

Enterprise Standards and Best Practices for IT Infrastructure

Lab 01 and 02-Lab Report

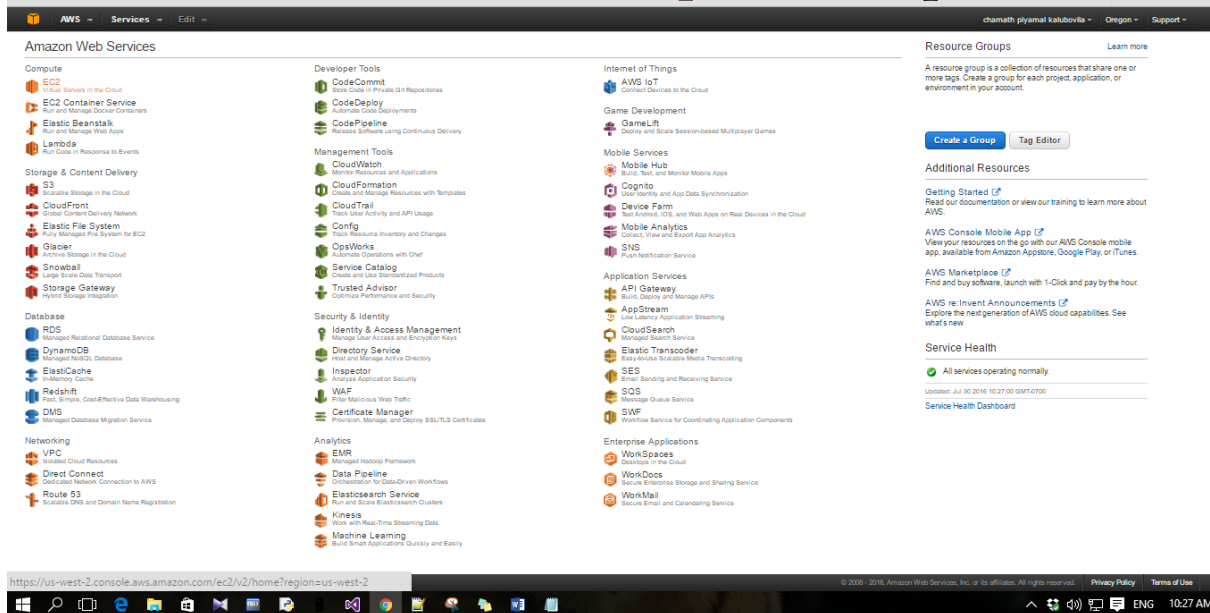
K.D.C.Piyamal –IT12080090

Software Requirements Specification

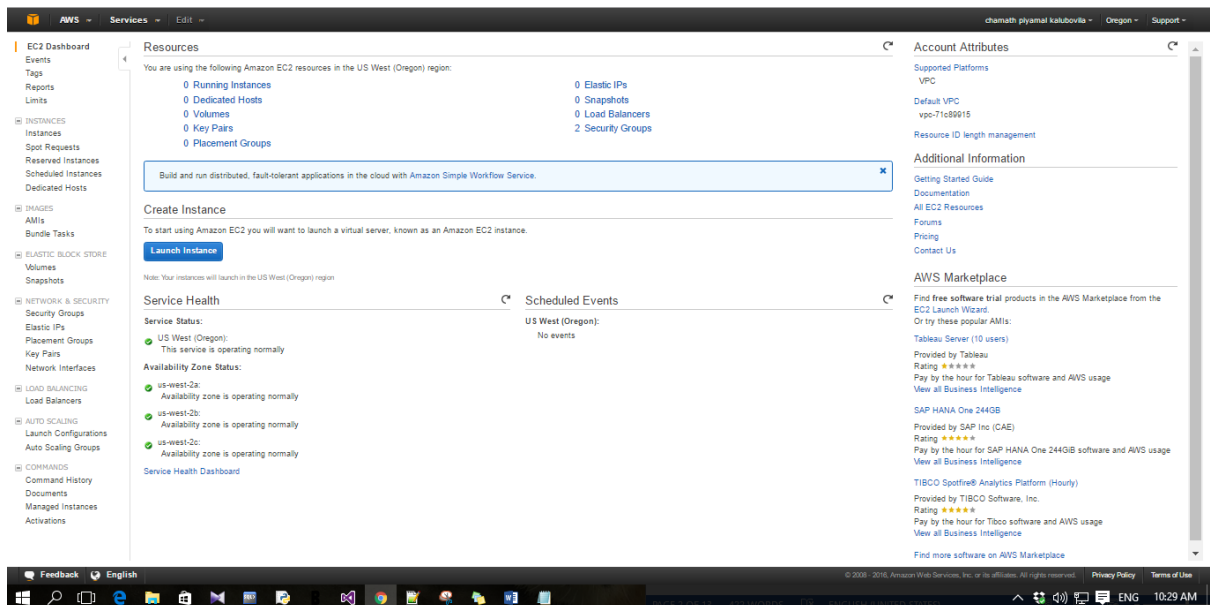
**Sri Lanka Institute of Information Technology
B.Sc. Special (Honors) Degree in Information Technology
Specialized in Information Technology**

Creating an Amazon EBS-Backed Windows AMI

Step 01: Select EC2 web service (virtual server in cloud) from Amazon web servers.



Step 02: Select Launch Instance under Create Instance in main interface.



Step 03: Choose an Amazon Machine image (AMI).(Select Microsoft windows Server 2012 R2 Base)

Step 1: Choose an Amazon Machine Image (AMI)

Cancel and Exit

AMI Linux SUSE Linux Enterprise Server 12 Service Pack 1 (HVM), EBS General Purpose (SSD) Volume Type, Public Cloud, Advanced Systems Management, Web and Scripting, and Legacy modules enabled. Root device type: ebs Virtualization type: hvm 64-bit

Free tier eligible

Ubuntu Ubuntu Server 14.04 LTS (HVM), SSD Volume Type - ami-d732f0b7 Root device type: ebs Virtualization type: hvm 64-bit

Free tier eligible

Windows Microsoft Windows Server 2012 R2 Base - ami-26e72546 Root device type: ebs Virtualization type: hvm 64-bit

Free tier eligible

Are you launching a database instance? Try Amazon RDS. Amazon Relational Database Service (RDS) makes it easy to set up, operate, and scale a relational database of your choice (MySQL, PostgreSQL, Oracle, SQL Server) in the cloud. It provides cost-efficient and resizable capacity while managing time-consuming database management tasks, freeing you up to focus on your applications and business. Aurora is a MySQL-compatible, enterprise-class database at 1/10th the cost of commercial databases. Learn more about RDS. [Launch a database using RDS](#) Hide

Windows Microsoft Windows Server 2012 R2 with SQL Server Express - ami-08ed2f98 Root device type: ebs Virtualization type: hvm 64-bit

Windows Microsoft Windows Server 2012 R2 with SQL Server Web - ami-18ec2e78 Root device type: ebs Virtualization type: hvm 64-bit

Windows Microsoft Windows Server 2012 R2 with SQL Server Standard - ami-0de2f90 Root device type: ebs Virtualization type: hvm 64-bit

Windows Microsoft Windows Server 2012 R2 with SQL Server Express - ami-27e42647 Root device type: ebs Virtualization type: hvm 64-bit

Step 04: Choose an Instance type.

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

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

	Family	Type	vCPUs (1)	Memory (GiB)	Instance Storage (GB) (1)	EBS-Optimized Available (1)	Network Performance (1)
<input type="checkbox"/>	General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate
<input checked="" type="checkbox"/>	General purpose	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	t2.small	1	2	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	t2.large	2	8	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	m4.large	2	8	EBS only	Yes	Moderate
<input type="checkbox"/>	General purpose	m4.xlarge	4	16	EBS only	Yes	High
<input type="checkbox"/>	General purpose	m4.2xlarge	8	32	EBS only	Yes	High
<input type="checkbox"/>	General purpose	m4.4xlarge	16	64	EBS only	Yes	High
<input type="checkbox"/>	General purpose	m4.10xlarge	40	160	EBS only	Yes	10 Gbps
<input type="checkbox"/>	General purpose	m3.medium	1	2.75	1 x 4 (SSD)	-	Moderate
<input type="checkbox"/>	General purpose	m3.large	2	7.5	1 x 32 (SSD)	-	Moderate
<input type="checkbox"/>	General purpose	m3.xlarge	4	15	2 x 40 (SSD)	Yes	High
<input type="checkbox"/>	General purpose	m3.2xlarge	8	30	2 x 80 (SSD)	Yes	High

Cancel Previous **Review and Launch** Next: Configure Instance Details

Step 05: Review Instance Launch.

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.

Improve your instances' security. Your security group, launch-wizard-1, is open to the world.
Your instances may be accessible from any IP address. We recommend that you update your security group rules to allow access from known IP addresses only. You can also open additional ports in your security group to facilitate access to the application or service you're running, e.g., HTTP (80) for web servers. [Edit security groups](#)

AMI Details [Edit AMI](#)
Microsoft Windows Server 2012 R2 Base - ami-26e72546
Microsoft Windows 2012 R2 Standard edition with 64-bit architecture [English]
Root Device Type: x86 Virtualization type: hvm

Instance Type [Edit 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 [Edit security groups](#)

Type	Protocol	Port Range	Source
RDP	TCP	3389	0.0.0.0/0

Instance Details [Edit instance details](#)
Storage [Edit storage](#)
Tags [Edit tags](#)

[Cancel](#) [Previous](#) [Launch](#)

Step 06: After launch there is popup box which is to select an existing key pair or create new key pair. Select new key pair and download the key pair. After downloading the key pair click Launch Instance.

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.

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AMI Details [Edit AMI](#)
Microsoft Windows Server 2012 R2 Base - ami-26e72546
Microsoft Windows 2012 R2 Standard edition with 64-bit architecture [English]
Root Device Type: x86 Virtualization type: hvm

Instance Type [Edit instance type](#)

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage
t2.micro	Variable	1	1	EBS only

Security Groups [Edit security groups](#)

Type	Protocol
RDP	TCP

Instance Details [Edit instance details](#)
Storage [Edit storage](#)
Tags [Edit tags](#)

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
keyPair01
[Download Key Pair](#)
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.
[Cancel](#) [Launch Instances](#)

[Cancel](#) [Previous](#) [Launch](#)

Step 07: View instance after 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'. The user is 'chanath piyamal kalubovila' in the 'Oregon' region. The main content area has a green banner stating 'Your instances are now launching' with the instance ID 'i-05588d875c86e15b0' and a 'View launch log' link. Below this is a blue banner for 'Get notified of estimated charges'. The 'How to connect to your instances' section provides instructions and links to resources like the Amazon EC2 User Guide. A 'View Instances' button is at the bottom right.

Launch Status

Your instances are now launching
The following instance launches have been initiated: i-05588d875c86e15b0 [View launch log](#)

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).

How to connect to your instances

Your instances are launching, and it may take a few minutes until they are in the running state, when they will be ready for you to use. Usage hours on your new instances will start immediately and continue to accrue until you stop or terminate your instances. Click [View Instances](#) to monitor your instances' status. Once your instances are in the running state, you can connect to them from the Instances screen. [Find out how to connect to your instances.](#)

Here are some helpful resources to get you started:

- Amazon EC2: User Guide
- Amazon EC2: Microsoft Windows Guide
- Amazon EC2: Discussion Forum
- How to connect to your Windows instance
- Learn about AWS Free Usage Tier

While your instances are launching you can also:

- Create status check alarms to be notified when these instances fail status checks. (Additional charges may apply)
- Create and attach additional EBS volumes (Additional charges may apply)
- Manage security groups

[View Instances](#)

Step 08: Select the created instance and then connect.

The screenshot shows the 'Instances' page in the AWS Management Console. The instance 'i-05588d875c86e15b0' is selected. The 'Description' tab is active, showing details like Instance ID, Instance state (running), Instance type (t2.micro), Private DNS, Private IPs, Secondary private IPs, VPC ID, Public DNS, Public IP, Elastic IPs, Availability zone, Security groups, Scheduled events, and AMI ID. The 'Status Checks' tab is also visible.

Instances

Filter by tags and attributes or search by keyword

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS	Public IP	Key Name	Monitoring	Launch Time	Security Groups
	i-05588d875c86e15b0	t2.micro	us-west-2a	running	Initializing	None	ec2-54-187-100-139.us-west-2.compute.amazonaws.com	54.187.100.139	KeyPair01	disabled	July 30, 2016 at 10:38:10 AM...	launch-wizard-1

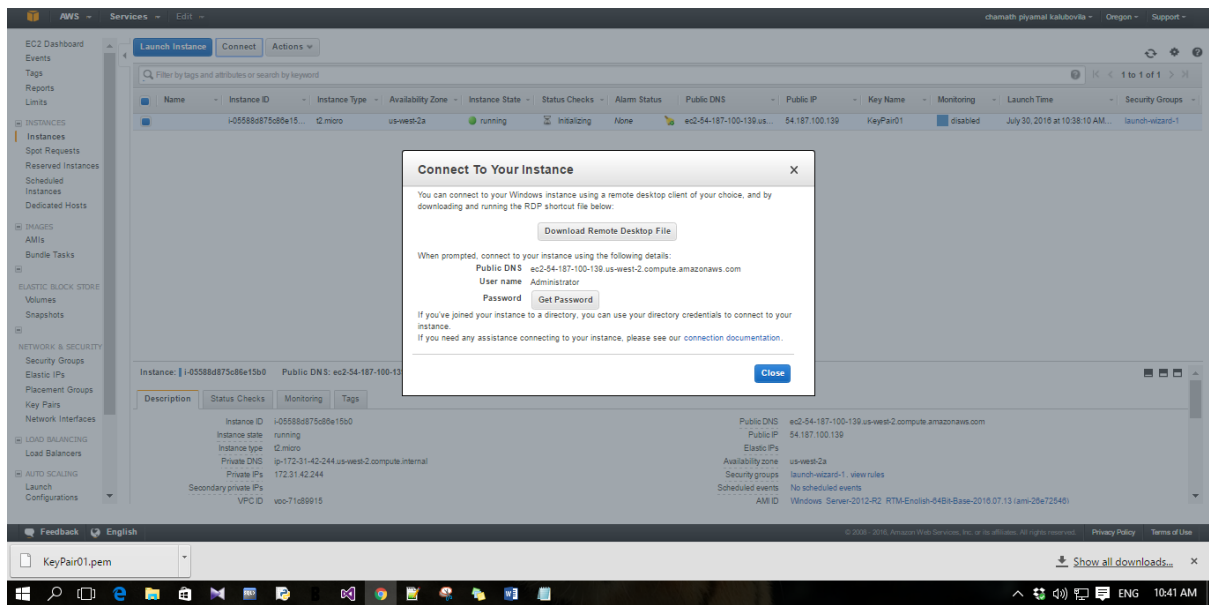
Instance: i-05588d875c86e15b0 Public DNS: ec2-54-187-100-139.us-west-2.compute.amazonaws.com

Description Status Checks Monitoring Tags

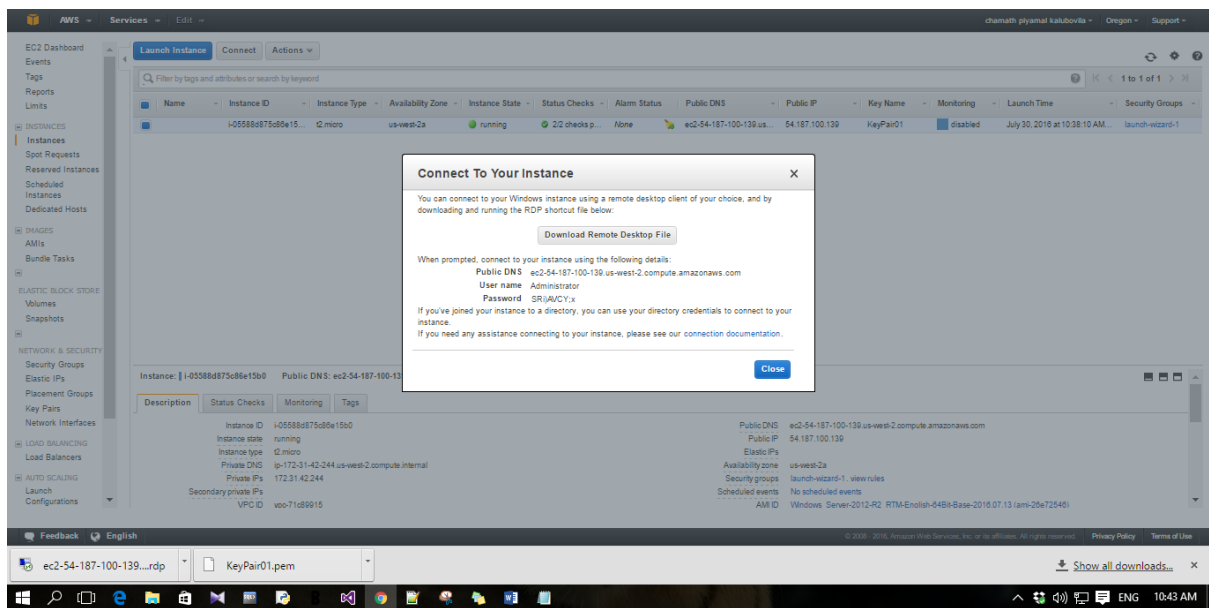
Instance ID: i-05588d875c86e15b0
Instance state: running
Instance type: t2.micro
Private DNS: ip-172-31-42-244.us-west-2.compute.internal
Private IPs: 172.31.42.244
Secondary private IPs: vpc-71d89915
VPC ID: vpc-71d89915

Public DNS: ec2-54-187-100-139.us-west-2.compute.amazonaws.com
Public IP: 54.187.100.139
Elastic IPs: [View rules](#)
Availability zone: us-west-2a
Security groups: launch-wizard-1 [view rules](#)
Scheduled events: No scheduled events
AMI ID: Windows_Server-2012-R2_RTM-English-64Bit-Base-2016.07.13 (ami-28e7254b)

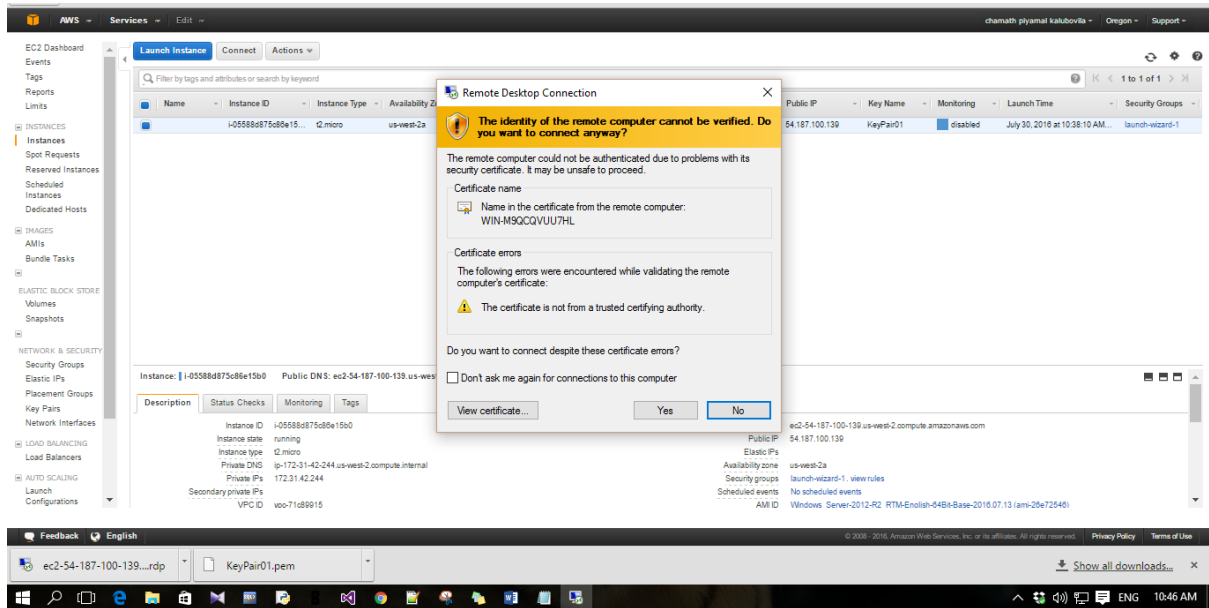
Step 09: Get a password from Connect to Your Instance window.



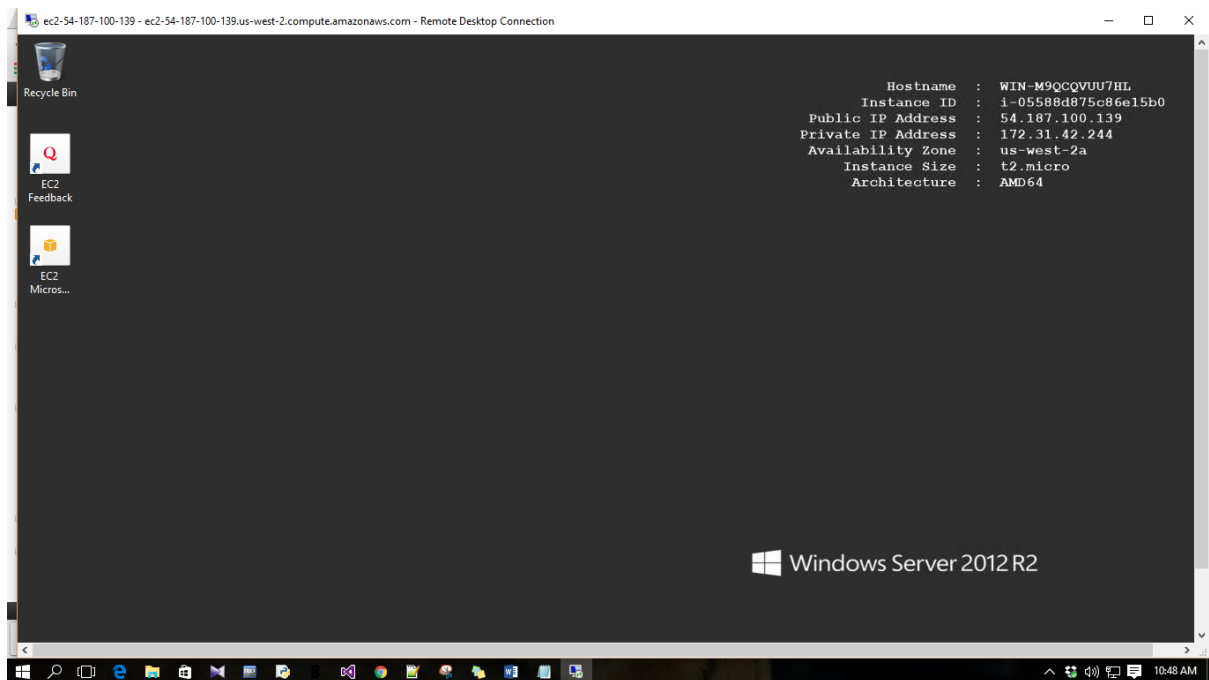
Step 10: Decrypt the password. Note down the user name and the decrypted password.



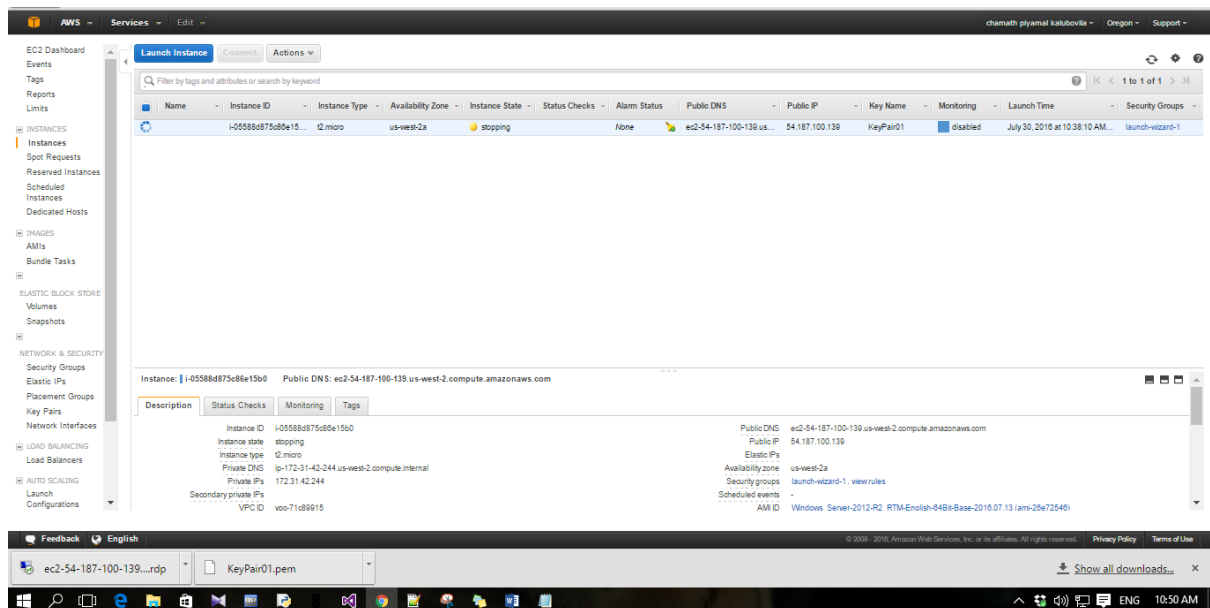
Step 11: Open Remote Desktop Connection. Provide the public IP of the launched instance. After enter password and Connect to the created instance.



Step 12: Log in to Windows Server 2012 R2 using the given user name and the decrypted password.

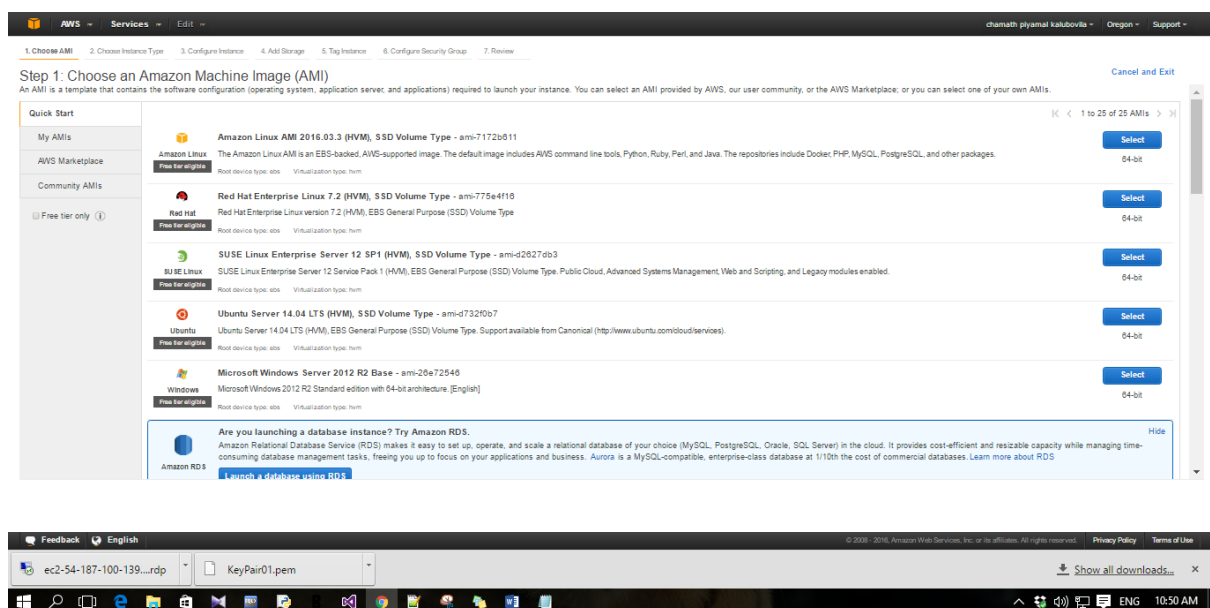


Step 13: Right click on the created server instance and terminate it from the instance state. (Right click on instance -> Instance State -> Stop)



Creating an Amazon EBS-Backed Linux AMI

Step 01: Choose an Amazon Machine Image (AMI). Select Amazon Linux AMI 2016.03.3 (HVM), SSD Volume Type



Step 02: Choose an Instance Type. Then review and launch

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](#)

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

Family	Type	vCPUs (1)	Memory (GiB)	Instance Storage (GiB) (1)	EBS-Optimized Available (1)	Network Performance (1)
General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate
General purpose	t2.micro View on Amazon	1	1	EBS only	-	Low to Moderate
General purpose	t2.small	1	2	EBS only	-	Low to Moderate
General purpose	t2.medium	2	4	EBS only	-	Low to Moderate
General purpose	t2.large	2	8	EBS only	-	Low to Moderate
General purpose	m4.large	2	8	EBS only	Yes	Moderate
General purpose	m4.xlarge	4	16	EBS only	Yes	High
General purpose	m4.2xlarge	8	32	EBS only	Yes	High
General purpose	m4.4xlarge	16	64	EBS only	Yes	High
General purpose	m4.10xlarge	40	100	EBS only	Yes	10 Gbps
General purpose	m3.medium	1	3.75	1 x 4 (SSD)	-	Moderate

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

Feedback English

ec2-54-187-100-139...rdp KeyPair01.pem

Show all downloads

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Step 03: Review Instance Launch.

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.

Improve your instances' security. Your security group, launch-wizard-2, is open to the world.
Your instances may be accessible from any IP address. We recommend that you update your security group rules to allow access from known IP addresses only. You can also open additional ports in your security group to facilitate access to the application or service you're running, e.g., HTTP (80) for web servers. [Edit security groups](#)

AMI Details [Edit AMI](#)

Amazon Linux AMI 2016.03.3 (HVM), SSD Volume Type - ami-7172b611
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.
Real Device Type: x86_64 Virtualization type: hvm

Instance Type [Edit instance type](#)

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

Security Groups [Edit security groups](#)

Security group name: launch-wizard-2
Description: launch-wizard-2 created 2018-07-30T10:52:24.185-07:00

Type (1)	Protocol (1)	Port Range (1)	Source (1)
SSH	TCP	22	0.0.0.0/0

Instance Details [Edit instance details](#)

Storage [Edit storage](#)

[Cancel](#) [Previous](#) [Launch](#)

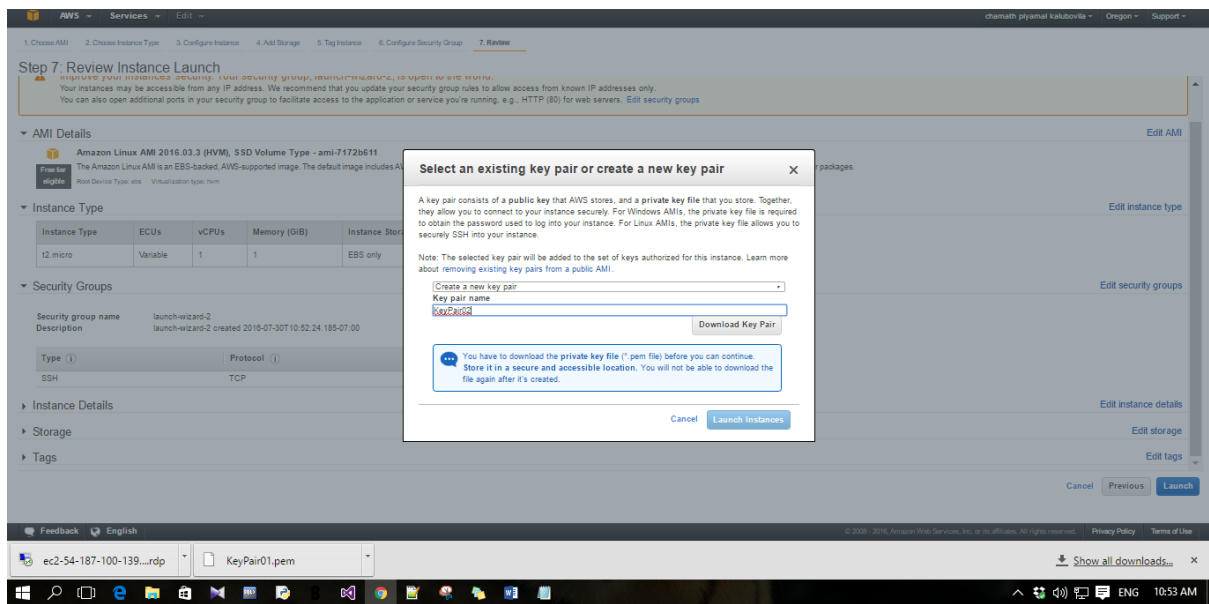
Feedback English

ec2-54-187-100-139...rdp KeyPair01.pem

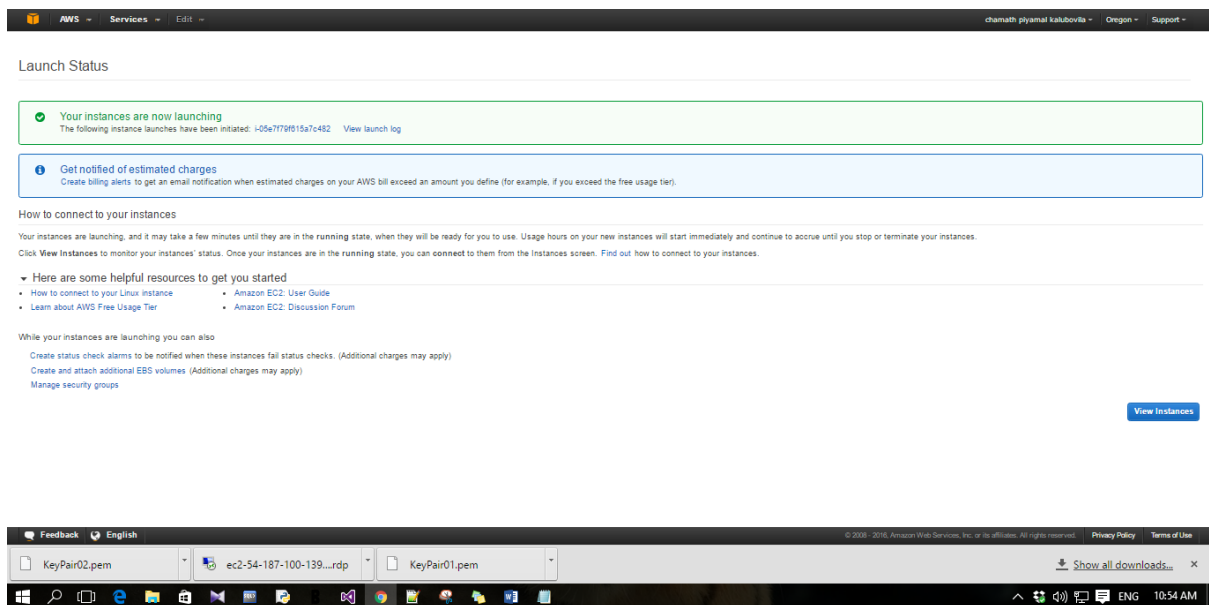
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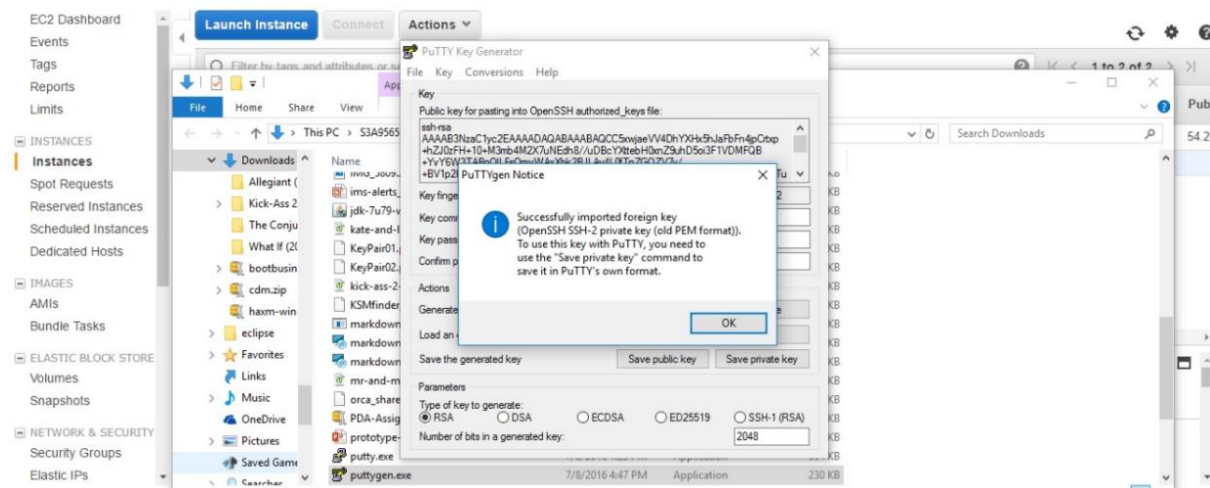
Step 04: Choose create a new key pair to download a new key pair. Then give a key pair name. Then select Launch Instance.



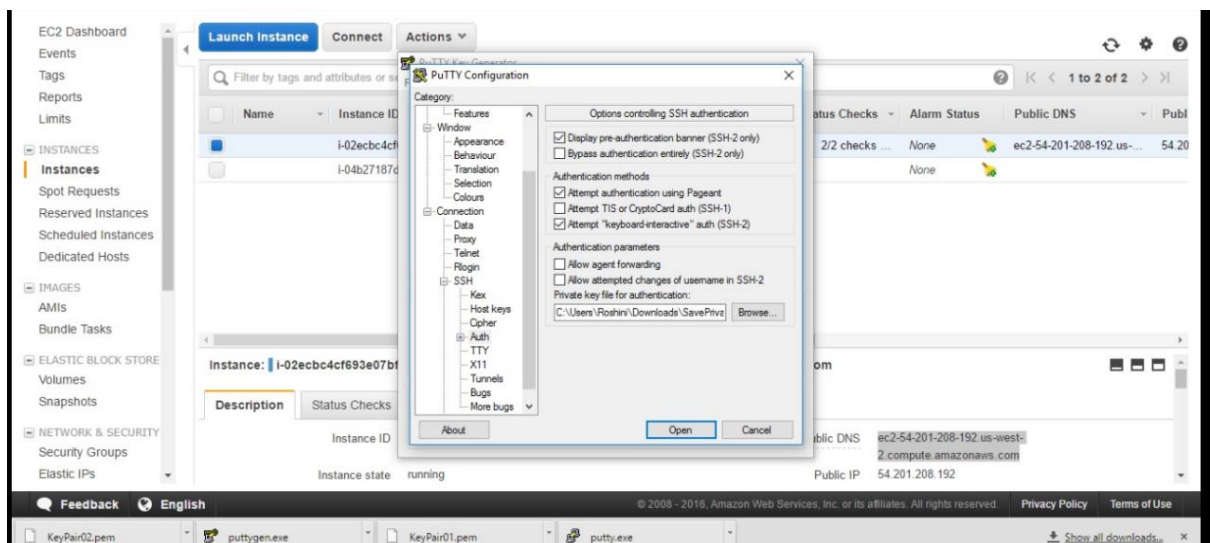
Step 05: View Instances after launching.



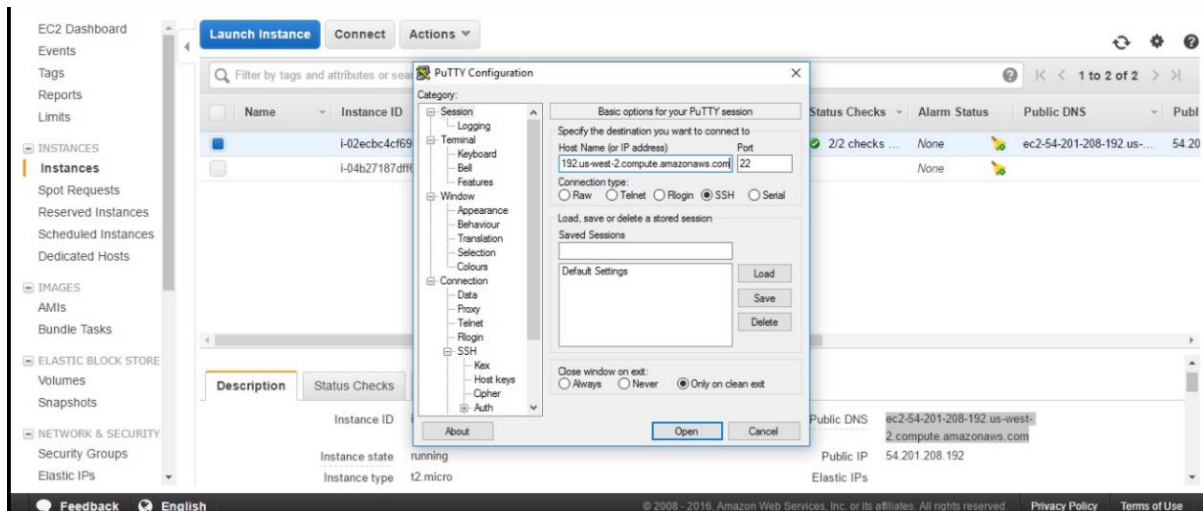
Step 06: Open PUTTY Key Generator. Then browse and load the downloaded key pair file and save it as a private key.



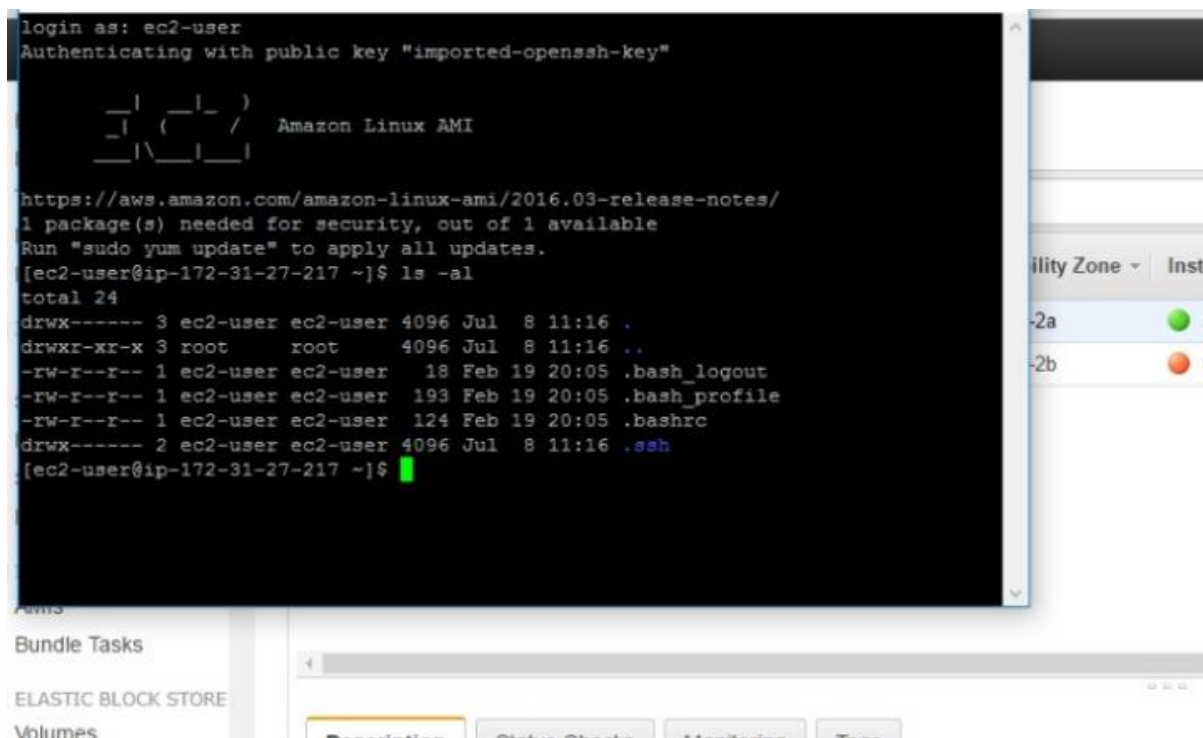
Step 07: Open PUTTY Configuration. Go to Connection category for SSH authentication. (Connection -> SSH -> Auth) Then under authentication parameters browse saved private key and open.



Step 8: Go back to Session category in PUTTY Configuration. Copy the Public DNS of created instance and paste it under Host Name. Set Connection type to SSH and open.



Step 9: Log in to Linux by giving user name in the kernel. (ec2-user). Type some Linux commands to check. (ls -al)



Step 10: Terminate or stop the instance from instance state.(Right click on instance -> Instance State -> Terminate/ Stop).

EC2 Dashboard

Events

Tags

Reports

Limits

INSTANCES

Instances

Spot Requests

Reserved Instances

Scheduled Instances

Dedicated Hosts

IMAGES

AMIs

Bundle Tasks

ELASTIC BLOCK STORE

Volumes

Snapshots

NETWORK & SECURITY

Security Groups

Elastic IPs

Launch Instance

Connect

Actions

Filter by tags and attributes or search by keyword

<< < 1 to 2 of 2 > >>

<input type="checkbox"/>	Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS	Publ
<input checked="" type="checkbox"/>		i-02ecbc4cf693e07bf	t2.micro	us-west-2a	stopped		None		
<input type="checkbox"/>		i-04b27187dff6bab99	t2.micro	us-west-2b	terminated		None		

Description

Status Checks

Monitoring

Tags

Instance ID

Instance state

Instance type

Private DNS

Public DNS

Public IP

Elastic IPs

Availability zone

us-west-2a

Feedback

English

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KeyPair02.pem

puttygen.exe

KeyPair01.pem

putty.exe

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