FACE DETECTION APP ON AWS

INTRODUCTION

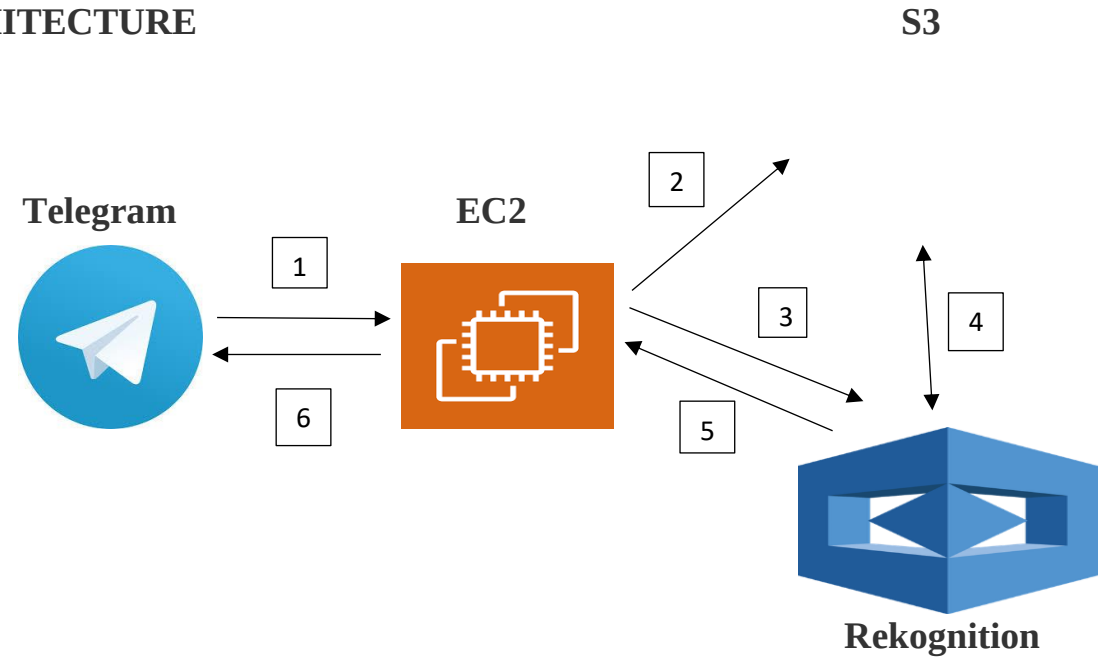
Amazon Web Services (AWS) is the world's most comprehensive and broadly adopted cloud platform, offering over 175 fully featured services from data centers globally. Amazon Web Services offers reliable, scalable, and inexpensive cloud computing services. Free to join, pay only for what you use.

Facial recognition and comparison is a new challenge you will face if you are developing an employee verification system, need to automate video editing, or provide secondary authentication for other applications. To solve this challenge, you could develop your own machine learning model, develop an API, and manage your own infrastructure. This option is expensive, requires advanced knowledge, and is time intensive.

Instead of taking the difficult route, you can use Amazon Rekognition, which can detect faces in an image or video, find facial landmarks such as the position of eyes, and detect emotions such as happy or sad in near real-time or in batches without management of infrastructure or modeling.

Here I'm using few of the amazon web services (ec2, s3, Rekognition) and telegram as a front end to build face-detection app.

ARCHITECTURE



COMPONENTS

1. 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.

2. S3

   Amazon Simple Storage Service (Amazon S3) is an object storage service that offers industry-leading scalability, data availability, security, and performance. This means customers of all sizes and industries can use it to store and protect any amount of data for a range of use cases, such as websites, mobile applications, backup and restore, archive, enterprise applications, IoT devices, and big data analytics

3. Amazon Rekognition

   Amazon Rekognition makes it easy to add image and video analysis to your applications. You just provide an image or video to the Amazon Rekognition API, and the service can identify objects, people, text, scenes, and activities. It can detect any inappropriate content as well. Amazon Rekognition also provides highly accurate facial analysis, face comparison, and face search capabilities

4. Telegram Bot

   Bots are third-party applications that run inside Telegram. Users can interact with bots by sending them messages, commands and inline requests. You control your bots using HTTPS requests to our Bot API.

REQUIREMENTS ANALYSIS

The requirement analysis specifies the requirements needed to develop a graphic project. In this phase, we collect the requirements needed for designing the project. The requirements collected are then analyzed and carried to the next phase.

1. SOFTWARE REQUIREMENTS:

1. PutTTYgen
2. PuTTY

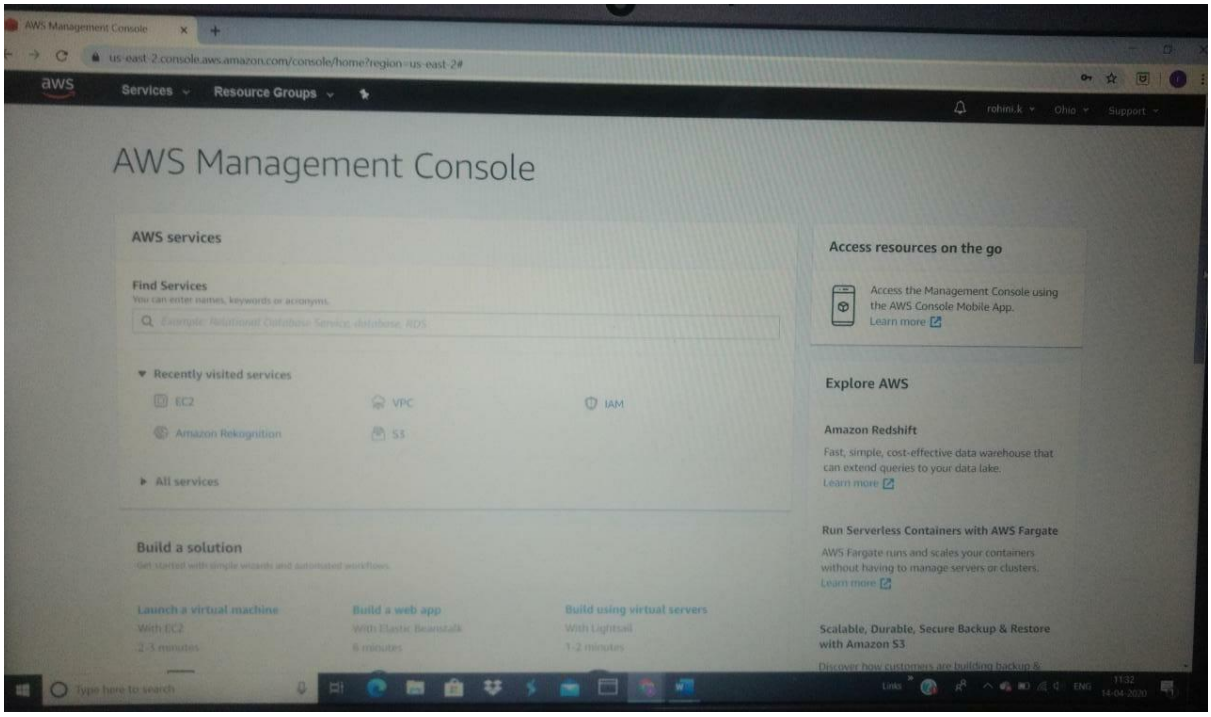
2. HARDWARE REQUIREMENTS:

1. Operating System: Amazon Linux 2
2. Ram: 1GB ram
3. Processor: 1 virtual CPU
4. Storage: 8GB

PROCEDURE:

1. Create a telegram bot
   - ➔ Install and open telegram
   - ➔ Search for BotFather in the search bar and open it
   - ➔ Type /newbot, once you type it will ask to type the name of the bot, type the name of the bot and hit enter
   - ➔ After that it will ask to choose the user name for your bot, type the username for the bot and hit enter
   - ➔ Your new bot is ready now

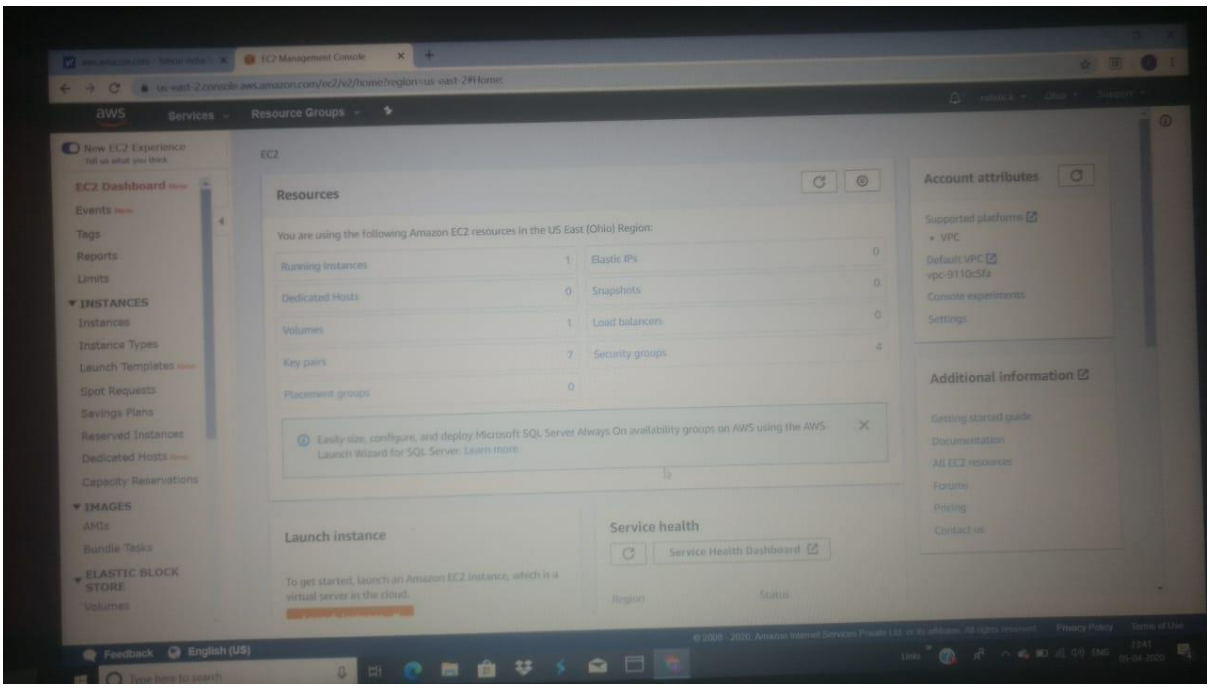
2. In order to use the amazon web services, we need create a amazon web service(AWS) account.



Snapshot 1

3. After successfully creation of AWS account, launch an instance (i.e., create an server).

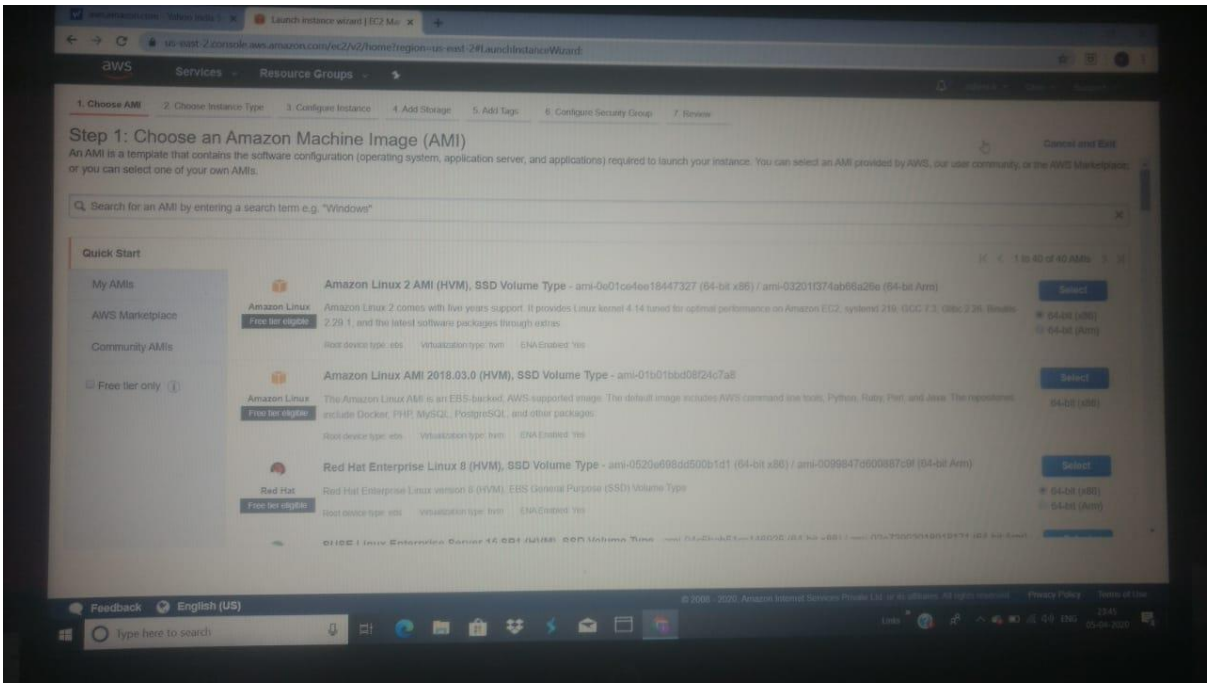
   Go to services and select EC2



Snapshot 2

i. Choose an Amazon Machine Image (AMI)

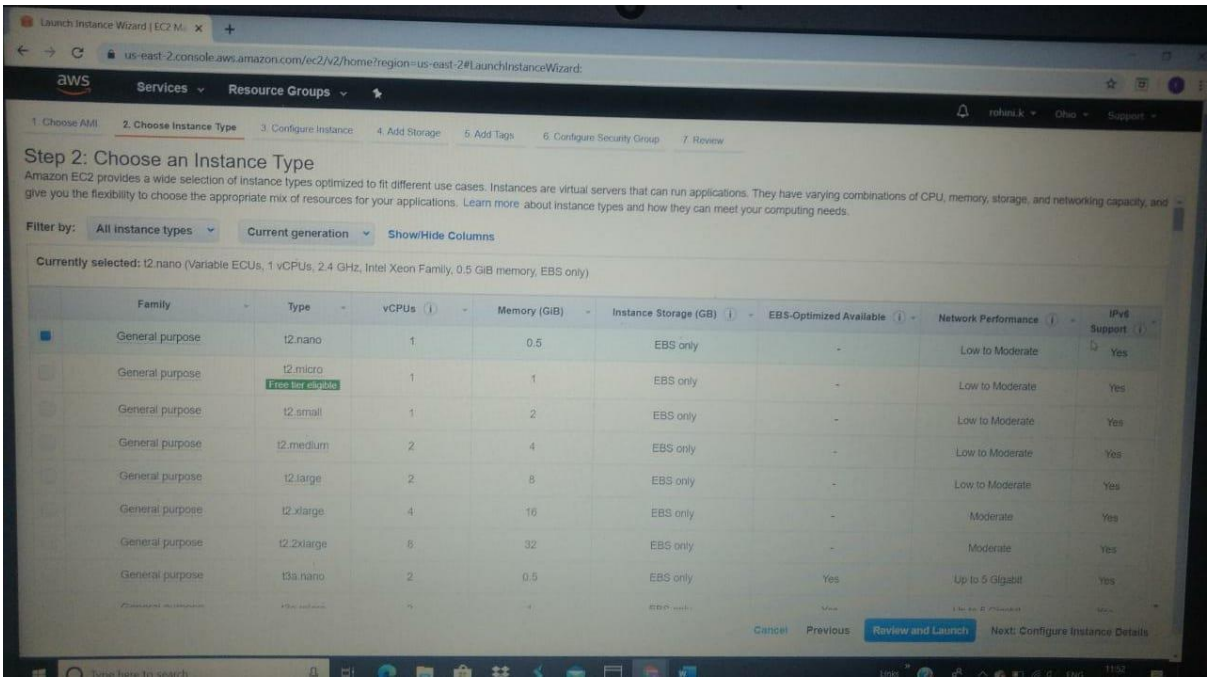
Here I have selected Amazon Linux 2



Snapshot 3

ii. Choose instance type

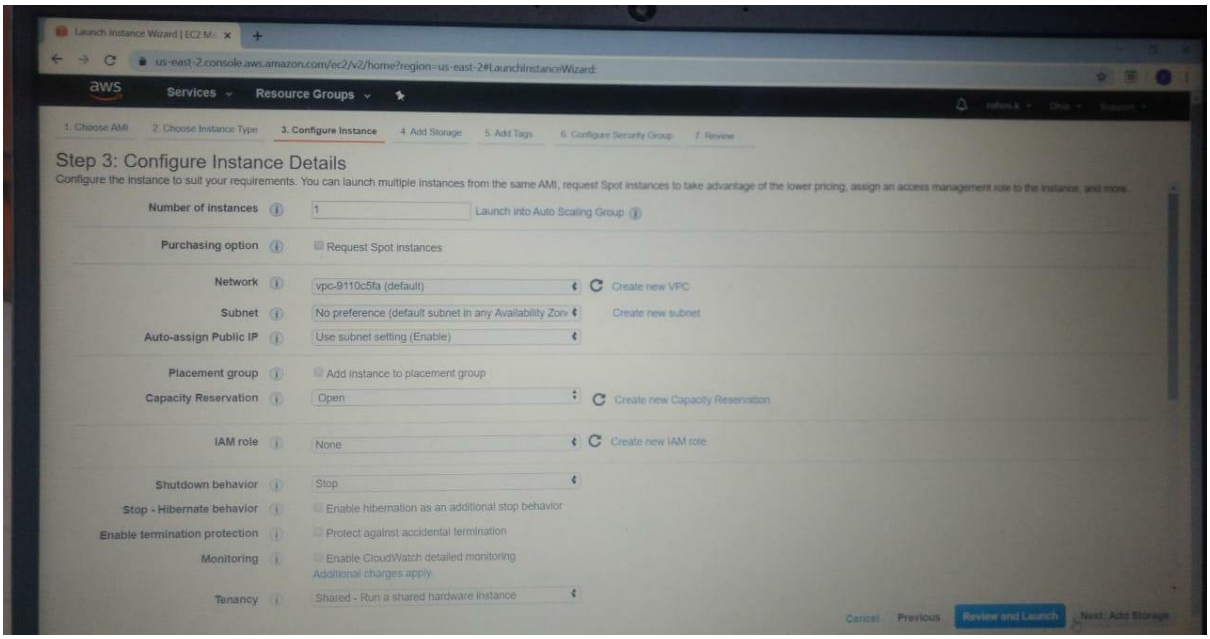
Here I have selected t2 micro so that I will get 1 CPU and 1 GB ram



Snapshot 4

iii. Configure instance

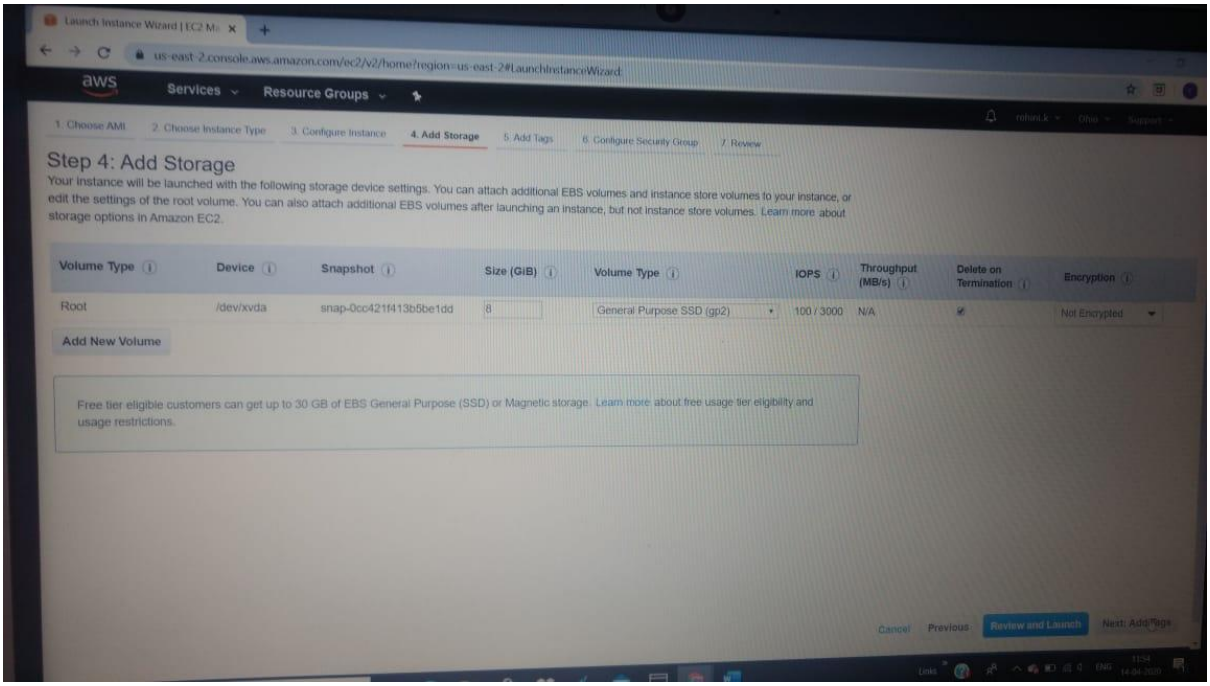
Here I left as it is without changing anything (click next)



Snapshot 5

iv. Add storage

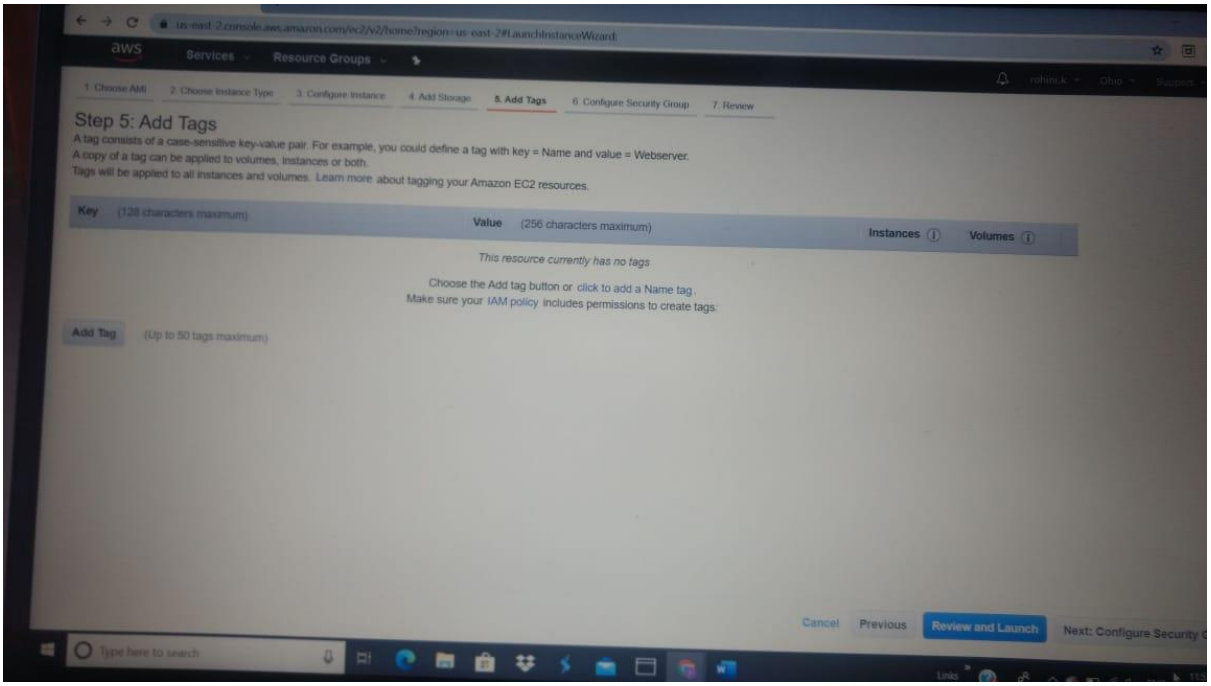
By default they have given 8GB so that is enough to build the project (click next)



Snapshot 6

v. Add tags

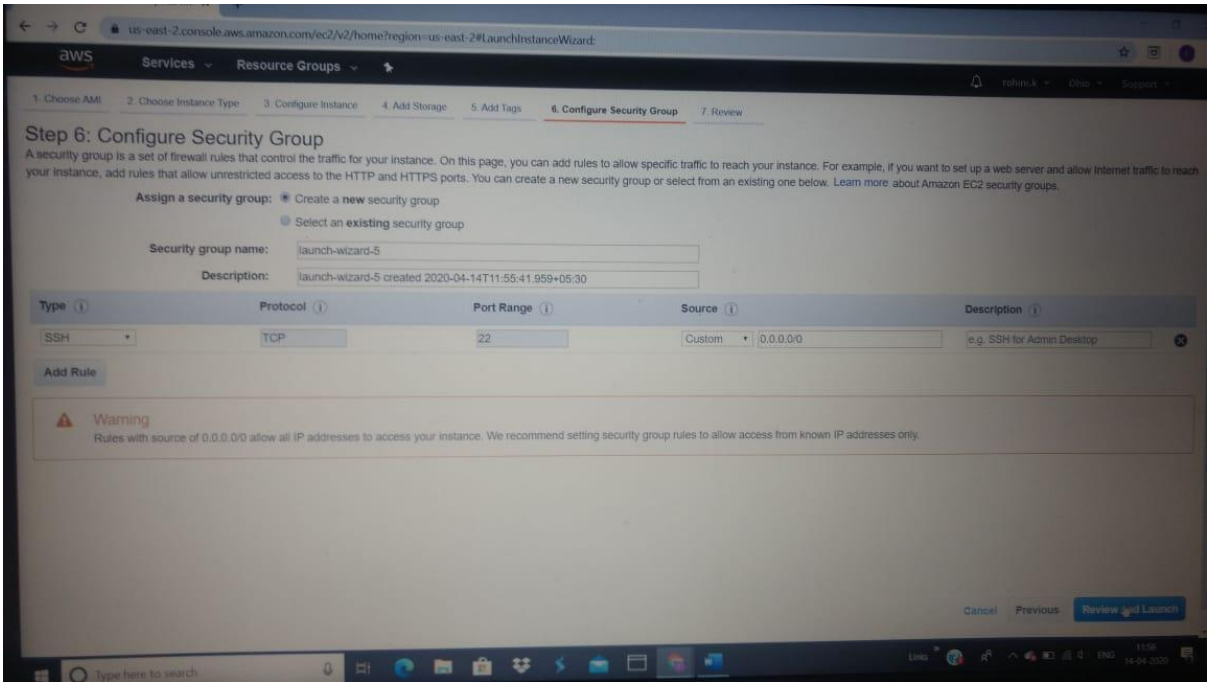
Leave as it is without changing anything in this section (click next)



Snapshot 7

vi. Configure security group

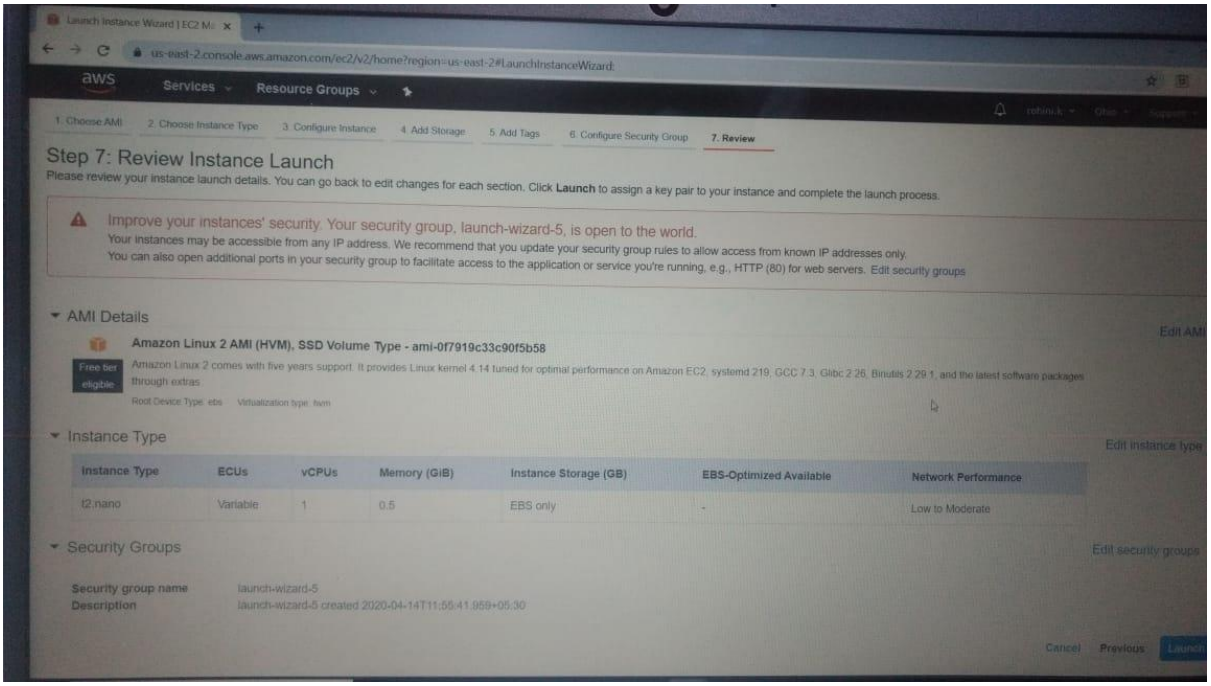
Select type: SSH and port range: 22 (click on review and launch)



Snapshot 8

vii. Review

Reviewing what I have selected in the previous steps (click on launch)

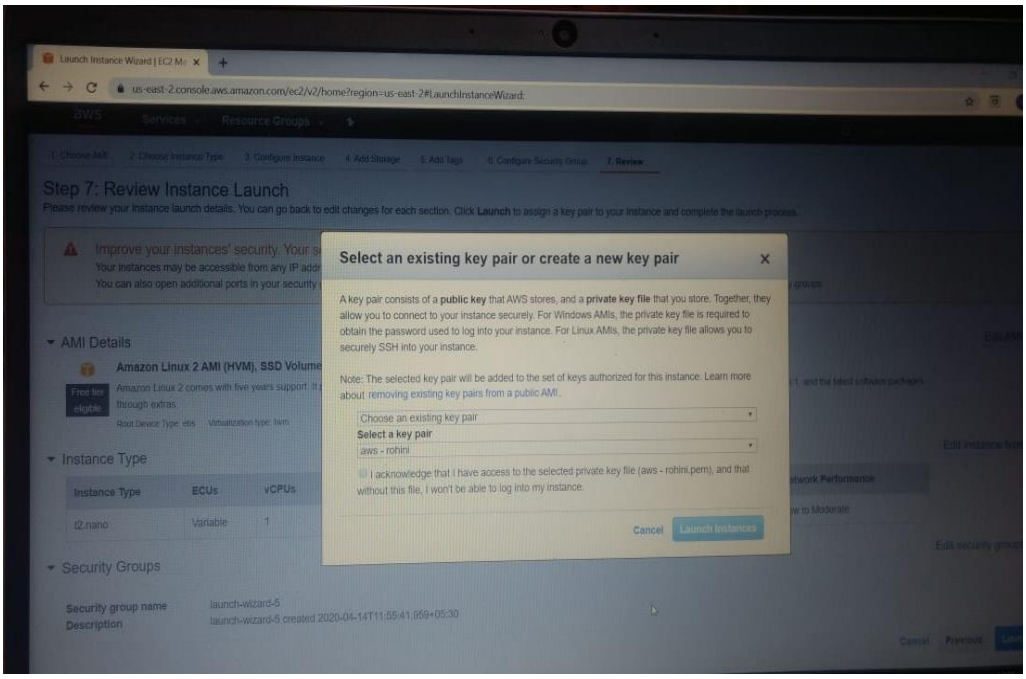


Snapshot 9

viii. Select an existing key pair or select a new key pair

Select on new key pair and give a name to it and download the key pair

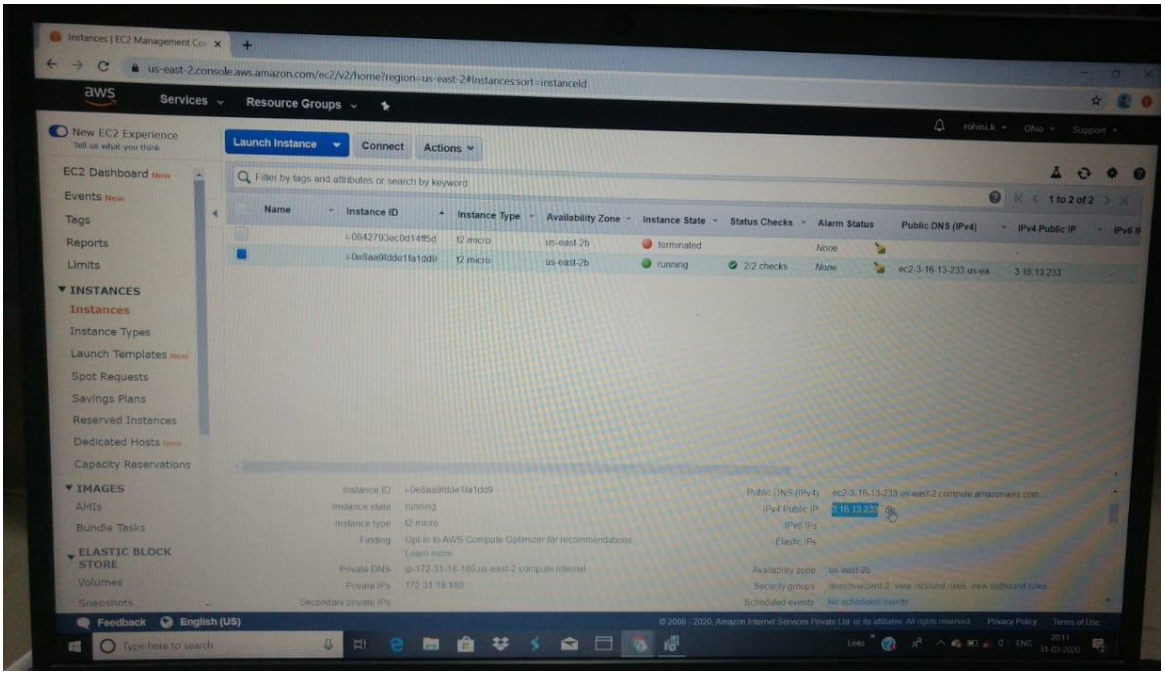
The extension of the a downloaded key pair will be .pem



Snapshot 10

ix. Launch log

So I have launched a machine which is residing in us east(Ohio)



Snapshot 11

4. How do we connect?

   This particular instance is a Linux based instance. For connecting to linux based instance we have a software called PuTTY

   i. Download putty and Connect AWS machine using putty

   ii. AWS Linux operating system basically follows key pairs

   There are two types of keys

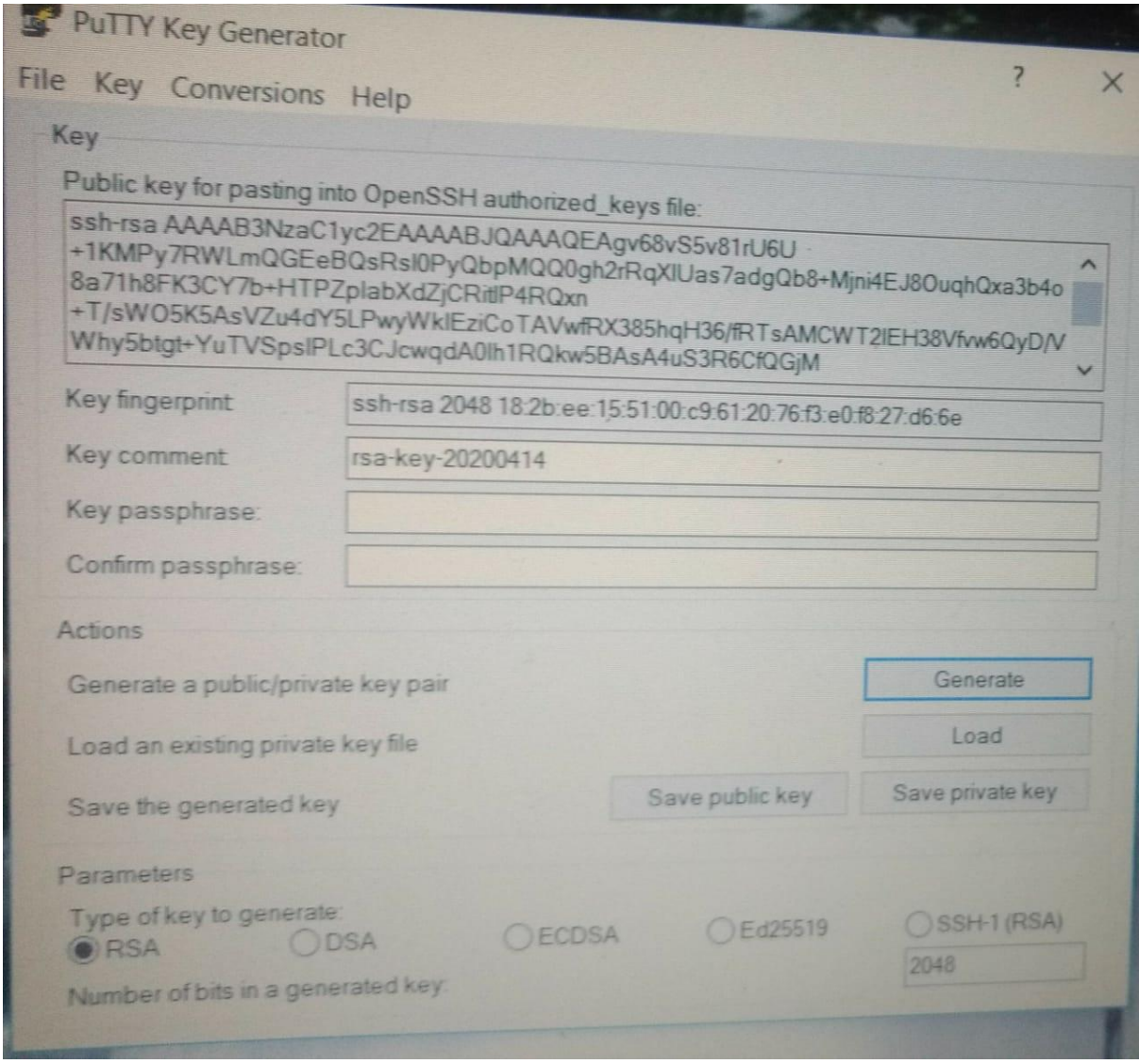
   1. Public key: they are stored on the server/instance
   2. Private key: they are the one we have to upload while connecting to the server

   Putty accepts the private key in the form of ppk but we have downloaded a private key from AWS which is in the form of pem, so there is a mismatch in the file extensions

   Now we have to convert .pem -> .ppk using PuTTYgen

   ➔ Open the software PuTTYgen

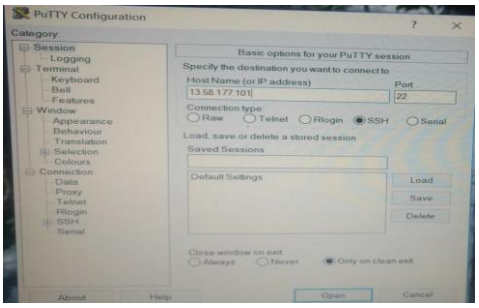
   ➔ Load the .pem file into PuTTYgen so that it will convert .pem file into .ppk file



Snapshot 12

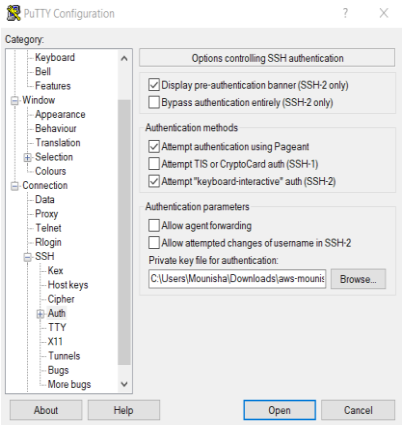
iii. Use the software PuTTY and get connected

- ➔ Open the software PuTTY
- ➔ Make sure that the connection type is SSH and port number is 22 and Enter the IP address
- ➔ Go to SSH on the LHS and open it
- ➔ Go to auth within SSH and select it
- ➔ Click on browse and select the converted ppk file (click open)



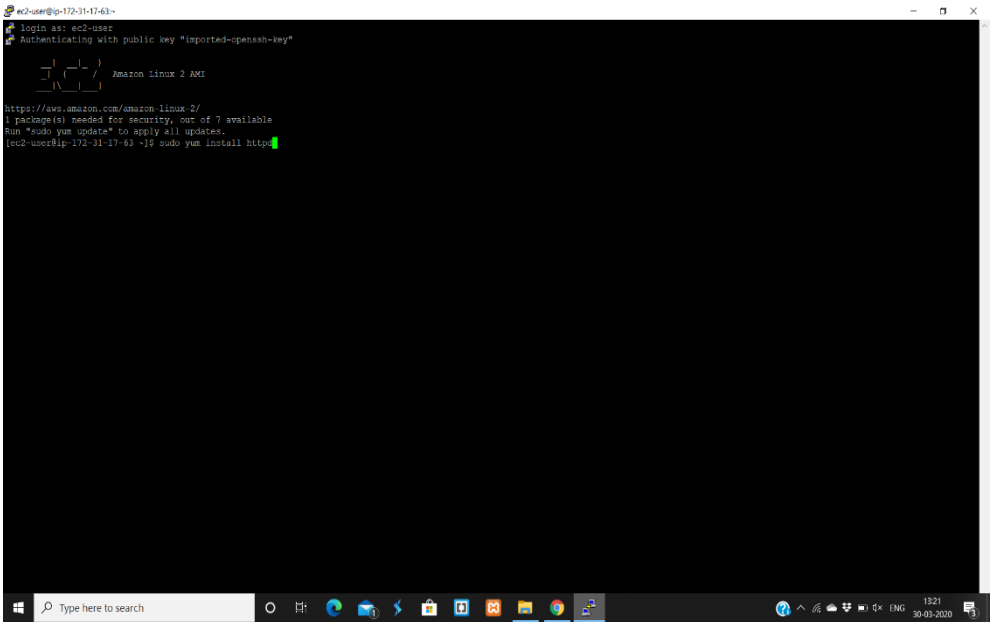
Snapshot 13

snapshot 14



iv. Putty console will be displayed and you will be prompted to enter the user the name

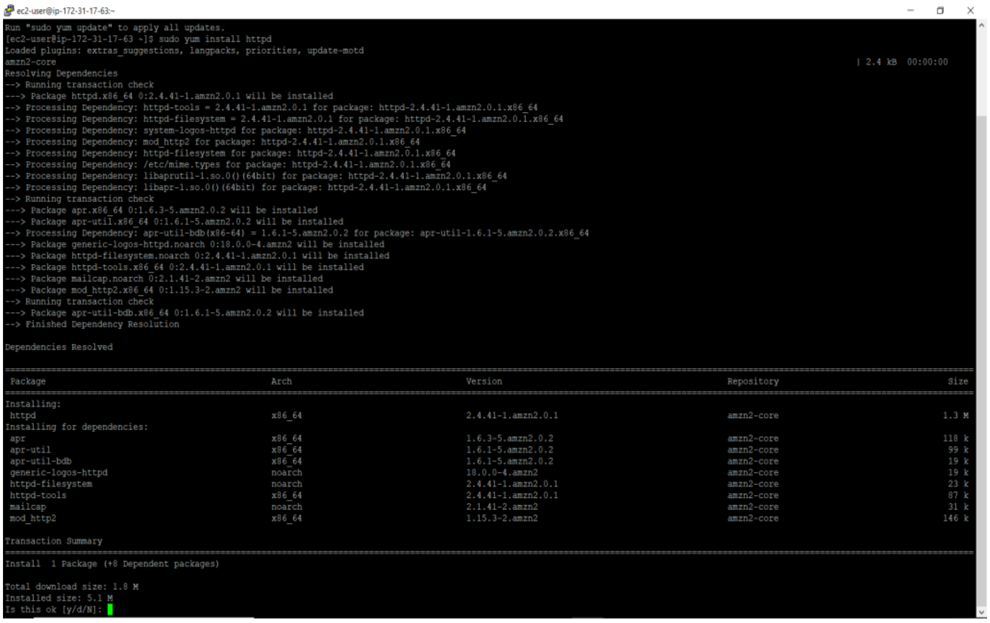
➔ Username for this machine is ec2-user, we don't need to enter password because we have private key



Snapshot 15

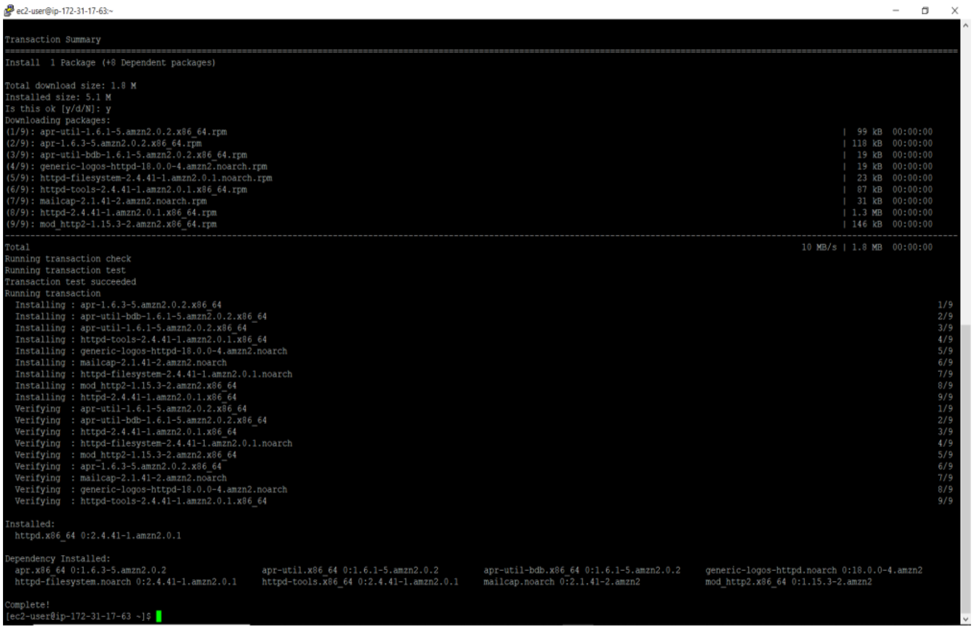
➔ After successful login, install apache(httpd) server using command

sudo yum install httpd and type y to install.



```
Run "sudo yum update" to apply all updates.
[ec2-user@ip-172-31-17-63 ~]$ sudo yum install httpd
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
amzn2-core                                                                                          | 2.4 kB  00:00:00
Resolving Dependencies
--> Running transaction check
---> Package httpd.x86_64 0:2.4.41-1.amzn2.0.1 will be installed
--> Processing Dependency: httpd-tools = 2.4.41-1.amzn2.0.1 for package: httpd-2.4.41-1.amzn2.0.1.x86_64
--> Processing Dependency: httpd-filesystem = 2.4.41-1.amzn2.0.1 for package: httpd-2.4.41-1.amzn2.0.1.x86_64
--> Processing Dependency: system-logos-httpd for package: httpd-2.4.41-1.amzn2.0.1.x86_64
--> Processing Dependency: mod_http2 for package: httpd-2.4.41-1.amzn2.0.1.x86_64
--> Processing Dependency: httpd-filesystem for package: httpd-2.4.41-1.amzn2.0.1.x86_64
--> Processing Dependency: /etc/mime.types for package: httpd-2.4.41-1.amzn2.0.1.x86_64
--> Processing Dependency: libaprutil-1.so.0()(64bit) for package: httpd-2.4.41-1.amzn2.0.1.x86_64
--> Processing Dependency: libapr-1.so.0()(64bit) for package: httpd-2.4.41-1.amzn2.0.1.x86_64
--> Running transaction check
---> Package apr.x86_64 0:1.6.3-5.amzn2.0.2 will be installed
---> Package apr-util.x86_64 0:1.6.1-5.amzn2.0.2 will be installed
--> Processing Dependency: apr-util-bdb(x86-64) = 1.6.1-5.amzn2.0.2 for package: apr-util-1.6.1-5.amzn2.0.2.x86_64
---> Package generic-logos-httpd.noarch 0:18.0.0-4.amzn2 will be installed
---> Package httpd-filesystem.noarch 0:2.4.41-1.amzn2.0.1 will be installed
---> Package httpd-tools.x86_64 0:2.4.41-1.amzn2.0.1 will be installed
---> Package mailcap.noarch 0:2.1.41-2.amzn2 will be installed
---> Package mod_http2.x86_64 0:1.15.3-2.amzn2 will be installed
--> Running transaction check
---> Package apr-util-bdb.x86_64 0:1.6.1-5.amzn2.0.2 will be installed
--> Finished Dependency Resolution

Dependencies Resolved

==========================================================================================================================
 Package                         Arch                   Version                            Repository                 Size
==========================================================================================================================
Installing:
 httpd                           x86_64                 2.4.41-1.amzn2.0.1                 amzn2-core                1.3 M
Installing for dependencies:
 apr                             x86_64                 1.6.3-5.amzn2.0.2                  amzn2-core                118 k
 apr-util                        x86_64                 1.6.1-5.amzn2.0.2                  amzn2-core                 99 k
 apr-util-bdb                    x86_64                 1.6.1-5.amzn2.0.2                  amzn2-core                 19 k
 generic-logos-httpd             noarch                 18.0.0-4.amzn2                     amzn2-core                 19 k
 httpd-filesystem                noarch                 2.4.41-1.amzn2.0.1                 amzn2-core                 23 k
 httpd-tools                     x86_64                 2.4.41-1.amzn2.0.1                 amzn2-core                 87 k
 mailcap                         noarch                 2.1.41-2.amzn2                     amzn2-core                 31 k
 mod_http2                       x86_64                 1.15.3-2.amzn2                     amzn2-core                146 k

Transaction Summary
==========================================================================================================================
Install  1 Package (+8 Dependent packages)

Total download size: 1.8 M
Installed size: 5.1 M
Is this ok [y/d/N]:
```

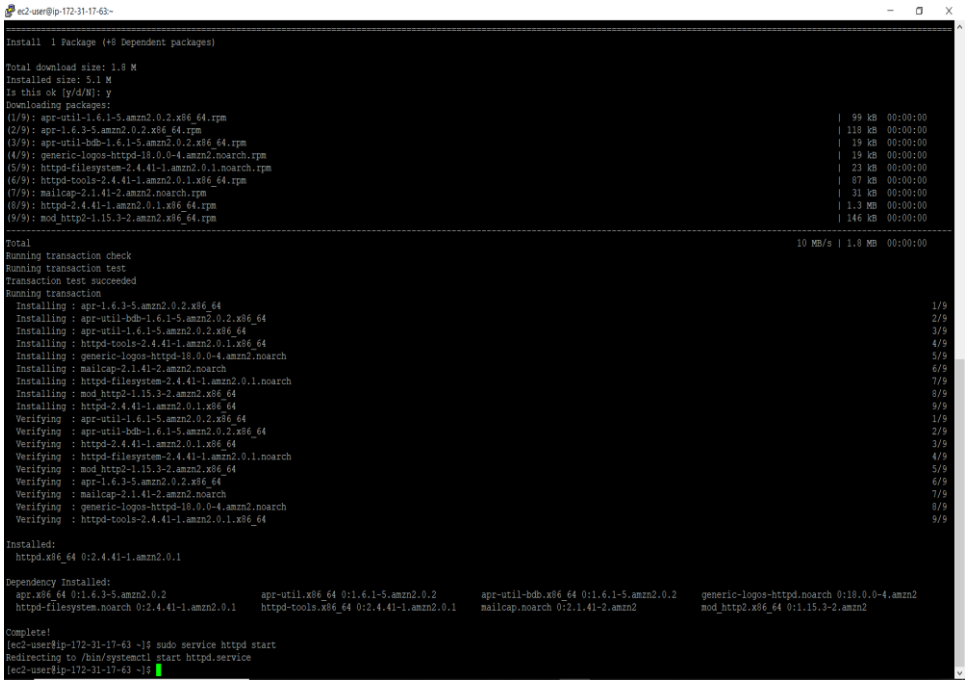
Snapshot 16



```
Transaction Summary
==========================================================================================================================
Install  1 Package (+8 Dependent packages)

Total download size: 1.8 M
Installed size: 5.1 M
Is this ok [y/d/N]: y
Downloading packages:
(1/9): apr-util-1.6.1-5.amzn2.0.2.x86_64.rpm                                                     |  99 kB  00:00:00
(2/9): apr-1.6.3-5.amzn2.0.2.x86_64.rpm                                                          | 118 kB  00:00:00
(3/9): apr-util-bdb-1.6.1-5.amzn2.0.2.x86_64.rpm                                                 |  19 kB  00:00:00
(4/9): generic-logos-httpd-18.0.0-4.amzn2.noarch.rpm                                             |  19 kB  00:00:00
(5/9): httpd-filesystem-2.4.41-1.amzn2.0.1.noarch.rpm                                            |  23 kB  00:00:00
(6/9): httpd-tools-2.4.41-1.amzn2.0.1.x86_64.rpm                                                 |  87 kB  00:00:00
(7/9): mailcap-2.1.41-2.amzn2.noarch.rpm                                                         |  31 kB  00:00:00
(8/9): httpd-2.4.41-1.amzn2.0.1.x86_64.rpm                                                       | 1.3 MB  00:00:00
(9/9): mod_http2-1.15.3-2.amzn2.x86_64.rpm                                                       | 146 kB  00:00:00
--------------------------------------------------------------------------------------------------------------------------
Total                                                                                    10 MB/s | 1.8 MB  00:00:00
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Installing : apr-1.6.3-5.amzn2.0.2.x86_64                                                                         1/9
  Installing : apr-util-bdb-1.6.1-5.amzn2.0.2.x86_64                                                                2/9
  Installing : apr-util-1.6.1-5.amzn2.0.2.x86_64                                                                    3/9
  Installing : httpd-tools-2.4.41-1.amzn2.0.1.x86_64                                                                4/9
  Installing : generic-logos-httpd-18.0.0-4.amzn2.noarch                                                            5/9
  Installing : mailcap-2.1.41-2.amzn2.noarch                                                                        6/9
  Installing : httpd-filesystem-2.4.41-1.amzn2.0.1.noarch                                                           7/9
  Installing : mod_http2-1.15.3-2.amzn2.x86_64                                                                      8/9
  Installing : httpd-2.4.41-1.amzn2.0.1.x86_64                                                                      9/9
  Verifying  : apr-util-1.6.1-5.amzn2.0.2.x86_64                                                                    1/9
  Verifying  : apr-util-bdb-1.6.1-5.amzn2.0.2.x86_64                                                                2/9
  Verifying  : httpd-2.4.41-1.amzn2.0.1.x86_64                                                                      3/9
  Verifying  : httpd-filesystem-2.4.41-1.amzn2.0.1.noarch                                                           4/9
  Verifying  : mod_http2-1.15.3-2.amzn2.x86_64                                                                      5/9
  Verifying  : apr-1.6.3-5.amzn2.0.2.x86_64                                                                         6/9
  Verifying  : mailcap-2.1.41-2.amzn2.noarch                                                                        7/9
  Verifying  : generic-logos-httpd-18.0.0-4.amzn2.noarch                                                            8/9
  Verifying  : httpd-tools-2.4.41-1.amzn2.0.1.x86_64                                                                9/9

Installed:
  httpd.x86_64 0:2.4.41-1.amzn2.0.1

Dependency Installed:
  apr.x86_64 0:1.6.3-5.amzn2.0.2              apr-util.x86_64 0:1.6.1-5.amzn2.0.2        apr-util-bdb.x86_64 0:1.6.1-5.amzn2.0.2     generic-logos-httpd.noarch 0:18.0.0-4.amzn2
  httpd-filesystem.noarch 0:2.4.41-1.amzn2.0.1    httpd-tools.x86_64 0:2.4.41-1.amzn2.0.1    mailcap.noarch 0:2.1.41-2.amzn2             mod_http2.x86_64 0:1.15.3-2.amzn2

Complete!
[ec2-user@ip-172-31-17-63 ~]$
```

Snapshot 17

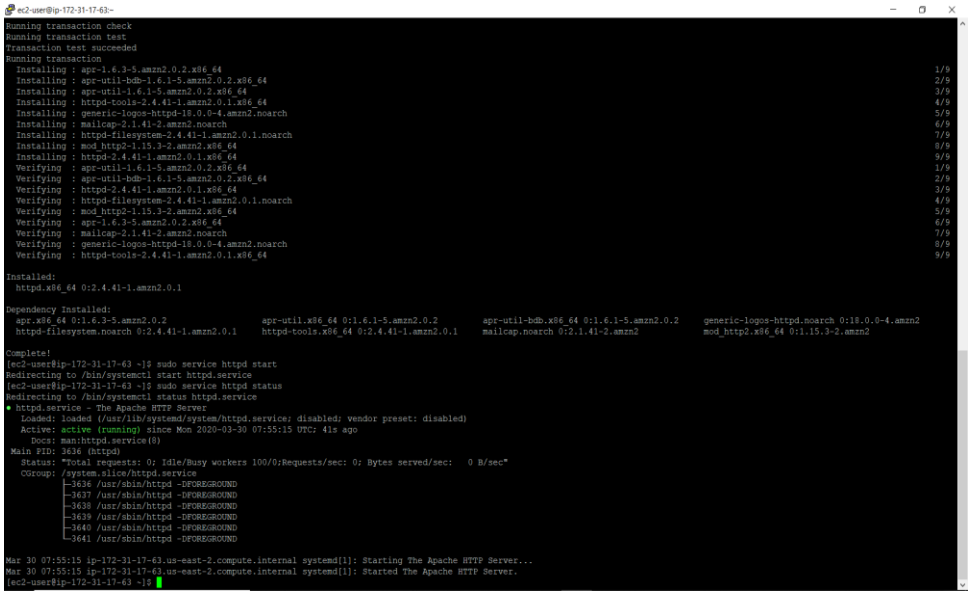
➔ After installing the server, start the service by using the command sudo service httpd start



```
ec2-user@ip-172-31-17-63:~
Install  1 Package (+8 Dependent packages)

Total download size: 1.8 M
Installed size: 5.1 M
Is this ok [y/d/N]: y
Downloading packages:
(1/9): apr-util-1.6.1-5.amzn2.0.2.x86_64.rpm                                                    |  99 kB  00:00:00
(2/9): apr-1.6.3-5.amzn2.0.2.x86_64.rpm                                                         | 118 kB  00:00:00
(3/9): apr-util-bdb-1.6.1-5.amzn2.0.2.x86_64.rpm                                                |  19 kB  00:00:00
(4/9): generic-logos-httpd-18.0.0-4.amzn2.noarch.rpm                                            |  19 kB  00:00:00
(5/9): httpd-filesystem-2.4.41-1.amzn2.0.1.noarch.rpm                                           |  23 kB  00:00:00
(6/9): httpd-tools-2.4.41-1.amzn2.0.1.x86_64.rpm                                                |  87 kB  00:00:00
(7/9): mailcap-2.1.41-2.amzn2.noarch.rpm                                                        |  31 kB  00:00:00
(8/9): httpd-2.4.41-1.amzn2.0.1.x86_64.rpm                                                      | 1.3 MB  00:00:00
(9/9): mod_http2-1.15.3-2.amzn2.x86_64.rpm                                                      | 146 kB  00:00:00
--------------------------------------------------------------------------------------------------------------------------
Total                                                                                    10 MB/s | 1.8 MB  00:00:00
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Installing : apr-1.6.3-5.amzn2.0.2.x86_64                                                                        1/9
  Installing : apr-util-bdb-1.6.1-5.amzn2.0.2.x86_64                                                               2/9
  Installing : apr-util-1.6.1-5.amzn2.0.2.x86_64                                                                   3/9
  Installing : httpd-tools-2.4.41-1.amzn2.0.1.x86_64                                                               4/9
  Installing : generic-logos-httpd-18.0.0-4.amzn2.noarch                                                           5/9
  Installing : mailcap-2.1.41-2.amzn2.noarch                                                                       6/9
  Installing : httpd-filesystem-2.4.41-1.amzn2.0.1.noarch                                                          7/9
  Installing : mod_http2-1.15.3-2.amzn2.x86_64                                                                     8/9
  Installing : httpd-2.4.41-1.amzn2.0.1.x86_64                                                                     9/9
  Verifying  : apr-util-1.6.1-5.amzn2.0.2.x86_64                                                                   1/9
  Verifying  : apr-util-bdb-1.6.1-5.amzn2.0.2.x86_64                                                               2/9
  Verifying  : httpd-2.4.41-1.amzn2.0.1.x86_64                                                                     3/9
  Verifying  : httpd-filesystem-2.4.41-1.amzn2.0.1.noarch                                                          4/9
  Verifying  : mod_http2-1.15.3-2.amzn2.x86_64                                                                     5/9
  Verifying  : apr-1.6.3-5.amzn2.0.2.x86_64                                                                        6/9
  Verifying  : mailcap-2.1.41-2.amzn2.noarch                                                                       7/9
  Verifying  : generic-logos-httpd-18.0.0-4.amzn2.noarch                                                           8/9
  Verifying  : httpd-tools-2.4.41-1.amzn2.0.1.x86_64                                                               9/9

Installed:
  httpd.x86_64 0:2.4.41-1.amzn2.0.1

Dependency Installed:
  apr.x86_64 0:1.6.3-5.amzn2.0.2                apr-util.x86_64 0:1.6.1-5.amzn2.0.2        apr-util-bdb.x86_64 0:1.6.1-5.amzn2.0.2    generic-logos-httpd.noarch 0:18.0.0-4.amzn2
  httpd-filesystem.noarch 0:2.4.41-1.amzn2.0.1  httpd-tools.x86_64 0:2.4.41-1.amzn2.0.1    mailcap.noarch 0:2.1.41-2.amzn2            mod_http2.x86_64 0:1.15.3-2.amzn2

Complete!
[ec2-user@ip-172-31-17-63 ~]$ sudo service httpd start
Redirecting to /bin/systemctl start httpd.service
[ec2-user@ip-172-31-17-63 ~]$
```

Snapshot 18

➔ Type sudo service httpd status to check whether the service has been started or not



```
ec2-user@ip-172-31-17-63:~
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Installing : apr-1.6.3-5.amzn2.0.2.x86_64                                                                        1/9
  Installing : apr-util-bdb-1.6.1-5.amzn2.0.2.x86_64                                                               2/9
  Installing : apr-util-1.6.1-5.amzn2.0.2.x86_64                                                                   3/9
  Installing : httpd-tools-2.4.41-1.amzn2.0.1.x86_64                                                               4/9
  Installing : generic-logos-httpd-18.0.0-4.amzn2.noarch                                                           5/9
  Installing : mailcap-2.1.41-2.amzn2.noarch                                                                       6/9
  Installing : httpd-filesystem-2.4.41-1.amzn2.0.1.noarch                                                          7/9
  Installing : mod_http2-1.15.3-2.amzn2.x86_64                                                                     8/9
  Installing : httpd-2.4.41-1.amzn2.0.1.x86_64                                                                     9/9
  Verifying  : apr-util-1.6.1-5.amzn2.0.2.x86_64                                                                   1/9
  Verifying  : apr-util-bdb-1.6.1-5.amzn2.0.2.x86_64                                                               2/9
  Verifying  : httpd-2.4.41-1.amzn2.0.1.x86_64                                                                     3/9
  Verifying  : httpd-filesystem-2.4.41-1.amzn2.0.1.noarch                                                          4/9
  Verifying  : mod_http2-1.15.3-2.amzn2.x86_64                                                                     5/9
  Verifying  : apr-1.6.3-5.amzn2.0.2.x86_64                                                                        6/9
  Verifying  : mailcap-2.1.41-2.amzn2.noarch                                                                       7/9
  Verifying  : generic-logos-httpd-18.0.0-4.amzn2.noarch                                                           8/9
  Verifying  : httpd-tools-2.4.41-1.amzn2.0.1.x86_64                                                               9/9

Installed:
  httpd.x86_64 0:2.4.41-1.amzn2.0.1

Dependency Installed:
  apr.x86_64 0:1.6.3-5.amzn2.0.2                apr-util.x86_64 0:1.6.1-5.amzn2.0.2        apr-util-bdb.x86_64 0:1.6.1-5.amzn2.0.2    generic-logos-httpd.noarch 0:18.0.0-4.amzn2
  httpd-filesystem.noarch 0:2.4.41-1.amzn2.0.1  httpd-tools.x86_64 0:2.4.41-1.amzn2.0.1    mailcap.noarch 0:2.1.41-2.amzn2            mod_http2.x86_64 0:1.15.3-2.amzn2

Complete!
[ec2-user@ip-172-31-17-63 ~]$ sudo service httpd start
Redirecting to /bin/systemctl start httpd.service
[ec2-user@ip-172-31-17-63 ~]$ sudo service httpd status
Redirecting to /bin/systemctl status httpd.service
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; vendor preset: disabled)
   Active: active (running) since Mon 2020-03-30 07:55:15 UTC; 41s ago
     Docs: man:httpd.service(8)
 Main PID: 3636 (httpd)
   Status: "Total requests: 0; Idle/Busy workers 100/0;Requests/sec: 0; Bytes served/sec:   0 B/sec"
   CGroup: /system.slice/httpd.service
           ├─3636 /usr/sbin/httpd -DFOREGROUND
           ├─3637 /usr/sbin/httpd -DFOREGROUND
           ├─3638 /usr/sbin/httpd -DFOREGROUND
           ├─3639 /usr/sbin/httpd -DFOREGROUND
           ├─3640 /usr/sbin/httpd -DFOREGROUND
           └─3641 /usr/sbin/httpd -DFOREGROUND

Mar 30 07:55:15 ip-172-31-17-63.us-east-2.compute.internal systemd[1]: Starting The Apache HTTP Server...
Mar 30 07:55:15 ip-172-31-17-63.us-east-2.compute.internal systemd[1]: Started The Apache HTTP Server.
[ec2-user@ip-172-31-17-63 ~]$
```

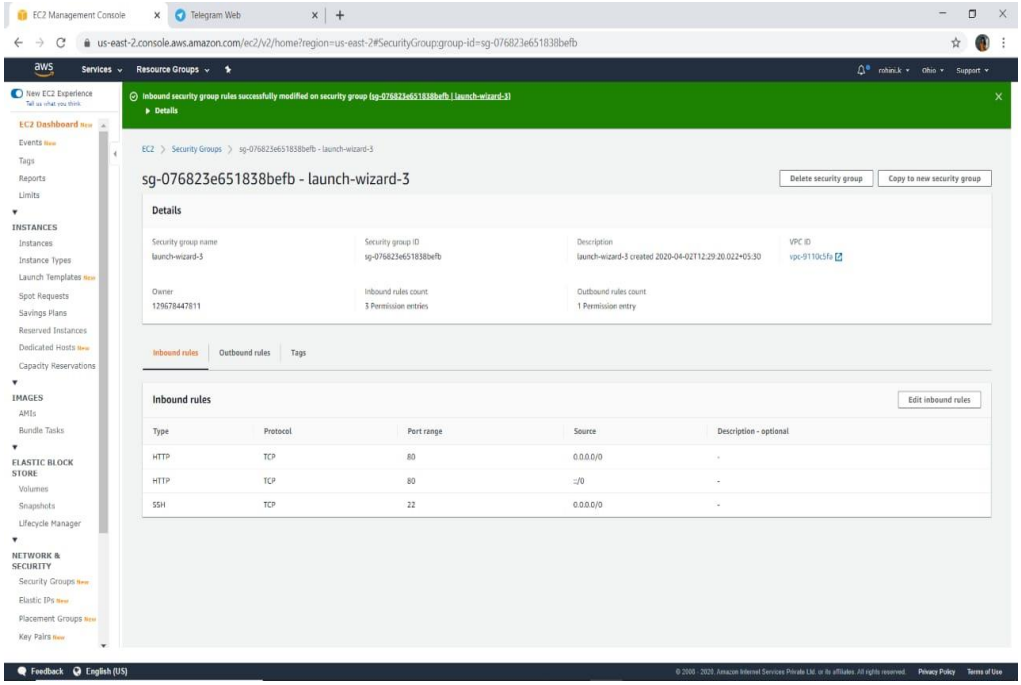
Snapshot 19

➔ Type sudo vim /var/www/html/index.html (hit enter and press I)

Type whatever you want in the black screen and press esc :wq to save and exit

➔ Go back to AWS ec2 instance and copy the ip address and paste it on the browser, it keeps buffering because we have opened a port number 22 while we are launching an instance this means that it only allows SSH traffic and denies all the other traffic.

So, what we need to do is go to security groups and click on launch wizard-2 and click on security group and click on edit inbound rules and add http and save the rules.



Snapshot 20

After adding http, go to browser and refresh the page so that you will get what you have typed.

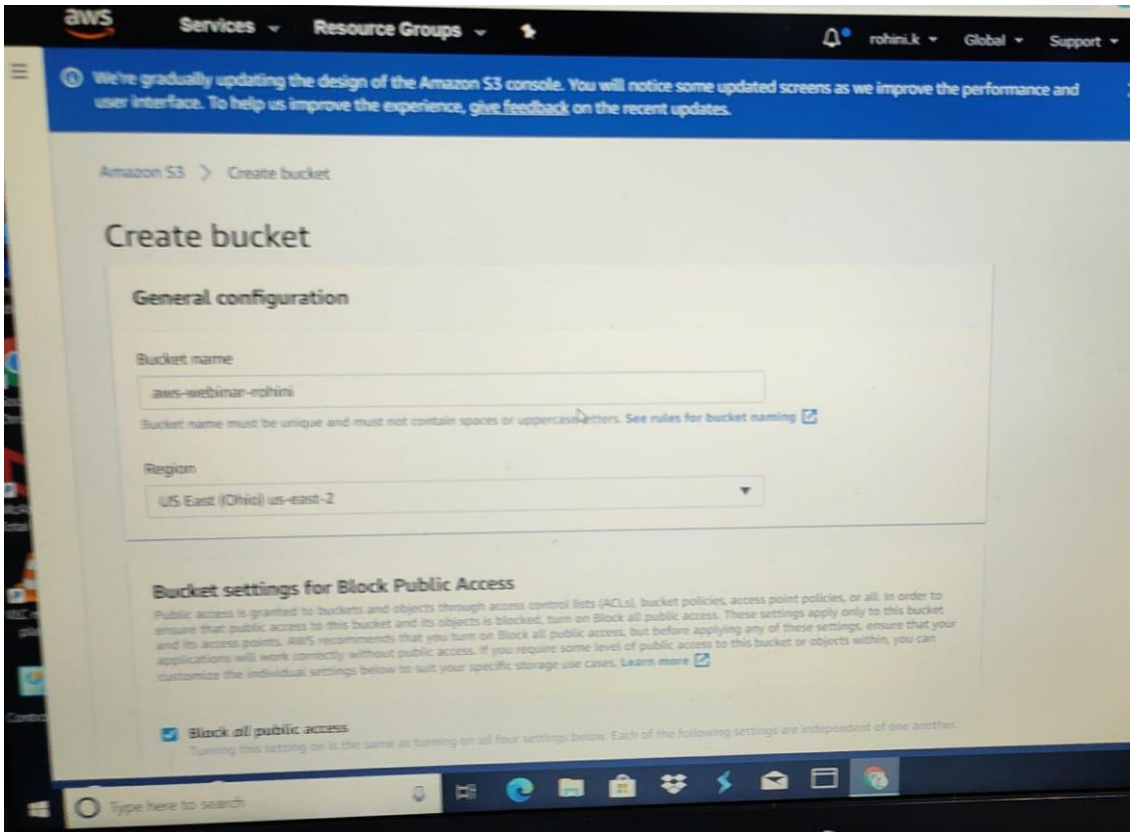
5. Create an s3(simple storage service) bucket

It is a storage for the internet provided by AWS and it is designed to make web-scale computing easy.

i. Create a bucket

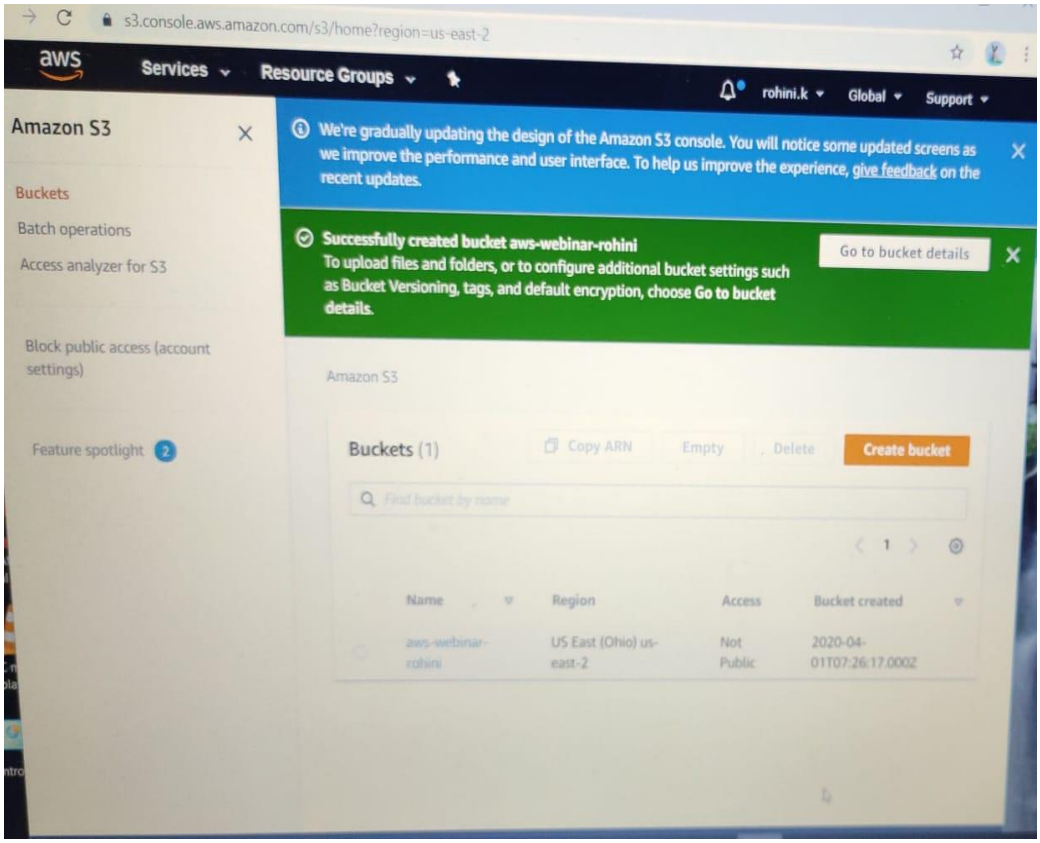
➔ Click on create bucket

Enter the bucket name and select the region and click on create bucket

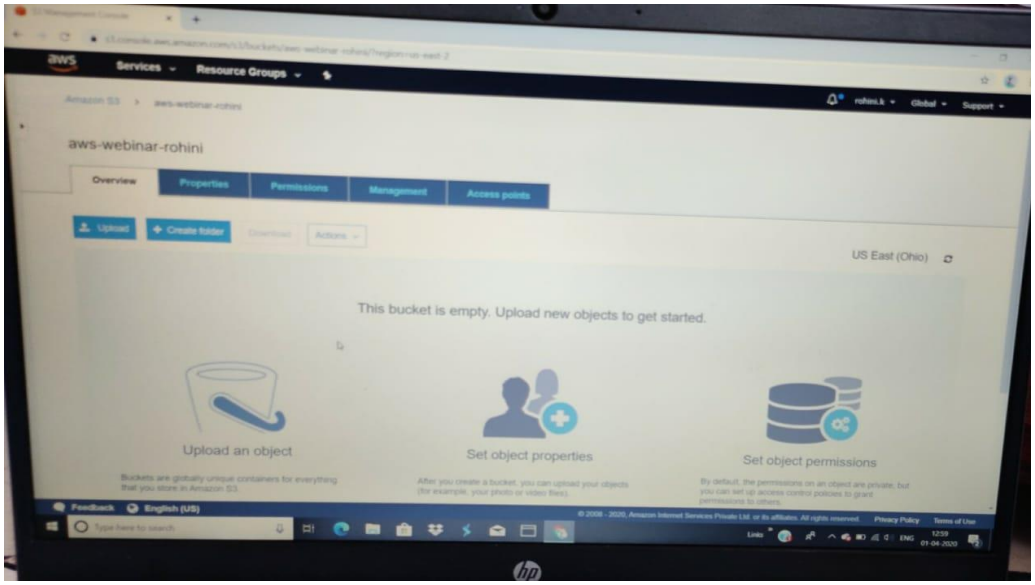


Snapshot 21

➔ After creating the bucket, the details of your bucket will appear on your s3 console



➔ Things present inside the s3 bucket

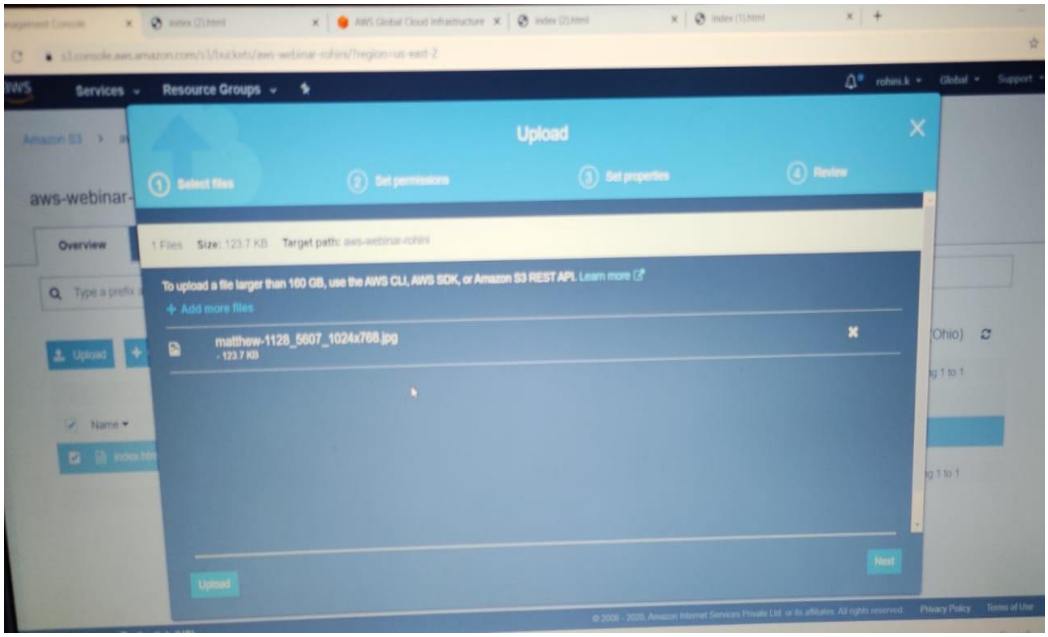


Snapshot 22

ii. Uploading objects into the bucket

➔ Select files:

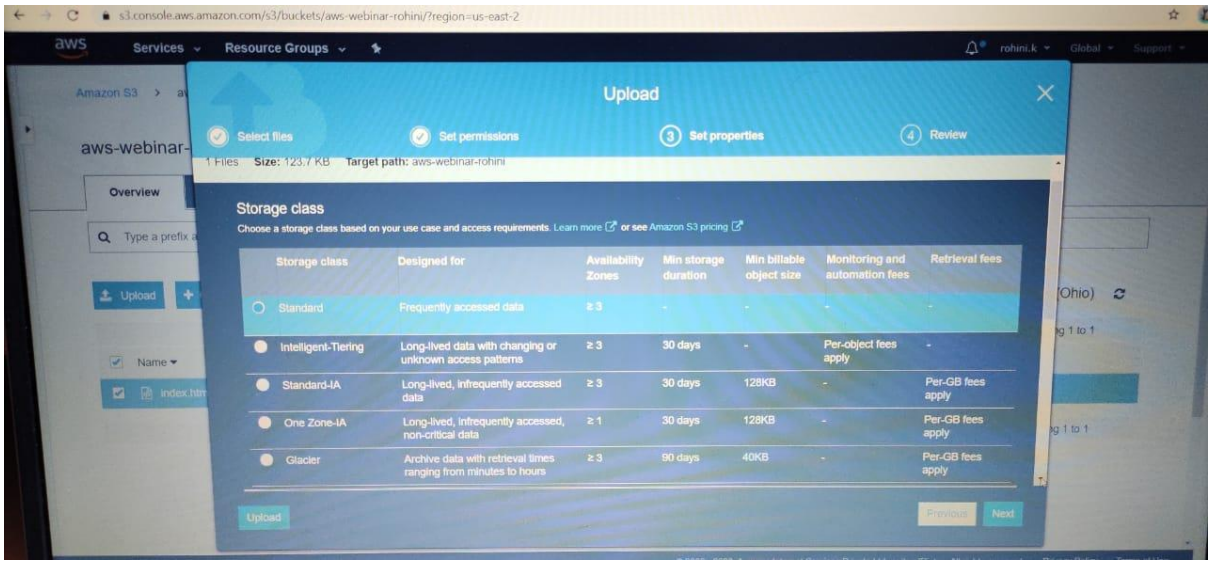
Click on upload and add the files which you want to upload into the bucket(click next)



Snapshot 23

➔ Set permissions: without changing anything click next

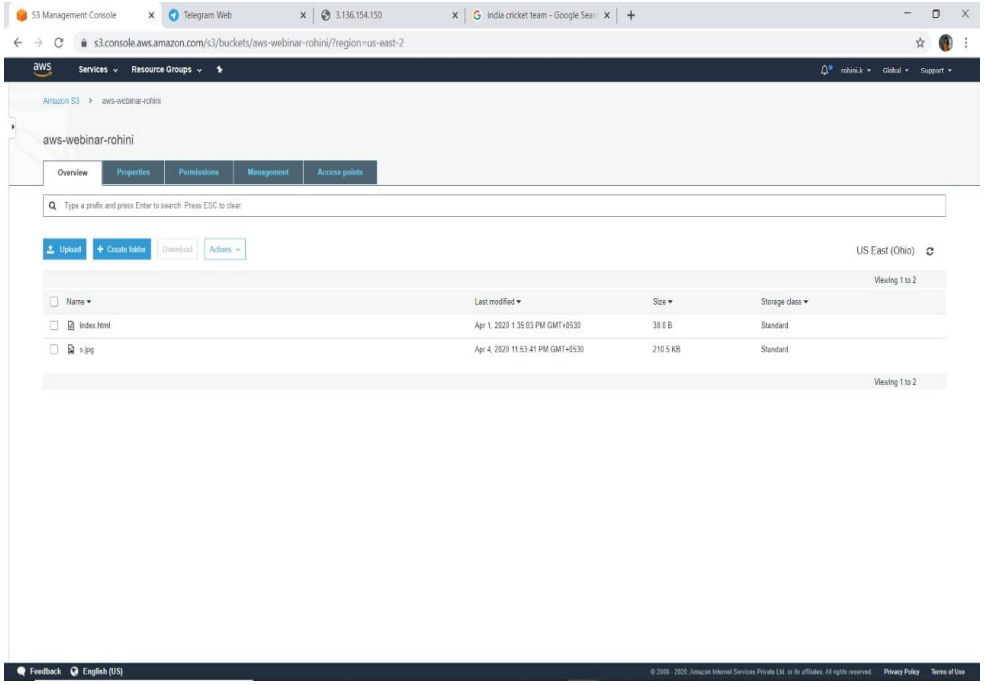
Snapshot 24



➔ Set properties: select standard and click on next

➔ Review: click on upload

➔ After couple of seconds the file will be uploaded



Snapshot 25

iii. Static web hosting

Click on object and click on the object URL

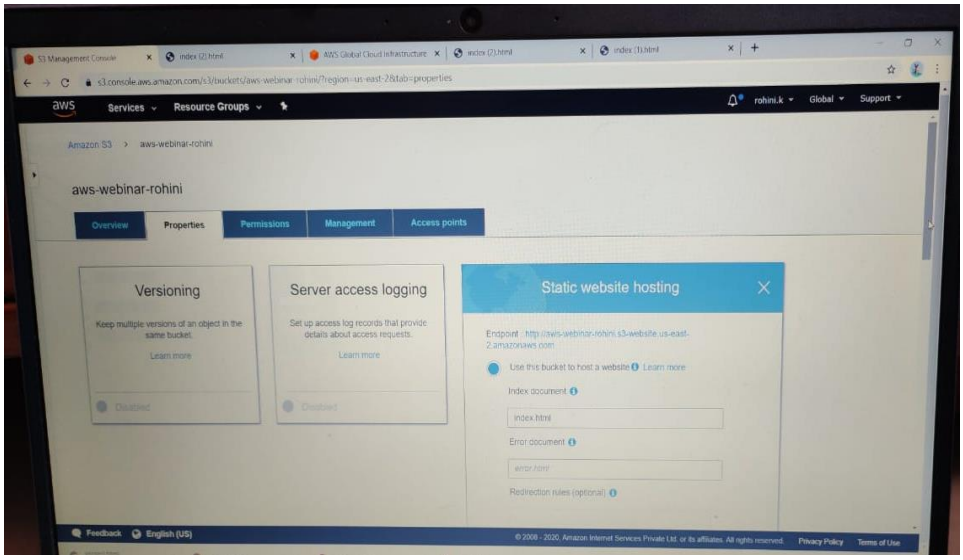
If we click on the URL the output will not be displayed it will show some error like access denied

In order to access it we need to make some configurations.

➔ We can download the object by clicking on download button and view the file

snapshot 26

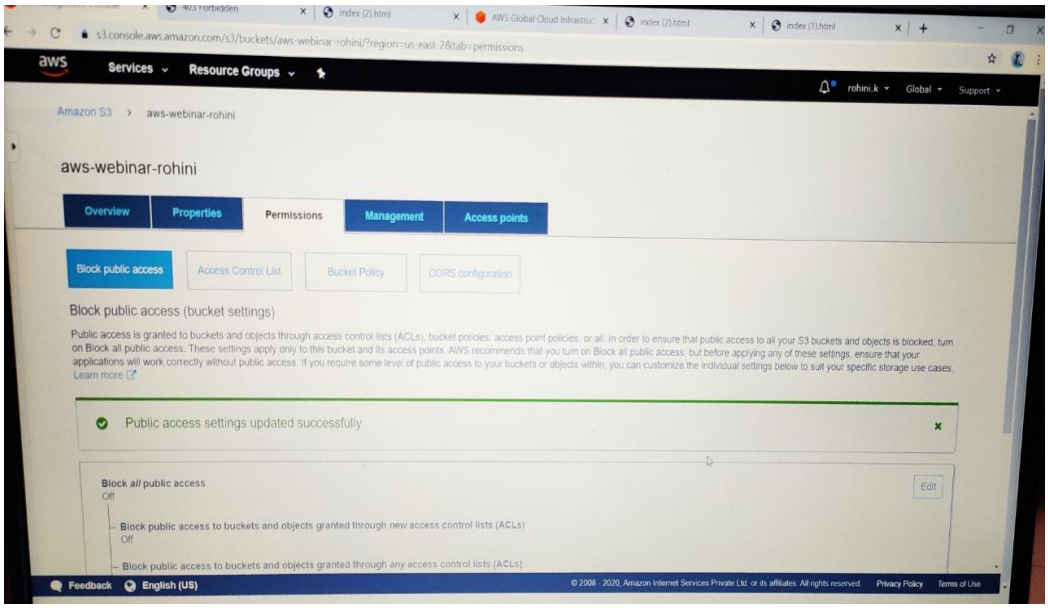
➔ In order to make it as webhosted, click on properties and click on static webhosting and select use this bucket to host a website enter the object name and click on save



Snapshot 27

Again click on static website hosting, you will find a end point click on that and you will get a error like forbidden access that is because we have not enabled public access to this bucket

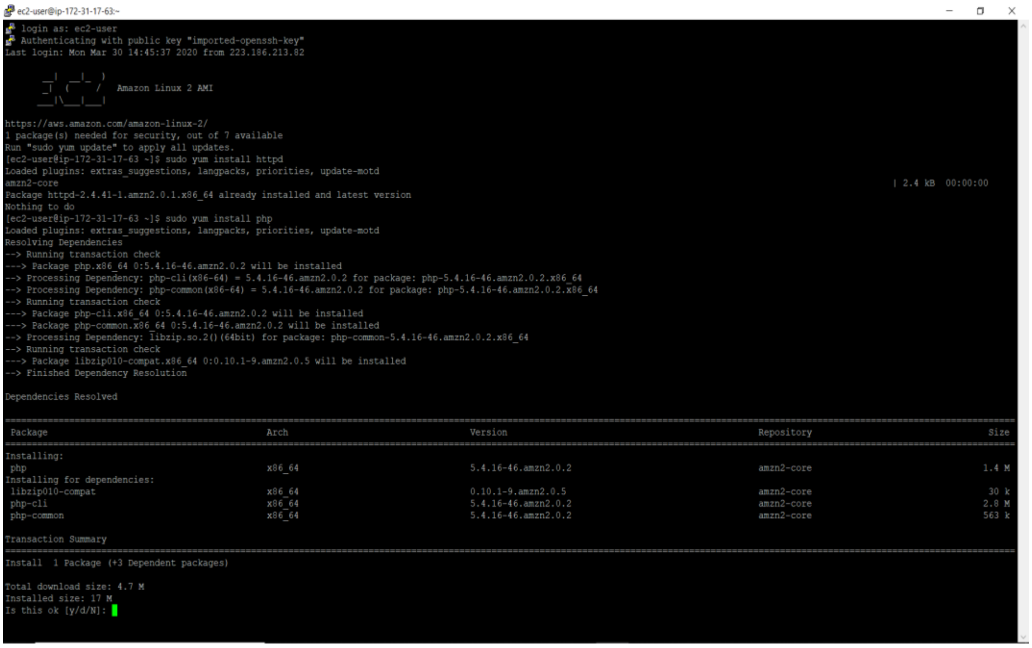
So go to permissions, click on edit and switch off the block all public access and type in confirm.



Snapshot 28

Again it will give an error because both and bucket and object has to be public so go back and click on object click on make public.

6. Uploading objects from ec2 to s3
   i. Login to putty using ip address and private key
      ➔ Install php using the below command
      sudo yum install php and type y for all

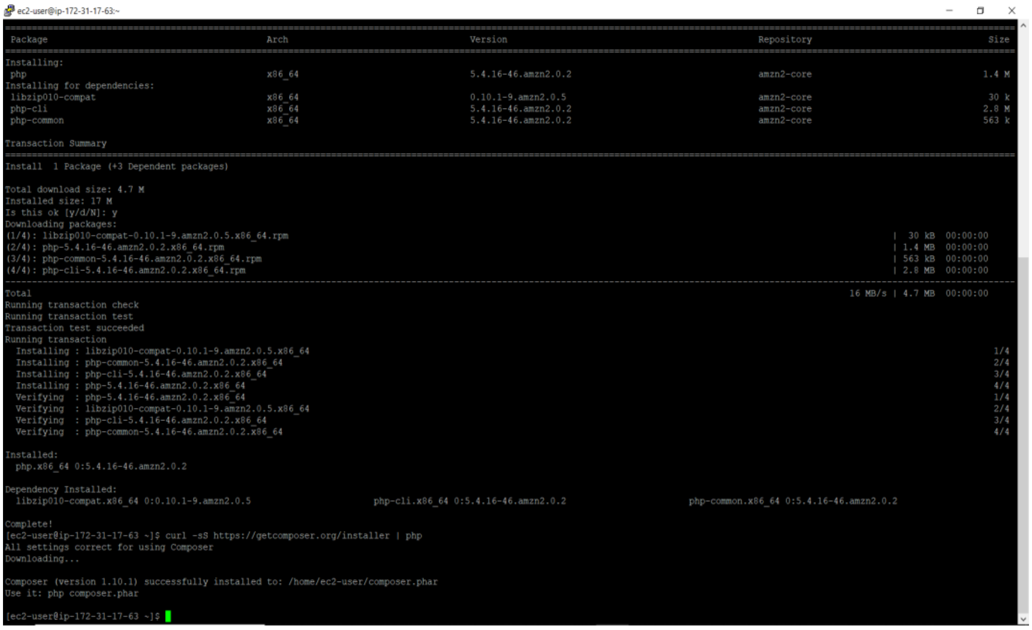


```
login as: ec2-user
Authenticating with public key "imported-openssh-key"
Last login: Mon Mar 30 14:45:37 2020 from 223.186.213.82

       __|  __|_  )
       _|  (     /   Amazon Linux 2 AMI
      ___|\___|___|

https://aws.amazon.com/amazon-linux-2/
1 package(s) needed for security, out of 7 available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-172-31-17-63 ~]$ sudo yum install httpd
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
amzn2-core                                                                                         | 2.4 kB  00:00:00
Package httpd-2.4.41-1.amzn2.0.1.x86_64 already installed and latest version
Nothing to do
[ec2-user@ip-172-31-17-63 ~]$ sudo yum install php
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
Resolving Dependencies
--> Running transaction check
---> Package php.x86_64 0:5.4.16-46.amzn2.0.2 will be installed
--> Processing Dependency: php-cli(x86-64) = 5.4.16-46.amzn2.0.2 for package: php-5.4.16-46.amzn2.0.2.x86_64
--> Processing Dependency: php-common(x86-64) = 5.4.16-46.amzn2.0.2 for package: php-5.4.16-46.amzn2.0.2.x86_64
--> Running transaction check
---> Package php-cli.x86_64 0:5.4.16-46.amzn2.0.2 will be installed
---> Package php-common.x86_64 0:5.4.16-46.amzn2.0.2 will be installed
--> Processing Dependency: libzip.so.2()(64bit) for package: php-common-5.4.16-46.amzn2.0.2.x86_64
--> Running transaction check
---> Package libzip010-compat.x86_64 0:0.10.1-9.amzn2.0.5 will be installed
--> Finished Dependency Resolution

Dependencies Resolved

========================================================================================================================
 Package                        Arch                  Version                              Repository             Size
========================================================================================================================
Installing:
 php                            x86_64                5.4.16-46.amzn2.0.2                  amzn2-core            1.4 M
Installing for dependencies:
 libzip010-compat               x86_64                0.10.1-9.amzn2.0.5                   amzn2-core             30 k
 php-cli                        x86_64                5.4.16-46.amzn2.0.2                  amzn2-core            2.8 M
 php-common                     x86_64                5.4.16-46.amzn2.0.2                  amzn2-core            563 k

Transaction Summary
========================================================================================================================
Install  1 Package (+3 Dependent packages)

Total download size: 4.7 M
Installed size: 17 M
Is this ok [y/d/N]:
```

Snapshot 29

- ➔ Install package manager for php called composer using below command

  curl -sS https://getcomposer.org/installer | php



```
========================================================================================================================
 Package                        Arch                  Version                              Repository             Size
========================================================================================================================
Installing:
 php                            x86_64                5.4.16-46.amzn2.0.2                  amzn2-core            1.4 M
Installing for dependencies:
 libzip010-compat               x86_64                0.10.1-9.amzn2.0.5                   amzn2-core             30 k
 php-cli                        x86_64                5.4.16-46.amzn2.0.2                  amzn2-core            2.8 M
 php-common                     x86_64                5.4.16-46.amzn2.0.2                  amzn2-core            563 k

Transaction Summary
========================================================================================================================
Install  1 Package (+3 Dependent packages)

Total download size: 4.7 M
Installed size: 17 M
Is this ok [y/d/N]: y
Downloading packages:
(1/4): libzip010-compat-0.10.1-9.amzn2.0.5.x86_64.rpm                                              |  30 kB  00:00:00
(2/4): php-5.4.16-46.amzn2.0.2.x86_64.rpm                                                          | 1.4 MB  00:00:00
(3/4): php-common-5.4.16-46.amzn2.0.2.x86_64.rpm                                                   | 563 kB  00:00:00
(4/4): php-cli-5.4.16-46.amzn2.0.2.x86_64.rpm                                                      | 2.8 MB  00:00:00
------------------------------------------------------------------------------------------------------------------------
Total                                                                                      16 MB/s | 4.7 MB  00:00:00
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Installing : libzip010-compat-0.10.1-9.amzn2.0.5.x86_64                                                          1/4
  Installing : php-common-5.4.16-46.amzn2.0.2.x86_64                                                               2/4
  Installing : php-cli-5.4.16-46.amzn2.0.2.x86_64                                                                  3/4
  Installing : php-5.4.16-46.amzn2.0.2.x86_64                                                                      4/4
  Verifying  : php-5.4.16-46.amzn2.0.2.x86_64                                                                      1/4
  Verifying  : libzip010-compat-0.10.1-9.amzn2.0.5.x86_64                                                          2/4
  Verifying  : php-cli-5.4.16-46.amzn2.0.2.x86_64                                                                  3/4
  Verifying  : php-common-5.4.16-46.amzn2.0.2.x86_64                                                               4/4

Installed:
  php.x86_64 0:5.4.16-46.amzn2.0.2

Dependency Installed:
  libzip010-compat.x86_64 0:0.10.1-9.amzn2.0.5           php-cli.x86_64 0:5.4.16-46.amzn2.0.2           php-common.x86_64 0:5.4.16-46.amzn2.0.2

Complete!
[ec2-user@ip-172-31-17-63 ~]$ curl -sS https://getcomposer.org/installer | php
All settings correct for using Composer
Downloading...

Composer (version 1.10.1) successfully installed to: /home/ec2-user/composer.phar
Use it: php composer.phar

[ec2-user@ip-172-31-17-63 ~]$
```

Snapshot 30

- ➔ cd var/www/html – used for changing the directory

create a directory using the below command

  sudo mkdir dir_name

- ➔ install AWS sdk (software development kit) using below command

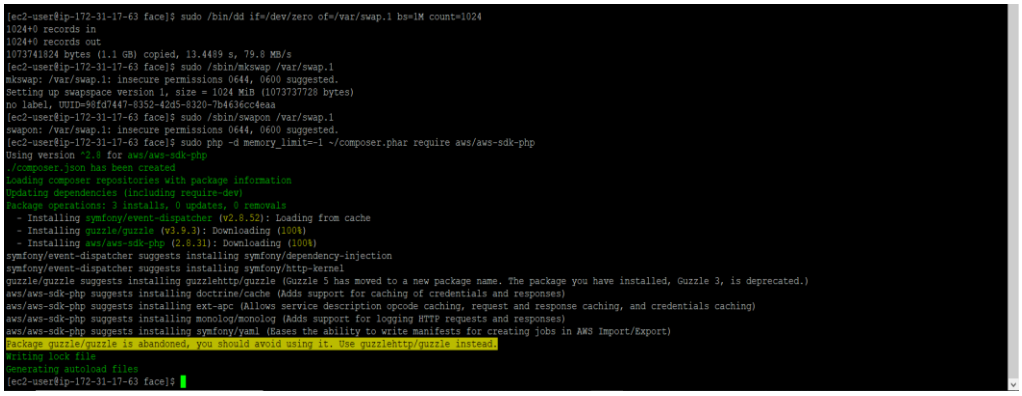
  sudo php -d memory_limit=-1 ~/composer.phar require aws/aws-sdk-php

In case if you get memory error -

sudo /bin/dd if=/dev/zero of=/var/swap.1 bs=1M count=1024

sudo /sbin/mkswap /var/swap.1

sudo /sbin/swapon /var/swap.1



Snapshot 31

ii. create IAM role

➔ open IAM management console

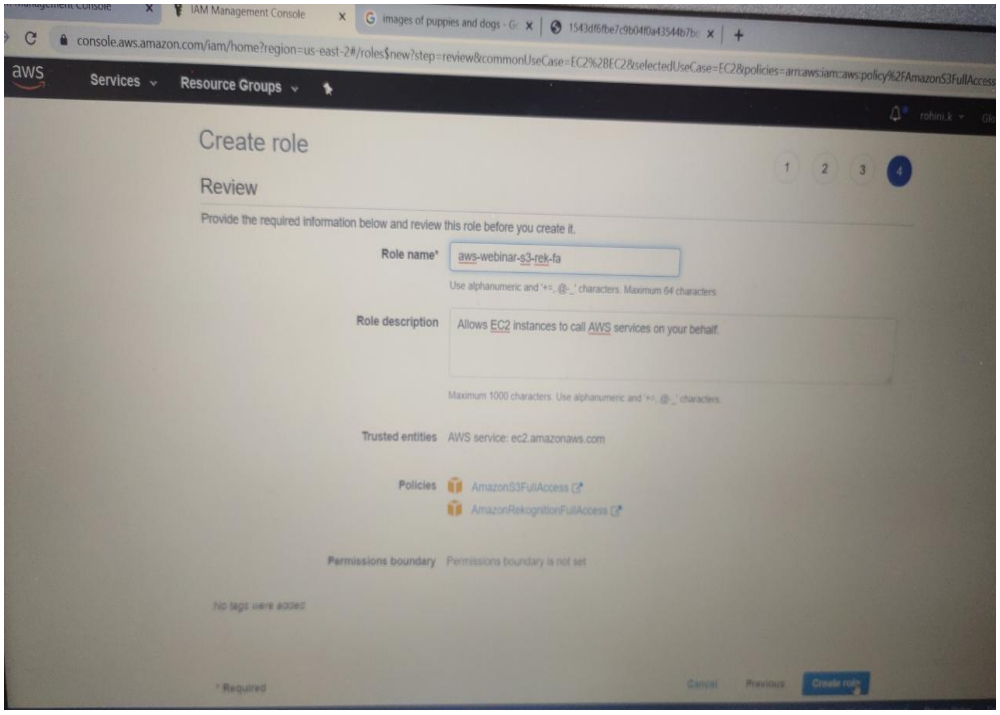
- Click on roles on the left hand side of IAM management console and click on create role
- Click on AWS service and select ec2 and go to next permissions

- Select the policies

  1.AmazonS3FullAccess

  2.AmazonRekognitionFullAccess
- Go to next: tags skip this and go to next: review

  Type the role name and click on create role



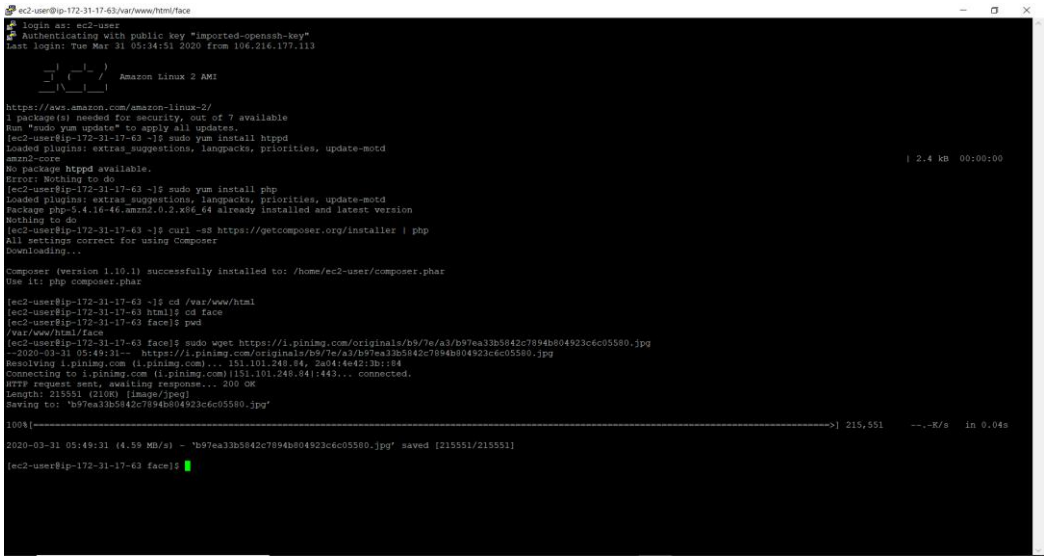
Snapshot 32

- Go back to ec2 console, click on action and click on instance settings and attach the iam role which you have created

iii. Downloading and uploading the image

➔ copy the image URL from the google and go to putty and download the image using below command

sudo wget image_url



Snapshot 33

➔ use the below command to rename the file name

sudo mv old_filename new_filename

Snapshot 34

➔ now create a php file using the below command

sudo vim index.php

and write the code to upload the image into s3

Type :wq to save close the file

Snapshot 35

➔ run the php file using below command

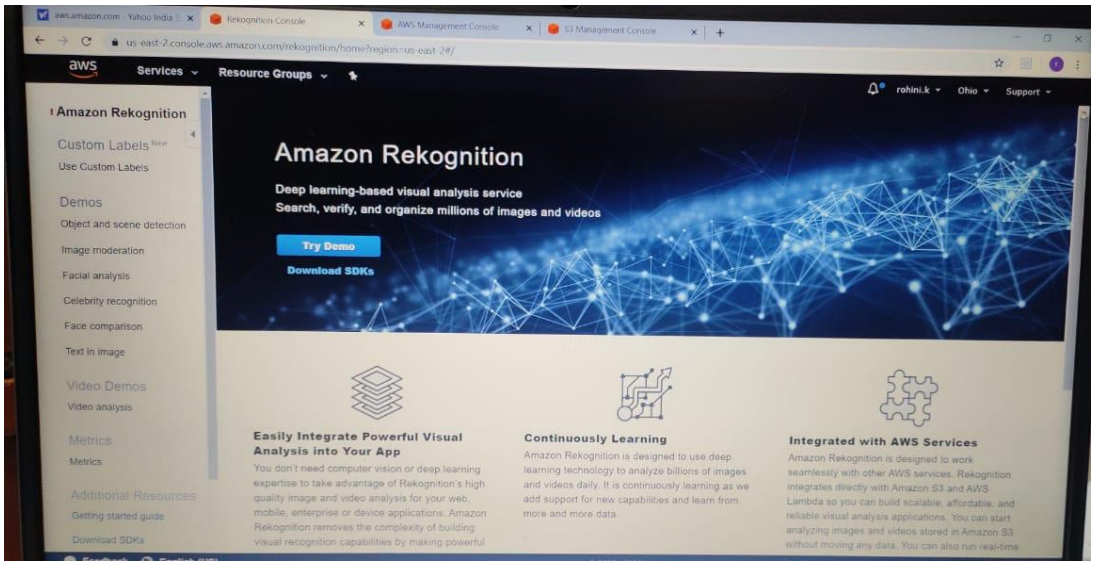
sudo php index.php

after executing the command the message will be displayed saying that the image uploading is done

Snapshot 36

iv. go back and check the s3 bucket to check whether the image has been uploaded to s3 bucket or not

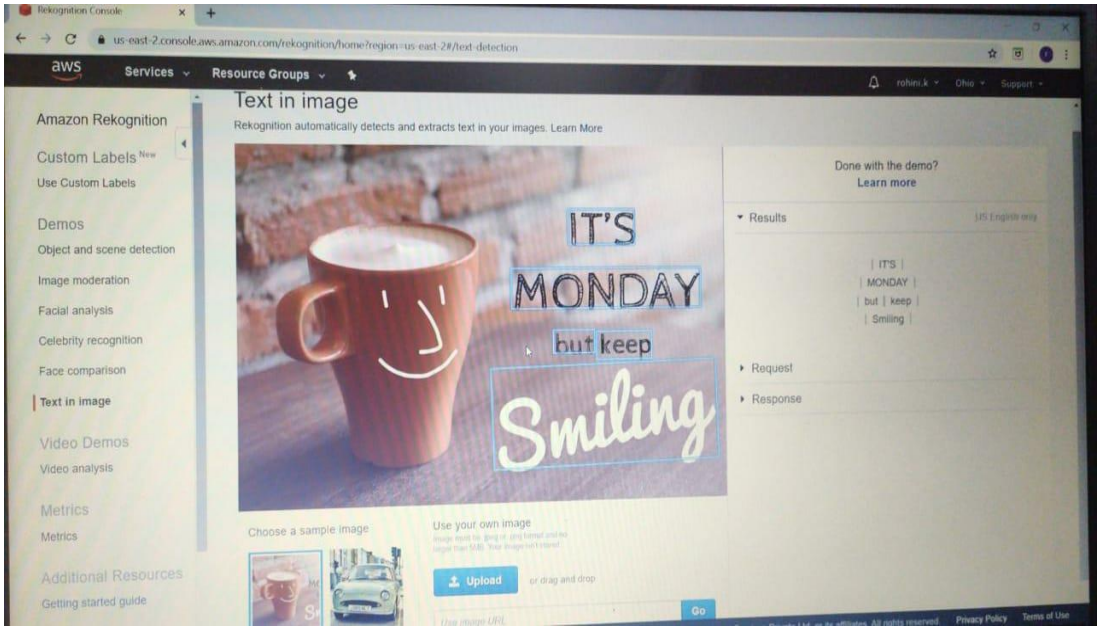
7. connecting ec2 to Rekognition



Snapshot 37

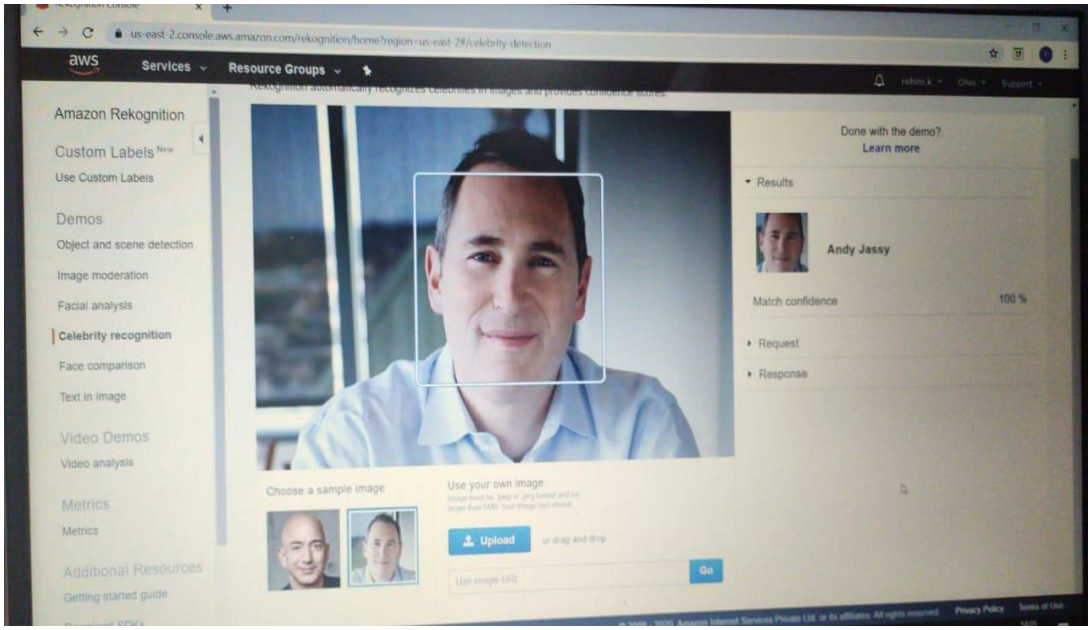
Services in Rekognition:

1. Text in image



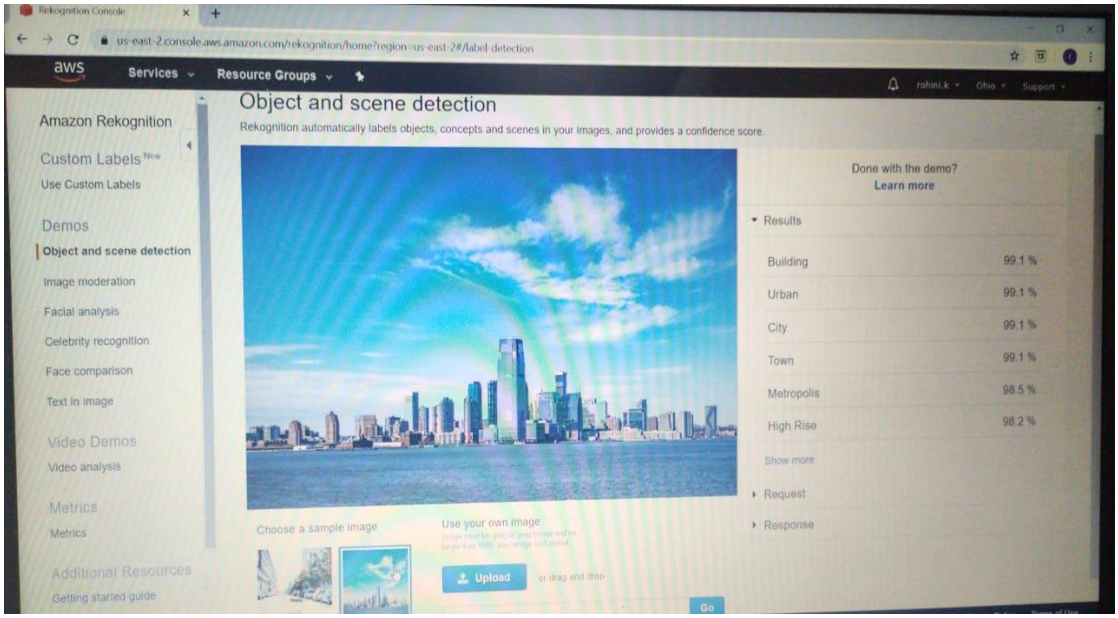
Snapshot 38

2. Celebrity Rekognition



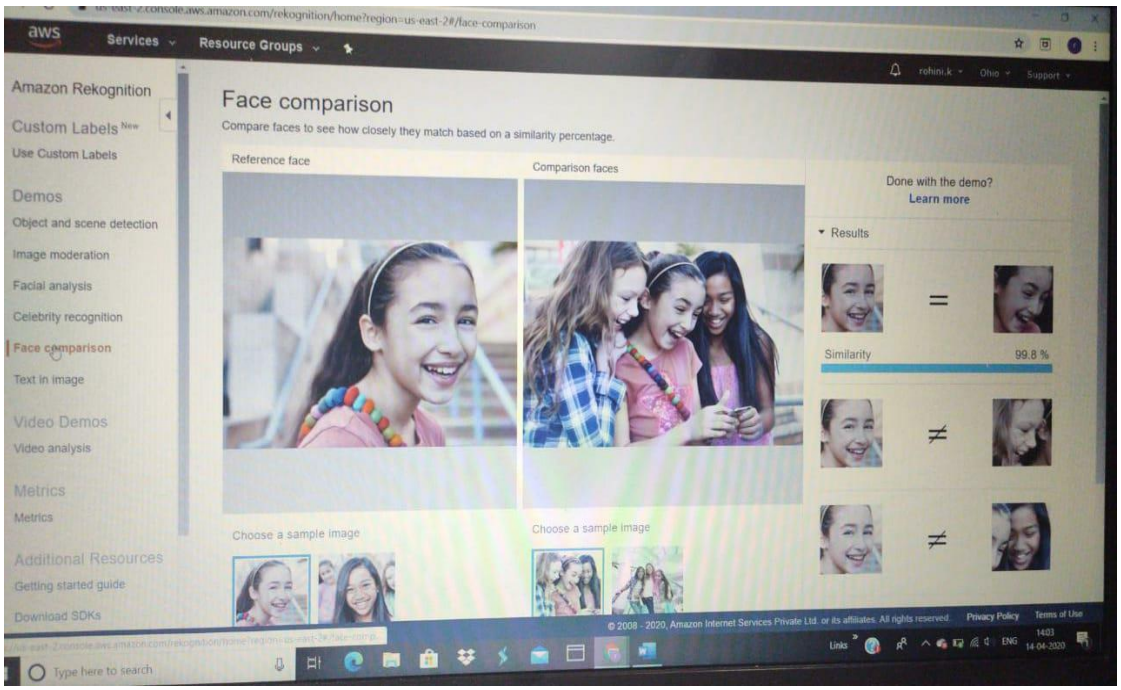
Snapshot 39

3. Facial analysis



Snapshot 40

4. Face comparison



Snapshot 41

i. Log in to putty by entering ip address and private key

- ➔ Enter into the directory where your previously created file exists
- ➔ Create the file using the command sudo vim index.php and write the code connect ec2 and Rekognition

  Type :wq to save and close the file

Snapshot 42

- ➔ Execute the file using the command sudo php index.php

Snapshot 43

8. Connecting ec2 to telegram web

   There is a method called set webhook so we need to invoke this method from the telegram by using the below link

   https://api.telegram.org/bot(mytoken)/setWebhook?url=https://mywebpagetorespondtobot/mymethod