



SRI LANKA INSTITUTE OF INFORMATION TECHNOLOGY

Enterprise Standards and Best Practices for IT Infrastructure

4th Year 2nd Semester 2016

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Group Number:

Practical Session: WD

Practical Number: Lab 2

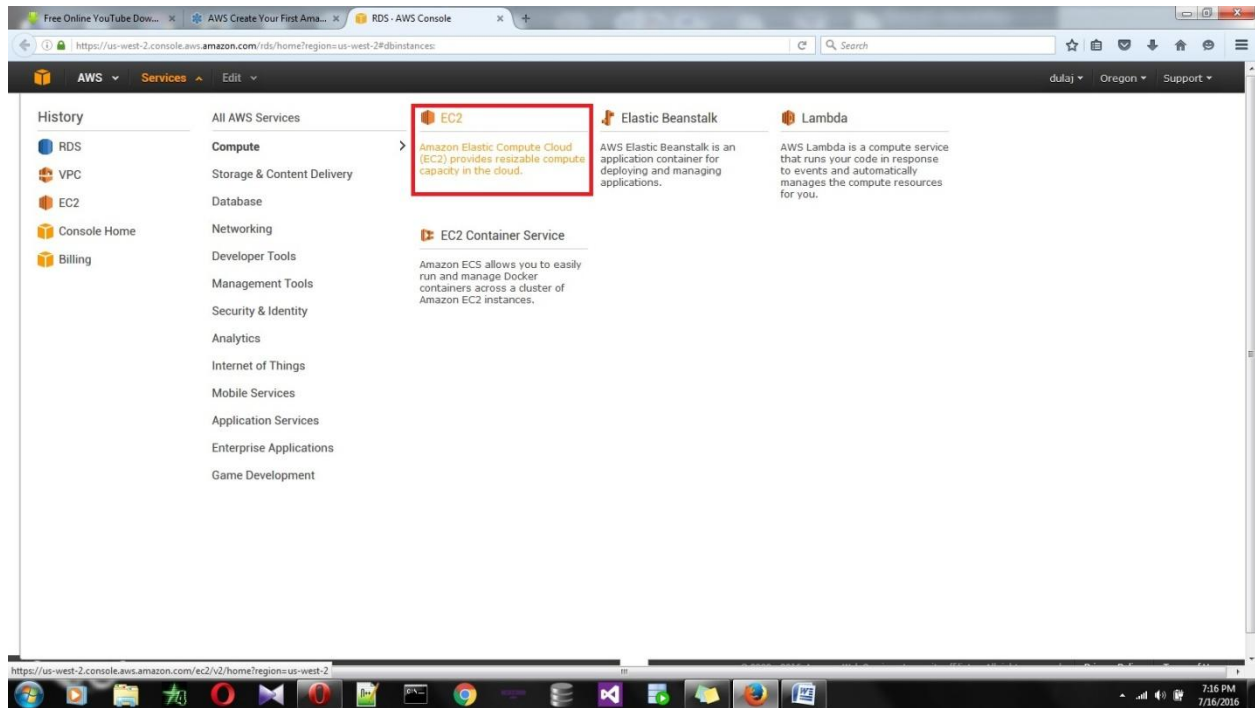
Date of Submission: 28-07-2016

Date of Evaluation : _____

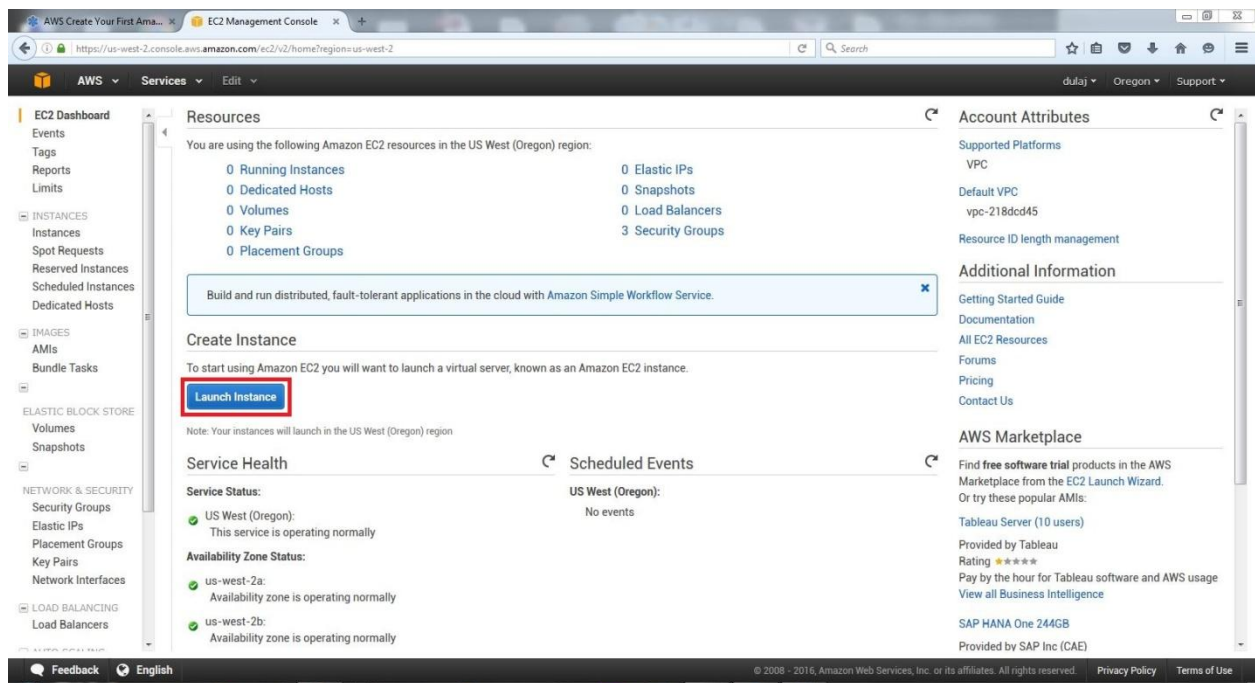
Evaluators Signature : _____

Step 1

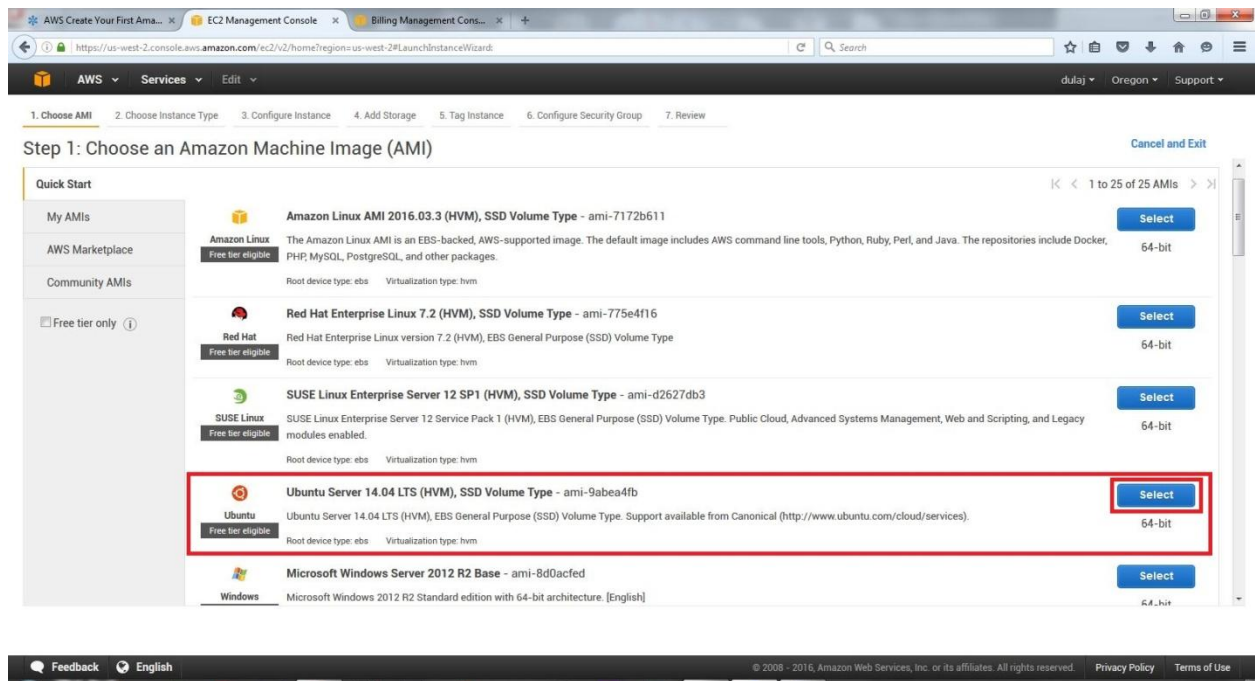
To create an EC (2Linux) instance, click “EC2” under Compute section in services.



From the EC2 Dashboard, click “Launch Instance”.

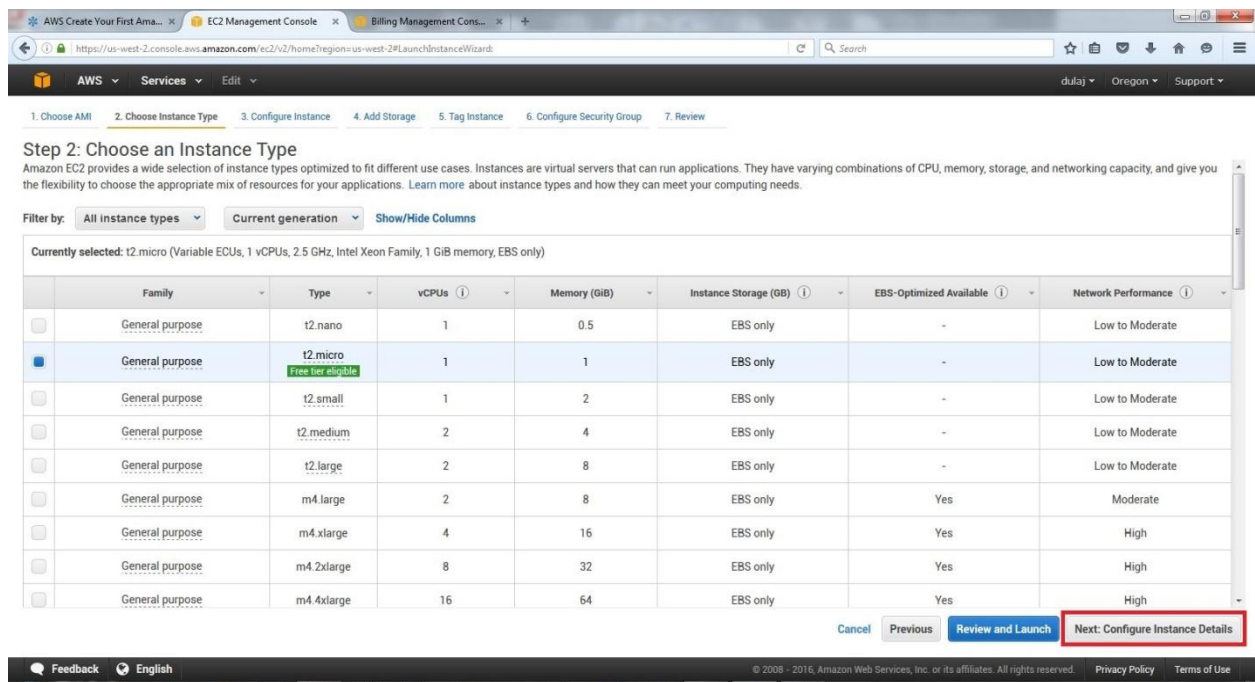


Click “Select” for “Ubuntu Server 14.04 LTS...”.



Step 2

Select the appropriate type. Here I select “t2.micro” sine it is eligible for free tier.



Click “Next: Configure Instance Details”.

Step 3

Under “Configure Instance Details” select “Network” and “Subnet”. Click “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: ☐ Request Spot instances

Network: vpc-218dcd45 (172.31.0.0/16) (default) [Create new VPC](#)

Subnet: subnet-43b7c627 (172.31.16.0/20) | Default in us-w... [Create new subnet](#)
4090 IP Addresses available

Auto-assign Public IP: Use subnet setting (Enable)

IAM role: None [Create new IAM role](#)

Shutdown behavior: Stop

Enable termination protection: ☐ Protect against accidental termination

Monitoring: ☐ Enable CloudWatch detailed monitoring
[Additional charges apply.](#)

Tenancy: Shared - Run a shared hardware instance
[Additional charges will apply for dedicated tenancy.](#)

Network interfaces

Device	Network Interface	Subnet	Primary IP	Secondary IP addresses
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[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Add Storage](#)

Step 4

Under “Add Storage” page, click “Review and Launch” without doing any modification.

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-306df873	8	General Purpose SSD (GP2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypted

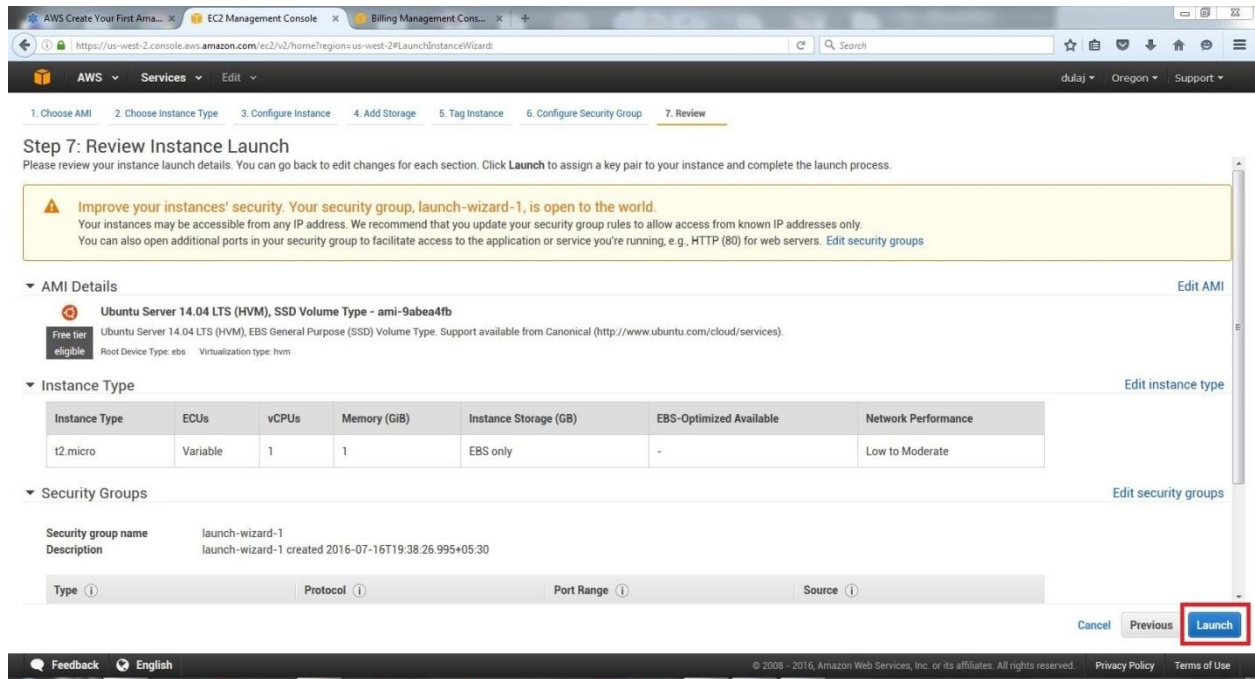
[Add New Volume](#)

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.

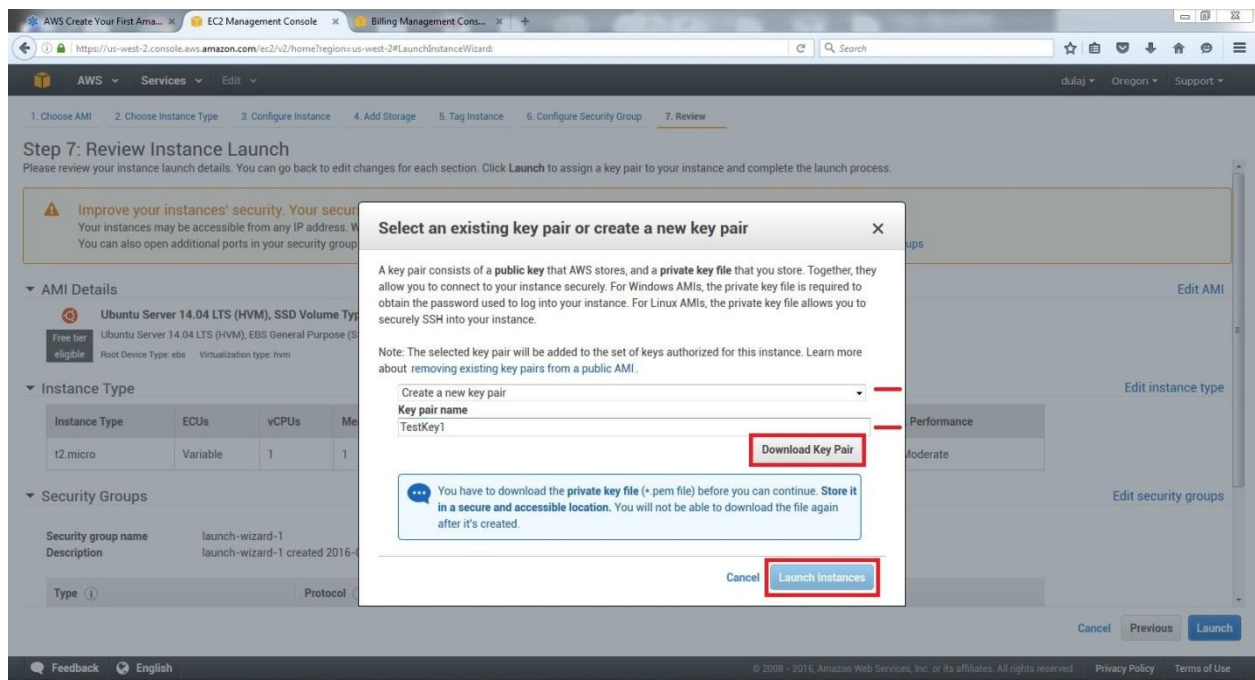
[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Tag Instance](#)

Step 5

On “Review Instance Launch” page, click “Launch”.



A popup page will be displayed asking for select a key pair or to create a key pair. Select “Create a new key pair” and enter a key name. Then click “Download Key Pair”.



Now click “Launch Instances”.

At the resulting page, we are notified that the instances are launching.

The screenshot shows the 'Launch Status' page in the AWS Management Console. At the top, there's a navigation bar with 'AWS', 'Services', and 'Edit' buttons. Below the navigation bar, the page title is 'Launch Status'. A green notification box states: 'Your instances are now launching. The following instance launches have been initiated: i-05d18c21613e0d381. View launch log'. Below this, a blue information box says: 'Get notified of estimated charges. Create billing alerts to get an email notification when estimated charges on your AWS bill exceed an amount you define (for example, if you exceed the free usage tier)'. The main content area is titled 'How to connect to your instances' and contains text explaining that instances are launching and will be in the 'running' state. It also provides a link to 'View Instances' to monitor their status. Below this, there are links to 'Here are some helpful resources to get you started', including 'How to connect to your Linux instance', 'Learn about AWS Free Usage Tier', 'Amazon EC2: User Guide', and 'Amazon EC2: Discussion Forum'. At the bottom, there are links for 'Create status check alarms', 'Create and attach additional EBS volumes', and 'Manage security groups'. A blue 'View Instances' button is located at the bottom right of the main content area. The footer includes 'Feedback', 'English', and copyright information.

On the “Instances” tab, we can see the instances we created.

The screenshot shows the 'Instances' tab in the AWS Management Console. The left sidebar contains a navigation menu with categories like 'INSTANCES', 'IMAGES', 'ELASTIC BLOCK STORE', 'NETWORK & SECURITY', and 'LOAD BALANCING'. The 'INSTANCES' section is expanded, showing 'Instances', 'Spot Requests', 'Reserved Instances', 'Scheduled Instances', and 'Dedicated Hosts'. The main content area displays a table of instances. The first instance is 'i-05d18c21613e0d381', which is a 't2.micro' instance in the 'us-west-2a' availability zone, currently in the 'running' state. Below the table, there's a detailed view for the selected instance, showing its 'Description', 'Status Checks', 'Monitoring', and 'Tags'. The 'Description' tab is active, displaying various instance details such as Instance ID, Instance state, Instance type, Private DNS, Private IPs, Secondary private IPs, VPC ID, Subnet ID, Network interfaces, Source/dest. check, EBS-optimized, Root device type, Root device, Block devices, Public DNS, Public IP, Elastic IPs, Availability zone, Security groups, Scheduled events, AMI ID, Platform, IAM role, Key pair name, Owner, Launch time, Termination protection, Lifecycle, Monitoring, Alarm status, and Kernel ID.

Step 6

Now we have to convert the PEM we downloaded to a PPK key. To convert that, we have to download PuTTYgen executable. The .exe can be downloaded from the following URL.

<http://the.earth.li/~sgtatham/putty/latest/x86/puttygen.exe>

Step 7

Run the downloaded exe.



Click "Load" to open an existing private key. Load the key file which we downloaded earlier.

The following message box will be appeared.



When we click “OK”, PuTTYgen displays a dialog box with information about the key we loaded.



Now click “Save private key”. Do not select a passphrase.

Now we are ready to use PuTTY for connecting to the instance we created.

Step 8

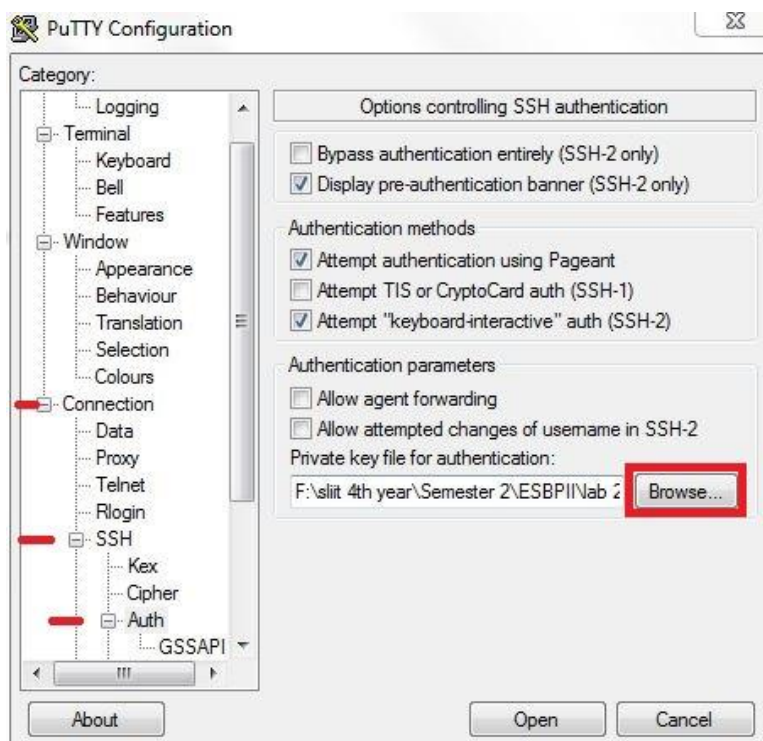
To download PuTTY, go to the URL and download putty.exe

<http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html>

Now open the putty.exe and enter the public DNS of the created EC2 instance as the “Host Name”. Make sure to prefix the DNS address with “ubuntu@” (as the username as in my case).



Then under Connection-> SSH-> Auth, select the converted Key for the “Private Key file for authentication”.



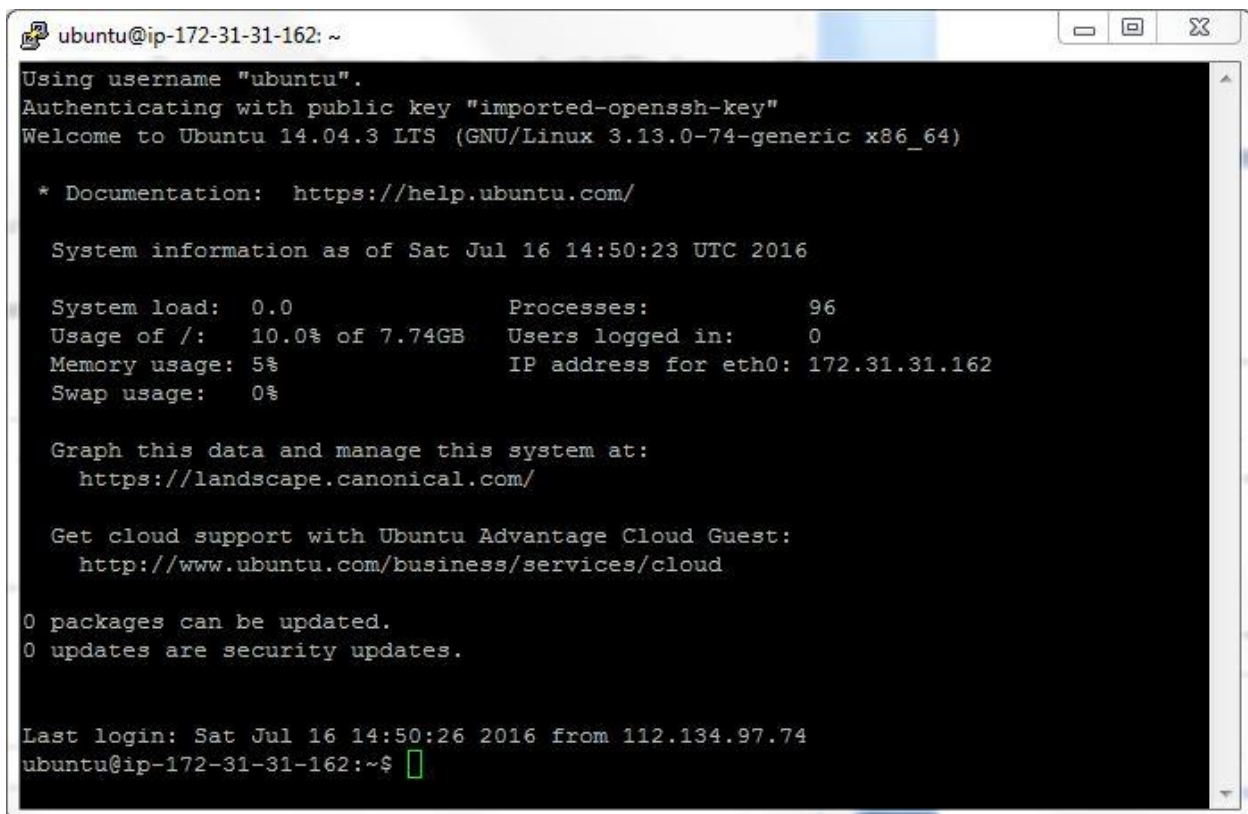
Click “Open”.

A dialog box will be showed asking whether to cache the key.



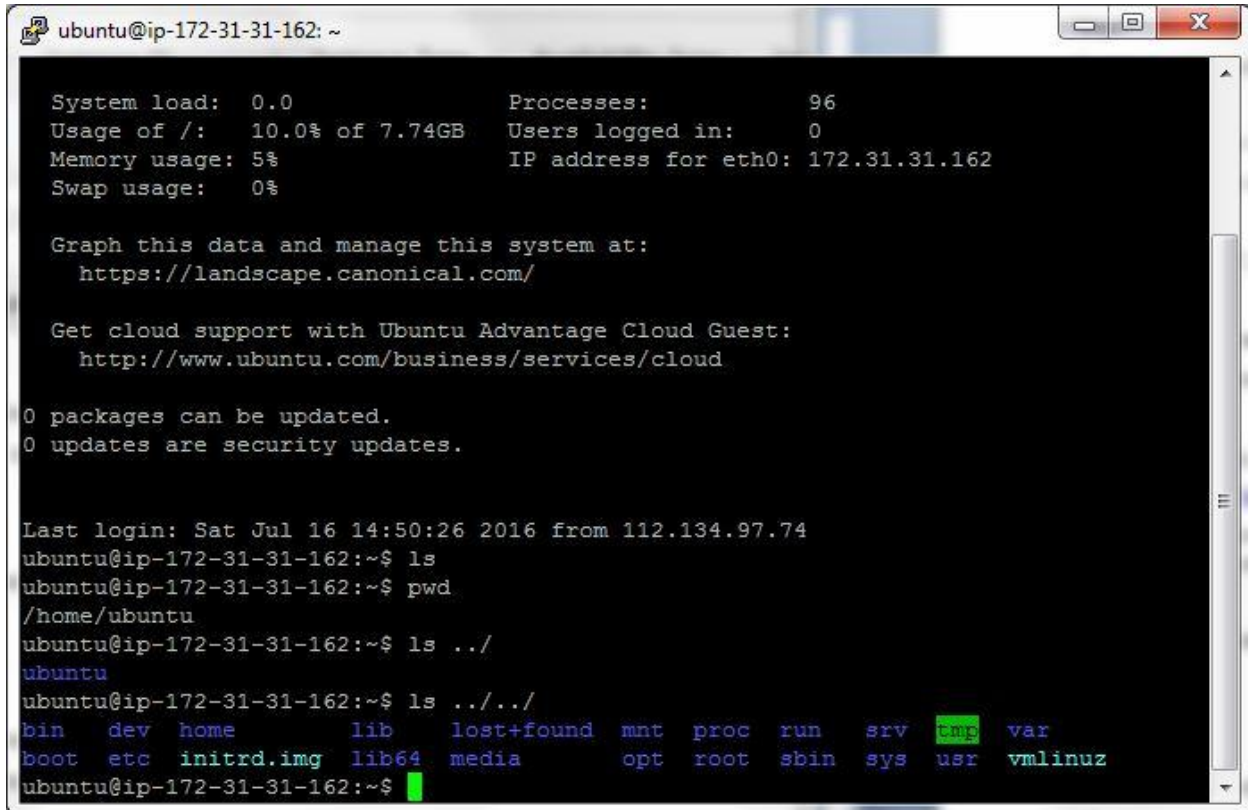
Click "Yes".

After the successful authentication following can be seen.

A screenshot of a terminal window titled 'ubuntu@ip-172-31-31-162: ~'. The terminal shows the following text: 'Using username "ubuntu".', 'Authenticating with public key "imported-openssh-key"', 'Welcome to Ubuntu 14.04.3 LTS (GNU/Linux 3.13.0-74-generic x86_64)', '* Documentation: https://help.ubuntu.com/', 'System information as of Sat Jul 16 14:50:23 UTC 2016', a table of system statistics (System load: 0.0, Usage of /: 10.0% of 7.74GB, Memory usage: 5%, Swap usage: 0%, Processes: 96, Users logged in: 0, IP address for eth0: 172.31.31.162), 'Graph this data and manage this system at: https://landscape.canonical.com/', 'Get cloud support with Ubuntu Advantage Cloud Guest: http://www.ubuntu.com/business/services/cloud', '0 packages can be updated.', '0 updates are security updates.', and 'Last login: Sat Jul 16 14:50:26 2016 from 112.134.97.74'. The prompt 'ubuntu@ip-172-31-31-162:~\$' is followed by a green cursor.

Step 9

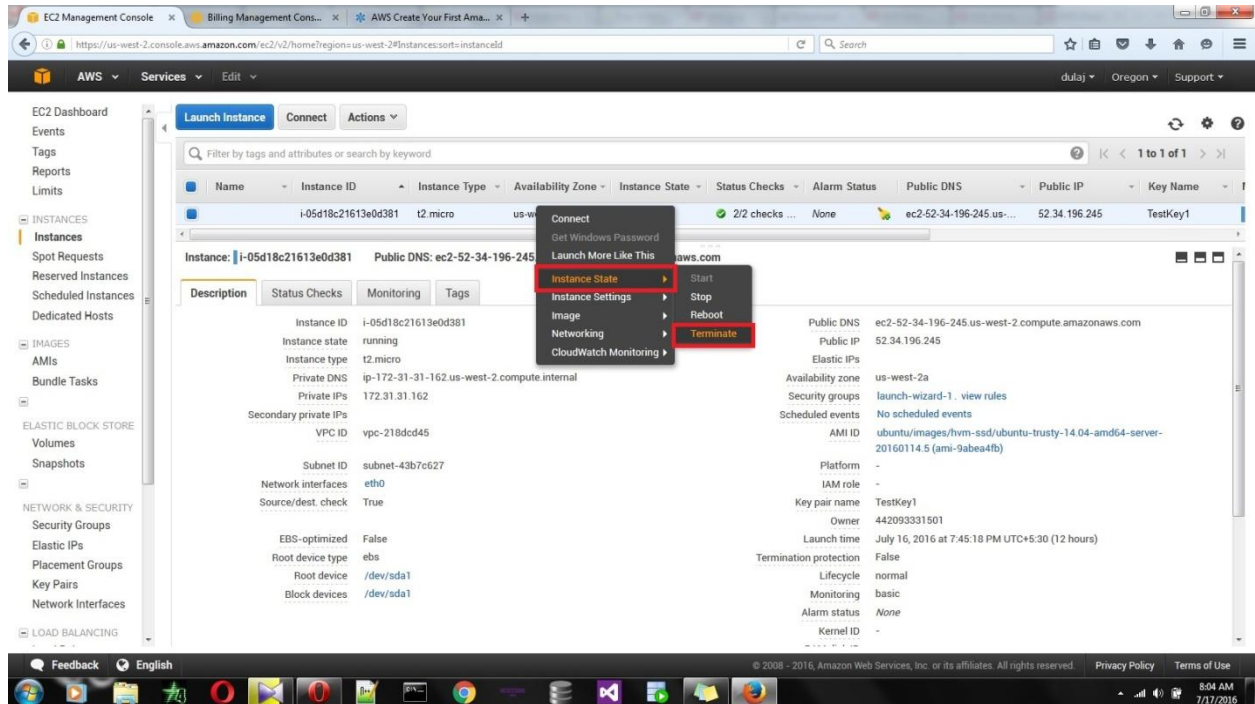
By issuing few Linux commands we can verify the server is working properly.

A terminal window titled 'ubuntu@ip-172-31-31-162: ~' with standard window controls. The terminal displays system statistics, update information, login history, and the output of several 'ls' commands. The system statistics show a load of 0.0, 10.0% disk usage, 5% memory usage, and 96 processes. It also shows the IP address for eth0 as 172.31.31.162. Update information indicates 0 packages can be updated, including 0 security updates. The last login was on Sat Jul 16 14:50:26 2016 from 112.134.97.74. The 'ls' commands show the current directory is /home/ubuntu, the parent directory is /, and the root directory contains various system directories and files like bin, dev, home, lib, lost+found, mnt, proc, run, srv, tmp, var, boot, etc, initrd.img, lib64, media, opt, root, sbin, sys, usr, and vmlinuz. The 'tmp' directory is highlighted in green in the original image.

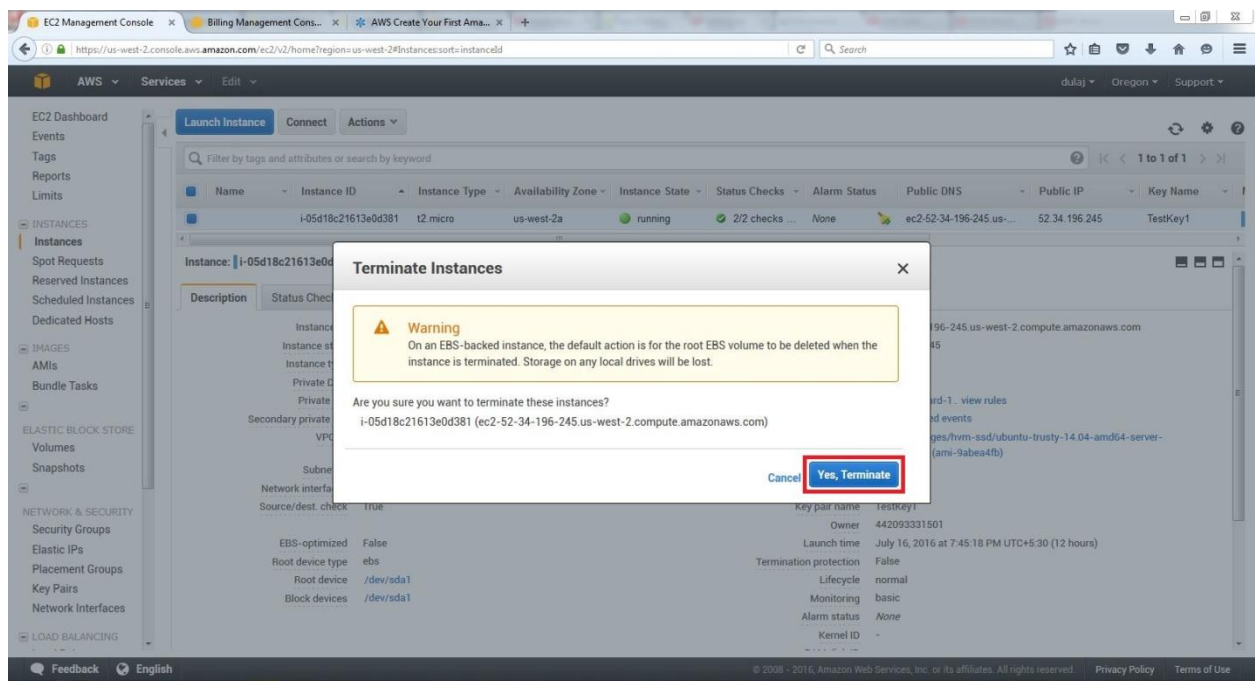
```
ubuntu@ip-172-31-31-162: ~  
  
System load:  0.0                Processes:            96  
Usage of /:   10.0% of 7.74GB    Users logged in:     0  
Memory usage: 5%                IP address for eth0: 172.31.31.162  
Swap usage:   0%  
  
Graph this data and manage this system at:  
  https://landscape.canonical.com/  
  
Get cloud support with Ubuntu Advantage Cloud Guest:  
  http://www.ubuntu.com/business/services/cloud  
  
0 packages can be updated.  
0 updates are security updates.  
  
Last login: Sat Jul 16 14:50:26 2016 from 112.134.97.74  
ubuntu@ip-172-31-31-162:~$ ls  
ubuntu@ip-172-31-31-162:~$ pwd  
/home/ubuntu  
ubuntu@ip-172-31-31-162:~$ ls ../  
ubuntu  
ubuntu@ip-172-31-31-162:~$ ls ../../  
bin    dev    home    lib    lost+found  mnt    proc    run    srv    tmp    var  
boot   etc    initrd.img  lib64  media      opt    root    sbin   sys    usr    vmlinuz  
ubuntu@ip-172-31-31-162:~$
```

Step 10

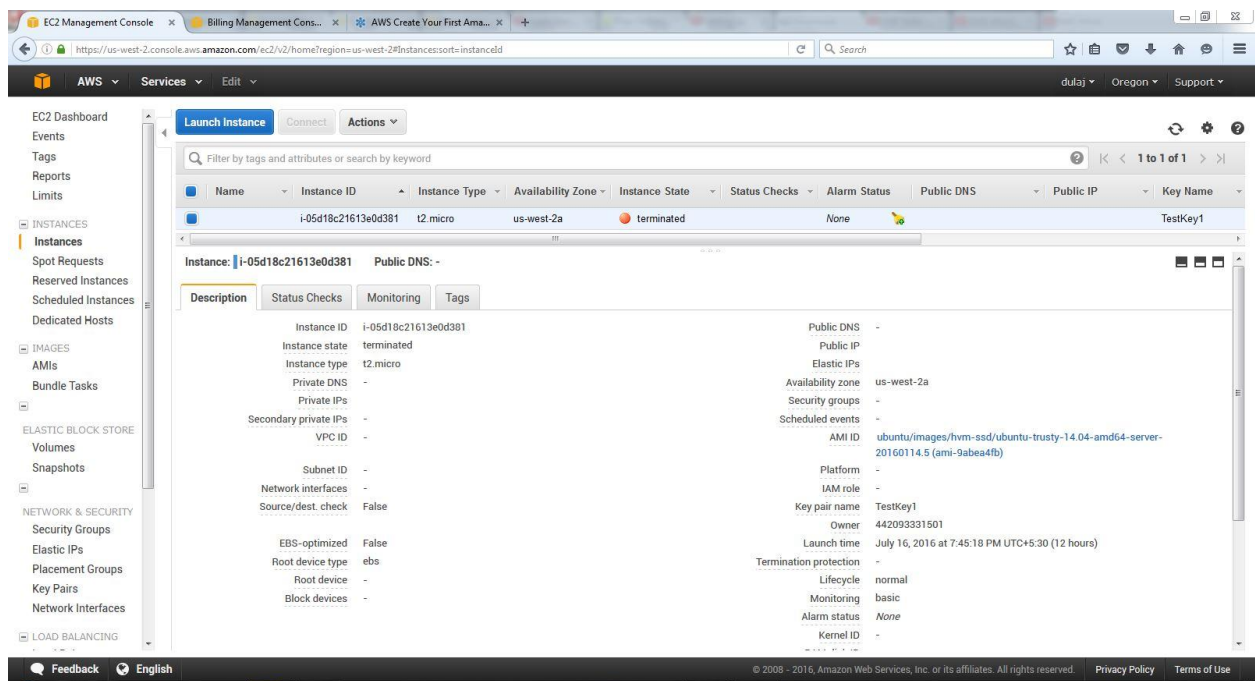
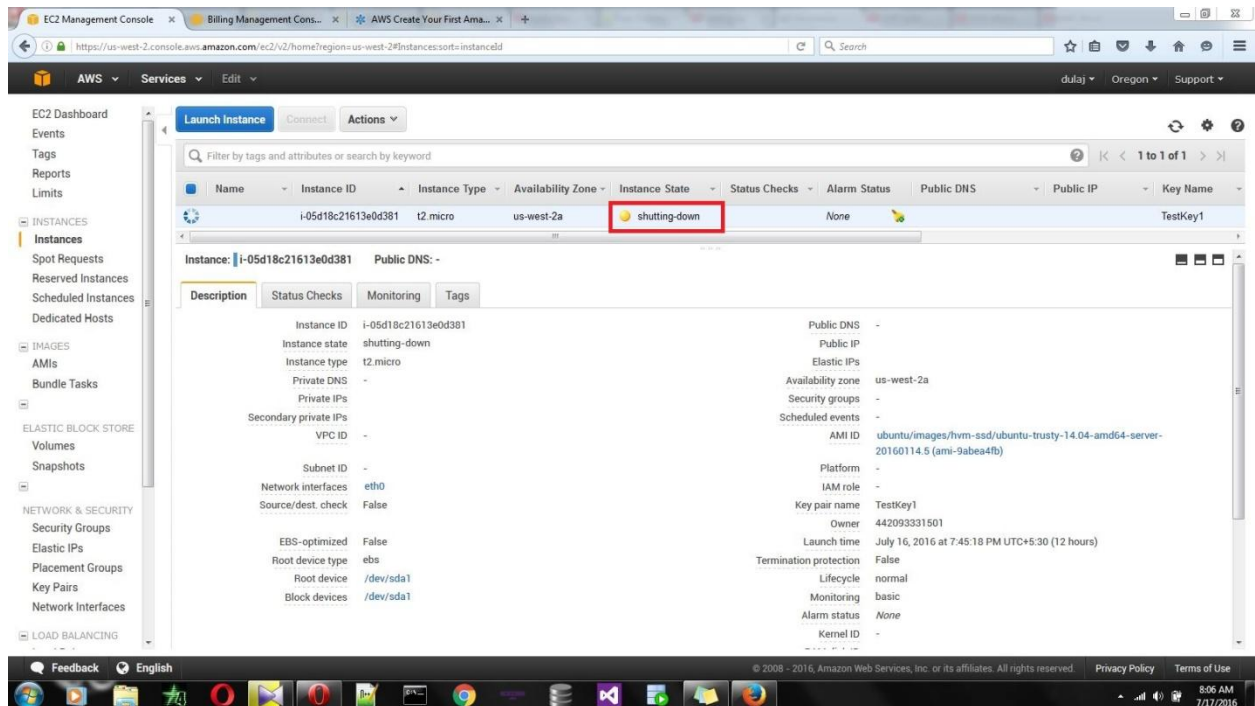
To terminate/remove the instance right click on the “Actions” or right click on the instance and go to “Instance State”. Then click “Terminate”.



A warning will be displayed whether confirming that we need to terminate the server instance. Click “Yes, Terminate”.



After that we can observe the server is being shut down from the “Instance State” column. It will take a couple of minutes to the server instance to shut down.



*** End of assignment 2***