



## SRI LANKA INSTITUTE OF INFORMATION TECHNOLOGY

### Enterprise Standards and Best Practices for IT Infrastructure

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Practical Session: WD Friday

Practical Number: Lab 1, Lab 2, Lab 3

## LAB 01

Get the Amazon Windows Instance.

1. Select the EC2 windows instance in Amazon Web Service.
2. Then click on “Launch Instance” button.
3. Select Microsoft Windows Server 2012 R2 Base (free tier eligible one) as the AMI.

The screenshot shows the AWS EC2 Management Console interface. At the top, there's a navigation bar with tabs for 'AWS', 'Services', and 'Edit'. Below the navigation bar, a progress bar indicates the steps: 1. Choose AMI (which is active and highlighted in orange), 2. Choose Instance Type, 3. Configure Instance, 4. Add Storage, 5. Tag Instance, 6. Configure Security Group, and 7. Review. The main content area is titled 'Step 1: Choose an Amazon Machine Image (AMI)'. It displays two AMI options:

- Ubuntu Server 14.04 LTS (HVM), SSD Volume Type - ami-9abea4fb**: This is listed as 'Free tier eligible'. It has 'Root device type: ebs' and 'Virtualization type: hvm'. A 'Select' button is available to the right.
- Microsoft Windows Server 2012 R2 Base - ami-8d0acfed**: This is also listed as 'Free tier eligible'. It has 'Root device type: ebs' and 'Virtualization type: hvm'. A 'Select' button is available to the right.

A callout box at the bottom left of the AMI list area says 'Are you launching a database instance? Try Amazon RDS.' It provides information about Amazon RDS and a 'Launch a database using RDS' button. At the very bottom of the page, there are links for 'Feedback', 'English', 'Privacy Policy', and 'Terms of Use'.

4. Select t2.micro as the instance type. Then click on the configure instance details 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.

Currently selected: t2.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)							
	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
<input type="checkbox"/>	General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate
<input checked="" type="checkbox"/>	General purpose	t2.micro <small>Free tier eligible</small>	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

**Next Step:** Review and Launch | Next: Configure Instance Details

5.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	<input type="text" value="1"/>	Launch into Auto Scaling Group
Purchasing option	<input type="checkbox"/> Request Spot instances	
Network	<input type="text" value="vpc-05522f61 (172.31.0.0/16) (default)"/>	<input type="button" value="Create new VPC"/>
Subnet	<input type="text" value="No preference (default subnet in any Availability Zone)"/>	<input type="button" value="Create new subnet"/>
Auto-assign Public IP	<input type="text" value="Use subnet setting (Enable)"/>	
IAM role	<input type="text" value="None"/>	<input type="button" value="Create new IAM role"/>
Shutdown behavior	<input type="text" value="Stop"/>	
Enable termination protection	<input type="checkbox"/> Protect against accidental termination	
Monitoring	<input type="checkbox"/> Enable CloudWatch detailed monitoring	

**Next Step:** Review and Launch | Next: Add Storage

6.Do not change any detail. Keep the storage size as it is. Then click on Next: Tag instance button.

EC2 Management Console

https://us-west-2.console.aws.amazon.com/ec2/v2/home?region=us-west-2#LaunchInstanceWizard:

AWS Services Edit

sachini Oregon Support

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Tag Instance 6. Configure Security Group 7. Review

### 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/xvda	snap-d465048a	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

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7.Click on Review and Launch button.

EC2 Management Console

https://us-west-2.console.aws.amazon.com/ec2/v2/home?region=us-west-2#LaunchInstanceWizard:

AWS Services Edit

sachini Oregon Support

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Tag Instance 6. Configure Security Group 7. Review

### Step 5: Tag Instance

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 (127 characters maximum)	Value (255 characters maximum)
Name	

Create Tag (Up to 10 tags maximum)

Cancel Previous Review and Launch Next: Configure Security Group

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8.Click on the 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.

**⚠ 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**  
 Free tier eligible  
 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.  
 Root Device Type: ebs 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

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

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9. Create a new key pair and download the key pair. Then launch the instance.

**Step 7: Review Instance Launch**

**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](#).

Type: [SSH](#)

Create a new key pair  
 Key pair name: NEWKEY  
[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](#)

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EC2 Management Console

https://us-west-2.console.aws.amazon.com/ec2/v2/home?region=us-west-2#LaunchInstanceWizard:

AWS Services Edit

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Tag Instance 6. Configure Security Group 7. Review

Step 7: Review Instance Launch

Instance Type: t2.micro | ECUs: Variable | 1

Security Groups: launch-wizard-1

Network Performance: Low to Moderate

Edit security groups

Source: 0.0.0/0

Instance Details: Edit instance details

Storage: Edit storage

Tags: Edit tags

Feedback English

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**Select an existing key pair or create a new key pair**

Opening NEWKEY\_1.pem

You have chosen to open: NEWKEY\_1.pem which is Text Document from: https://us-west-2.console.aws.amazon.com

What should Firefox do with this file?

Open with Notepad (default)  Save File  Do this automatically for files like this from now on.

OK Cancel

Cancel Previous Launch

10. Then you get the launch status.

EC2 Management Console

https://us-west-2.console.aws.amazon.com/ec2/v2/home?region=us-west-2#LaunchInstanceWizard:

AWS Services Edit

### Launch Status

Your instances are now launching

The following instance launches have been initiated: i-0ceec3205db08cc750 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

- How to connect to your Linux Instance
- Learn about AWS Free Usage Tier
- Amazon EC2: User Guide
- Amazon EC2: Discussion Forum

While your instances are launching you can also

Feedback English

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11. Then go down this page and click on the View Instances button.

12. Then you get the instance details.

The screenshot shows the AWS EC2 Management Console interface. On the left, there's a sidebar with navigation links like EC2 Dashboard, Events, Tags, Reports, Limits, Instances, Images, Elastic Block Store, and Network & Security. The main area has tabs for Launch Instance, Connect, and Actions. A search bar at the top says "Filter by tags and attributes or search by keyword". Below it is a table with columns: Name, Instance ID, Instance Type, Availability Zone, Instance State, Status Checks, Alarm Status, Public DNS, and Public IP. One row is visible: i-0cee3205db08cc750, t2.micro, us-west-2a, running, Initializing, None, ec2-52-38-164-58.us-west-2.compute.amazonaws.com, 52.38.164.58. Below the table, there's a detailed view of the instance: Instance ID (i-0cee3205db08cc750), Public DNS (ec2-52-38-164-58.us-west-2.compute.amazonaws.com), Instance state (running), Public IP (52.38.164.58). At the bottom, the URL is https://us-west-2.console.aws.amazon.com/console/home?region=us-west-2 and there are links for Privacy Policy and Terms of Use.

13.Click on the Connect button to connect to the instance.

The screenshot shows the same EC2 Management Console interface as above, but with a modal dialog box in the foreground titled "Connect To Your Instance". The dialog says: "You can connect to your Windows instance using a remote desktop client of your choice, and by downloading and running the RDP shortcut file below:". It contains a "Download Remote Desktop File" button. Below that, it says: "When prompted, connect to your instance using the following details:" followed by "Public DNS ec2-52-36-108-106.us-west-2.compute.amazonaws.com", "User name Administrator", and a "Password" field with a "Get Password" button. It also says: "If you've joined your instance to a directory, you can use your directory credentials to connect to your instance." and "If you need any assistance connecting to your instance, please see our [connection documentation](#)". At the bottom right of the dialog is a "Close" button. The background of the console shows the same instance details as the first screenshot.

14.After click on the Get Password button, you will get an interface.

15.Then click get password and select the downloaded .pem file.

The following Key Pair was associated with this instance when it was created.

**Key Name** NewKey1.pem

In order to retrieve your password you will need to specify the path of this Key Pair on your local machine:

**Key Pair Path**  NewKey1.pem

Or you can copy and paste the contents of the Key Pair below:

```
-----BEGIN RSA PRIVATE KEY-----
MIIEowIBAAKCAQEAgQGADpqsaMWDfclCQnnwuzSLzJwCPXPZlGnE9pPKxTtsb21nJ6Q65tH6kxF0
oQIP2ZEy1TRYjNkGgs2d98atQHnV92pcq6b8i92uOk2NmzRxtty416S9Q64CL/OThzC9qI8+qmXnm
N/dGfGVHfVxL55v+Te5iE0aV5RhAwbzMA/Scb1QbfFrCvNzOjcFbk4a3+9RLY7MzA07G6fuedORz
O0YusuFI5Lc+WvuIz/tth7LZWViQQyRYsmdhqoKypHCG6uzil/sn8k/5GkkBUA92rcRM+VDNQ
aq+1BDmZn4QnYUD3zVfLyax1jaiyURqSR4MaZ1zz5UexZ9RN4cL+nwIDAQABaoIBACOT4FcvmQmf
-----END RSA PRIVATE KEY-----
```

**Decrypt Password**

**Instance:** i-03... **Description:**

**Instance state:** running

Public DNS: ec2-52-36-108-106.us-west-2.compute.amazonaws.com  
Public IP: 52.36.108.106

16. Then decrypt the password. You will get the decrypted password.

You can connect to your Windows instance using a remote desktop client of your choice, and by downloading and running the RDP shortcut file below:

**Download Remote Desktop File**

When prompted, connect to your instance using the following details:

**Public DNS** ec2-52-36-108-106.us-west-2.compute.amazonaws.com  
**User name** Administrator  
**Password** BuqW3shPhs5

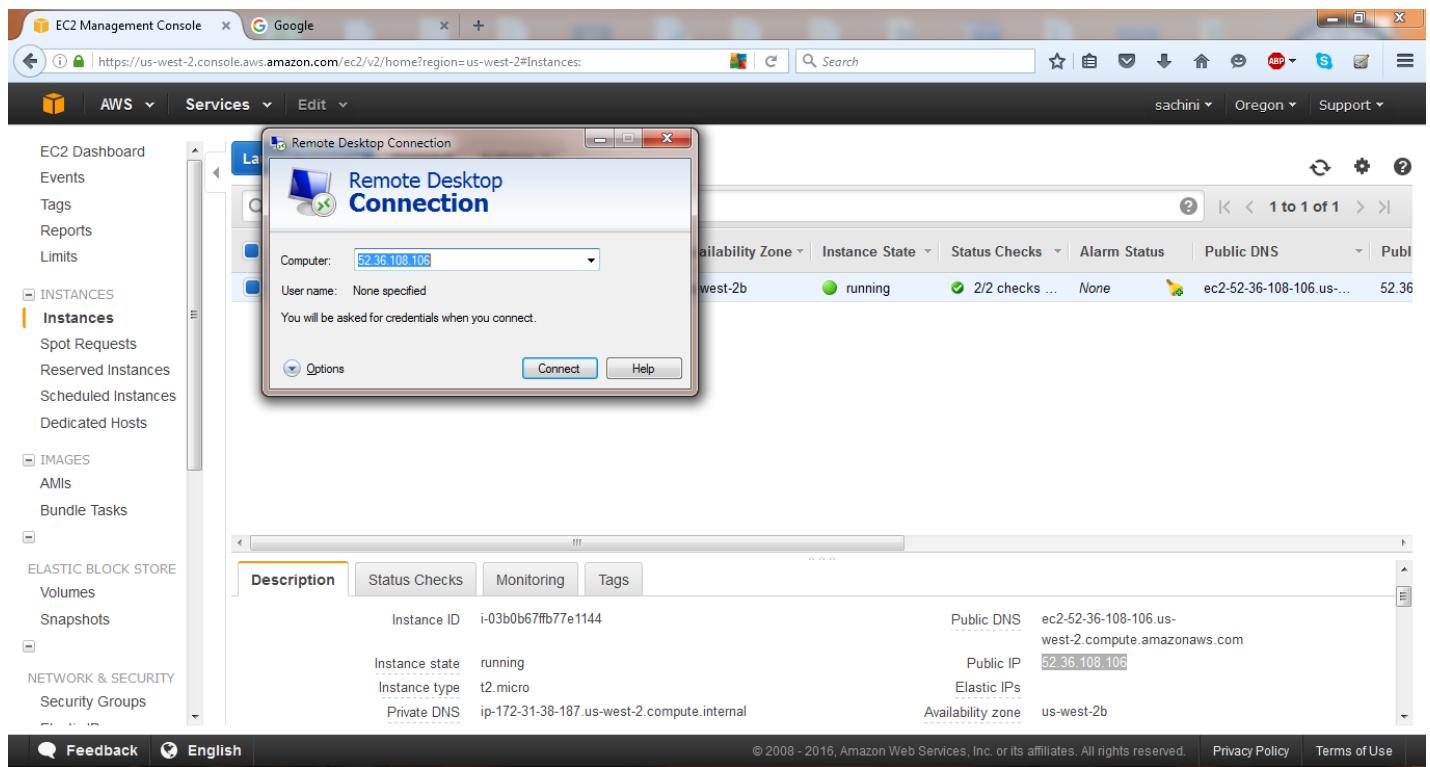
If you've joined your instance to a directory, you can use your directory credentials to connect to your instance.

If you need any assistance connecting to your instance, please see our [connection documentation](#).

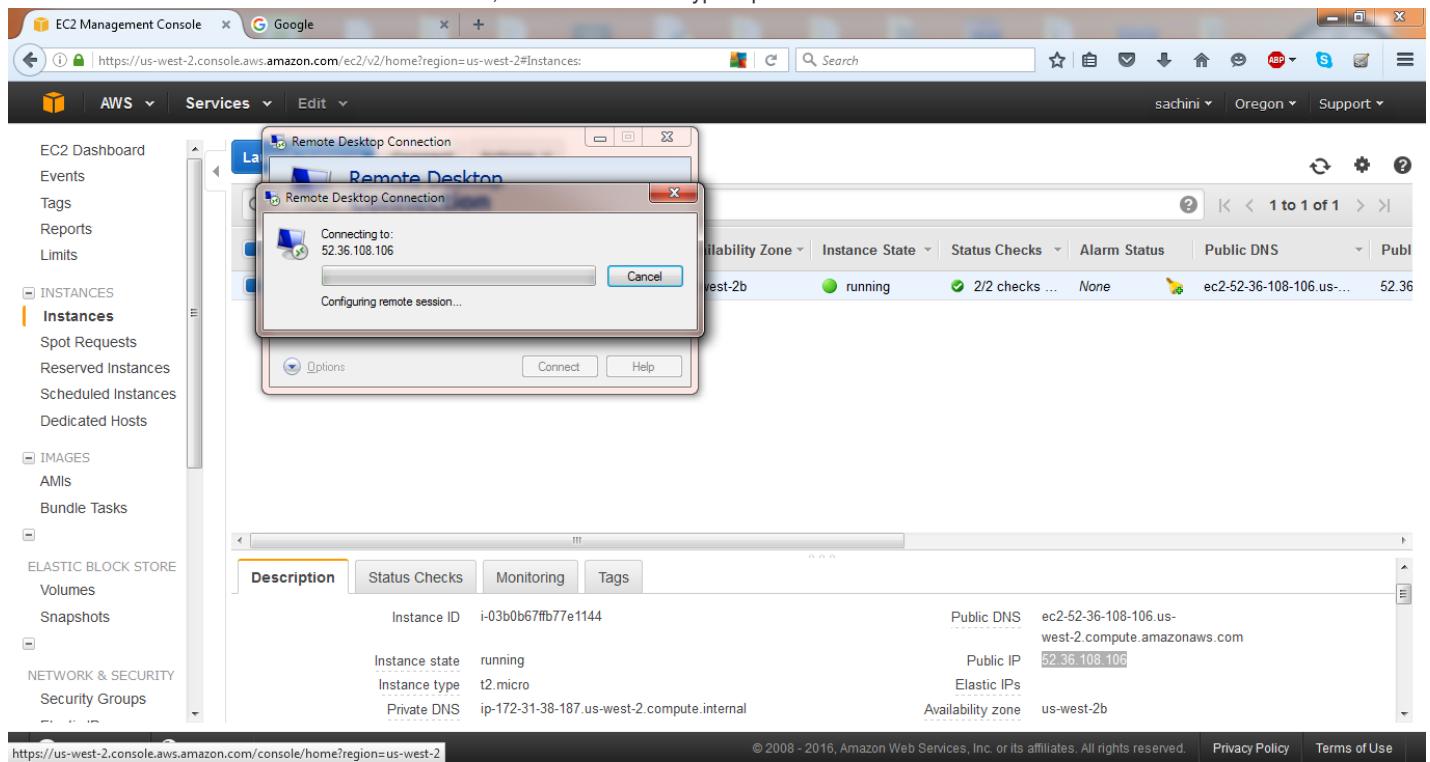
**Instance ID:** i-03b0b67ff77e1144    **Public DNS:** ec2-52-36-108-106.us-west-2.compute.amazonaws.com  
**Instance state:** running    **Public IP:** 52.36.108.106

17. Get the Remote Desktop Connection.

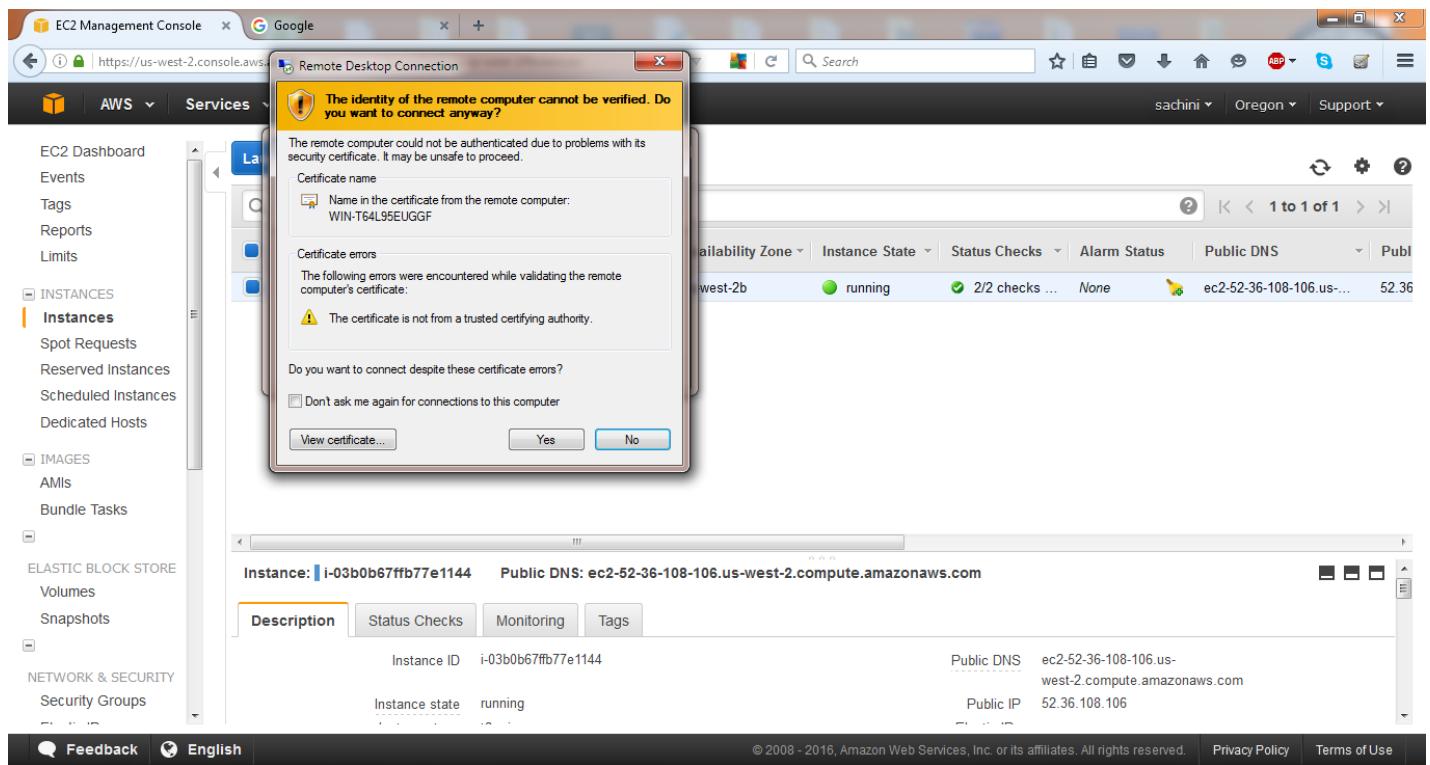
18. Give the public IP as the remote computer IP. Then click on the Connect button.



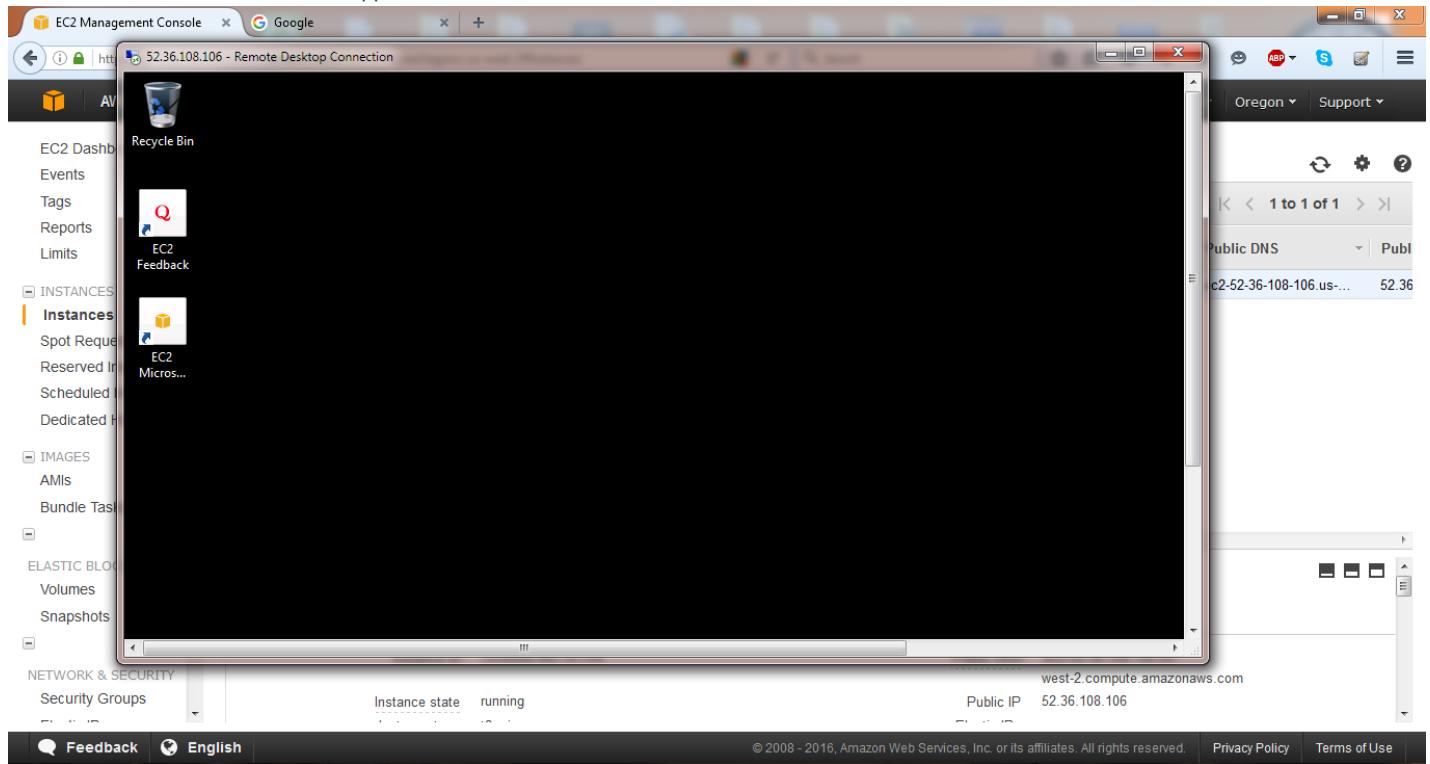
19. Enter the credentials. Username- Administrator, Password- the decrypted password.



20. Then click on Yes



21.Then this Windows instance will appear.



22.Finally terminate the windows instance.

The screenshot shows the AWS Management Console with the EC2 service selected. A modal dialog box titled "Terminate Instances" is open, containing a warning message: "Warning: On an EBS-backed instance, the default action is for the root EBS volume to be deleted when the instance is terminated. Storage on any local drives will be lost." Below the message, it asks, "Are you sure you want to terminate these instances?" followed by the instance ID "i-03b0b67fb77e1144". At the bottom right of the dialog are "Cancel" and "Yes, Terminate" buttons.

## LAB 02

Get the Amazon Linux Instance.

1. Launch the instance.

The screenshot shows the AWS Management Console with the EC2 service selected. The main area displays "Resources" information: 0 Running Instances, 0 Dedicated Hosts, 0 Volumes, 3 Key Pairs, and 0 Placement Groups. It also features a callout for "Amazon Simple Workflow Service". Below this is the "Create Instance" section, which includes a "Launch Instance" button and a note about launching in the US West (Oregon) region. The "Service Health" section shows "Service Status: US West (Oregon)" with a green checkmark and the message "This service is operating normally". The "Scheduled Events" section shows "US West (Oregon): No events". To the right, there are sections for "Account Attributes" (Supported Platforms, VPC, Default VPC, Resource ID length management), "Additional Information" (Getting Started Guide, Documentation, All EC2 Resources, Forums, Pricing, Contact Us), and "AWS Marketplace" (free software trial products, EC2 Launch Wizard, popular AMIs, Tableau Server (10 users)).

2. Select Amazon Linux AMI or Red Hat Enterprise Linux.

**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			
<input type="checkbox"/> My AMIs	<input checked="" type="checkbox"/> Amazon Linux AMI 2016.03.3 (HVM), SSD Volume Type - ami-7172b611	<input type="button" value="Select"/>	
<input type="checkbox"/> AWS Marketplace	Amazon Linux Free tier eligible	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.	
<input type="checkbox"/> Community AMIs		Root device type: ebs	Virtualization type: hvm
<input type="checkbox"/> Free tier only <small>(i)</small>	<input checked="" type="checkbox"/> Red Hat Enterprise Linux 7.2 (HVM), SSD Volume Type - ami-775e4f16	<input type="button" value="Select"/>	64-bit
	Red Hat Free tier eligible	Red Hat Enterprise Linux version 7.2 (HVM), EBS General Purpose (SSD) Volume Type	
		Root device type: ebs	Virtualization type: hvm
	<input checked="" type="checkbox"/> SUSE Linux Enterprise Server 12 SP1 (HVM), SSD Volume Type - ami-d2627db3	<input type="button" value="Select"/>	64-bit
	SUSE Linux Free tier eligible	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

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3. Select t2.micro as the instance type. And click on the configure instance details 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: <a href="#">All instance types</a> <a href="#">Current generation</a> <a href="#">Show/Hide Columns</a>							
<b>Currently selected:</b> t2.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)							
	Family	Type	vCPUs <small>(i)</small>	Memory (GiB)	Instance Storage (GB) <small>(i)</small>	EBS-Optimized Available <small>(i)</small>	Network Performance <small>(i)</small>
<input type="checkbox"/>	General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate
<input checked="" type="checkbox"/>	General purpose	t2.micro <small>Free tier eligible</small>	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

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

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4. 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-05522f61 (172.31.0.0/16) (default)	<input type="button"/> Create new VPC
Subnet	No preference (default subnet in any Availability Zone)	<input type="button"/> Create new subnet
Auto-assign Public IP	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 <small>Additional charges apply</small>	

**Cancel** **Previous** **Review and Launch** **Next: Add Storage**

5. Select Next: Tag instance button.

**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/xvda	snap-d465048a	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**

6. Click on the Review and Launch.

**Step 5: Tag Instance**

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** (127 characters maximum)      **Value** (255 characters maximum)

Name

**Create Tag** (Up to 10 tags maximum)

**Cancel** **Previous** **Review and Launch** **Next: Configure Security Group**

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7. Click on the 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** [Edit AMI](#)

**Amazon Linux AMI 2016.03.3 (HVM), SSD Volume Type - ami-7172b611**

**Free tier eligible** 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.  
Root Device Type: ebs 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

**Cancel** **Previous** **Launch**

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8. Create a new key pair and download the key pair. Then launch the instance.

EC2 Management Console

https://us-west-2.console.aws.amazon.com/ec2/v2/home?region=us-west-2#LaunchInstanceWizard:

AWS Services Edit

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Tag Instance 6. Configure Security Group 7. Review

Step 7: Review Instance Launch

Instance Type: t2.micro | ECUs: Variable | Security Groups: launch-wizard-1

Security group name: launch-wizard-1 | Description: launch-wizard-1

Type: SSH

Instance Details, Storage, 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: NEWKEY\_1 | Download Key Pair

You have to download the **private key file (\*.pem)** 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

Network Performance: Low to Moderate | Edit security groups

Source: 0.0.0/0 | Edit instance details, Edit storage, Edit tags

Cancel | Previous | Launch

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EC2 Management Console

https://us-west-2.console.aws.amazon.com/ec2/v2/home?region=us-west-2#LaunchInstanceWizard:

AWS Services Edit

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Tag Instance 6. Configure Security Group 7. Review

Step 7: Review Instance Launch

Instance Type: t2.micro | ECUs: Variable | Security Groups: launch-wizard-1

Security group name: launch-wizard-1 | Description: launch-wizard-1

Type: SSH

Instance Details, Storage, 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: NEWKEY\_1 | Download Key Pair

You have chosen to open: NEWKEY\_1.pem

You have chosen to open: NEWKEY\_1.pem  
which is Text Document  
from: https://us-west-2.console.aws.amazon.com

What should Firefox do with this file?  
 Open with Notepad (default)  
 Save File  
 Do this automatically for files like this from now on.

OK | Cancel

You have chosen to open: NEWKEY\_1.pem  
which is Text Document  
from: https://us-west-2.console.aws.amazon.com

What should Firefox do with this file?  
 Open with Notepad (default)  
 Save File  
 Do this automatically for files like this from now on.

OK | Cancel

Network Performance: Low to Moderate | Edit security groups

Source: 0.0.0/0 | Edit instance details, Edit storage, Edit tags

Cancel | Previous | Launch

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9. Then you will get Launch Status.

EC2 Management Console

https://us-west-2.console.aws.amazon.com/ec2/v2/home?region=us-west-2#LaunchInstanceWizard:

AWS Services Edit sachini Oregon Support

## Launch Status

Your instances are now launching  
The following instance launches have been initiated: i-0cee3205db08cc750 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

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

While your instances are launching you can also

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### 10. Then you will get the instance details.

EC2 Management Console

https://us-west-2.console.aws.amazon.com/ec2/v2/home?region=us-west-2#Instances:

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EC 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

Launch Instance Connect Actions

Filter by tags and attributes or search by keyword

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS	Publ
	i-0cee3205db08cc750	t2.micro	us-west-2a	running	Initializing	None	ec2-52-38-164-58.us-w...	52.38

Instance: i-0cee3205db08cc750 Public DNS: ec2-52-38-164-58.us-west-2.compute.amazonaws.com

Description Status Checks Monitoring Tags

Instance ID	i-0cee3205db08cc750	Public DNS	ec2-52-38-164-58.us-west-2.compute.amazonaws.com
Instance state	running	Public IP	52.38.164.58

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### 11. Download the PuTTY and PuTTY gen

12. Double click on the PuTTY gen. this dialog will appear. Generate the private key.

EC2 Management Console puttygen free download fo... PutTY Download Page Download PuTTY free - lat...

sachini Oregon Support

EC2 Dashboard Services Edit

Instances Instances

Launch Instance Connect Actions

PutTY Key Generator

File Key Conversions Help

Key No key.

Actions

Generate a public/private key pair Generate

Load an existing private key file Load

Save the generated key Save public key Save private key

Parameters

Type of key to generate:

SSH-1 RSA  SSH-2 RSA  SSH-2 DSA

Number of bits in a generated key: 2048

Instance: i-0cee3205db08cc7 Description Status Checks

Instance ID: i-0cee3205db08cc7/50 Instance state: running

Public DNS: ec2-52-38-164-58.us-west-2.compute.amazonaws.com Public IP: 52.38.164.58

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EC2 Management Console puttygen free download fo... PutTY Download Page Download PuTTY free - lat...

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EC2 Dashboard Services Edit

Instances Instances

Launch Instance Connect Actions

PutTY Key Generator

File Key Conversions Help

Load private key:

Organize New folder

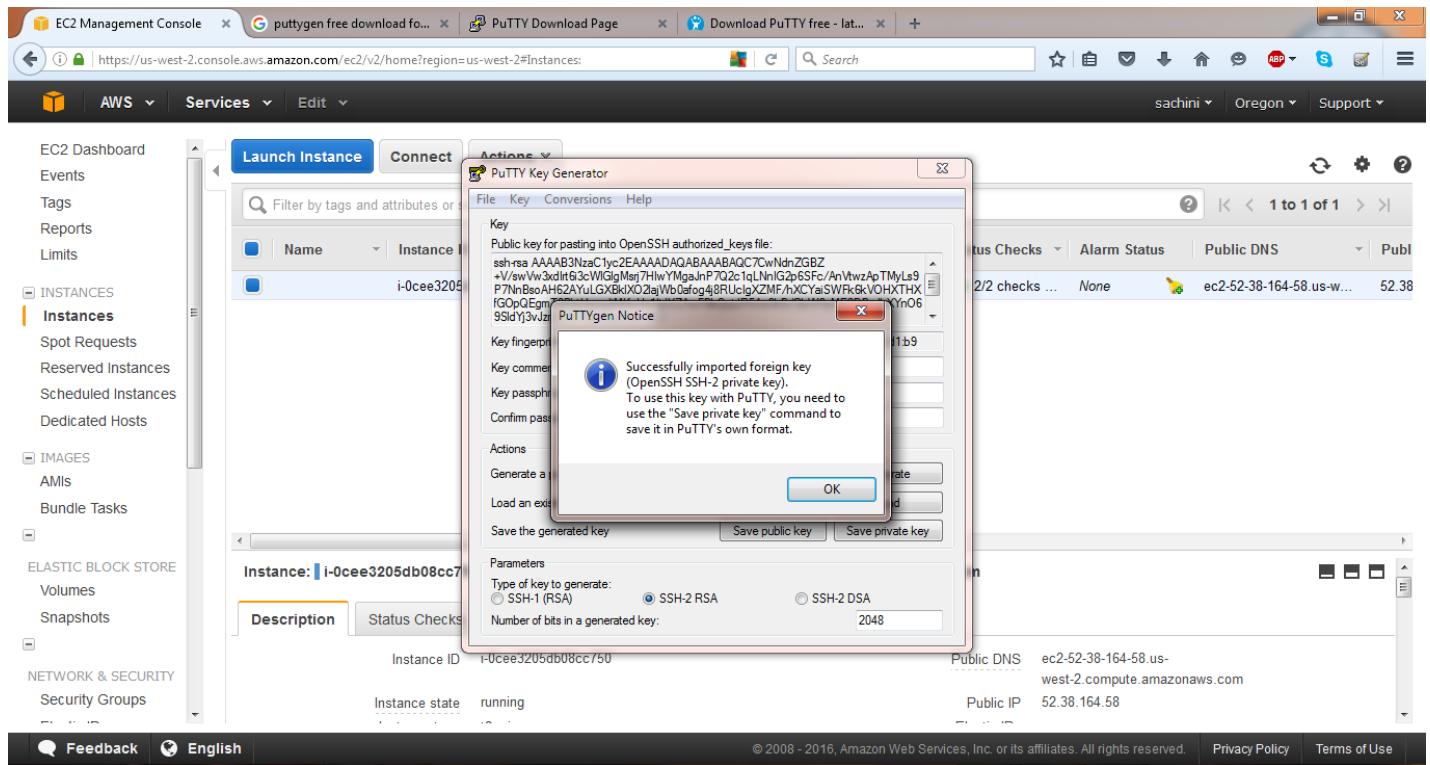
Favorites Desktop Recent Places Downloads

Libraries Apps Documents Music Pictures Videos

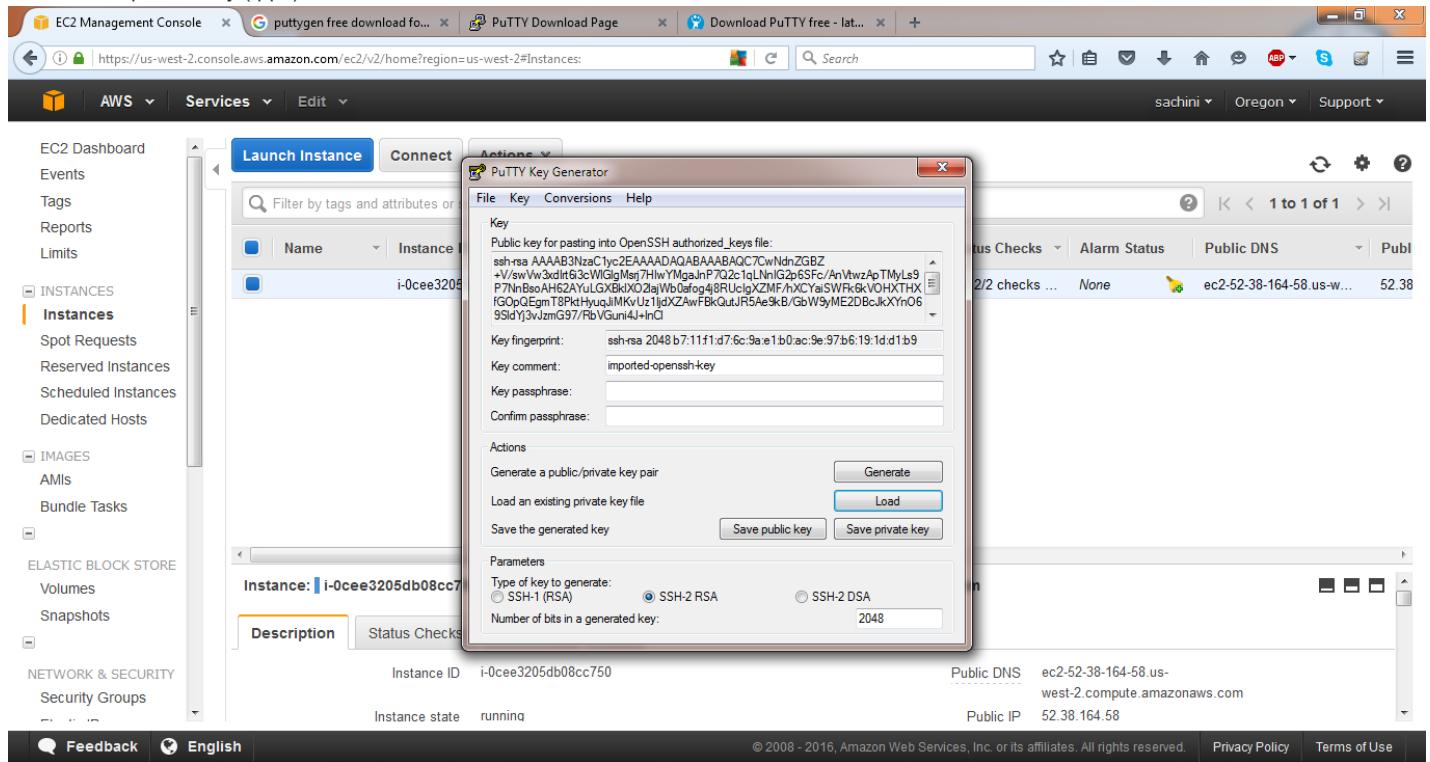
Computer Local Disk (C:) Reflection.docx REG-NOTICE-2016-2.rar Repeat examination (year1+semester 2016).docx scikit\_learn-0.17.1-cp27-cp27m-win32(l).whl

File name: NEWKEY\_1.pem Open Cancel

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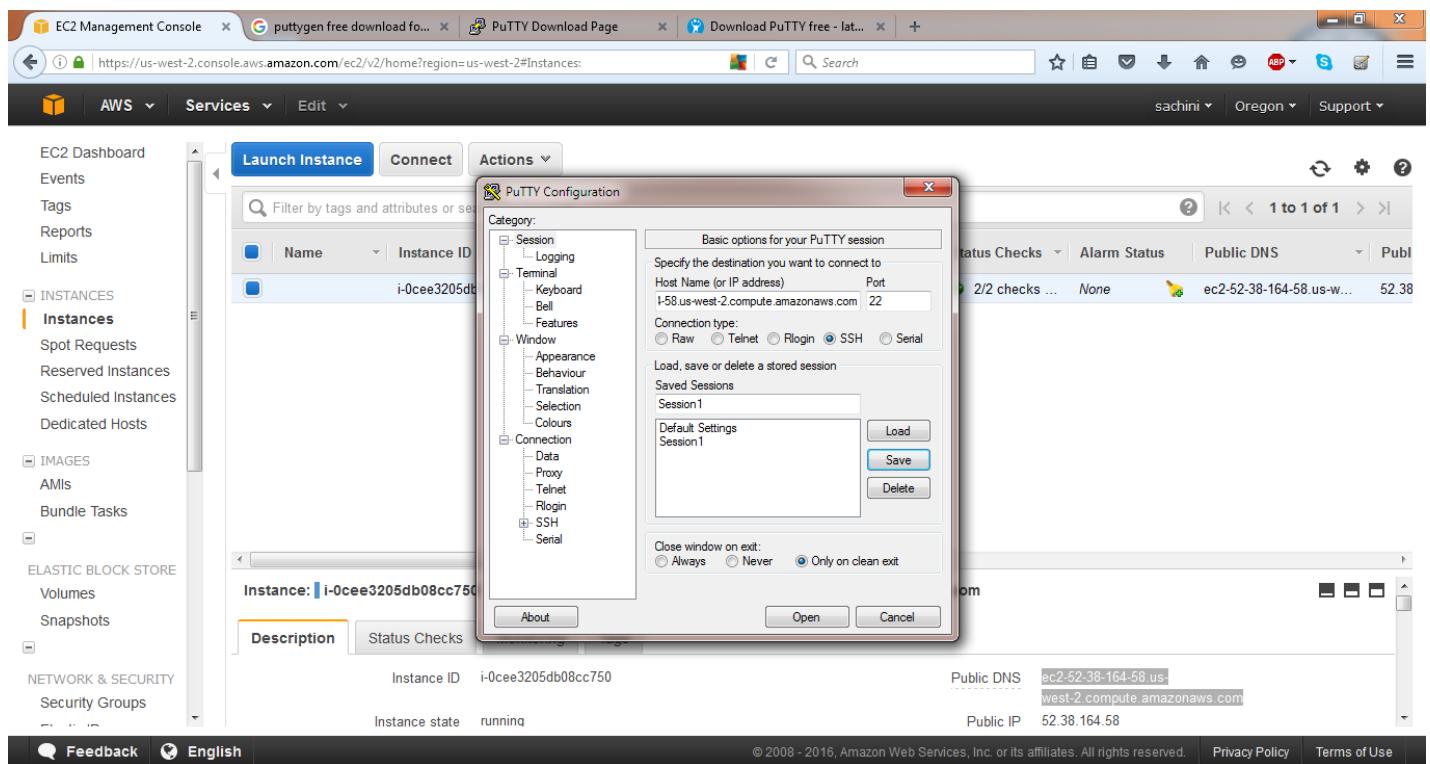
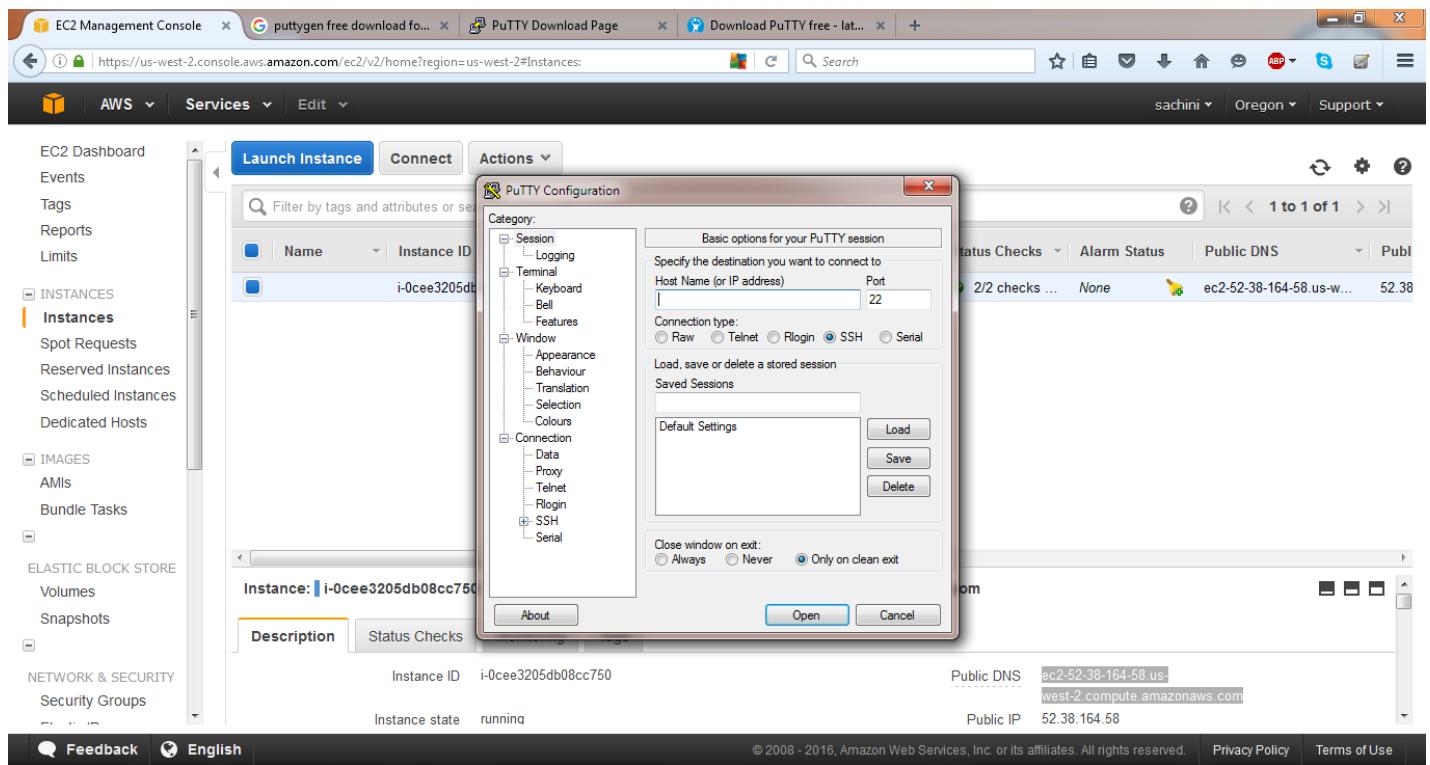


### 13.Load the private key.(.ppk)



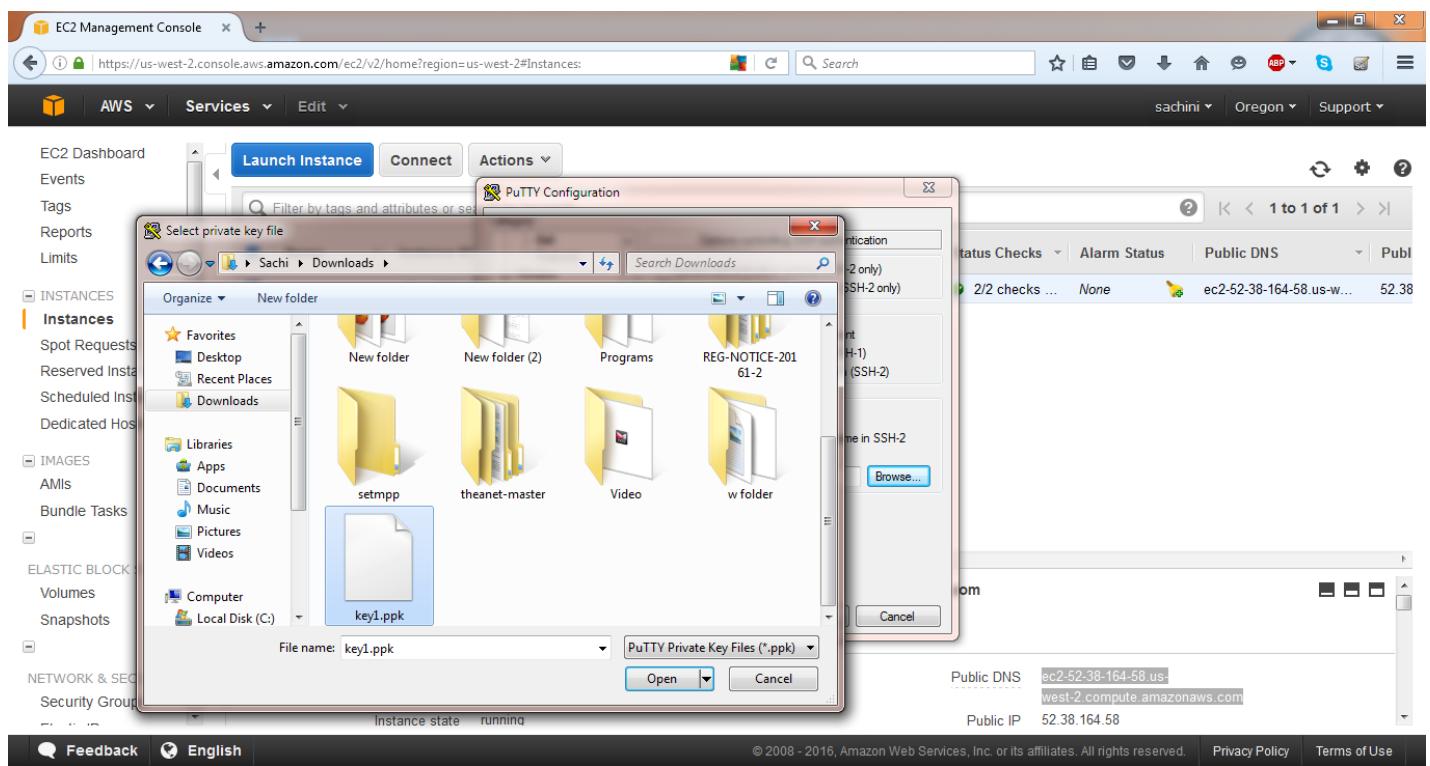
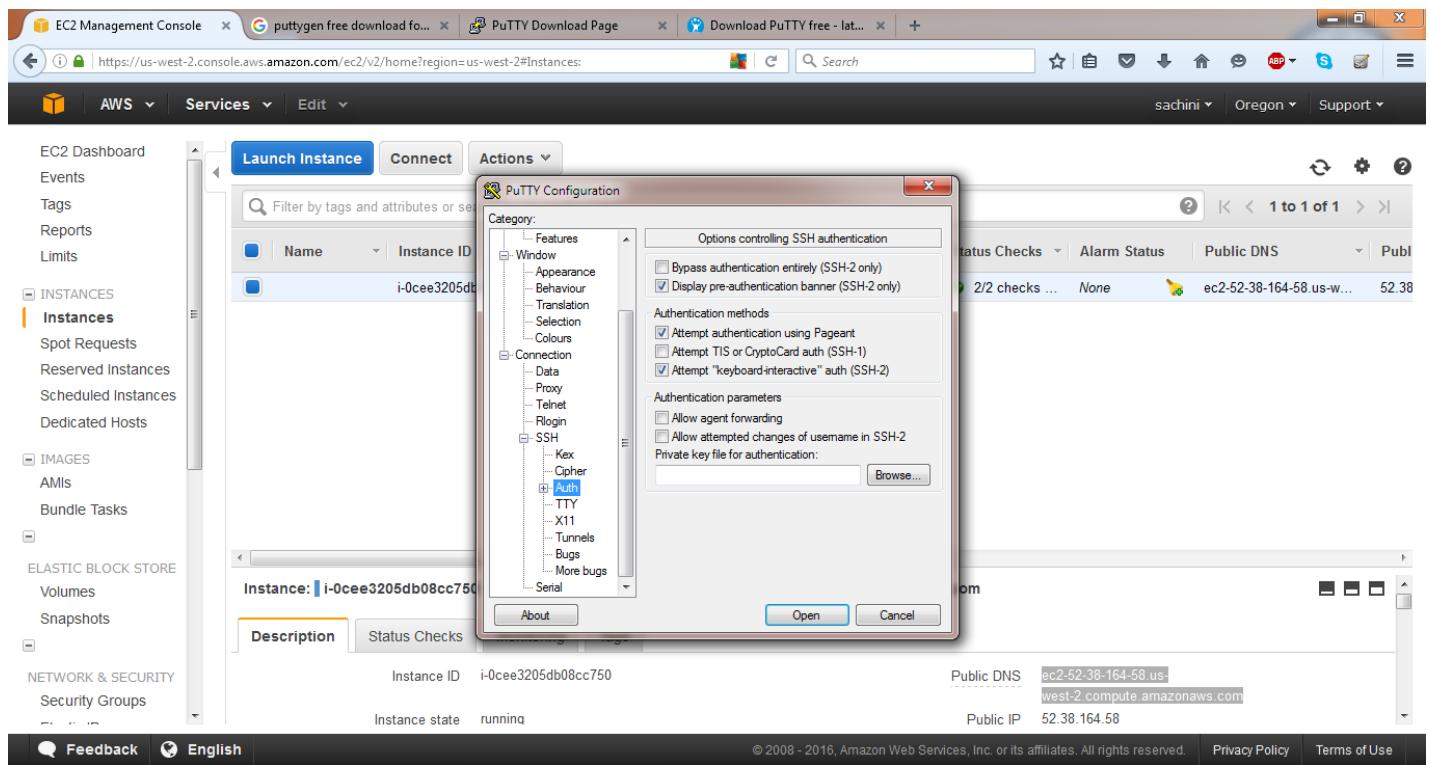
### 14.Then double click on the PuTTY configuration.

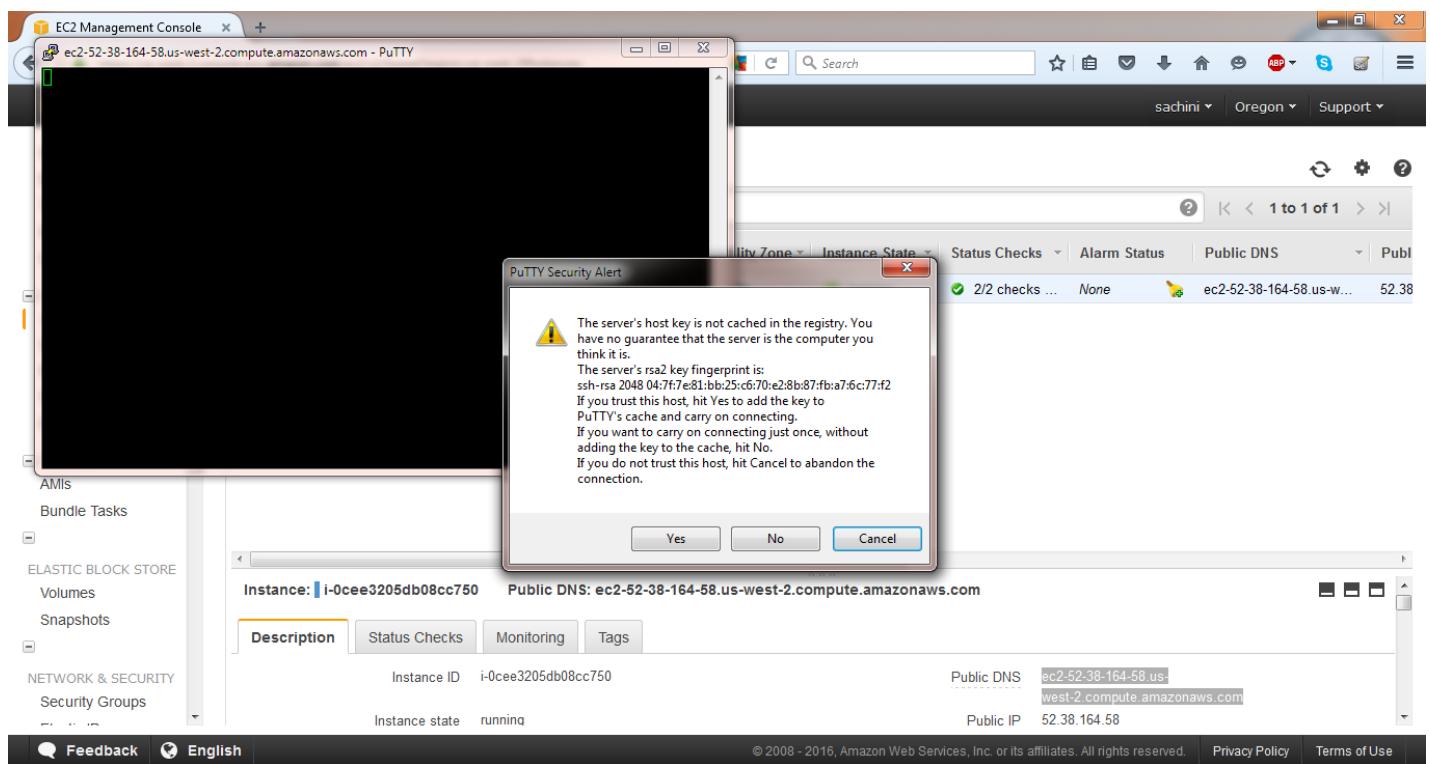
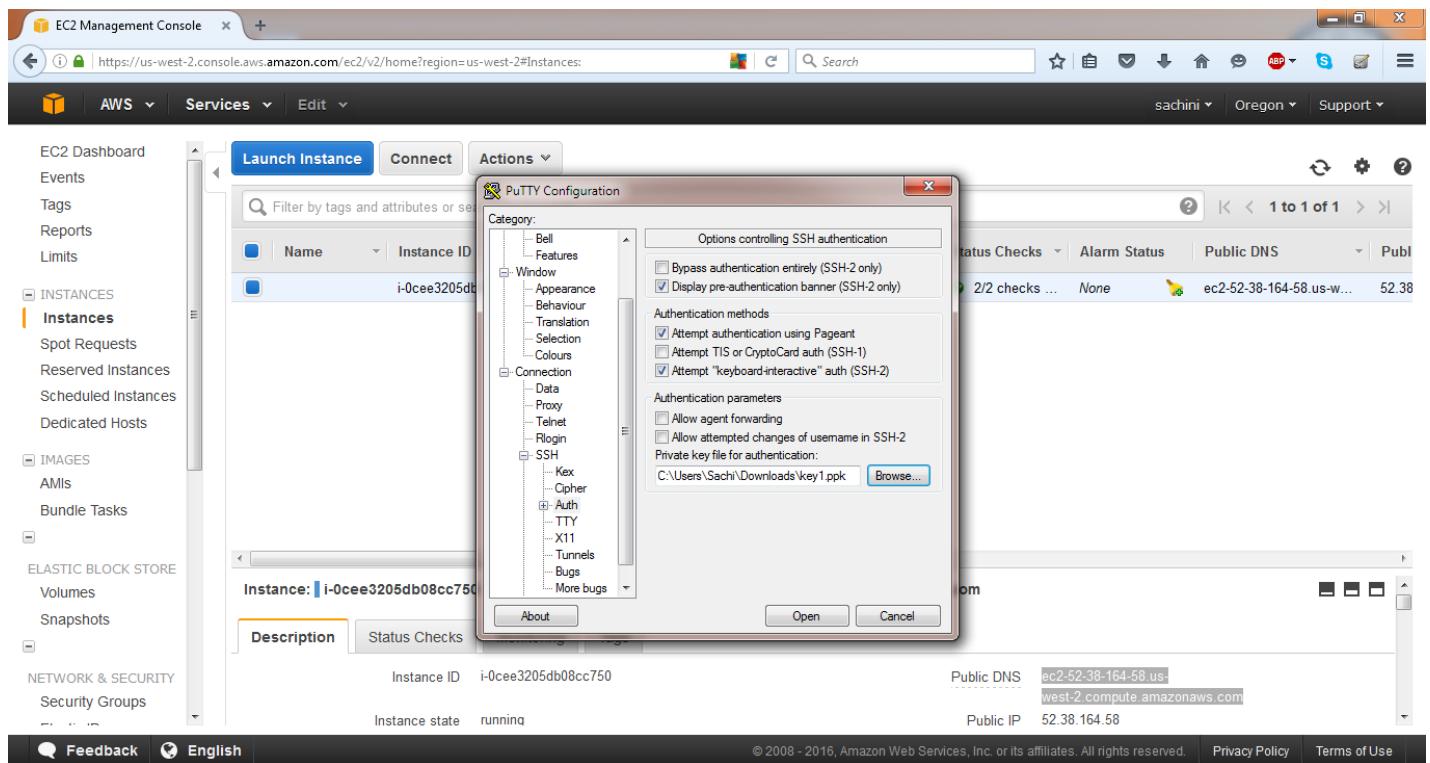
15.Give the public DNS as the host name. Then create a session and save it. (category-> session)



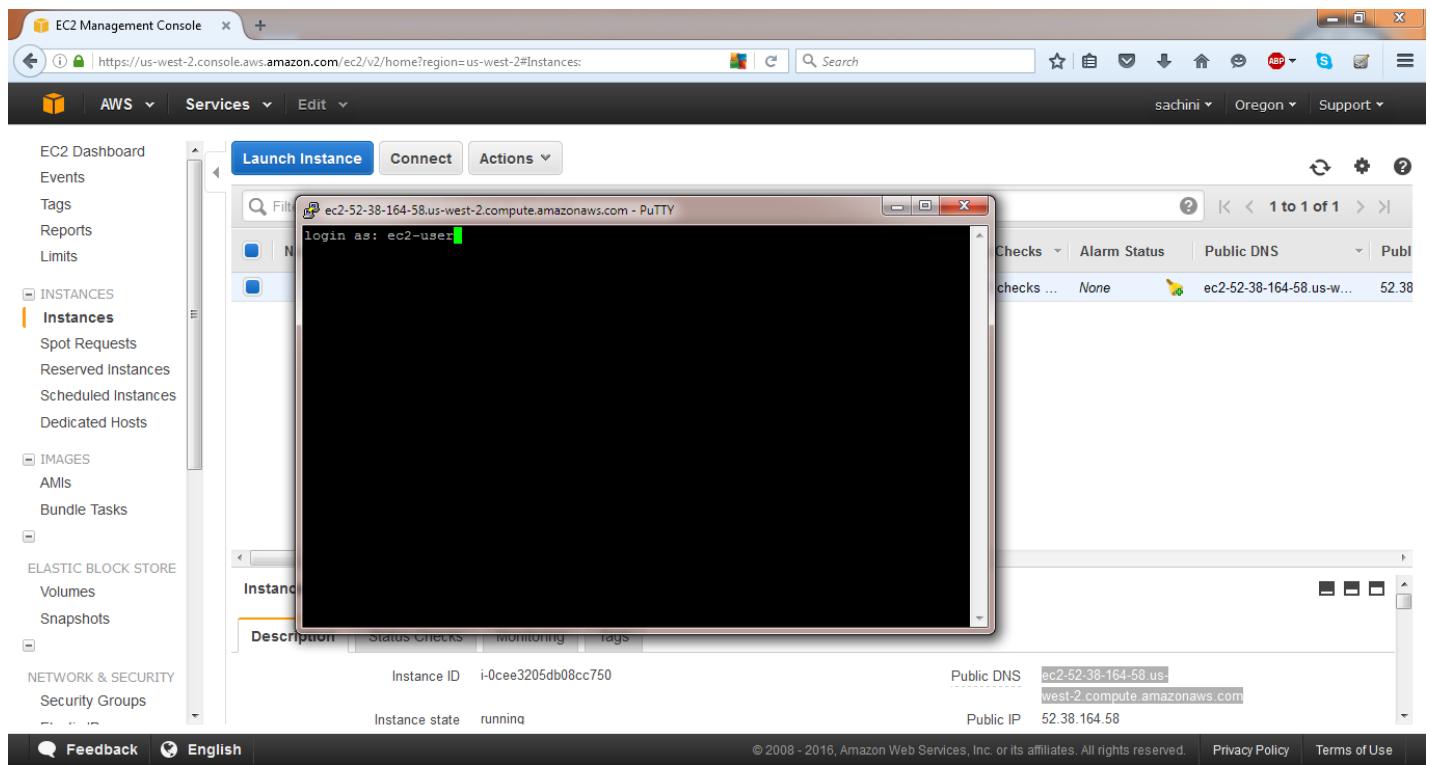
16.(category-> connection -> SSH ->Auth)

17.Then open.

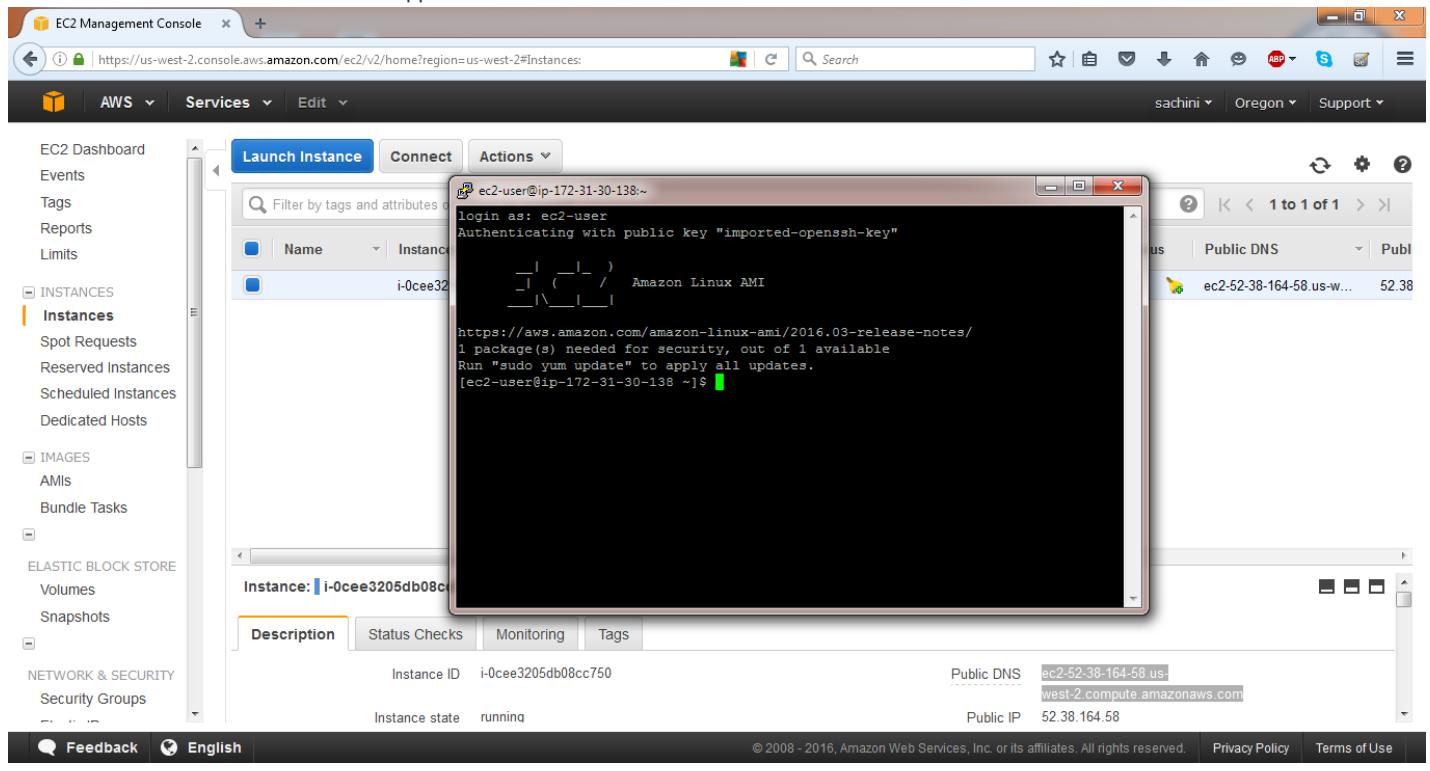




18. Type ec2-user to login.



19.Then the Amazon Linux instance will appear.



## LAB 03

Getting started with Amazon RDS (Relational Database Service)

We have to create a MySQL DB instance and Connecting to a Database on a MySQL DB instance.

Have to do three tasks.

- 1.Creating a MySQL DB Instance
- 2.Connecting to a Database on a DB Instance Running the MySQL Database Engine
- 3.Deleting a DB Instance

First we need to setup for Amazon RDS.

01. Log in to the AWS console and select the RDS in database category.

02. Then you get this interface and click on 'get started now' button.

RDS Dashboard

Instances

Clusters

Reserved Purchases

Snapshots

Security Groups

Parameter Groups

Option Groups

Subnet Groups

Events

Event Subscriptions

Notifications

Amazon Relational Database Service

Amazon Relational Database Service (Amazon RDS) makes it easy to set up, operate, and scale relational databases in the cloud. It provides cost-efficient and resizable capacity while managing time-consuming database administration tasks, freeing you up to focus on your applications and business.

Get Started Now

Getting Started Guide

Feedback English

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### Create MySQL DB instance.

01. Go to services and select RDS. Then it is directed to the select engine page as this.

History

All AWS Services

RDS

Console Home

EC2

API Gateway

DynamoDB

OpsWorks

Compute

AppStream

EC2

Redshift

Storage & Content Delivery

AWS IoT

EC2 Container Service

Route 53

Database

Certificate Manager

Elastic Beanstalk

S3

Networking

CloudFormation

Elastic File System

Service Catalog

Developer Tools

CloudFront

Elastic Transcoder

SES

Management Tools

CloudSearch

ElastiCache

Snowball

Security & Identity

CloudTrail

Elasticsearch Service

SNS

Analytics

CloudWatch

Elastic Transcoder

SQS

Internet of Things

CodeCommit

GameLift

Storage Gateway

Mobile Services

CodeDeploy

Glacier

SWF

Application Services

CodePipeline

IAM

Trusted Advisor

Enterprise Applications

Cognito

Inspector

VPC

Game Development

Config

Kinesis

WAF

Data Pipeline

Device Farm

Lambda

Machine Learning

WorkDocs

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02. On the select engine page select MySQL, Then community edition.

Screenshot of the AWS RDS - AWS Console Step 1: Select Engine page.

The page title is "Select Engine". A sub-header says "To get started, choose a DB Engine below and click Select." On the left, there's a sidebar with steps: Step 1: Select Engine, Step 2: Production?, Step 3: Specify DB Details, Step 4: Configure Advanced Settings. The "Production?" step is currently selected.

The main content area shows a list of database engines:

- Amazon Aurora**: Not selected.
- MySQL**: Selected. It's described as MySQL Community Edition. A "Select" button is next to it. Below the description is a bulleted list of features:
  - Supports database size up to 6 TB.
  - Instances offer up to 32 vCPUs and 244 GiB Memory.
  - Supports automated backup and point-in-time recovery.
  - Supports cross-region read replicas.
- MariaDB**: Not selected.
- PostgreSQL**: Not selected.
- ORACLE**: Not selected.
- Microsoft SQL Server**: Not selected.

At the bottom of the page, the URL is https://us-west-2.console.aws.amazon.com/rds/home?region=us-west-2#launch-dbinstance:ct=gettingStarted, and the page footer includes links for Privacy Policy and Terms of Use.

03.To select the production, tick on the MySQL and click on 'next step'

Screenshot of the AWS RDS - AWS Console Step 2: Production? page.

The sidebar now shows Step 2: Production? as the active step. The main content asks "Do you plan to use this database for production purposes?"

Two options are shown:

- Production**: Contains a section for "Amazon Aurora" which is labeled "Recommended". It describes it as a MySQL-compatible, enterprise-class database at 1/10th the cost of commercial databases.
- Dev/Test**: Contains a section for "MySQL". It describes it as intended for use outside of production or under the RDS Free Usage Tier.

Billing information is noted as being based on [RDS pricing](#). At the bottom are "Cancel", "Previous", and "Next Step" buttons.

Screenshot of the AWS RDS - AWS Console Step 3: Specify DB Details page.

The sidebar shows Step 3: Specify DB Details as the active step. The page header includes "Feedback" and "English" buttons. The page footer includes links for Privacy Policy and Terms of Use.

04.Then on the specify DB details page give the details as follow.

RDS - AWS Console

AWS Services Edit sachini Oregon Support

Step 1: Select Engine  
Step 2: Production?  
**Step 3: Specify DB Details**  
Step 4: Configure Advanced Settings

The following selections disqualify the instance from being eligible for the free tier:

- DB Instance Class

You will be charged normal RDS Prices. [Learn More](#).

Estimate your monthly costs for the DB Instance using the [RDS Instance Cost Calculator](#).

### Specify DB Details

#### Free Tier

The Amazon RDS Free Tier provides a single db.t2.micro instance as well as up to 20 GB of storage, allowing new AWS customers to gain hands-on experience with Amazon RDS. Learn more about the RDS Free Tier and the instance restrictions [here](#).

Only show options that are eligible for RDS Free Tier

#### Instance Specifications

DB Engine: mysql  
License Model: general-public-license  
DB Engine Version: 5.6.27

Review the [Known Issues/Limitations](#) to learn about potential compatibility issues with specific database versions.

DB Instance Class: db.m1.small — 1 vCPU, 1.7 GB RAM  
Multi-AZ Deployment: No  
Storage Type: General Purpose (SSD)  
Allocated Storage\*: 5 GB

General Purpose (SSD) storage is suitable for a broad range of database workloads. Provides baseline of 3 IOPS/GB and ability to burst to 3,000 IOPS.

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05. Give the username and password. You need to remember it.

RDS - AWS Console

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Cost Calculator.

DB Instance Class: db.m1.small — 1 vCPU, 1.7 GB RAM  
Multi-AZ Deployment: No  
Storage Type: General Purpose (SSD)  
Allocated Storage\*: 5 GB

Provisioning less than 100 GB of General Purpose (SSD) storage for high throughput workloads could result in higher latencies upon exhaustion of the initial General Purpose (SSD) IO credit balance. [Click here](#) for more details.

Settings

DB Instance Identifier\*: rds-lab  
Master Username\*: cloudacademy  
Master Password\*: \*\*\*\*\*  
Confirm Password\*: \*\*\*\*\*

\* Required Cancel Previous Next Step

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06. Then on the Configure Advanced Settings, give the additional information that need to launch the MySQL DB instance.

RDS - AWS Console

https://us-west-2.console.aws.amazon.com/rds/home?region=us-west-2#launch-dbinstance:ct=gettingStarted

AWS Services Edit sachini Oregon Support

Step 1: Select Engine  
Step 2: Production?  
Step 3: Specify DB Details  
**Step 4: Configure Advanced Settings**

### Configure Advanced Settings

**Network & Security**

VPC\* Default VPC (vpc-05522f61)  
Subnet Group cloudacedemy  
Publicly Accessible No  
Availability Zone us-west-2a  
VPC Security Group(s) Create new Security Group  
default (VPC)  
launch-wizard-1 (VPC)  
launch-wizard-2 (VPC)

**Database Options**

Database Name rdsappdb  
Note: if no database name is specified then no initial MySQL database will be created on the DB Instance.  
Database Port 3306  
DB Parameter Group default.mysql5.6

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### Steps to create the subnet group.

- I. Go to subnet groups.
- II. Then you get the interface to create the subnet group.
- III. Give the name of the subnet group.
- IV. Click the add all the subnets button.
- V. Then click the create button.

RDS - AWS Console

https://us-west-2.console.aws.amazon.com/rds/home?region=us-west-2#db-subnet-groups:

AWS Services Edit sachini Oregon Support

RDS Dashboard Instances Clusters Reserved Purchases Snapshots Security Groups Parameter Groups Option Groups Subnet Groups Events Event Subscriptions Notifications

### Create DB Subnet Group

To create a new Subnet Group give it a name, description, and select an existing VPC below. Once you select an existing VPC, you will be able to add subnets related to that VPC.

Name cloudacedemy  
Description rds lab  
VPC ID vpc-05522f61

Add Subnet(s) to this Subnet Group. You may add subnets one at a time below or [add all the subnets](#) related to this VPC. You may make additions/edits after this group is created. A minimum of 2 subnets is required.

Availability Zone	Subnet ID	CIDR Block	Action
us-west-2c	subnet-839659db	172.31.0.0/20	Remove
us-west-2b	subnet-09d6527f	172.31.32.0/20	Remove
us-west-2a	subnet-952845f1	172.31.16.0/20	Remove

Cancel Create

07. Go back to the Configure Advanced Settings and do these changes.

RDS - AWS Console

https://us-west-2.console.aws.amazon.com/rds/home?region=us-west-2#launch-dbinstance:ct=gettingStarted

AWS Services Edit sachini Oregon Support

**DB Parameter Group:** default.mysql5.6  
**Option Group:** default:mysql-5-6  
**Copy Tags To Snapshots:**   
**Enable Encryption:** No

**Backup**

Please note that automated backups are currently supported for InnoDB storage engine only. If you are using MyISAM, refer to detail [here](#).

**Backup Retention Period:** 0 days

**Backup Window:** No Preference

**Maintenance**

**Auto Minor Version Upgrade:** Yes  
**Maintenance Window:** No Preference

\* Required      Cancel      Previous      **Launch DB Instance**

Select the number of days, between 1 and 35, that Amazon RDS should retain automatic backups of this DB instance. The backup retention period determines the period for which you can perform a point-in-time recovery. Select 0 to disable backups. [Learn More](#).



08.Then click on the Launch DB instance button.

RDS - AWS Console

https://us-west-2.console.aws.amazon.com/rds/home?region=us-west-2#launch-dbinstance:ct=gettingStarted

AWS Services Edit sachini Oregon Support

Step 1: Select Engine  
Step 2: Production?  
Step 3: Specify DB Details  
Step 4: Configure Advanced Settings

**Your DB Instance is being created.**

Note: Your instance may take a few minutes to launch.

**Connecting to your DB Instance**

You will be unable to connect to your database instance unless you have previously authorized access on your chosen security group.

[Go to the Security Groups Page](#)

**Related AWS Services**

**Amazon ElastiCache**  
Add a managed Memcached or Redis-compatible in-memory cache to speed up your database access.  
[Click here to learn more and launch your Cache Cluster](#)

**View Your DB Instances**

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09.Then the DB instance is creating successfully.

The screenshot shows the AWS RDS Dashboard for the MySQL rds-lab instance. The instance is listed as available with 2.95% CPU usage, 0 connections, and no maintenance scheduled. The endpoint is rds-lab.cxkgihbbycd.us-west-2.rds.amazonaws.com:3306 (authorized). Monitoring charts show CPU at 3%, Memory at 1,160 MB, Storage at 4,540 MB, and Swap Usage at 0 MB. The interface includes tabs for Launch DB Instance, Show Monitoring, Instance Actions, Alarms and Recent Events, Monitoring, and Log.

Connecting to a Database on a DB Instance Running the MySQL Database Engine.

Open the MySQL Workbench. And create a new connection.

A screenshot of the MySQL Workbench application. The interface includes a top menu bar with File, Edit, View, Database, Tools, Scripting, and Help. Below the menu is a search bar. On the left, there's a 'MySQL Connections' section showing a local instance MySQL56 (auto-reconnect) with a user 'root' and host 'localhost:3306'. There's also a 'Models' section listing a single model named 'sakila\_full'. On the right, a 'Shortcuts' panel lists various MySQL-related tools with corresponding icons: MySQL Doc Library, MySQL Utilities, Database Migration, MySQL Bug Reporter, Workbench Blogs, Planet MySQL, Workbench Forum, and Scripting Shell.

