User Manual on

Amazon Web Services (AWS)

Document Revision and Approval History

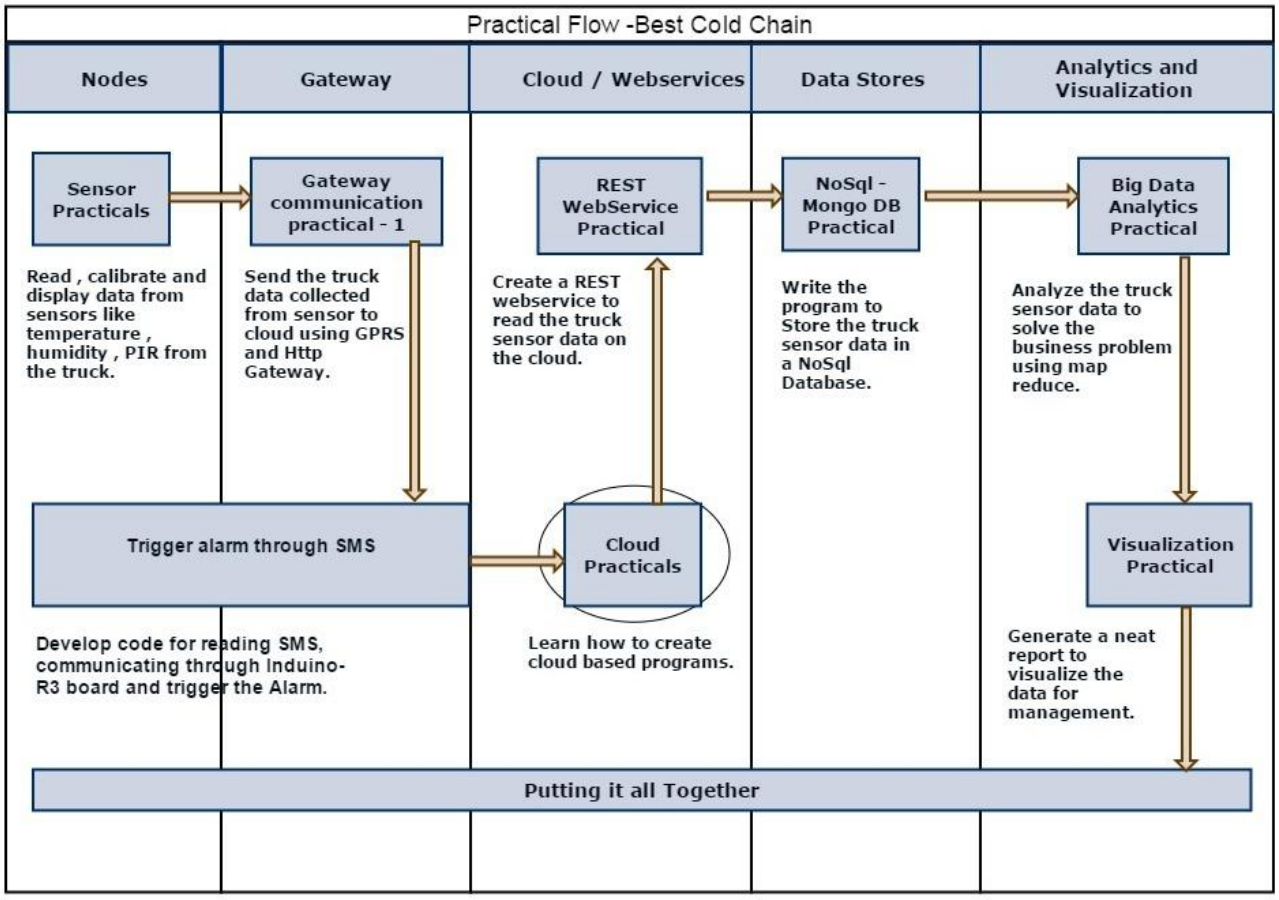
Title: User Manual on AWS Practice Labs

ID :

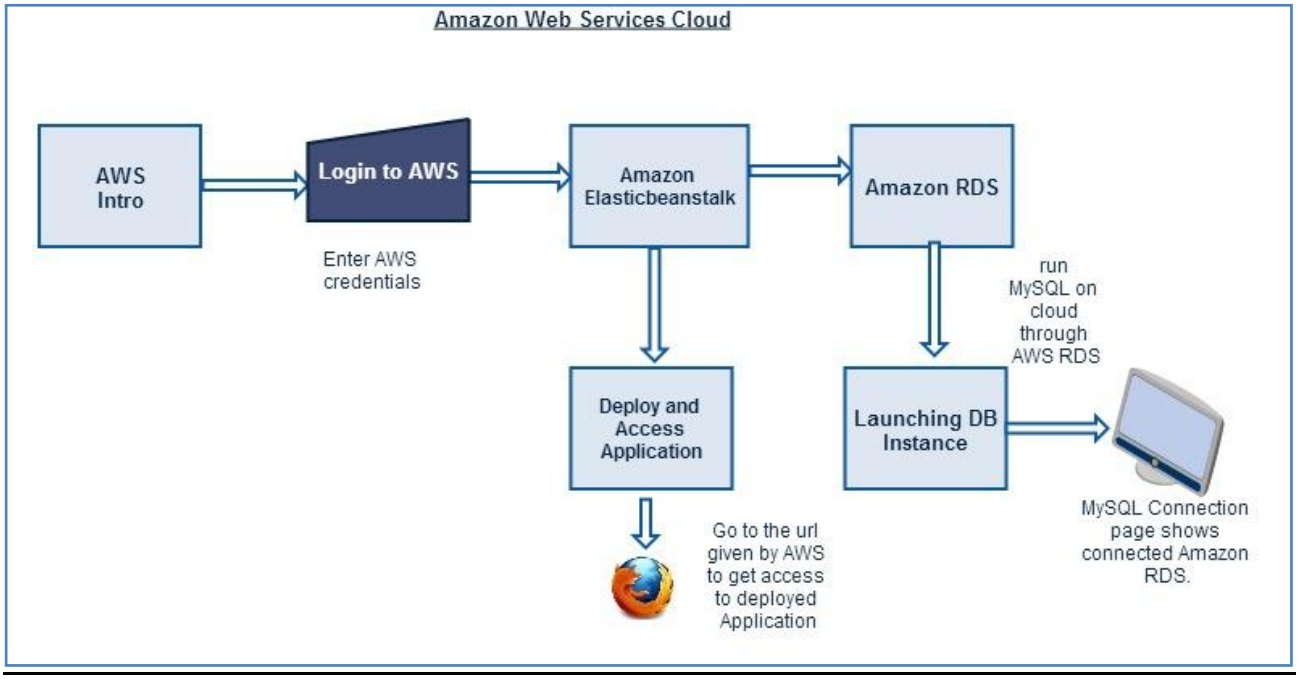
Effective: 06-Jun-2014

Edition No.	Release Date	Author's Name	Software Version	Reason for Change / Description of Changes
1	06/06/2014	Raghavendra		
2	03/10/2014	Raghavendra		

Complete End-End IoT Diagram:



Amazon Web Services Cloud flow Diagram:



Introduction

1. **About Amazon Web Services (AWS)**
2. **Run Qwik Lab (AWS Training Environment)**
3. **Amazon Elastic Beanstalk**
4. **Amazon RDS**

1. About Amazon Web Services

Amazon Web Services (AWS):

- Amazon Web Services (AWS) is a collection of computing infrastructure services that developers can leverage when developing their applications. The services include computing, storage, database, and application synchronization (messaging and queuing). AWS uses a pay-as-you-go service model. You are charged only for the services that you—or your applications—use. Also, to make AWS more approachable as a platform for prototyping and experimentation, AWS offers a free usage tier. On this tier, services are free below a certain level of usage. For more information about AWS costs and the free tier, go to AWS Free Usage Tier.
- You can run nearly anything on AWS that you would run on physical hardware: websites, applications, databases, mobile apps, email campaigns, distributed data analysis, media storage, and private networks. The services we provide are designed to work together so that you can build complete solutions. There are currently dozens of services, with more being added each year.

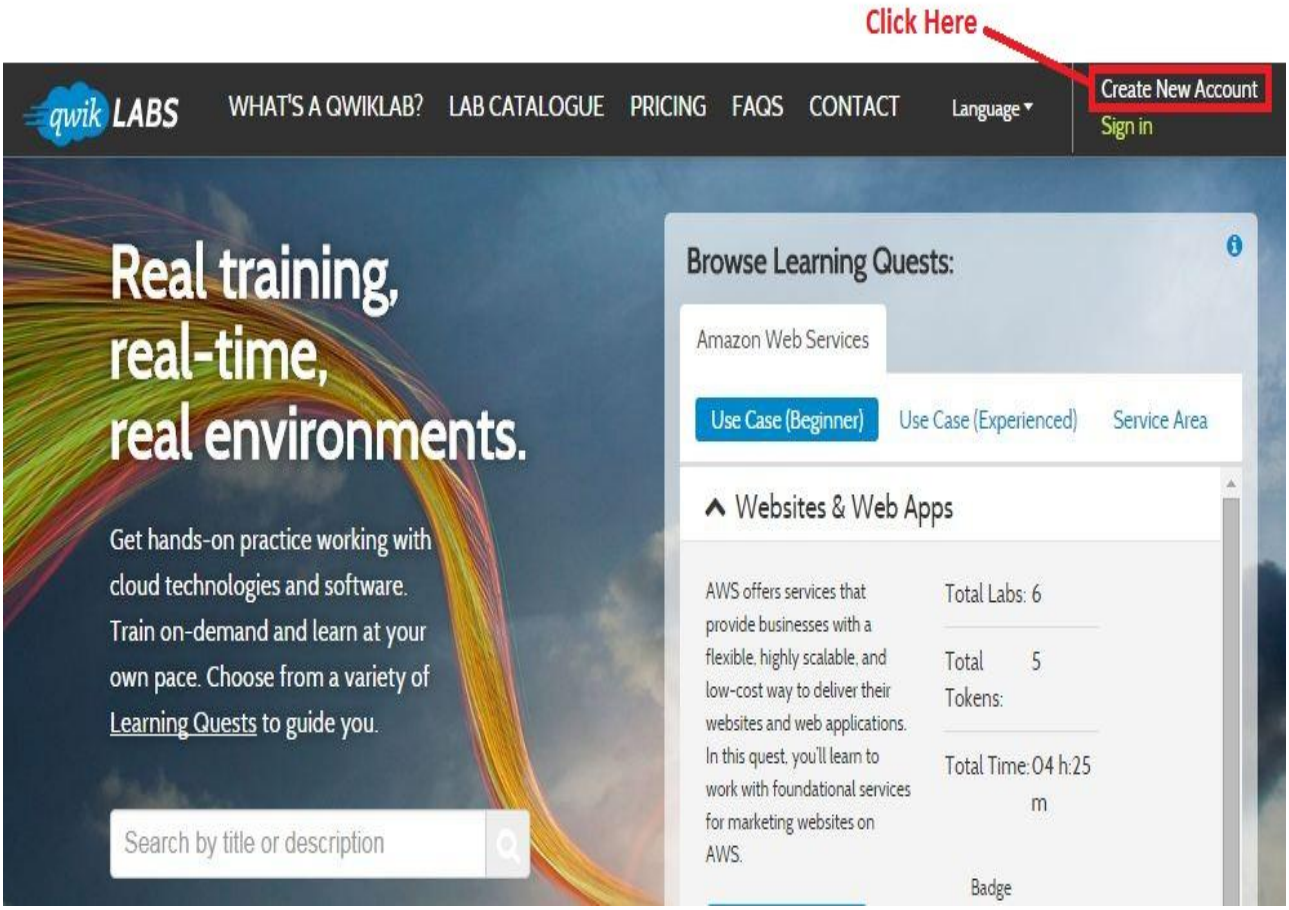
2. Run Qwik Lab (AWS Training Environment)

Objective:

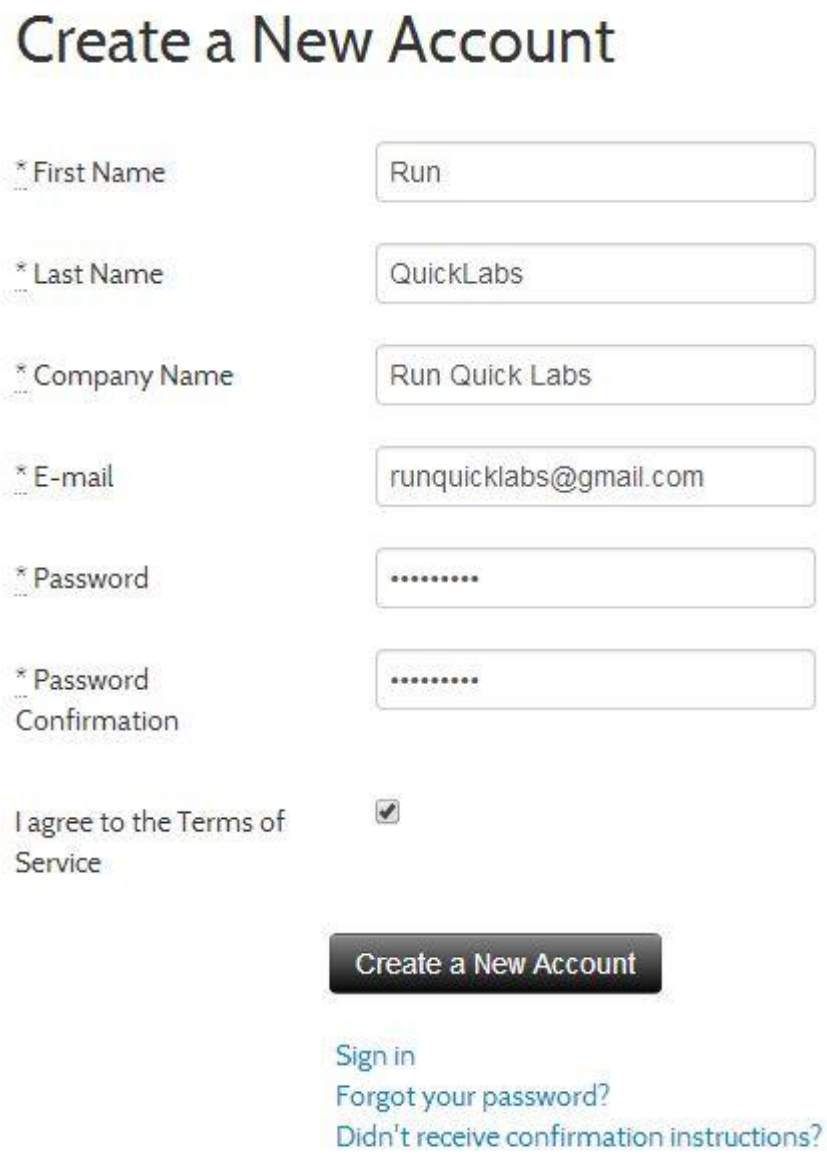
- Get hands-on knowledge of working on AWS cloud platform
- Understand different services provided by AWS like EBS, RDS, etc

To get hands-on practice on AWS by using run.qwiklab.com

- Go to https://run.qwiklab.com
- To sign in to QwikLabs first click **Create New Account**.



- Fill the details required, check the **I agree to the Terms of Service** and click **Create a New Account**.



Note: You may receive e-mail conformation.

- Log-in into RunQwikLabs.

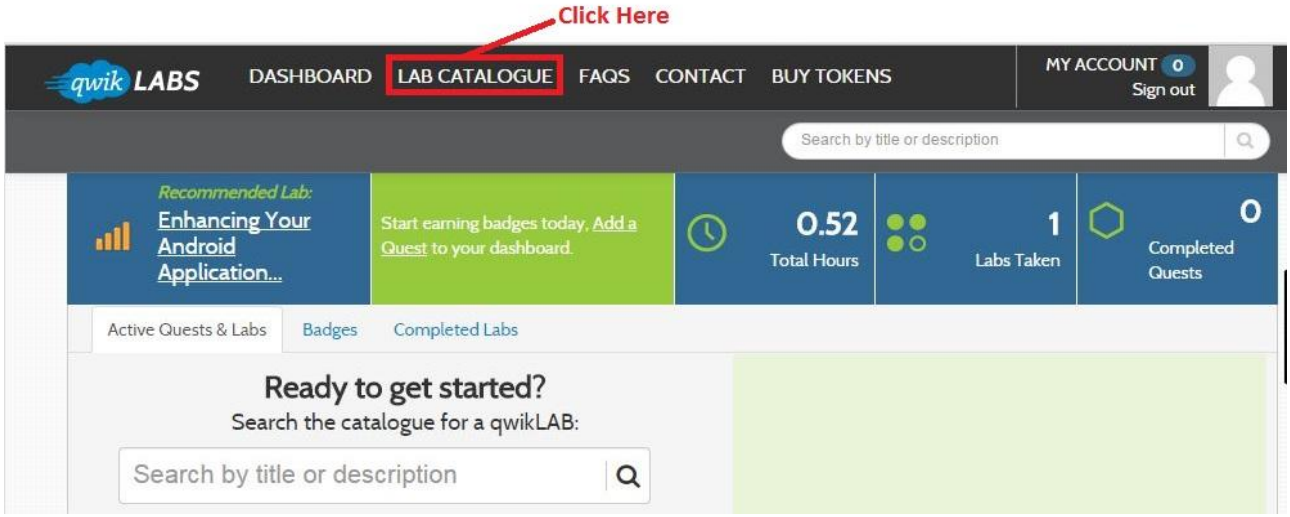
3. Amazon Elasticbeanstalk

Objective:

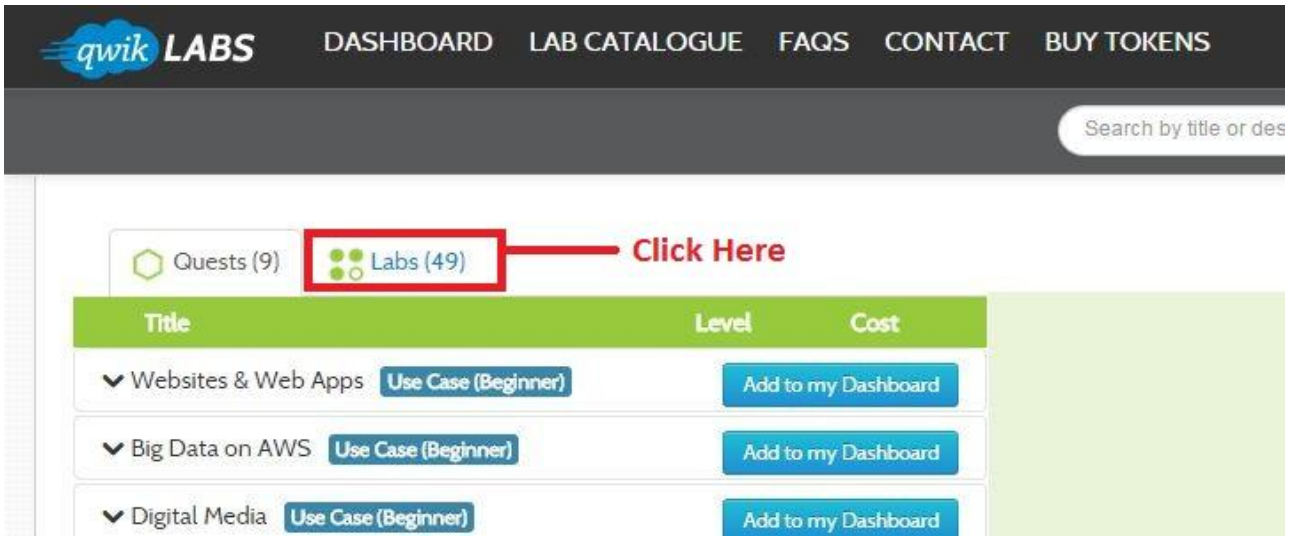
This document helps you to deploy and access your application on cloud through AWS Elastic Beanstalk. It is a quick and simple way to deploy your application to AWS. Within minutes, your application will be ready to use without any infrastructure or resource configuration work on your part. However, with Elastic Beanstalk, you retain full control over the AWS resources powering your application. If you decide you want to take over some (or all) of the elements of their infrastructure, you can do so seamlessly by using Elastic Beanstalk's management capabilities.

Deploying an Application to AWS:

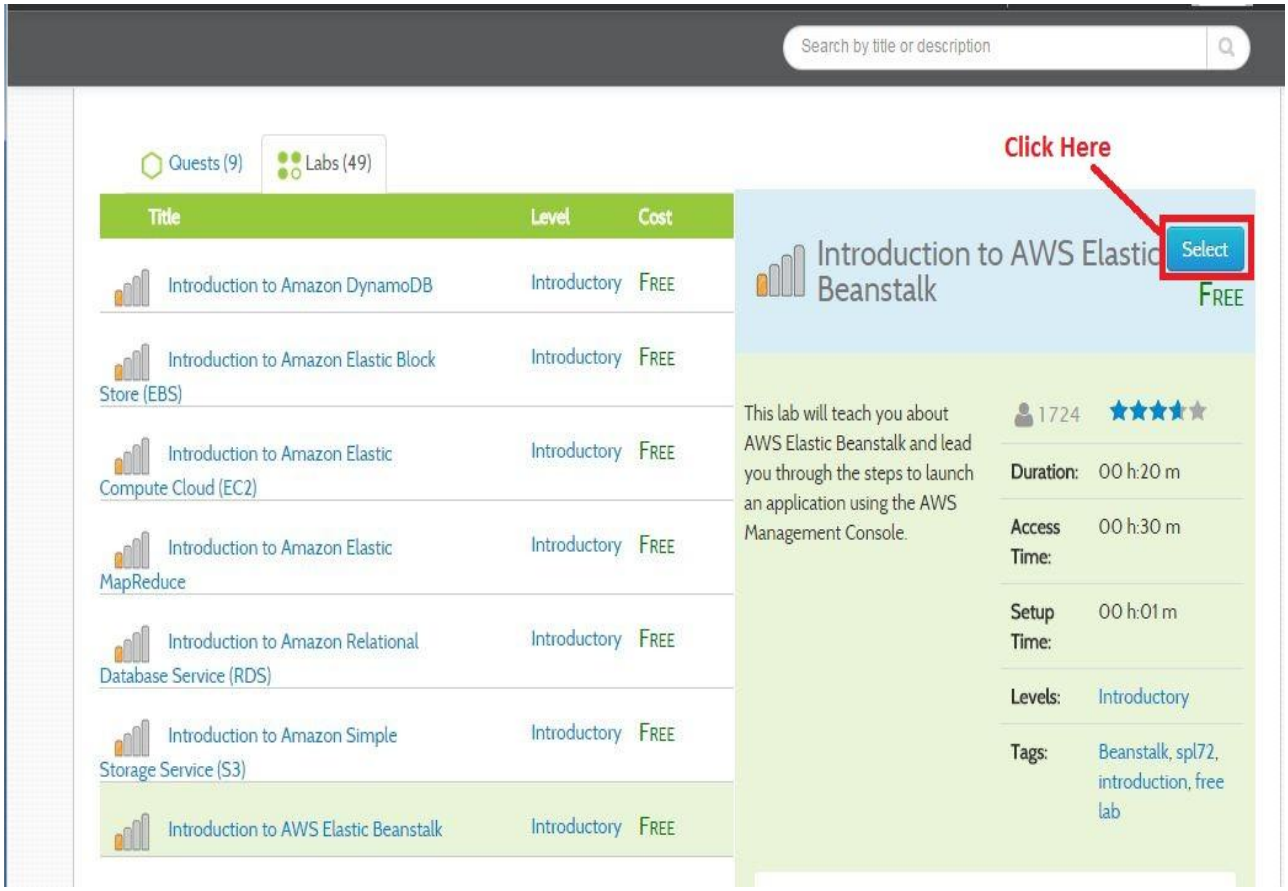
- Login into run.qwiklab.com to get hands-on-work on AWS with your Run QwikLab credentials.
- Click **Lab Catalogue**.



- Click **Labs** Tab.



- Select **Introduction to AWS Elastic Beanstalk** and click **Select**.

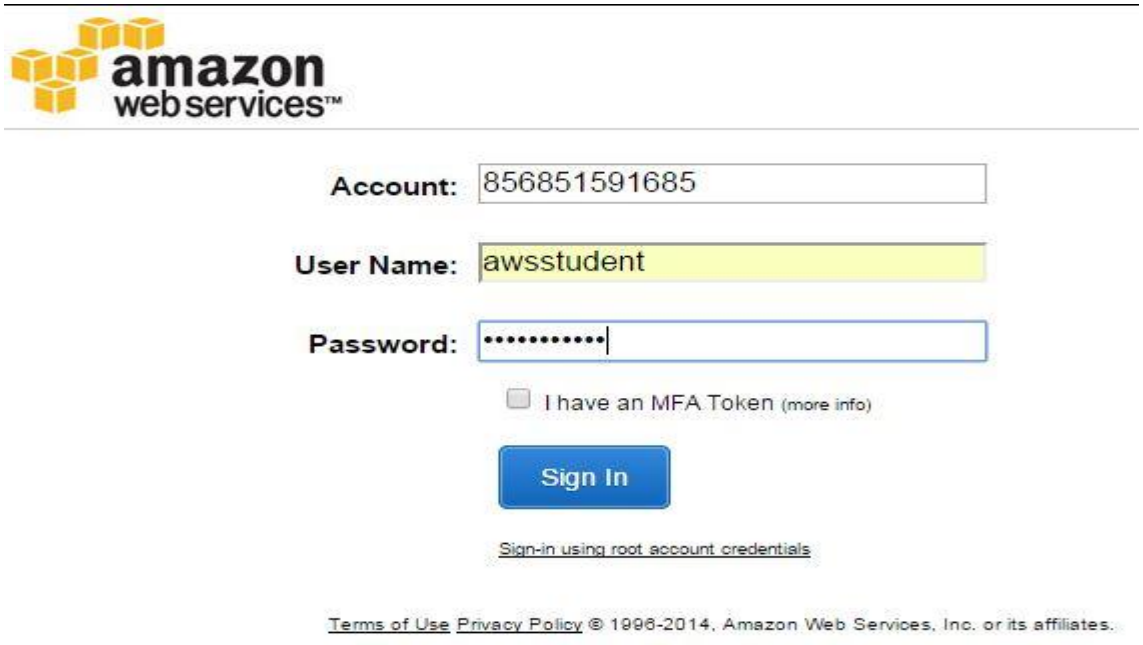


- Now click **Start Lab**.

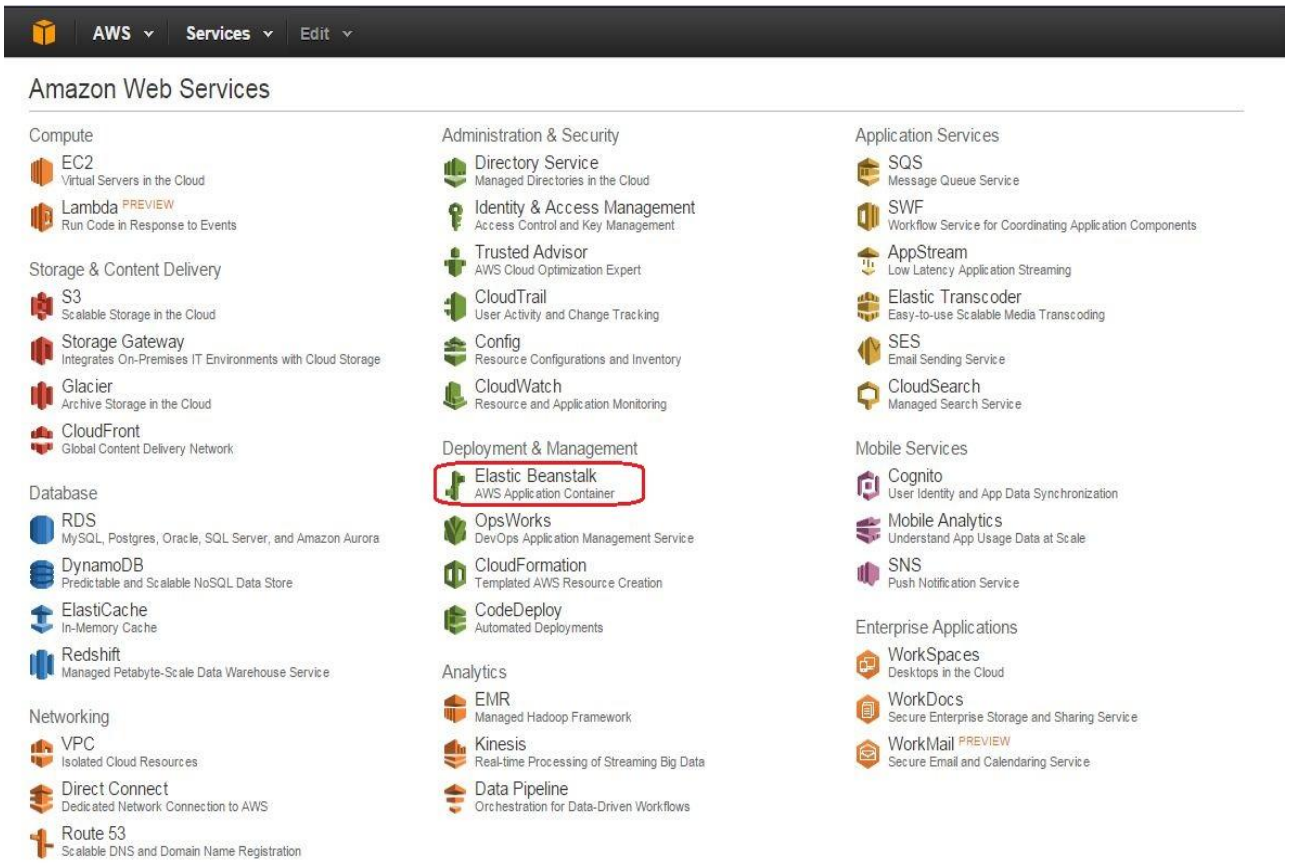
- Under AWS Management Console, copy the **password** to your clipboard.

- Click **Open Console**.

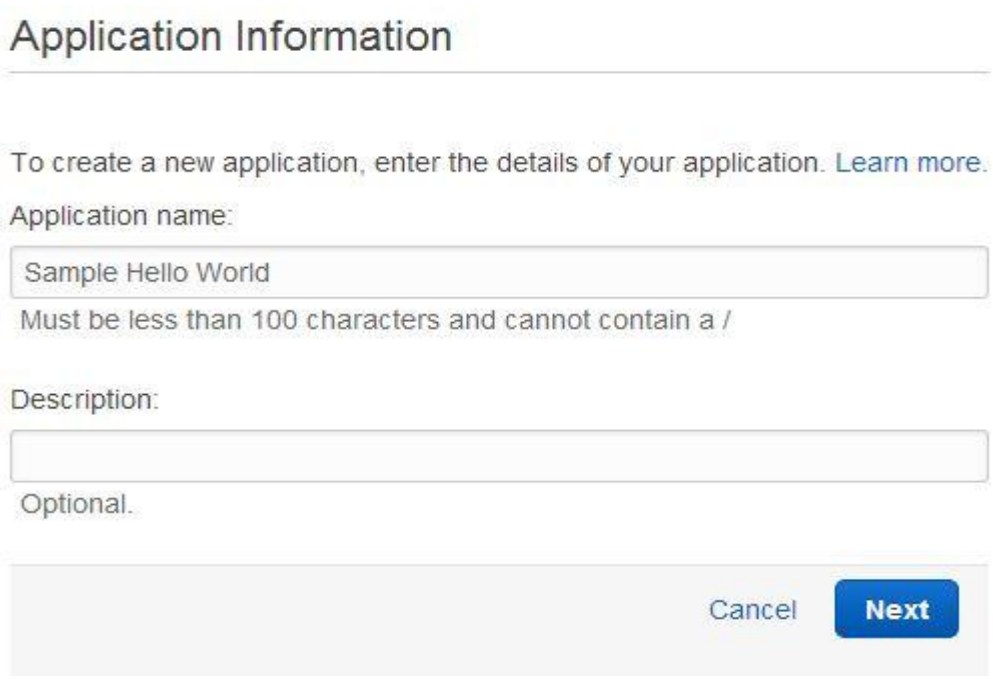
- A new window will appear, enter the username as **awsstudent** and paste password from your clipboard in required fields respectively and click **Sign In**.



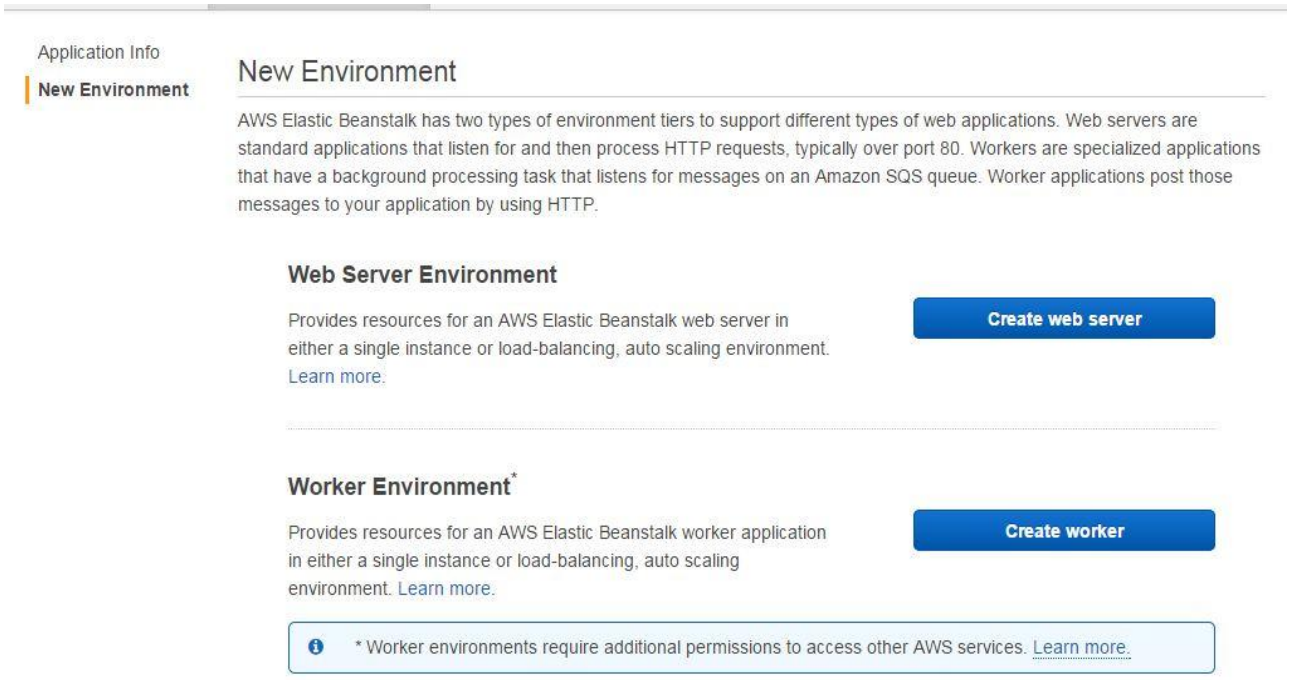
- Under Amazon Web Services select **Elastic Beanstalk**.



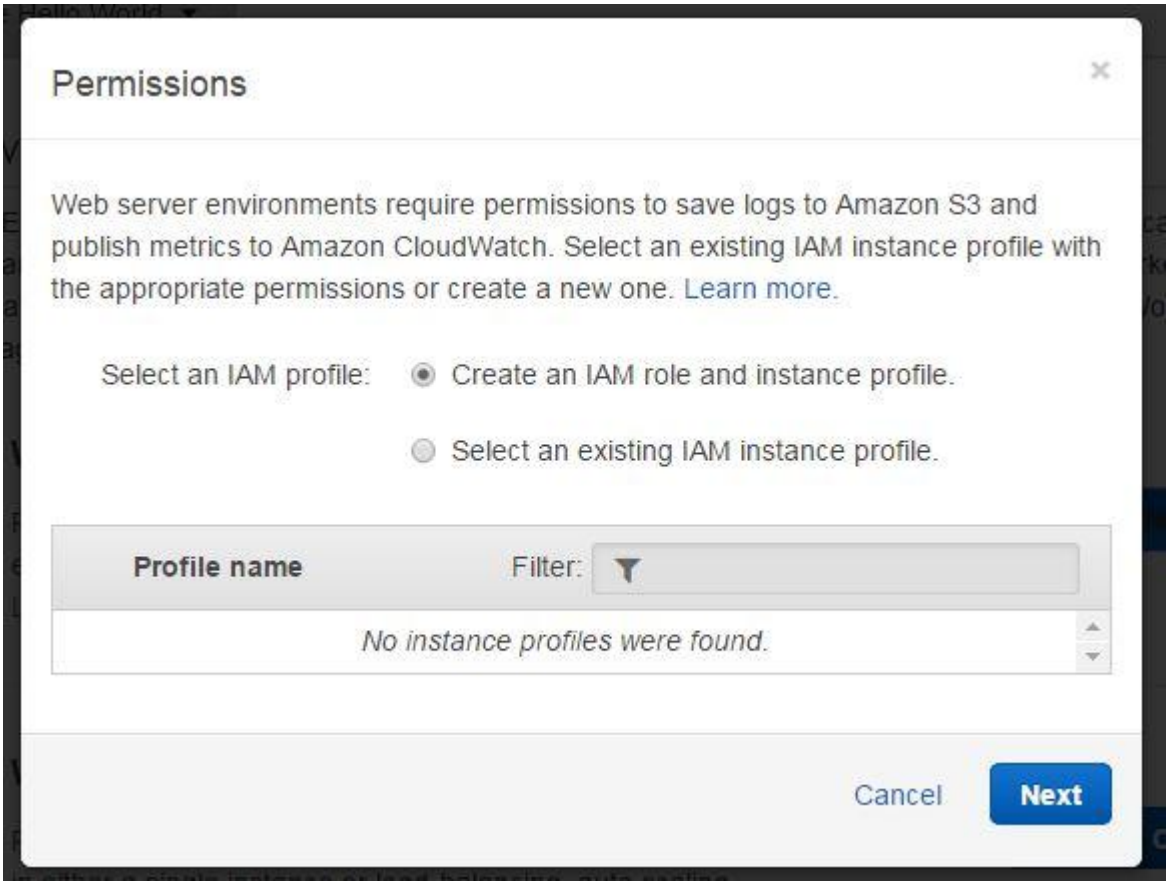
- Click **Create New Application**.
- Enter **Application name** and click **Next**.



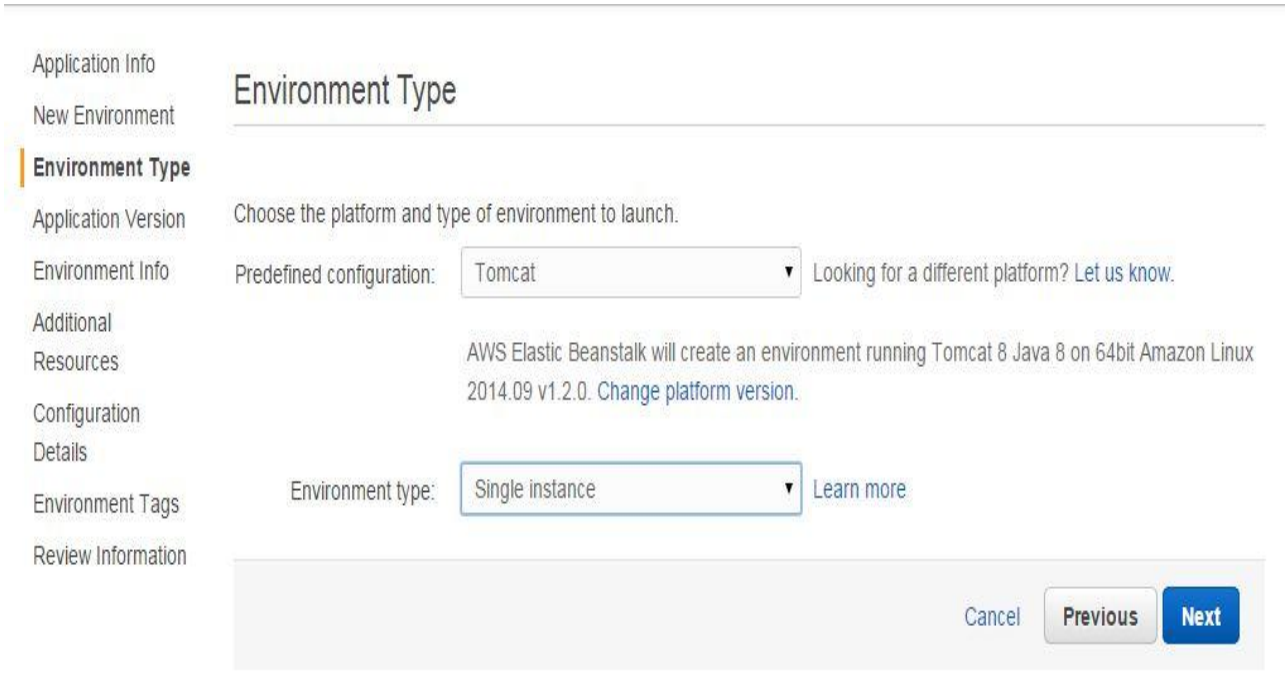
- Click **Create Web Server.**



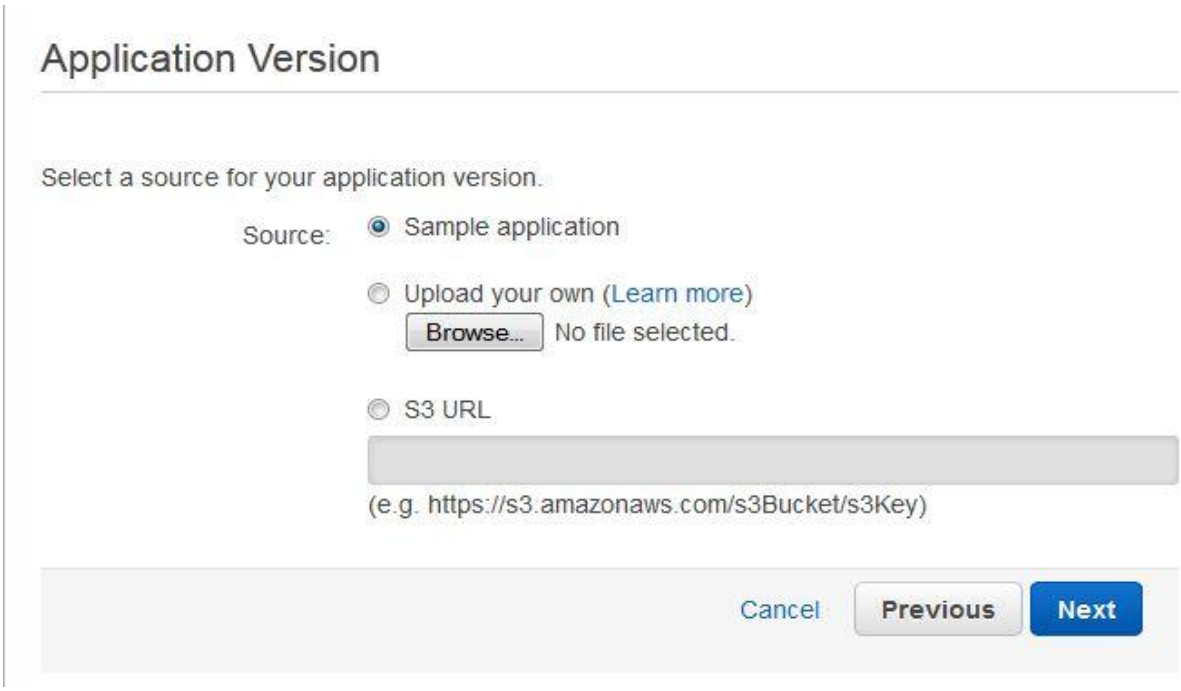
- A Permission popup appears. Select **Create an IAM role and Instance profile** and click **Next**.



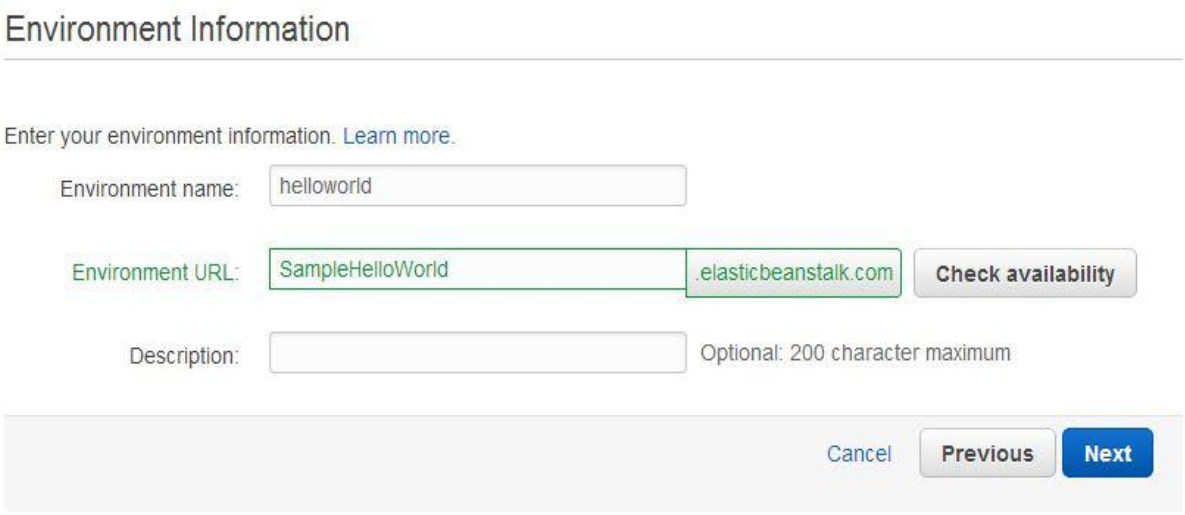
- Now choose predefined configuration as **Tomcat**, Environment type as **Single Instance** and click **Next**.



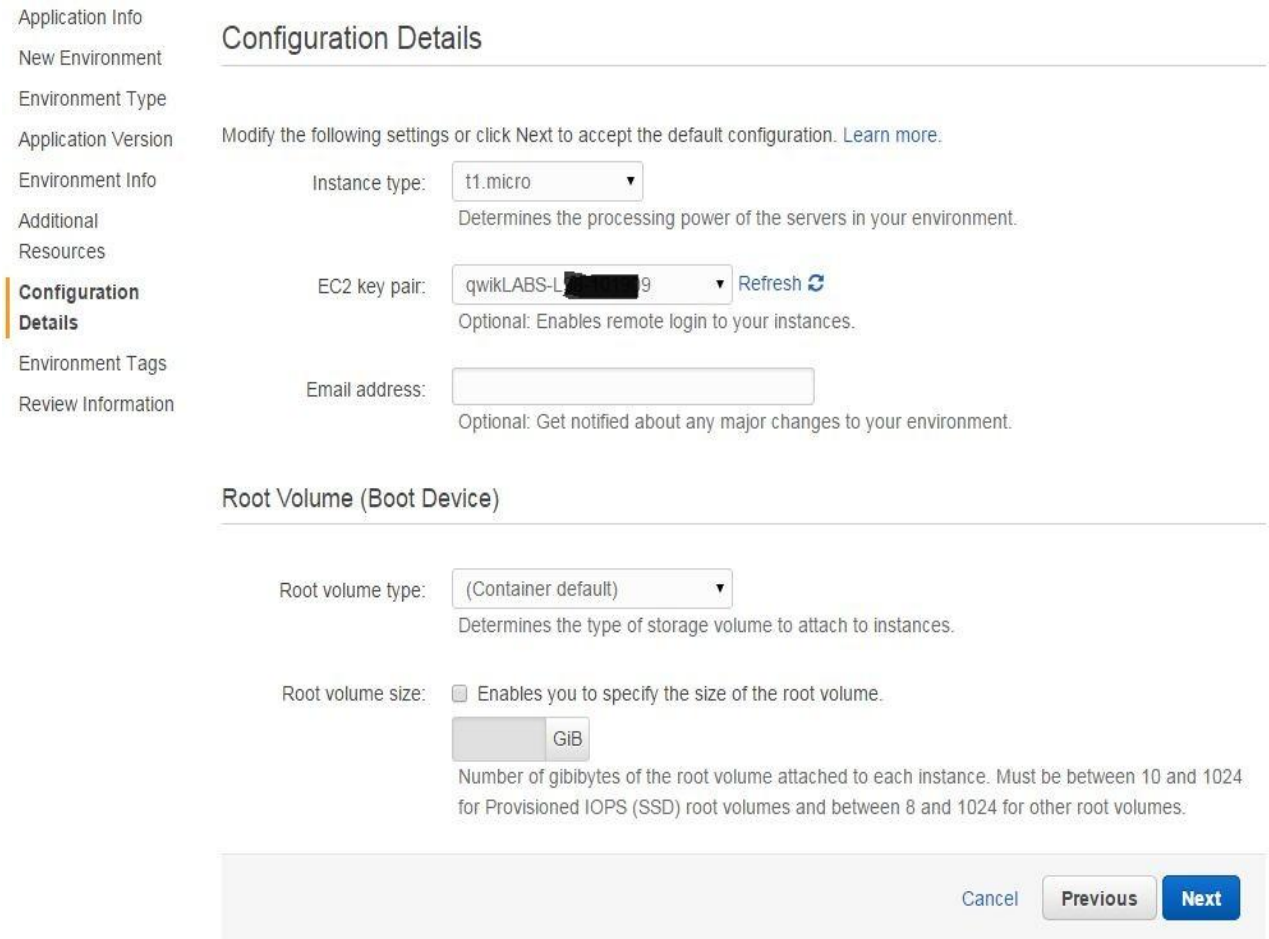
- Now check your choice.
  - If you choose **Sample Application**, a sample application will be created by amazon.
  - If you choose **Upload your own**, click **Choose File** and select the file of your upload.
  - If you choose **S3 URL**, you must enter the url where the file is stored in amazon S3.
- Click **Next**



- Enter **Environment Name** and **Environment URL**, Environment URL will be the ulr for your project and click **Next**.



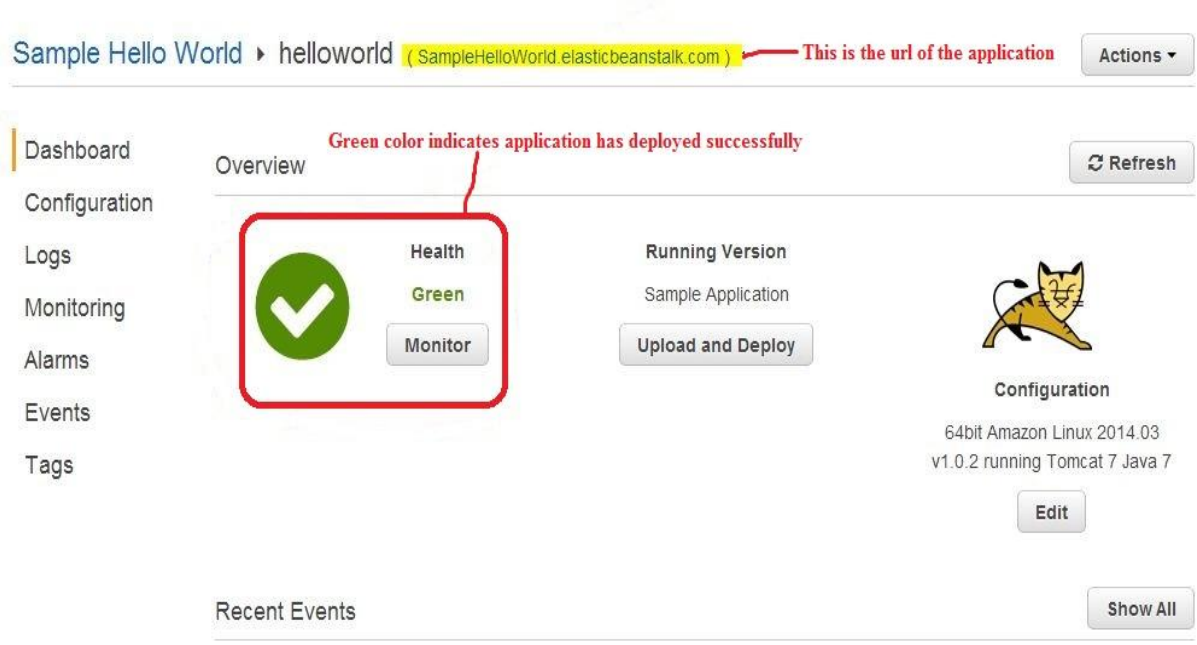
- No "Additional Resources" are required, click **Next**.
- Select Instance Type as **t1.micro** and EC2 key pair as **qwikLABS-xxx**, and click **Next**



- Skip "Environment Tags" as this is optional, click **Next**.
- A **Review** page appears. Review the information and click **Launch**.
- Now your application getting deployed on AWS, when **Health** becomes to green your application is ready to use. It might take a few minutes.

Note: First health turns to red and then to green.

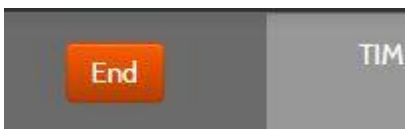
- Click the url given by AWS to get access to the created Sample Application.



- Congratulations, you have created and deployed a new sample application with AWS Elastic Beanstalk.

End Your Lab

- In the navigation bar of the AWS Management Console, click **awsstudent@**<AccountNumber>, and then click **Sign out**.
- On the qwikLABS page, click **End Lab**.
  1. In the conformation message, click **OK**



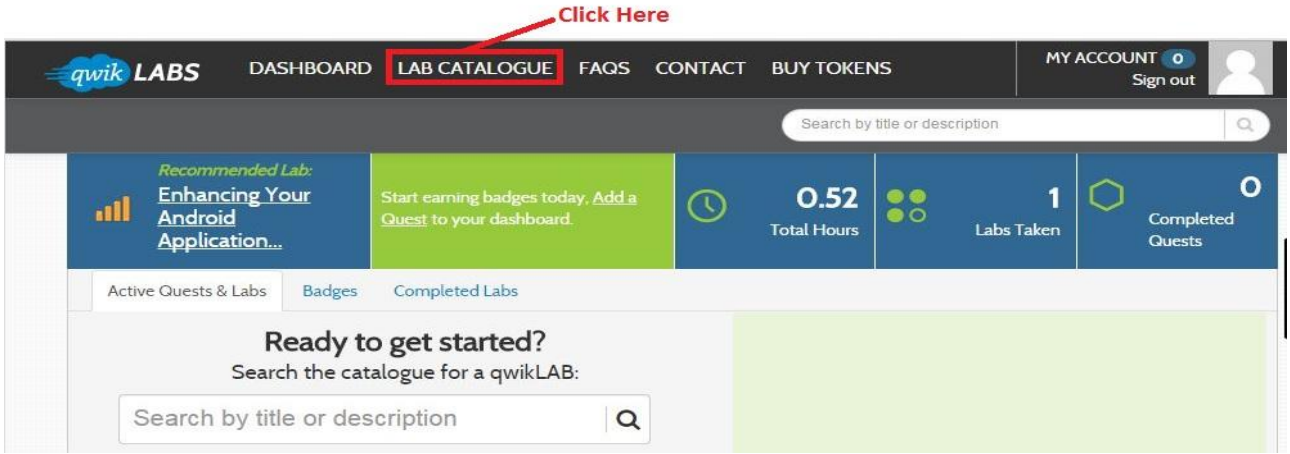
4. Amazon RDS

Objective :

This document helps you to run MySQL on cloud through AWS RDS. Amazon RDS for MySQL gives you access to the capabilities of a familiar MySQL database engine. Amazon RDS makes it easy to set up, operate, and scale MySQL deployments in the cloud. Amazon RDS frees you up to focus on application development by managing time-consuming database administration tasks including backups, software patching, monitoring, scaling and replication. With Amazon RDS, you can deploy scalable MySQL deployments in minutes with cost-efficient and resizable hardware capacity.

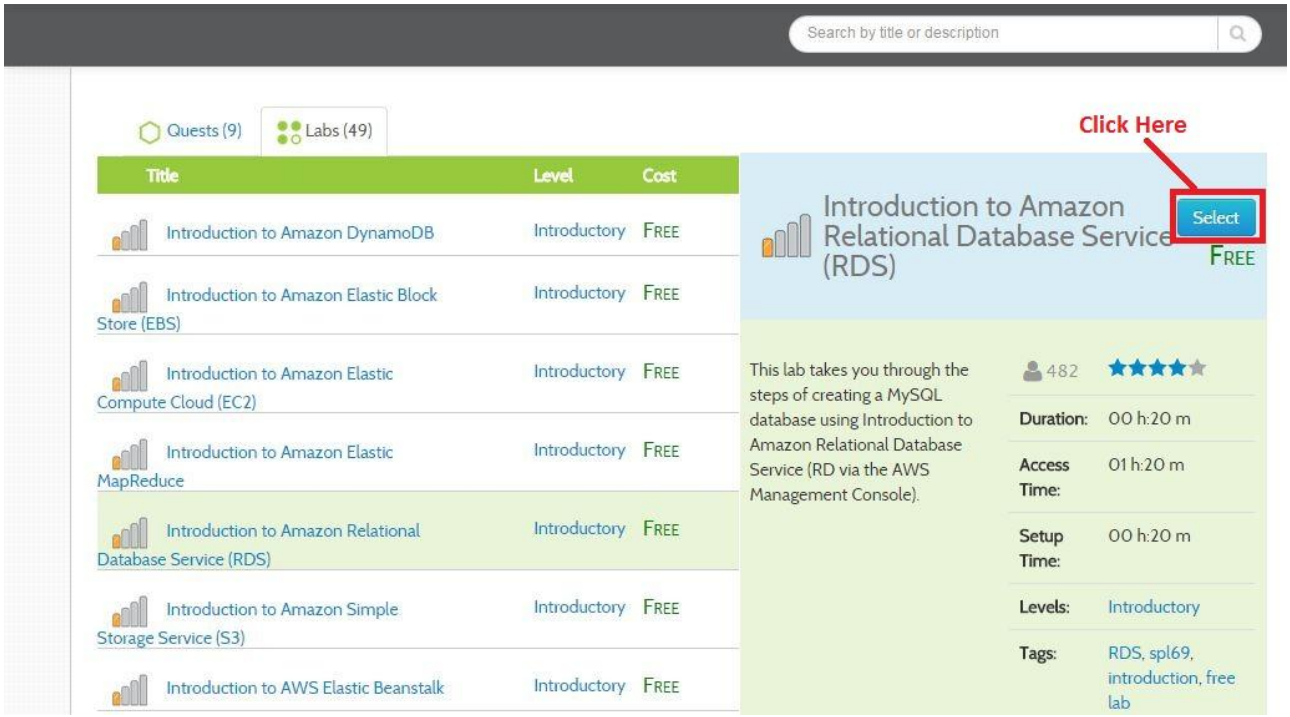
Deploying an Application to AWS :

- Login into run.qwiklab.com to get hands-on-work on AWS with your Run QwikLab credentials.
- Click **Lab Catalogue**.



- Click **Labs** Tab.

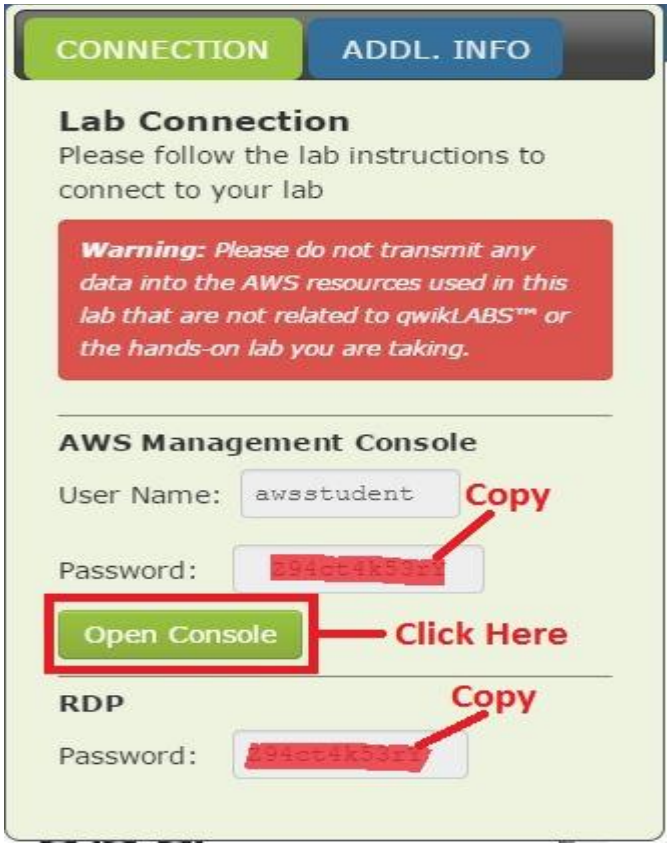
- Select **Introduction to Amazon Relational Database Service (RDS)** and click **Select**.



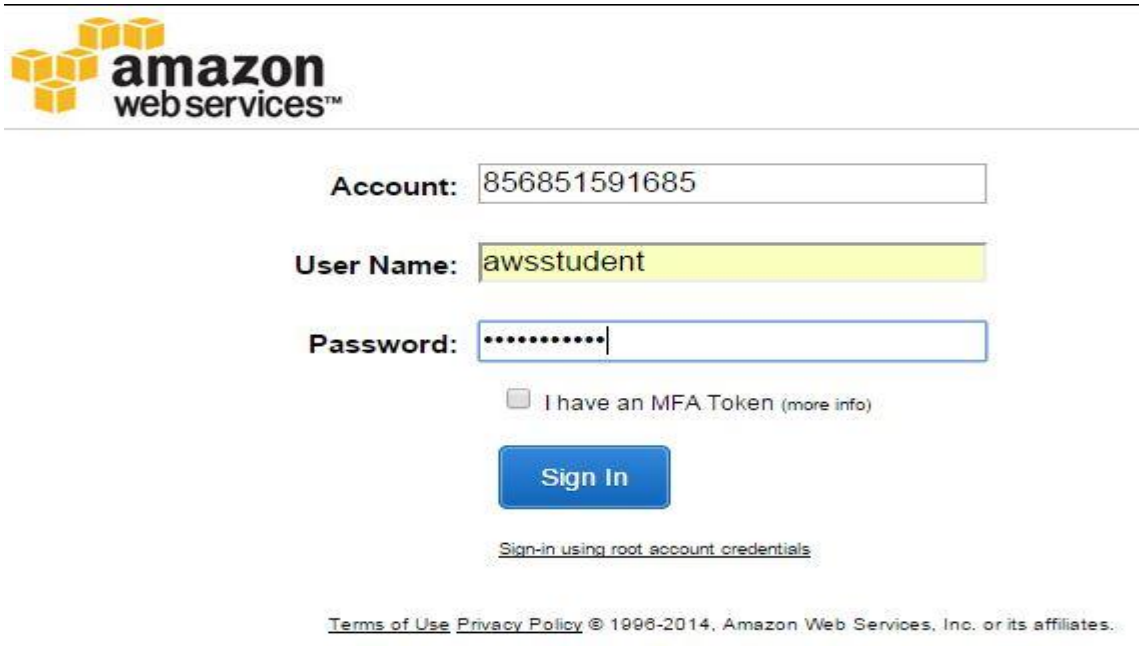
- Now click **Start Lab**.

- Under AWS Management Console, copy the **password** to your clipboard.
- Under RDP, copy the password to your clipboard.

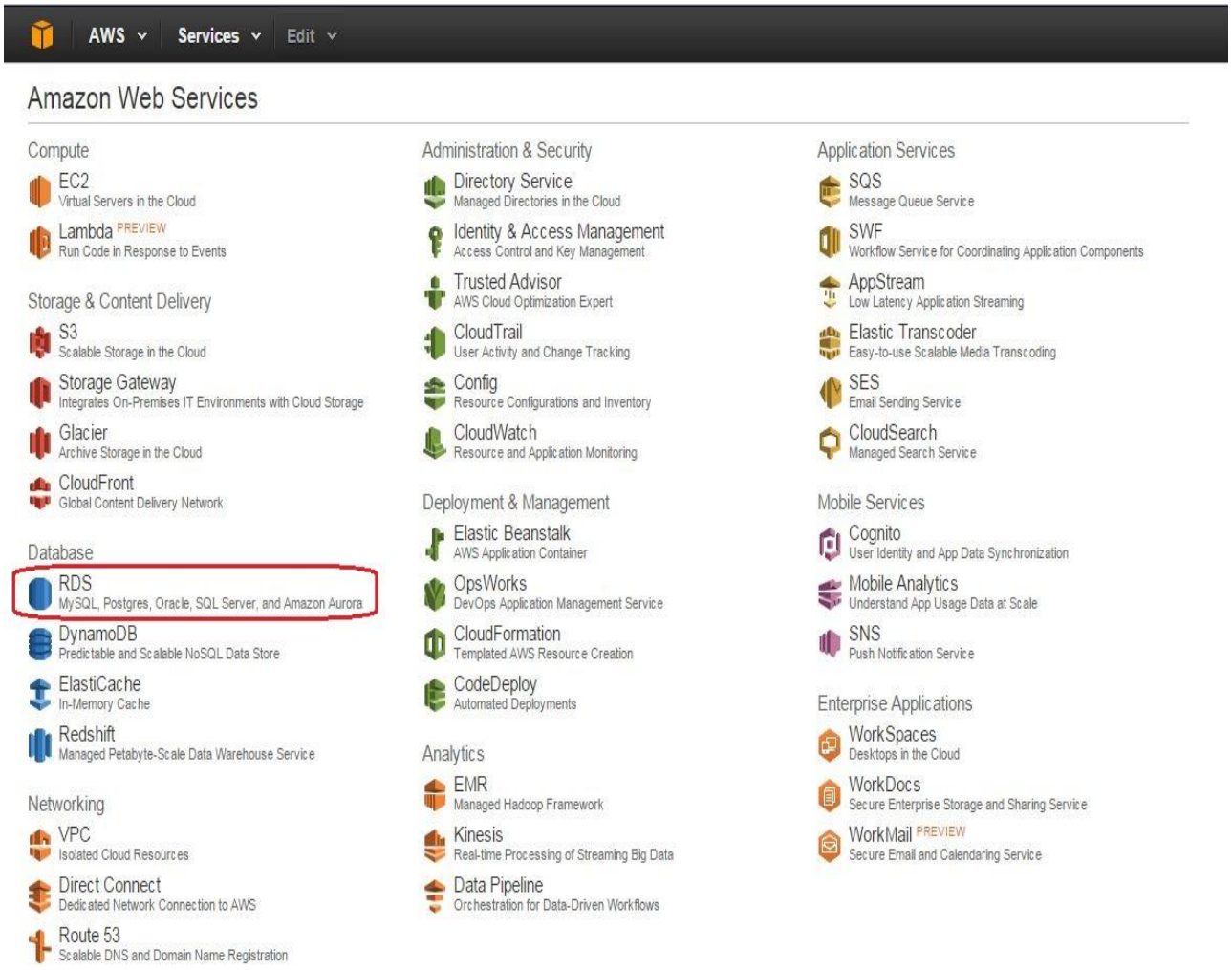
- Click **Open Console**.



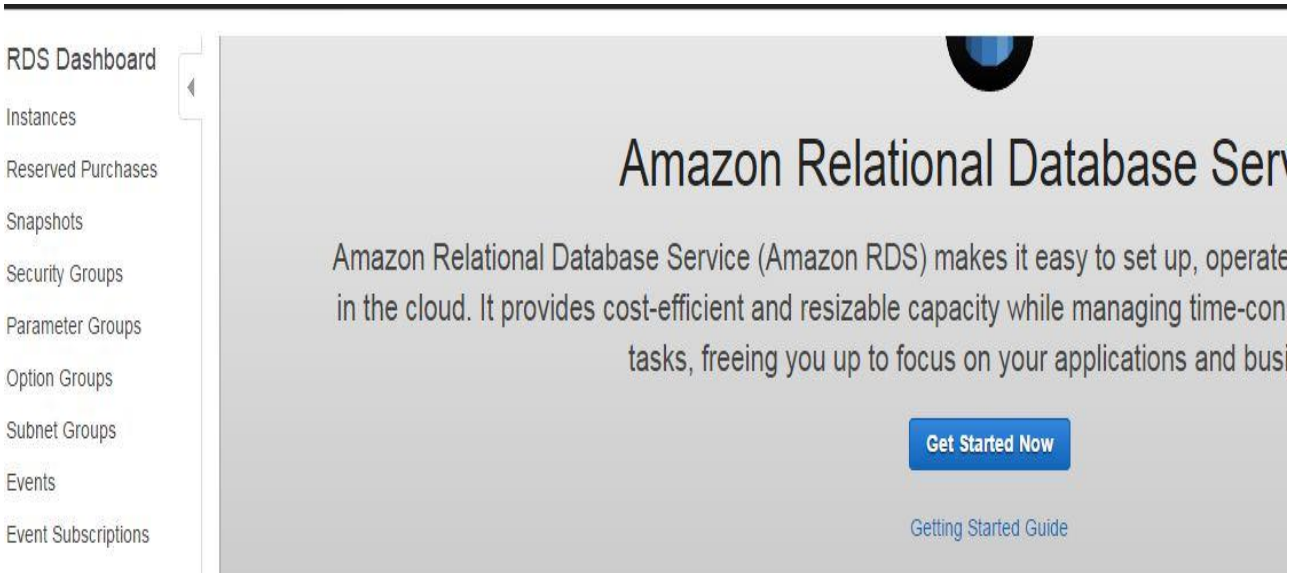
- A new window will appear, enter the username as **awsstudent** and paste password (AWS Management Console) from your clipboard in required fields respectively and click **Sign In**.



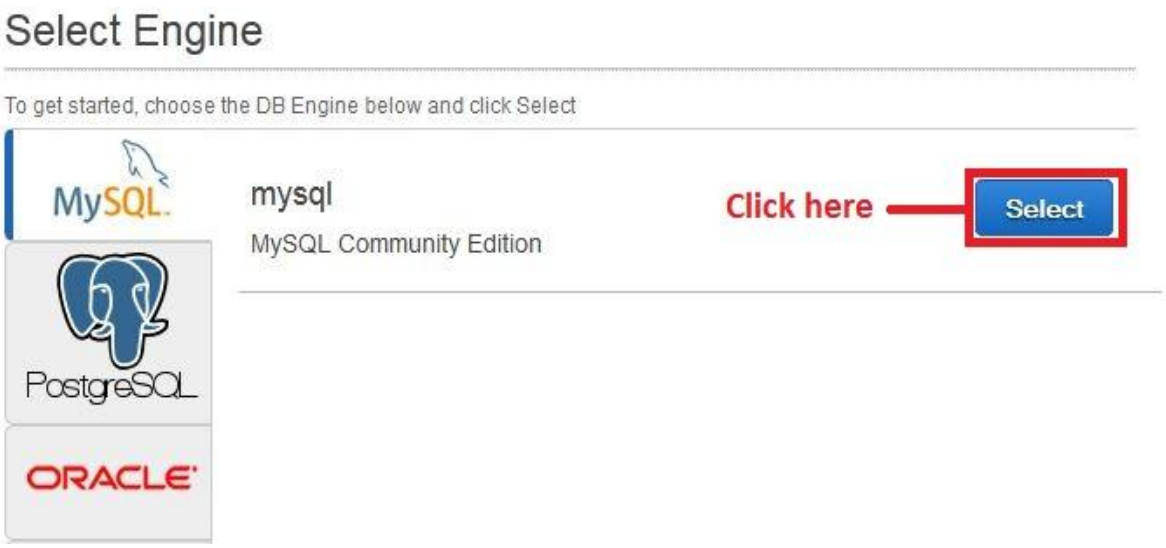
- Under Amazon Web Services select **RDS**.



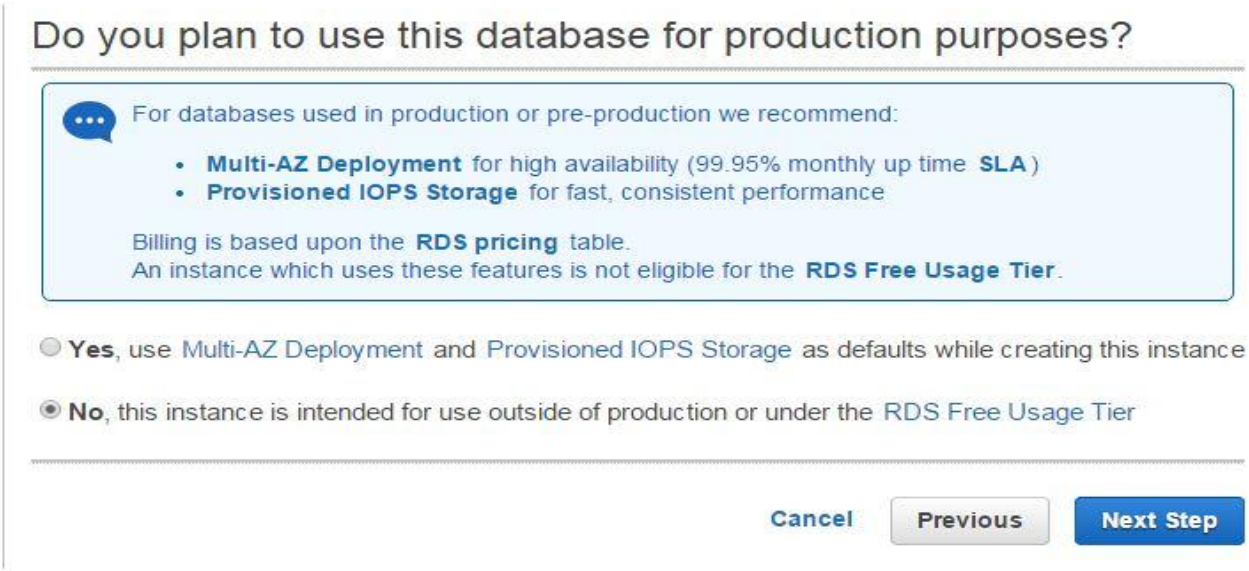
- Click **Get Started Now**.



- In Select Engine page select MySQL and click **Select**

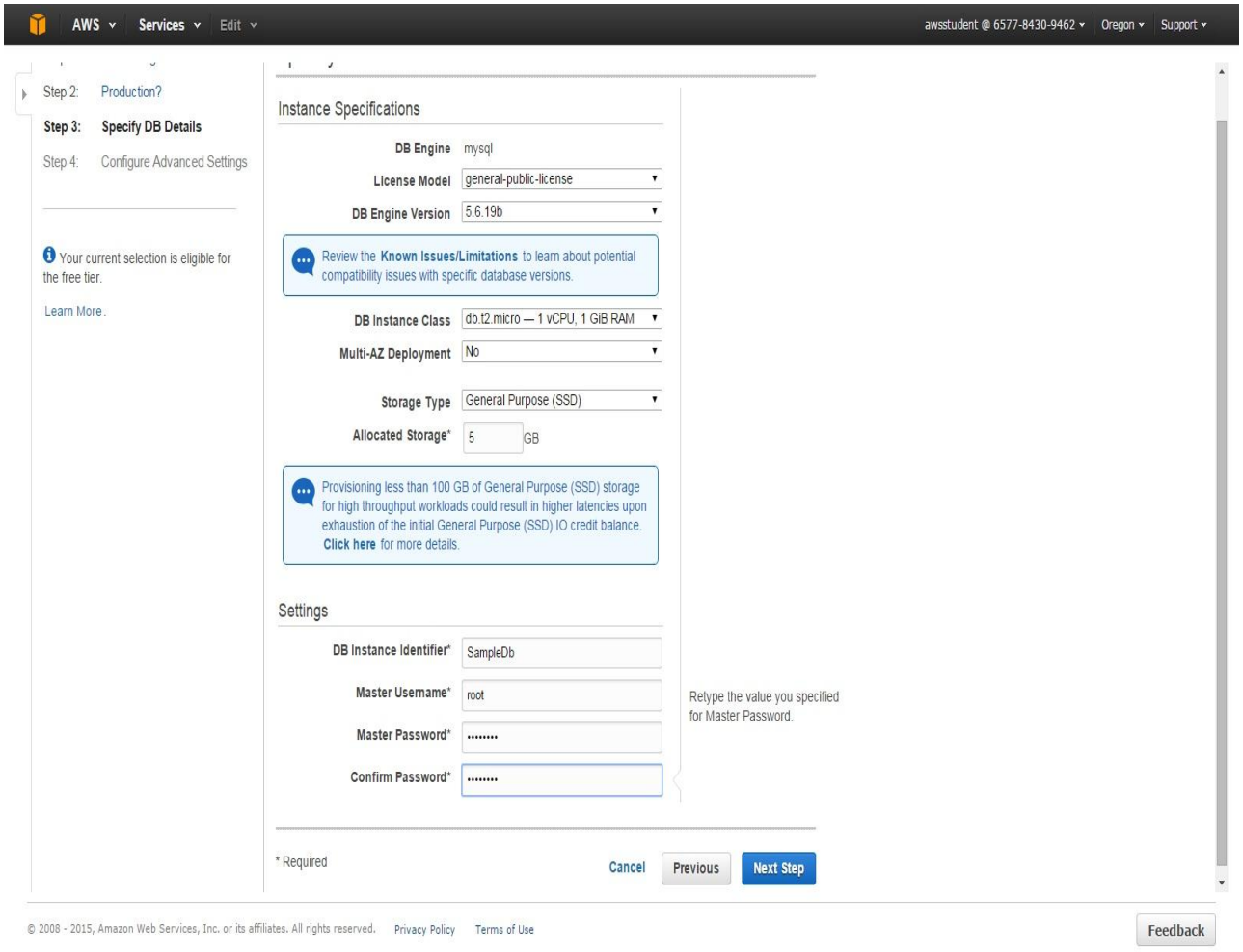


- Check " No, this instance is intended for use outside of production or under the [RDS Free Usage Tier]" Radio button and click **Next Step**

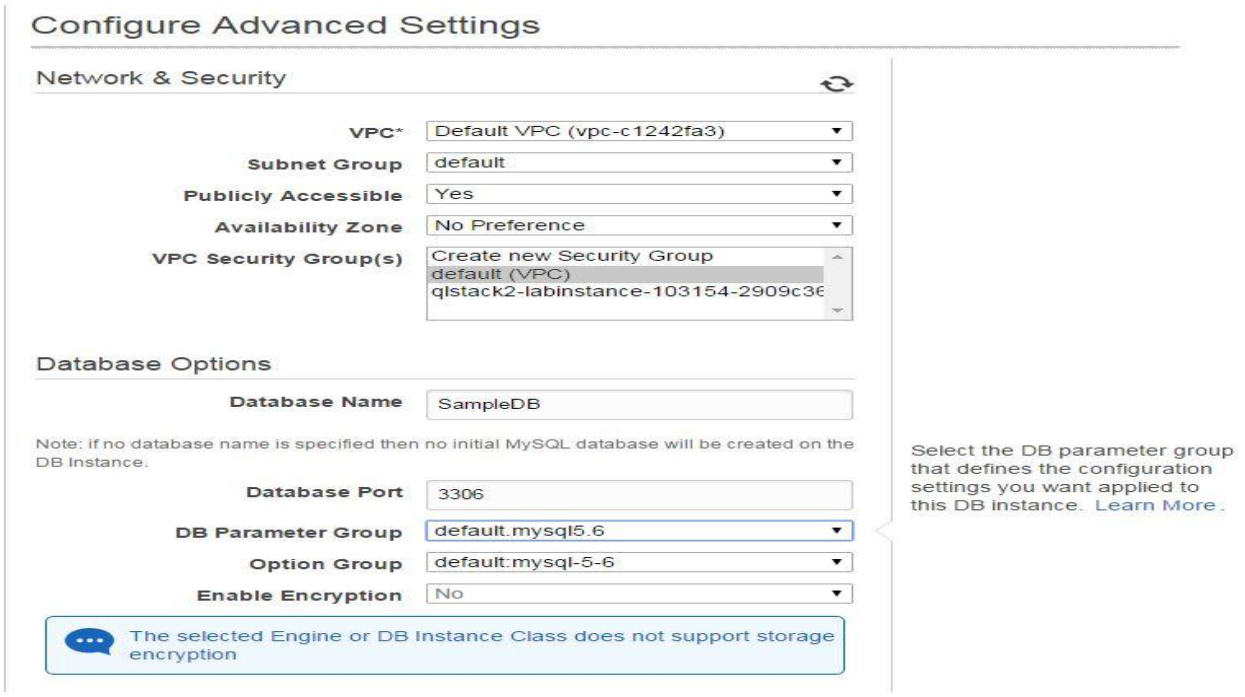


- Select "Specify DB Details" as below and click **Next Step**

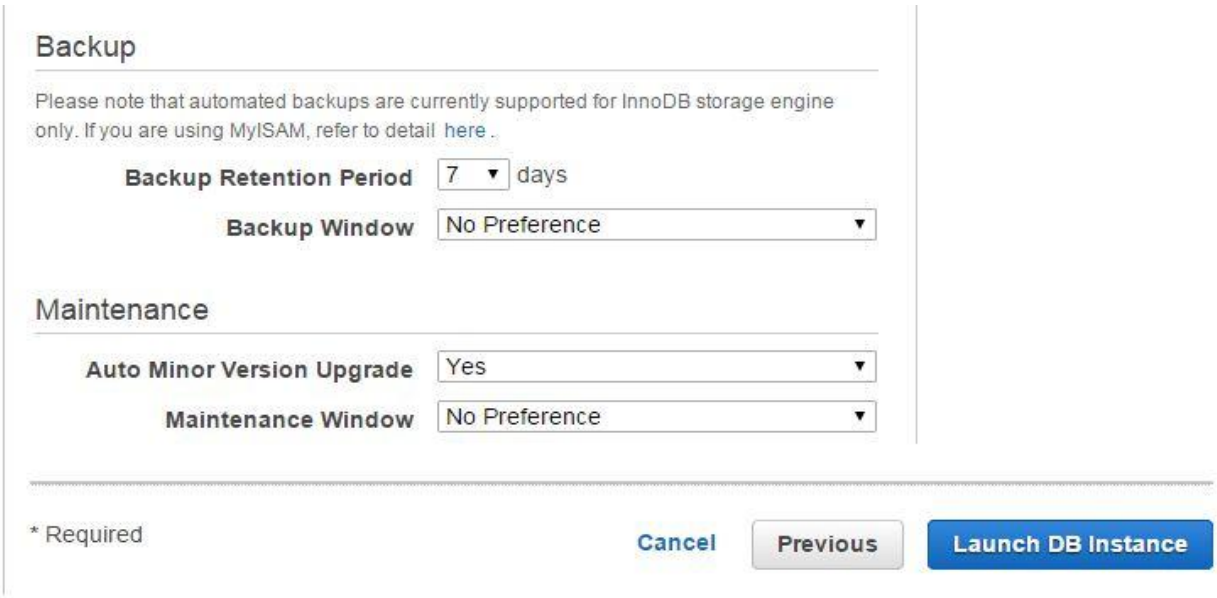
Db Instance Class	db.t2.micro - 1 vCPU, 1GB RAM
Multi-AZ Deployment	No
Storage Type	General Purpose (SSD)
Allocated Storage	5
Db Instance Identifier	SampleDB
Master Username	root
Master Password	root1234



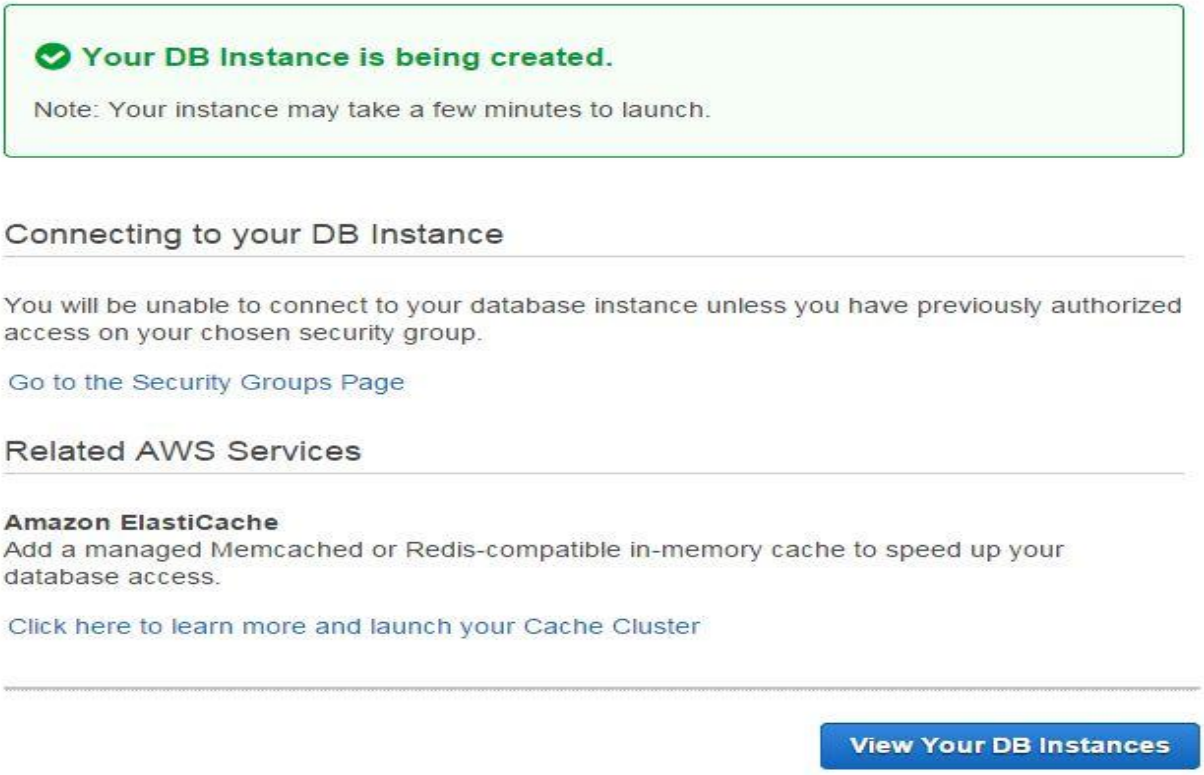
- Select VCP Security Group(s) as **default (VCP)**



- Enter Database Name as **SampleDB** and click **Launch DB Instance**

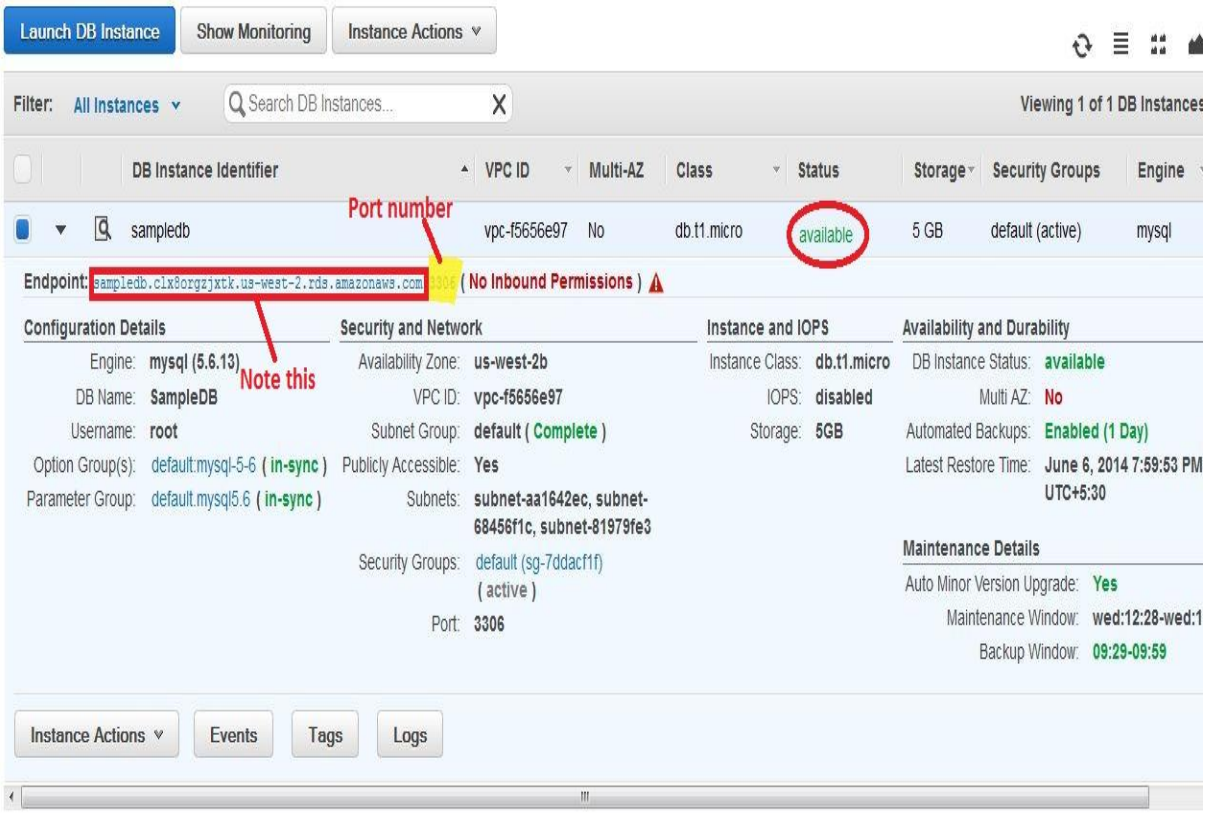


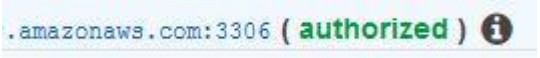
- Click **View Your DB Instances**.



- RDS Instance page appears for creating RDS instance it takes few minutes.
- After status becomes from "creating" to "available", it is now available for creating database.
- Click on the instance to get details of the instance.

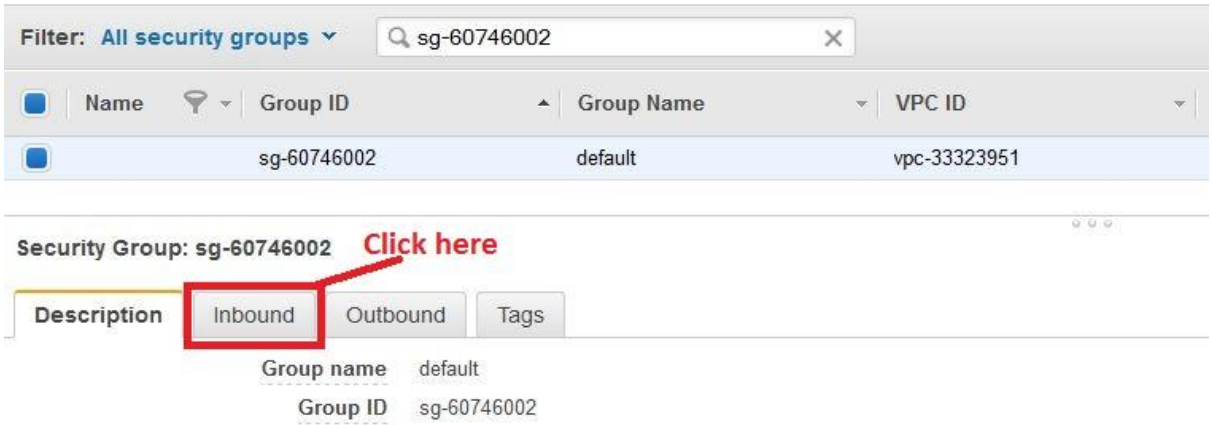
- Note the **Endpoint** for login into MySQL Workbench.



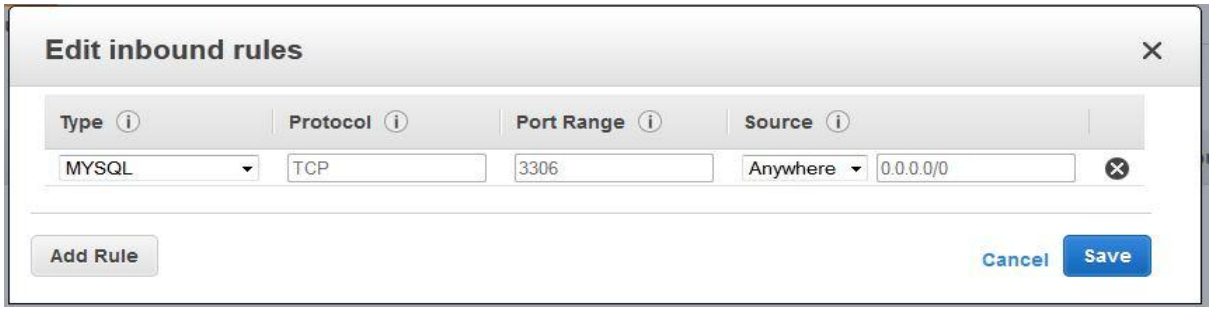
- Here if you see "**No Inbound Permissions**" which represents we can't access RDS from anywhere, to get access to RDS from anywhere click exclamation symbol  . If you see "**authorized**" 

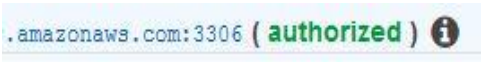
then skip below 5 steps.
- Click Edit Security Group.

- Click **Inbound Tab**



- Click **Edit**
- Select "Type" as **MYSQL** and "Source" as **Anywhere** and click **save**



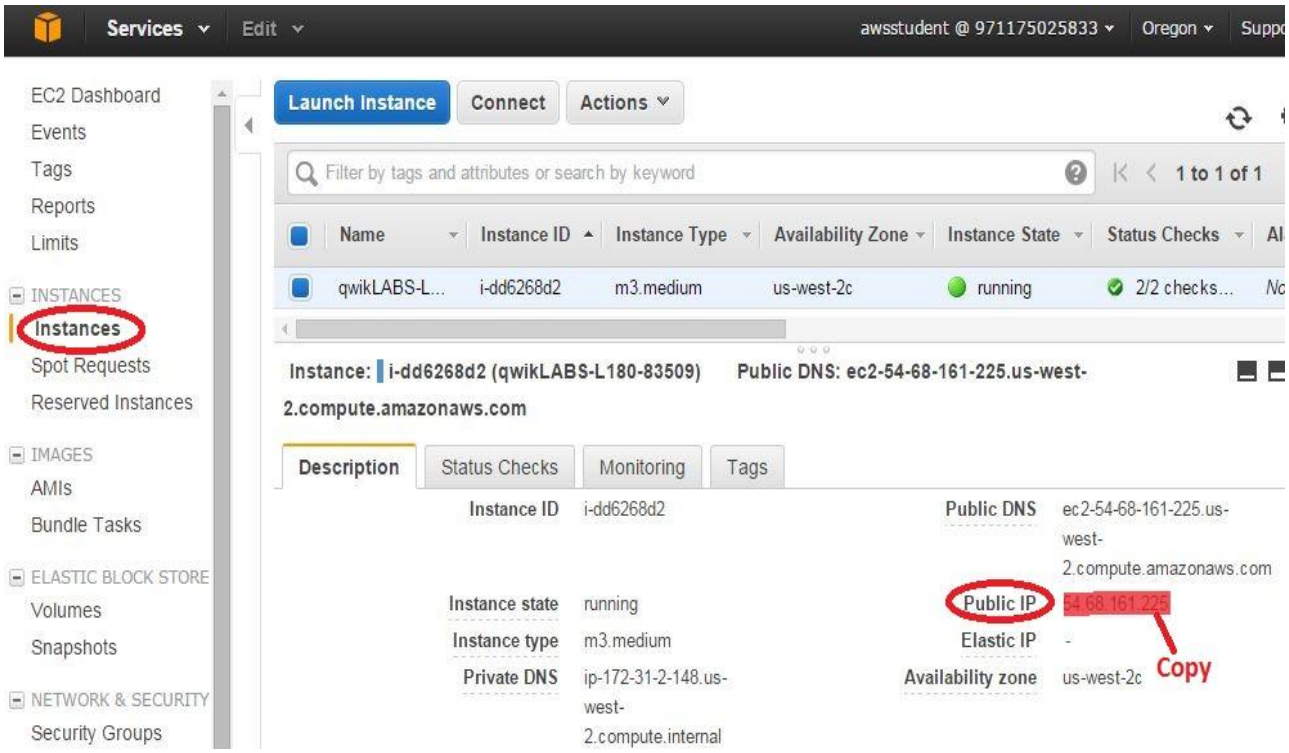
- Now "No Inbound Permissions" changes to "authorized" 

- Now RDS is authorized and can be accessed from anywhere.

Note: While you were creating database, an instance of Windows Server was being created for you.

- Click **Service**, under **compute** select **EC2**.

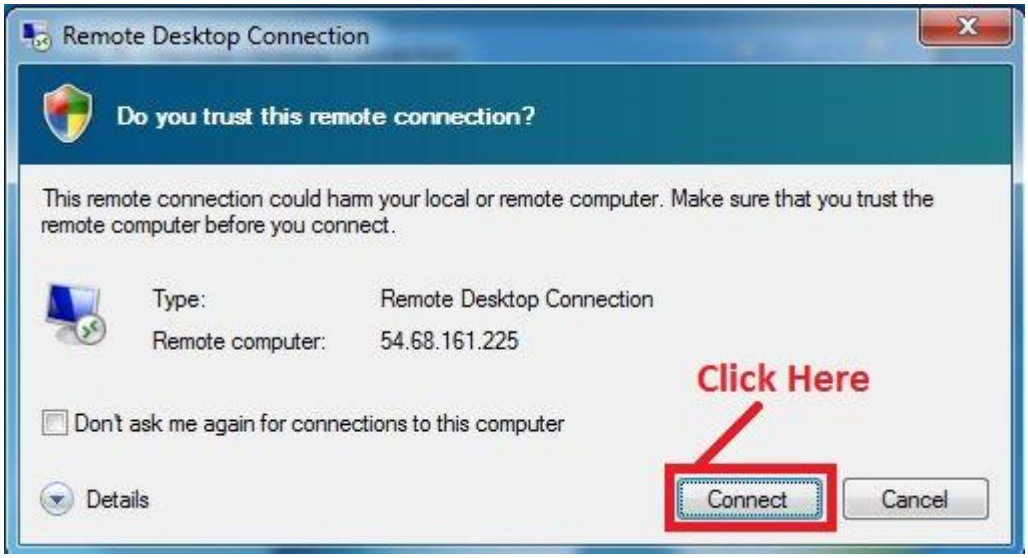
- In the left panel, click **Instances**.
- In the bottom panel, under description tab, copy the **Public IP** to your clipboard.



Connecting to Development Instance and RDS

- Open **Start menu** and enter **mstsc** (Microsoft Terminal Service Client). This will Open your **Remote Desktop Connection**.
- Paste the copied **Public IP**, click **Connect**.

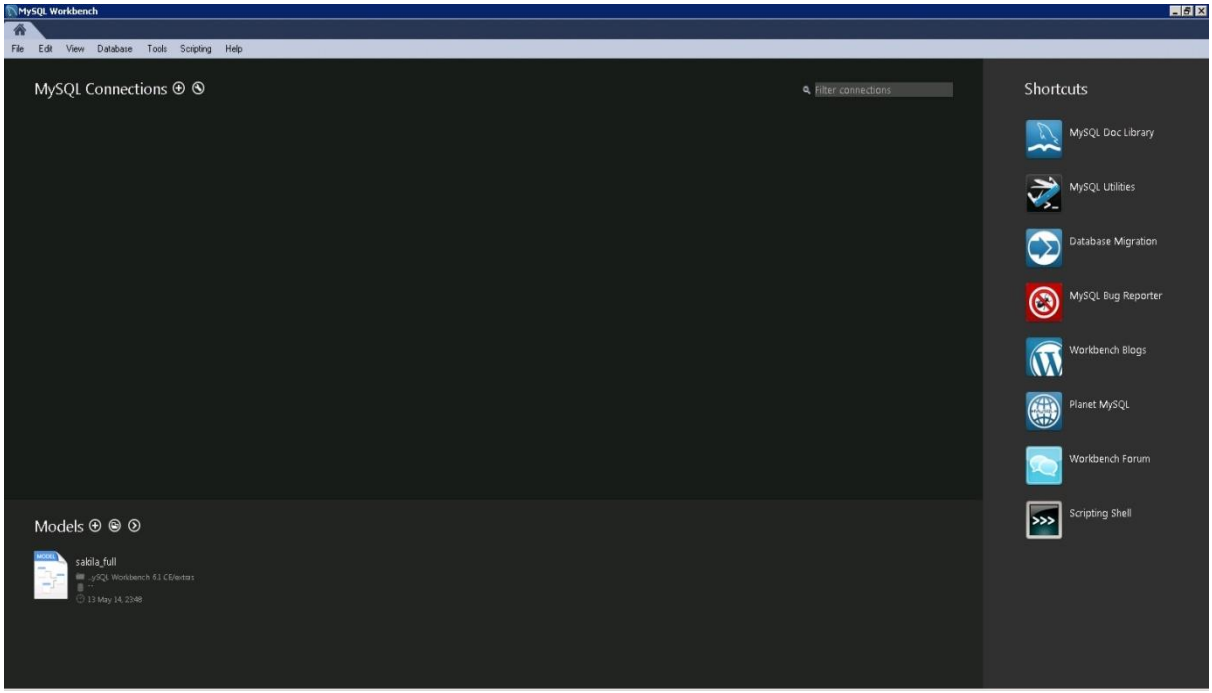
- A trust window appears, click Connect.



- If you see username as **Administrator**, paste the copied **RDS password** in the required field and click **ok**.
- Else click **Use another account** enter username as **Administrator**, paste the copied **RDS password** in the required field and click **ok**.

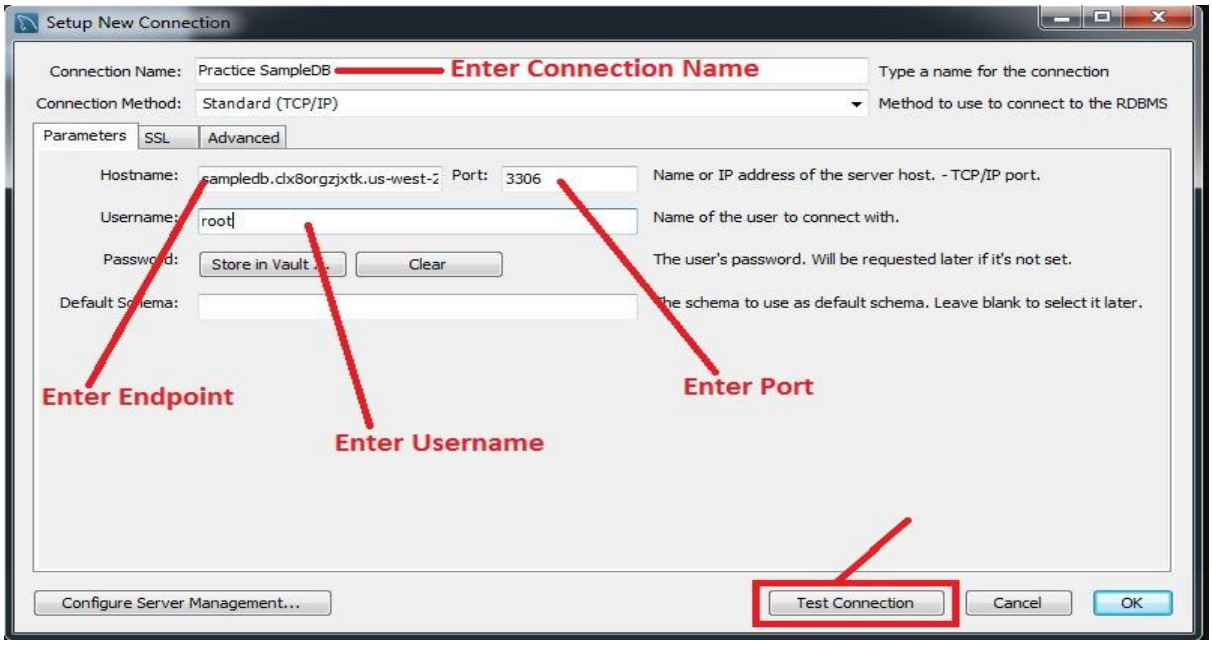
- Click **Yes** if you get a security warning.

- After Login into Virtual Machine, click **Start -> All Programs -> MySQL -> MySQL Workbench** to launch Workbench.
- In MySQL workbench, select **Databases -> Manage Connections** then click **New** .



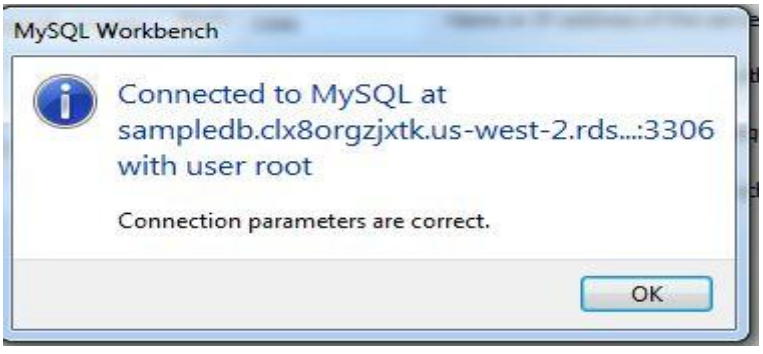
- Enter Connection Name as **Practice SampleDB**.

- Enter noted Endpoint in Host name without port number as port number in Port field.
- Enter port number in required field.
- Enter User name and click **Test Connection**.

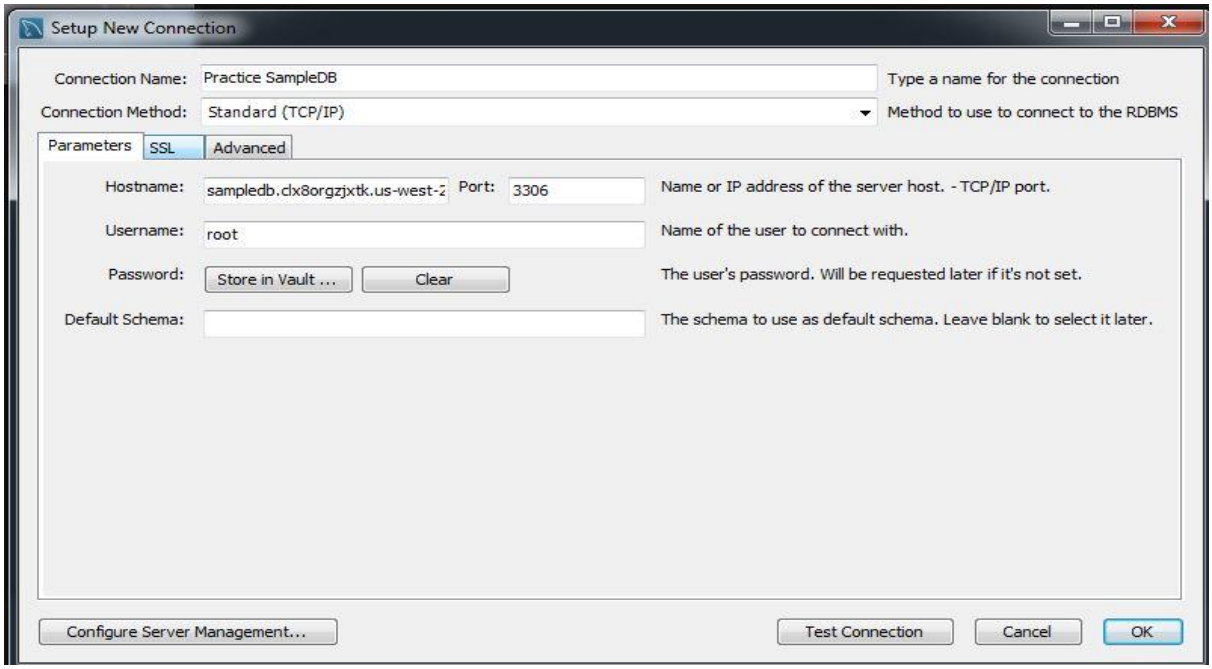


- Enter password in the field as **root1234** and click OK.

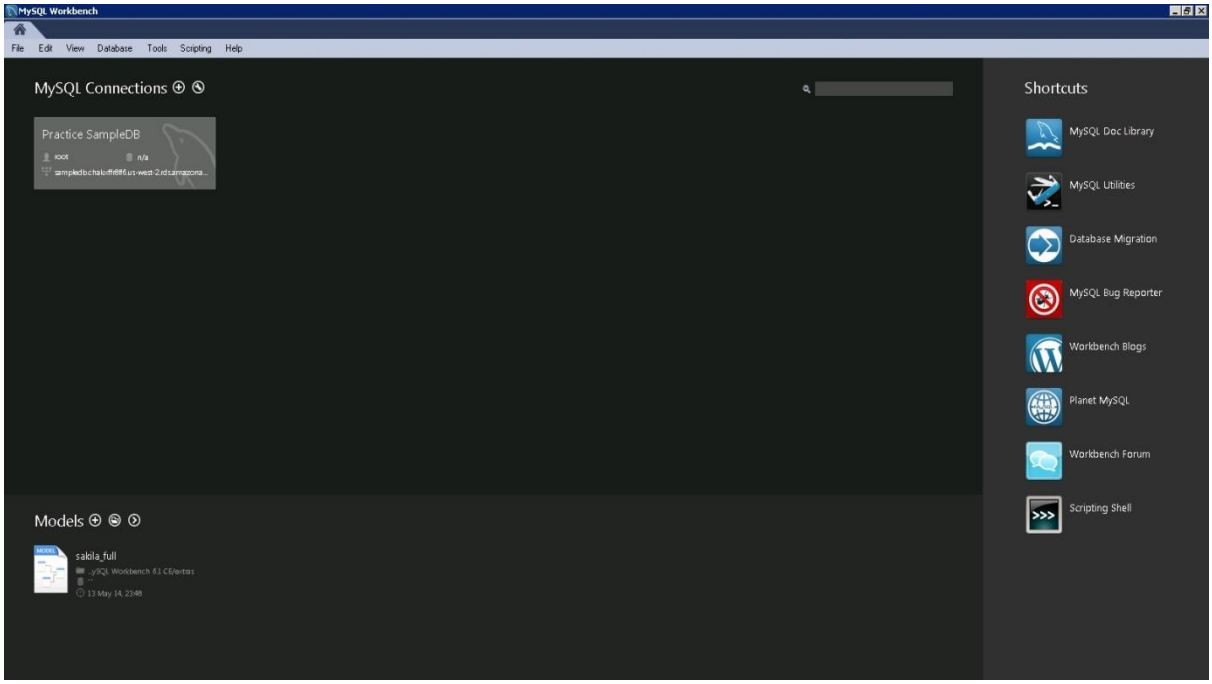
- A window alert as "connection parameters are correct", this alert represents connection is successful, click **OK**.



- Now click **OK** on "Setup New Connection" window.
- Now you're connected to Amazon RDS MySQL.



- MySQL Connection page shows connected Amazon RDS.



- Click on created RDS a SQL Editor window opens, showing a successful connection to your database.

End Your Lab

- In the navigation bar of the AWS Management Console, click **awsstudent@**<AccountNumber>, and then click **Sign out**.
- On the qwikLABS page, click **End**.

2. In the conformation message, click **OK**

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