AWS Technical Essentials
Lab Book

Table of Contents

Getting Started

Overview

This lab book is a guided tour for learning AWS Technical Essentials. It comprises of demos for various web services.

Setup Checklist for AWS Tech Essentials

Here is what is expected on your machine in order for the lab to work.

Minimum System Requirements

- Intel Pentium 90 or higher (P166 recommended)
- Microsoft Windows 95, 98, or NT 4.0, 2k, XP.
- Memory: 32MB of RAM (64MB or more recommended)
- Internet Explorer 11.0 or higher
- Internet connection

Instructions

- You may also look up the on-line docs on AWS site.

Learning More (Bibliography if applicable)

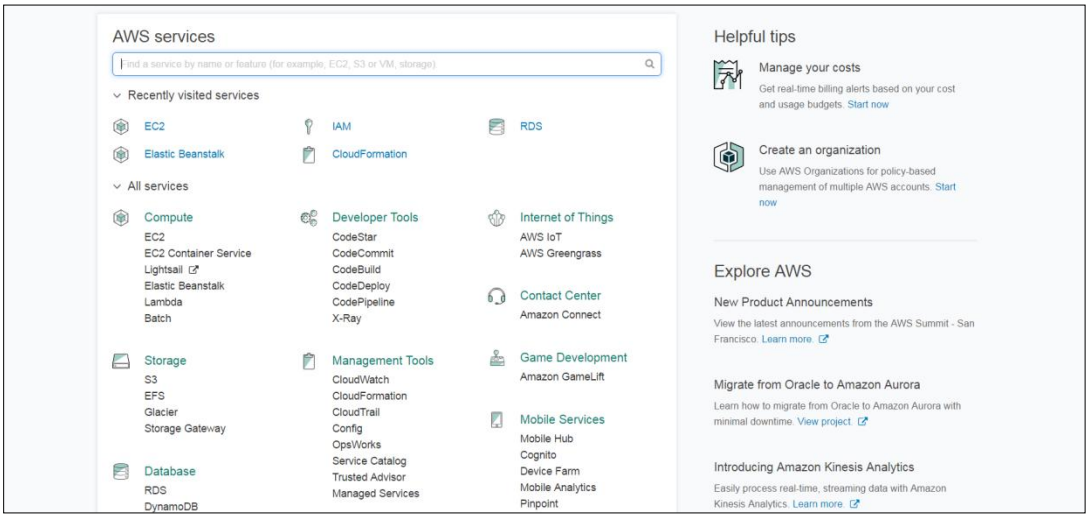
- Learning AWS- by Amit Shah and Aurobindo Sarkar

Lab 1. EC2 Service:

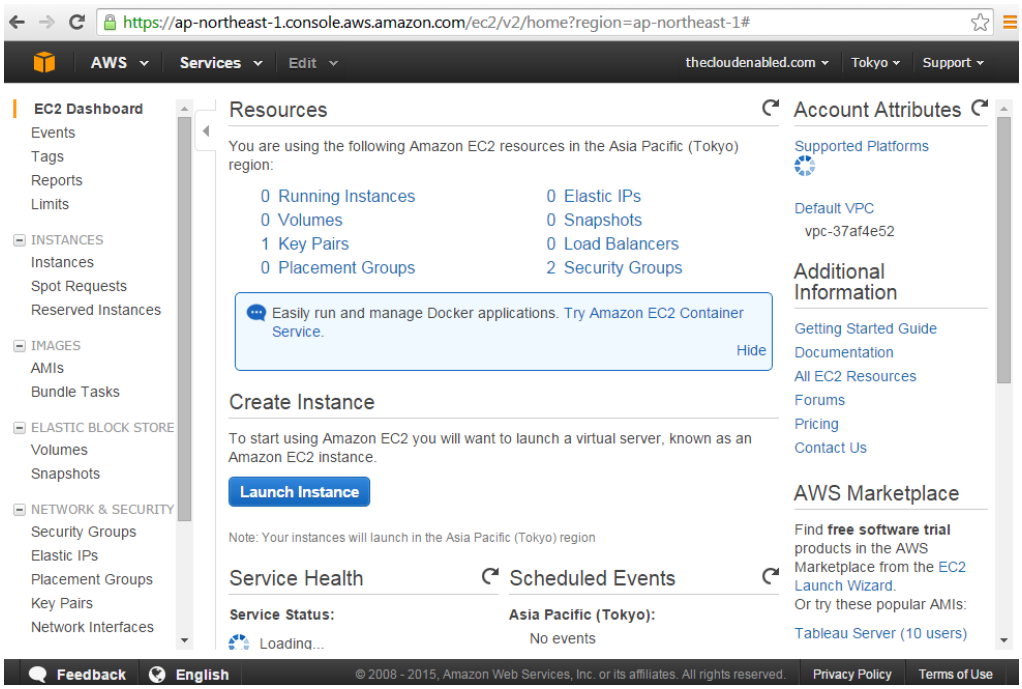
Goals	Understand the steps to create Windows instance using AWS
Time	10 minutes

1.1: Creating EC2 instance on Windows

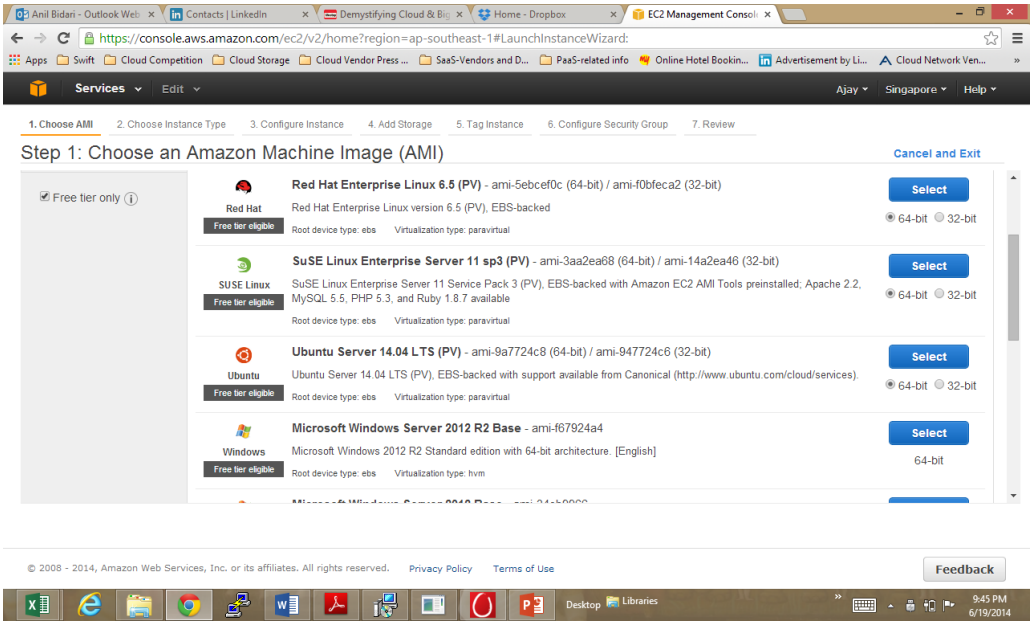
Step 1: Sign in with aws account to see the AWS home page.



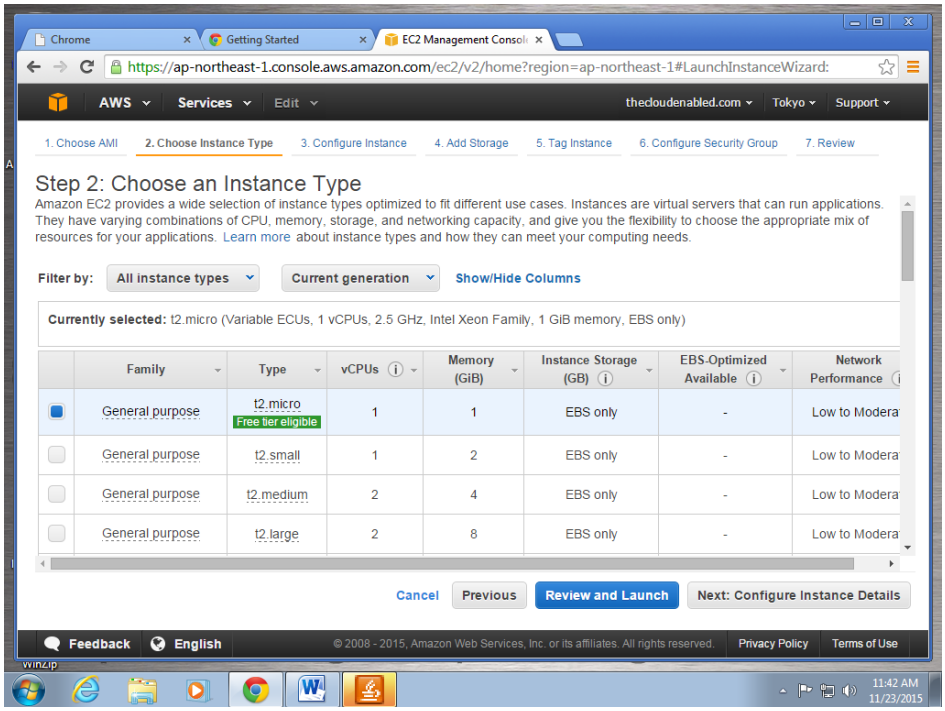
Step 2: Click on EC2 on the home page and select Launch Instance



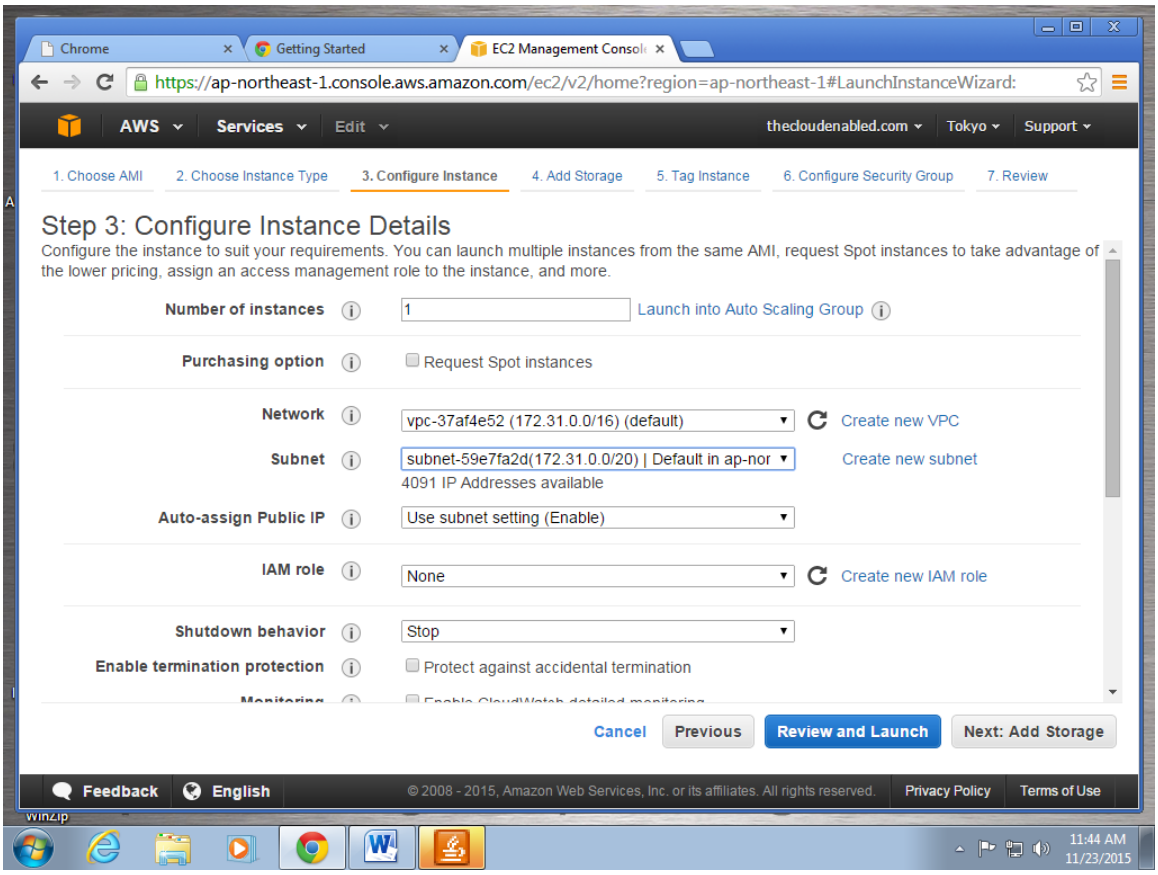
Step 3: Select Microsoft Windows Server.



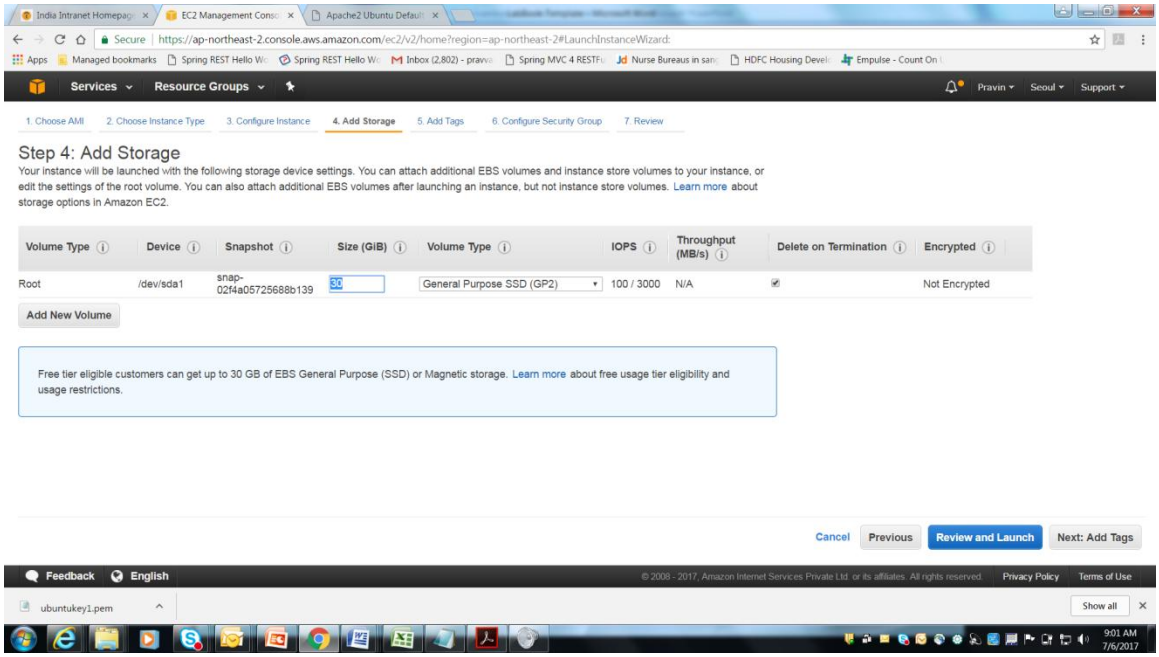
Step 4: Select t2 micro free tier



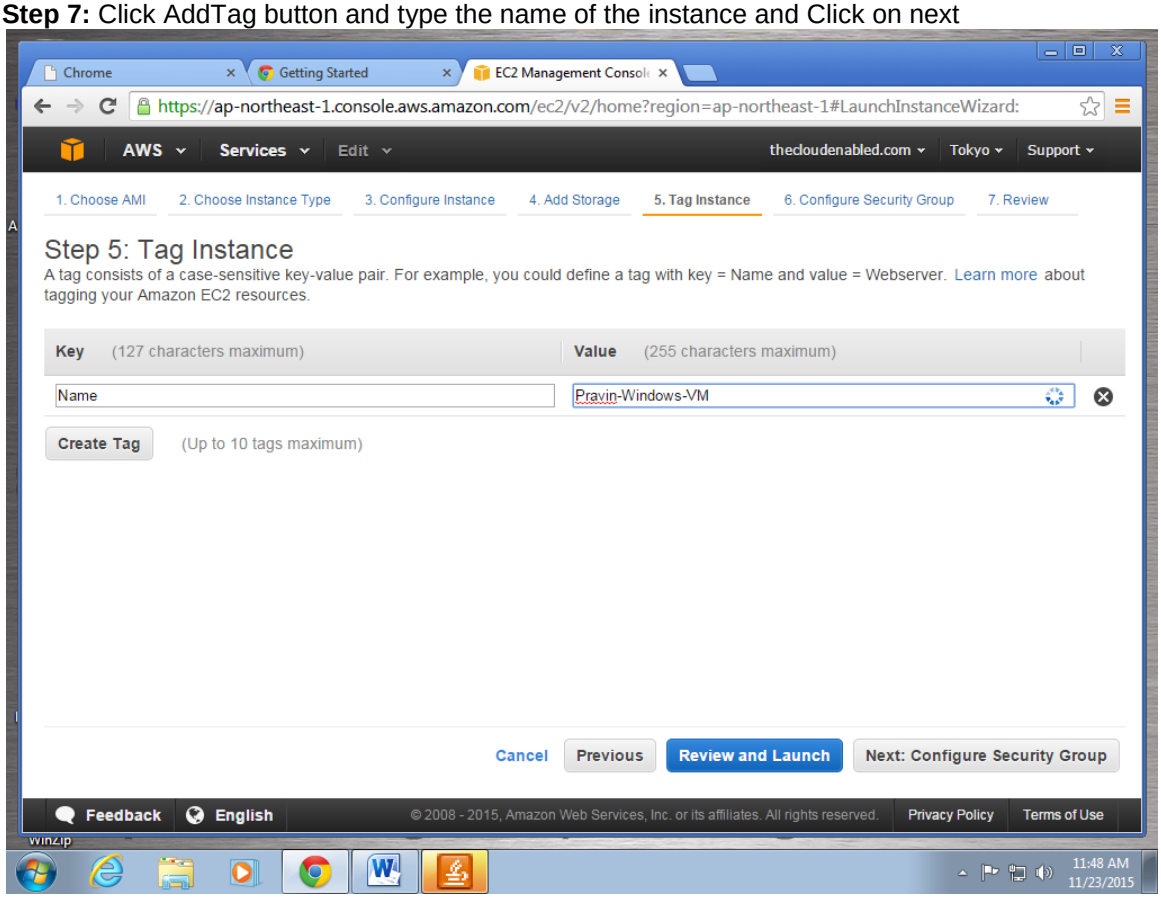
Step 5: Select the subnet(any option is ok) Click on next



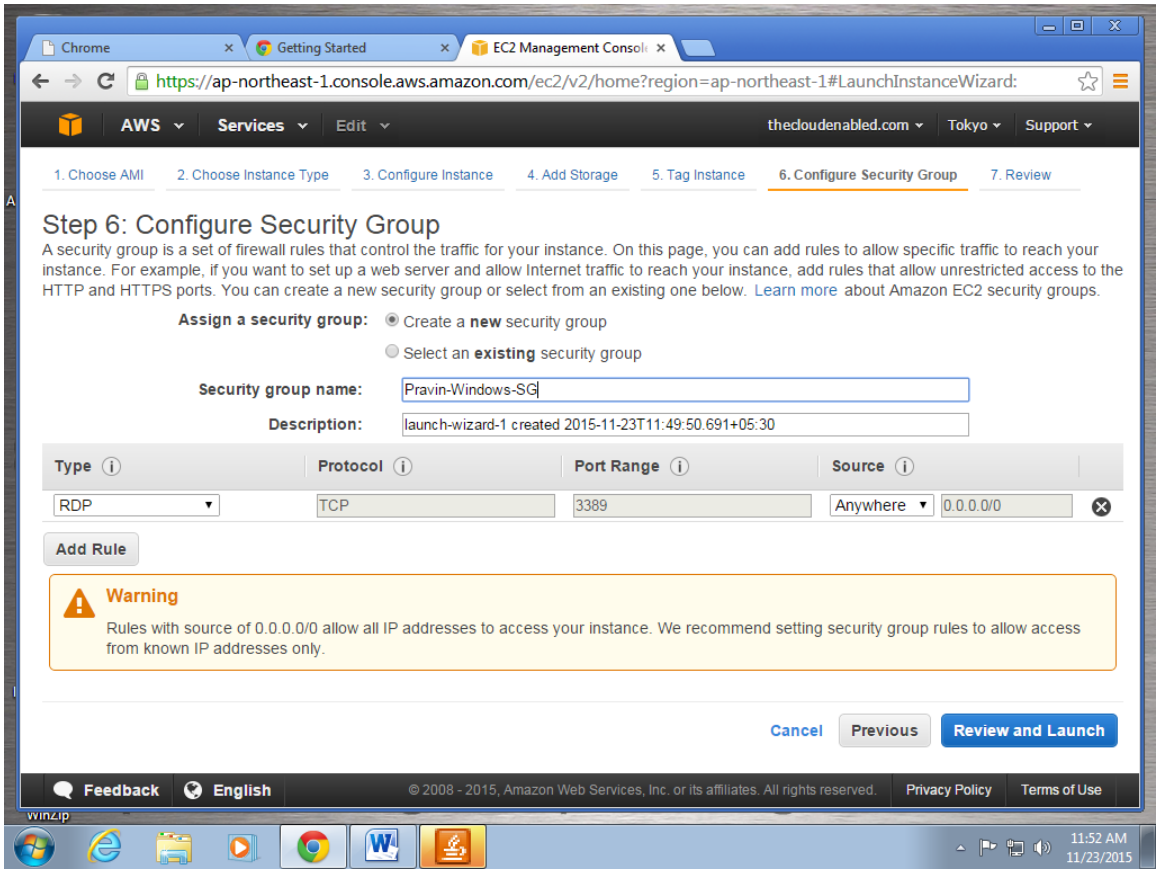
Step 6: Click next here



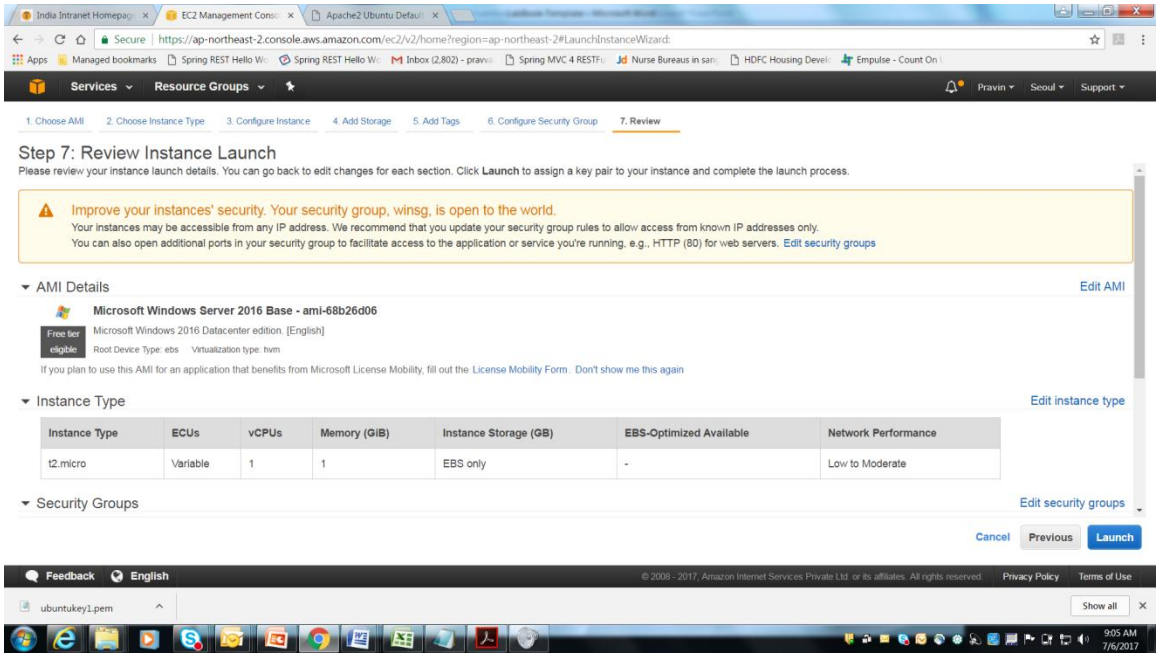
Step 7: Click AddTag button and type the name of the instance and Click on next



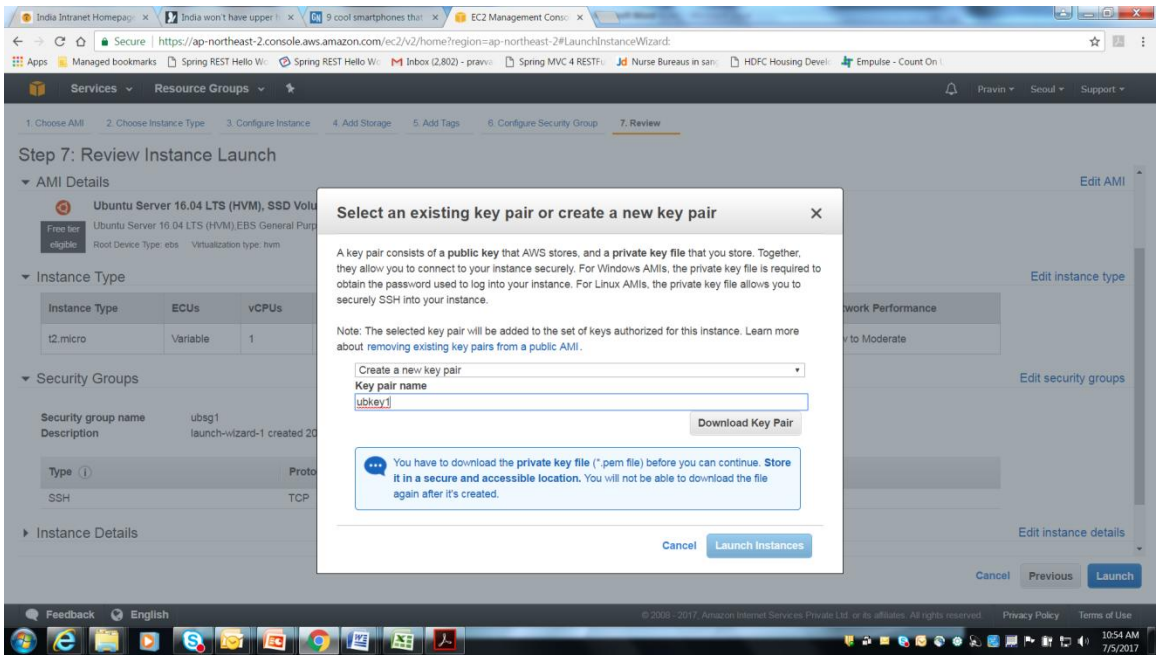
Step 8: Create a new security group with some name. Click on Review and Launch



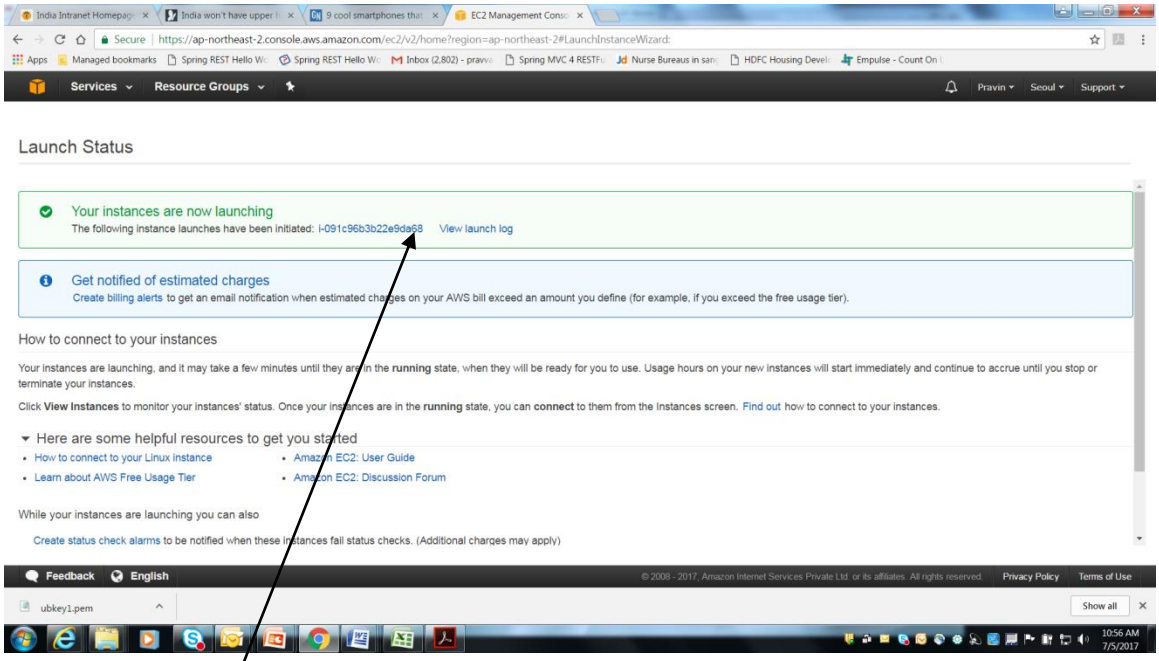
Step 9: Click on Launch Button



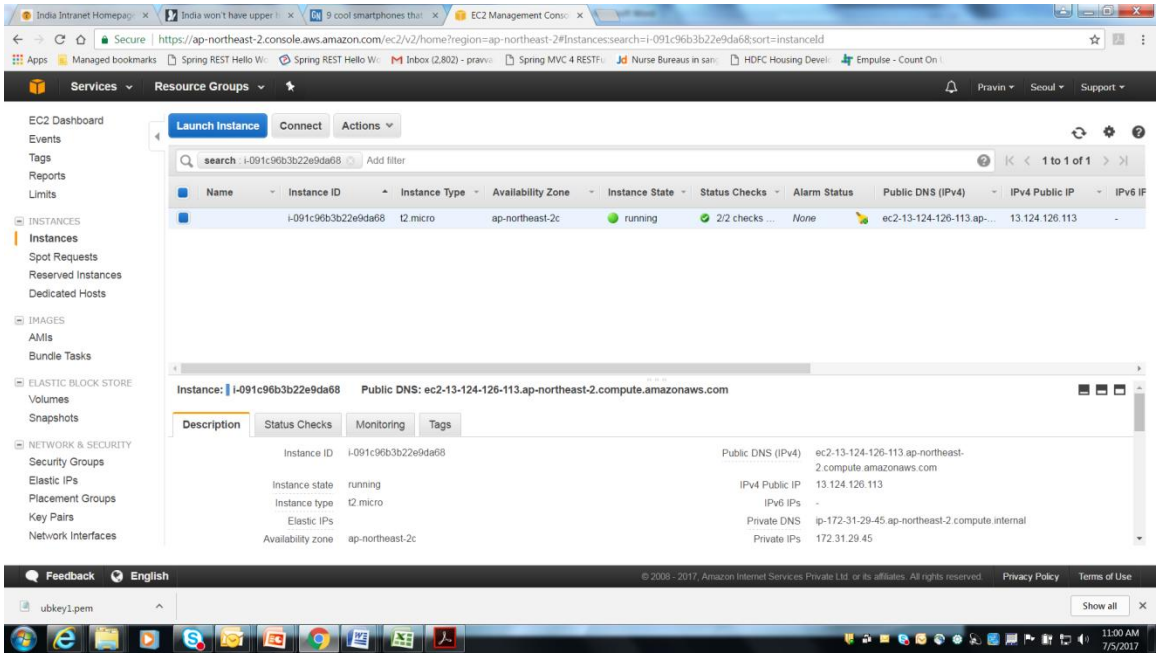
Step 10: Select create a new key pair option. Type key pair name and click Download key pair button and Click Launch Instance option



Step 11: Instance creation status will be shown



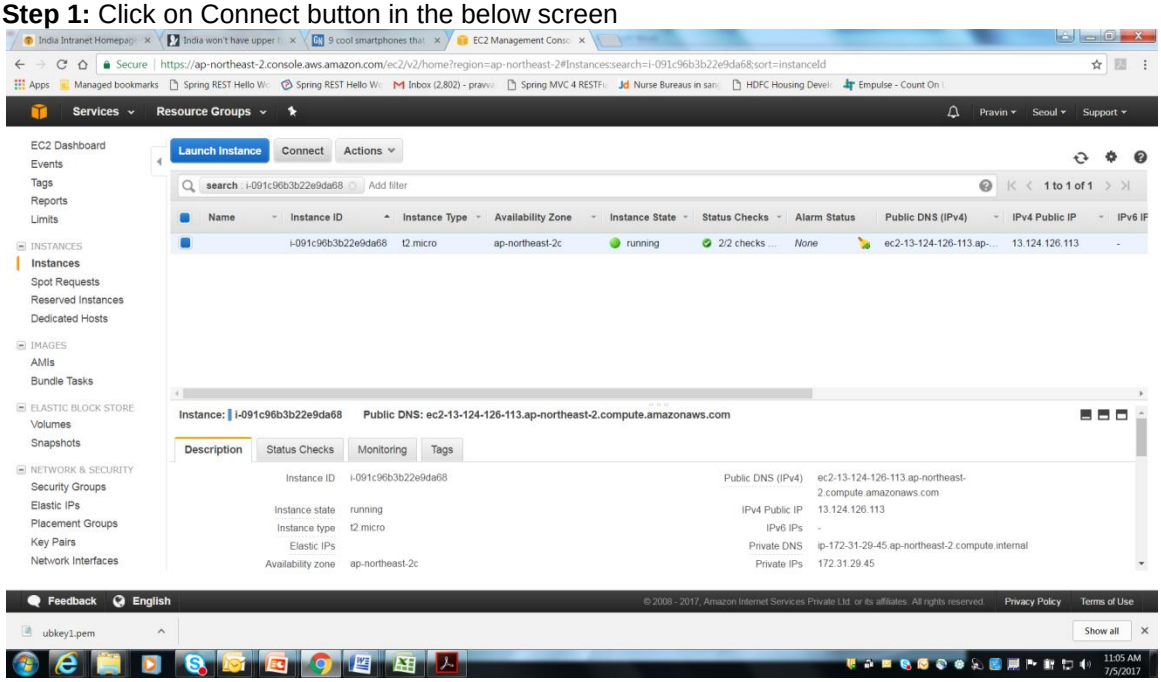
Step 10: Click on the instance id. The instance creation would be successful once the status check column shows 2/2 check passed



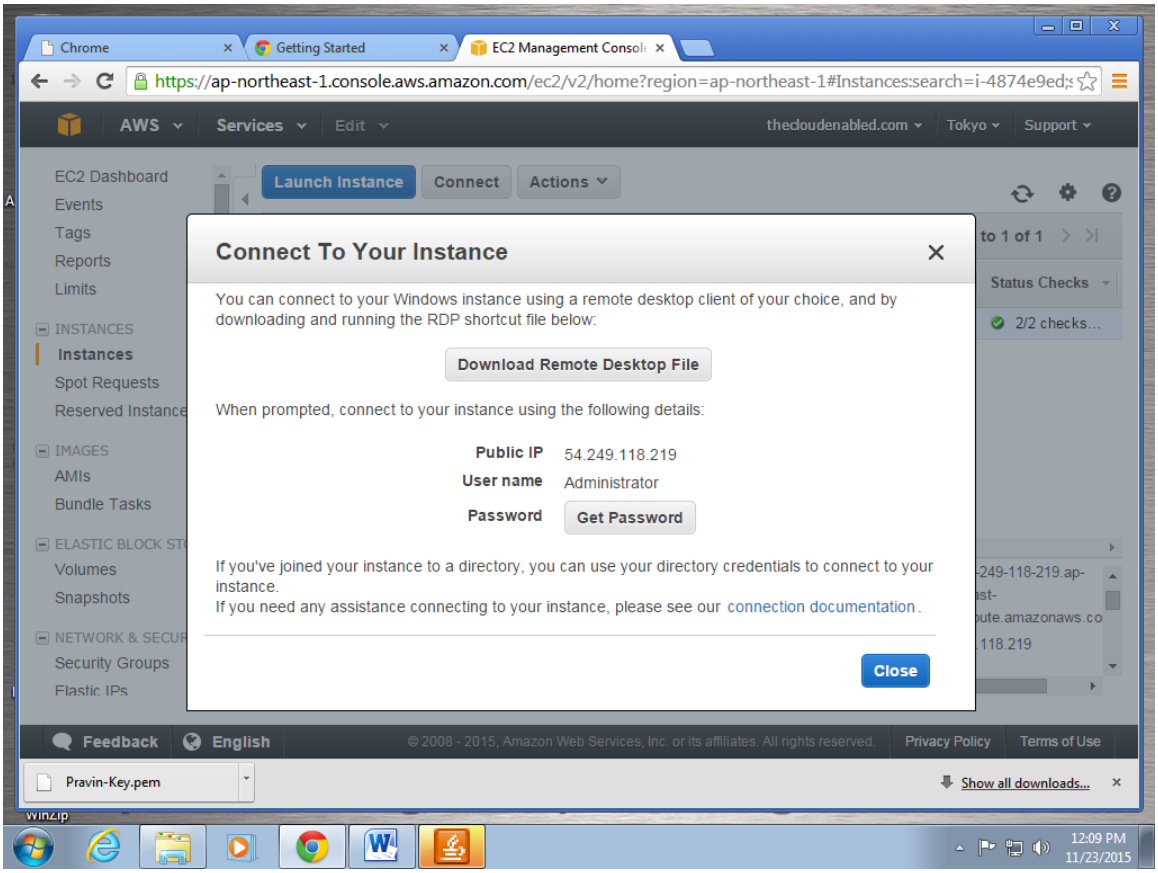
Lab 2. Connecting to Windows instance

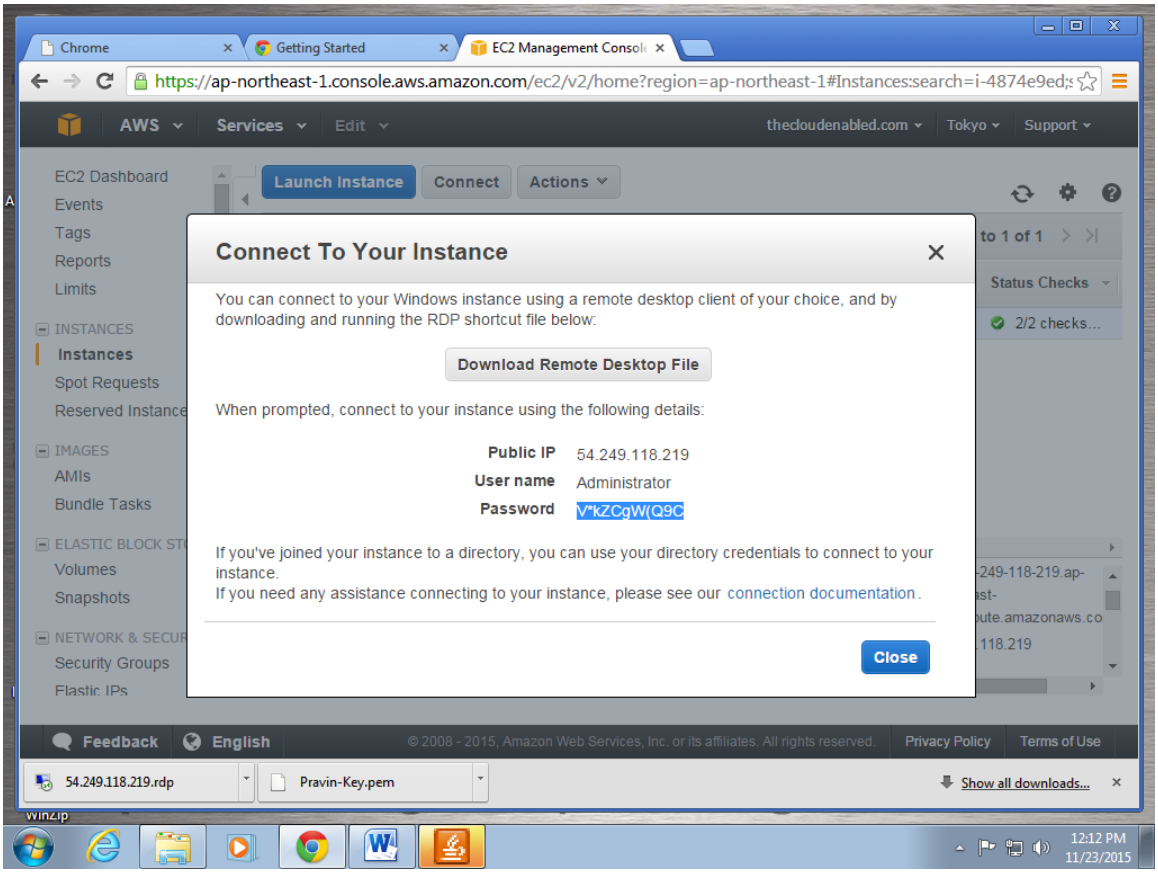
Goals	Understand the steps to connect to Windows instance
Time	10 minutes

Step 1: Click on Connect button in the below screen

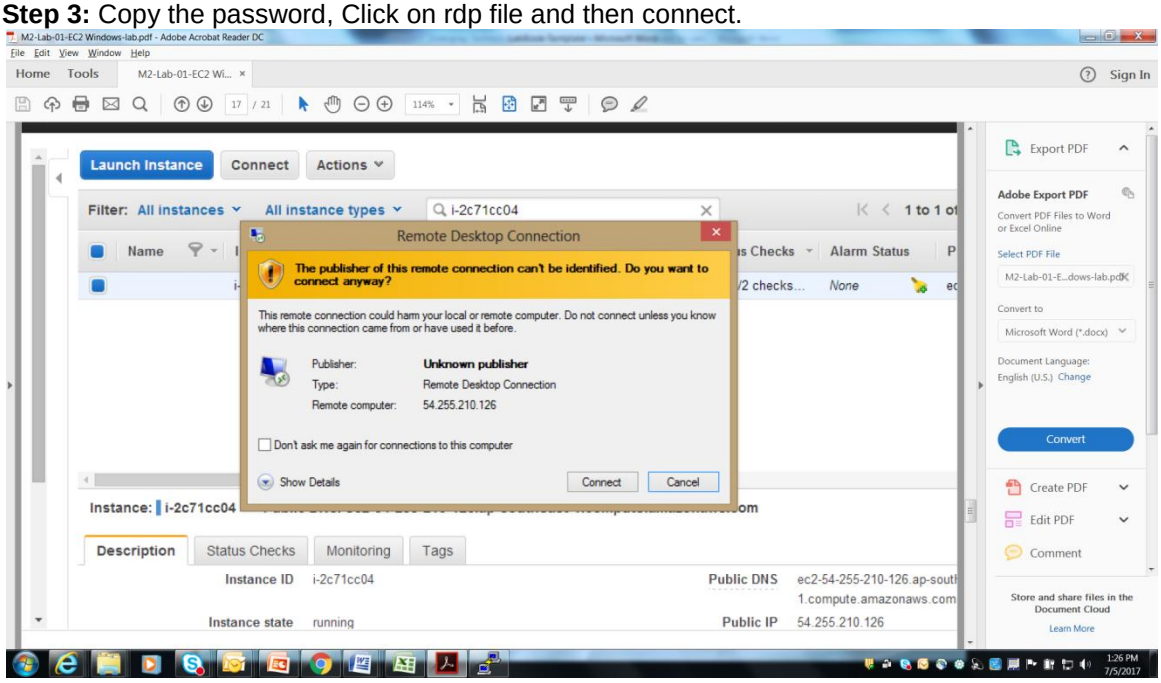


Step 2: Click on download remote desktop file and then click on Get Password button. Copy the password, Select the key pair file and hit the Decrypt password button

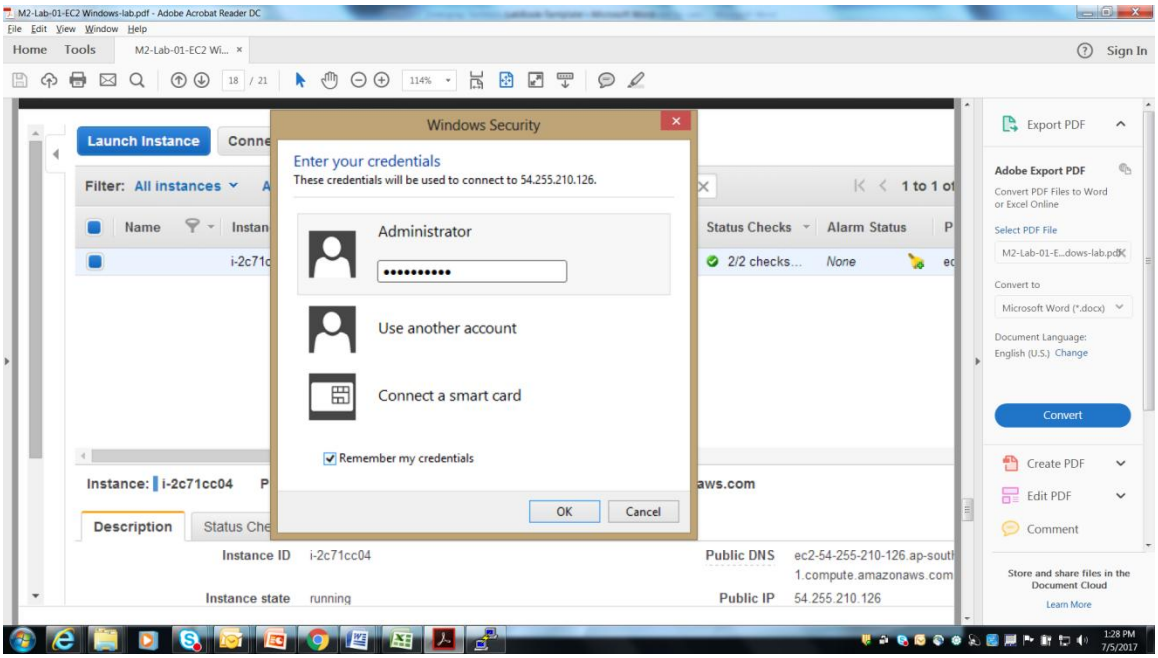


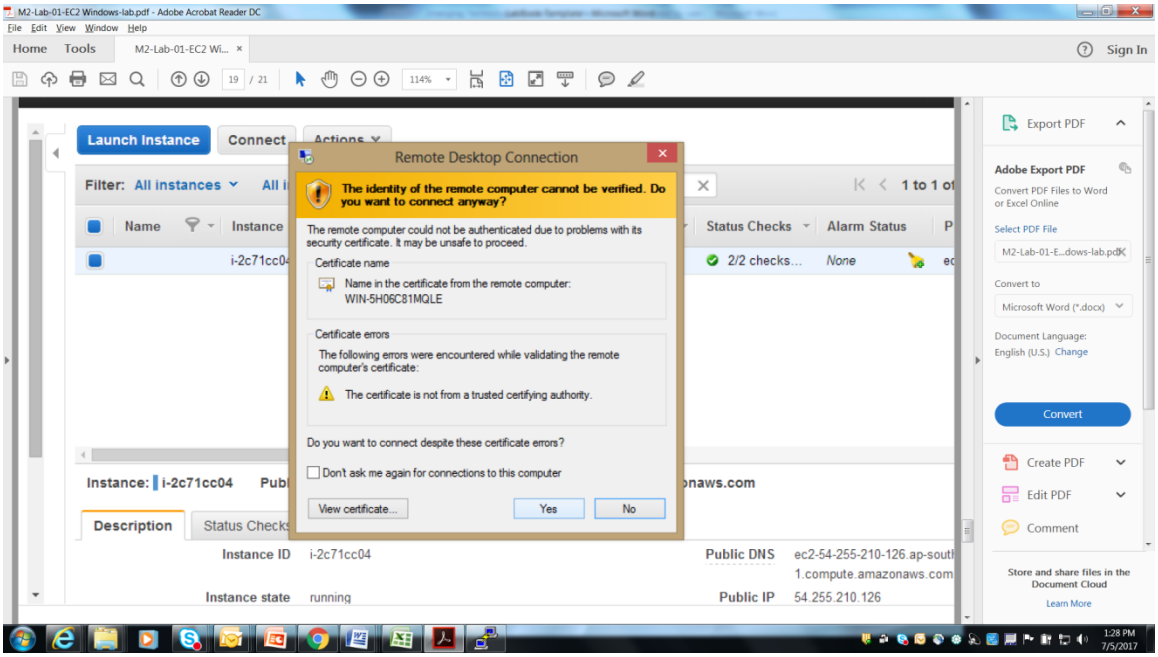


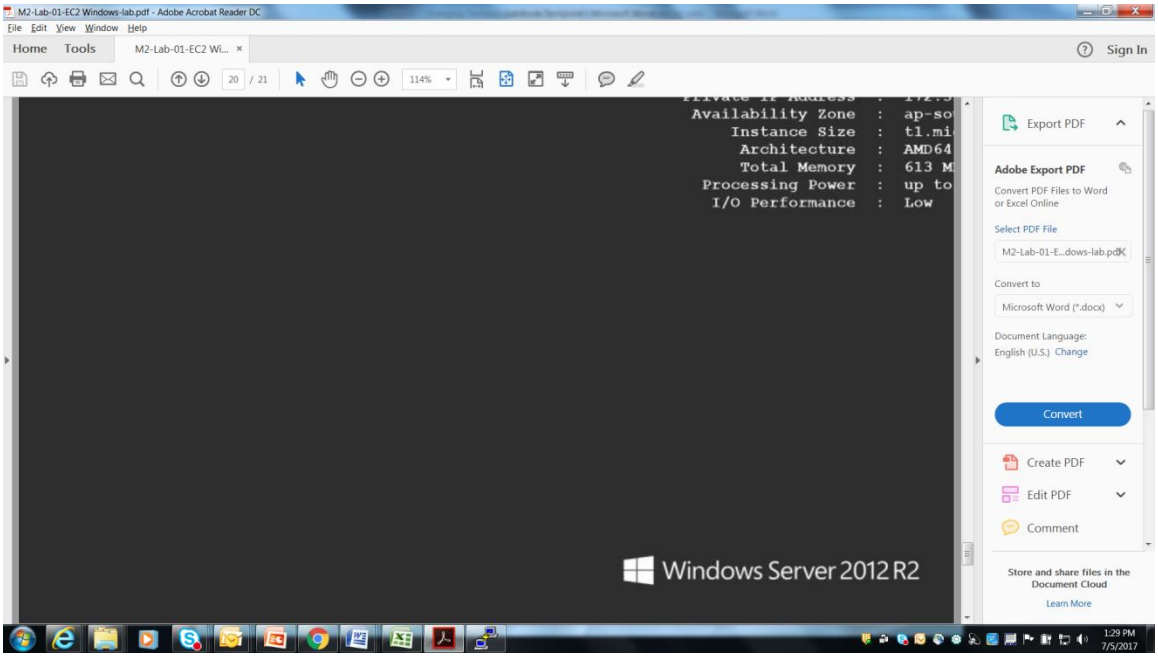
Step 3: Copy the password, Click on rdp file and then connect.



Step 4: Type the user name as Administrator and paste the password in the password text box you will get connected to the instance (VM)



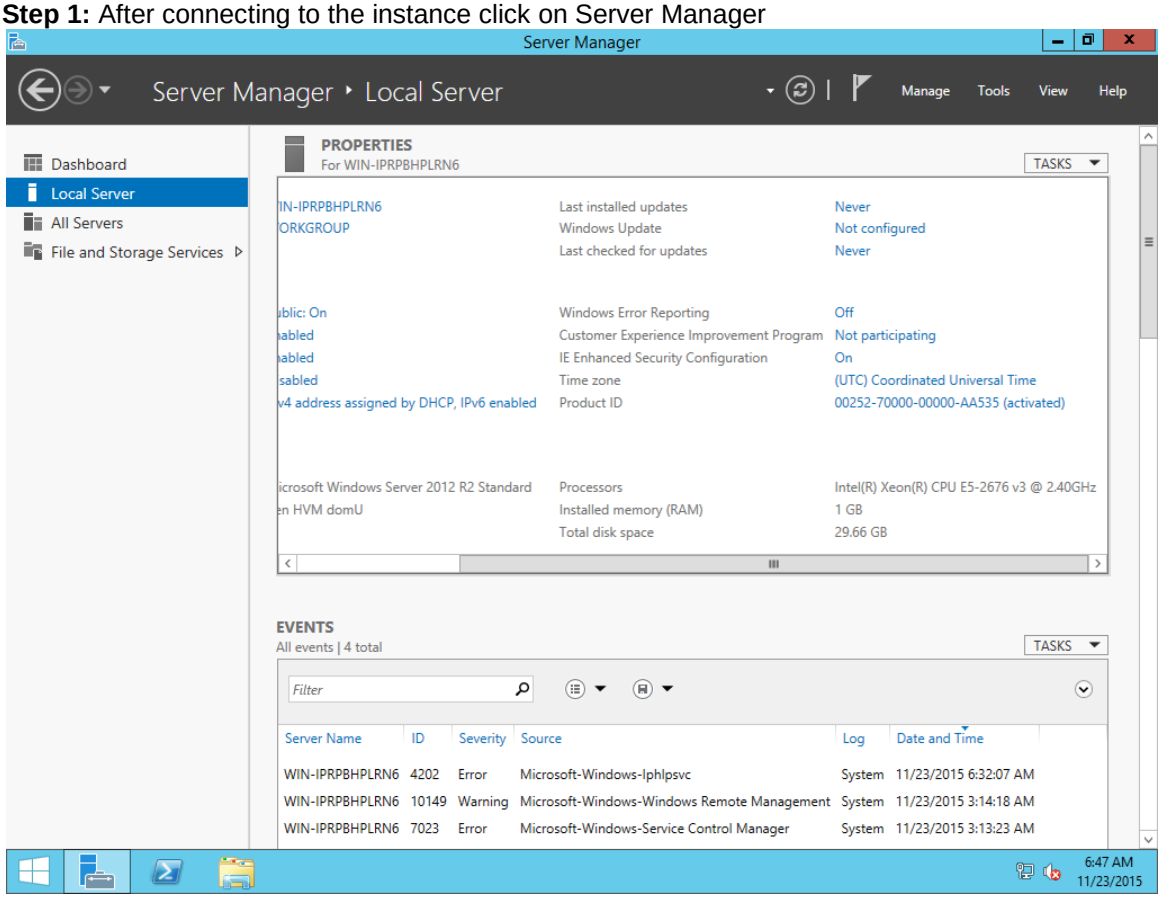




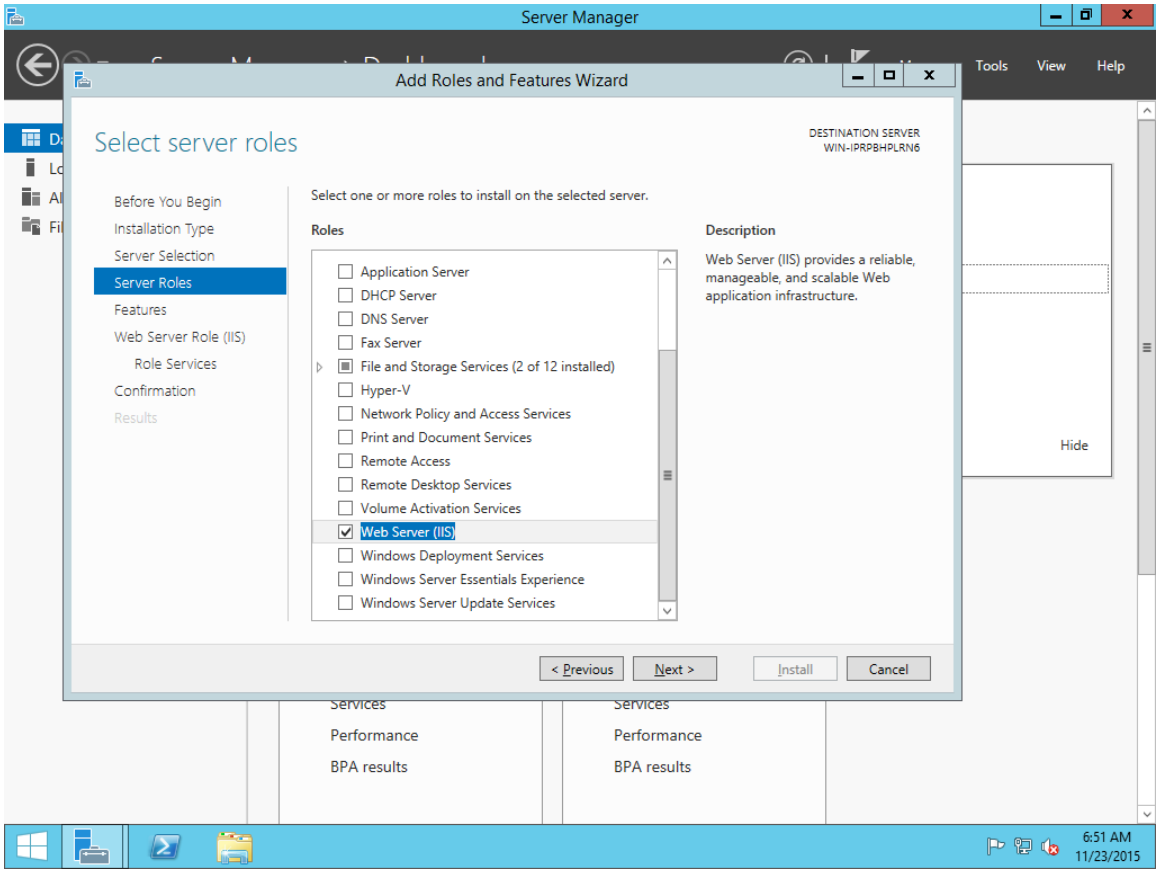
Lab 3. Configure IIS service on Windows

Goals	Understand the steps to configure IIS
Time	10 minutes

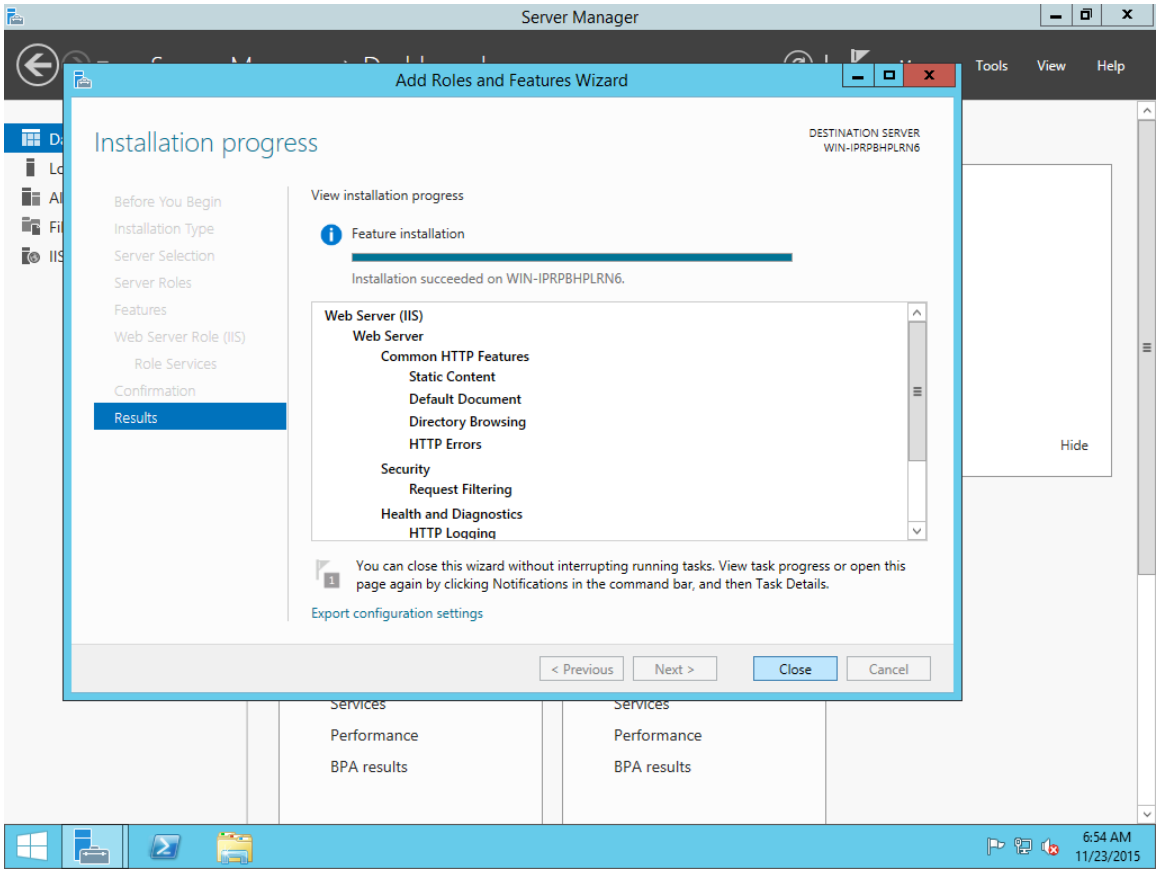
Step 1: After connecting to the instance click on Server Manager



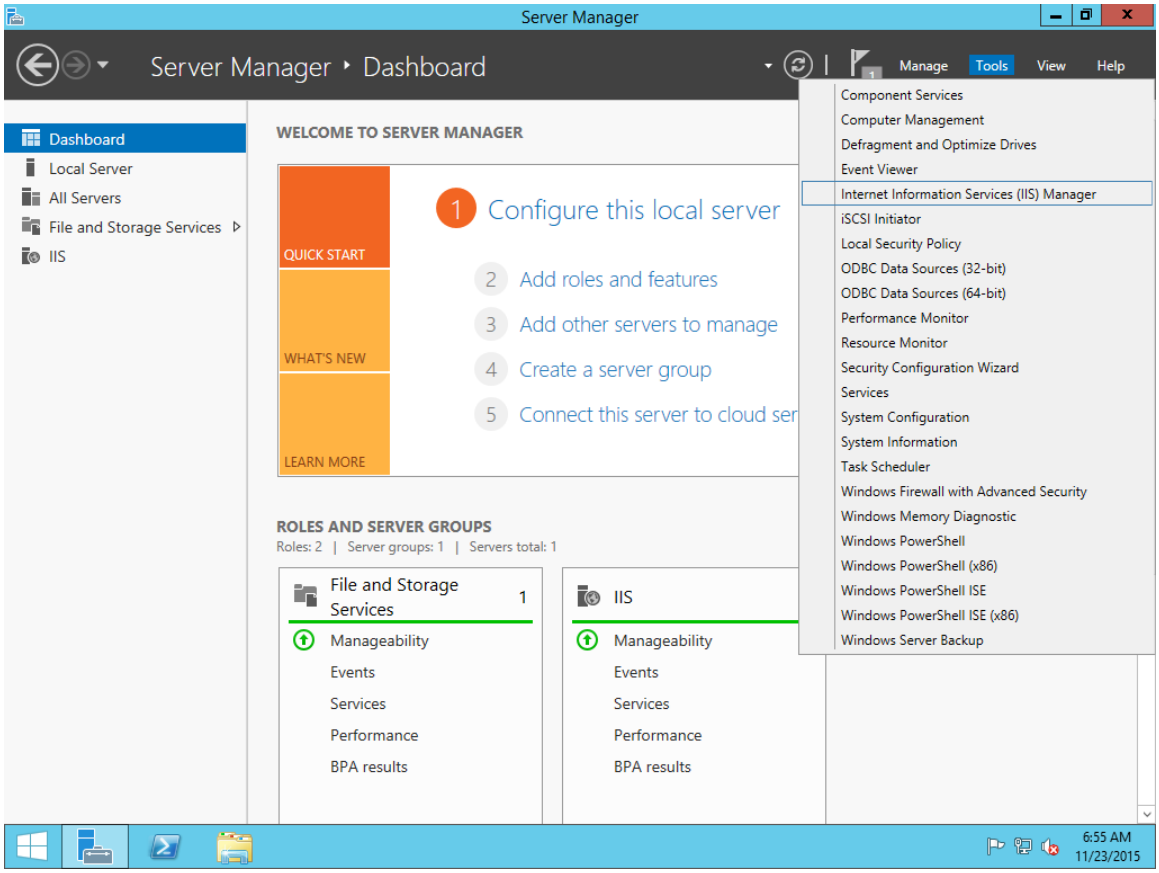
Step 2: Click on Dashboard, Click on role and features, Click on next, next, select IIS Web Server option



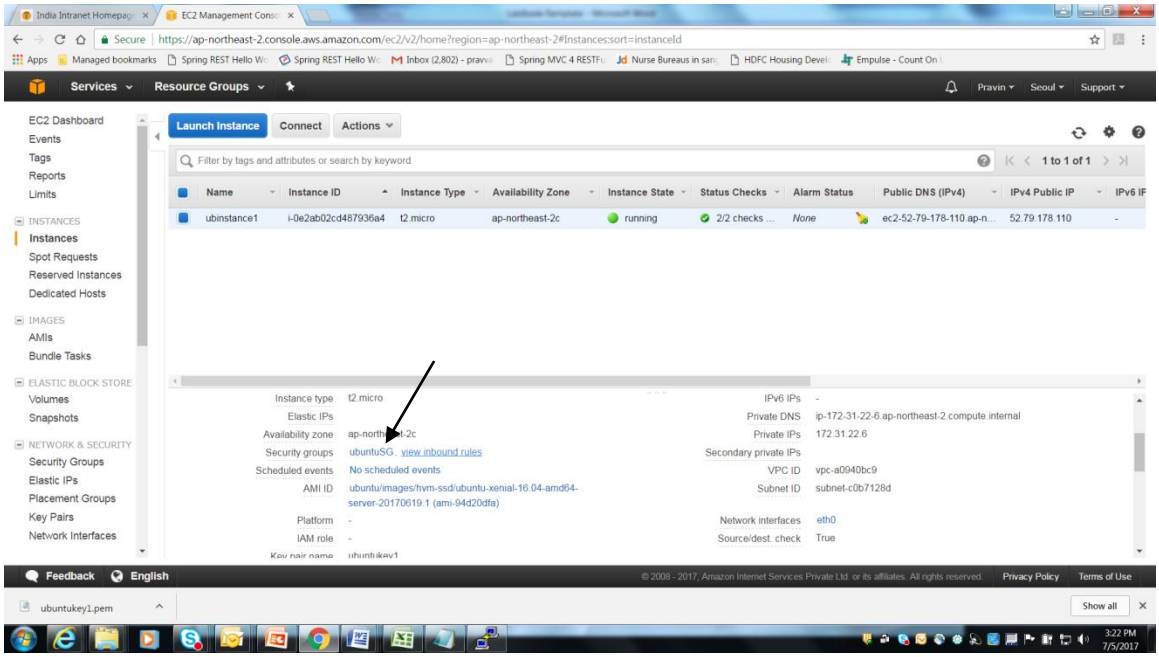
Step 3: Click on Next 3 times and then select install



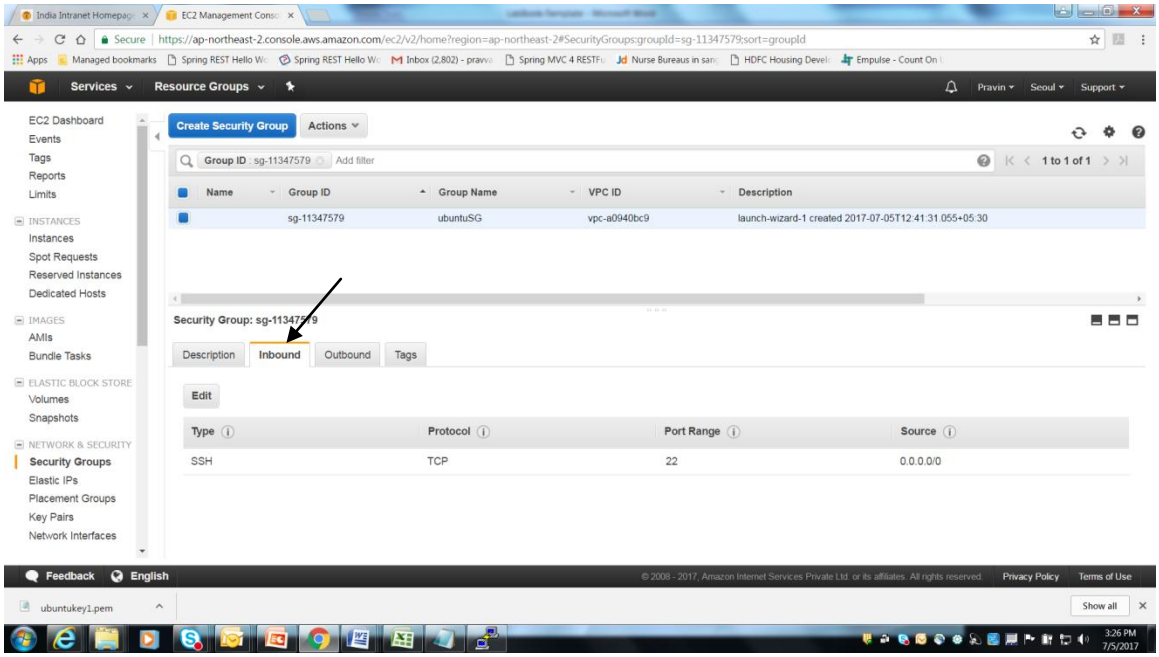
Step 4: Click on close, click on Tools-IIS Manager to see the configuration



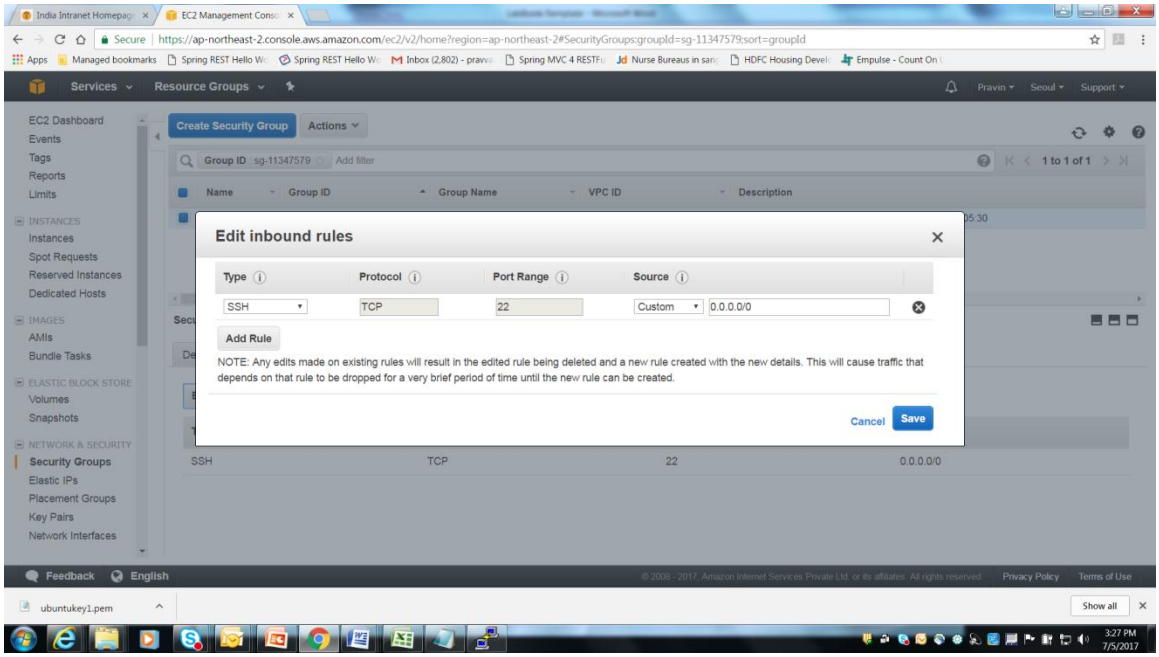
Step 5: Go to EC2 dashboard select the instance created and add HTTP rule as part of the security group assigned to the instance as shown in the screen below. Click on the security group name assigned to the instance to modify the inbound rues



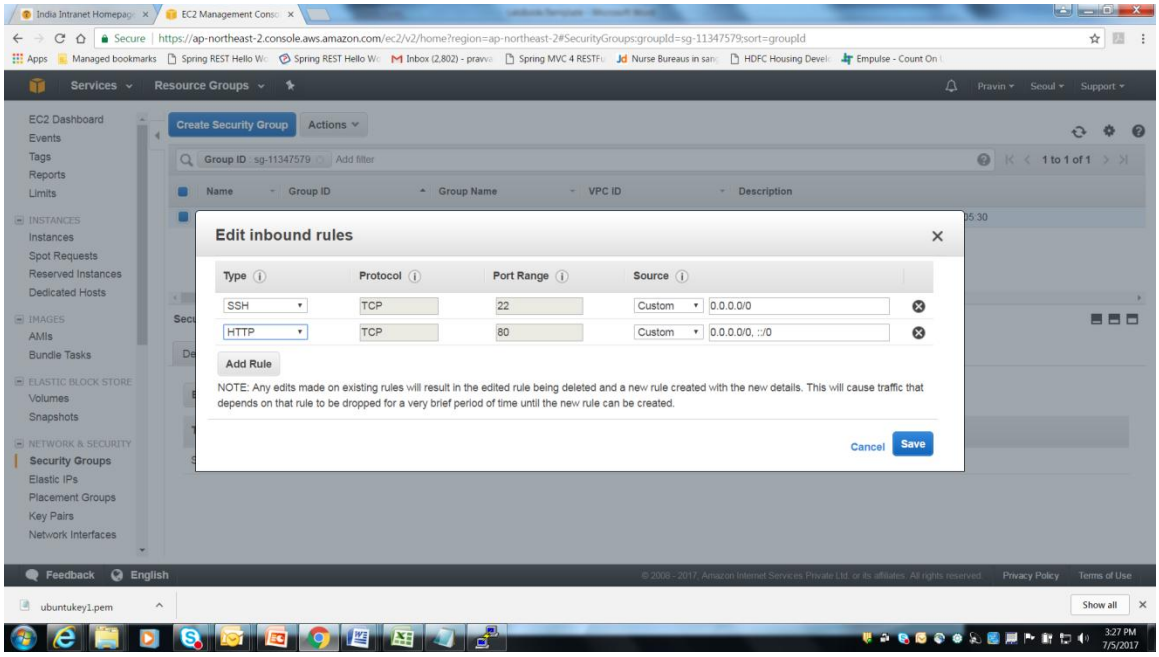
Step 6: select the Inbound option as shown in the image below



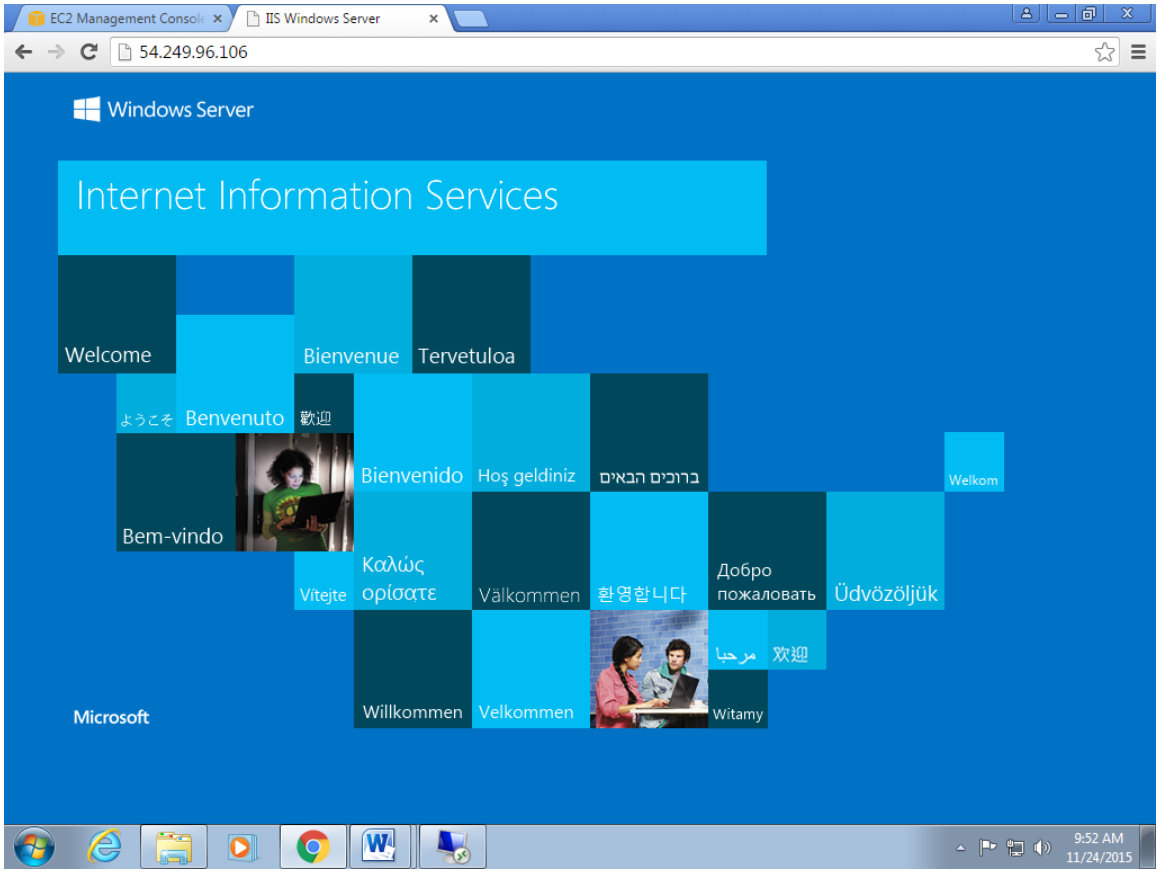
Step 7: select the Edit button to add the rule



Click on Add Rule select HTTP from drop down and hit the save button



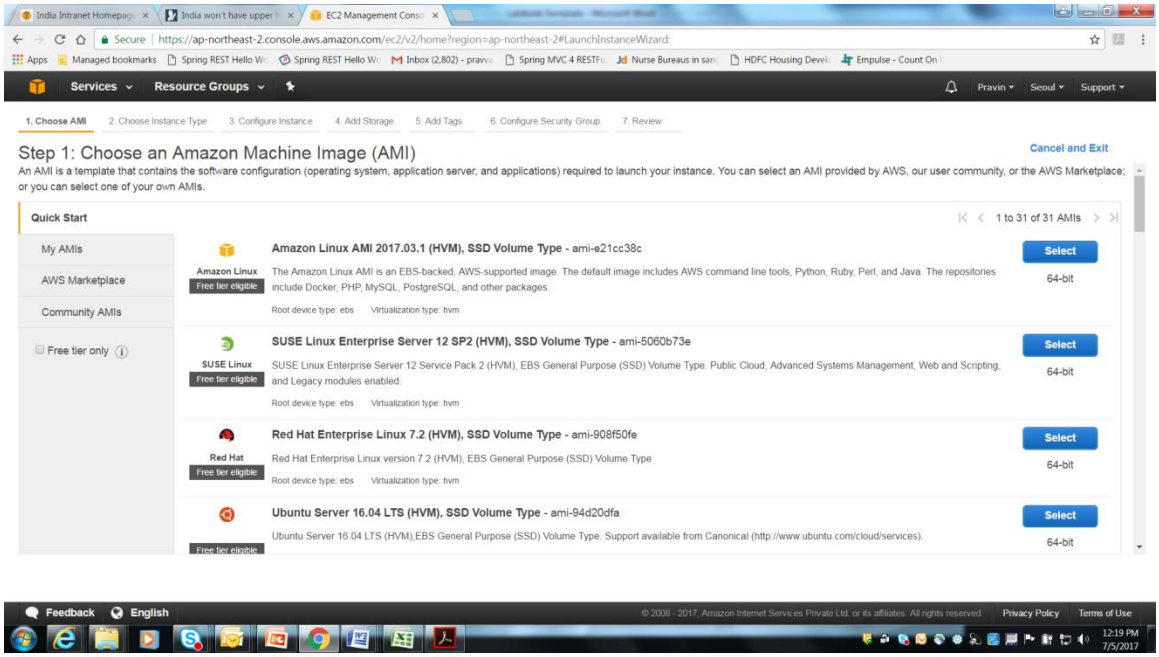
Step 8: Copy the public IP and check in the local browser to see the page as shown below



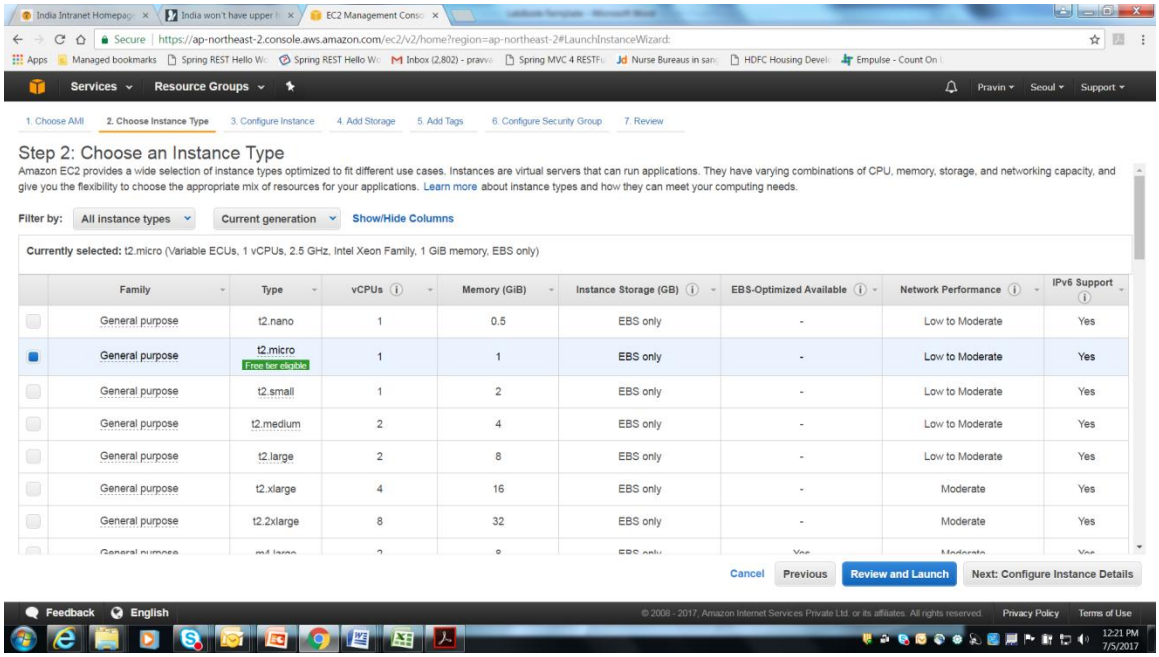
Lab 4. Create Ubuntu Instance

Goals	Understand the steps to create Ubuntu Instance
Time	10 minutes

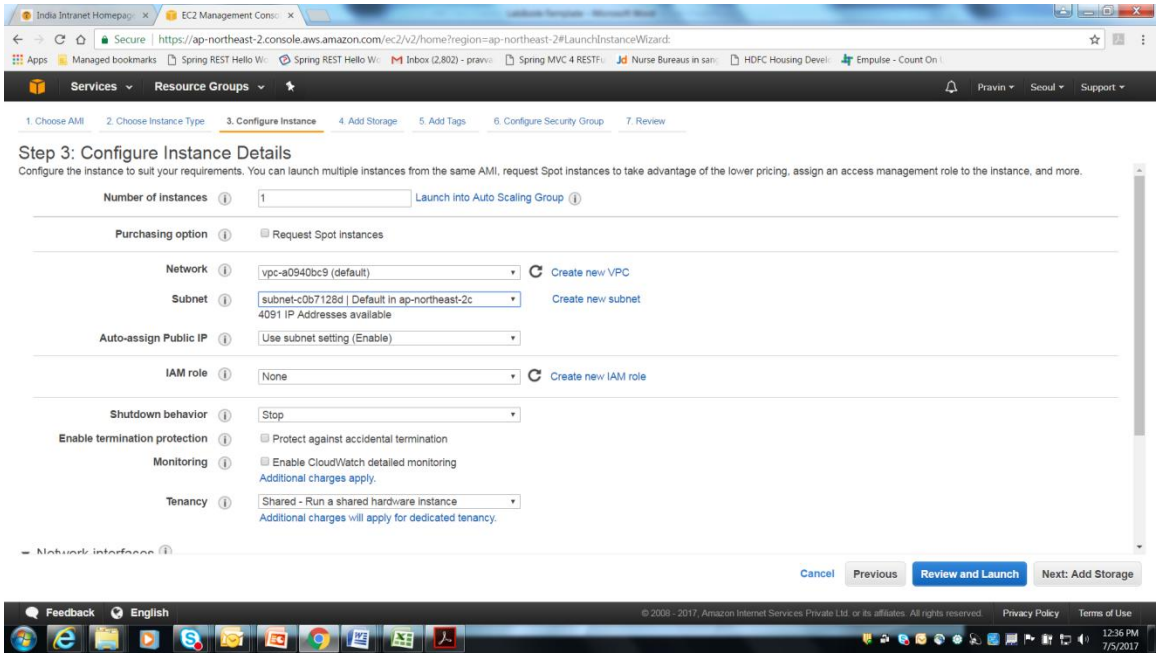
Step 1: On aws home screen click on EC2 Dashboard and then select EC2 instance, select Ubuntu Server 16.04 by clicking on select button on the right of the screen



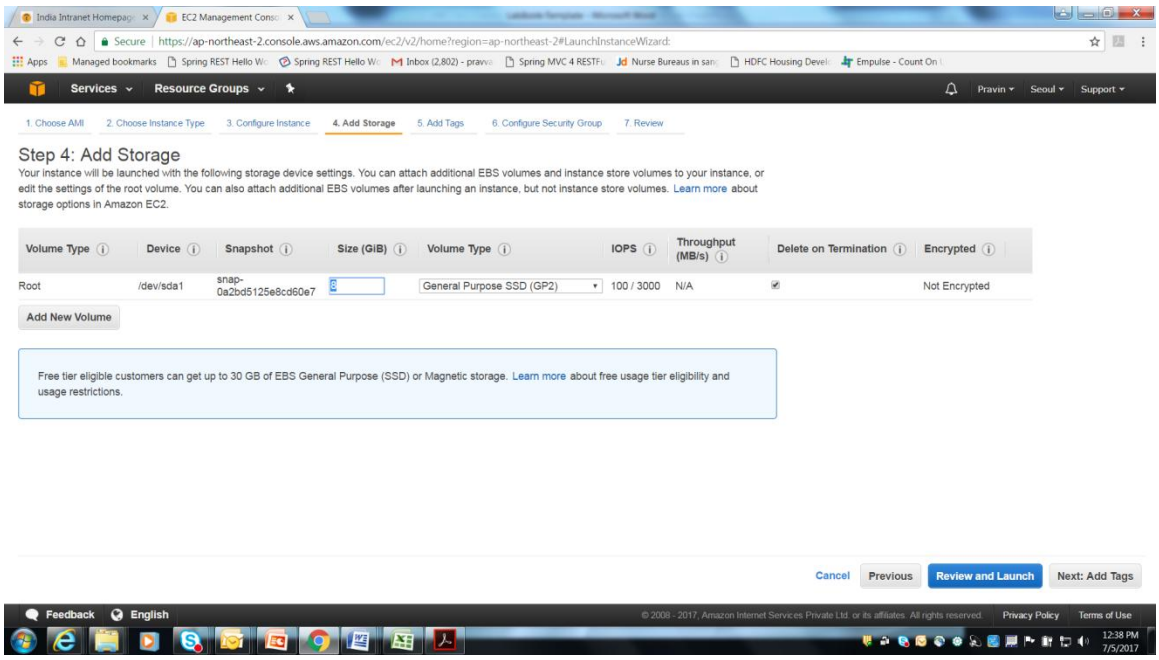
Step 2: Click on General purpose t2 micro free tier option and then click next button



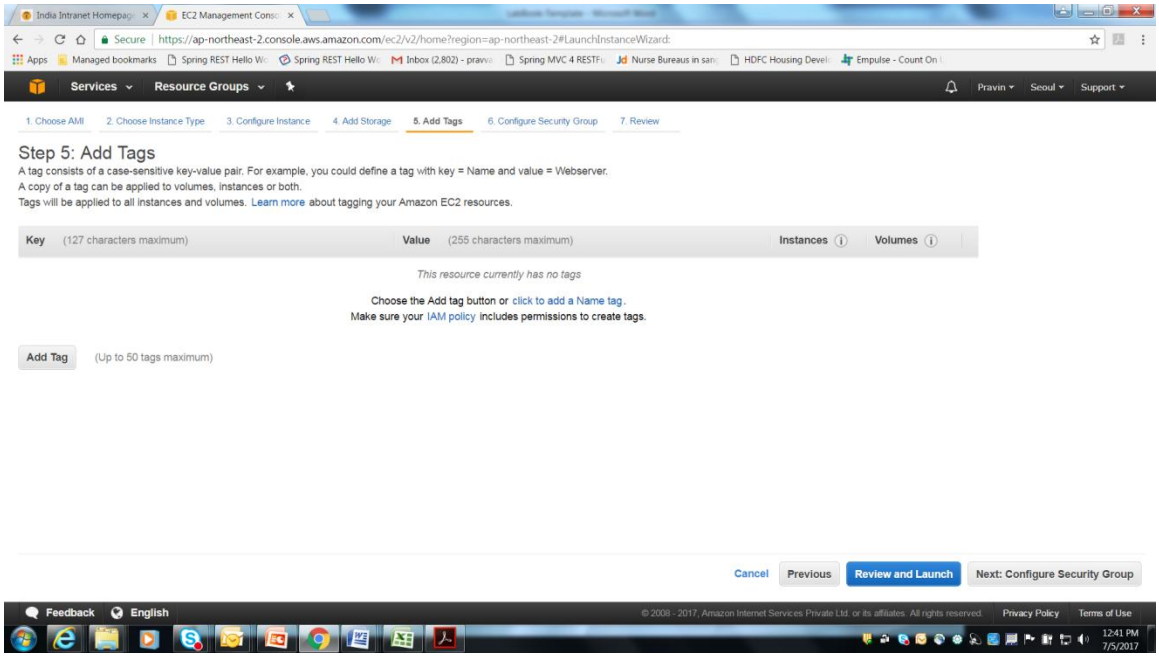
Step 3: Select the subnet either 2c or 2a in the following screen and click on Next Add Storage



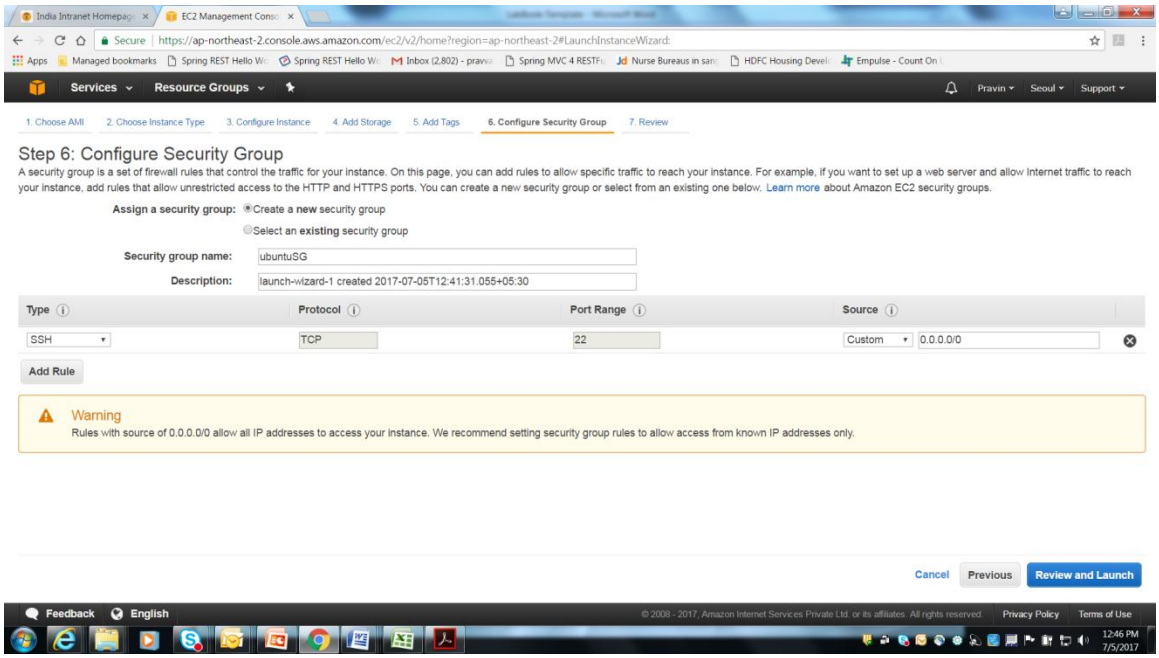
Step 4: click on Next button in the below screen



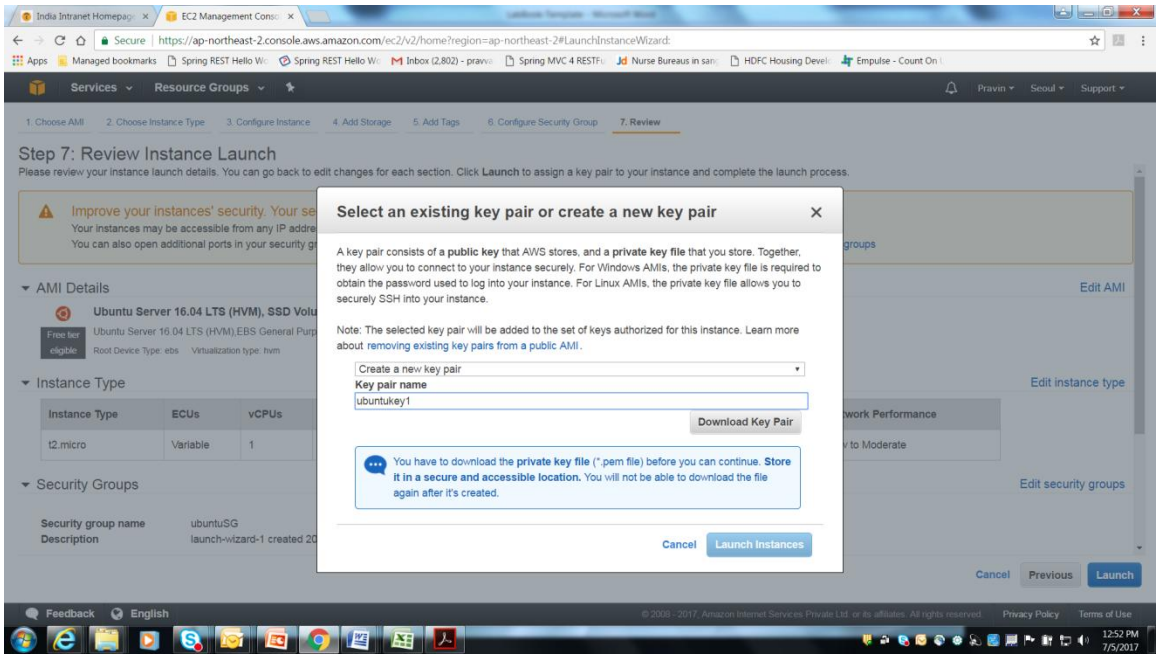
Step 5: click on Next Configure security group button in the below screen



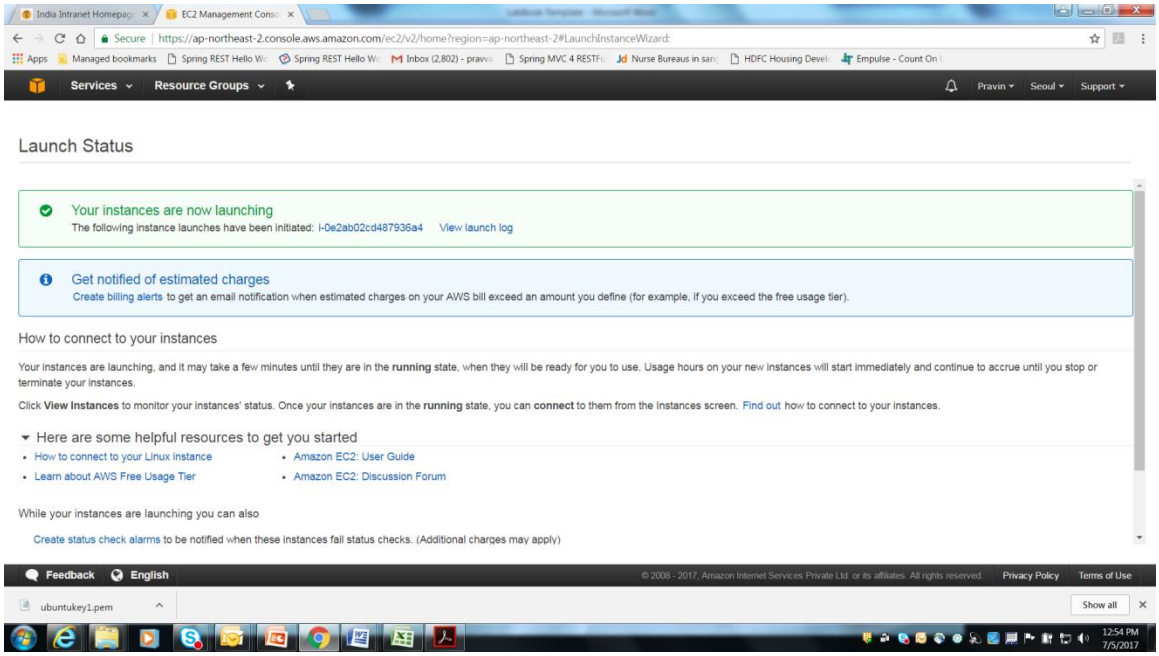
Step 6: In the below screen click on create a new security group option, type the name of security group as shown in the screen. Click on Review and Launch button



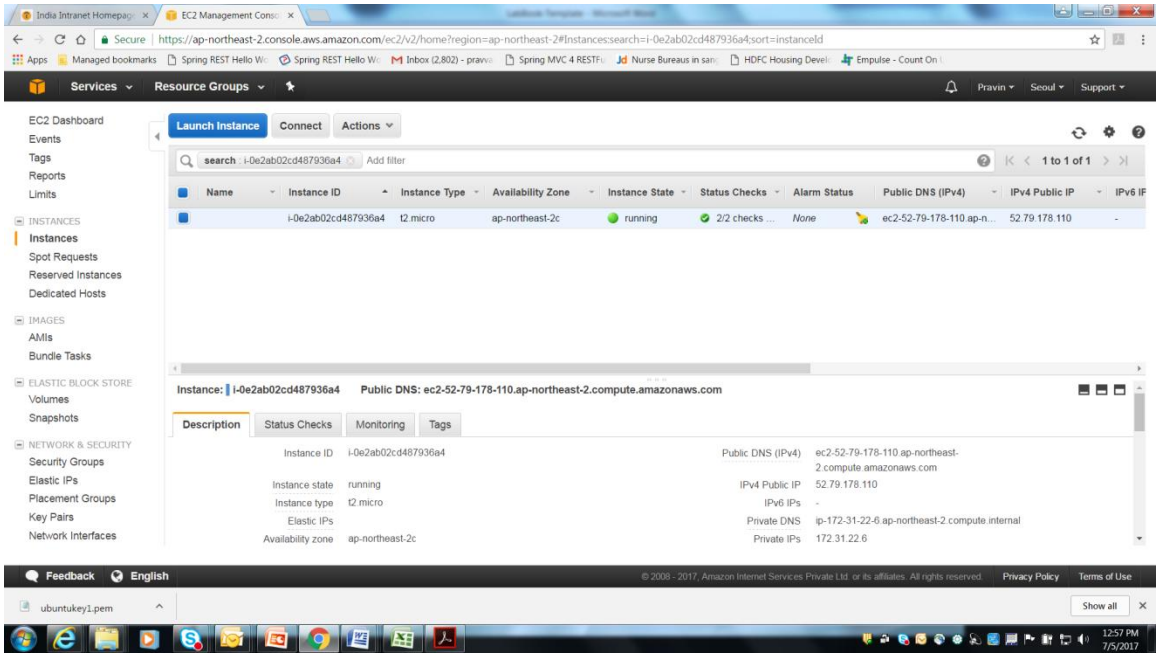
Step 7: Click on Review and Launch button and in the step select Launch button to see the below screen. Select the Create new key pair option. Type the keypair name and then click on the Download Key Pair button and then click on Launch Instance button



Step 8: The instance creation will be in processed as shown in the below screen. Click on the instance id to see the status check column will change from initializing to 2/2 in the next step



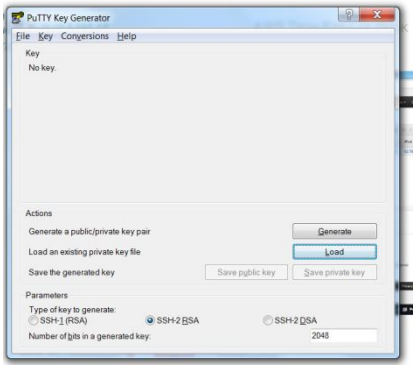
Step 9: The instance will be created once the status check is passed



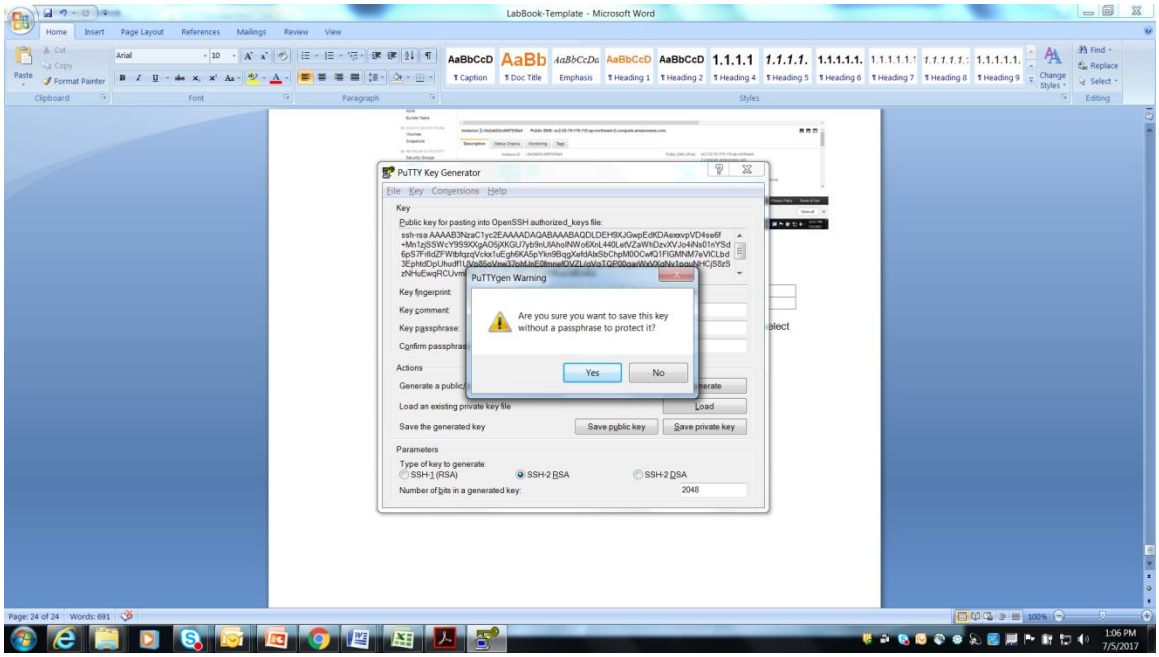
Lab 5. Connecting to Ubuntu Instance

Goals	Understand the steps to connect to Ubuntu Instance
Time	10 minutes

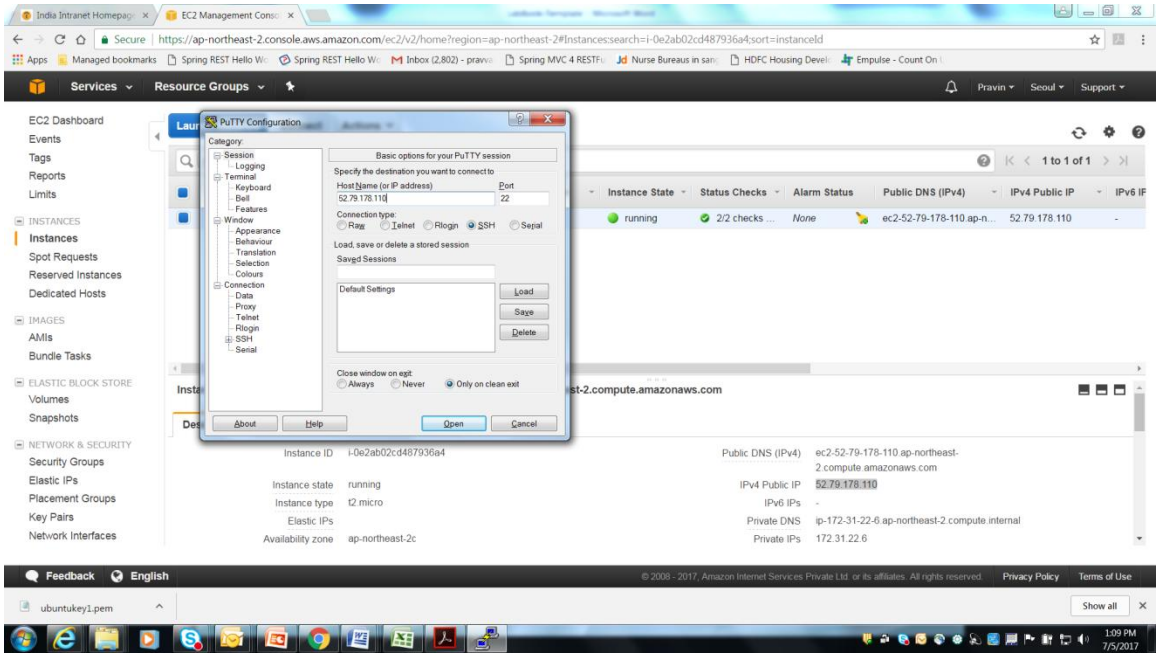
Step 1: Start puttygen software to see the below screen. Click on load button and select the downloaded pem file and ht the ok buton



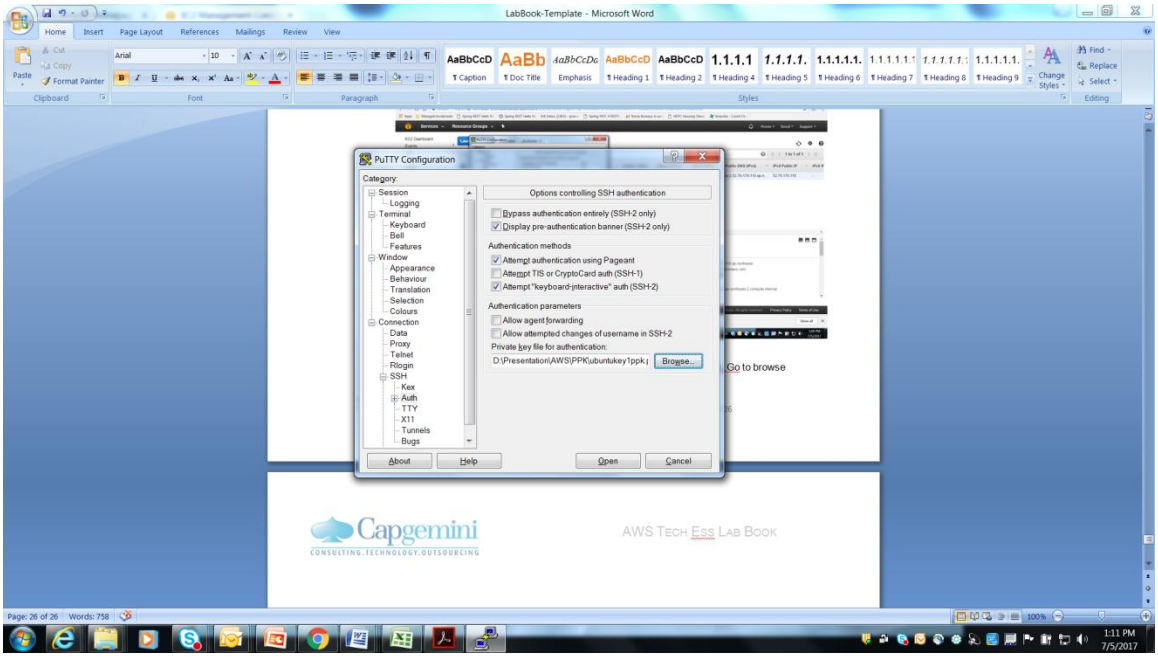
Step 2: Click on save private key button and click Yes to save the ppk file . Close this application



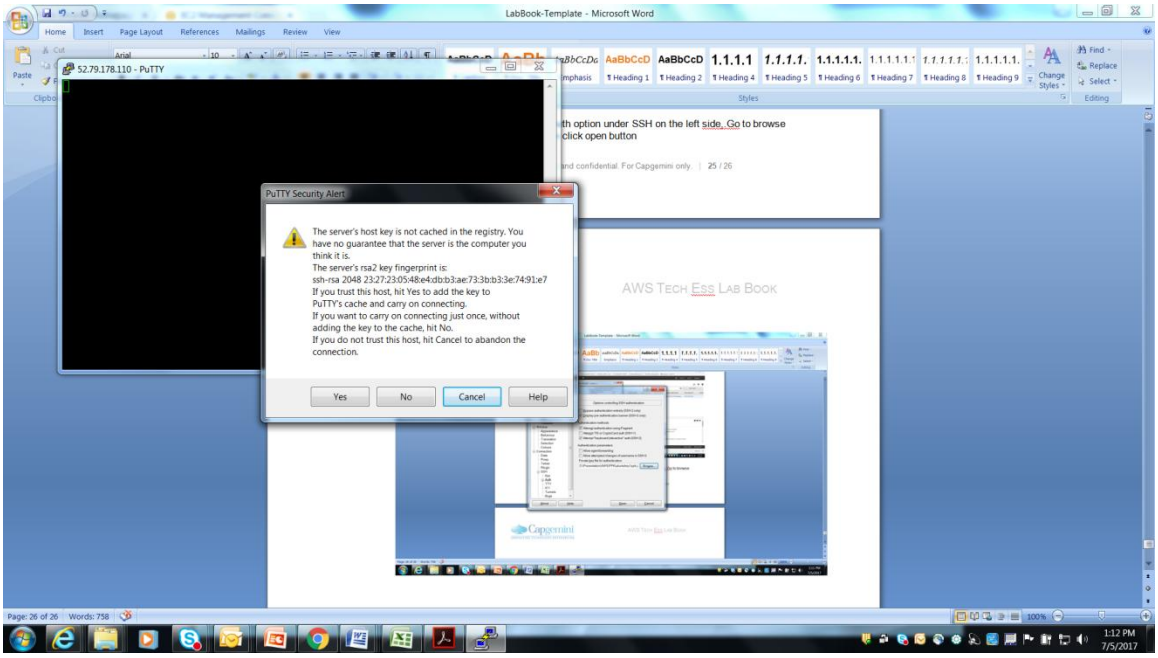
Step 3: Open the Putty application and in the host Name type the public IP of the instance



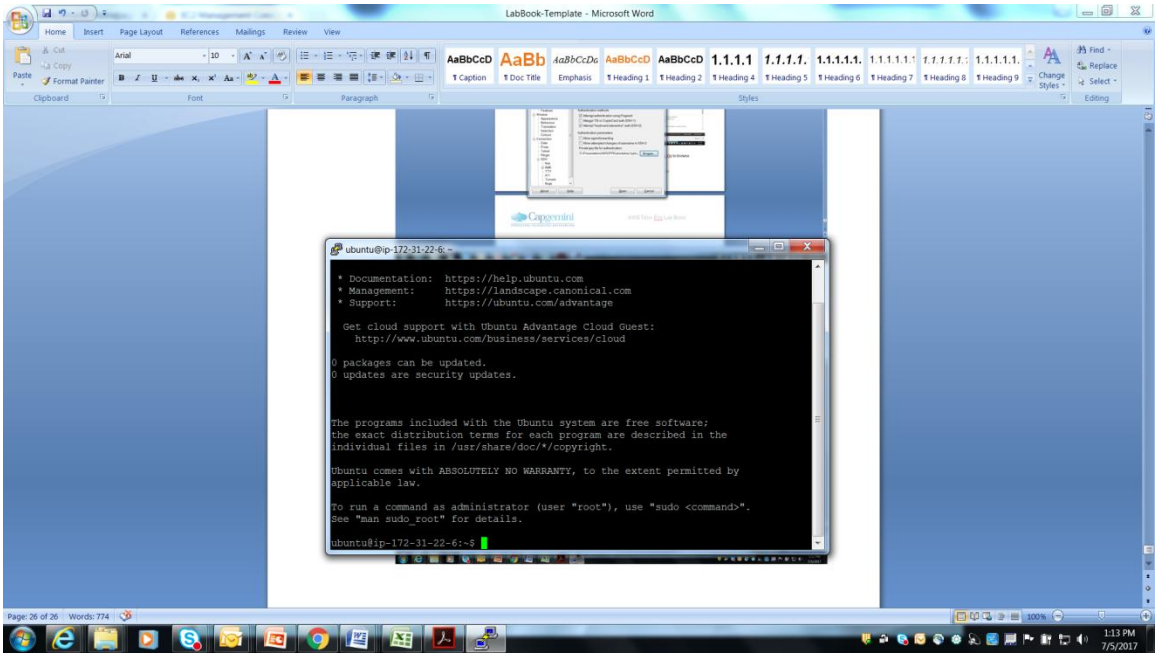
Step 4: In the Putty app, select the Auth option under SSH on the left side,.Go to browse and select the ppk file name and then click open button



Step 5: Select Yes option and type the user name as ubuntu and hit enter key



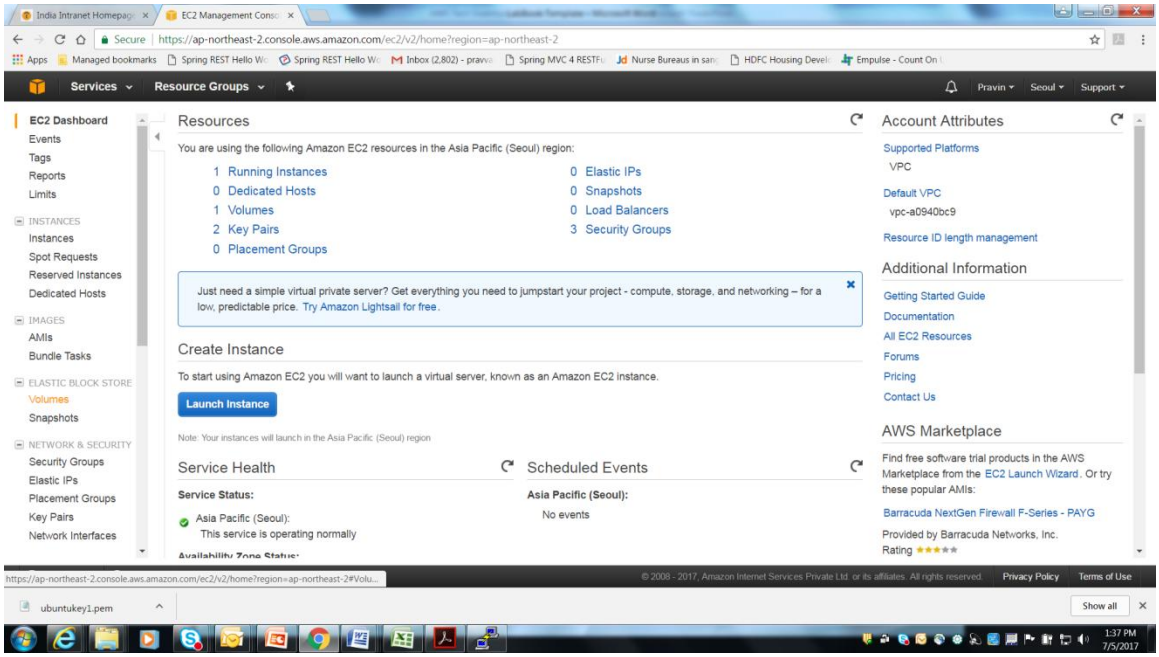
Step 5: Once you get the below screen you will be connected to the instance



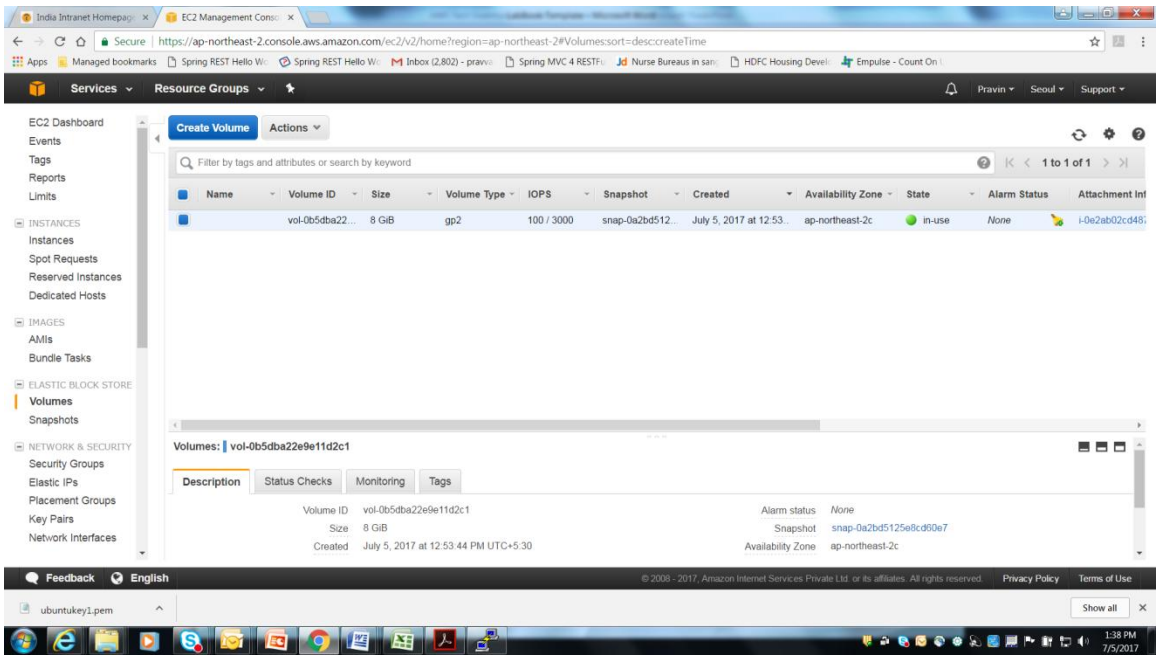
Lab 6. Creating and Attaching volume to Ubuntu Instance

Goals	Understand the steps to create and attach volume to Ubuntu Instance
Time	10 minutes

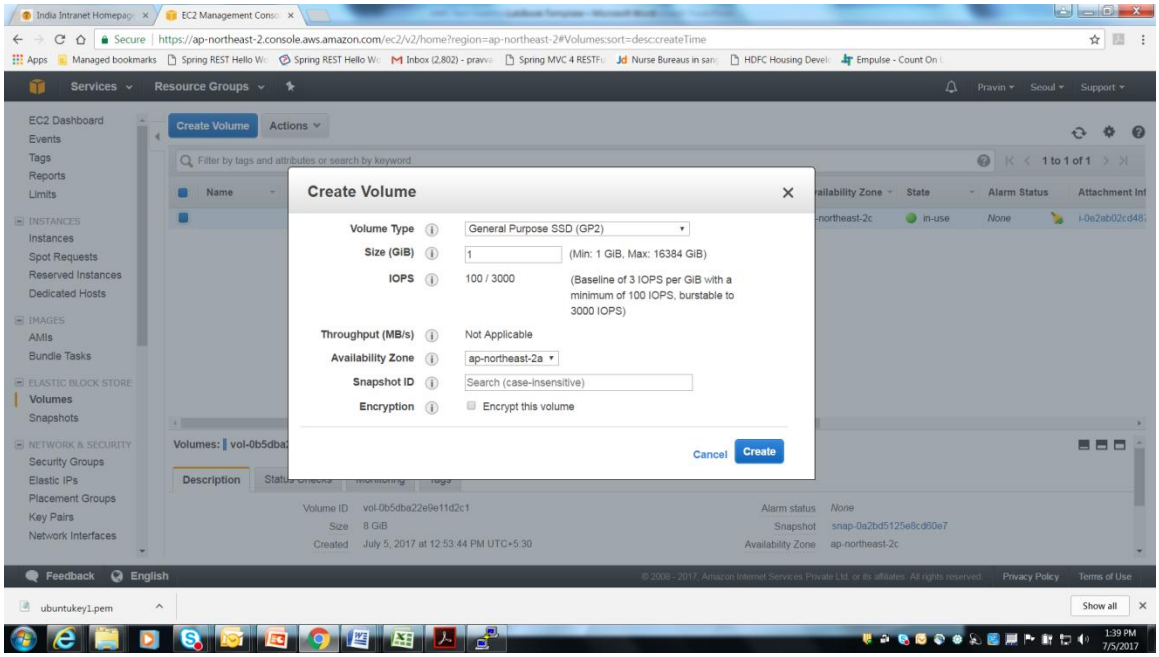
Step 1: On EC2 dashboard select Volumes under Elastic Block store option as shown in the below screen



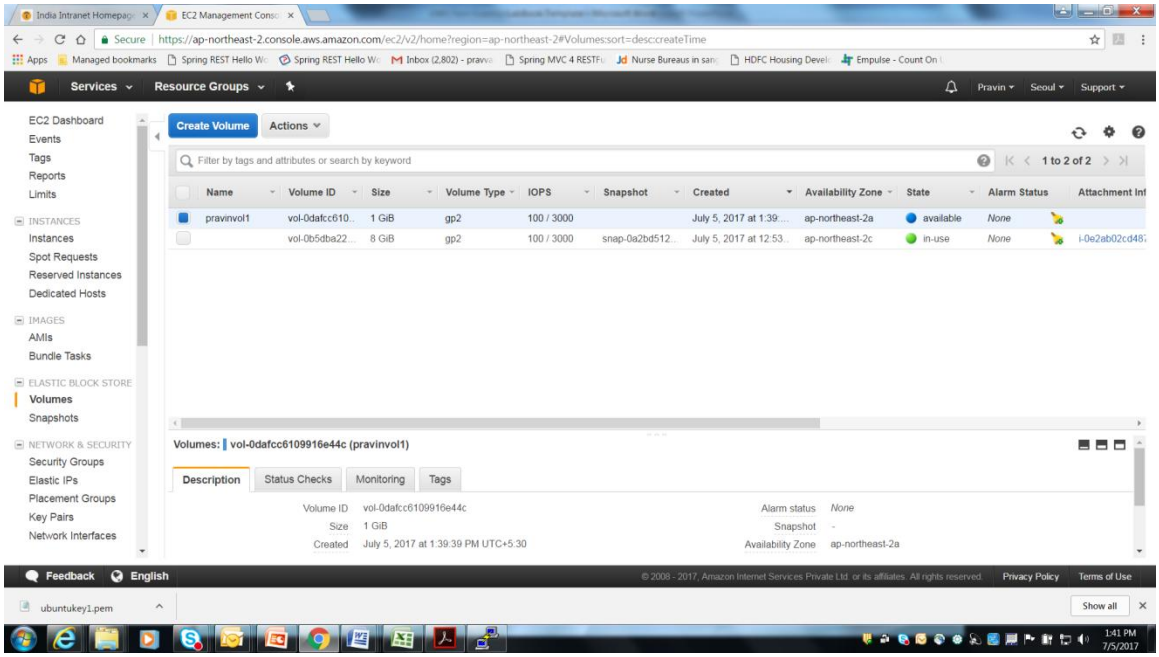
Step 2: Click on create volume button



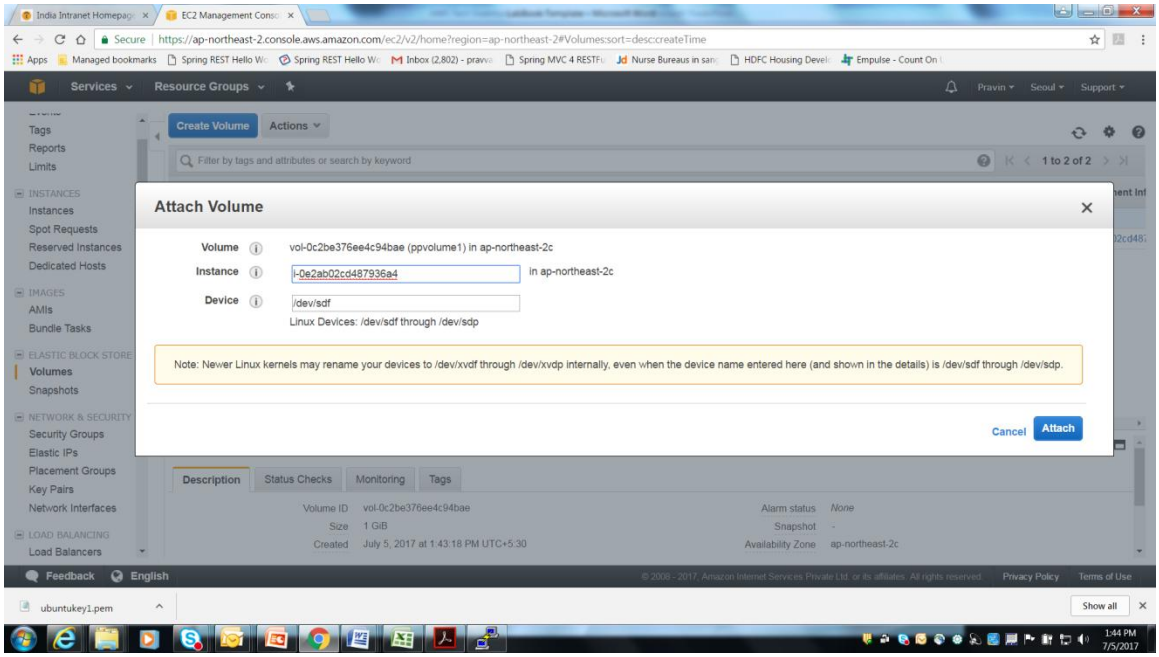
Step 3: Change the volume size from 100 to 1 and select the availability zone same as the instance availability zone and hit the create button



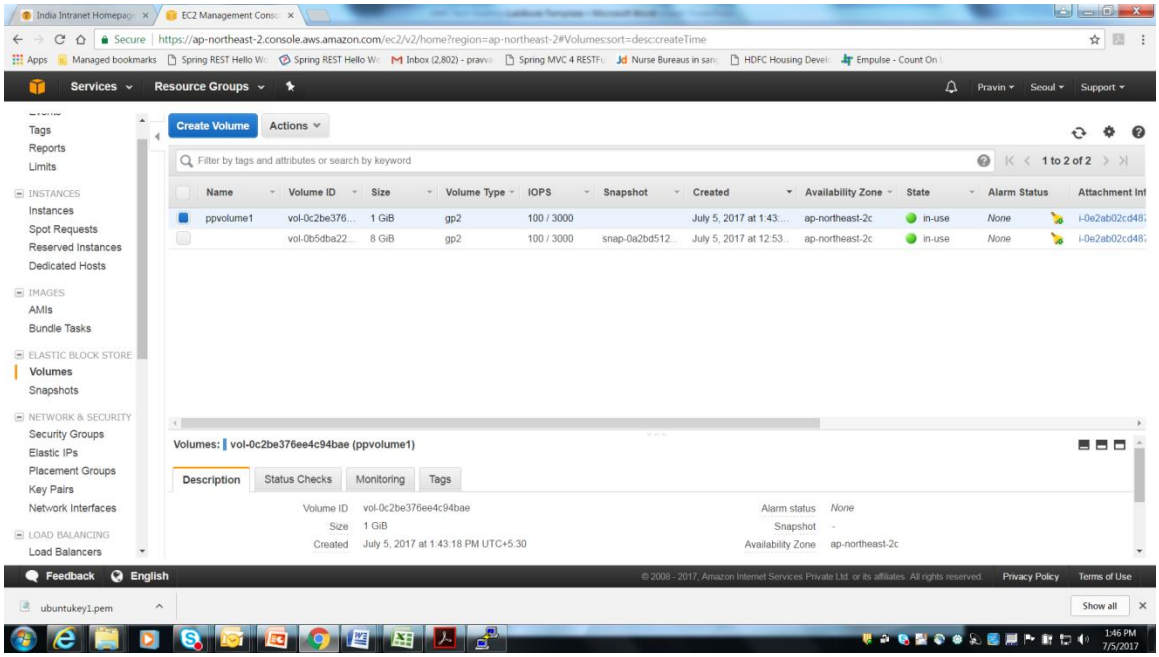
Step 4: Type the name of the volume , please ensure give the name to the volume where the state shown is available



Step 5: Click on Actions button and select attach volume, select the instance id to see the below screen. Click Attach button



Step 6: The volume will be attached and the State column will change from available to in-use



Step 6: Connect to the ubuntu instance and issue the below commands

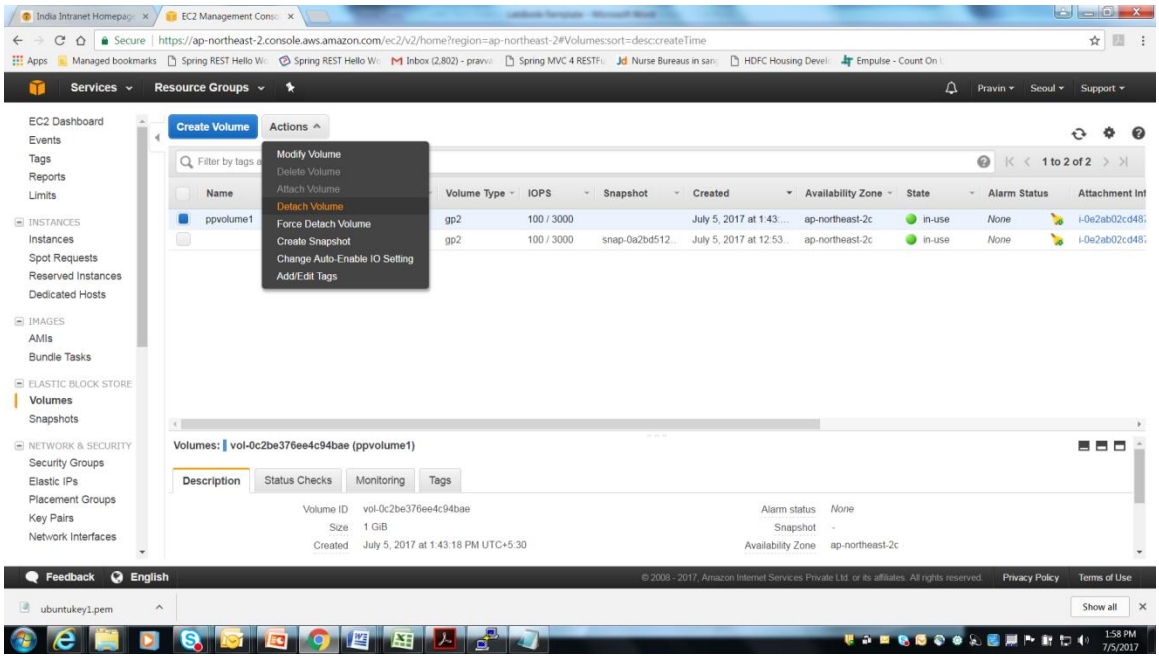
sudo su
apt-get update
fdisk /dev/xvdf

Type p and then enter 3 times
Type the command w . This will save the partition table

Issue the command fdisk –l . This will show you the partition name
Issue the command mkfs.ext3 /dev/xvdf1 -- to format
Create a folder by command mkdir pravin
Now mount the volume on the folder: mount /dev/xvdf1 pravin/
df -h : will show the new volume
cd pravin
Now you create files on the volume.

Unmount the volume by issuing the following command
cd..
umount /dev/xvdf1

Step 7: Select the volume created from the EC2 dashboard. Click on Actions-Detach volume- Yes Detach



Lab 7. Configuring Apache web server on ubuntu instance

Goals	Understand the steps to configure apache web server on ubuntu instance
Time	10 minutes

Step 1: SSH to ubuntu instance
Issue the following commands
sudo su
apt-get update

apt-get install apache2 –y

Step 2: Modify ubuntu instance security group by add the HTTP rule

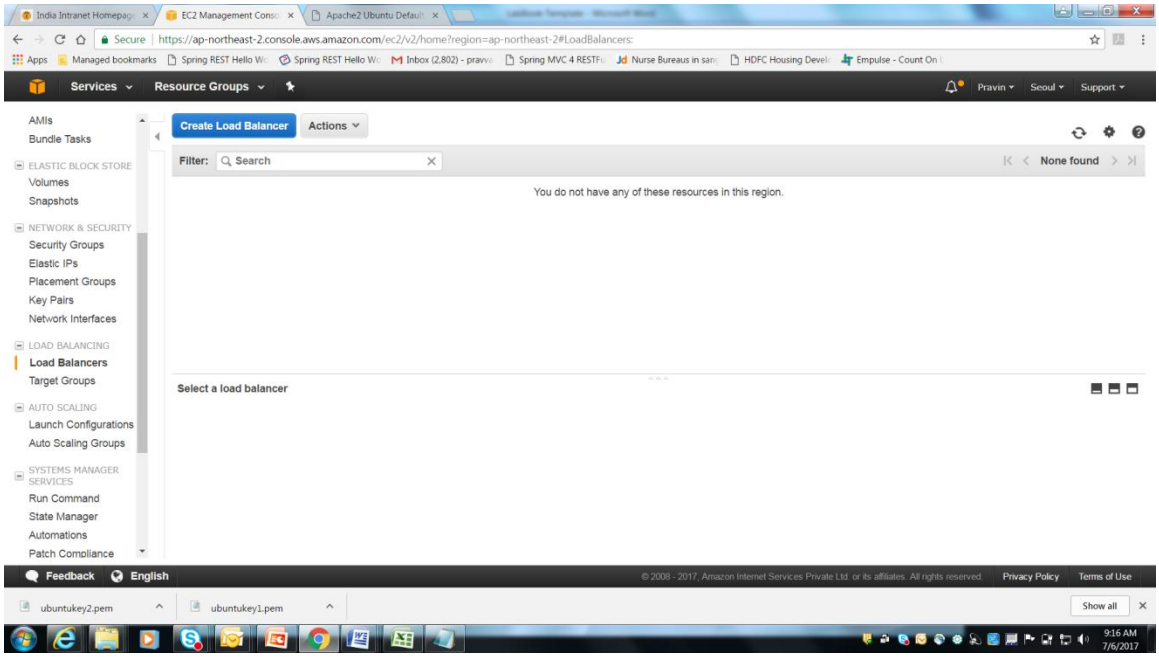
Step 3: Go to the browser and type the public ip address to see the following screen

Lab 8. ELB

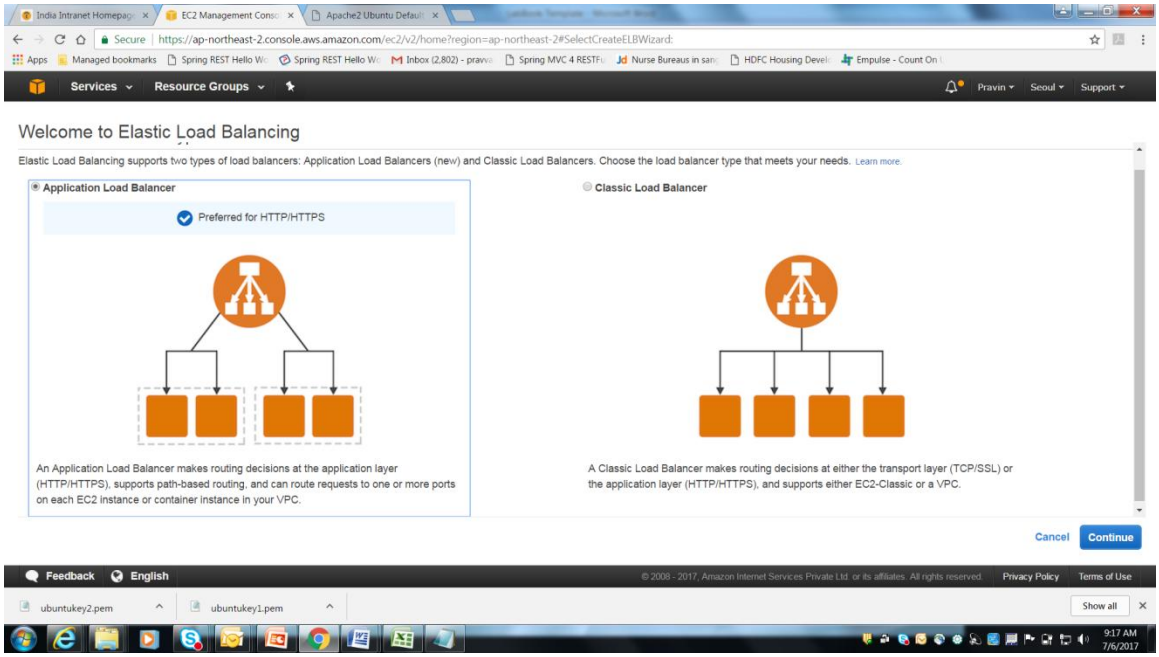
Goals	Understand the steps to configure ELB
Time	10 minutes

Step 1: Create two ubuntu instances and install apache server on both the instances. Modify index page for one of the instance by changing some content of index.html file. The index.html file is available in /var/www/html folder. May be change the heading of the page, This will help understand that when we configure ELB then we can differentiate to which instance ELB sends the request.

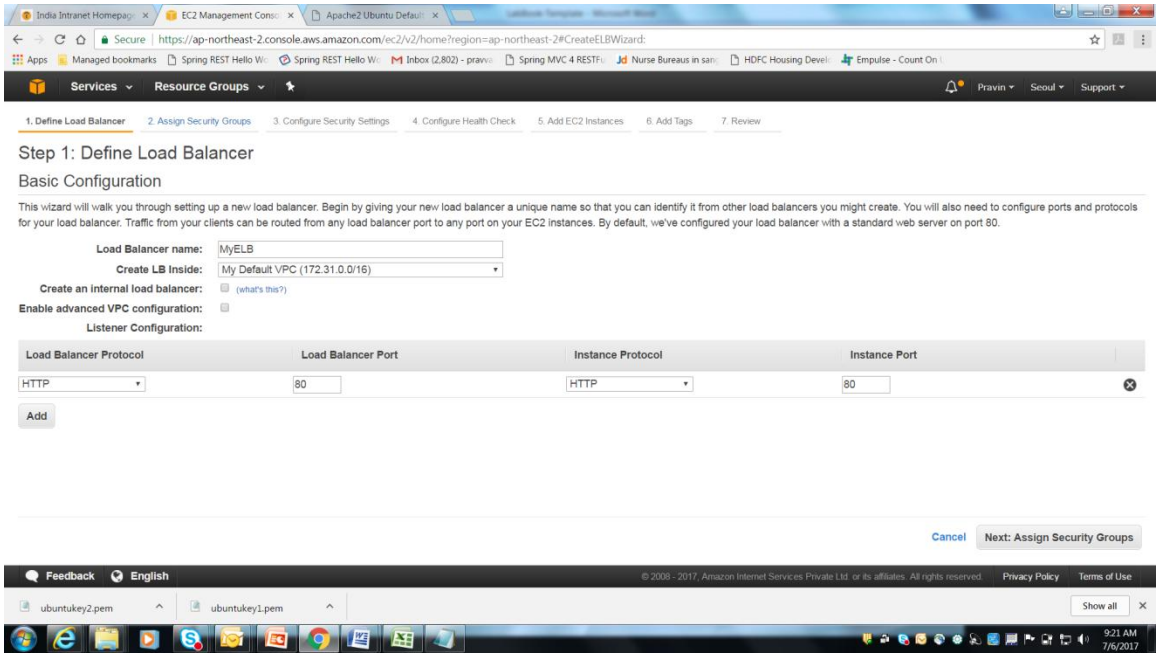
Step 2: Go to EC2 Dashboard, on the left click on the menu option Load Balancers under Load Balancing header to see the below screen



Step 2: Click on Create Load Balancer button. You will see the below screen



Step 3: Select Classic Load Balancer and click continue button to see the below screen. Type the name of the ELB in Load Balancer Name text box and click next button



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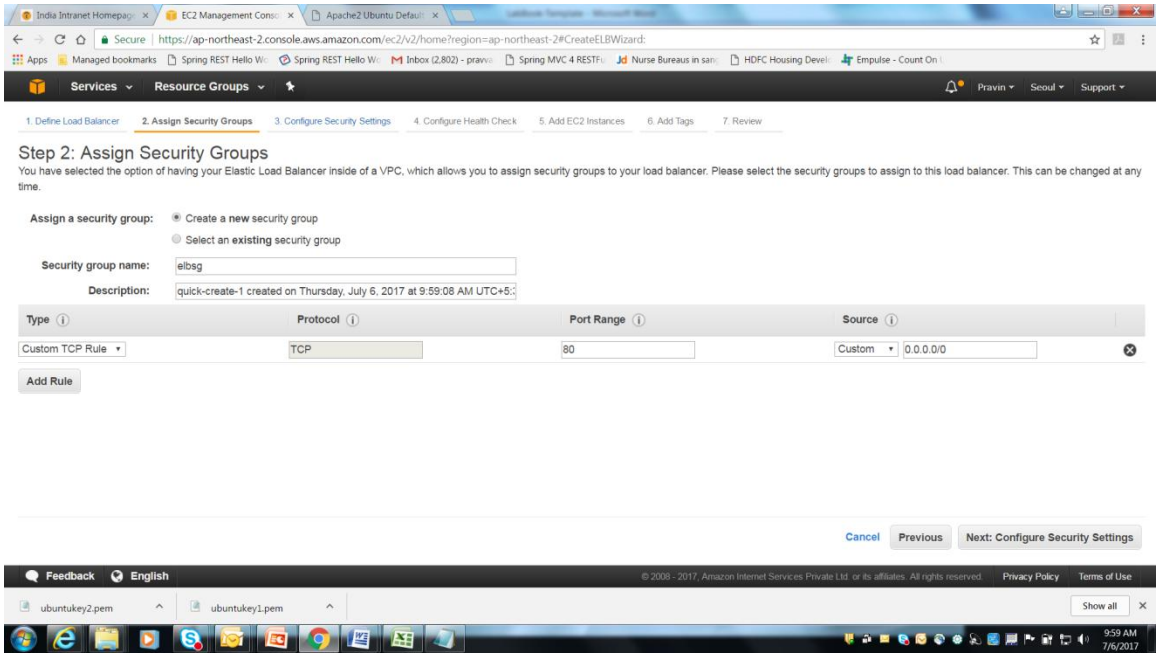
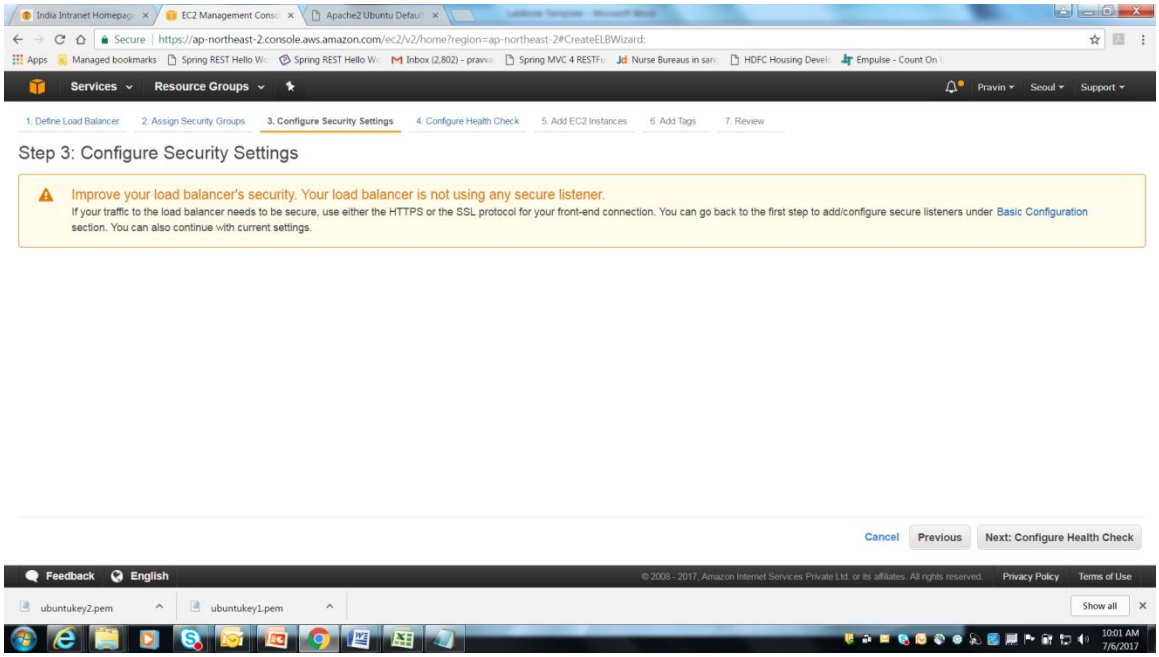
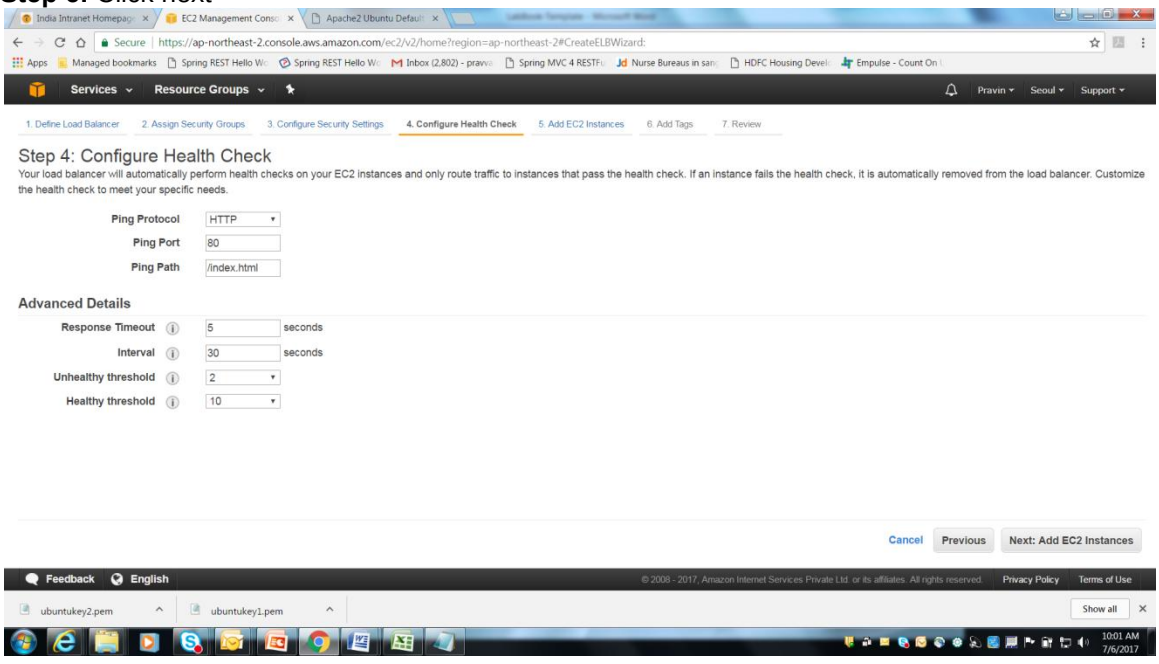
Step 4: create new security group, give the group name. Click next



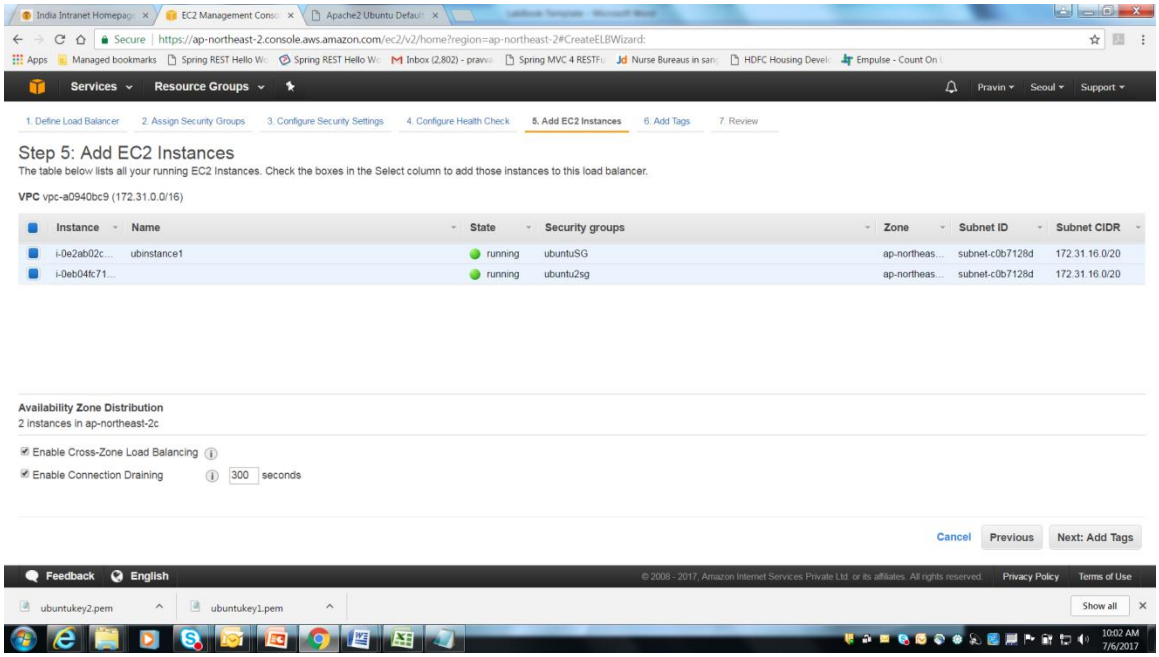
Step 5: Click next



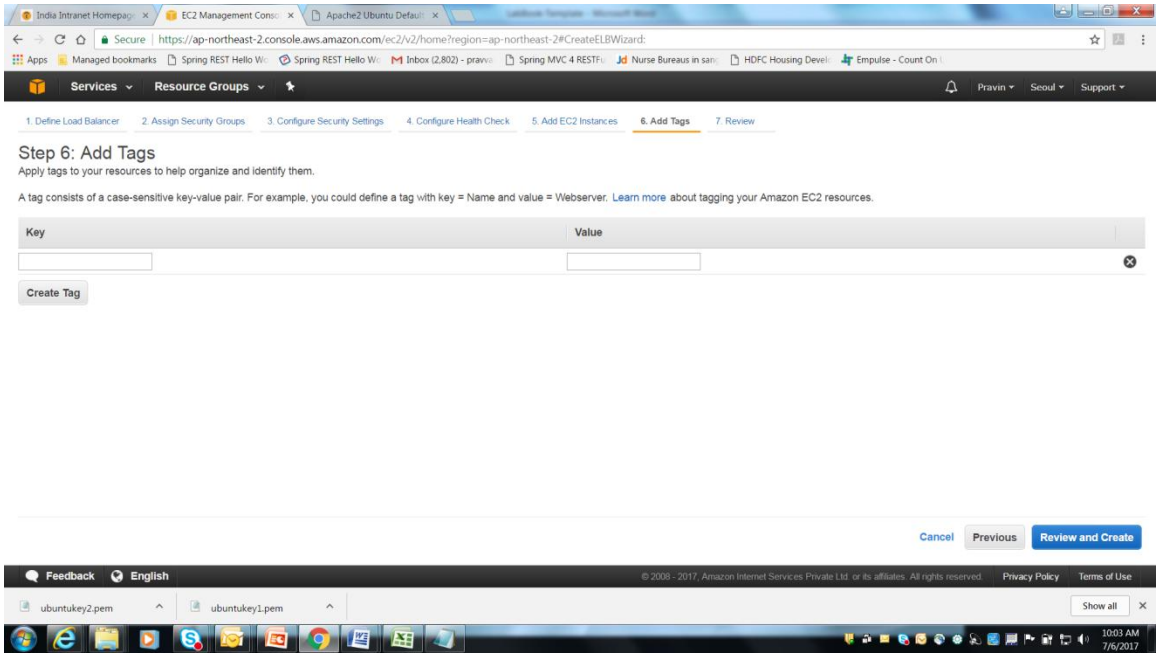
Step 6: Click next



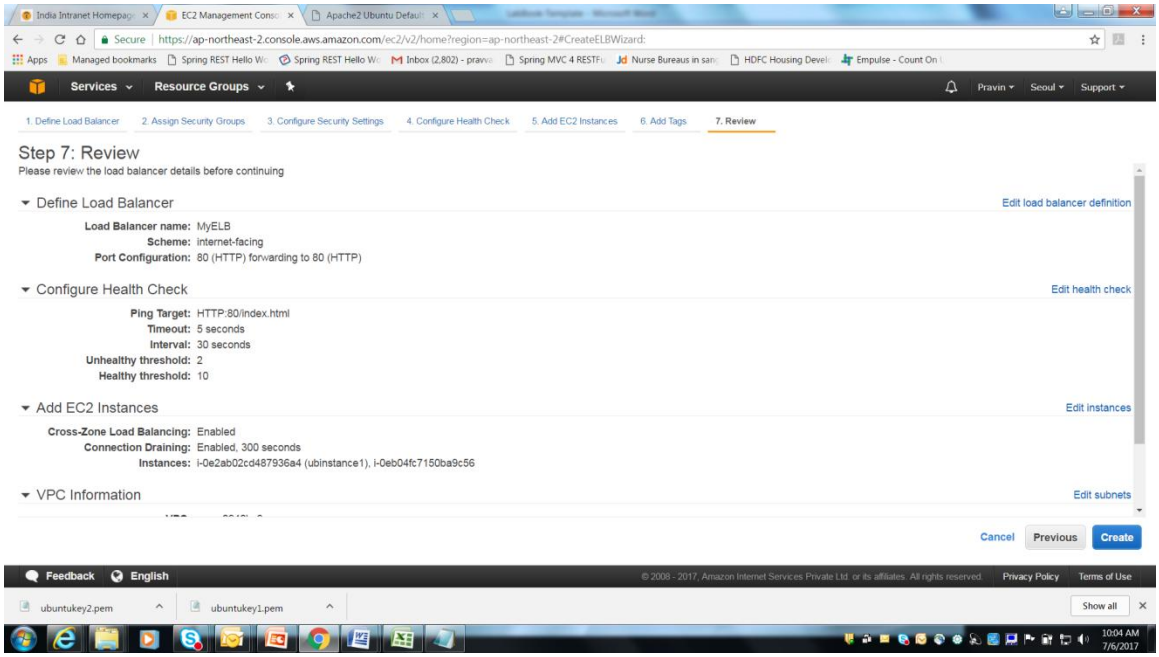
Step 7: Select the checkbox next to both the instances and click next



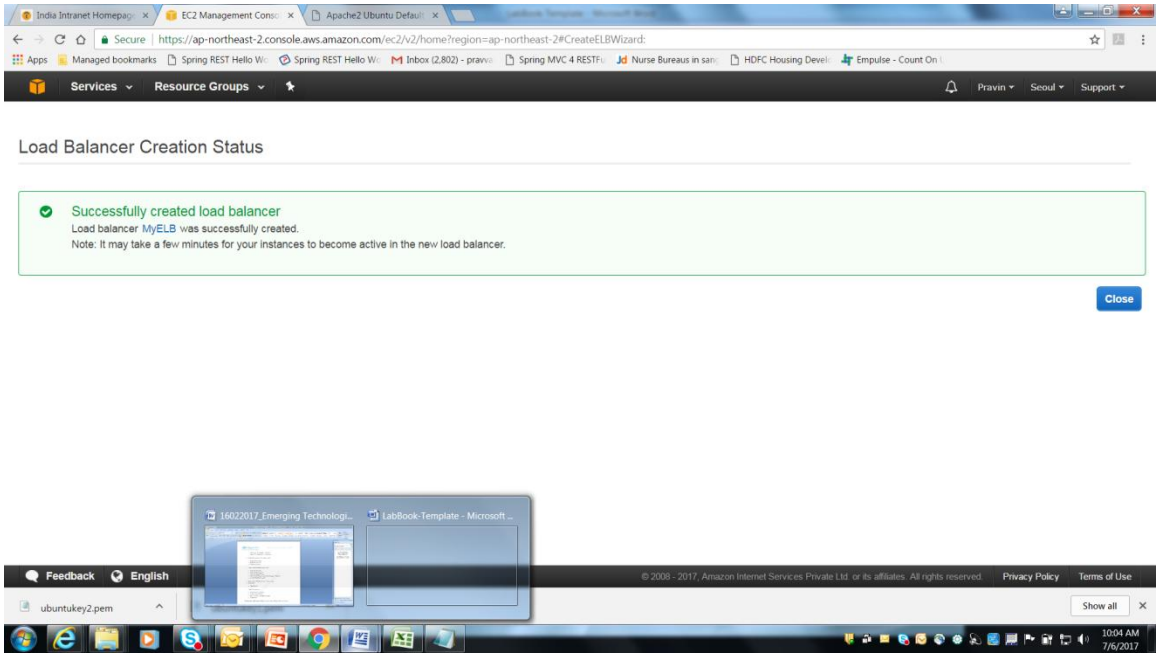
Step 8: Click Review and Create button



Step 9: Click Create

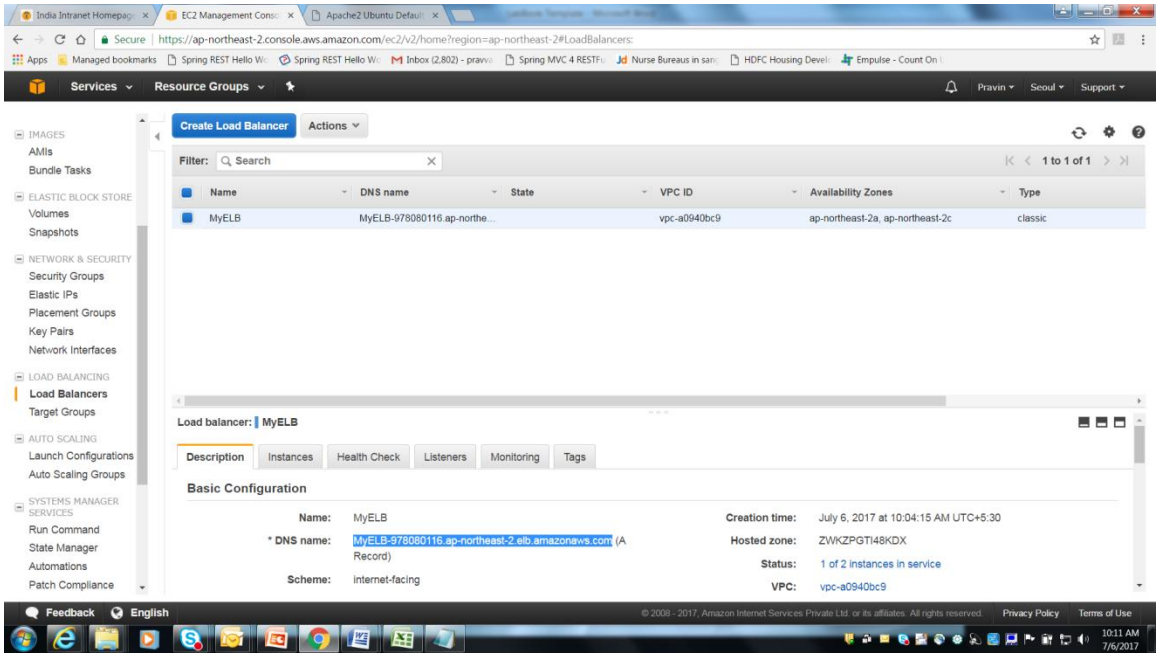


Step 10: The load balancer will be created. Click on Close buton. Please note this will take some minutes before it becomes active



Step 11: SSH to the instance and install apache service on the new instance created.

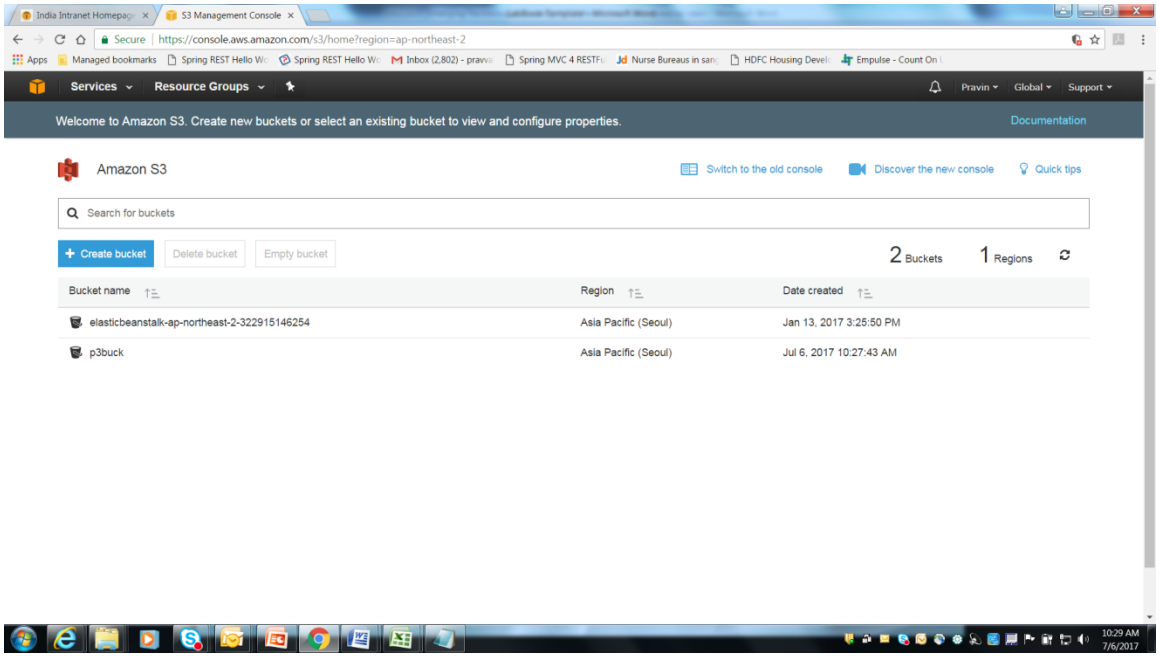
Step 12: Go to the Load Balancer created and hit the DNS Name to check if the request goes to any one instance. Try making multiple request to check for the working of Load balancer.



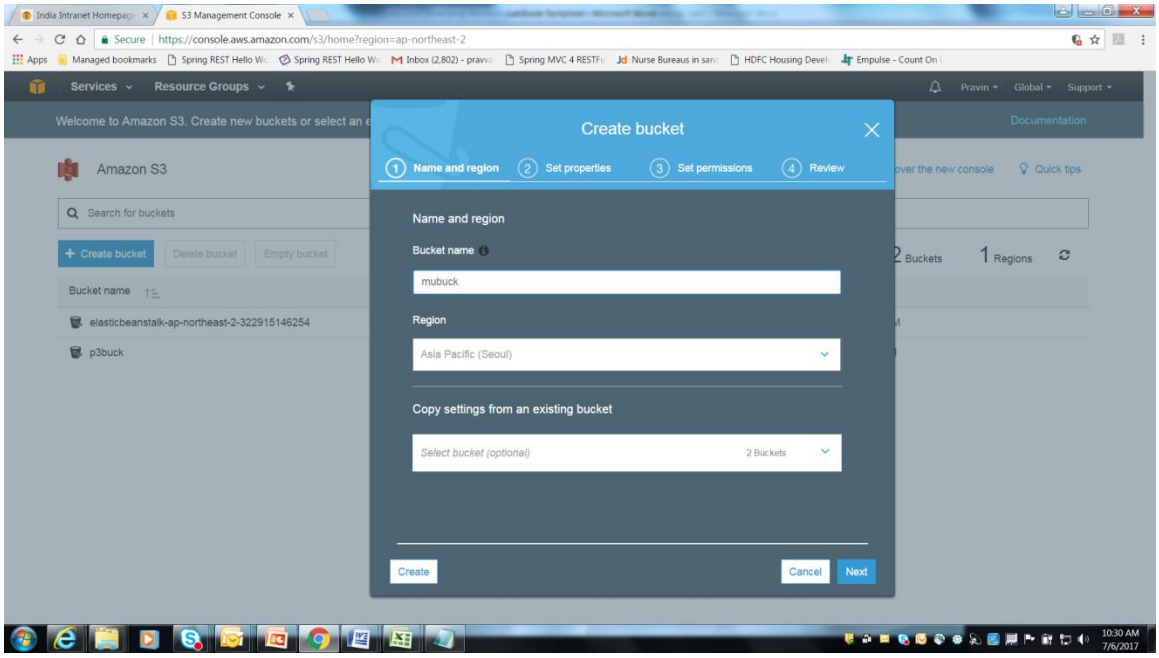
Lab 9. S3

Goals	Understand the steps to use S3 service
Time	10 minutes

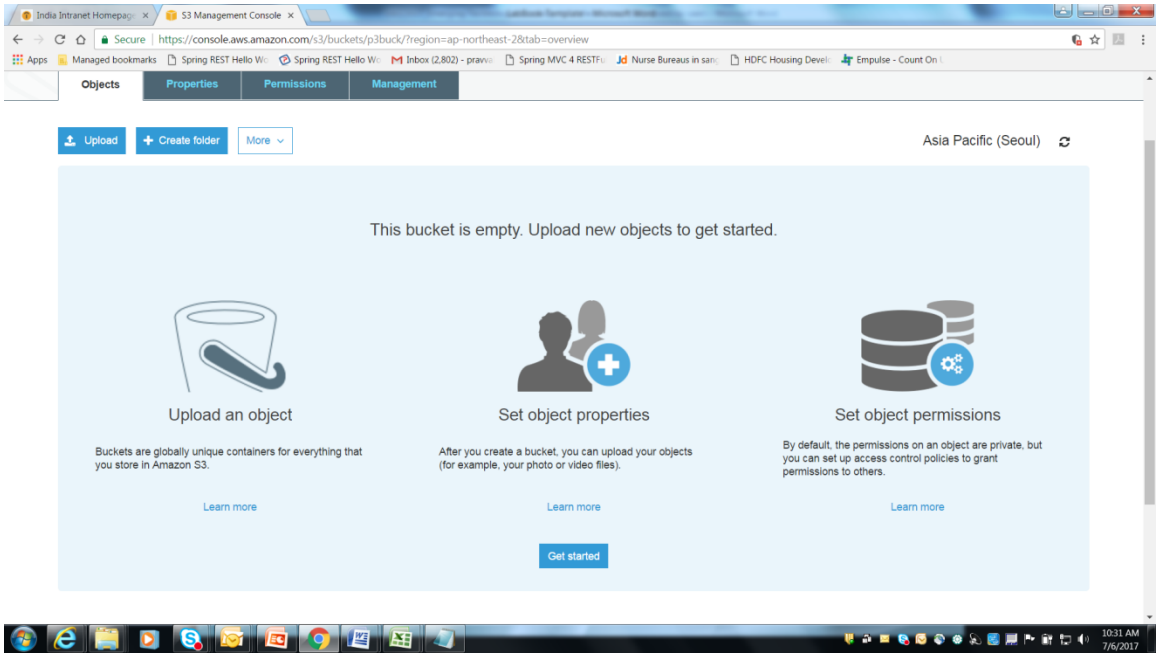
Step 1: Create bucket in s3 by going to home page of aws. Select s3 from storage section. You will see the below screen



Step 2: Click on Create bucket, give the name and hit the create button



Step 3: The bucket will be created. Select your bucket and you can upload the files inside the bucket. Click the Get Started button



Step 4: Click on Add files to add the object inside the bucket. Hit the add files, select your file and then click Upload button