Advance AWS

AWS Project- 2

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Course:

Advance AWS Cloud Computing with DevOps Fundamentals

Institute:

Lets Upgrade

Project 02:

Deploying nginx Web Server in Ubuntu Instance

Below are the 4 steps:

STEP A: Launch an Amazon EC2 Ubuntu Instance

STEP B: Connect EC2 Instance

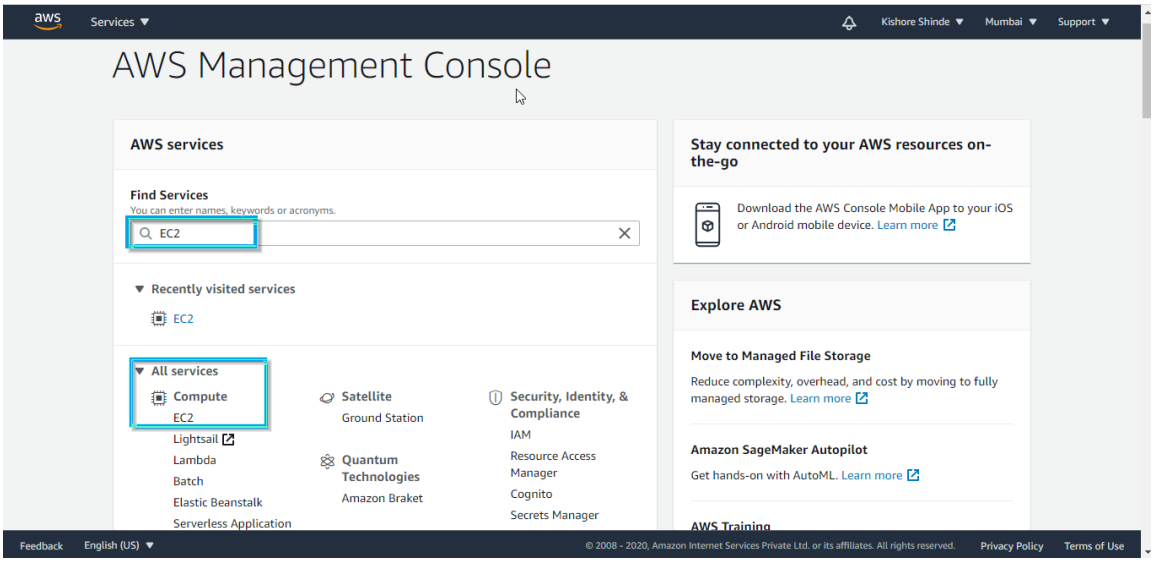
STEP C: Install nginx Web Server

STEP D: Terminate EC2 Instance

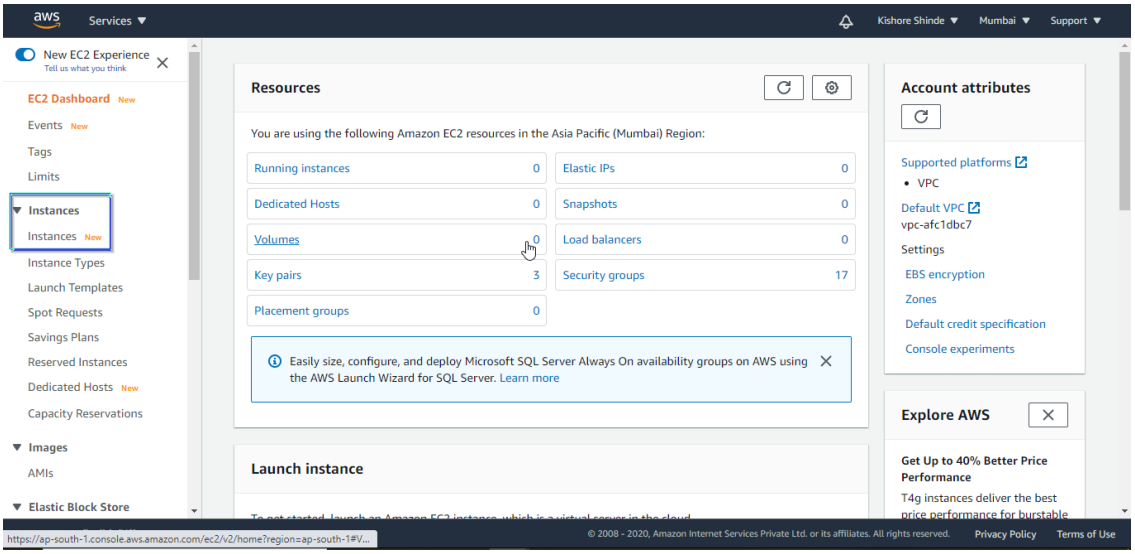
STEP A: Launch an Amazon EC2 Instance

Steps for launching a new ubuntu instance:

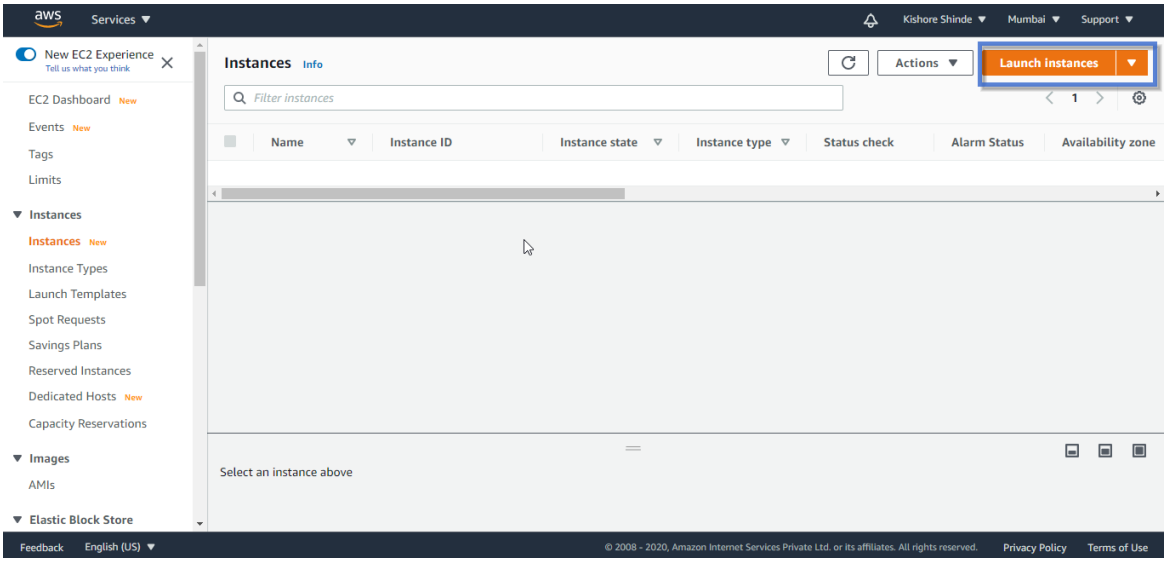
1. From the AWS Management Console, you can either find EC2 service or click on All services ->Compute->EC2



2. Once you are in EC2 console from the EC2 Dashboard on the left, select Instances

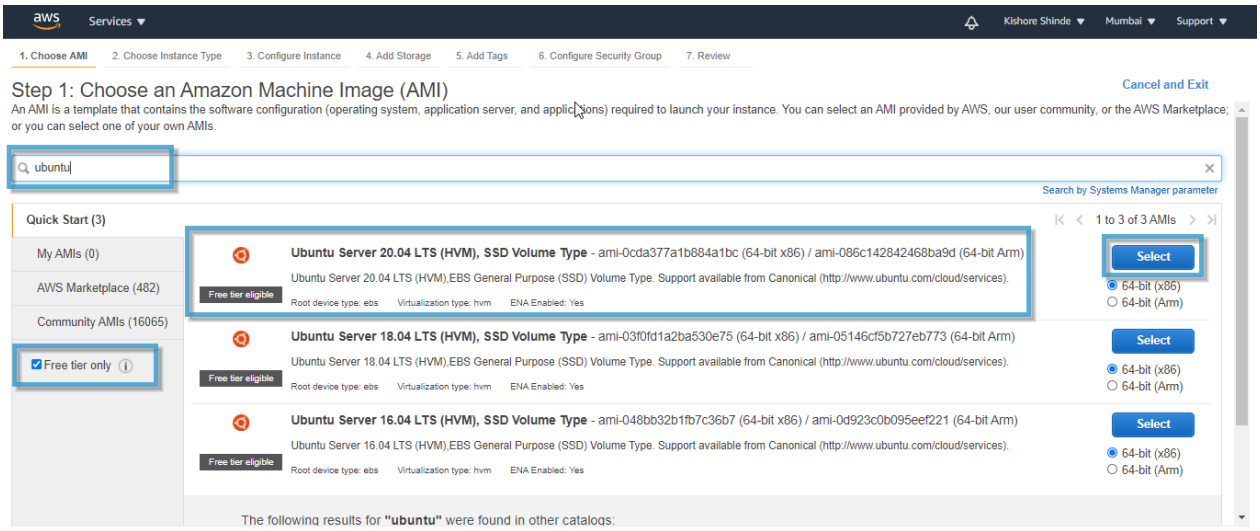


3. From the Instances Dashboard, Select Launch Instance at the right



Once you click on Launch Instance, a wizard will start which has 7 steps for creating the instance.

Step 1: Choose an Amazon Machine Image (AMI)



You can search the AMI e.g. ubuntu…. or can select the AMI from the list of the AMI's.

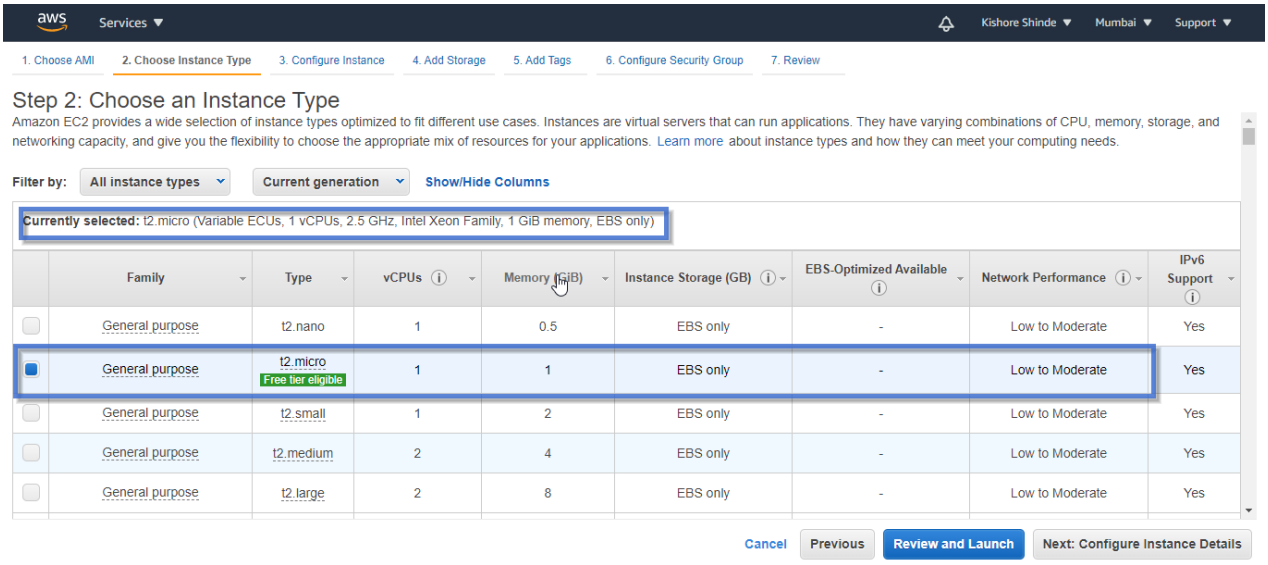
Note: *Make sure you select the Free Tier only option so only free AMI's will be shown and you will not be charged.*

Click on "Select" on the Ubuntu AMI *e.g. Ubuntu Server 20.04 LTS(HVM)….*

Step 2: Choose an Instance Type

Here you can select the Instance type. These are varying combinations of CPU, Memory, Storage and Networking capacity. The default instance type selected is "t2.micro" which is Free tier eligible. Let it be selected otherwise you will be charged for other instance type. You can even see the details of the selected instance type in Currently Selected

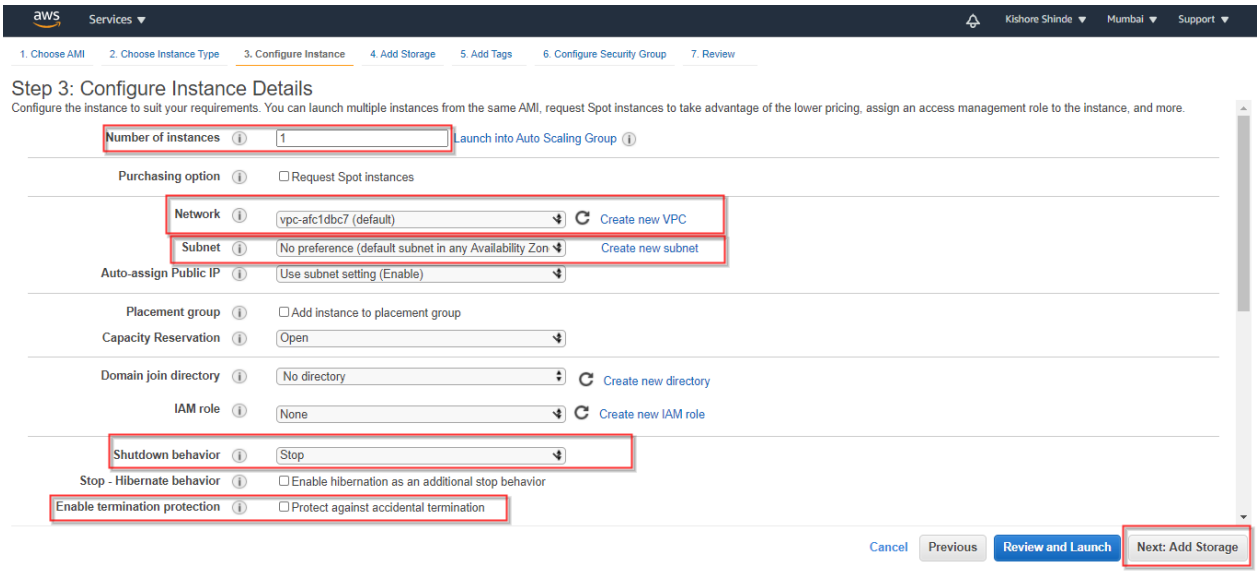
e.g. : t2.micro (Variable ECUs,1 vCPUs,2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)



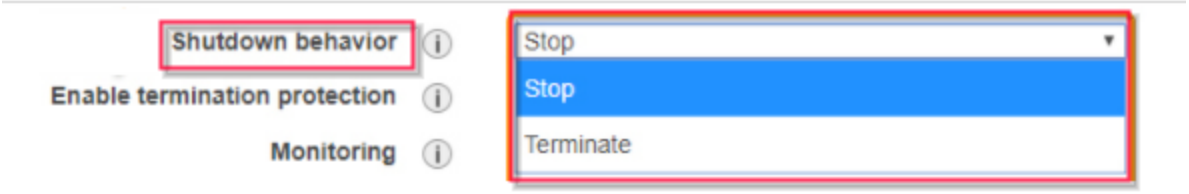
Step 3: Configure Instance Details

Here you can configure the instance that suits your requirement. You can launch multiple instances from the same AMI you can mention it in Number of instances.

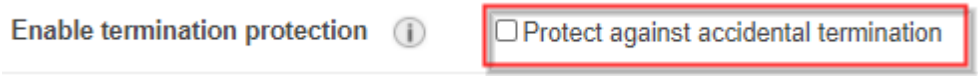
In Network you can select the VPC or create new VPC, we will continue with default VPC, select or create new Subnet, we will continue with default subnet. We can select IAM role, we will continue with “None”.



In the Shutdown behavior you can select Stop or Terminate. It is an important option If you select Stop when the instance shuts down it will not be deleted but stopped.



Enable termination protection: If you check it will protect your instance from accidental termination.



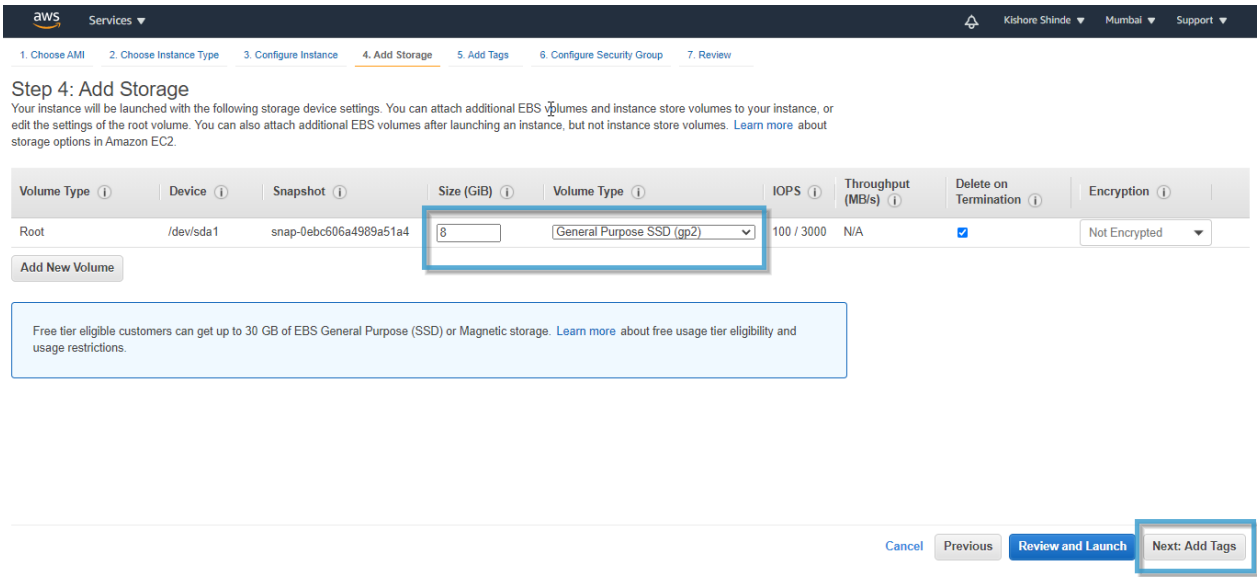
Now keep whatever is default don't change anything and click on Next: Add Storage

Step 4: Add Storage

Your Instance will be launched with the following storage device settings. You can attach additional EBS volumes. For now, keep the default Volume Type: Root and size: 8 GiB

Note: The default root partition in AWS for windows is 30 GB and for Ubuntu is 8 GB you can change it.

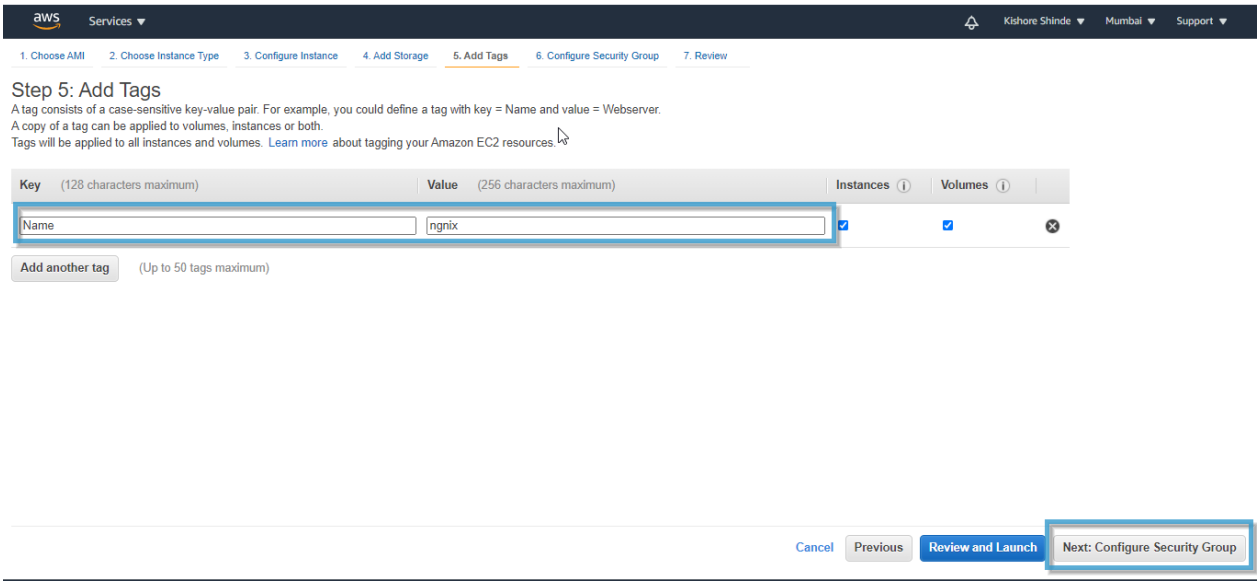
Let the General-Purpose SSD (gp2) selection as it is. Delete on Termination checkbox will make sure the volume gets deleted as soon as the Instance is terminated. You can even add new EBS volume.



Click on Next: Add Tags

Step 5: Add Tags

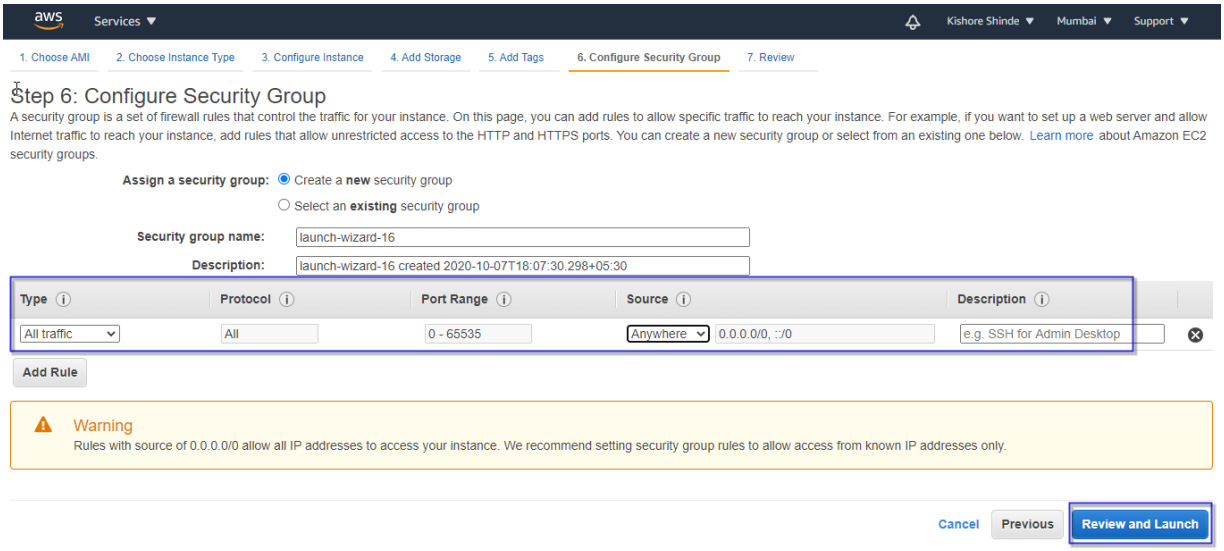
Tags enable you to categorize your AWS resources in different ways. Each tag is a simple label consisting of customer-defined key and an optional value that can make it easier to manage, search for, and filter resources. For E.g. Key can be Name and Value can be Web Server(ngnix).



You can add the tag or can continue to next step “Configure Security Group”

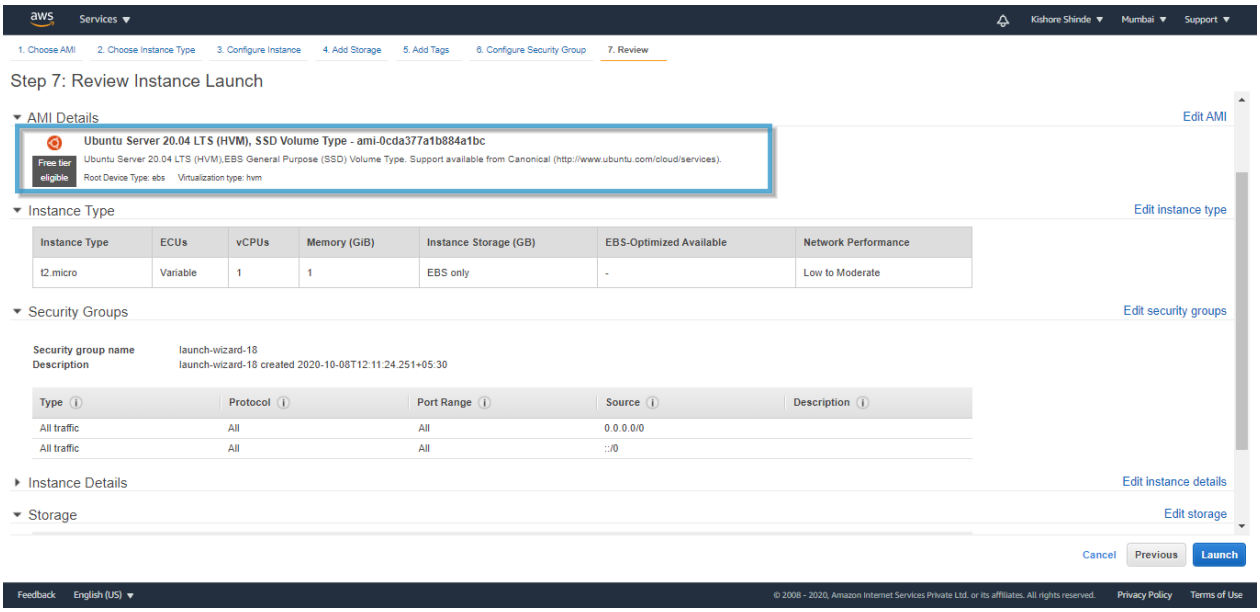
Step 6: Configure Security Group

A security group is similar to firewall. Here you can set the rules that can control traffic for your instance. For the current instance in the Type select “All Traffic” and in Source select “Anywhere”. It will show you a warning that the source anywhere will allow al IP addresses to access your instance you must select IP Addresses only. Ignore it for now and click on “Review and Launch.



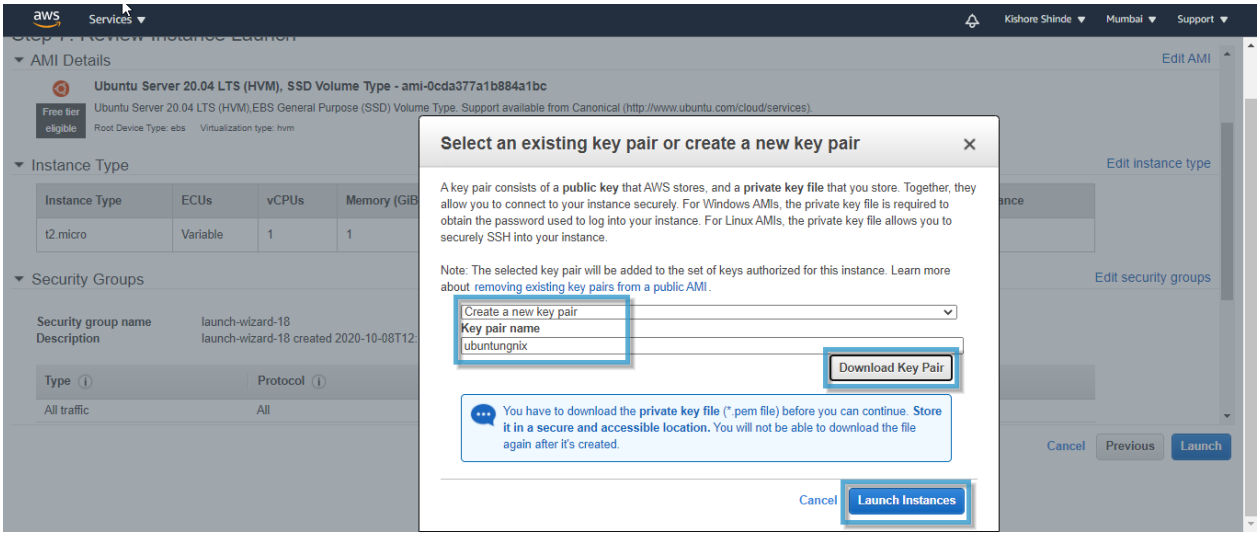
Step 7: Review

Here you can review all the selection you have done in previous steps and if required can go back and change them. You are able to review the AMI details, Instance Type/Details, Security Groups, Storage & Tags.



Click on Launch once you have reviewed all the details.

Next it will ask you to Select an existing key pair or create a new key pair.

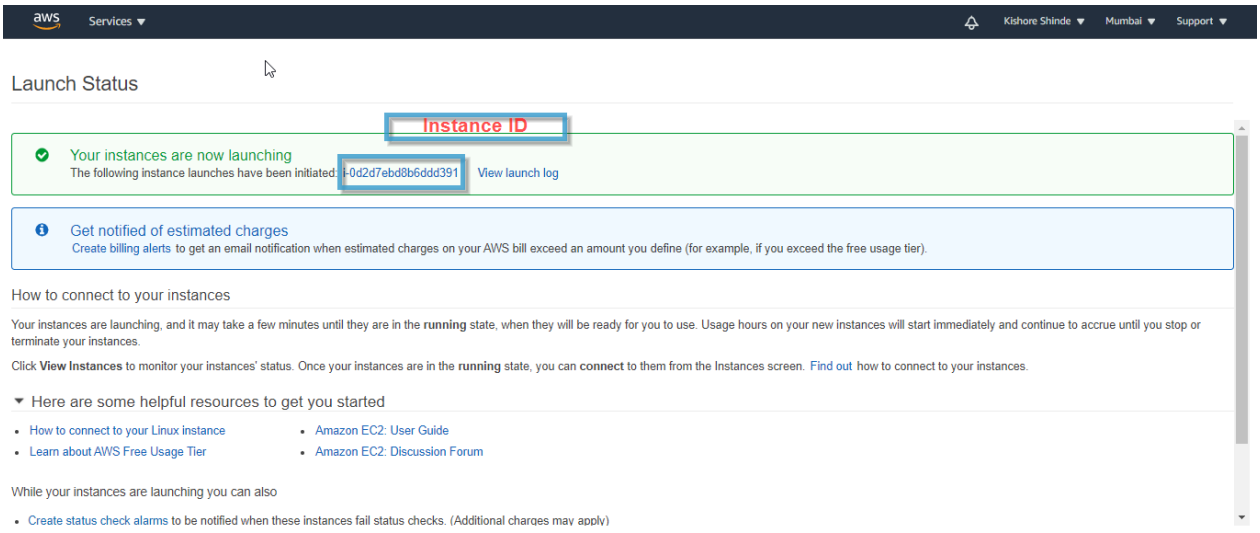


You can select existing key pair if you have one. For now, select “Create new pair” give key pair a name and download the keypair.

Note: Please keep if safe, it will be required to connect to the instance otherwise you can’t.

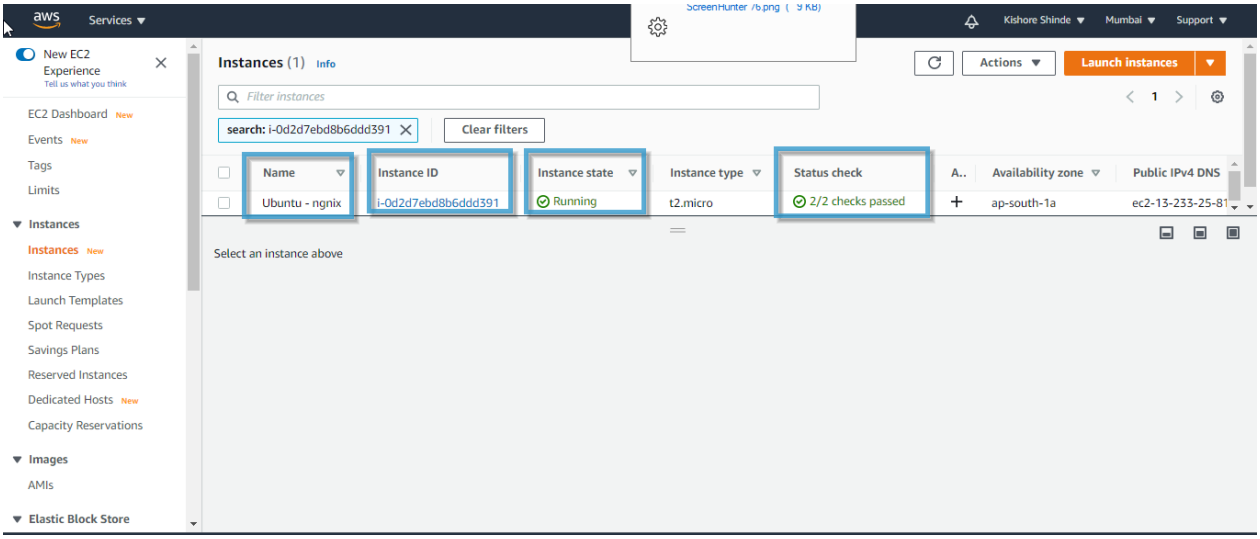
Click on Launch Instance.

In the next screen you will be able to see “Your instance is launching”. You will be able to see the instance id that is initiated for launch.

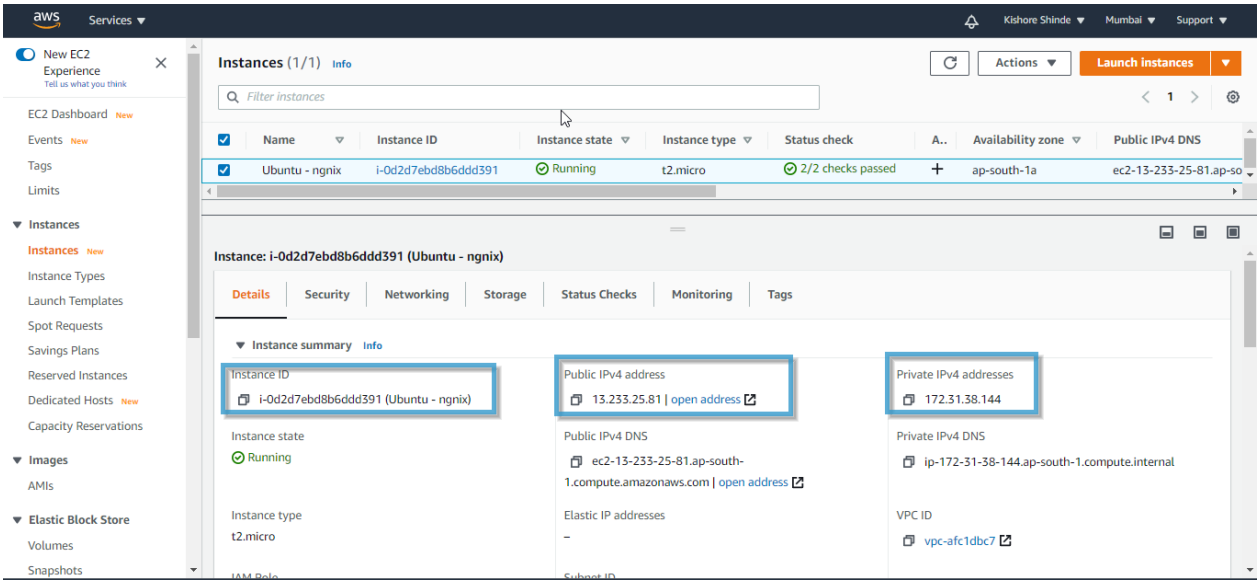


You can click on the instance id which will take you to Instances Dashboard.

Here you will see the Ubuntu instance is created which will be initially showing Instance State as “Pending”. Wait till the Status check shows 2/2 checks and Instance State becomes “Running”.



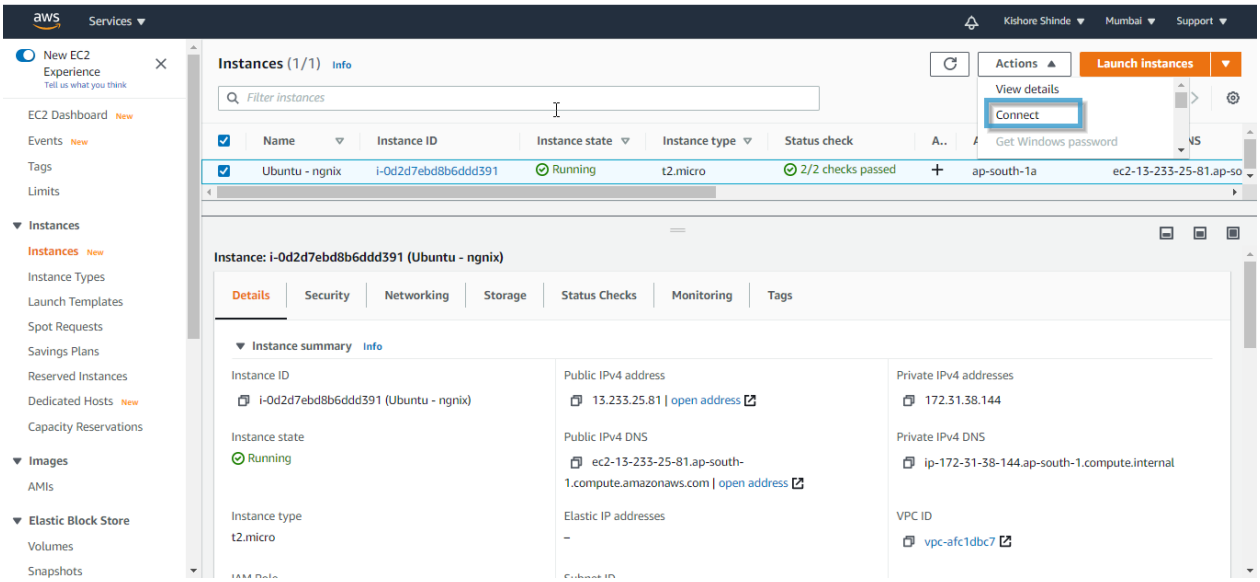
Now select the instance you will be able to see the additional details of the instance like Public IPv4 address, Private IPv4 address, Public IPv4 DNS, Private IPv4 DNS etc. You can also check the Security, Networking, Storage details etc.



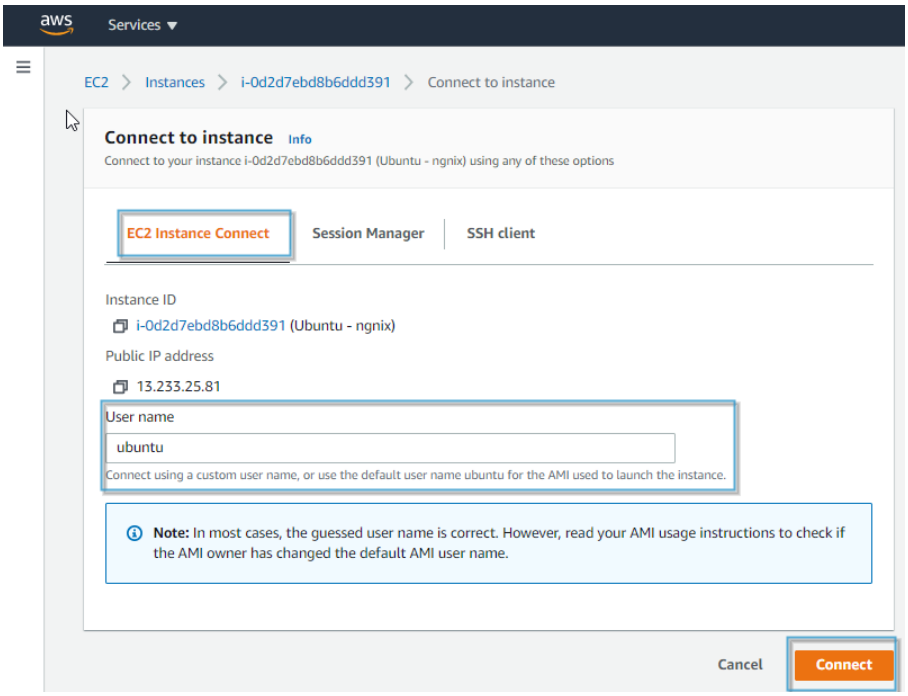
So now your instance is up and running.

Step B: Connecting to Ubuntu Instance

Following are the steps to connect to the instance. Select the instance, Click on Action menu at the top, from the list select Connect.

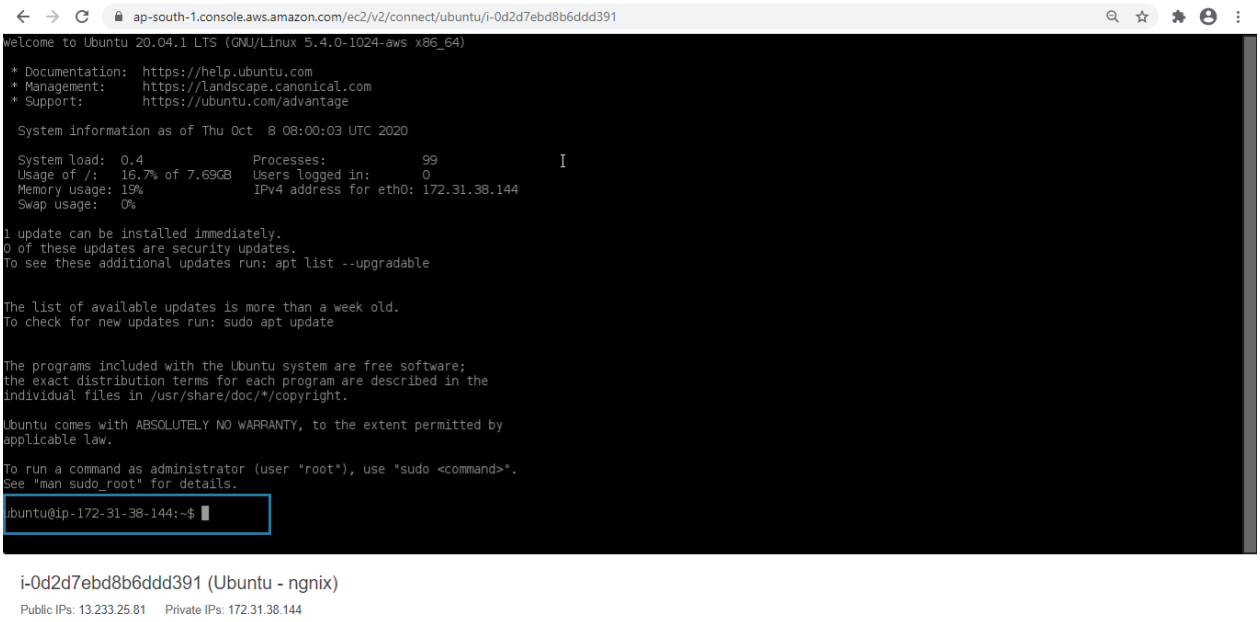


On the next screen you will see EC2 Instance Connect (default selected), Session Manager, SSH client Tabs. We will connect by EC2 Instance Connect



Let the default User Name “ubuntu” as it is and click on Connect.”

The ubuntu instance will be connected. Once the instance is started you will be able to see the $ prompt.

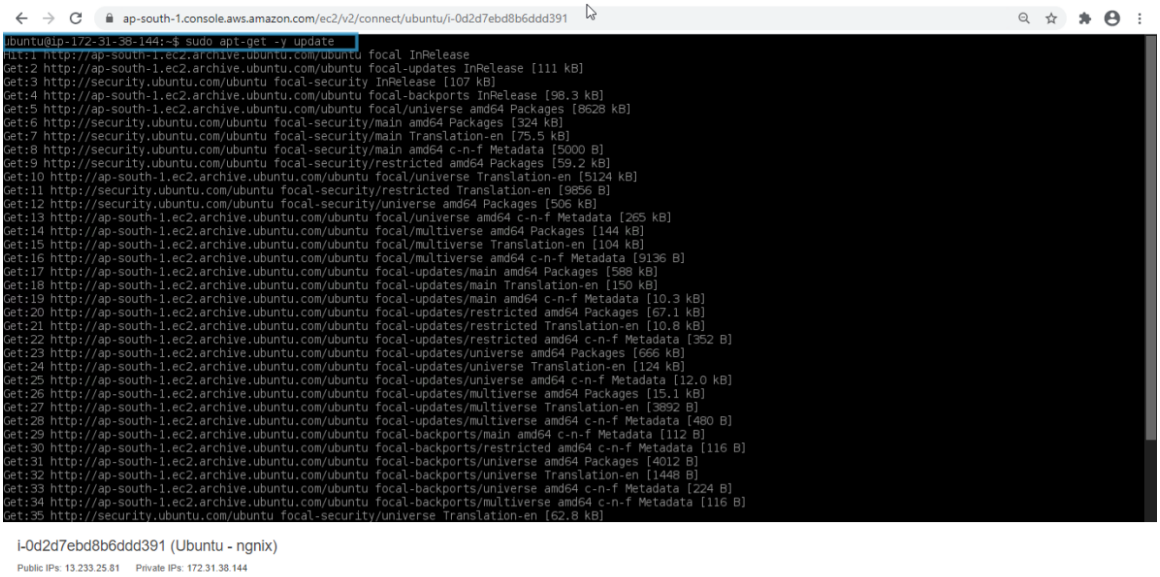


Note: In Windows Server Instance we required to download the RDP client, select key pair (.pem) file, decrypt the password, copy it and paste in Windows Security (password for Administrator) & then connect. Here all the steps are not required you can directly connect, internally AWS will take care of all the steps.

STEP C: Installing ngnix Web Server

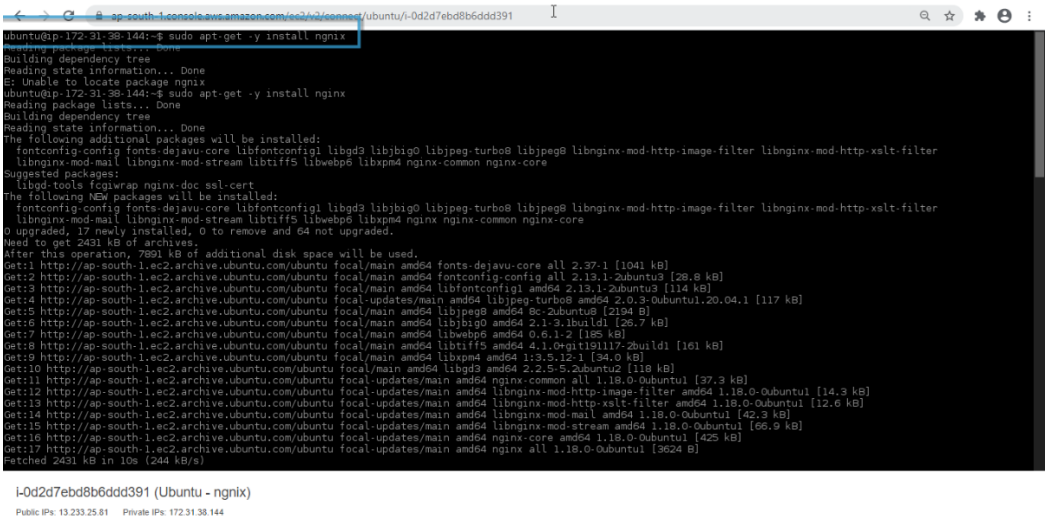
Below are the commands you need to execute on the Ubuntu server $ prompt for installing nginx web server.

1. sudo apt-get -y update
    - this command will get the latest packages for the server
    - sudo – Will give super user rights
    - y is for Automatic Yes (so it will not prompt you for confirmation)



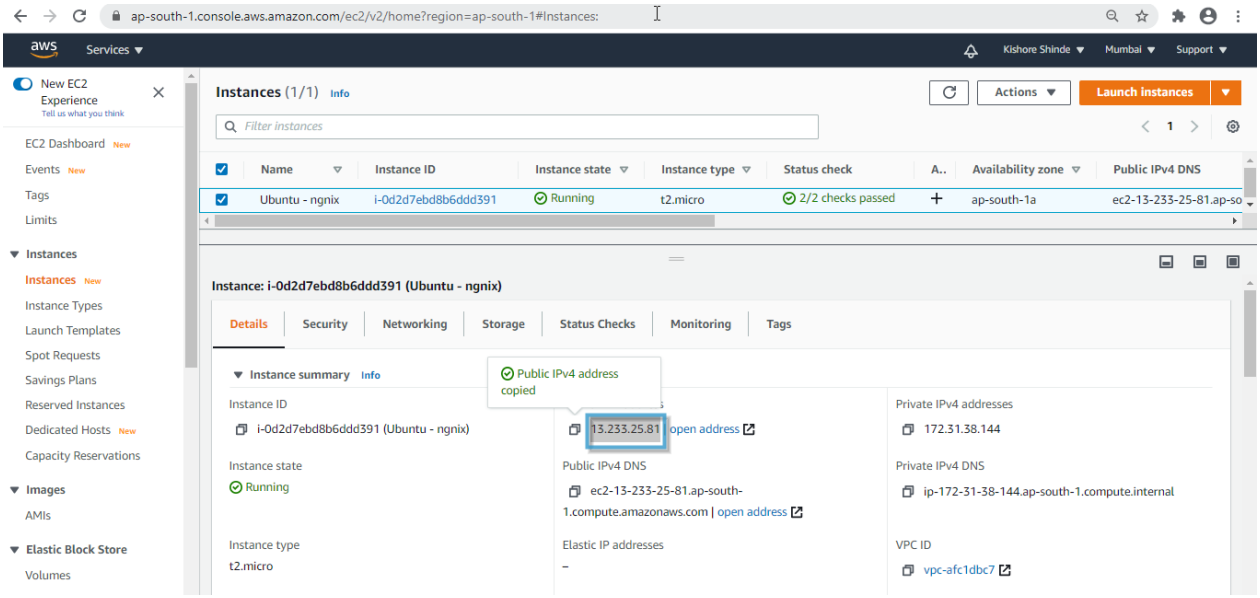
Once the package is installed, execute the command below for installing ngnix.

2. sudo apt-get -y install nginx
    - this command will install nginx server



So now nginx is installed. Disconnect the server.

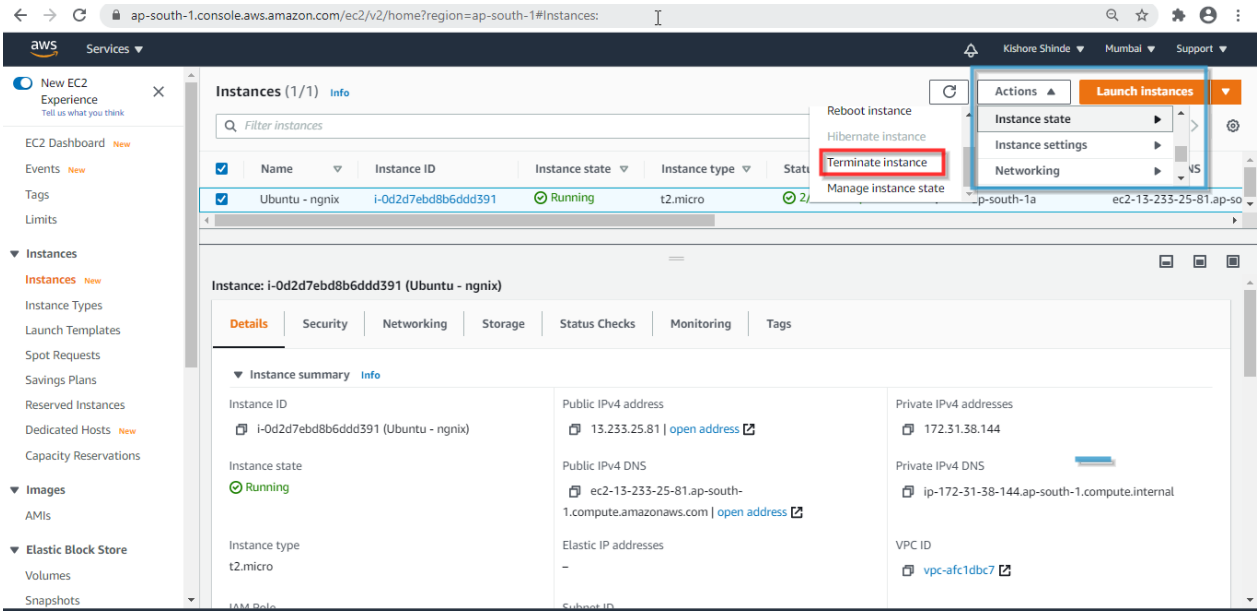
Now to check the nginx installation. Copy the public address from the Instance details & paste it in your Internet browser (e.g. Chrome/Internet Explorer/Firefox) or click on open. In our current scenario our ubuntu server public IP is: 13.233.25.81



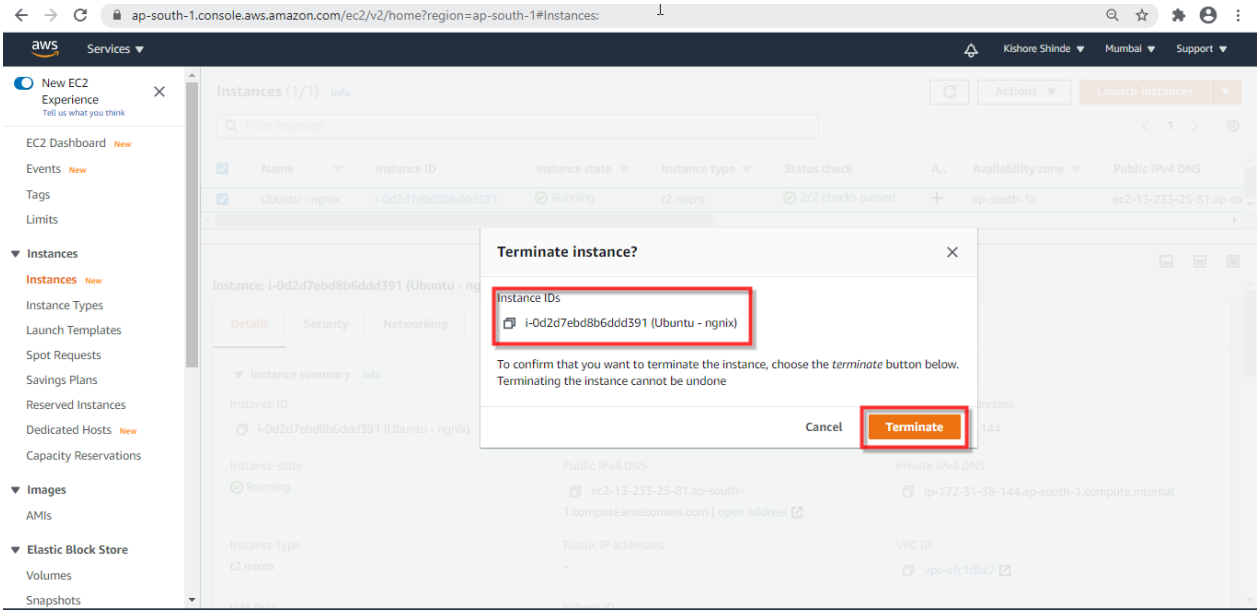
You should be able to see the nginx web server installed on ubuntu.

STEP D: Terminating Instance

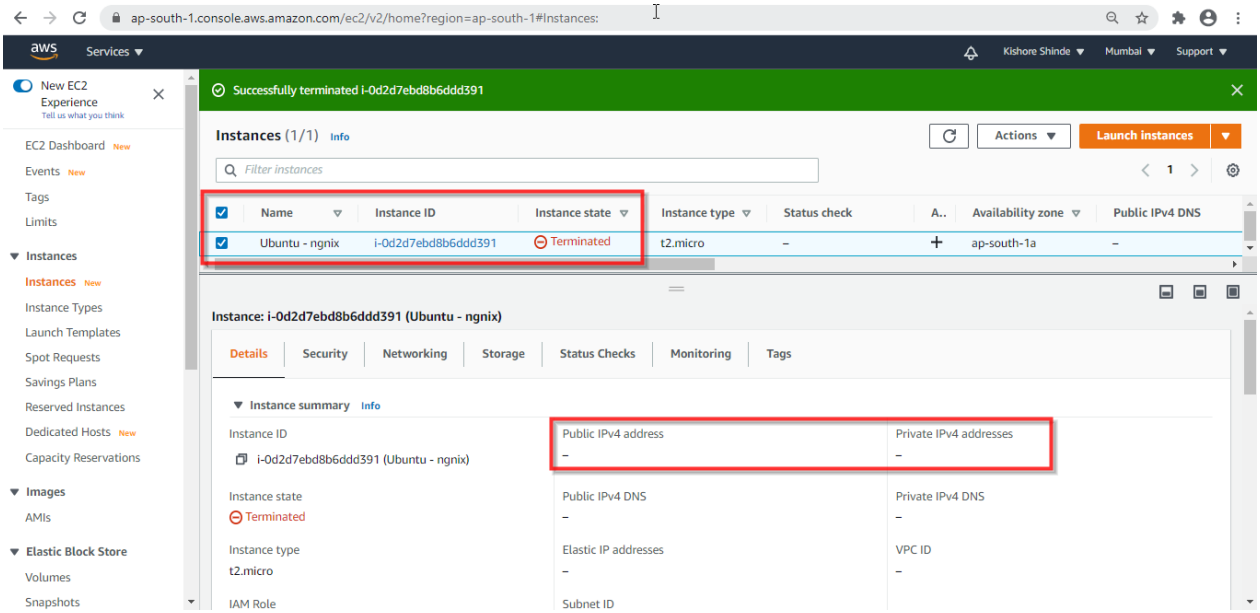
Click on Actions->Select Instance State->Click on Terminate instance.



It will ask you for Termination permission click on Terminate.



The instance will be terminated and, in the instance, details you will see the public & private IP are released, which will go back to shared pool and the instance status will show terminated.



Project 2 is completed.