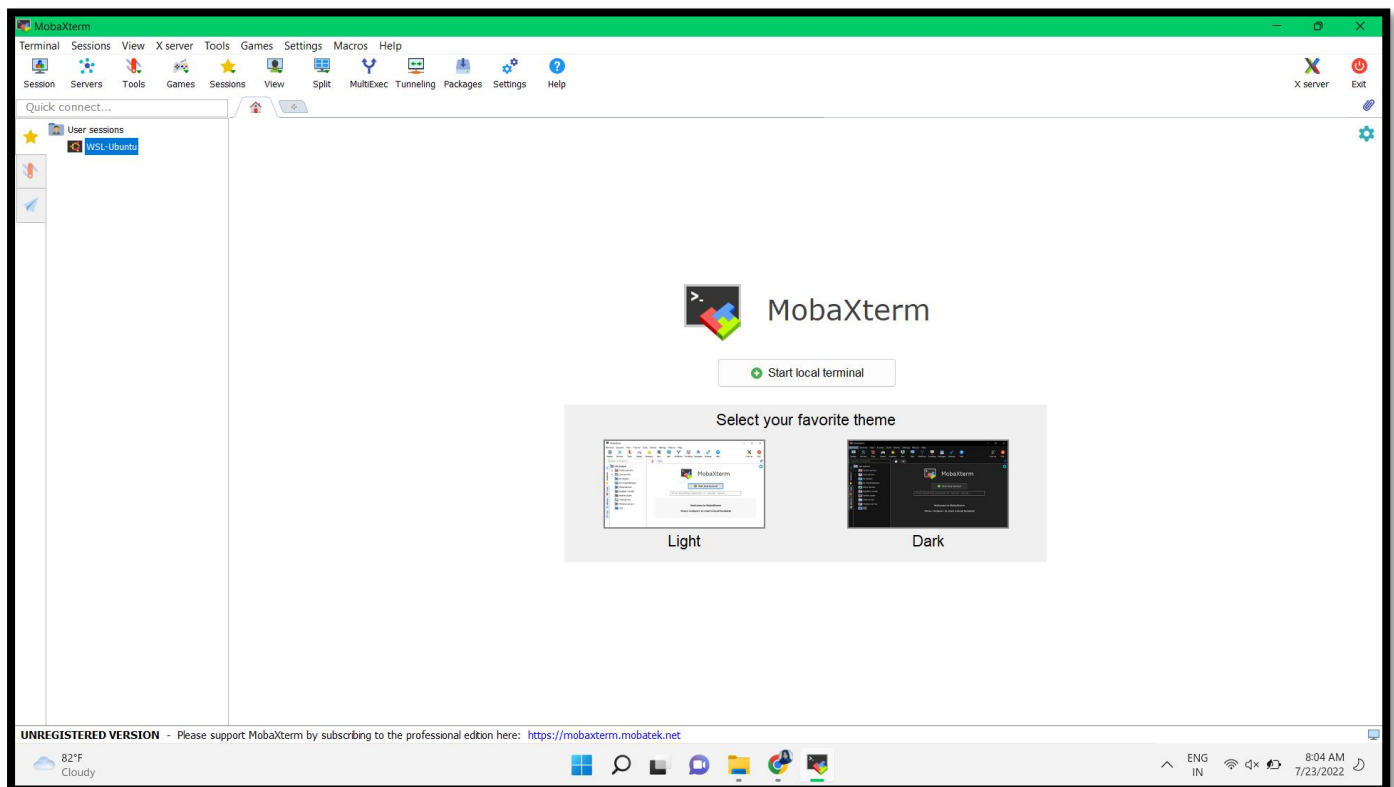
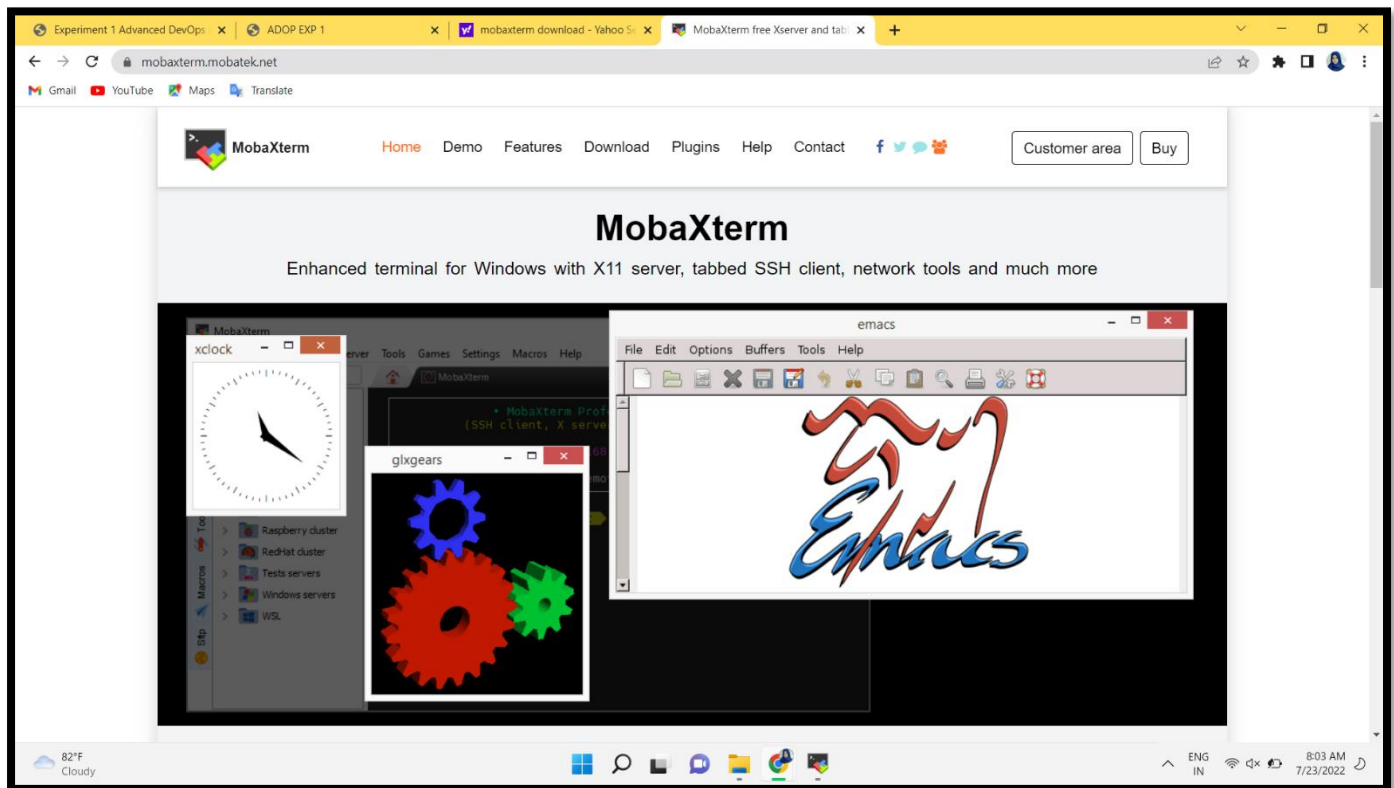
Step 3: Launch Ubuntu instance



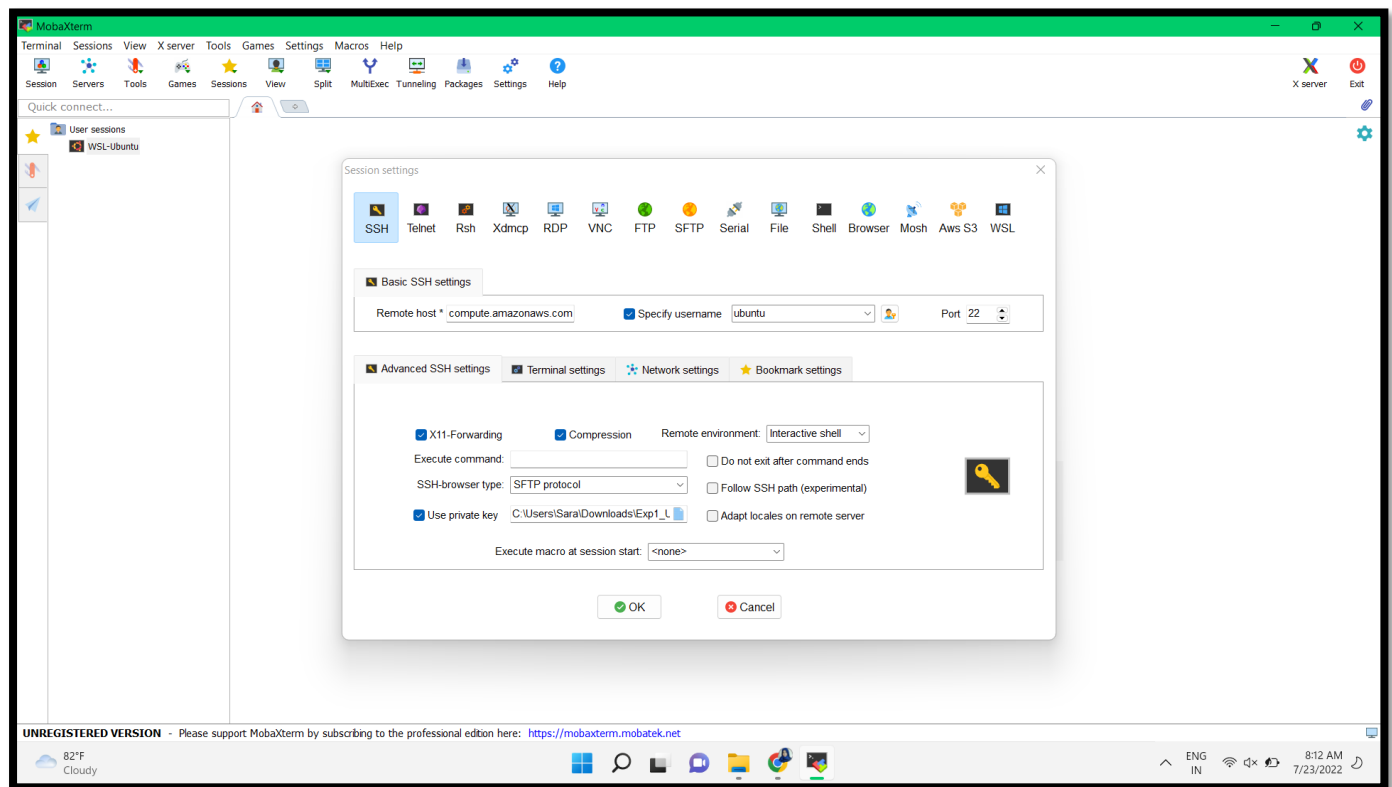
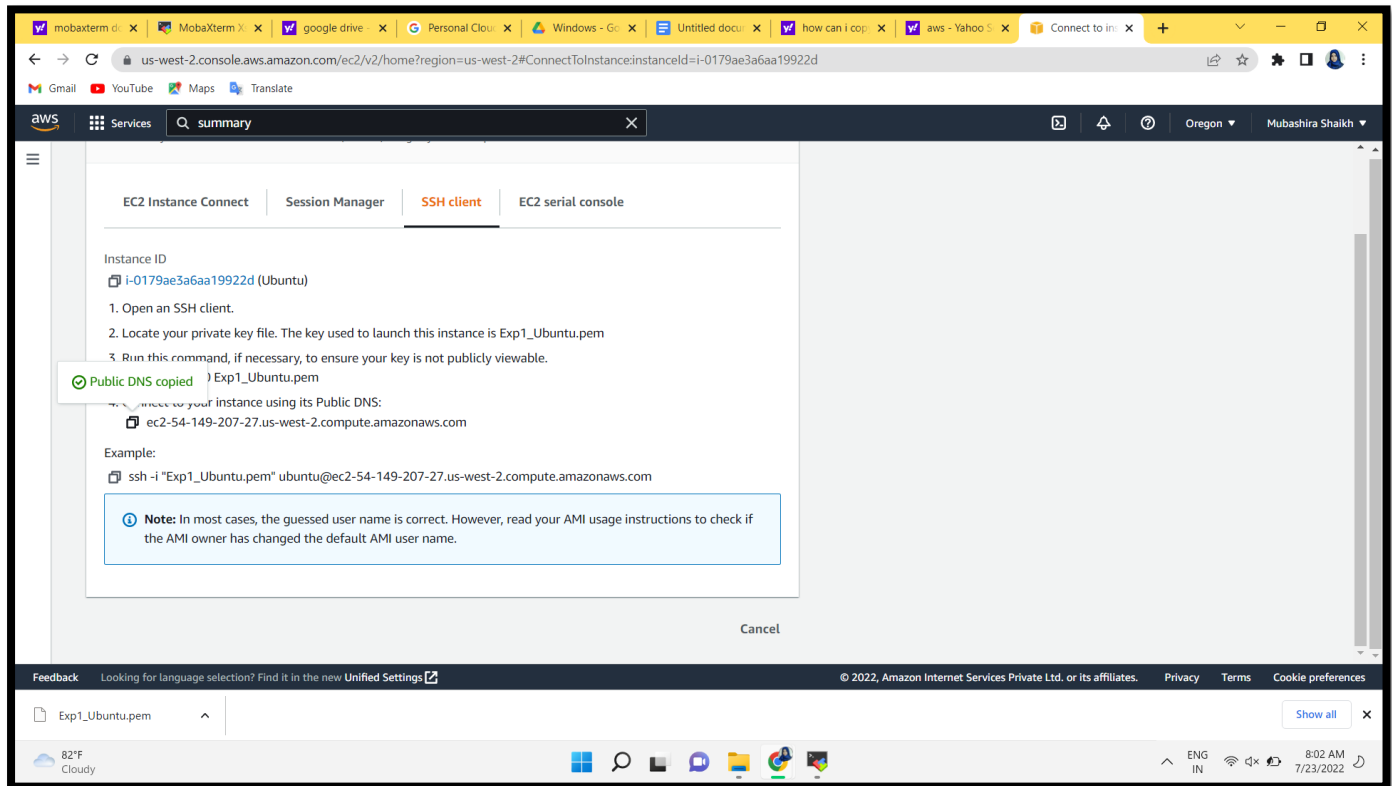
*** Success msg will be shown after succuessfull creation of instance**

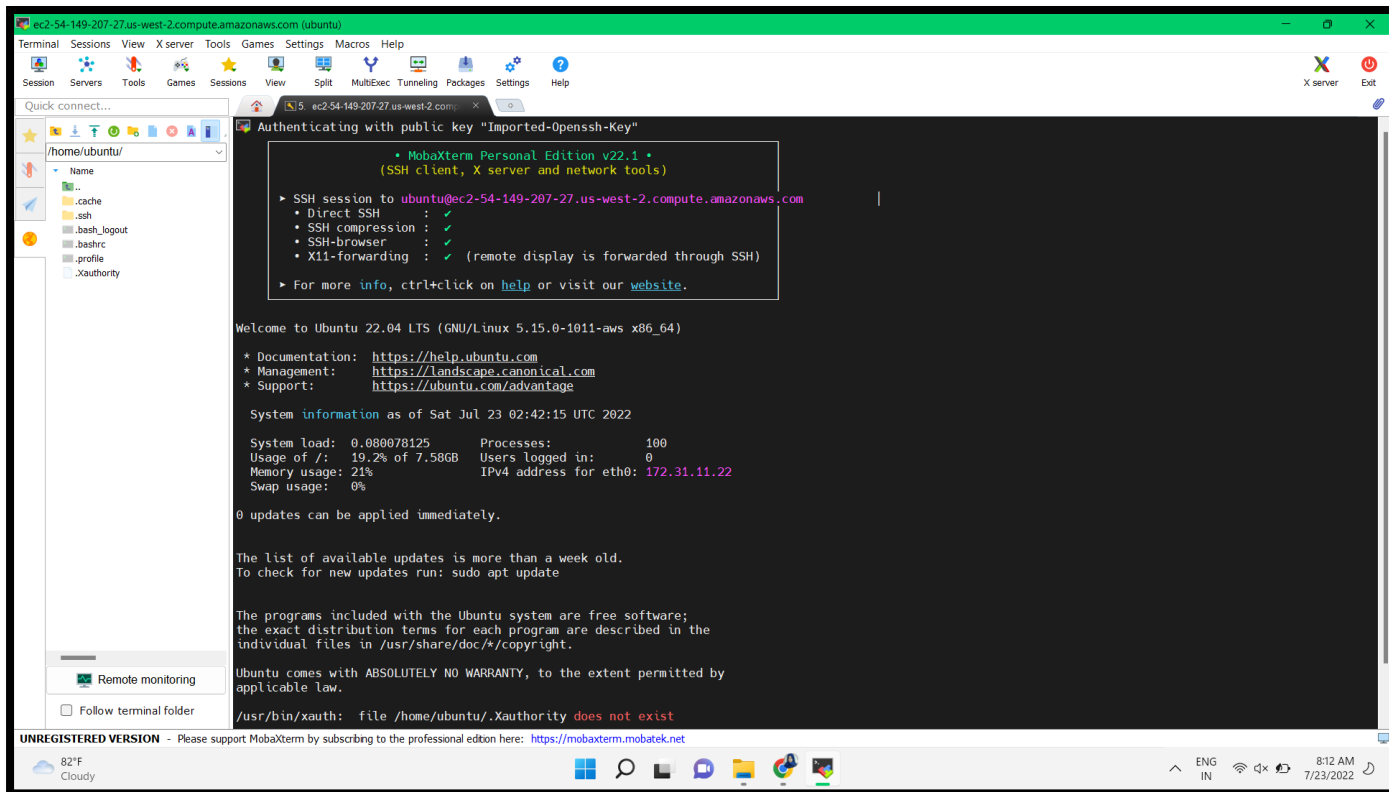


Step 4: MobaXterm download



Step 5: connection building with aws instance with mobaxterm ssh server





Step 6 : writing some commands for executing google chrome through ubuntu server

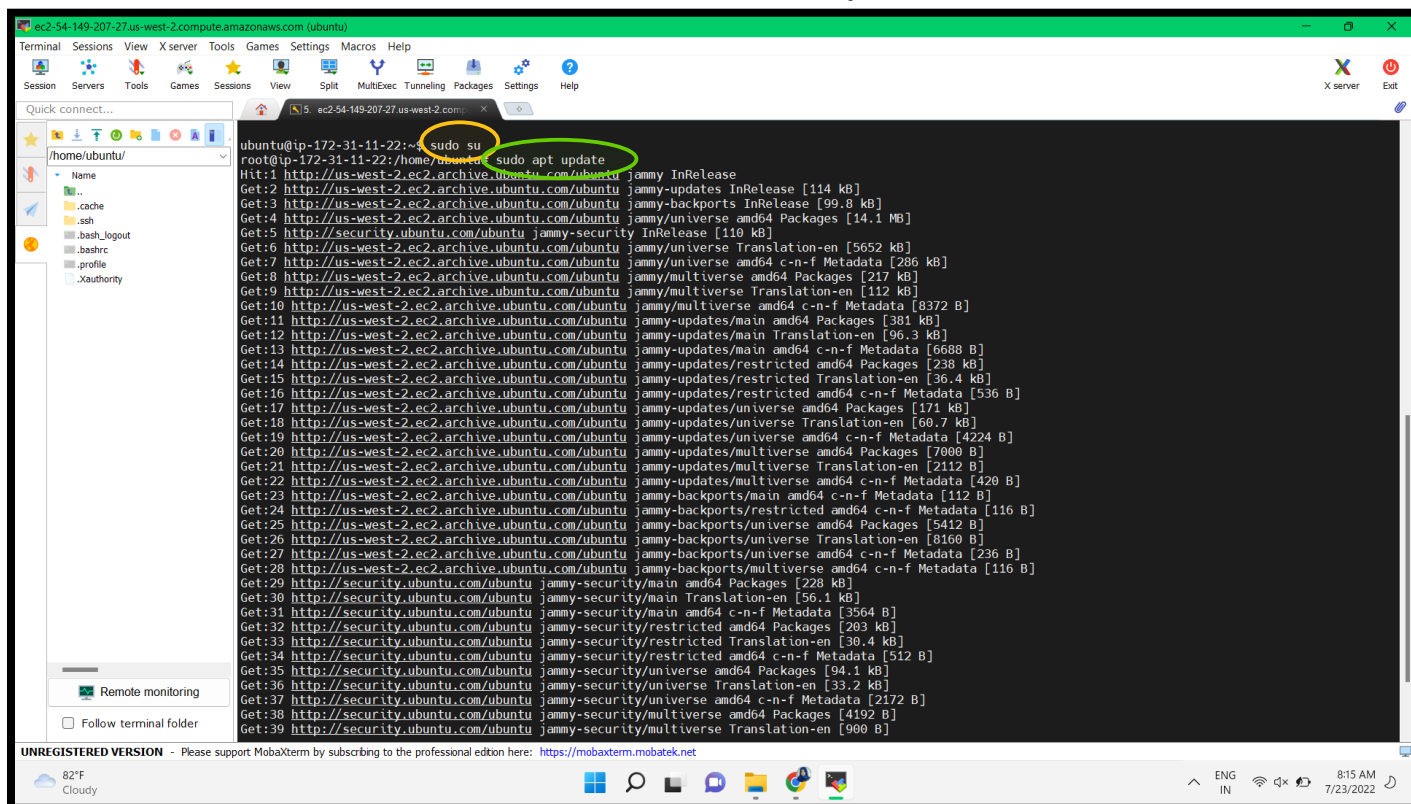
Which are as follows

Sudo su

Sudo apt update

Sudo apt install wget

Create a directory



```
root@ip-172-31-11-22:/home/ubuntu# sudo apt install wget
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
wget is already the newest version (1.21.2-2ubuntu1).
wget set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 47 not upgraded.
root@ip-172-31-11-22:/home/ubuntu#
```

art MobaXterm by subscribing to the professional edition here: <https://mobaxterm.mobatek.net>

Creating Directoty

ec2-54-149-207-27.us-west-2.compute.amazonaws.com (ubuntu)

Terminal Sessions View X server Tools Games Settings Macros Help

Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help

Quick connect...

User sessions

- ec2-54-149-207-27.us-west-2.com
- WSL-Ubuntu

MobaXterm Personal Edition v22.1
(SSH client, X server and network tools)

- SSH session to ubuntu@ec2-54-149-207-27.us-west-2.compute.amazonaws.com
 - Direct SSH : ✓
 - SSH compression : ✓
 - SSH-browser : ✓
 - X11-forwarding : ✓ (remote display is forwarded through SSH)
- For more info, ctrl+click on help or visit our website.

Welcome to Ubuntu 22.04 LTS (GNU/Linux 5.15.0-1011-aws x86_64)

- * Documentation: <https://help.ubuntu.com>
- * Management: <https://landscape.canonical.com>
- * Support: <https://ubuntu.com/advantage>

System information as of Sat Jul 23 07:37:27 UTC 2022

System load: 0.0	Processes: 99
Usage of /: 33.4% of 7.58GB	Users logged in: 0
Memory usage: 28%	IPv4 address for eth0: 172.31.11.22
Swap usage: 0%	

* Ubuntu Pro delivers the most comprehensive open source security and compliance features.

<https://ubuntu.com/aws/pro>

16 updates can be applied immediately.
To see these additional updates run: `apt list --upgradable`

*** System restart required ***

Last login: Sat Jul 23 03:51:50 2022 from 112.79.73.144

```
ubuntu@ip-172-31-11-22:~$ mkdir mubashira
mkdir: cannot create directory 'mubashira': File exists
ubuntu@ip-172-31-11-22:~$ mkdir mubashirashah
ubuntu@ip-172-31-11-22:~$
```

UNREGISTERED VERSION - Please support MobaXterm by subscribing to the professional edition here: <https://mobaxterm.mobatek.net>

86°F Cloudy

ENG US 1:07 PM 7/23/2022