

AWS Technical Essentials Lab Book

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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.

AWS services

Find a service by name or feature (for example, EC2, S3 or VM, storage).

Recently visited services

- EC2
- IAM
- RDS
- Elastic Beanstalk
- CloudFormation

All services

- Compute
 - EC2
 - EC2 Container Service
 - Lightsail
 - Elastic Beanstalk
 - Lambda
 - Batch
- Developer Tools
 - CodeStar
 - CodeCommit
 - CodeBuild
 - CodeDeploy
 - CodePipeline
 - X-Ray
- Internet of Things
 - AWS IoT
 - AWS Greengrass
- Contact Center
 - Amazon Connect
- Storage
 - S3
 - EFS
 - Glacier
 - Storage Gateway
- Management Tools
 - CloudWatch
 - CloudFormation
 - CloudTrail
 - Config
 - OpsWorks
 - Service Catalog
- Game Development
 - Amazon GameLift
- Mobile Services
 - Mobile Hub
 - Cognito
 - Device Farm
 - Mobile Analytics
 - Pinpoint
- Database
 - RDS
 - DynamoDB
- Trusted Advisor
- Managed Services

Helpful tips

Manage your costs

Get real-time billing alerts based on your cost and usage budgets. [Start now](#)

Create an organization

Use AWS Organizations for policy-based management of multiple AWS accounts. [Start now](#)

Explore AWS

New Product Announcements

View the latest announcements from the AWS Summit - San Francisco. [Learn more](#)

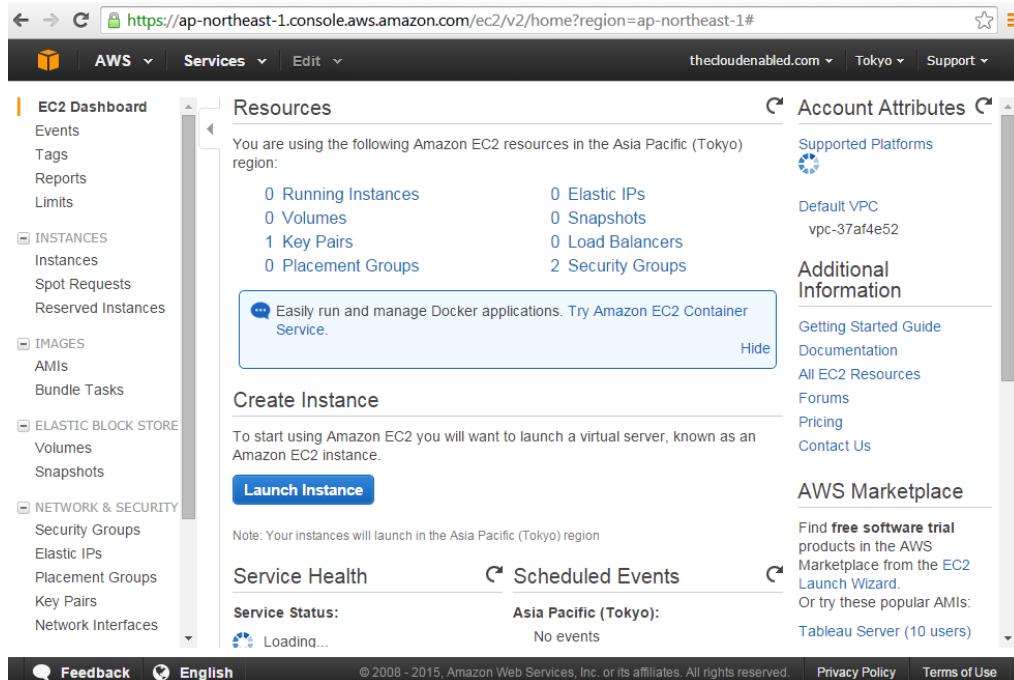
Migrate from Oracle to Amazon Aurora

Learn how to migrate from Oracle to Amazon Aurora with minimal downtime. [View project](#)

Introducing Amazon Kinesis Analytics

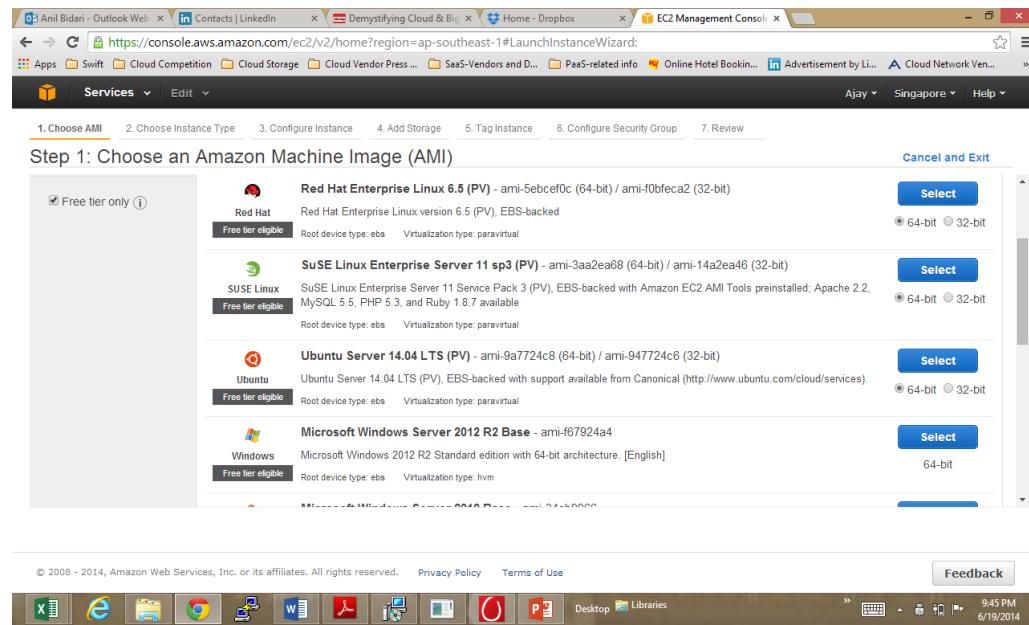
Easily process real-time, streaming data with Amazon Kinesis Analytics. [Learn more](#)

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



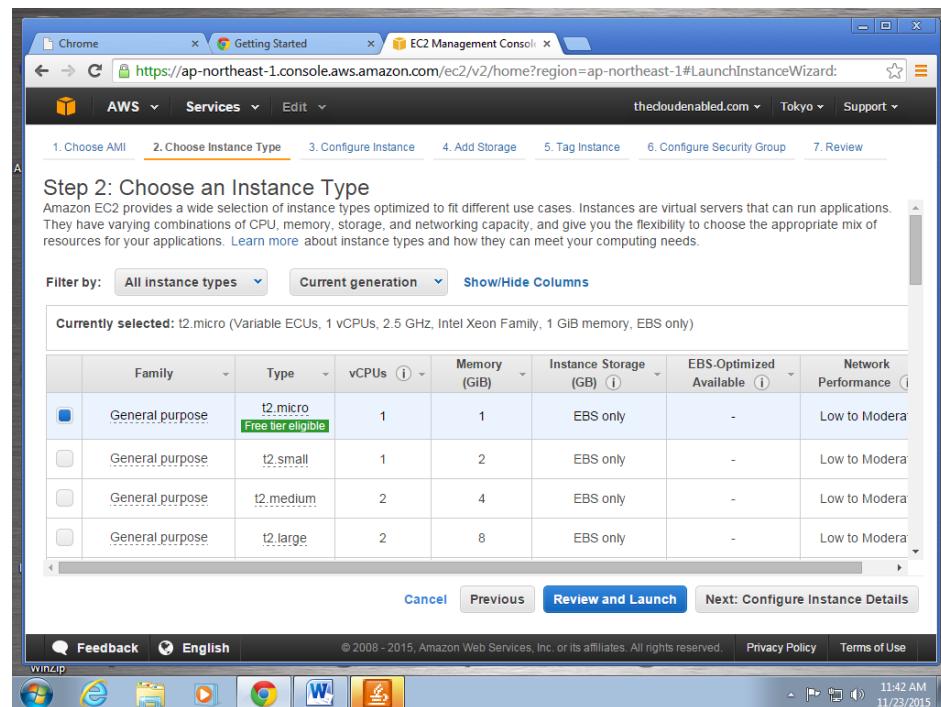
The screenshot shows the AWS EC2 Dashboard. On the left, there's a sidebar with links like EC2 Dashboard, Instances, AMIs, and Network & Security. The main area has a heading 'Resources' with a message about using Amazon EC2 resources in the Asia Pacific (Tokyo) region. It shows 0 Running Instances, 0 Volumes, 1 Key Pairs, 0 Placement Groups, 0 Elastic IPs, 0 Snapshots, 0 Load Balancers, and 2 Security Groups. Below this is a callout box with the text: 'Easily run and manage Docker applications. Try Amazon EC2 Container Service.' A 'Launch Instance' button is visible. To the right, there's an 'Account Attributes' section with information about supported platforms, a default VPC, and additional links for getting started, documentation, forums, pricing, and contact us. There's also a 'AWS Marketplace' section with a note about finding software trials.

Step 3: Select Microsoft Windows Server.



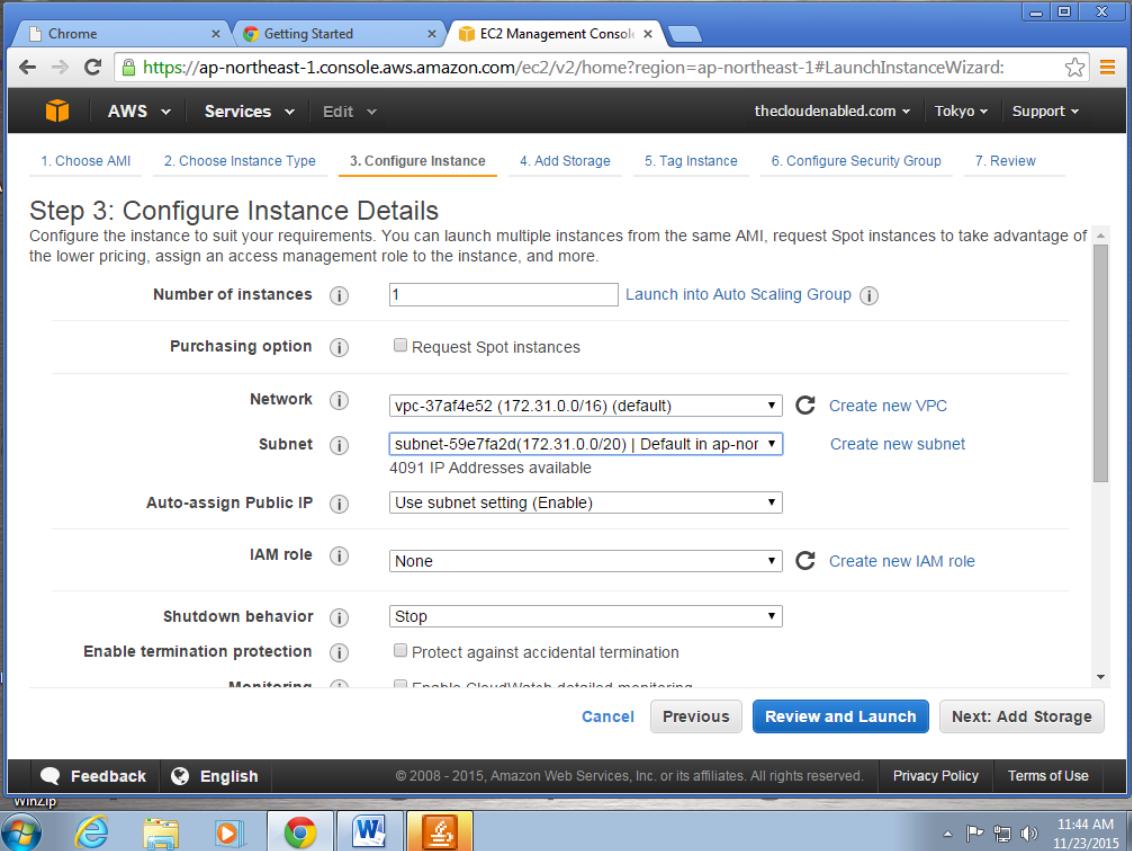
The screenshot shows the AWS EC2 Management Console interface. The user is on Step 1: Choose an Amazon Machine Image (AMI). A list of AMIs is displayed, with the Microsoft Windows Server 2012 R2 Base AMI selected. The AMI details show it's a 64-bit instance with a root device type of ebs and virtualization type of paravirtual. The status is "Free tier eligible". Other options listed include Red Hat Enterprise Linux 6.5 (PV), SuSE Linux Enterprise Server 11 sp3 (PV), Ubuntu Server 14.04 LTS (PV), and Microsoft Windows Server 2012 R2 Base. The interface includes a toolbar at the top and a taskbar at the bottom.

Step 4: Select t2 micro free tier



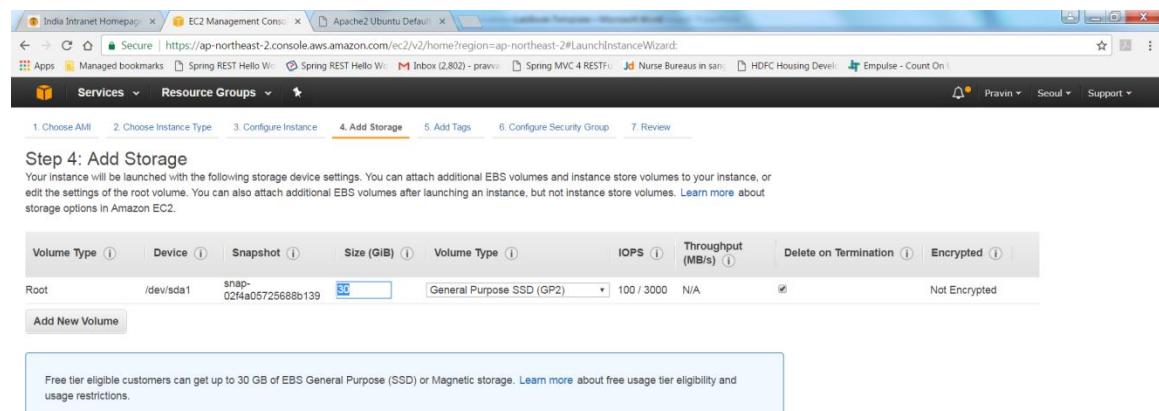
The screenshot shows the AWS EC2 Management Console interface. The user is on Step 2: Choose an Instance Type. A table lists various instance types under the "General purpose" family. The t2.micro instance type is selected and highlighted in green. The table columns include Family, Type, vCPUs, Memory (GiB), Instance Storage (GiB), EBS-Optimized Available, and Network Performance. Other rows shown are t2.small, t2.medium, and t2.large. The interface includes a toolbar at the top and a taskbar at the bottom.

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



The screenshot shows the AWS EC2 Management Console interface. The URL in the address bar is <https://ap-northeast-1.console.aws.amazon.com/ec2/v2/home?region=ap-northeast-1#LaunchInstanceWizard:3>. The page title is "EC2 Management Console". The top navigation bar includes "AWS", "Services", "Edit", and links for "thedoudenabled.com", "Tokyo", and "Support". Below the navigation is a step-by-step wizard: "1. Choose AMI", "2. Choose Instance Type", "3. Configure Instance" (which is highlighted in orange), "4. Add Storage", "5. Tag Instance", "6. Configure Security Group", and "7. Review". The main content area is titled "Step 3: Configure Instance Details" with the sub-instruction "Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot instances to take advantage of the lower pricing, assign an access management role to the instance, and more.". The configuration form includes fields for "Number of instances" (set to 1), "Purchasing option" (checkbox for "Request Spot instances" is unchecked), "Network" (dropdown set to "vpc-37af4e52 (172.31.0.0/16) (default)"), "Subnet" (dropdown set to "subnet-59e7fa2d(172.31.0.0/20) | Default in ap-nor"), "Auto-assign Public IP" (dropdown set to "Use subnet setting (Enable)"), "IAM role" (dropdown set to "None"), "Shutdown behavior" (dropdown set to "Stop"), and "Enable termination protection" (checkbox for "Protect against accidental termination" is unchecked). At the bottom are buttons for "Cancel", "Previous", "Review and Launch" (which is highlighted in blue), and "Next: Add Storage". The footer contains links for "Feedback", "English", "Privacy Policy", and "Terms of Use". The status bar at the bottom right shows "11:44 AM" and "11/23/2015".

Step 6: Click next here



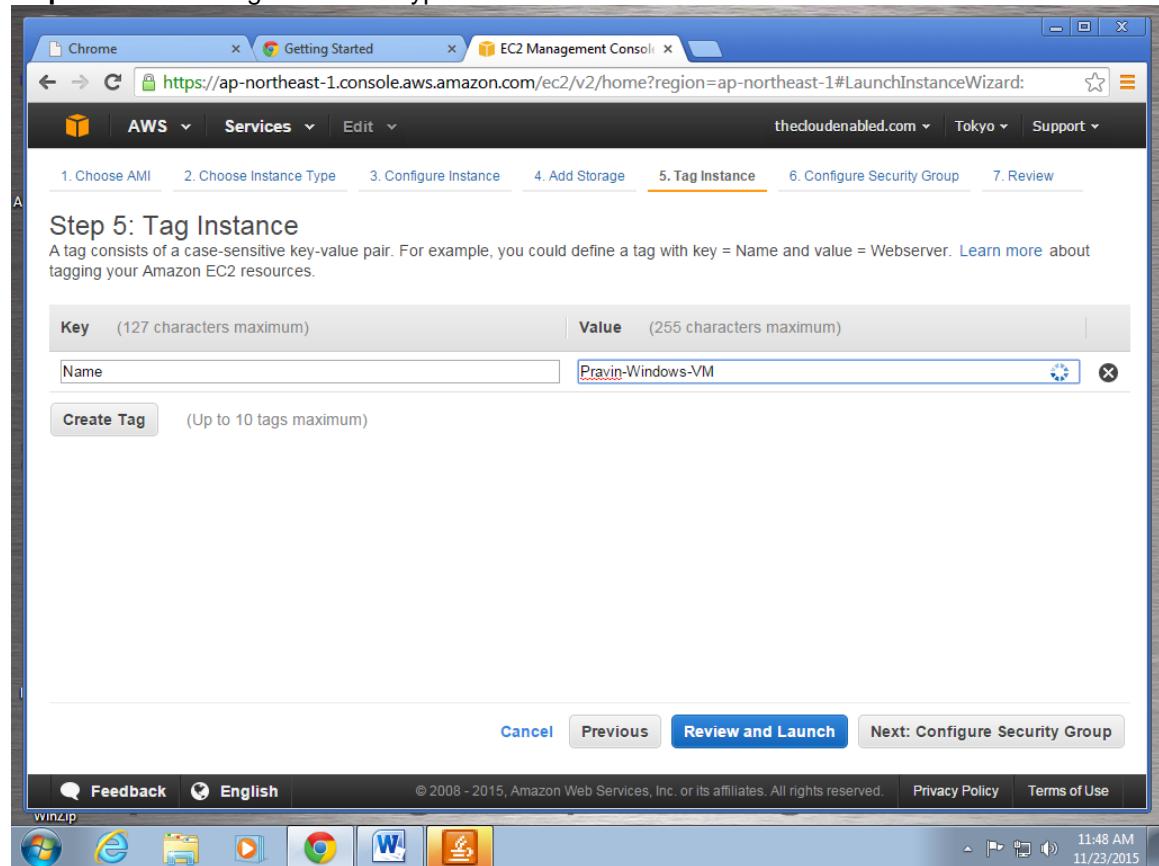
Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encrypted
Root	/dev/sda1	snap-02f4a05725688b139	80	General Purpose SSD (GP2)	N/A	100 / 3000		Not Encrypted

Add New Volume

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. Learn more about free usage tier eligibility and usage restrictions.

Cancel Previous Review and Launch Next: Add Tags

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



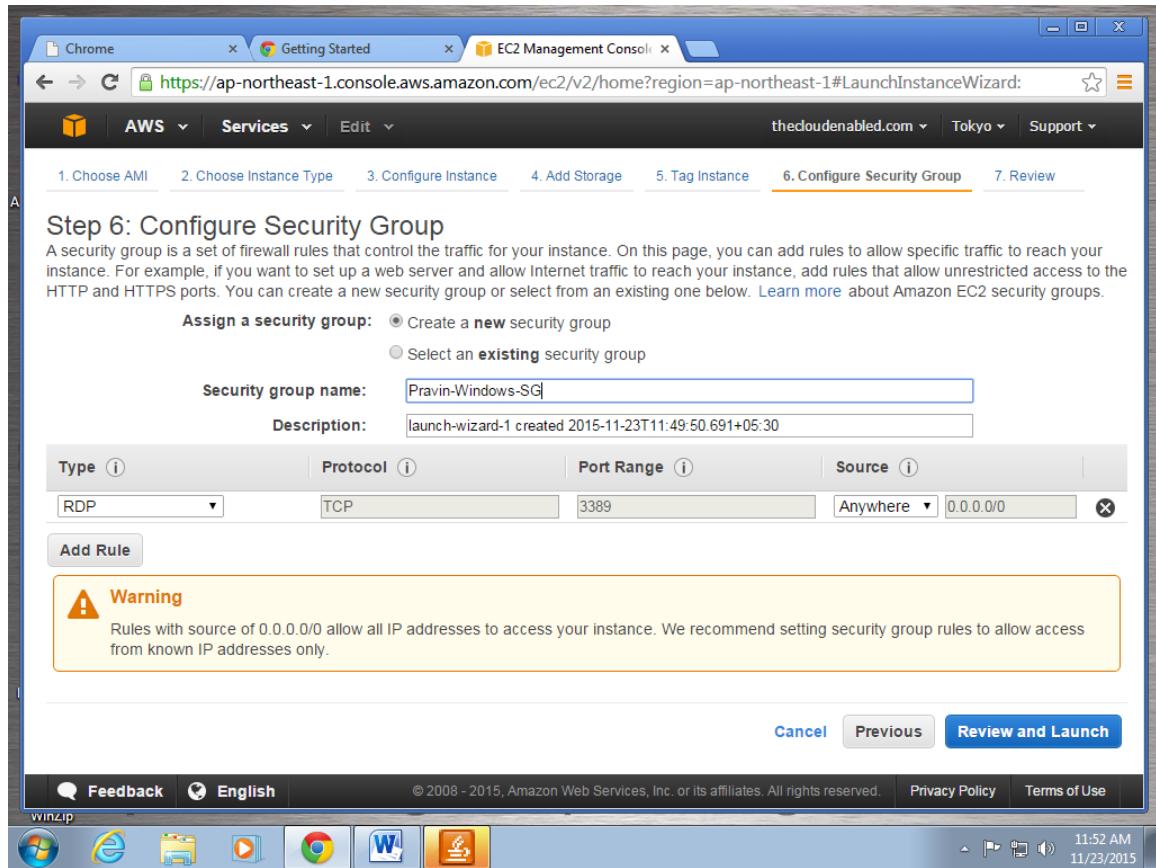
Key (127 characters maximum) | Value (255 characters maximum)

Name | Pravin-Windows-VM

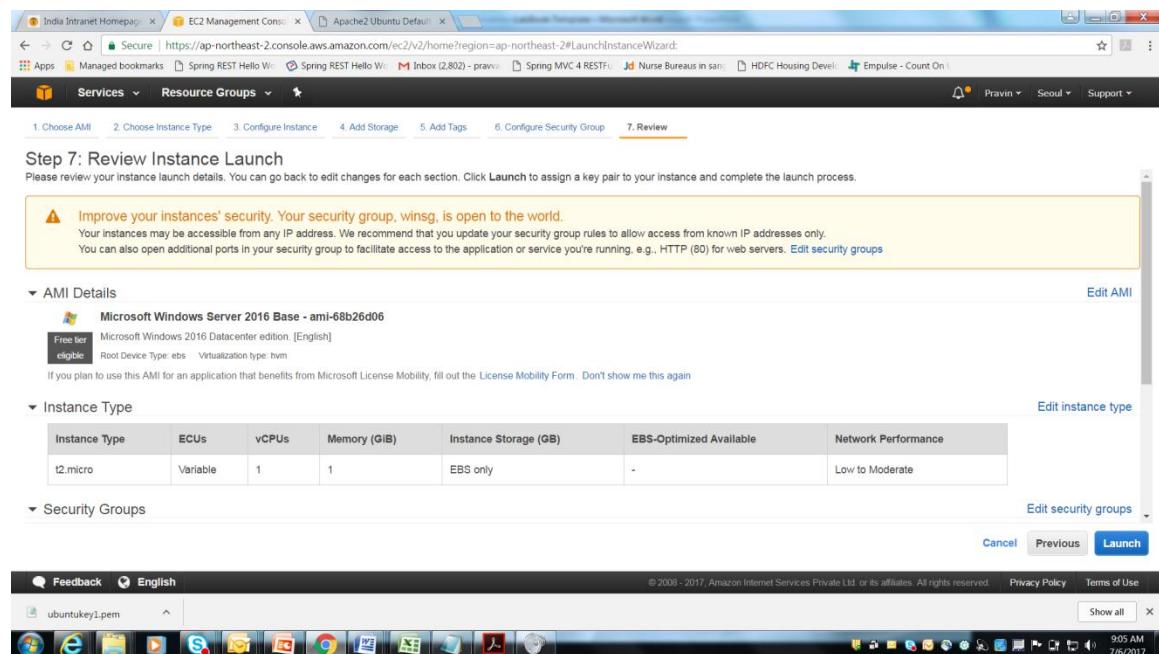
Create Tag (Up to 10 tags maximum)

Cancel Previous Review and Launch Next: Configure Security Group

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



Step 9: Click on Launch Button



Step 7: Review Instance Launch

Please review your instance launch details. You can go back to edit changes for each section. Click Launch to assign a key pair to your instance and complete the launch process.

AMI Details

Microsoft Windows Server 2016 Base - ami-68b26d06
 Microsoft Windows 2016 Datacenter edition. [English]
 Free tier eligible
 Root Device Type: ebs Virtualization type: hvm

If you plan to use this AMI for an application that benefits from Microsoft License Mobility, fill out the License Mobility Form. Don't show me this again

Instance Type

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
t2.micro	Variable	1	1	EBS only	-	Low to Moderate

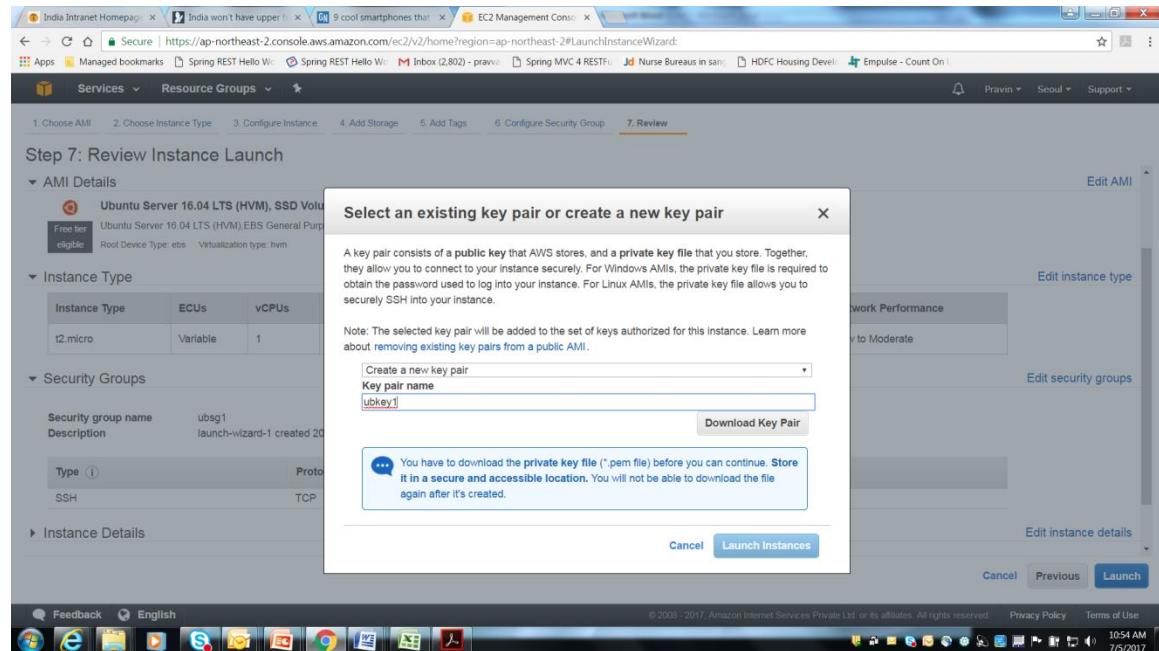
Security Groups

ubuntukey1.pem

Feedback English

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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 7: Review Instance Launch

AMI Details

Ubuntu Server 16.04 LTS (HVM), SSD Volume Type
 Ubuntu Server 16.04 LTS (HVM)/EBS General Purpose
 Free tier eligible
 Root Device Type: ebs Virtualization type: hvm

Instance Type

Instance Type	ECUs	vCPUs
t2.micro	Variable	1

Security Groups

Security group name: ubsg1
 Description: launch-wizard-1 created 2017-07-06T09:05:21Z

Type: SSH Protocol: TCP

Select an existing key pair or create a new key pair

A key pair consists of a public key that AWS stores, and a private key file that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance.

Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about removing existing key pairs from a public AMI.

Create a new key pair
 Key pair name:

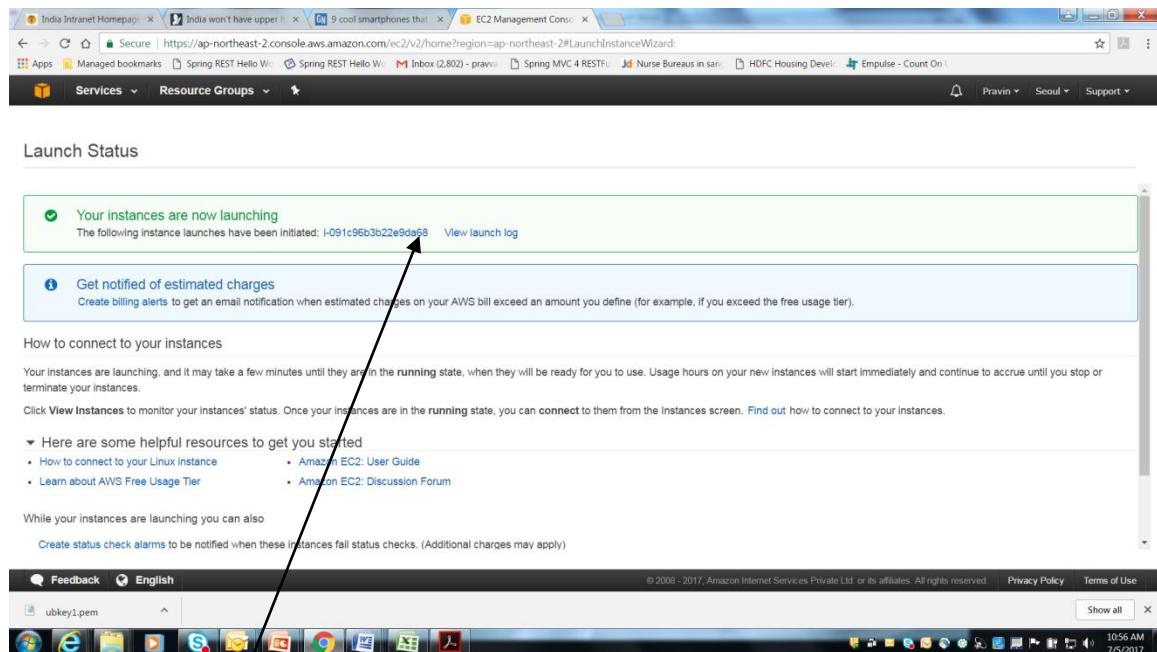
You have to download the private key file (*.pem file) before you can continue. Store it in a secure and accessible location. You will not be able to download the file again after it's created.

Launch Instances

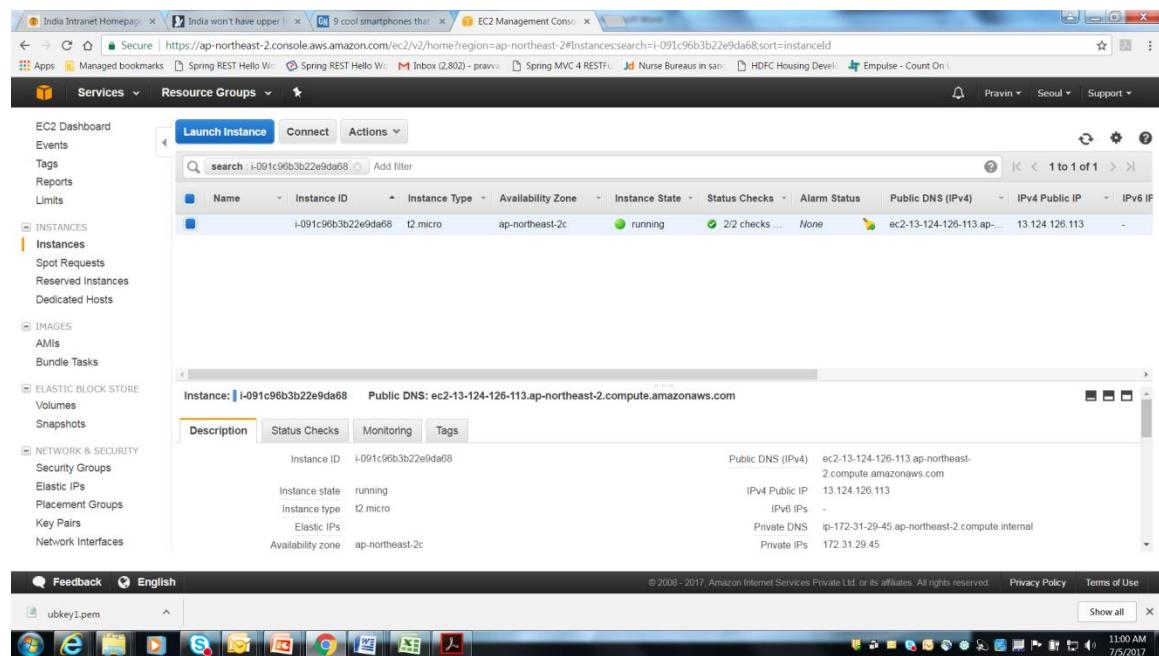
Feedback English

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Step 11: Instance creation status will be shown



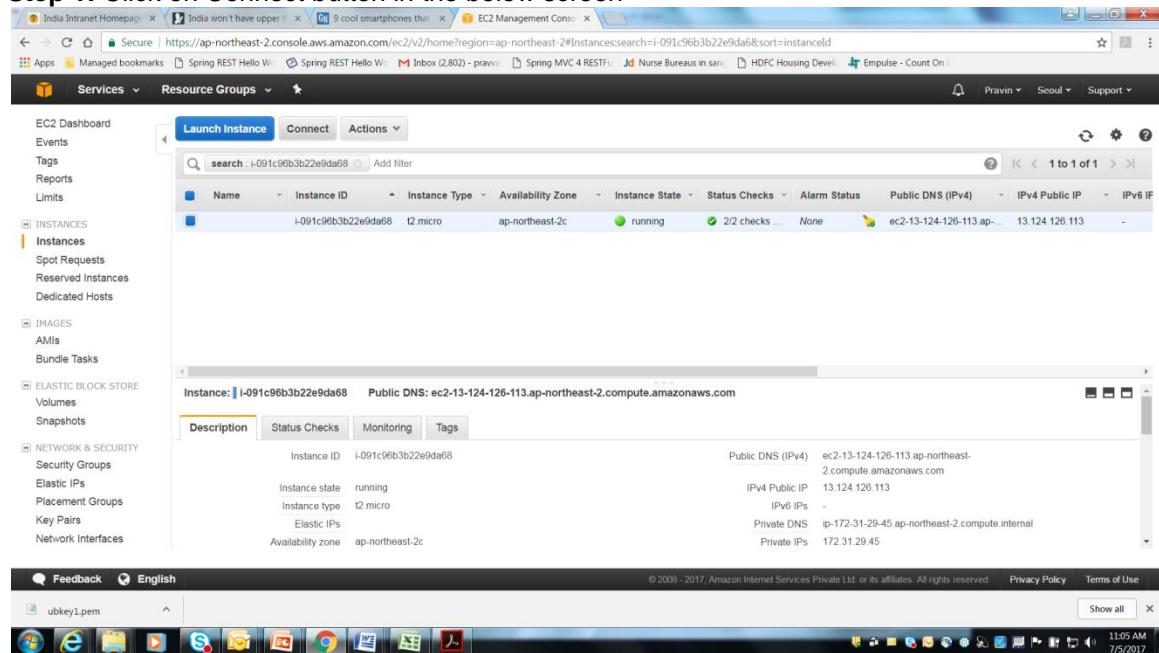
Step 10: Click on the instance id. The instance creation would be successful once the status check column shows 2/2 check passed



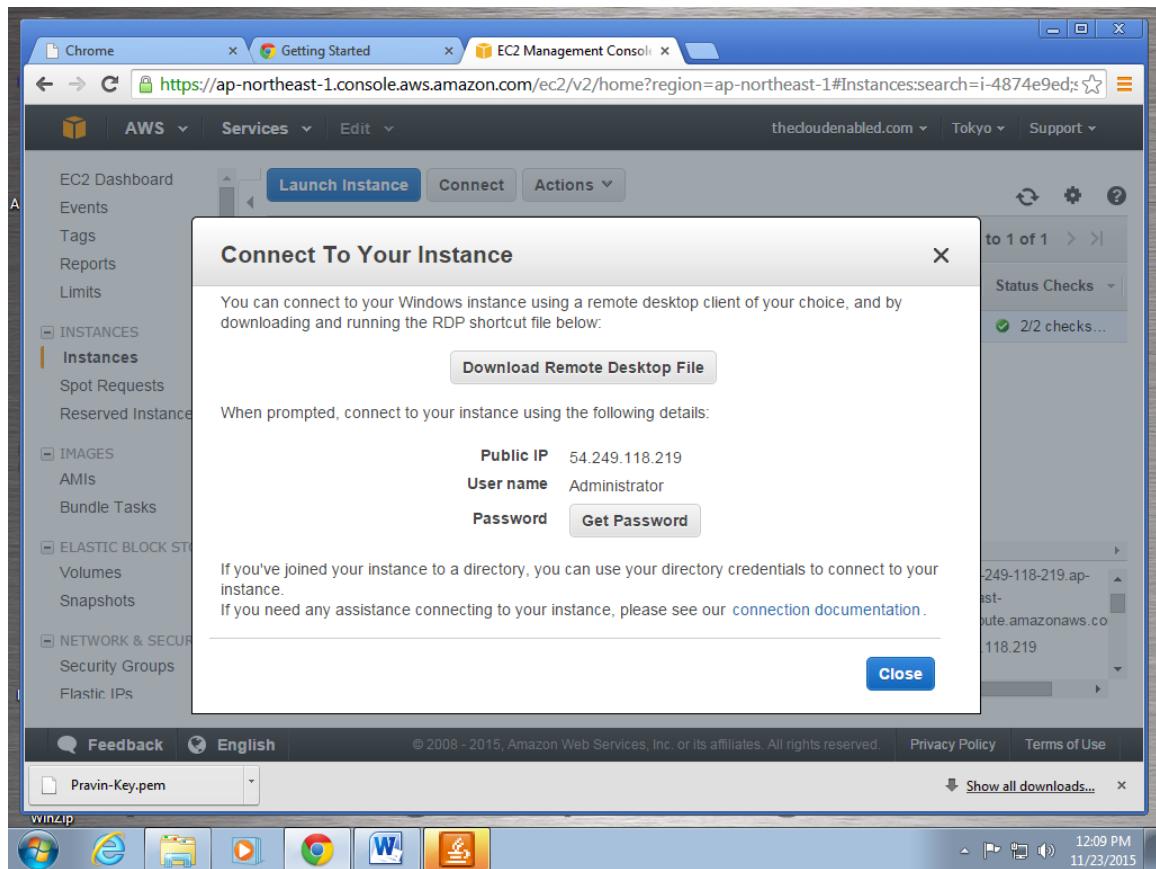
Lab 2. Connecting to Windows instance

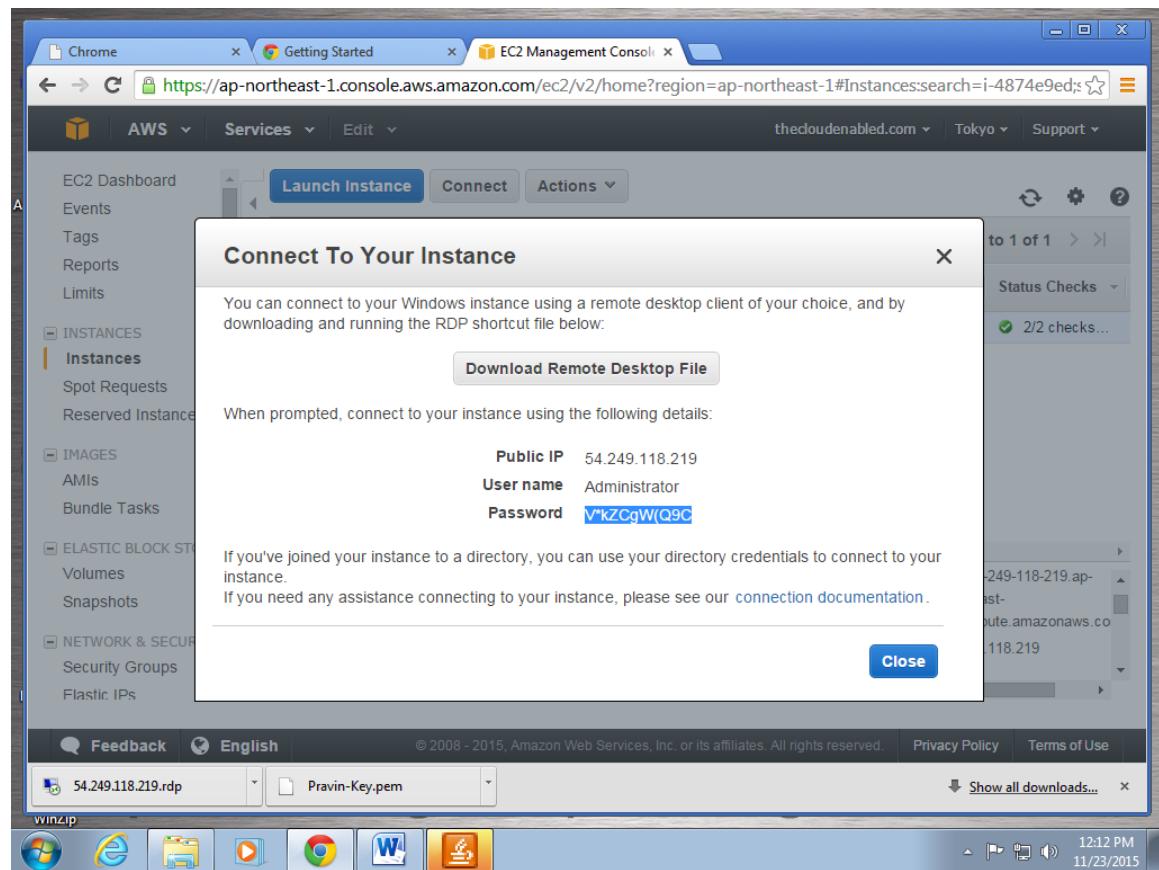
Goals	Understand the steps to connect to Windows instance
Time	10 minutes

Step 1: Click on Connect button in the below screen

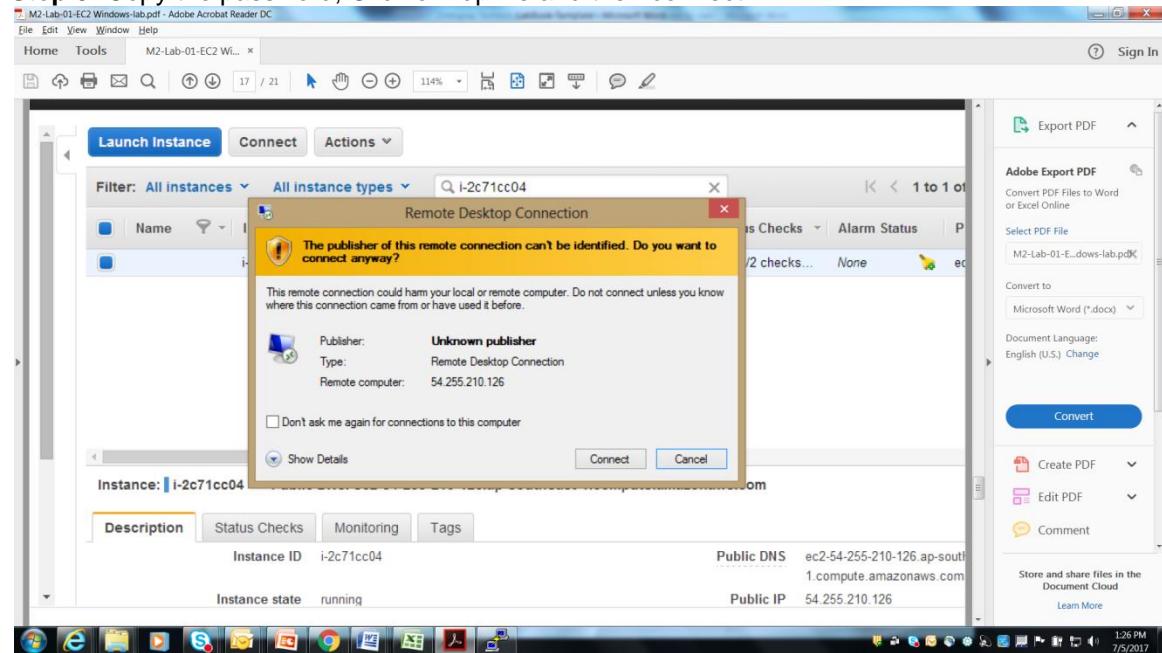


Step 2: Click on download remote desktop file and then click on Get Password button.
Copy the password, Select the key pair file and hit the Decrypt password button

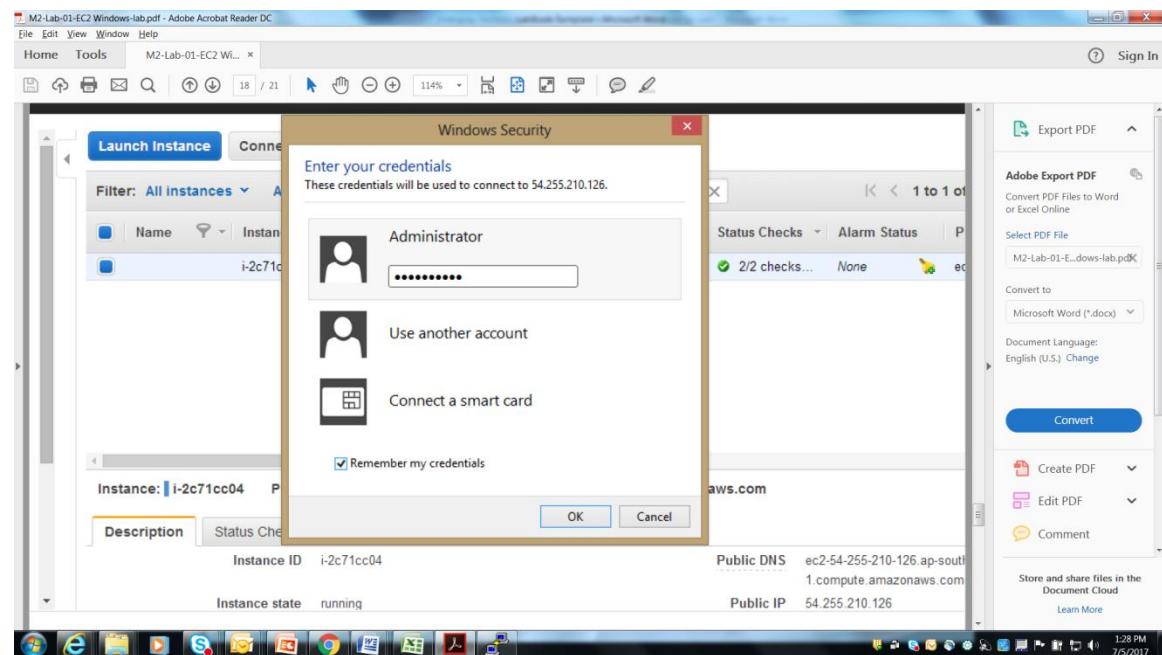


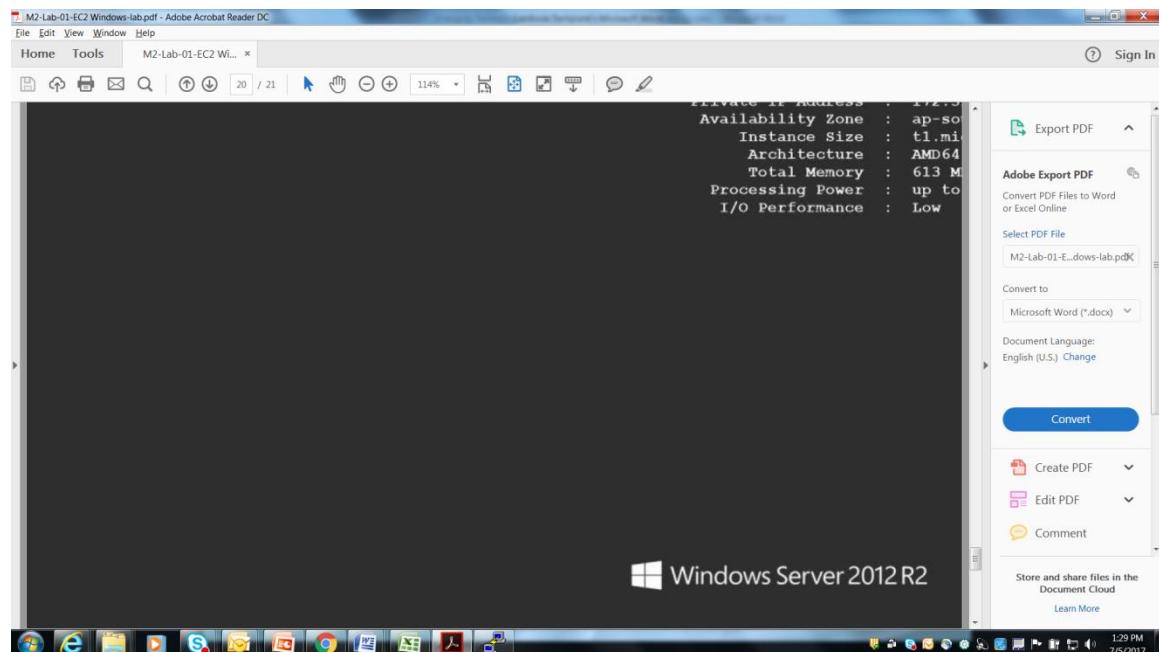
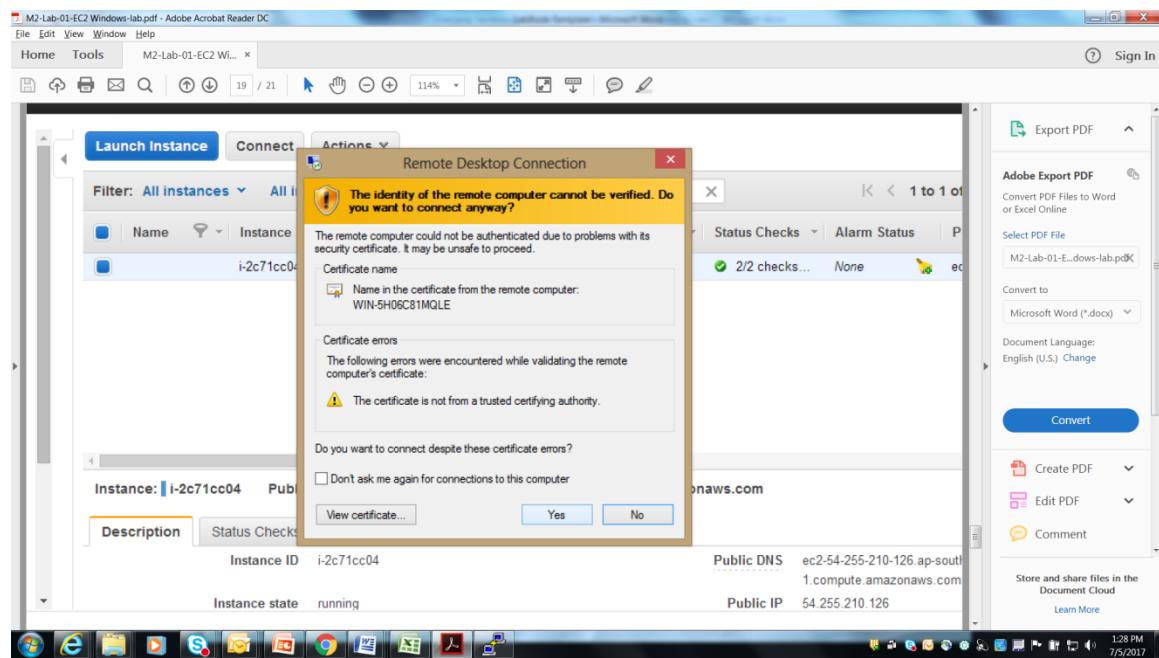


Step 3: Copy the password, Click on rdp file and then connect.



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)

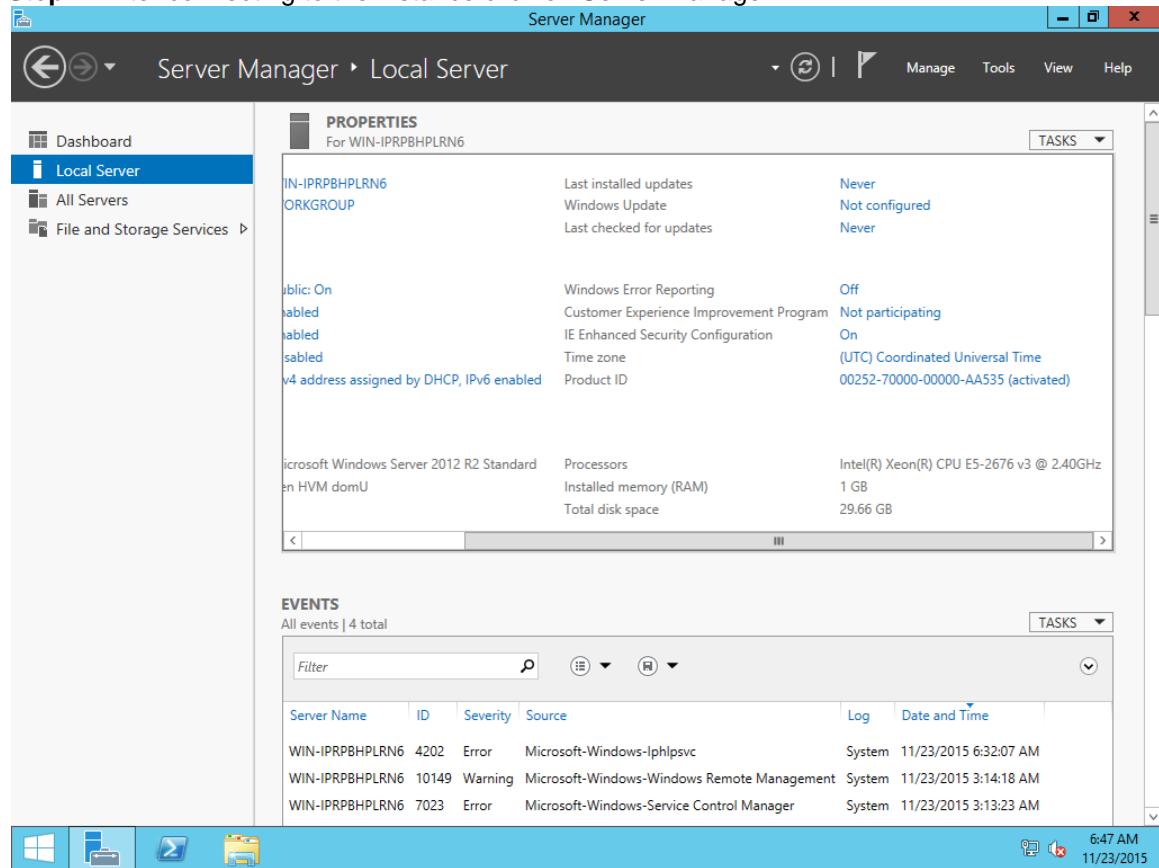




Lab 3. Configure IIS service on Windows

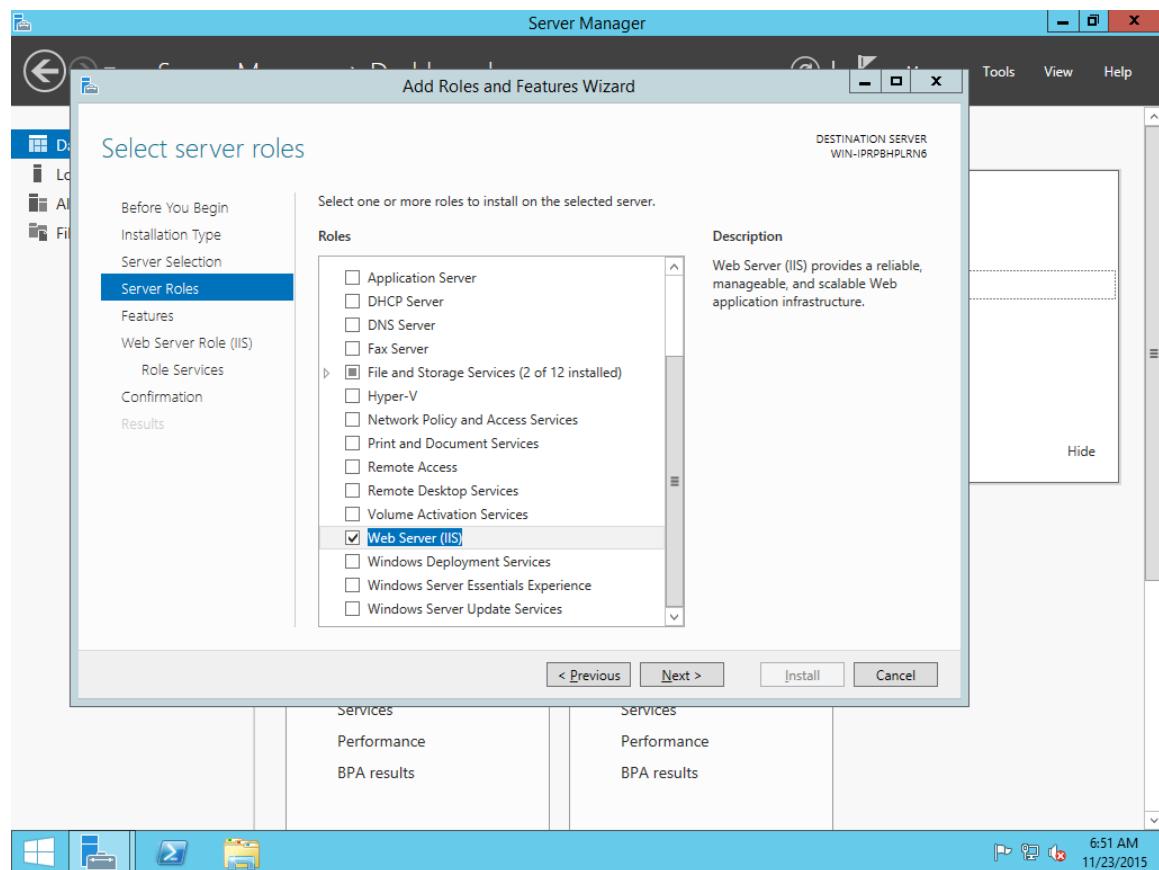
Goals	Understand the steps to configure IIS
Time	10 minutes

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

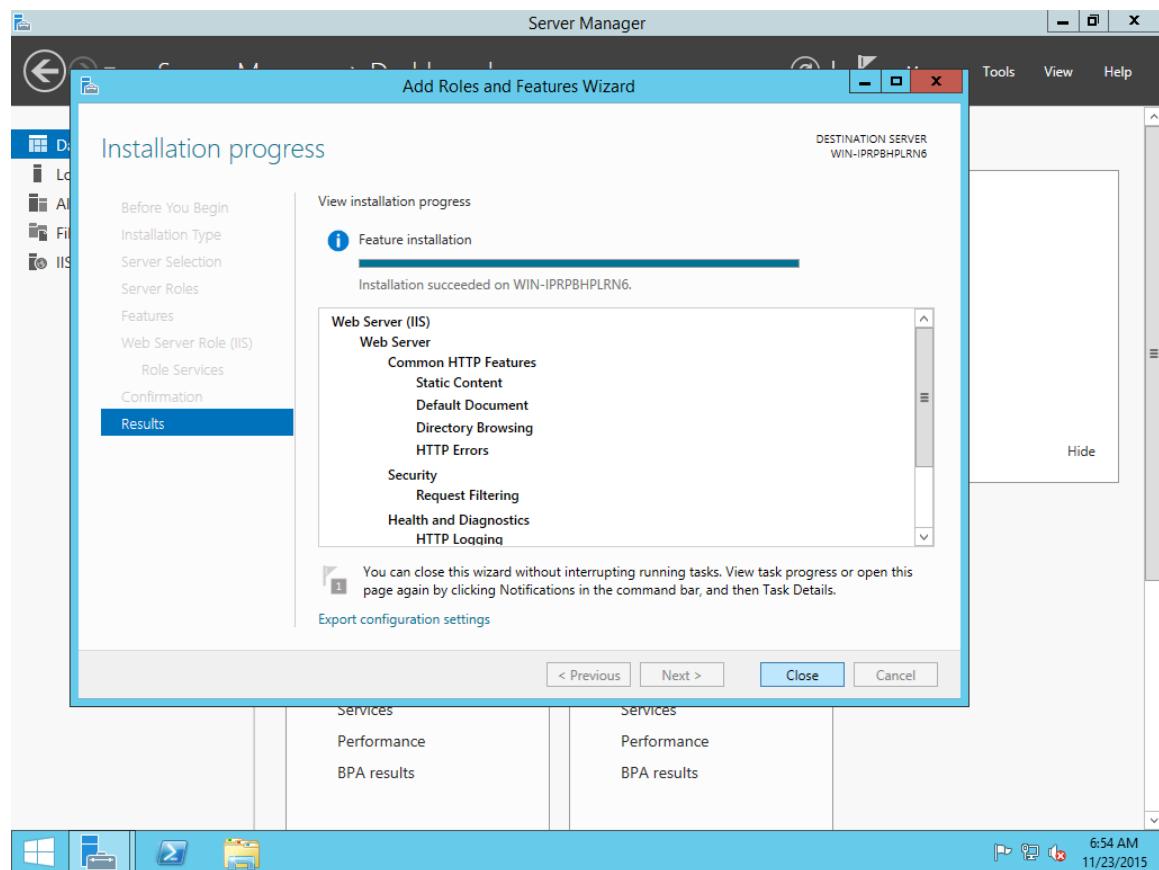


The screenshot shows the Windows Server Manager interface. The left navigation pane is visible with options like Dashboard, Local Server (which is selected), All Servers, and File and Storage Services. The main content area displays the 'PROPERTIES' tab for the local server, showing details such as the server name (WIN-IPRBHPLRN6), operating system (Windows Server 2012 R2 Standard), processor (Intel(R) Xeon(R) CPU E5-2676 v3 @ 2.40GHz), and memory (1 GB). Below the properties is the 'EVENTS' section, which lists three events: one error from Microsoft-Windows-Iphlpsvc and two warnings from Microsoft-Windows-Windows Remote Management. The bottom status bar shows the date and time as 11/23/2015 6:47 AM.

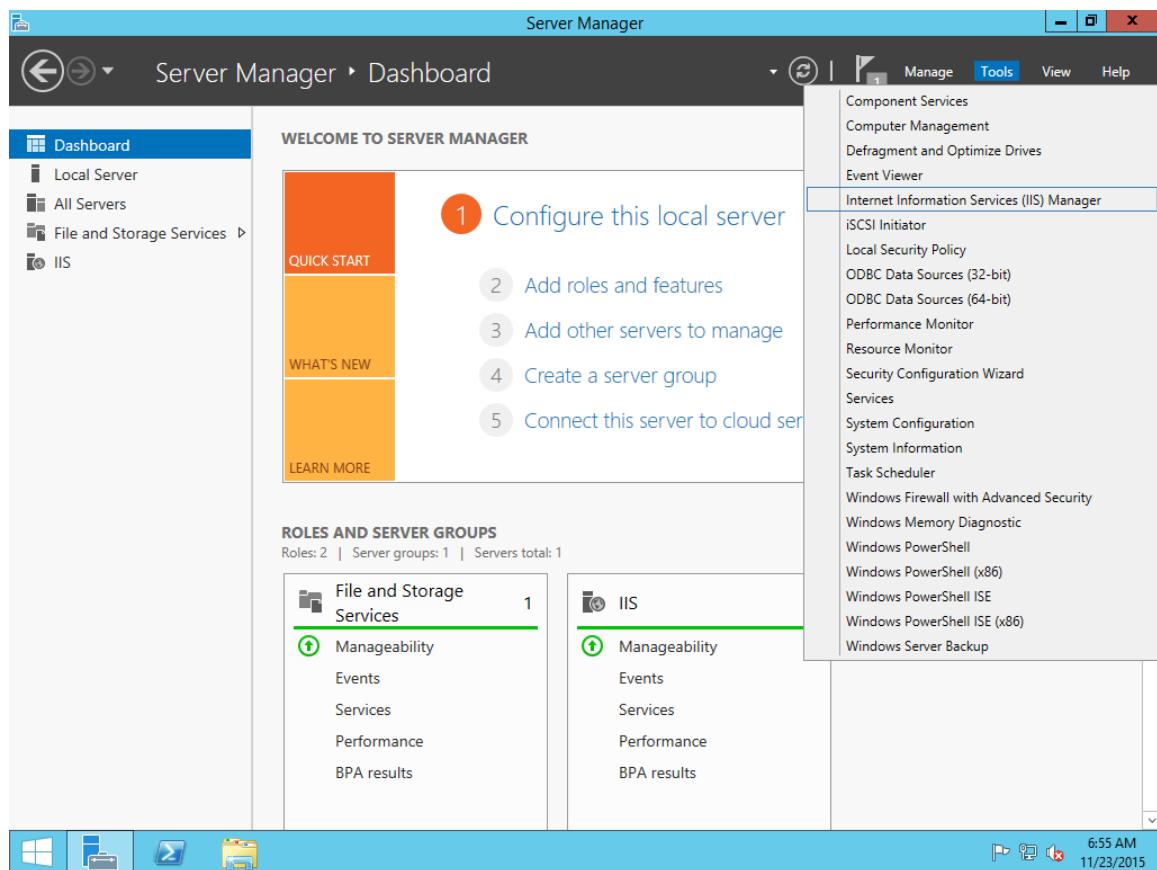
Step 2: Click on Dashboard, Click on role and features, Click on next, next, select IIS Web Server option



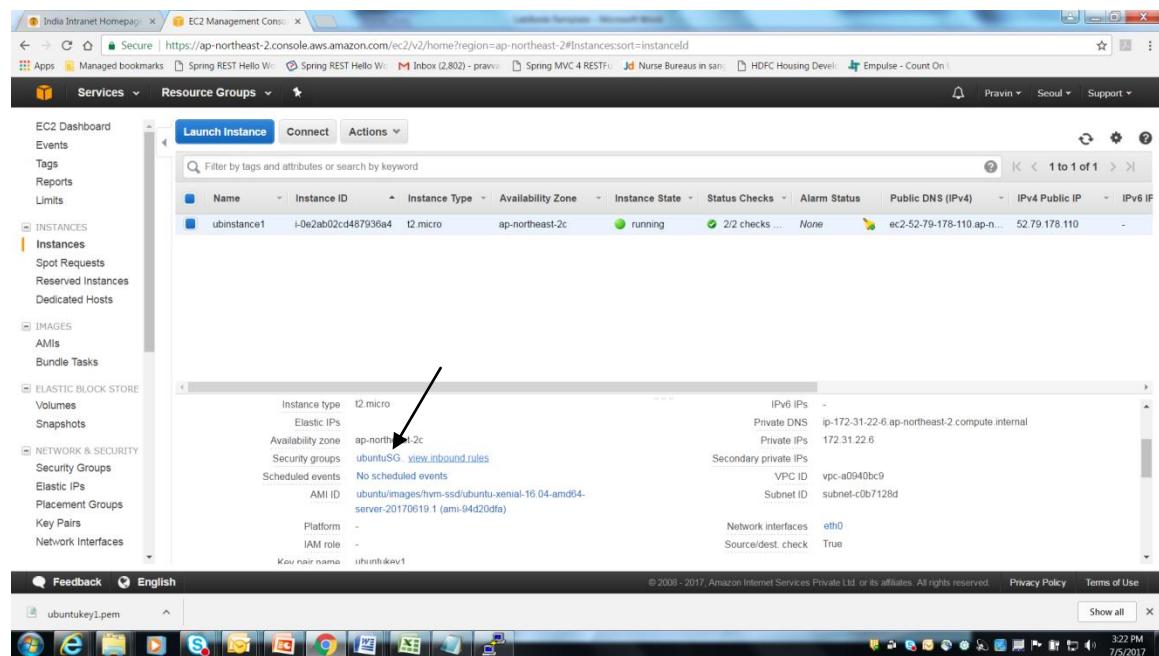
Step 3: Click on Next 3 times and then select install



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

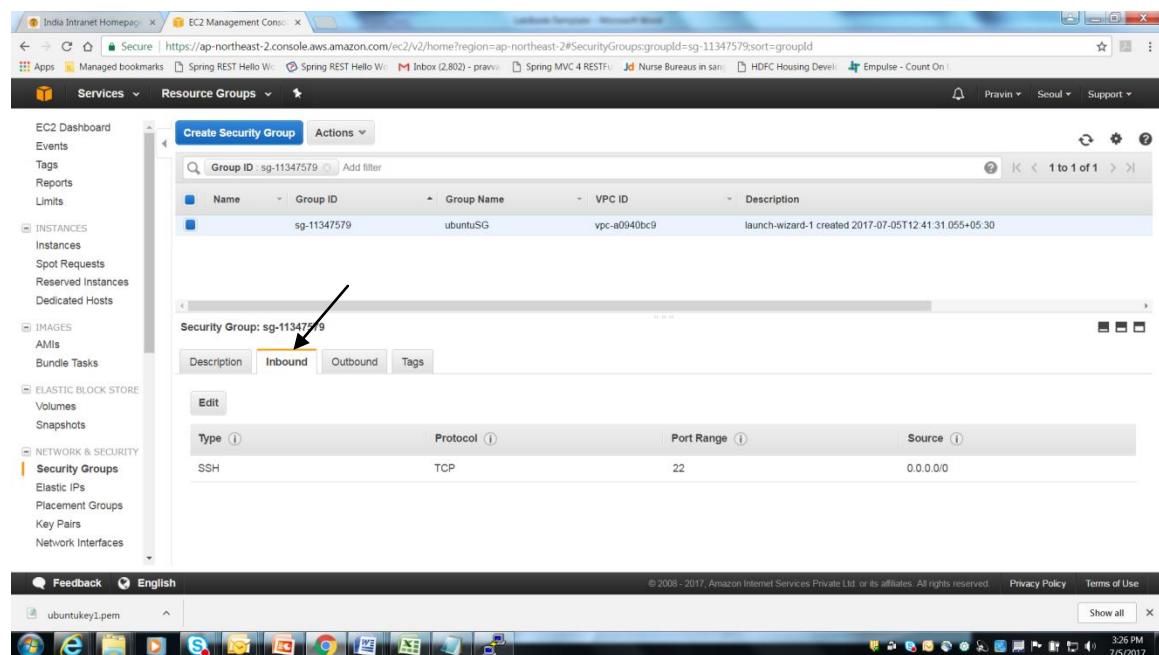


Step 5: Go to EC2 dashboard select the instance created and add HTTP rule as part of the security group assigned to the instance as shown in the screen below. Click on the security group name assigned to the instance to modify the inbound rules



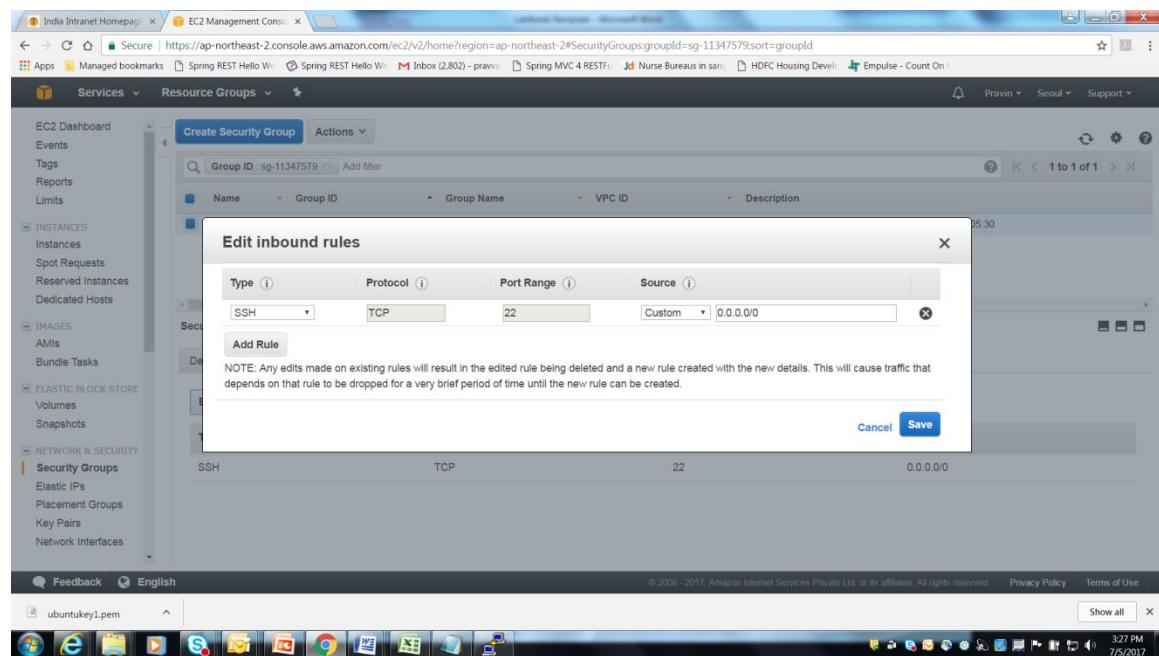
The screenshot shows the AWS EC2 Management Console. On the left, the navigation pane includes 'Instances', 'Security Groups', and 'Network & Security'. The main panel displays an instance named 'ubintus1' with details like 't2.micro' instance type, 'ap-northeast-2c' availability zone, and 'ubuntuSG' security group. The 'Actions' dropdown menu is open, showing options like 'Launch Instance', 'Connect', and 'Actions'. A large arrow points from the text below to the 'Inbound' tab in the security group configuration section.

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

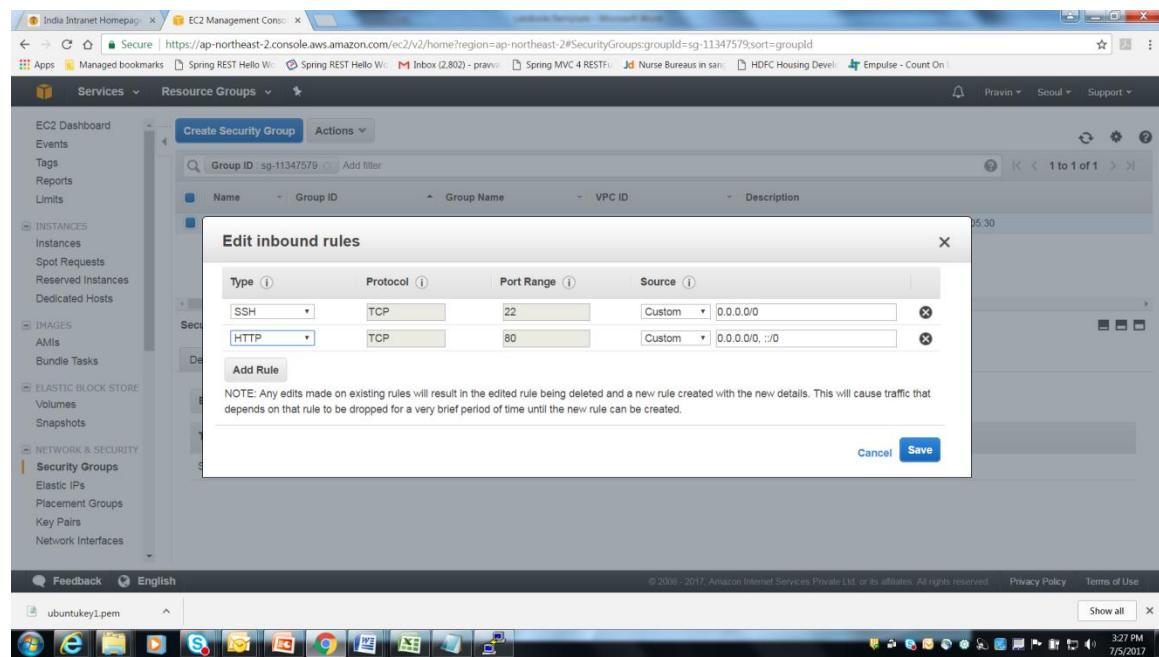


The screenshot shows the 'Create Security Group' page in the AWS EC2 Management Console. The 'Inbound' tab is highlighted with a yellow border. The table shows one rule: 'SSH' protocol on port '22' from '0.0.0.0/0'. The left sidebar shows 'Security Groups' under 'Network & Security'.

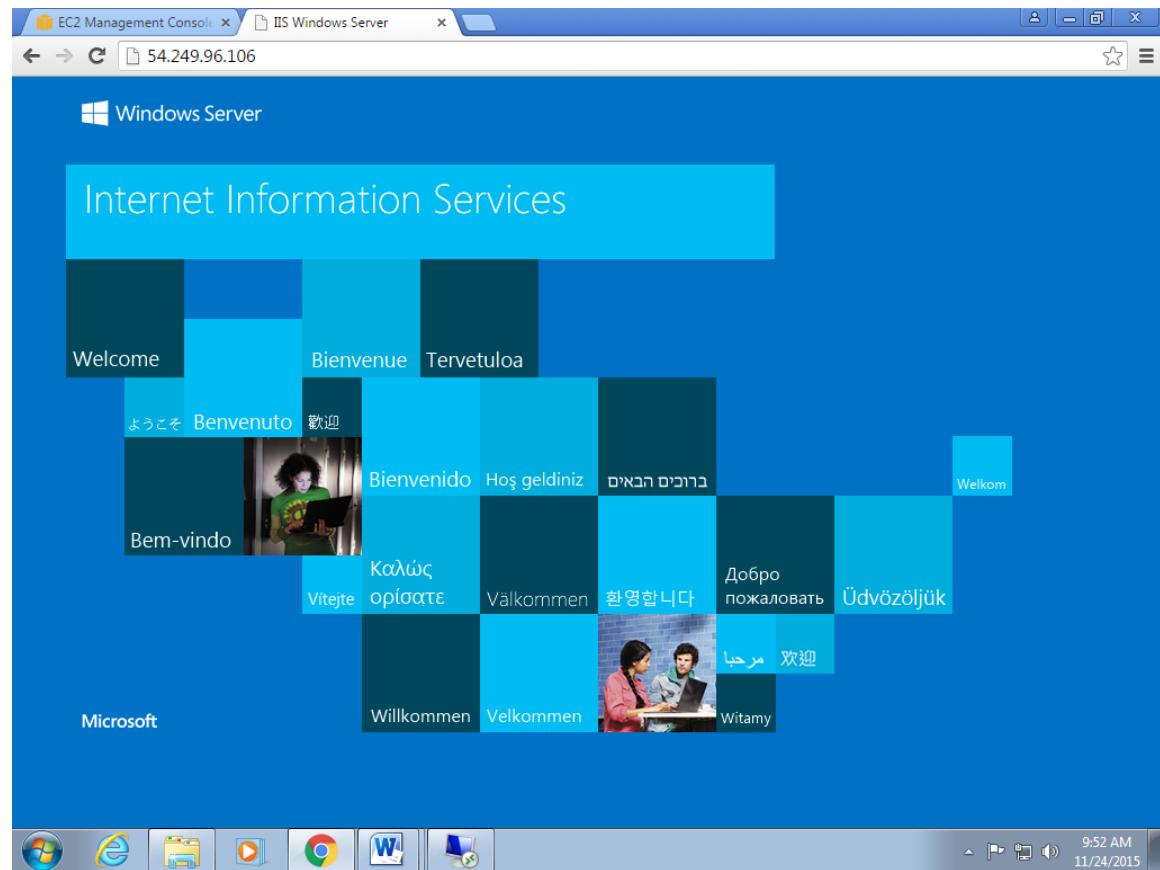
Step 7: select the Edit button to add the rule



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 1: Choose an Amazon Machine Image (AMI)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our user community, or the AWS Marketplace; or you can select one of your own AMIs.

Quick Start

AMI Name	Description	Select	64-bit
Amazon Linux	The Amazon Linux AMI is an EBS-backed, AWS-supported image. The default image includes AWS command line tools, Python, Ruby, Perl, and Java. The repositories include Docker, PHP, MySQL, PostgreSQL, and other packages.	Select	64-bit
SUSE Linux	SUSE Linux Enterprise Server 12 Service Pack 2 (HVM), EBS General Purpose (SSD) Volume Type. Public Cloud, Advanced Systems Management, Web and Scripting, and Legacy modules enabled.	Select	64-bit
Red Hat	Red Hat Enterprise Linux version 7.2 (HVM), EBS General Purpose (SSD) Volume Type	Select	64-bit
Ubuntu Server	Ubuntu Server 16.04 LTS (HVM), EBS General Purpose (SSD) Volume Type. Support available from Canonical (http://www.ubuntu.com/cloud/services).	Select	64-bit

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

Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. Learn more about instance types and how they can meet your computing needs.

Filter by: All instance types Current generation Show/Hide Columns

Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
General purpose	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate	Yes
General purpose	t2.small	1	2	EBS only	-	Low to Moderate	Yes
General purpose	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
General purpose	t2.large	2	8	EBS only	-	Low to Moderate	Yes
General purpose	t2.xlarge	4	16	EBS only	-	Moderate	Yes
General purpose	t2.2xlarge	8	32	EBS only	-	Moderate	Yes

Cancel Previous Review and Launch Next: Configure Instance Details

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

Step 3: Configure Instance Details

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot Instances to take advantage of the lower pricing, assign an access management role to the instance, and more.

Number of Instances	1	Launch into Auto Scaling Group
Purchasing option	<input type="checkbox"/> Request Spot instances	
Network	vpc-a0940bc9 (default)	<input type="button"/> Create new VPC
Subnet	subnet-c0b7128d Default in ap-northeast-2c	<input type="button"/> Create new subnet 4091 IP Addresses available
Auto-assign Public IP	<input type="checkbox"/> Use subnet setting (Enable)	
IAM role	None <input type="button"/> Create new IAM role	
Shutdown behavior	Stop	
Enable termination protection	<input type="checkbox"/> Protect against accidental termination	
Monitoring	<input type="checkbox"/> Enable CloudWatch detailed monitoring Additional charges apply.	
Tenancy	Shared - Run a shared hardware instance Additional charges will apply for dedicated tenancy.	

Network interface

Cancel Previous Review and Launch Next: Add Storage

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Step 4: click on Next button in the below screen

Step 4: Add Storage

Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. [Learn more](#) about storage options in Amazon EC2.

Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encrypted
Root	/dev/sda1	snap-0a2bd5125e8cd60e7	<input type="button"/>	General Purpose SSD (GP2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/> Not Encrypted

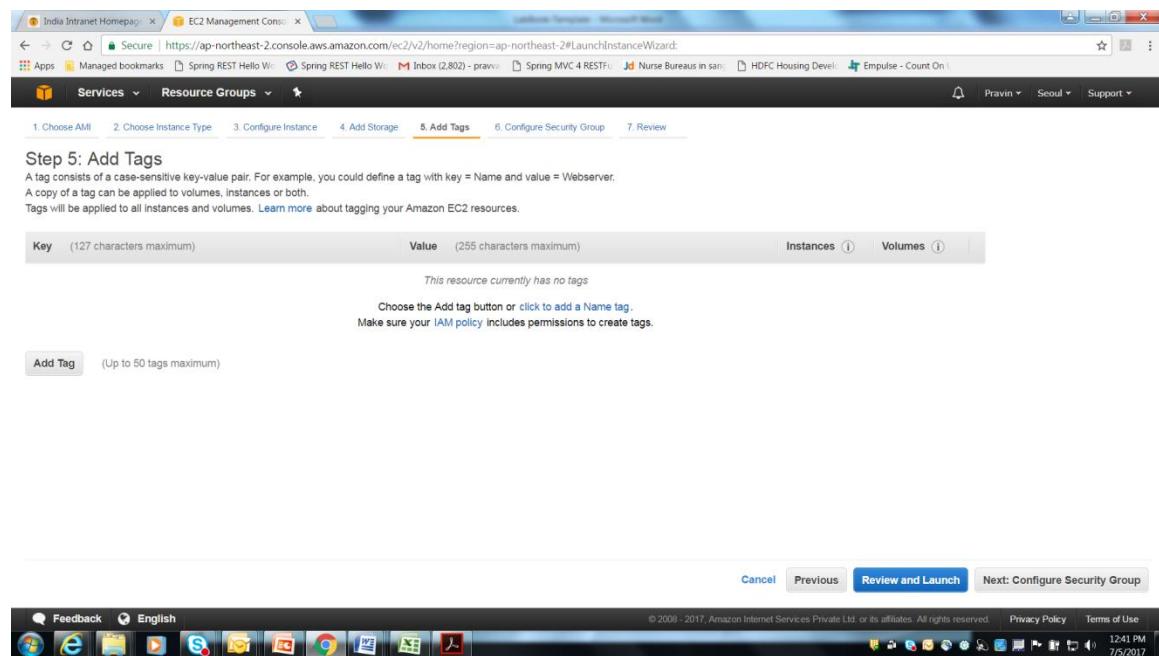
Add New Volume

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. [Learn more](#) about free usage tier eligibility and usage restrictions.

Cancel Previous Review and Launch Next: Add Tags

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



Step 5: Add Tags

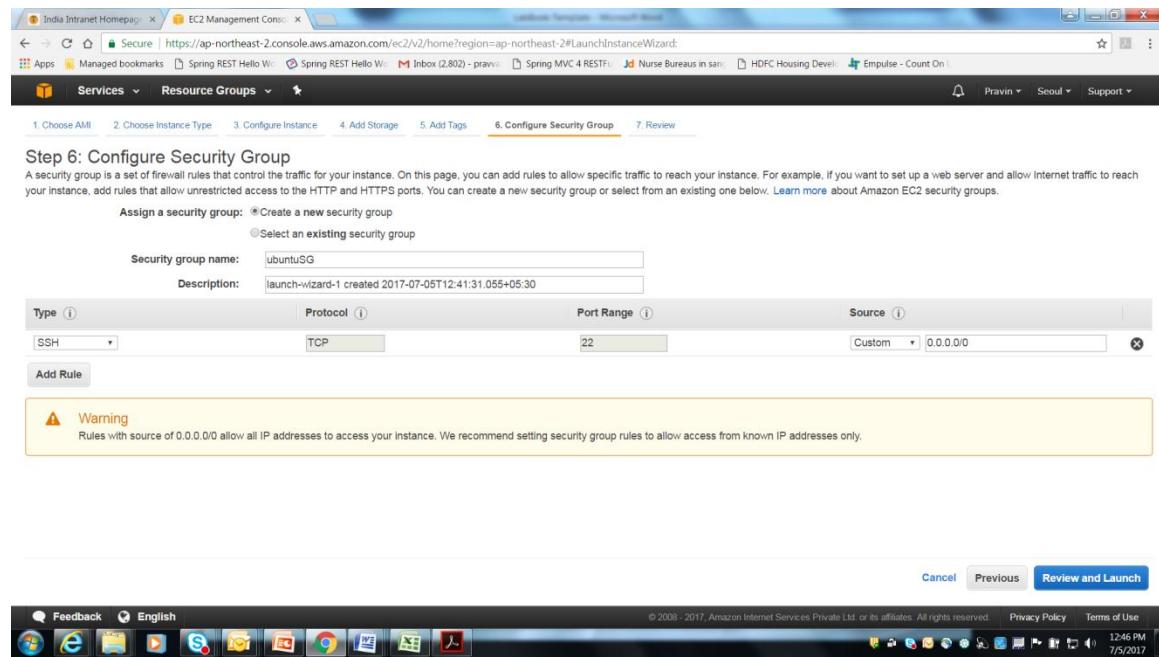
A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver.

A copy of a tag can be applied to volumes, instances or both.

Tags will be applied to all instances and volumes. [Learn more](#) about tagging your Amazon EC2 resources.

Key	(127 characters maximum)	Value	(255 characters maximum)
This resource currently has no tags			
Choose the Add tag button or click to add a Name tag. Make sure your IAM policy includes permissions to create tags.			
Add Tag (Up to 50 tags maximum)		Cancel Previous Review and Launch Next: Configure Security Group	

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 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more](#) about Amazon EC2 security groups.

Assign a security group: Create a new security group
 Select an existing security group

Security group name:
 Description:

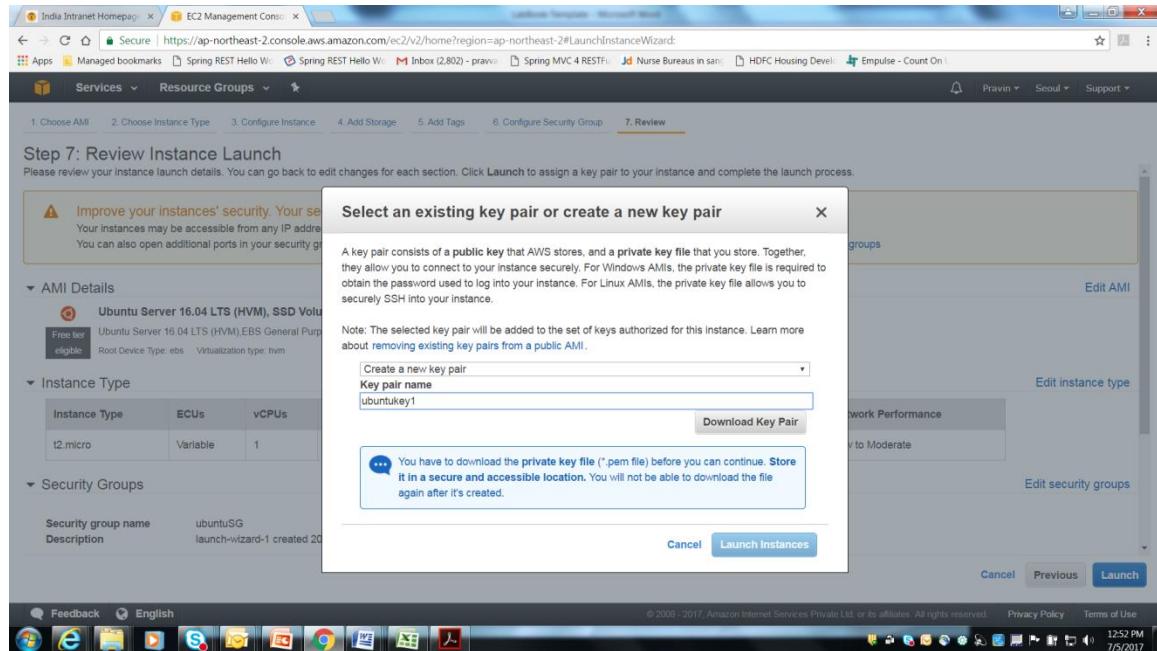
Type	Protocol	Port Range	Source
SSH	TCP	22	Custom <input type="text" value="0.0.0.0"/>

[Add Rule](#)

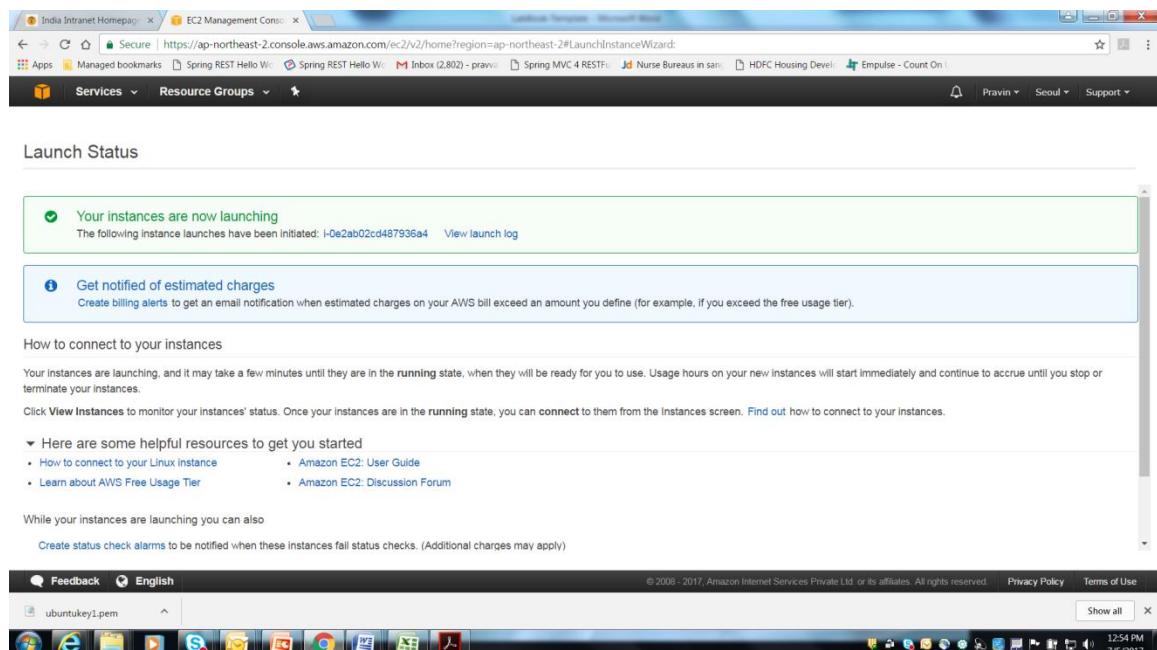
Warning
 Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

Cancel	Previous	Review and Launch
--------	----------	-----------------------------------

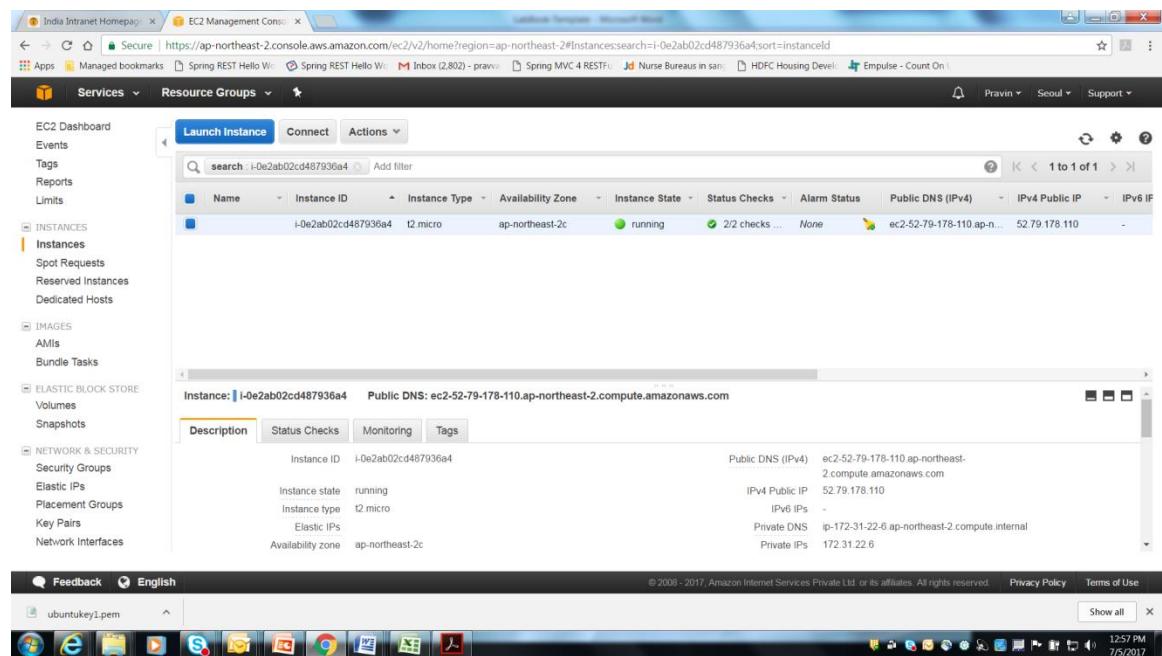
Step 7: Click on Review and Launch button and in the step select Launch button to see the below screen. Select the Create new key pair option. Type the keypair name and then click on the Download Key Pair button and then click on Launch Instance button



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

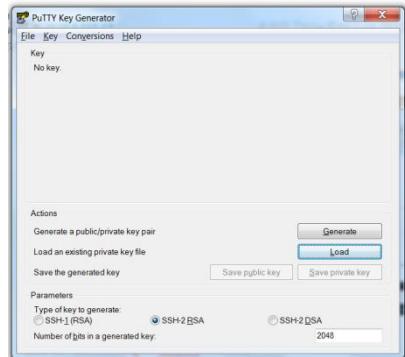


The screenshot shows the AWS EC2 Management Console interface. On the left, there's a navigation sidebar with options like Services, Resource Groups, EC2 Dashboard, Events, Tags, Reports, Limits, Instances, Images, Elastic Block Store, Network & Security, and more. The main area displays a table of instances. One instance is selected, showing its details: Name (i-0e2ab02cd487936a4), Instance ID (i-0e2ab02cd487936a4), Instance Type (t2.micro), Availability Zone (ap-northeast-2c), Status (running), and Public DNS (ec2-52-79-178-110.ap-northeast-2.compute.amazonaws.com). Below the table, there's a detailed view of the selected instance with tabs for Description, Status Checks, Monitoring, and Tags.

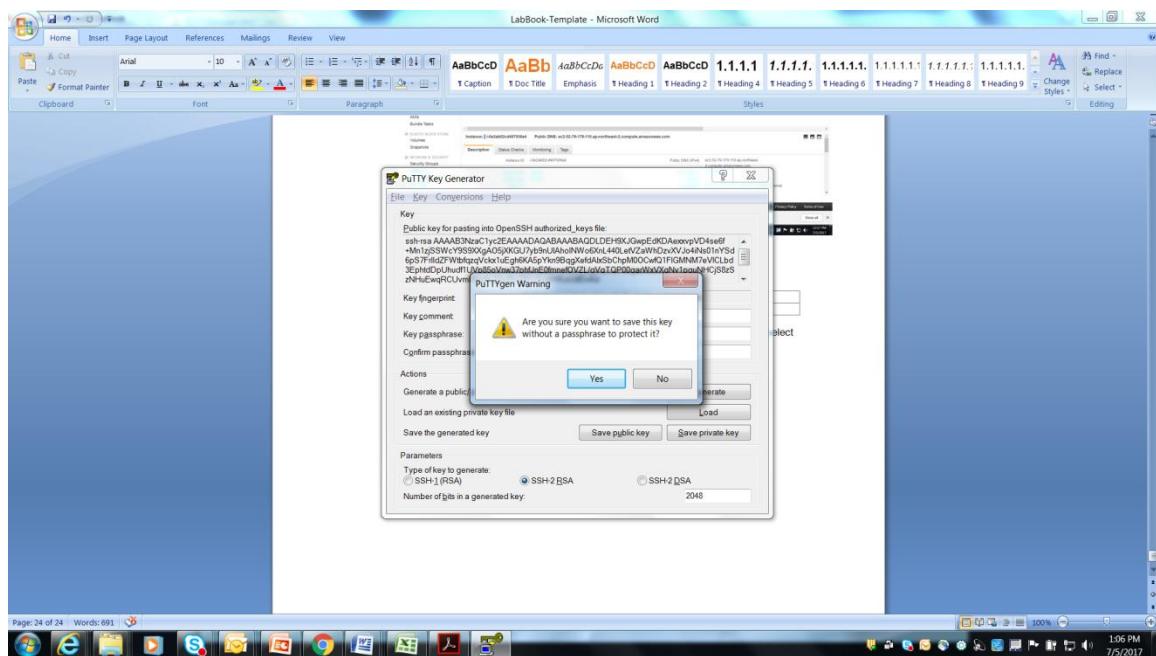
Lab 5. Connecting to Ubuntu Instance

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

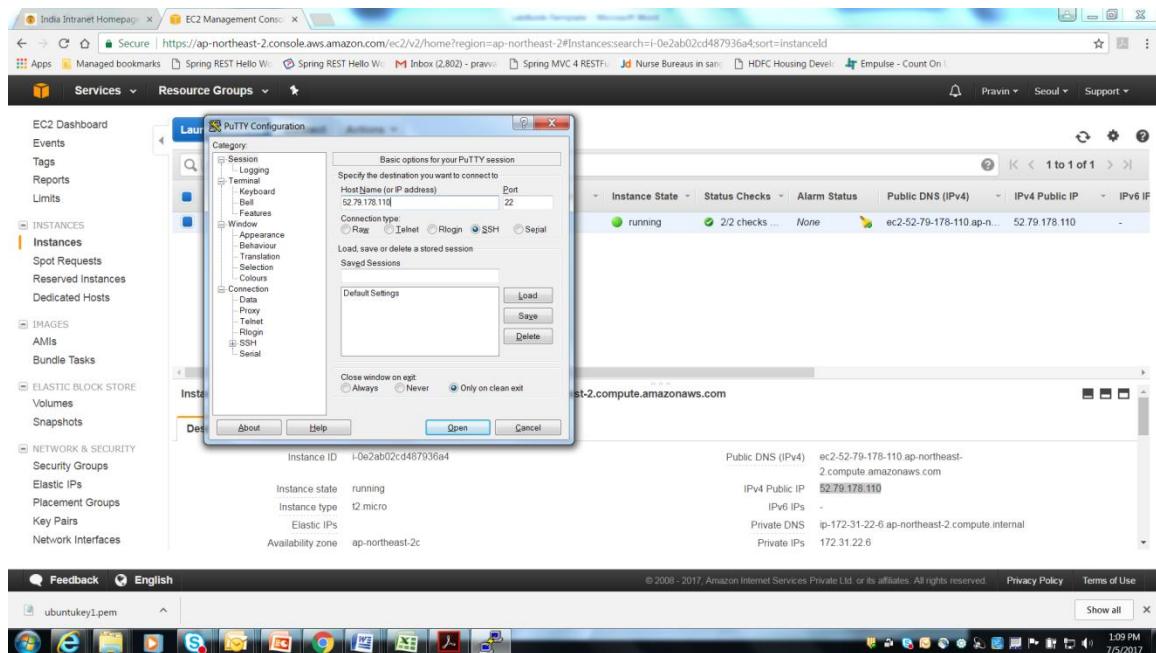
Step 1: Start puttygen software to see the below screen. Click on load button and select the downloaded pem file and hit the ok button



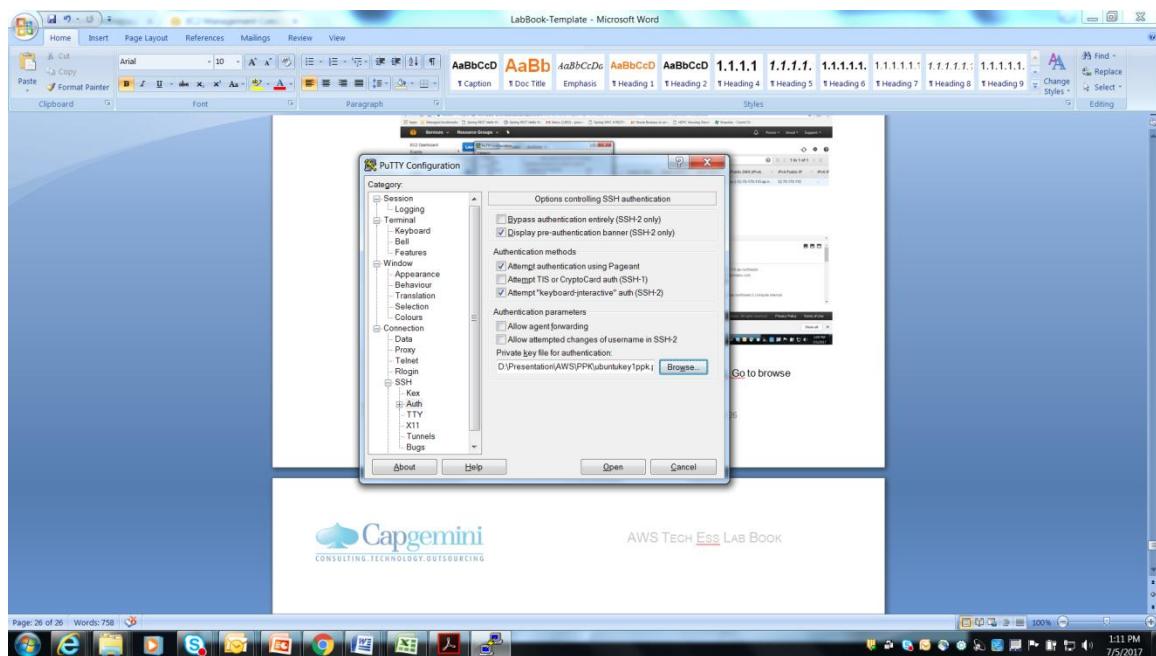
Step 2: Click on save private key button and click Yes to save the ppk file . Close this application



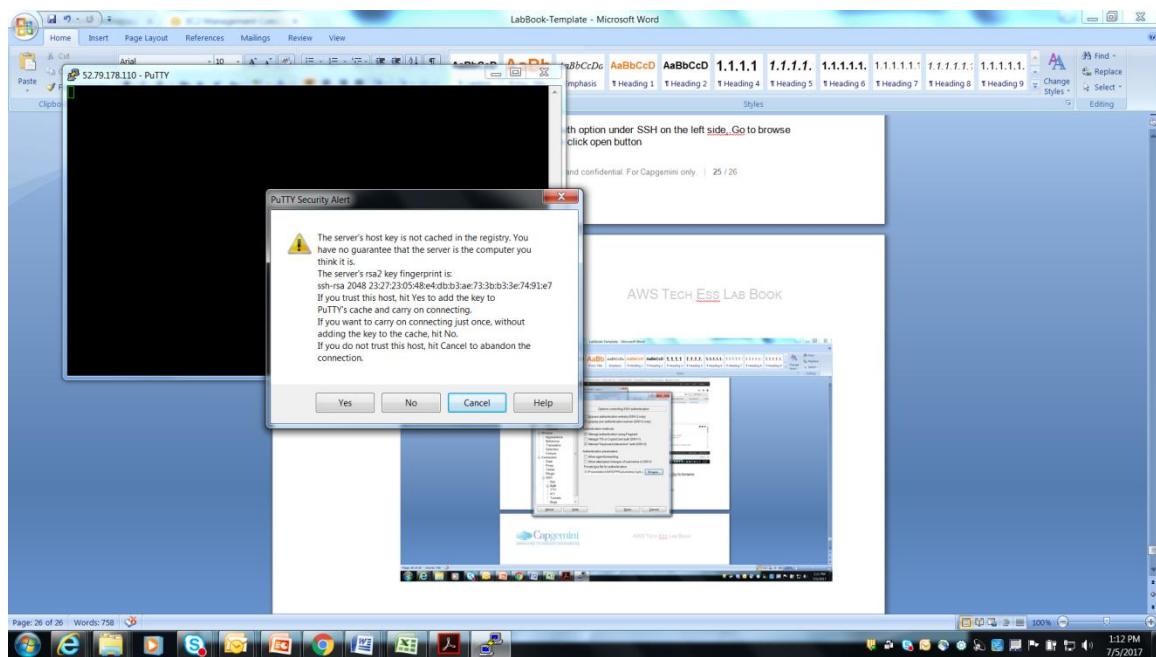
Step 3: Open the Putty application and in the host Name type the public IP of the instance



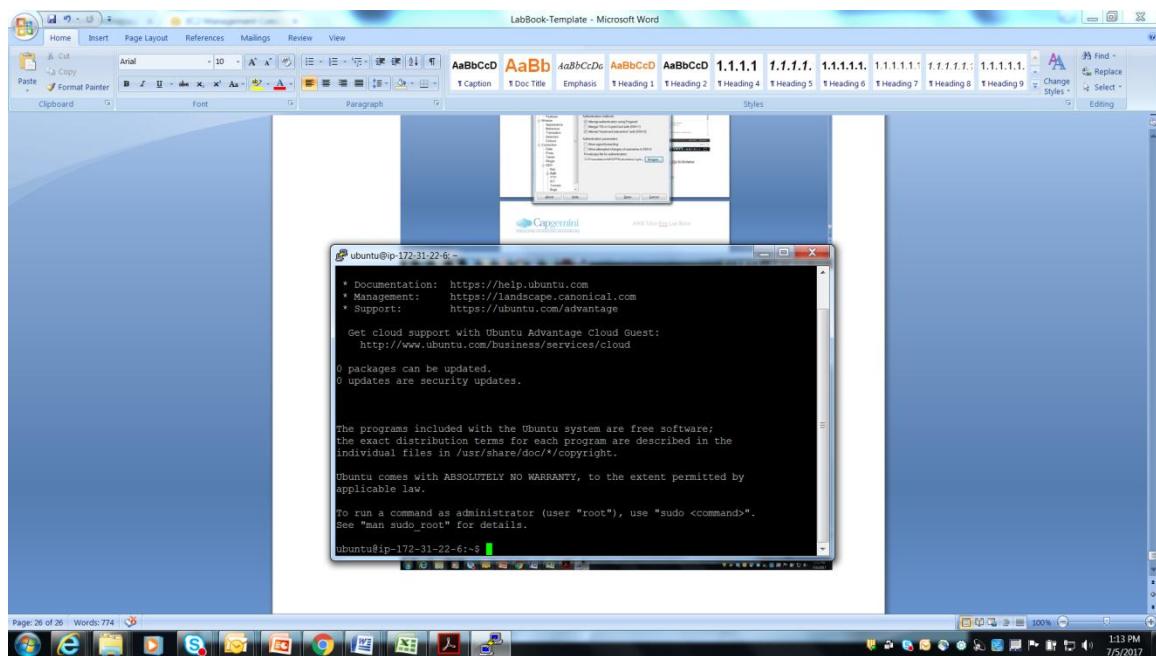
Step 4: In the Putty app, select the Auth option under SSH on the left side,. Go to browse and select the ppk file name and then click open button



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



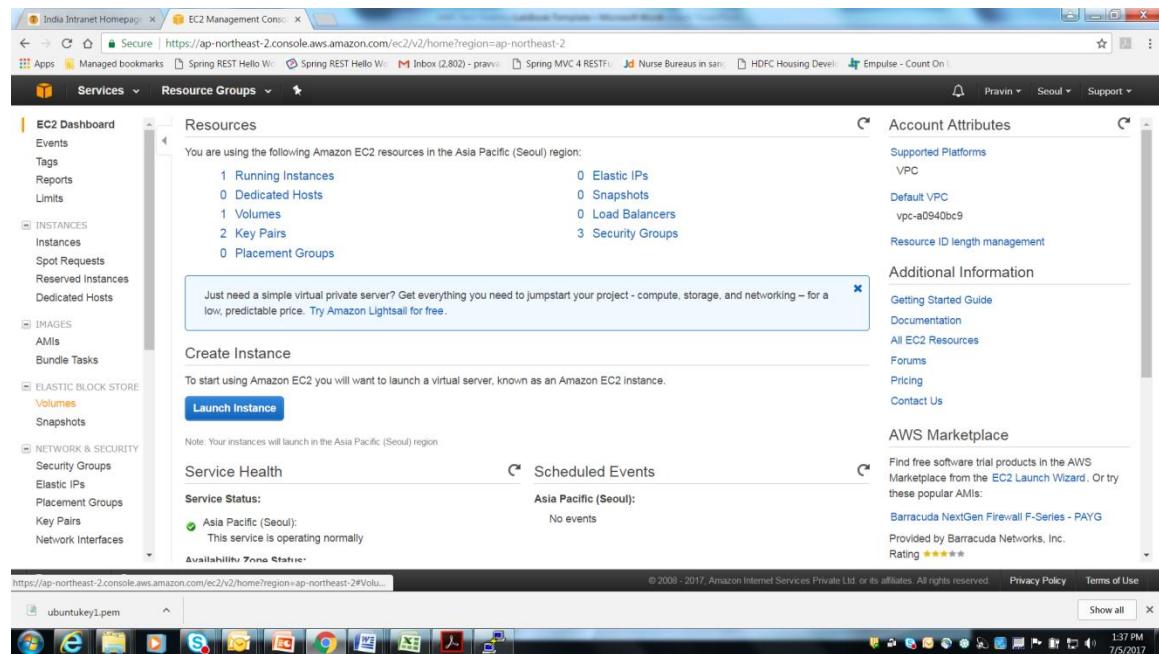
Step 5: Once you get the below screen you will be connected to the instance



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



Resources

You are using the following Amazon EC2 resources in the Asia Pacific (Seoul) region:

1	Running Instances
0	Dedicated Hosts
1	Volumes
2	Key Pairs
0	Placement Groups

Create Instance

To start using Amazon EC2 you will want to launch a virtual server, known as an Amazon EC2 instance.

Launch Instance

Note: Your instances will launch in the Asia Pacific (Seoul) region

Service Health

Service Status: Asia Pacific (Seoul): This service is operating normally

Scheduled Events

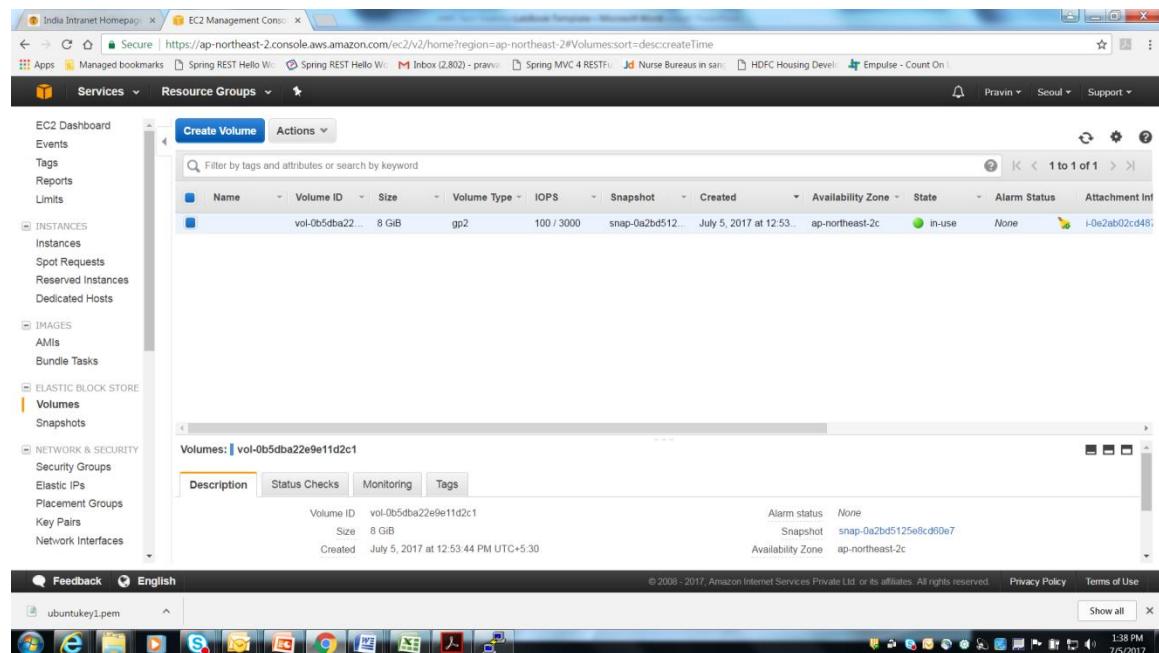
AWS Marketplace

Find free software trial products in the AWS Marketplace from the EC2 Launch Wizard. Or try these popular AMIs:

- Barracuda NextGen Firewall F-Series - PAYG
- Provided by Barracuda Networks, Inc.
- Rating ★★★★☆

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Step 2: Click on create volume button



Create Volume

Actions

Filter by tags and attributes or search by keyword

Name	Volume ID	Size	Volume Type	IOPS	Snapshot	Created	Availability Zone	State	Alarm Status	Attachment Info
vol-0b5dbe22e9e11d2c1	vol-0b5dbe22e9e11d2c1	8 GiB	gp2	100 / 3000	snap-0a2bd512	July 5, 2017 at 12:53	ap-northeast-2c	in-use	None	i-0e2ab02cd48

Volumes: vol-0b5dbe22e9e11d2c1

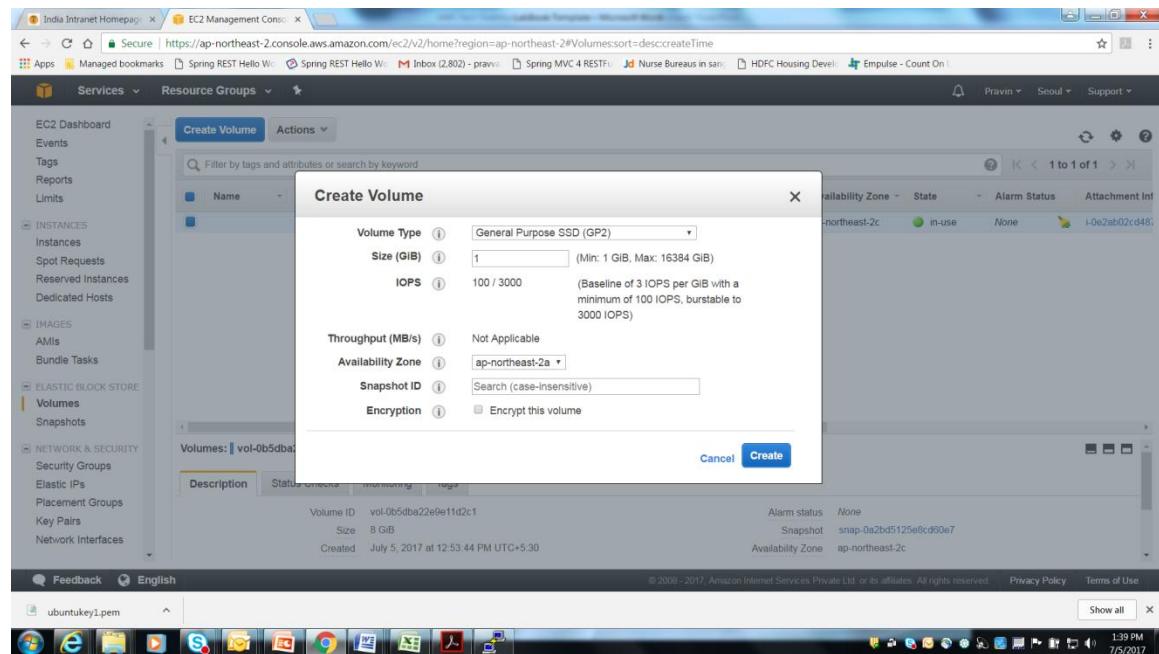
Description Status Checks Monitoring Tags

Volume ID: vol-0b5dbe22e9e11d2c1	Volume ID: vol-0b5dbe22e9e11d2c1	Alarm status: None
Size: 8 GiB	Size: 8 GiB	Snapshot: snap-0a2bd512
Created: July 5, 2017 at 12:53:44 PM UTC+5:30	Created: July 5, 2017 at 12:53:44 PM UTC+5:30	Availability Zone: ap-northeast-2c

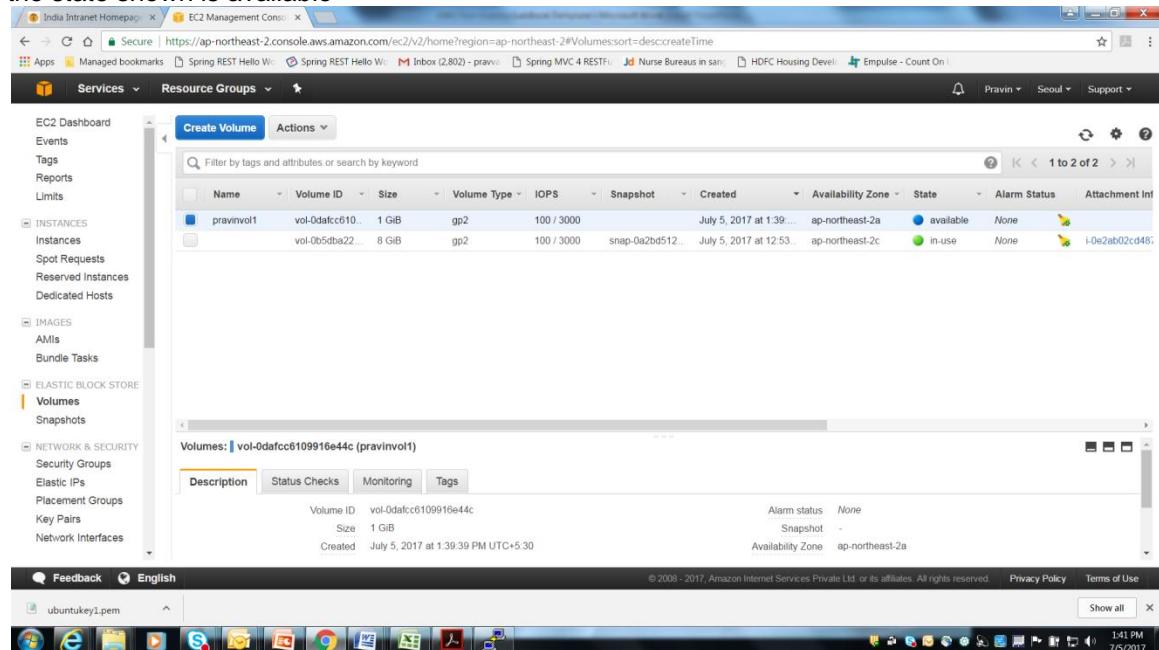
Feedback English

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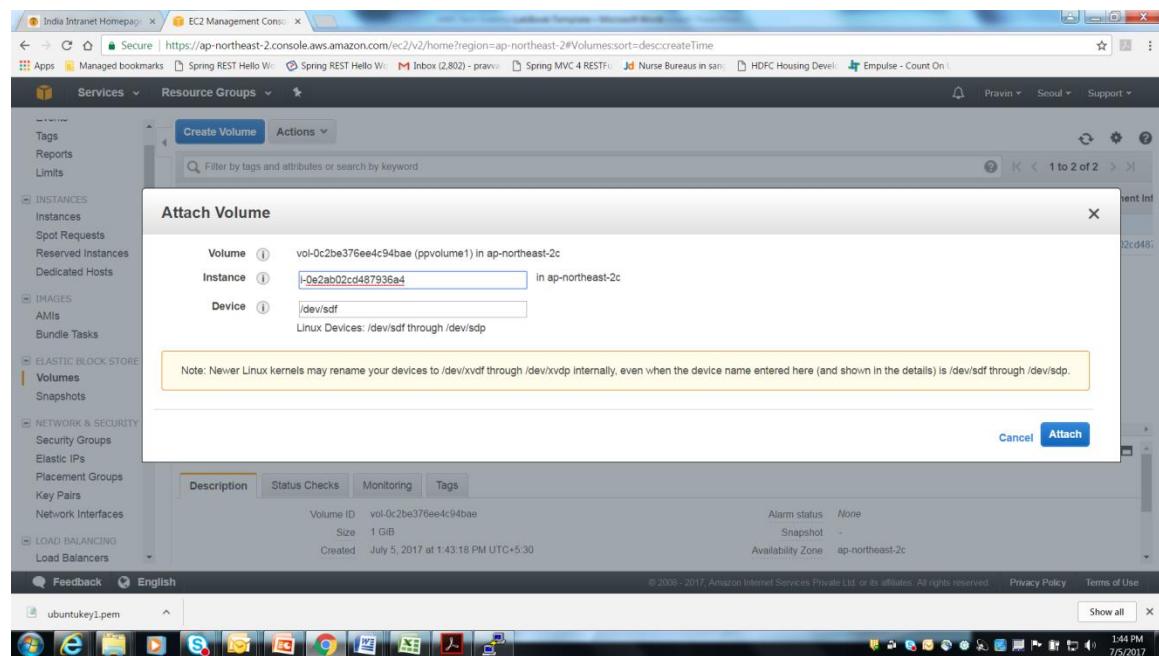
Step 3: Change the volume size from 100 to 1 and select the availability zone same as the instance availability zone and hit the create button



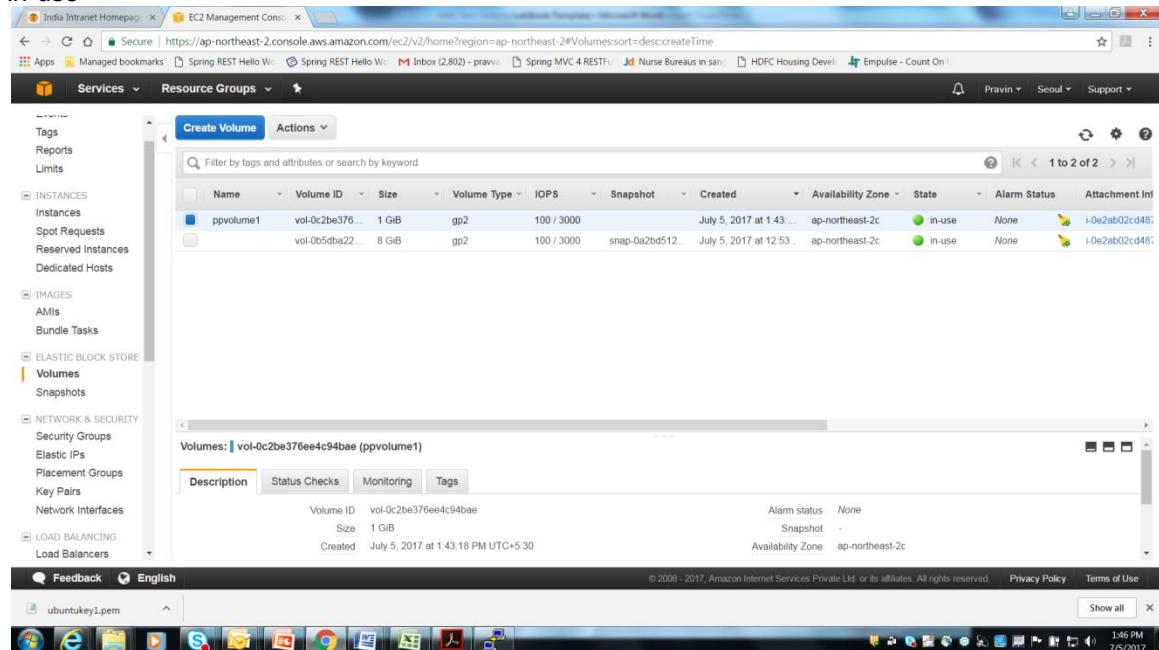
Step 4: Type the name of the volume , please ensure give the name to the volume where the state shown is available



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

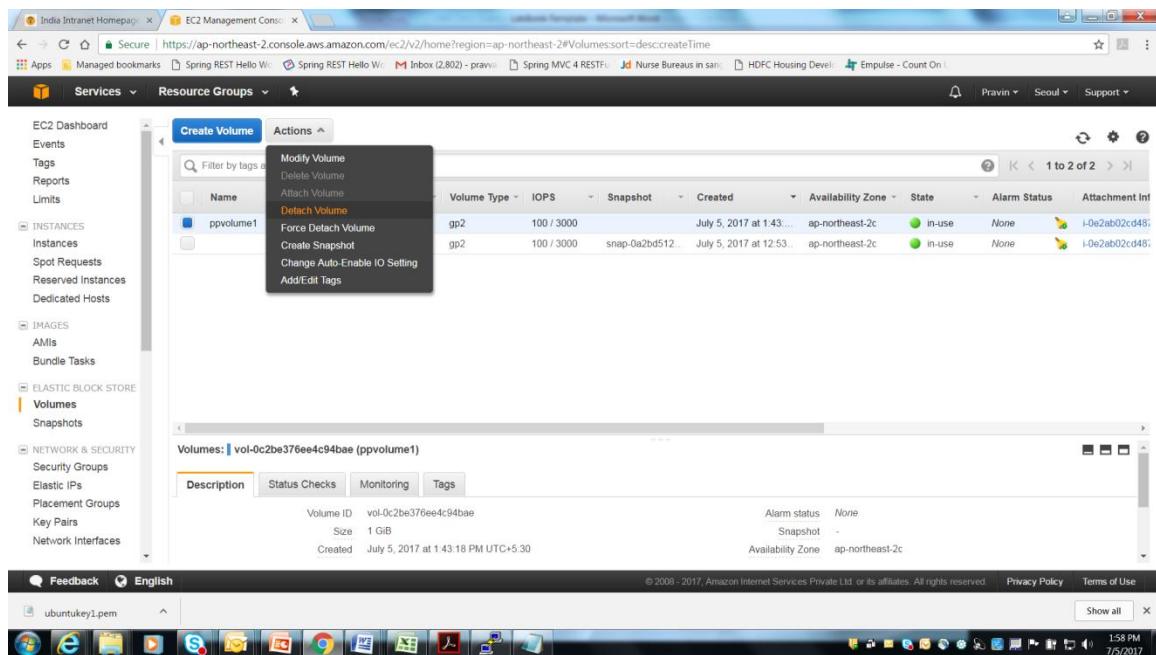
Now you create files on the volume.

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

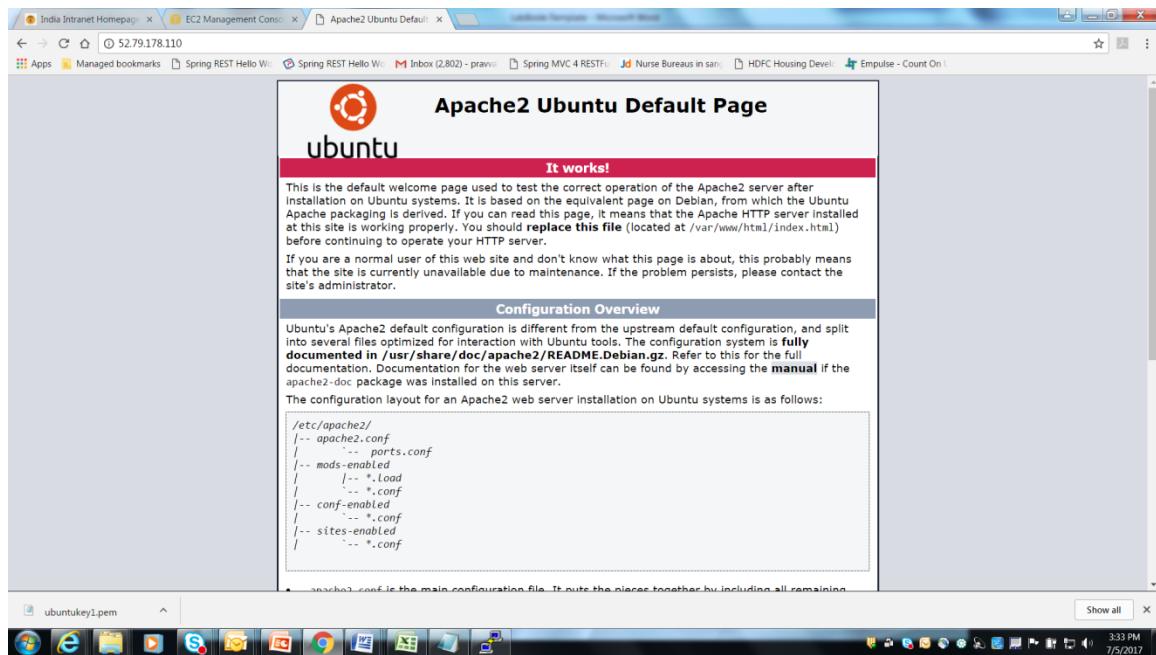
sudo su

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

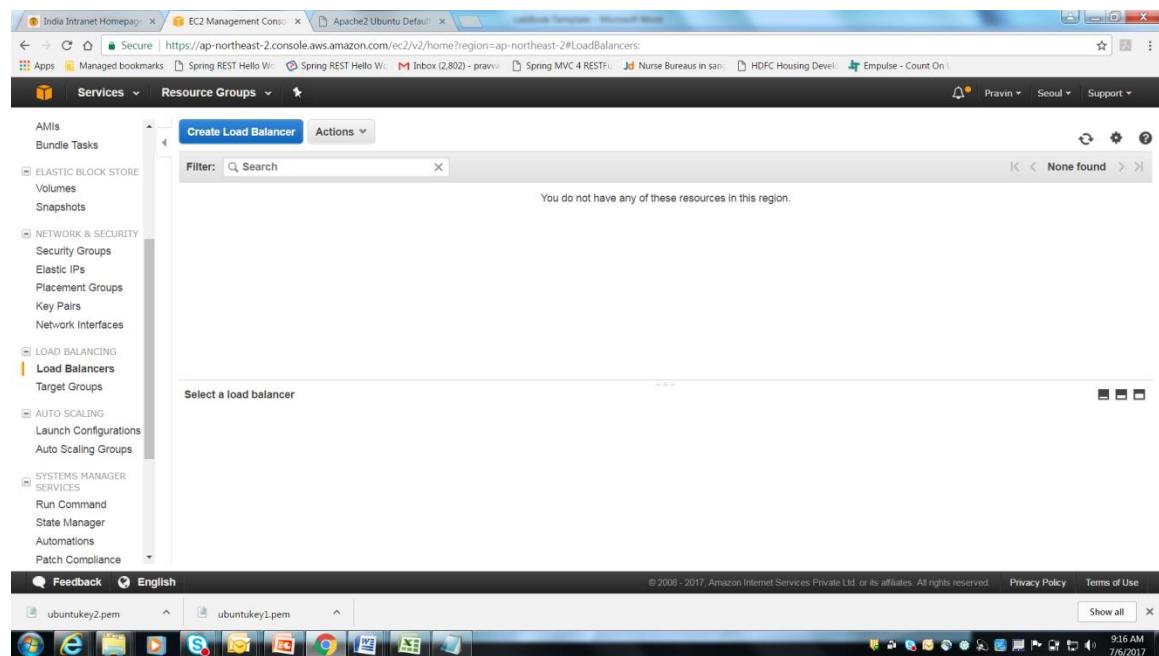


Lab 8. ELB

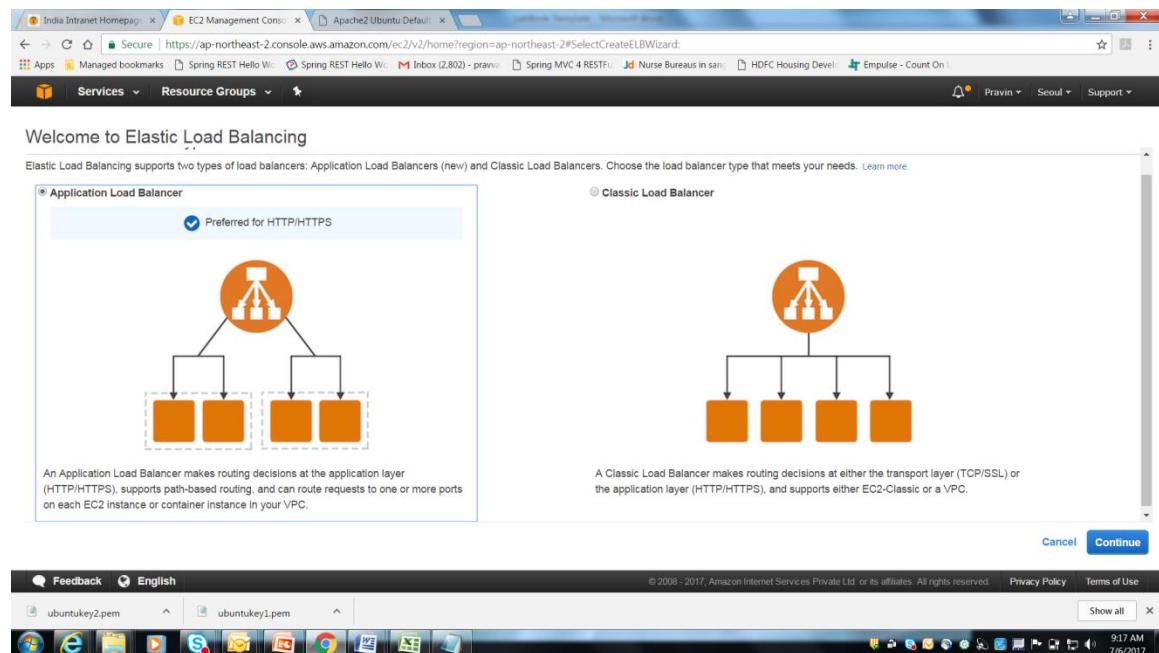
Goals	Understand the steps to configure ELB
Time	10 minutes

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.

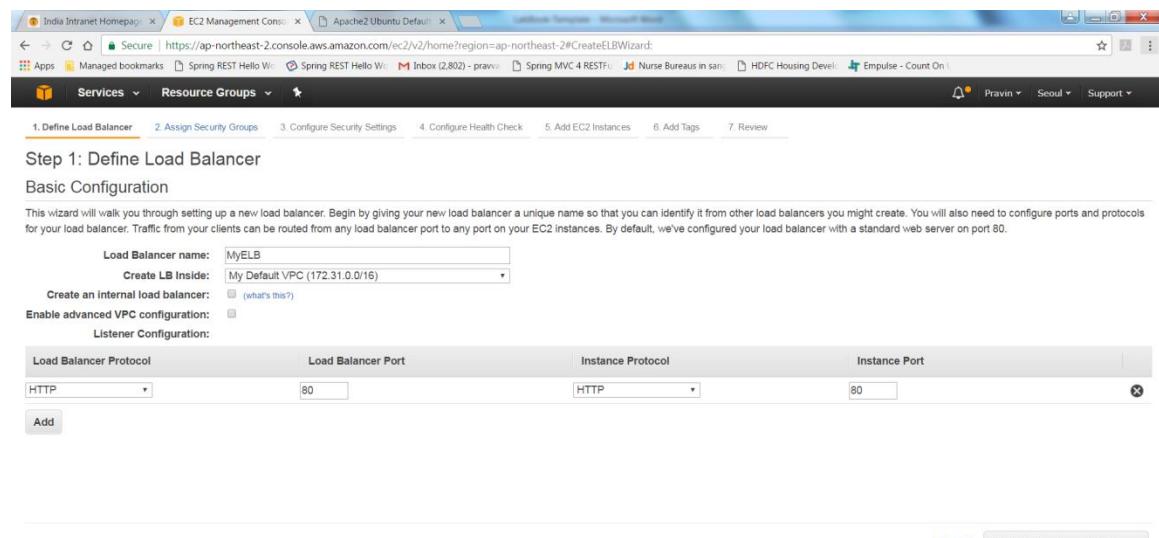
Step 2: Go to EC2 Dashboard, on the left click on the menu option Load Balancers under Load Balancing header to see the below screen



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



Step 1: Define Load Balancer

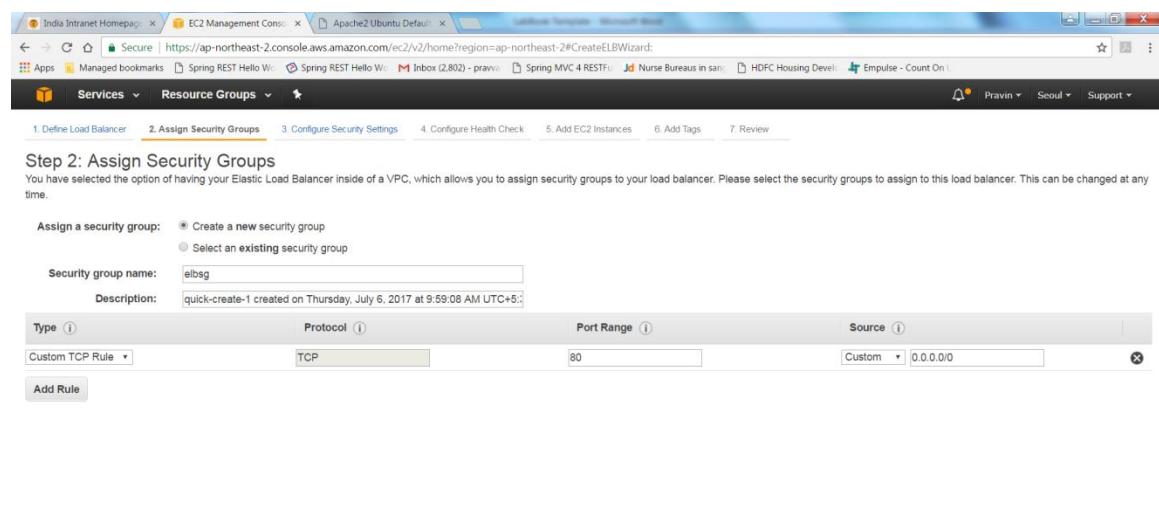
Basic Configuration

This wizard will walk you through setting up a new load balancer. Begin by giving your new load balancer a unique name so that you can identify it from other load balancers you might create. You will also need to configure ports and protocols for your load balancer. Traffic from your clients can be routed from any load balancer port to any port on your EC2 instances. By default, we've configured your load balancer with a standard web server on port 80.

Load Balancer Protocol	Load Balancer Port	Instance Protocol	Instance Port
HTTP	80	HTTP	80

Next: Assign Security Groups

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



Step 2: Assign Security Groups

You have selected the option of having your Elastic Load Balancer inside of a VPC, which allows you to assign security groups to your load balancer. Please select the security groups to assign to this load balancer. This can be changed at any time.

Assign a security group:

- Create a new security group
- Select an existing security group

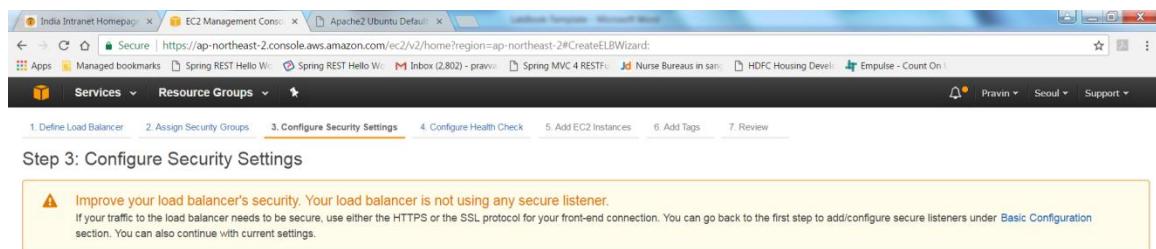
Security group name: elbsg

Description: quick-create-1 created on Thursday, July 6, 2017 at 9:59:08 AM UTC+5:30

Type	Protocol	Port Range	Source
Custom TCP Rule	TCP	80	Custom 0.0.0.0/0

Next: Configure Security Settings

Step 5: Click next



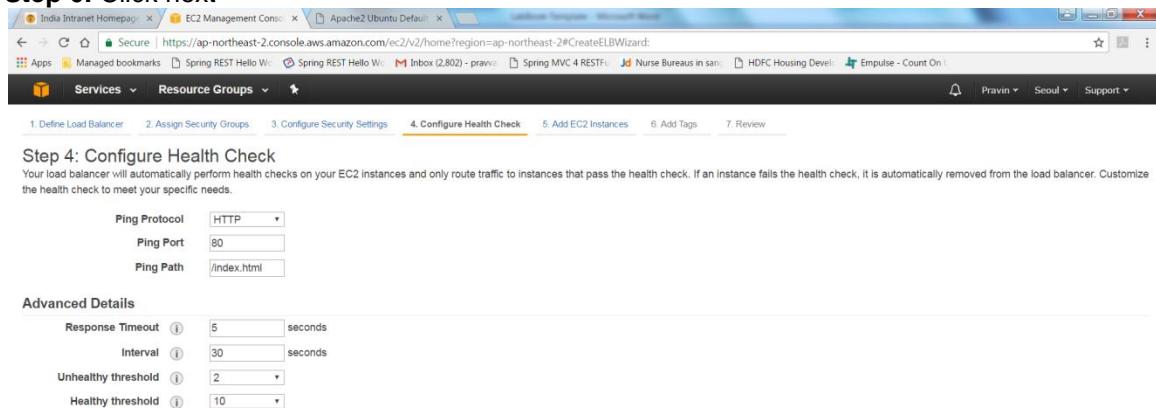
Step 3: Configure Security Settings

⚠ Improve your load balancer's security. Your load balancer is not using any secure listener.

If your traffic to the load balancer needs to be secure, use either the HTTPS or the SSL protocol for your front-end connection. You can go back to the first step to add/configure secure listeners under [Basic Configuration](#) section. You can also continue with current settings.



Step 6: Click next



Step 4: Configure Health Check

Your load balancer will automatically perform health checks on your EC2 instances and only route traffic to instances that pass the health check. If an instance fails the health check, it is automatically removed from the load balancer. Customize the health check to meet your specific needs.

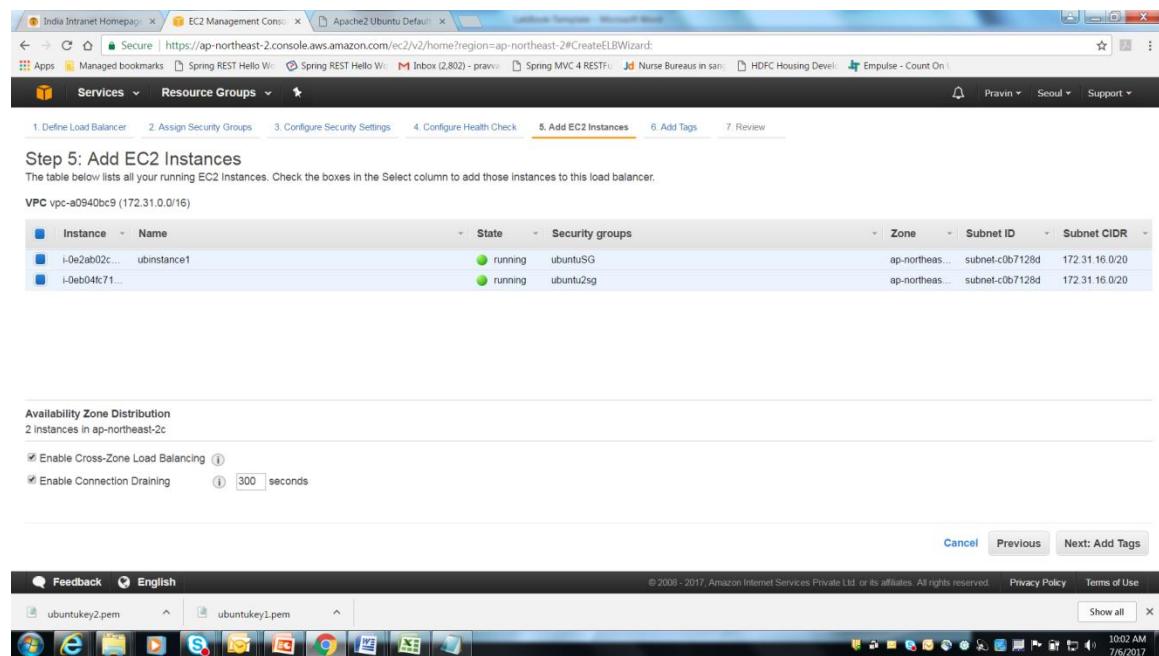
Ping Protocol	HTTP
Ping Port	80
Ping Path	/index.html

Advanced Details

Response Timeout	5 seconds
Interval	30 seconds
Unhealthy threshold	2
Healthy threshold	10



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



Step 5: Add EC2 Instances

The table below lists all your running EC2 Instances. Check the boxes in the Select column to add those instances to this load balancer.

VPC vpc-a0940bc9 (172.31.0.0/16)

Instance	Name	State	Security groups	Zone	Subnet ID	Subnet CIDR
i-0e2ab02c...	ubinstance1	running	ubuntuSG	ap-northeas...	subnet-cb7128d	172.31.16.0/20
i-0eb04fk71...		running	ubuntu2sg	ap-northeas...	subnet-cb7128d	172.31.16.0/20

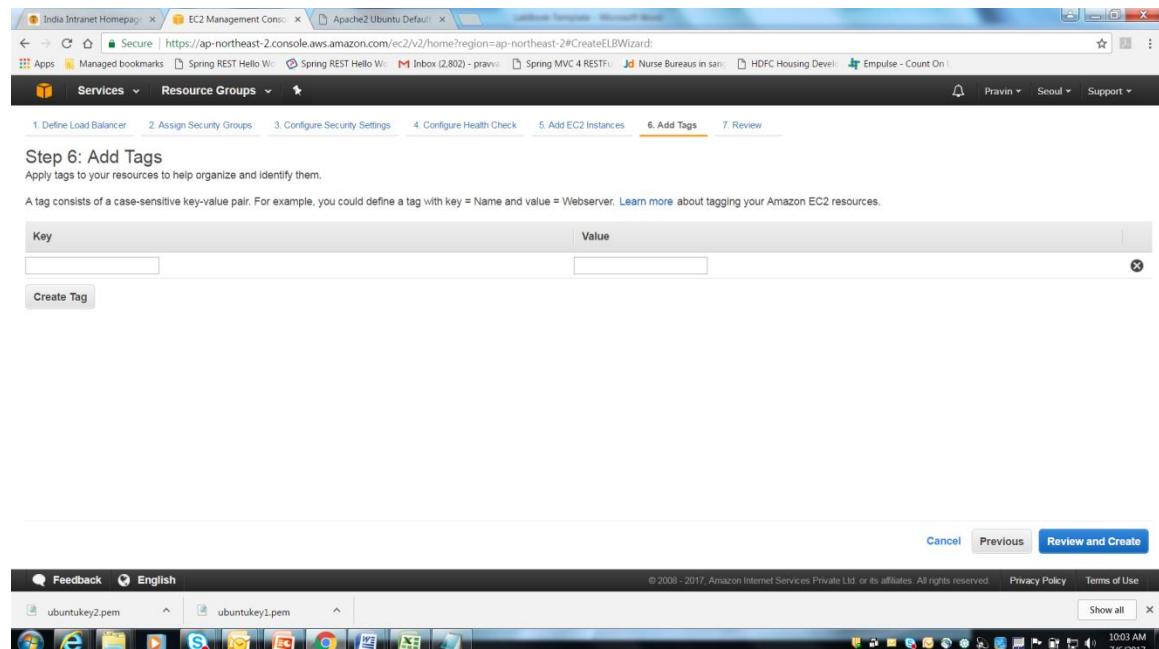
Availability Zone Distribution
2 instances in ap-northeast-2c

Enable Cross-Zone Load Balancing (Optional)

Enable Connection Draining (Optional) [300] seconds

Cancel Previous Next: Add Tags

Step 8: Click Review and Create button



Step 6: Add Tags

Apply tags to your resources to help organize and identify them.

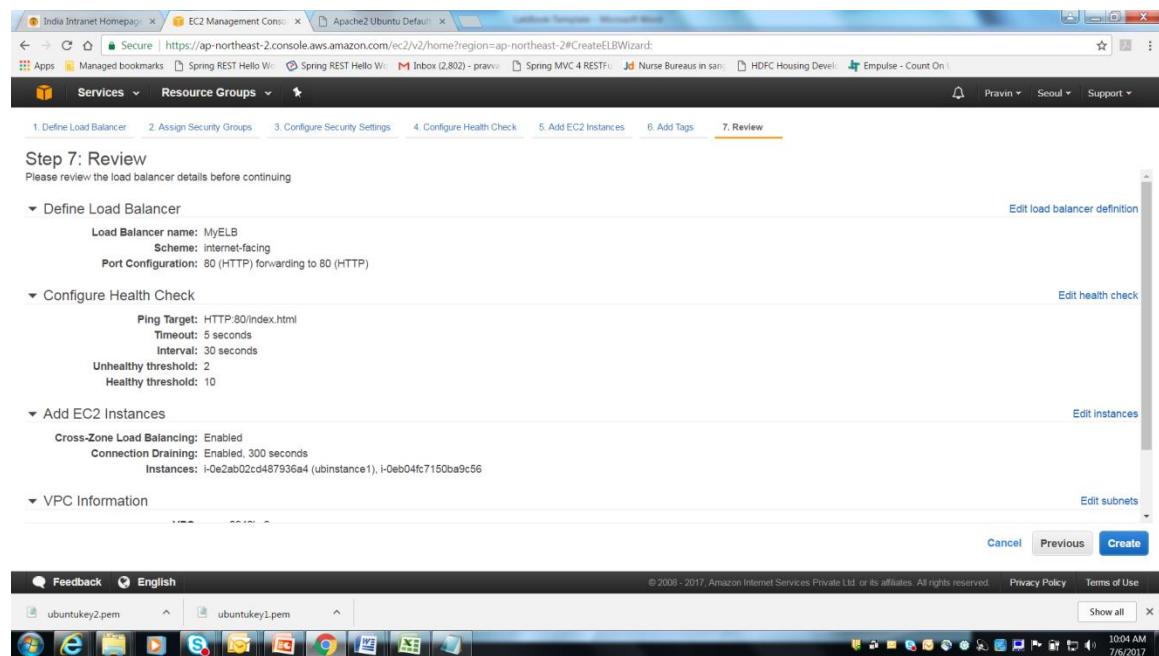
A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver. [Learn more](#) about tagging your Amazon EC2 resources.

Key	Value
<input type="text"/>	<input type="text"/>

Create Tag

Cancel Previous Review and Create

Step 9: Click Create

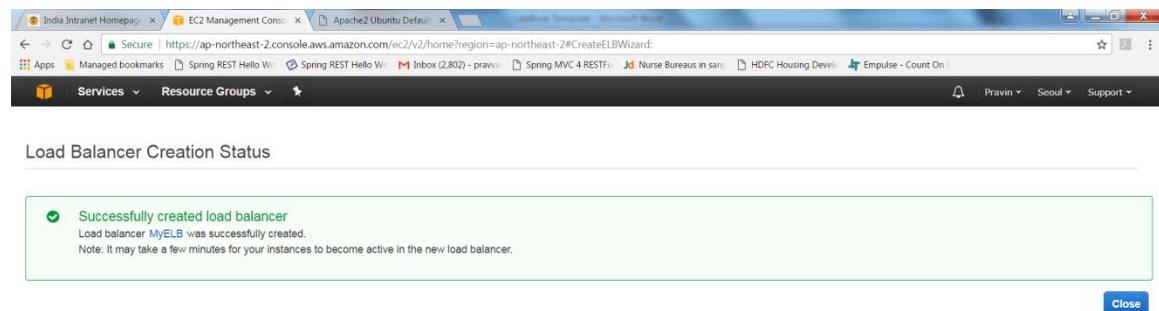


Step 7: Review
Please review the load balancer details before continuing

- Define Load Balancer**
 - Load Balancer name: MyELB
 - Scheme: internet-facing
 - Port Configuration: 80 (HTTP) forwarding to 80 (HTTP)
- Configure Health Check**
 - Ping Target: HTTP:80/index.html
 - Timeout: 5 seconds
 - Interval: 30 seconds
 - Unhealthy threshold: 2
 - Healthy threshold: 10
- Add EC2 Instances**
 - Cross-Zone Load Balancing: Enabled
 - Connection Draining: Enabled, 300 seconds
 - Instances: i-0e2ab02cd487936a4 (ubinstance1), i-0eb04fc7150ba9c56
- VPC Information**

Create

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



Load Balancer Creation Status

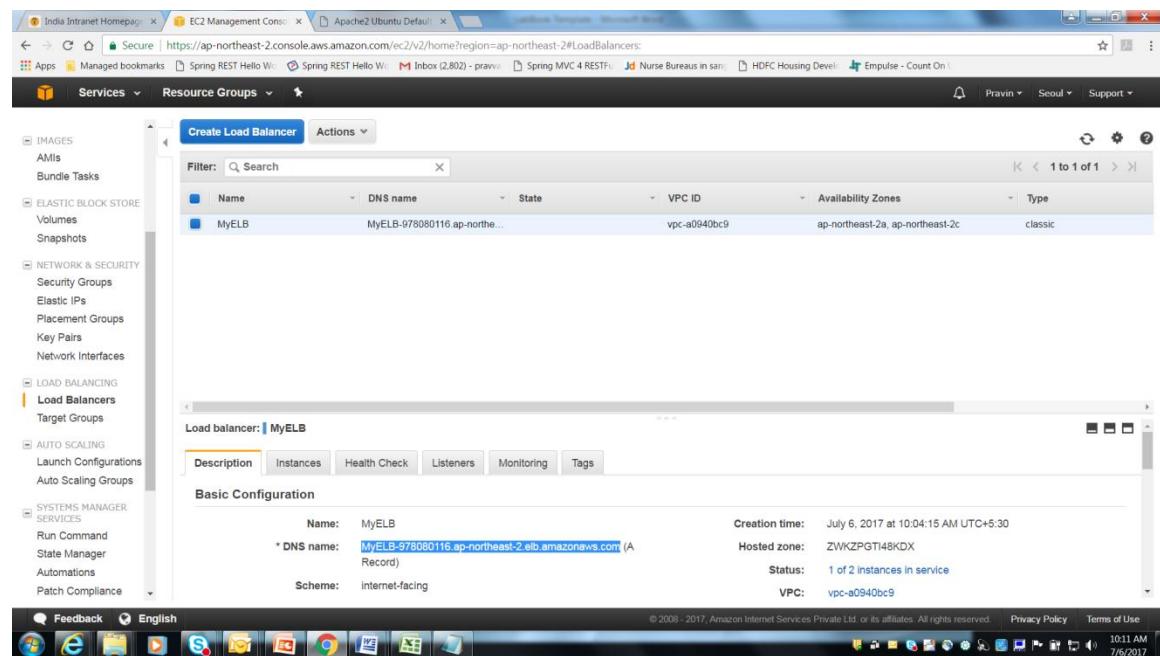
Successfully created load balancer
Load balancer MyELB was successfully created.
Note: It may take a few minutes for your instances to become active in the new load balancer.

Close



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 requests to check for the working of Load balancer.

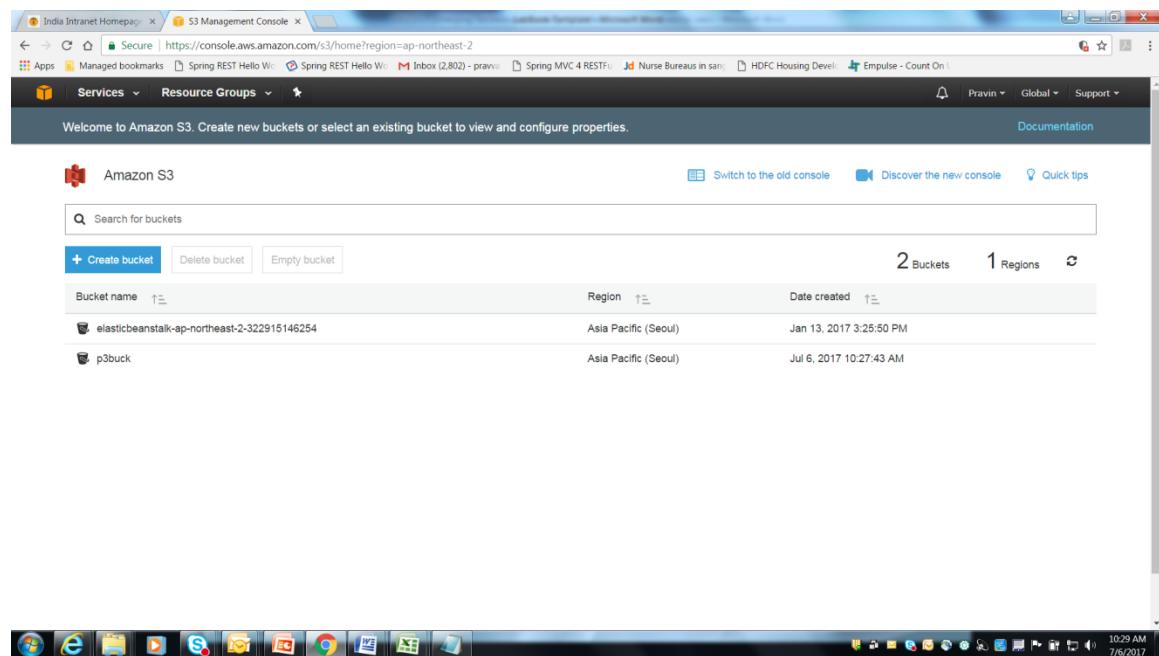


Name	DNS name	State	VPC ID	Availability Zones	Type
MyELB	MyELB-978080116.ap-northeast-2.elb.amazonaws.com	Active	vpc-a0940bc9	ap-northeast-2a, ap-northeast-2c	classic

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



Welcome to Amazon S3. Create new buckets or select an existing bucket to view and configure properties.

Amazon S3

Search for buckets

+ Create bucket Delete bucket Empty bucket

2 Buckets 1 Regions

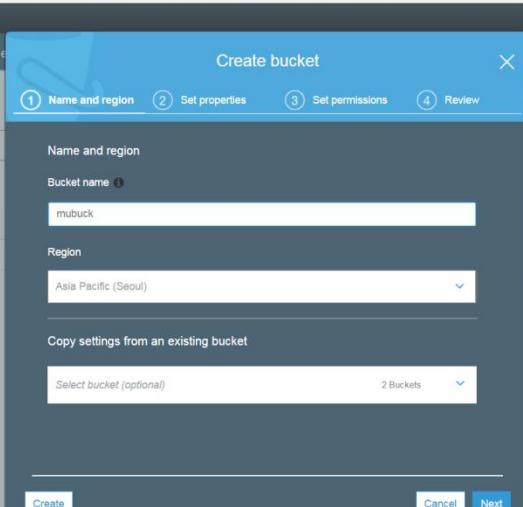
Bucket name	Region	Date created
elasticbeanstalk-ap-northeast-2-322915146254	Asia Pacific (Seoul)	Jan 13, 2017 3:25:50 PM
p3buck	Asia Pacific (Seoul)	Jul 6, 2017 10:27:43 AM

Switch to the old console Discover the new console Quick tips

Pravin Global Support Documentation

10:29 AM 7/6/2017

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



Welcome to Amazon S3. Create new buckets or select an existing bucket to view and configure properties.

Amazon S3

Search for buckets

+ Create bucket Delete bucket Empty bucket

Bucket name: mubuck

Region: Asia Pacific (Seoul)

Copy settings from an existing bucket

Select bucket (optional)

Create Cancel Next

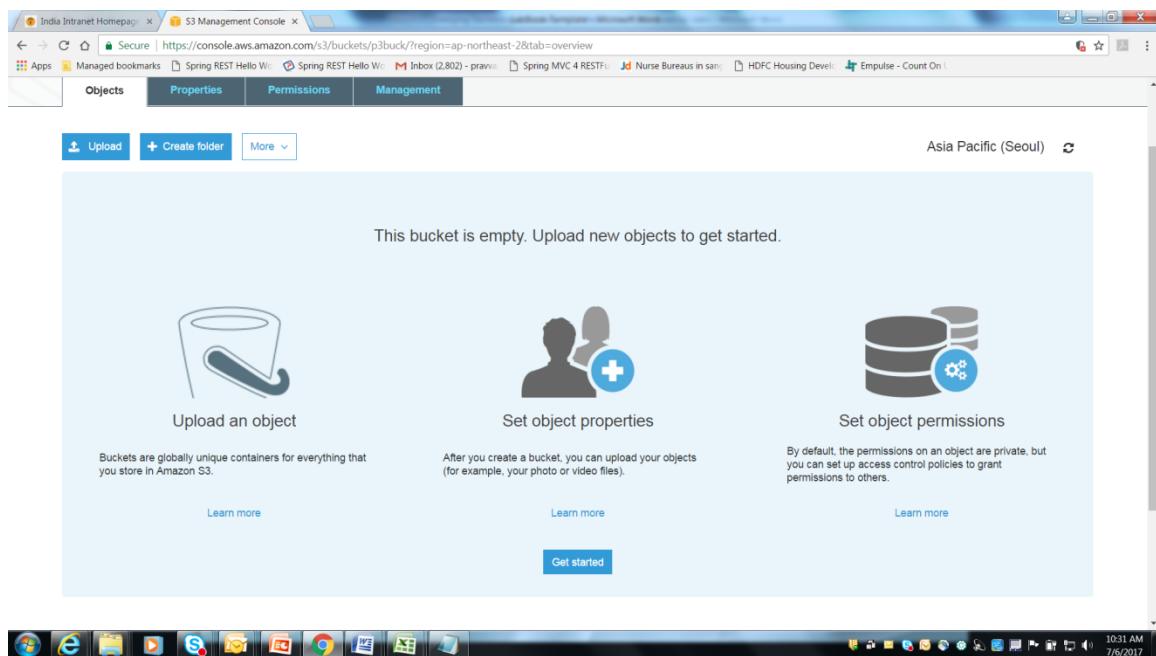
2 Buckets 1 Regions

Switch to the old console Discover the new console Quick tips

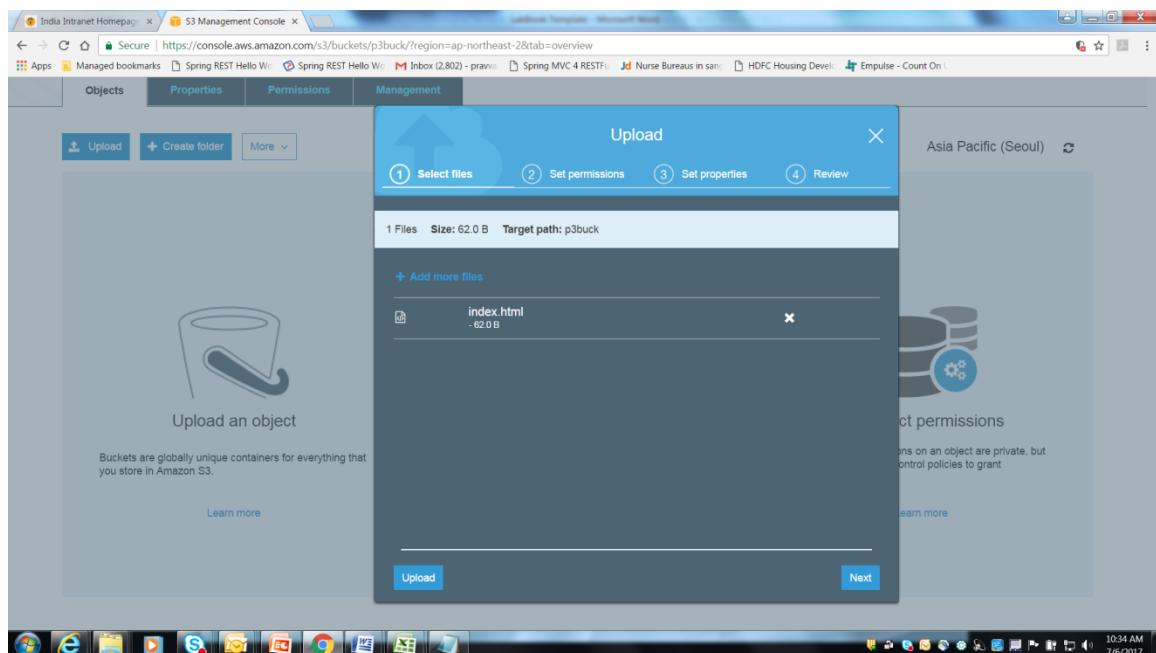
Pravin Global Support Documentation

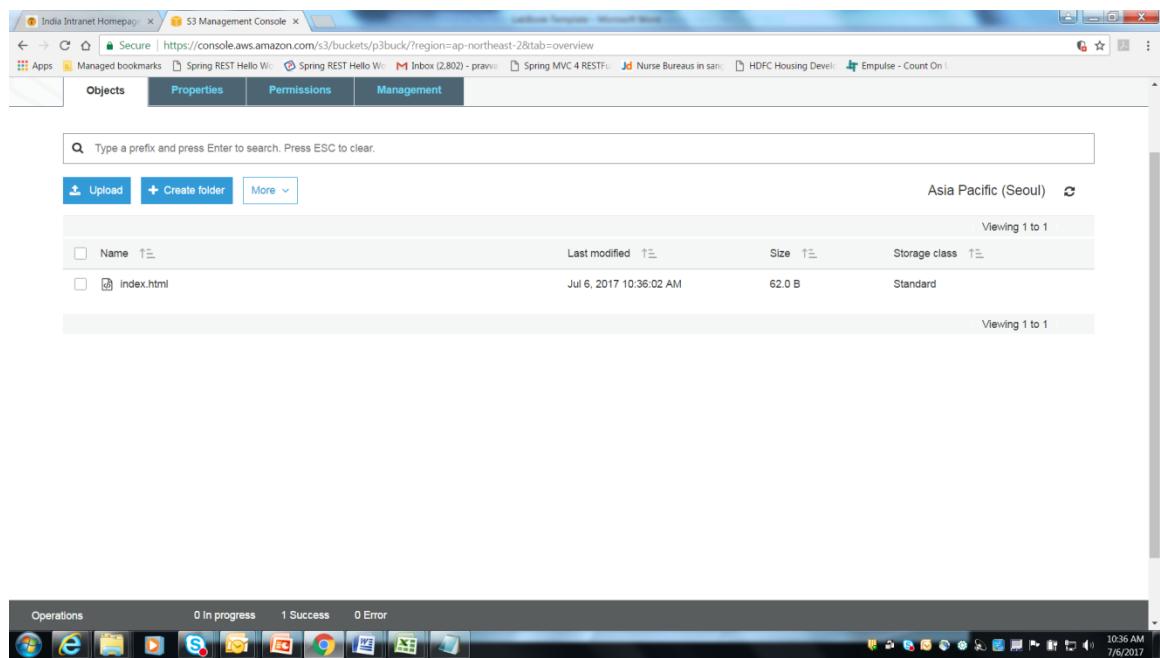
10:30 AM 7/6/2017

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





The screenshot shows the AWS S3 Management Console interface. At the top, there are tabs for Objects, Properties, Permissions, and Management. The Management tab is selected. Below the tabs is a search bar with placeholder text "Type a prefix and press Enter to search. Press ESC to clear." Underneath the search bar are three buttons: Upload, Create folder, and More. To the right of these buttons, it says "Asia Pacific (Seoul)" with a refresh icon. Below this, a message "Viewing 1 to 1" is displayed. A table lists a single object:

Name	Last modified	Size	Storage class
index.html	Jul 6, 2017 10:36:02 AM	62.0 B	Standard

At the bottom of the table, another message "Viewing 1 to 1" is shown. The bottom of the window features a toolbar with various icons for operations like upload, download, and delete, along with status indicators: 0 In progress, 1 Success, 0 Error. The system tray at the very bottom shows icons for network, battery, and volume, with the date and time "10:36 AM 7/6/2017".