



SRI LANKA INSTITUTE OF INFORMATION TECHNOLOGY

[Enterprise Standards and Best Practices for IT Infrastructure](#)

4th Year 2nd Semester 2016

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SLIIT ID: IT13122492

Group Number:

Practical Session: WD

Practical Number: Lab 3

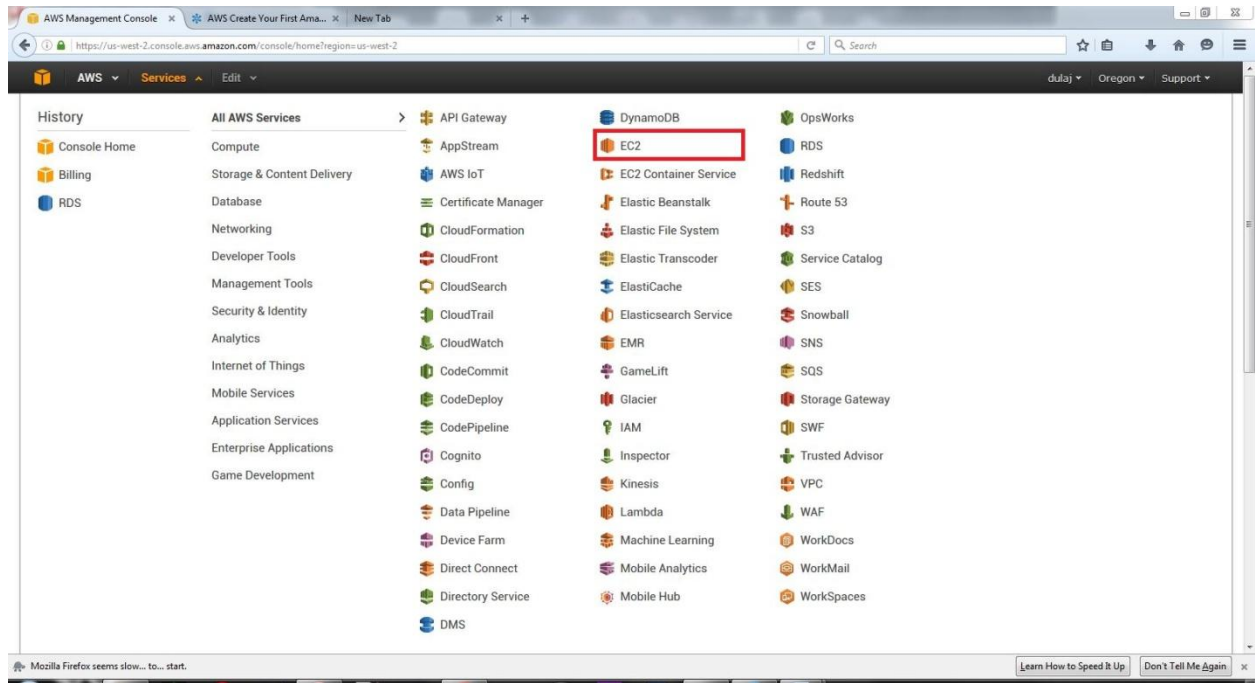
Date of Submission: 28-07-2016

Date of Evaluation : _____

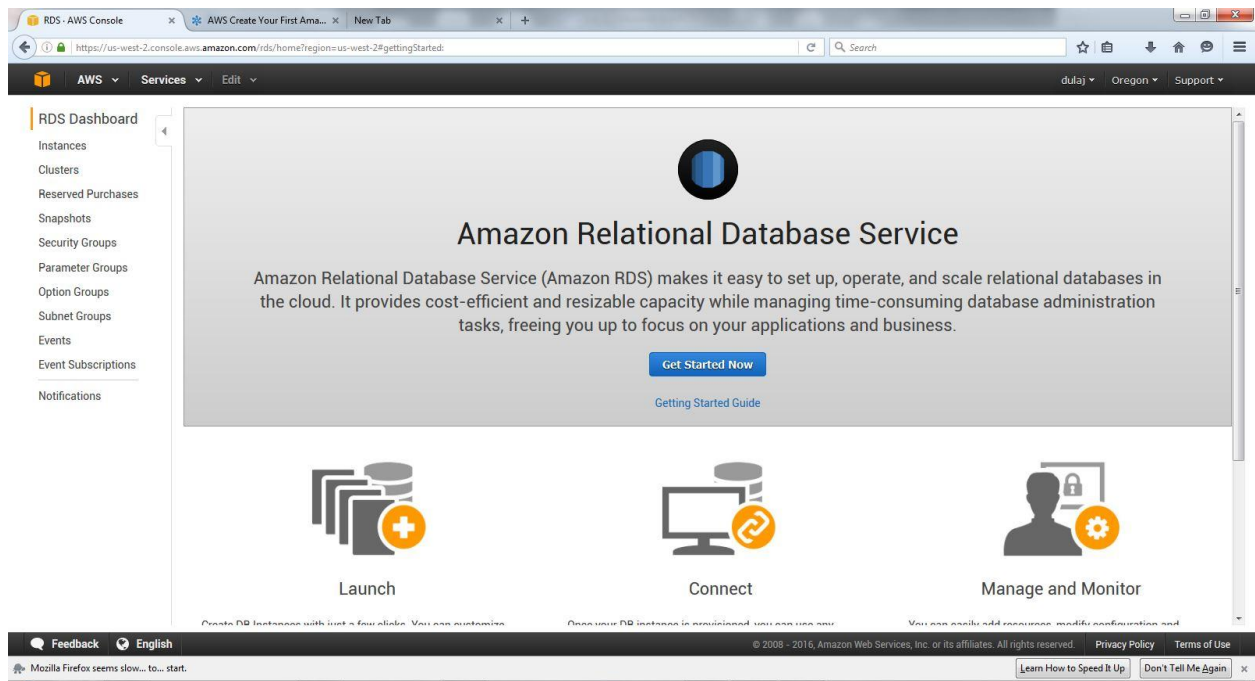
Evaluators Signature : _____

Step 1

On the console, click “RDS”.



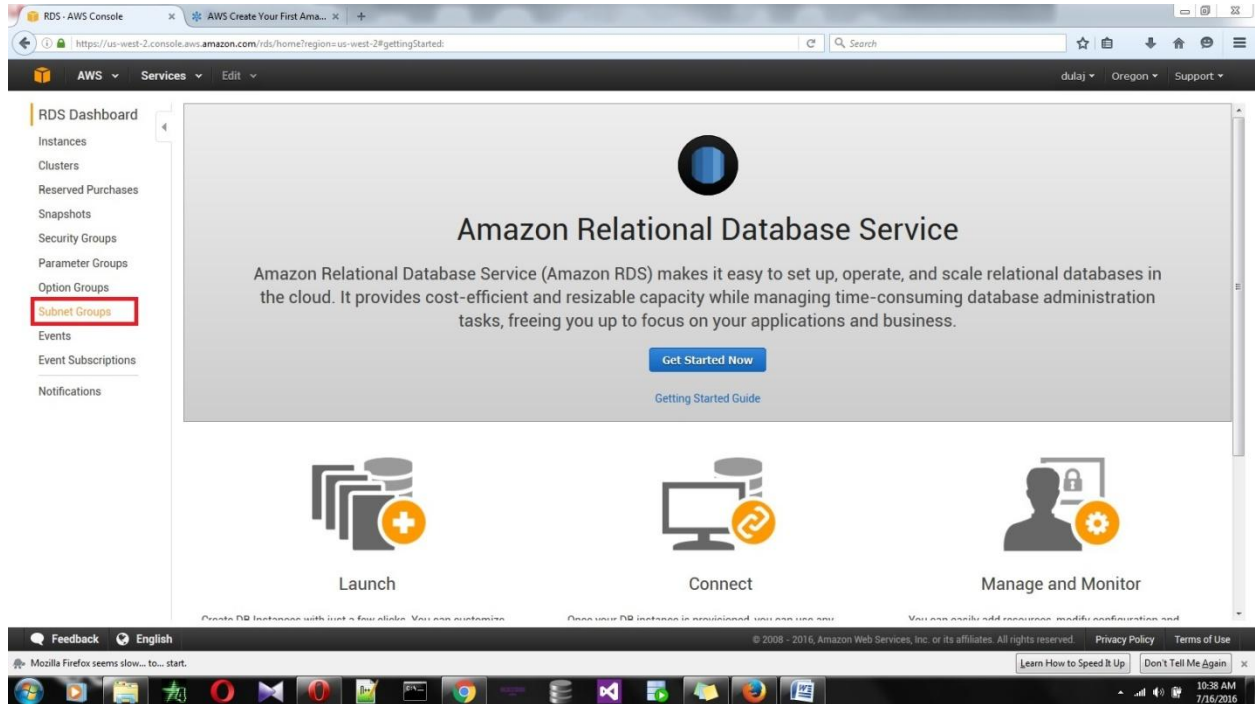
The following dashboard can be seen for the RDS.



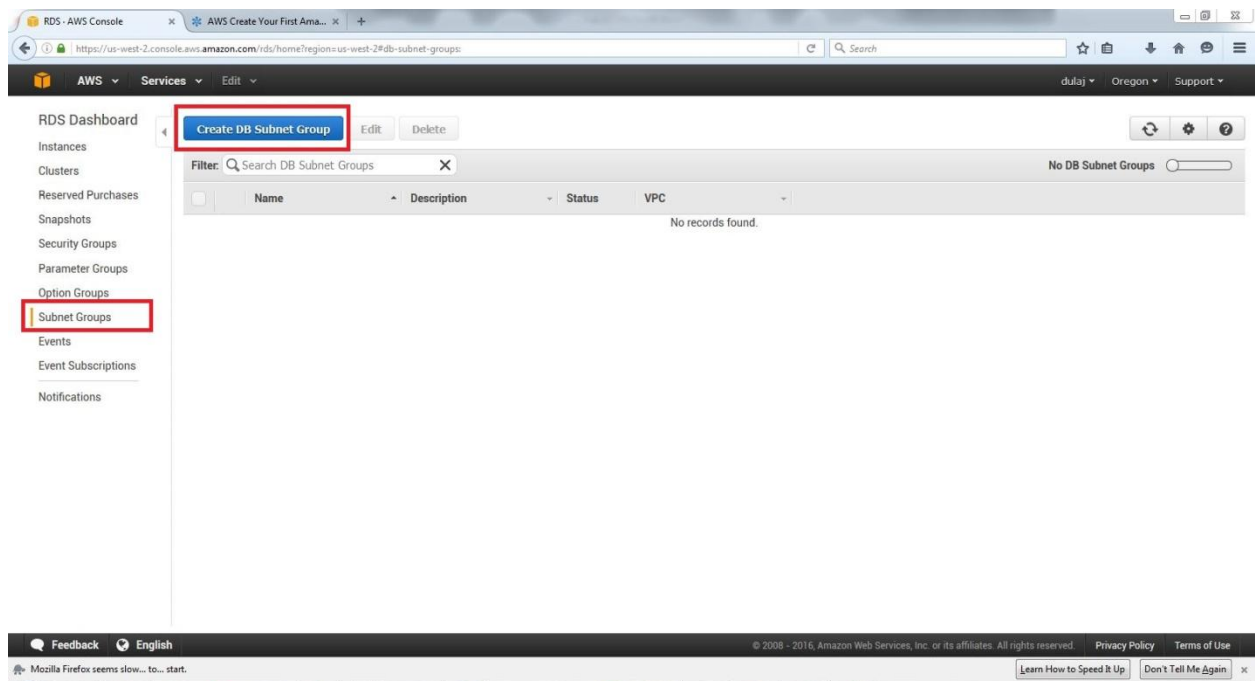
Step 2

Before configuring the actual RDS instance, we need to create a “Subnet Group”. Subnet is an IP range that allows us to group our resources based on security and operational needs.

To create a subnet group, click “Subnet Groups” in the dashboard menu.



Under the “Subnet groups”, click “Create DB Subnet Group”.



Fill the required information as follows.

- **Name:** SliitLabs
- **Description:** lab 3 - RDS
- **VPC ID:** select the available one

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. Once you select an existing VPC, you will be able to add subnets related to that VPC.

Name: SliitLabs

Description: lab 3 - RDS

VPC ID: vpc-218dcd45

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: Select One

Subnet ID: Select One

Add

Availability Zone	Subnet ID	CIDR Block	Action
None added			

Cancel Create

Once you have entered the above information, add at least 2 subnets to the group.

RDS Dashboard

Instances

Clusters

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Create DB Subnet Group

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

Name: SliitLabs

Description: lab 3 - RDS

VPC ID: vpc-218dcd45

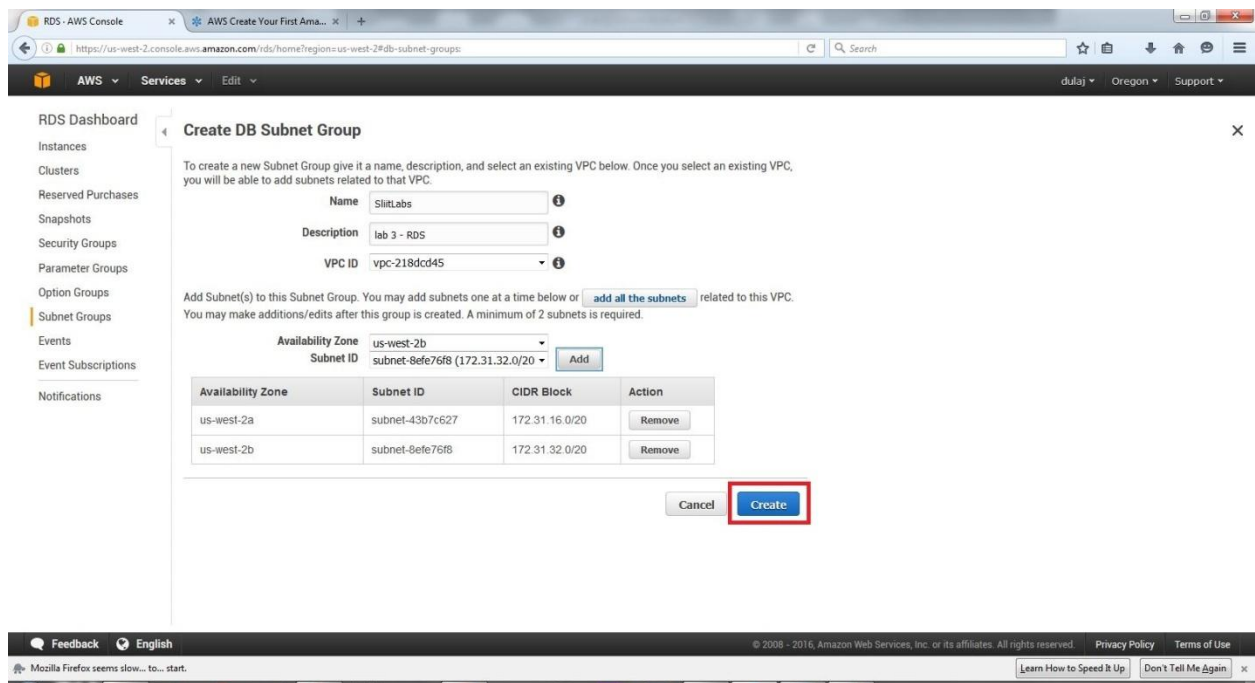
Add Subnet(s) to this Subnet Group. You may add subnets one at a time below or [add all the subnets](#) related to this VPC. You may make additions/edits after this group is created. A minimum of 2 subnets is required.

Availability Zone: us-west-2a

Subnet ID: subnet-43b7c627 (172.31.16.0/20) Add

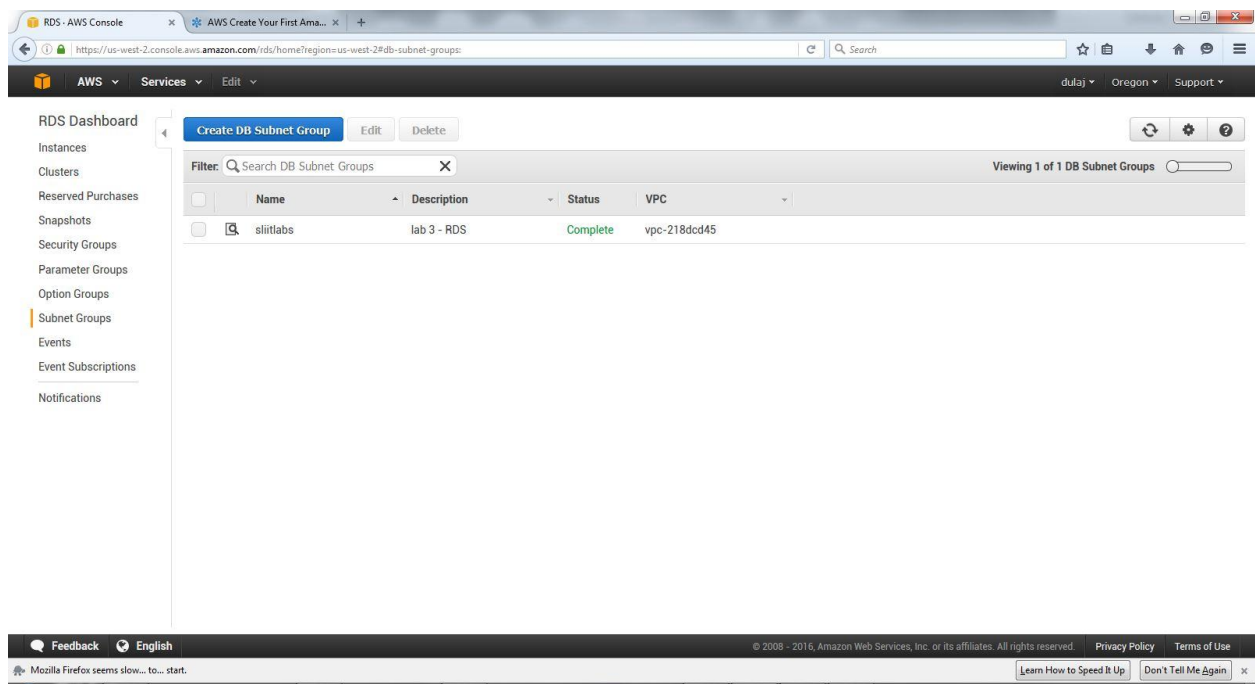
Availability Zone	Subnet ID	CIDR Block	Action
us-west-2a	subnet-43b7c627	172.31.16.0/20	Remove

Cancel Create



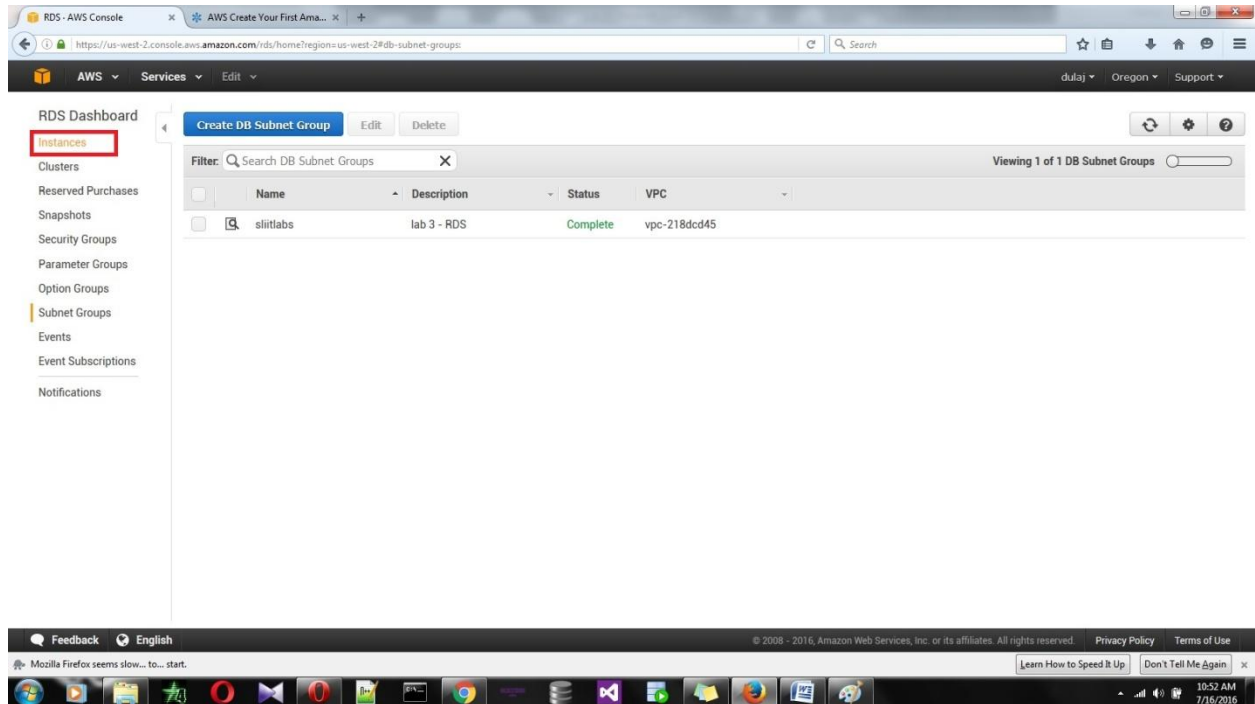
Now click “Create”.

After a few seconds the created subnet group will be available to be used.

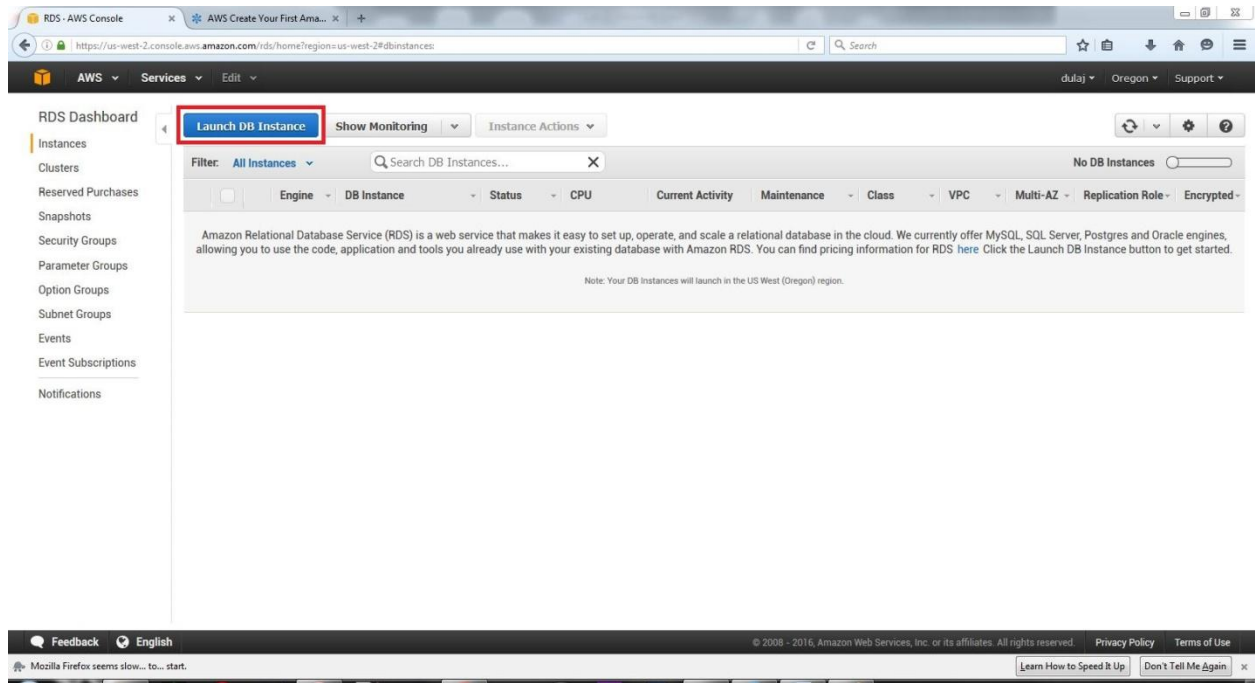


Step 3

Now that we have created a subnet group, lets create a RDS instance. Go to “Instances” in the RDS dashboard.

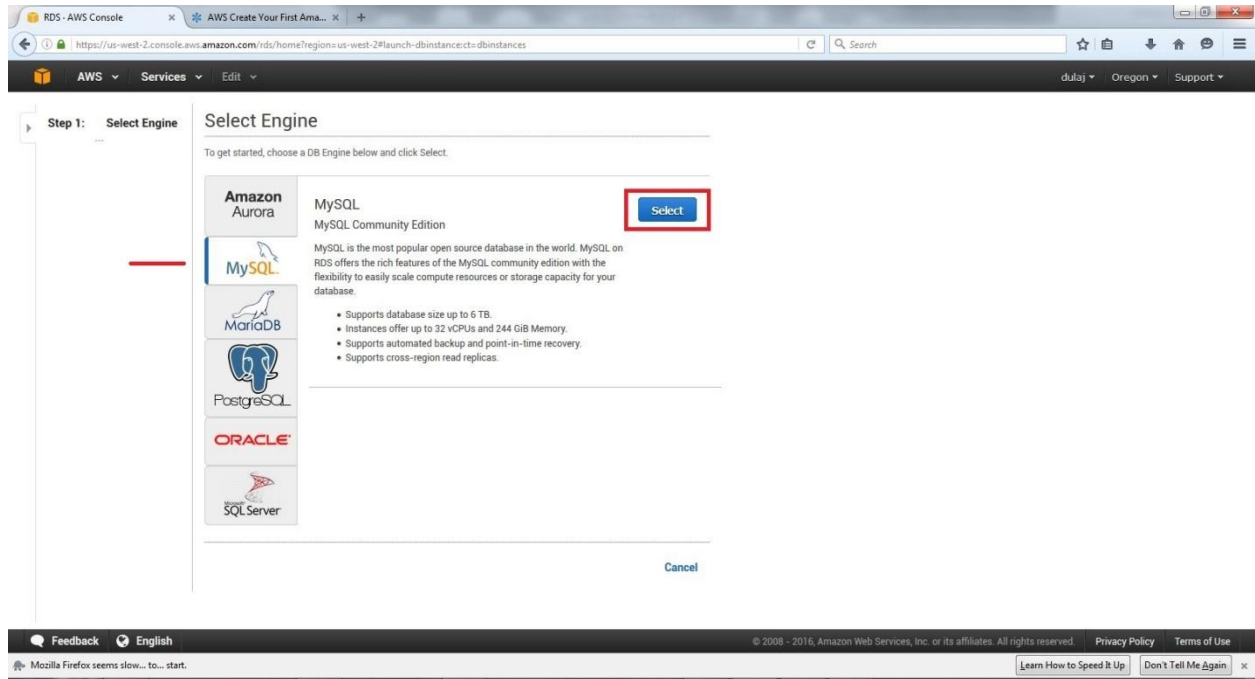


Click “Launch DB Instance”.



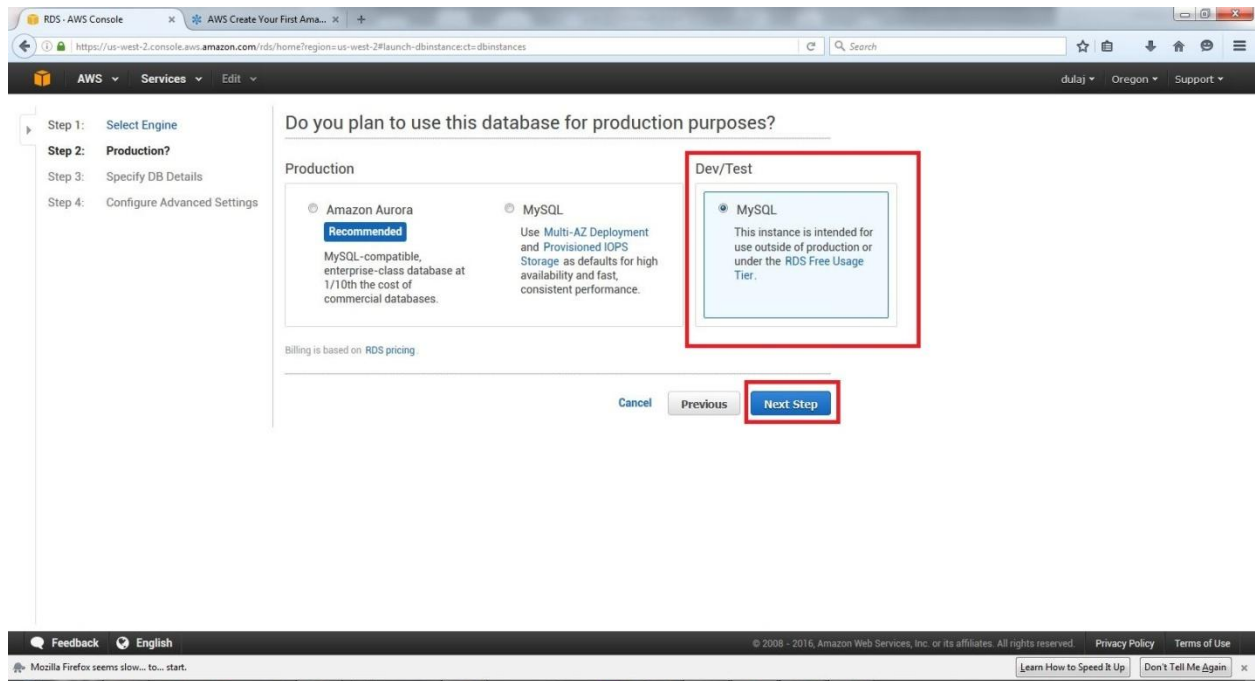
Step 4

In the resulting form, we need to define the database engine. Here we use a MySQL database engine. Select “MySQL” and click “Select”.



Step 5

At the next form we will be asked whether the database would be used as a production database or not. Since we use this as a test, select “MySQL” under “Dev/Test” and click “Next Step”.



Step 6

At the next step, we will be asked the basic configuration for the database instance. Provide the necessary information as follows.

The screenshot shows the 'Specify DB Details' step in the AWS RDS console. The left sidebar indicates the current step is 'Specify DB Details'. The main content area is titled 'Specify DB Details' and includes a 'Free Tier' section, 'Instance Specifications', and a 'Storage Type' dropdown. The 'Free Tier' section states that the Amazon RDS Free Tier provides a single db.t2.micro instance with up to 20 GB of storage. The 'Instance Specifications' section shows the following configuration: DB Engine: mysql, License Model: general-public-license, DB Engine Version: 5.6.27, DB Instance Class: db.t2.micro — 1 vCPU, 1 GB RAM, Multi-AZ Deployment: No, Storage Type: General Purpose (SSD), and Allocated Storage: 5 GB. A warning message indicates that 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. The 'Storage Type' dropdown is set to 'General Purpose (SSD)', and a tooltip explains that this storage is suitable for a broad range of database workloads, providing a baseline of 3 IOPS/GB and the ability to burst to 3,000 IOPS. The 'Provisioned IOPS (SSD)' storage is also mentioned as suitable for I/O-intensive database workloads, providing flexibility to provision I/O. The bottom of the console shows the 'Feedback' and 'English' buttons, and the copyright notice for 2008-2016 Amazon Web Services, Inc. or its affiliates.

The screenshot shows the 'Settings' section of the AWS RDS console. The left sidebar indicates the current step is 'Settings'. The main content area is titled 'Settings' and includes a 'DB Instance Identifier' field, a 'Master Username' field, a 'Master Password' field, and a 'Confirm Password' field. The 'DB Instance Identifier' field contains the value 'lab3-rds'. The 'Master Username' field contains the value 'shankatest'. The 'Master Password' and 'Confirm Password' fields are masked with dots. A tooltip indicates that the 'Master Password' and 'Confirm Password' fields must be the same. The 'Next Step' button is highlighted with a red box. The bottom of the console shows the 'Feedback' and 'English' buttons, and the copyright notice for 2008-2016 Amazon Web Services, Inc. or its affiliates.

Click "Next Step".

Step 7

After the basic instance configuration, we will be asked advanced configuration. Enter the following information.

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-218dcd45)
Subnet Group: slitabs
Publicly Accessible: No
Availability Zone: us-west-2a
VPC Security Group(s): Create new Security Group default (VPC)

Database Options

Database Name:
Database Port: 3306
DB Parameter Group: default.mysql5.6
Option Group: default.mysql5-6
Copy Tags To Snapshots: ☐
Enable Encryption: No

Note: If no database name is specified then no initial MySQL database will be created on the DB instance.

Select the DB parameter group that defines the configuration settings you want applied to this DB instance. [Learn More](#).

Feedback English
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Mozilla Firefox seems slow... to... start. [Learn How to Speed It Up](#) [Don't Tell Me Again](#)

Database Port: 3306
DB Parameter Group: default.mysql5.6
Option Group: default.mysql5-6
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

A backup retention period of zero days will disable automated backups for this DB instance.

Monitoring

Enable Enhanced Monitoring: No

Maintenance

Auto Minor Version Upgrade: Yes
Maintenance Window: No Preference

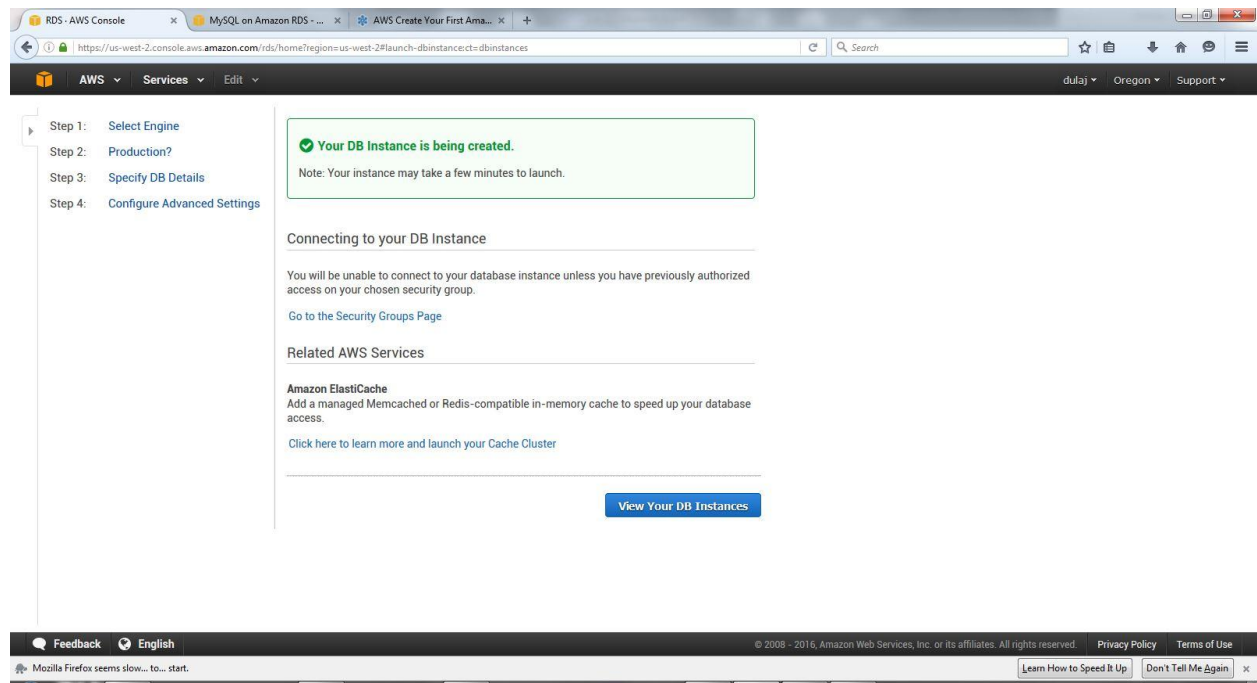
Select the period in which you want pending modifications (such as changing the DB instance class) or patches applied to the DB instance by Amazon RDS. Any such maintenance should be started and completed within the selected period. If you do not select a period, Amazon RDS will assign a period randomly. [Learn More](#).

Required Cancel Previous **Launch DB Instance**

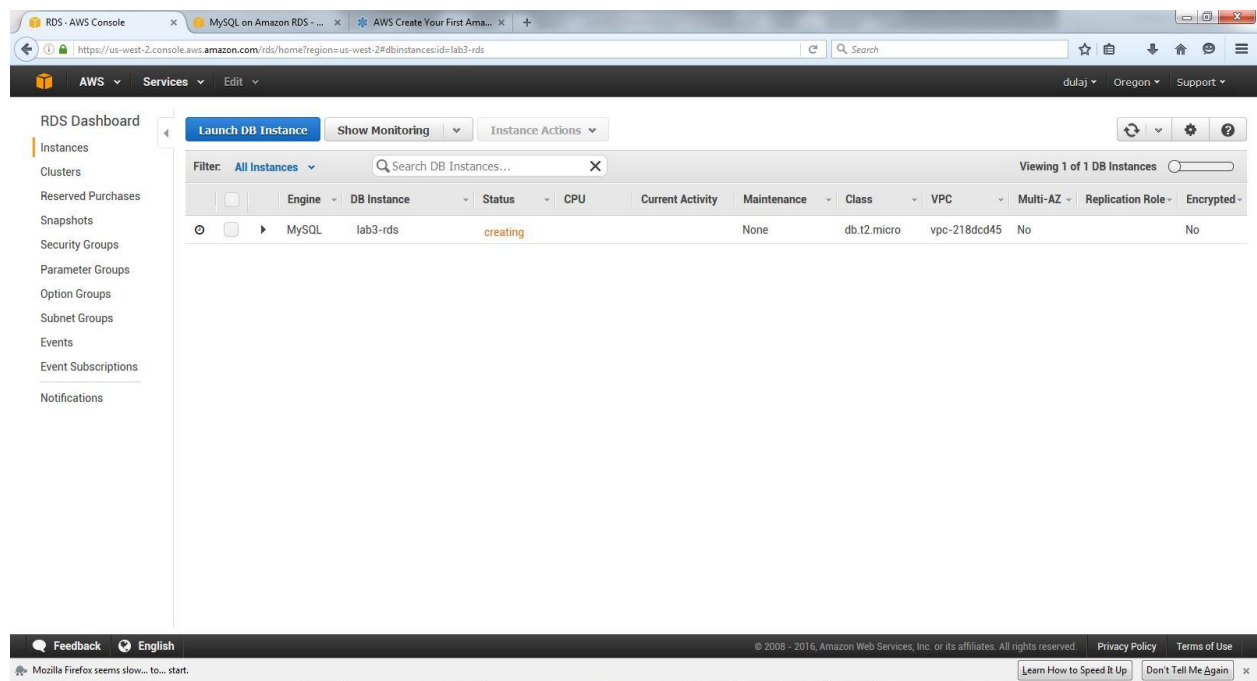
Feedback English
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Mozilla Firefox seems slow... to... start. [Learn How to Speed It Up](#) [Don't Tell Me Again](#)

Click "Launch DB Instance".

After the successful creation of the instance, the following message can be seen.

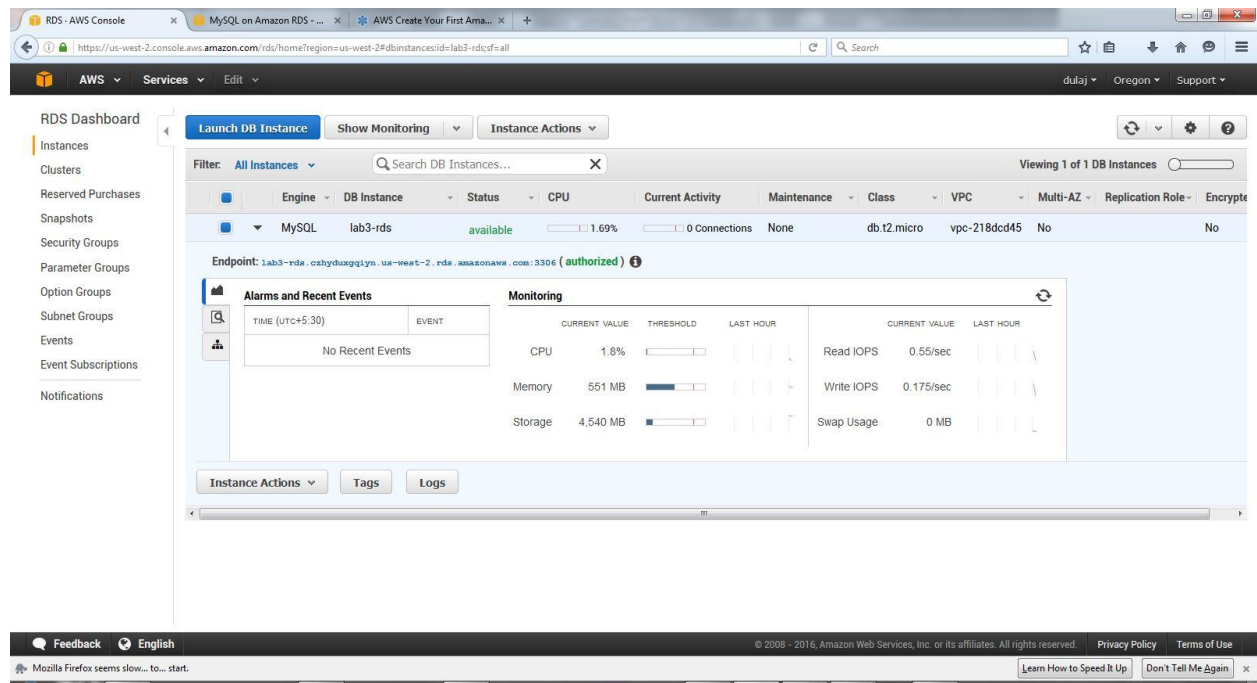


By clicking “View Your DB Instances”, we can see the DB instances that we have created.



Here we can see the newly created instance's status as "Creating". For the instance to be available, it may take up to 10 minutes.

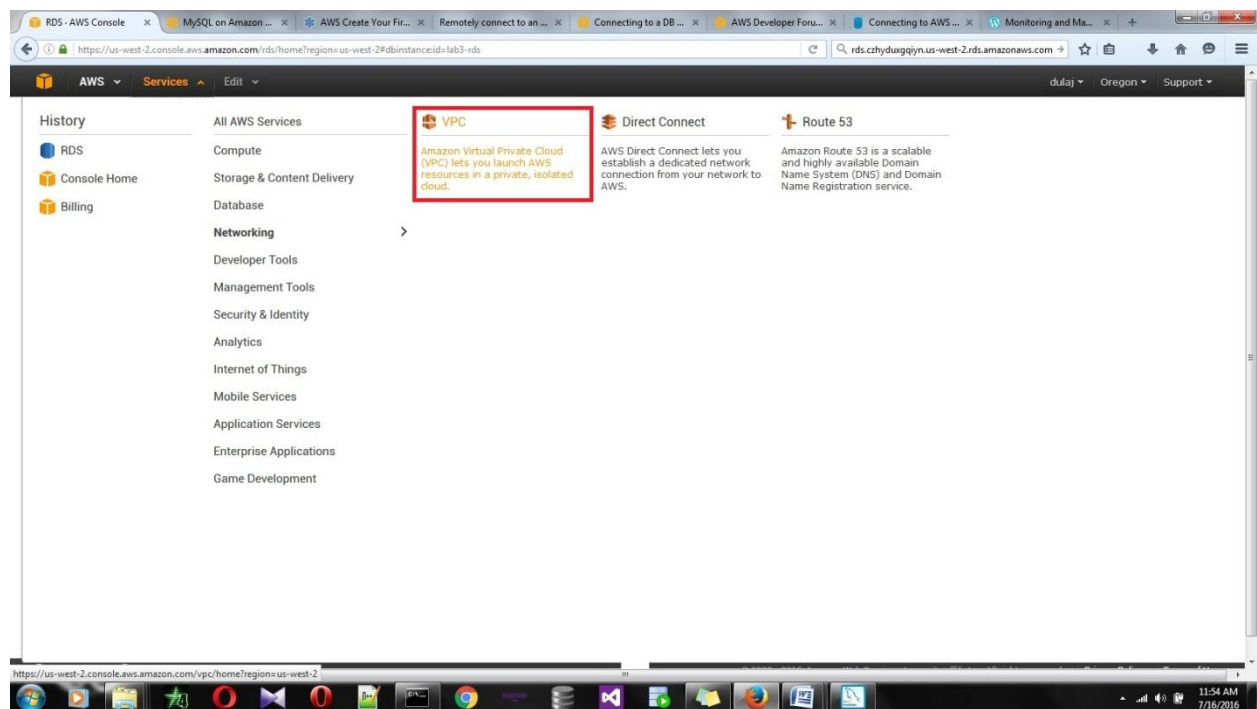
When the instance is available to use, the following can be seen.



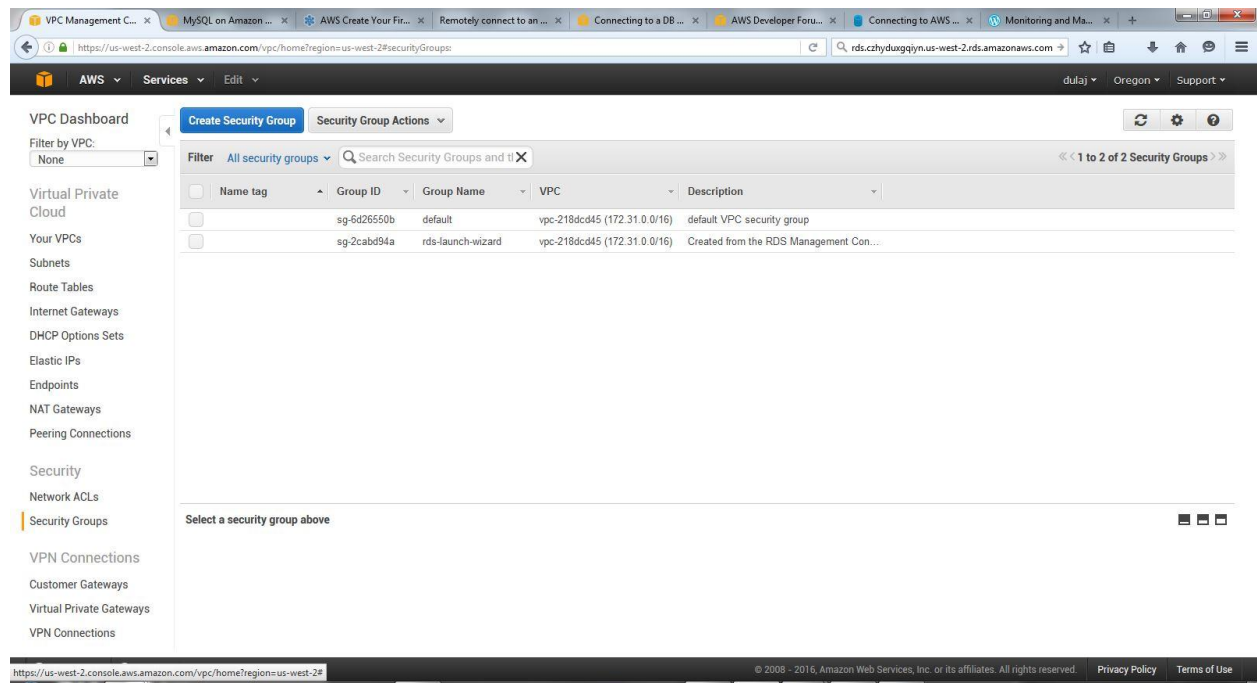
Step 8

In order to use the created RDS instance, we need to add an inbound rule to the VPC Security Group created during the RDS instance creation.

From the services, select “VPC” under “Networking”.

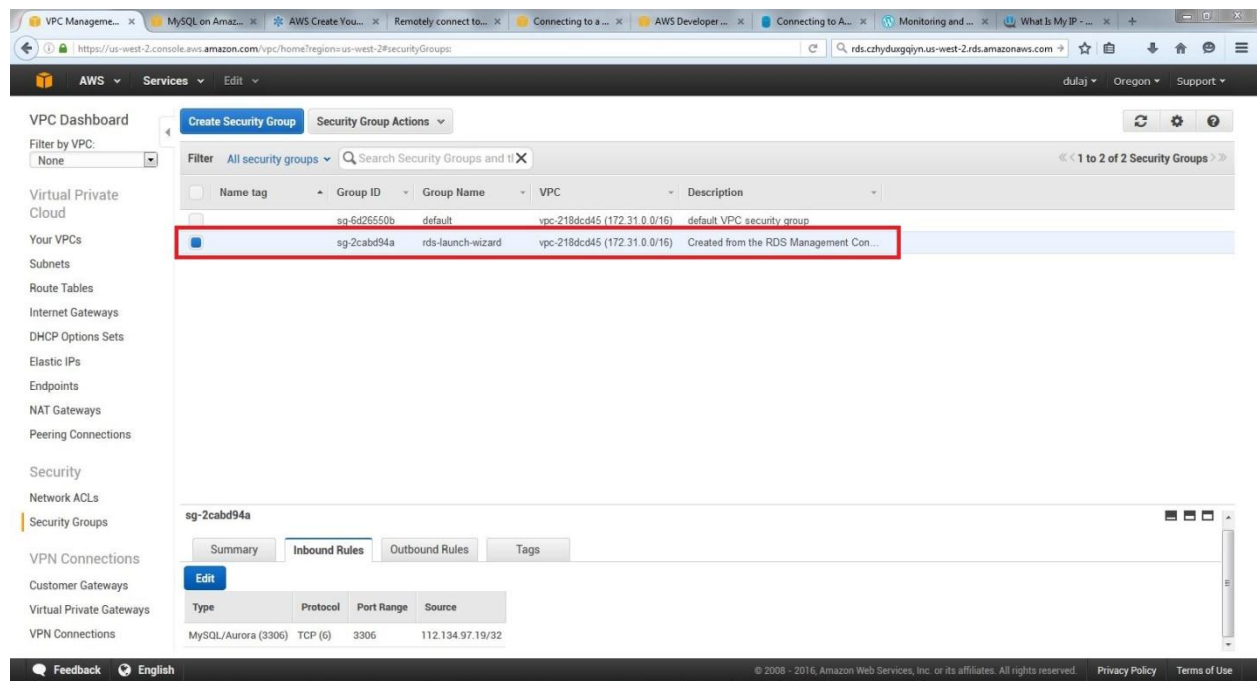


Now select “Security Groups” under the VPC Dashboard. The following page appears.

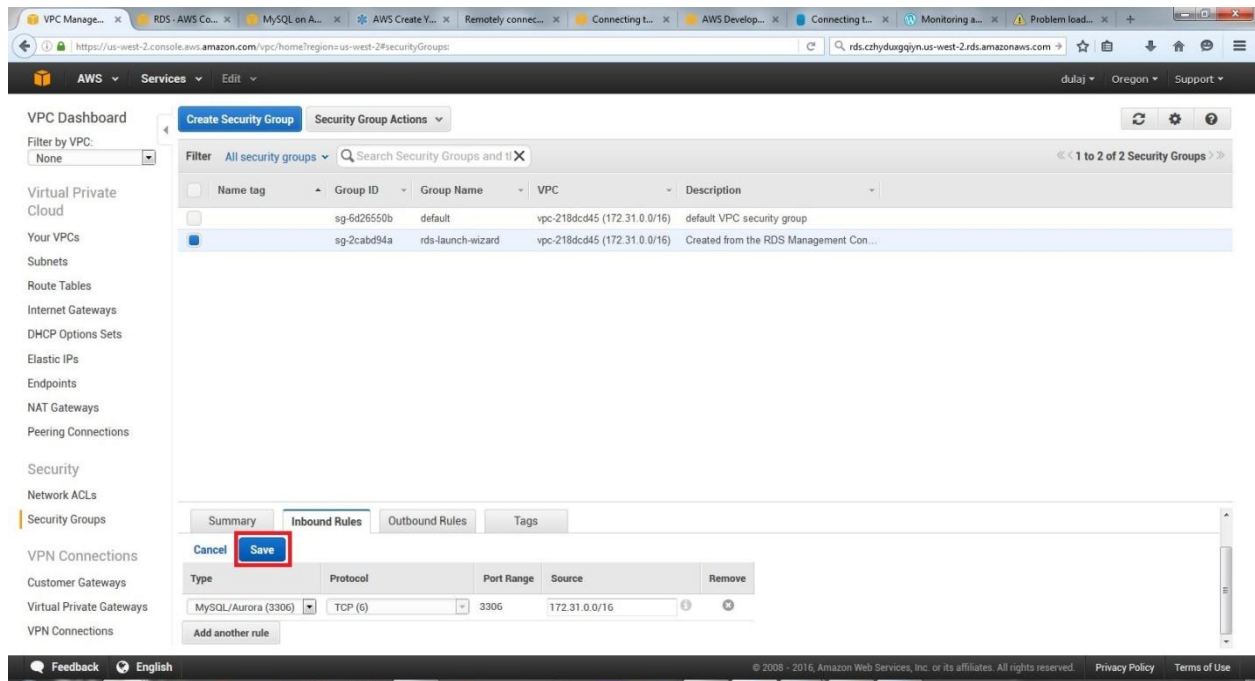


Click “rds-launch-wizard”.

On the “Inbound rules”, click “Edit”.



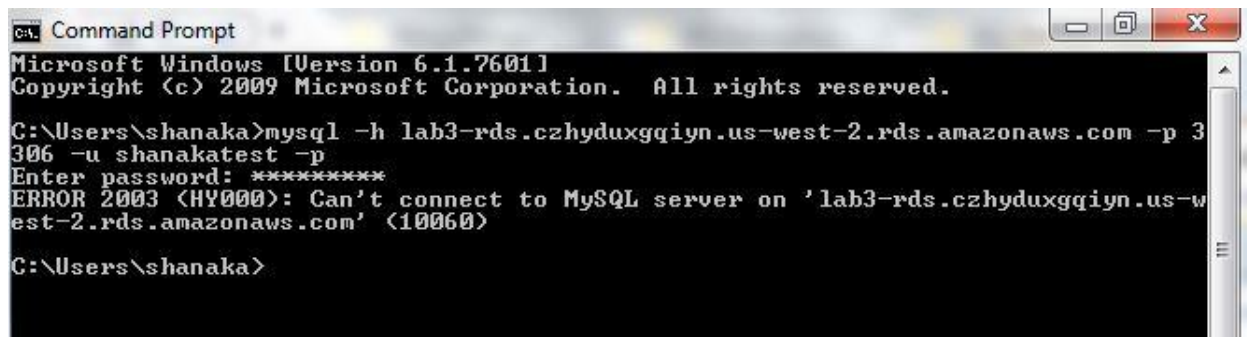
Change the “Source” to 172.31.0.0/16. Click “Save”.



Step 9

Lets try connecting to the MySQL instance that we have created. Type the following command in the format,

```
mysql -h <endpoint> -P 3306 -u <mymasteruser> -p
```

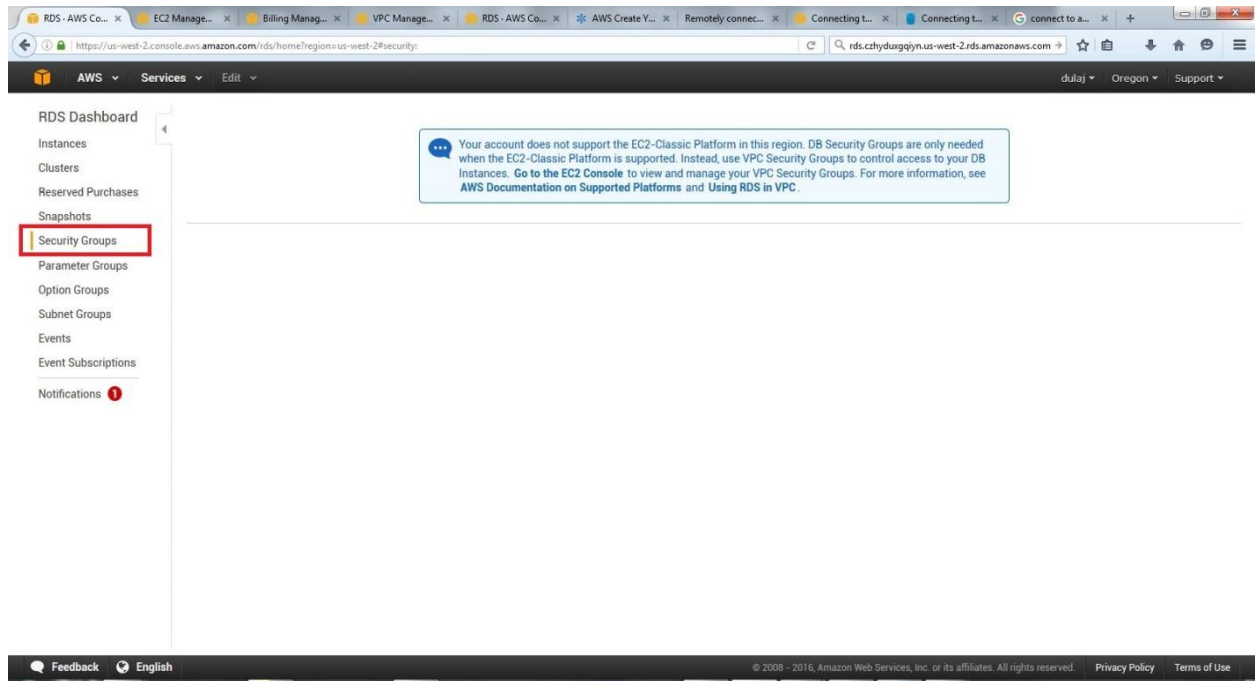


Here we got an error indicating a failure trying to connect to the MySQL instance.

The solution for this error is that we need to create a Security Group.

Step 10

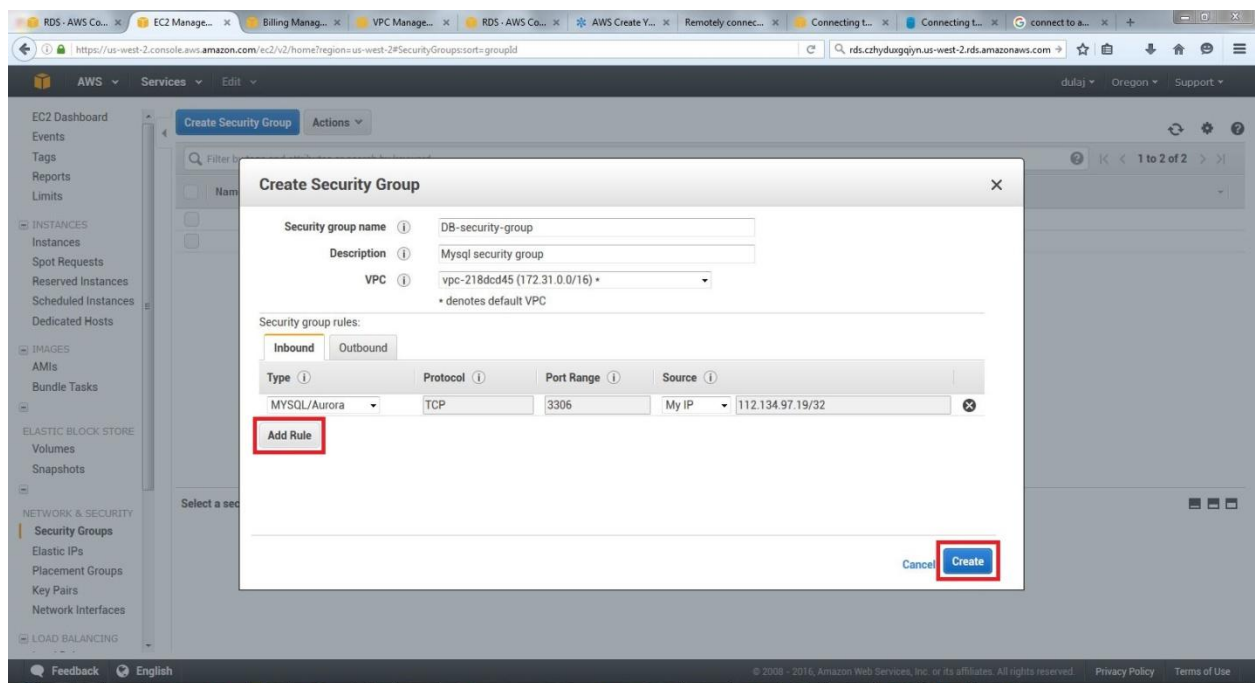
Lets create a security group from “Security Groups” under RDS panel. Click “Go to The EC2 Console”.



Click “Create Security Group”. Enter the required information.

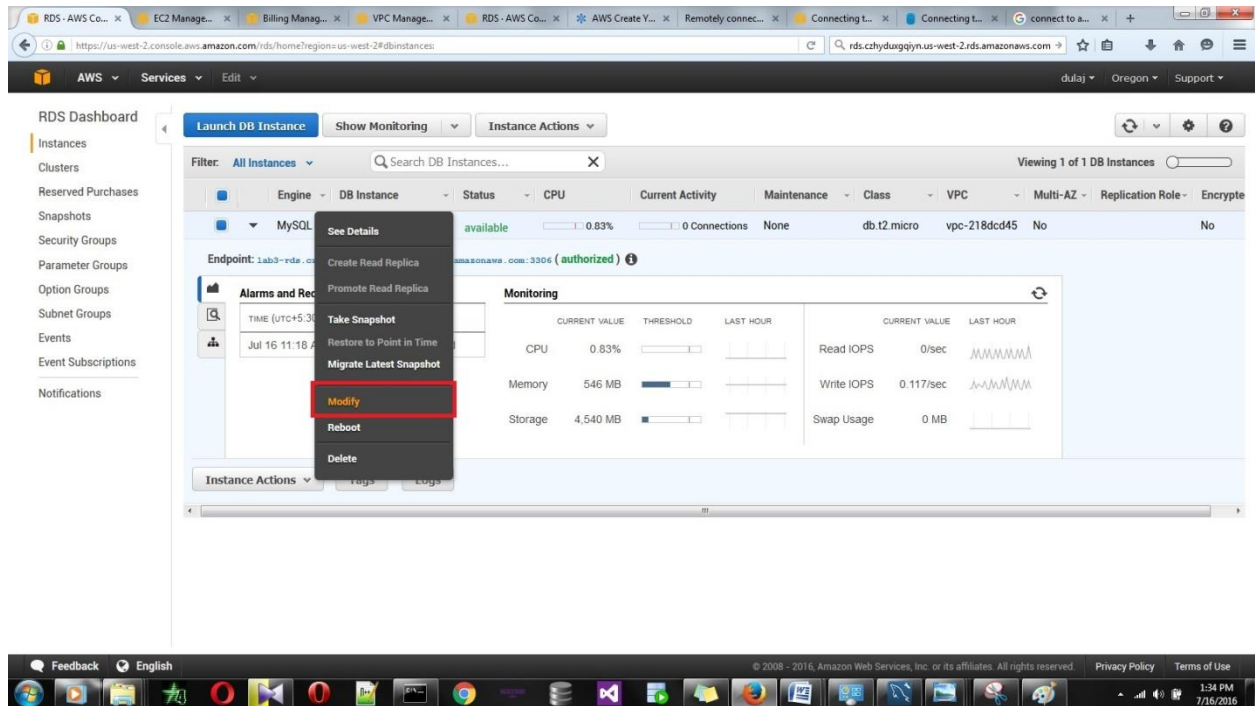
NOTE: make sure to select the correct VPS we defined for the RDS instance creation.

Click “Add Rule”. Select “MySQL” as the type and the IP address for the source. Click “Create”.

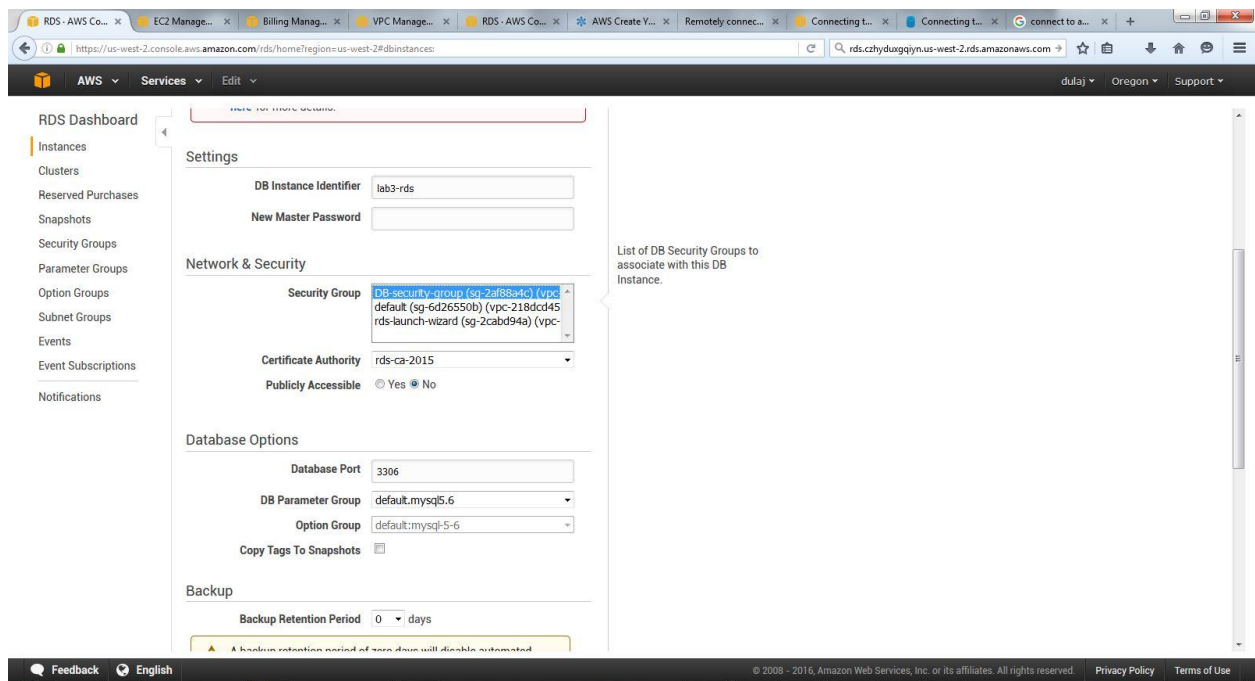


Step 11

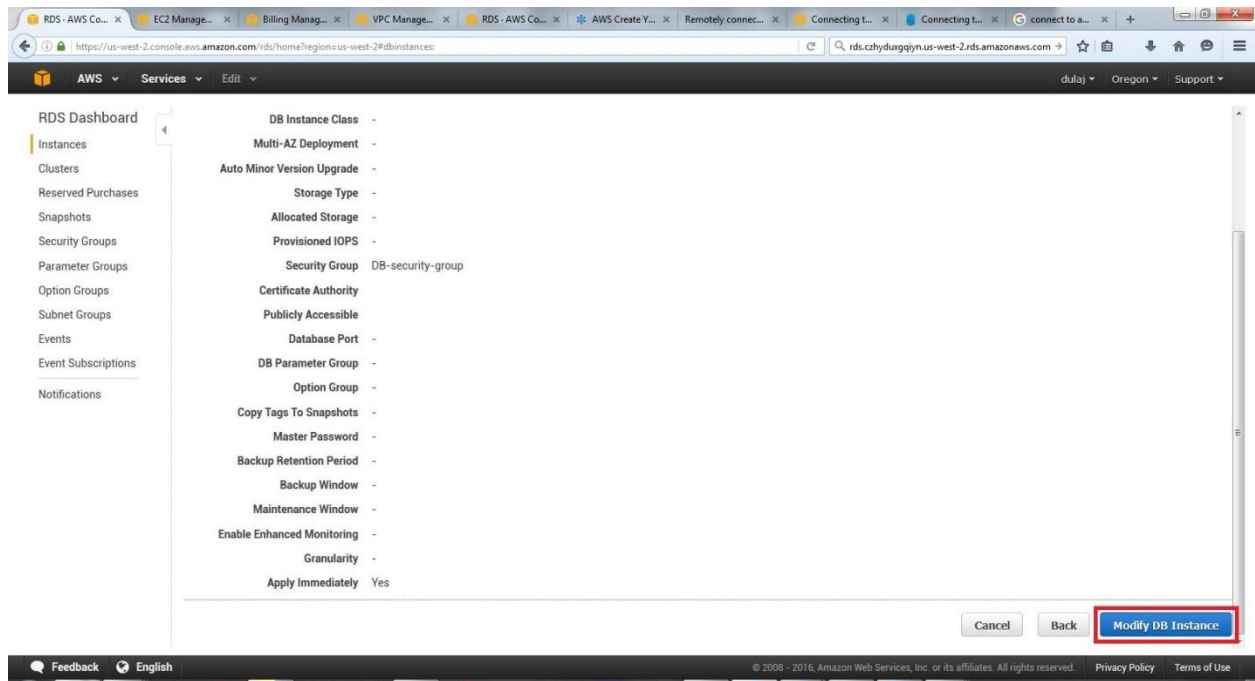
Now go to the RDS instance we created, right click the instance and click “Modify”.



Now select the new Security Group we have created in “Security Group” under “Network & Security”.



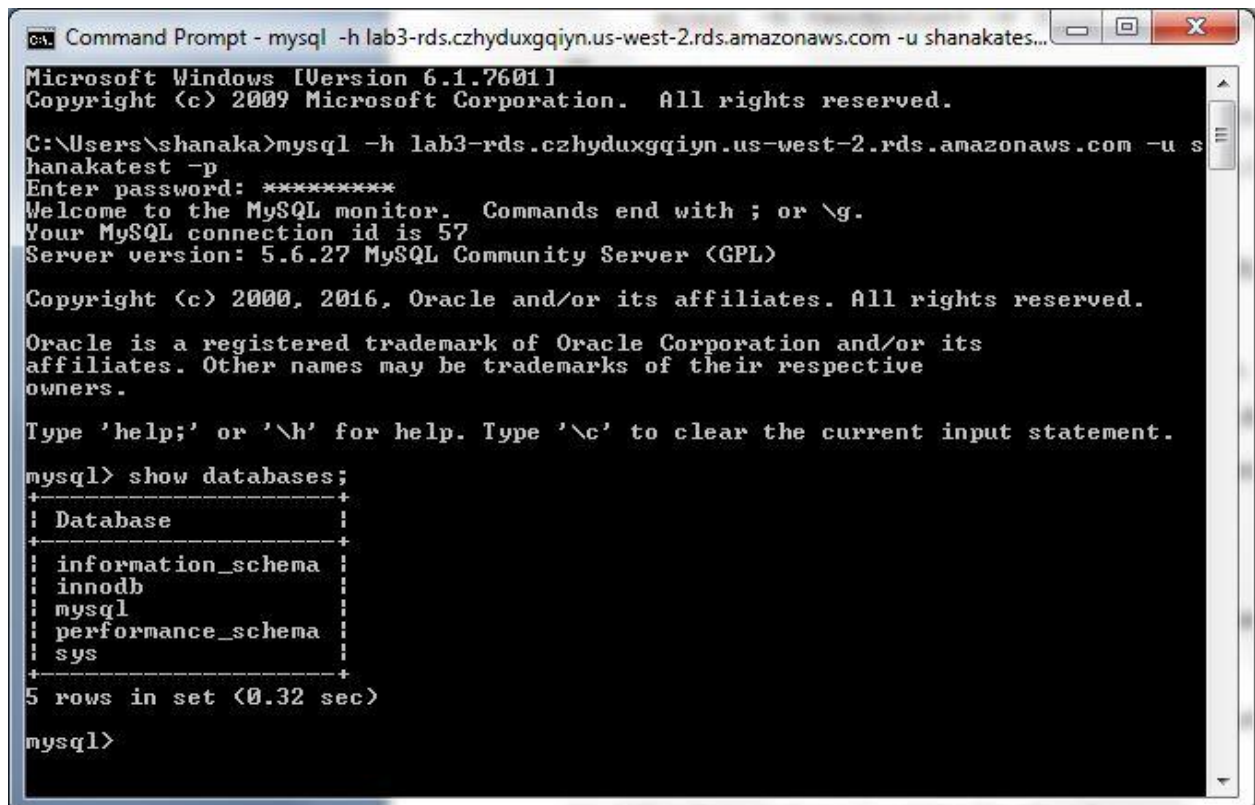
Check “Apply Immediately” and click “Continue”.



Click "Modify DB Instance".

Step 12

Lets connect again to the MySQL database instance.



Step 13

Lets test the created database by creating a database and adding some records to it.

```
Command Prompt - mysql -h lab3-rds.czhyduxgqiyn.us-west-2.rds.amazonaws.com -u shanakates...
affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| innodb |
| mysql |
| performance_schema |
| sys |
+-----+
5 rows in set (0.32 sec)

mysql> create database mydb;
ERROR 2006 (HY000): MySQL server has gone away
No connection. Trying to reconnect...
Connection id: 85
Current database: *** NONE ***

Query OK, 1 row affected (2.11 sec)

mysql> use mydb;
Database changed
mysql> create table Users
-> (
-> id int,
-> name varchar(30)
-> );
Query OK, 0 rows affected (0.33 sec)

mysql> insert into Users(id, name) values(1, 'Shanaka');
Query OK, 1 row affected (0.31 sec)

mysql> insert into Users(id, name) values(2, 'Lahiru');
Query OK, 1 row affected (0.31 sec)

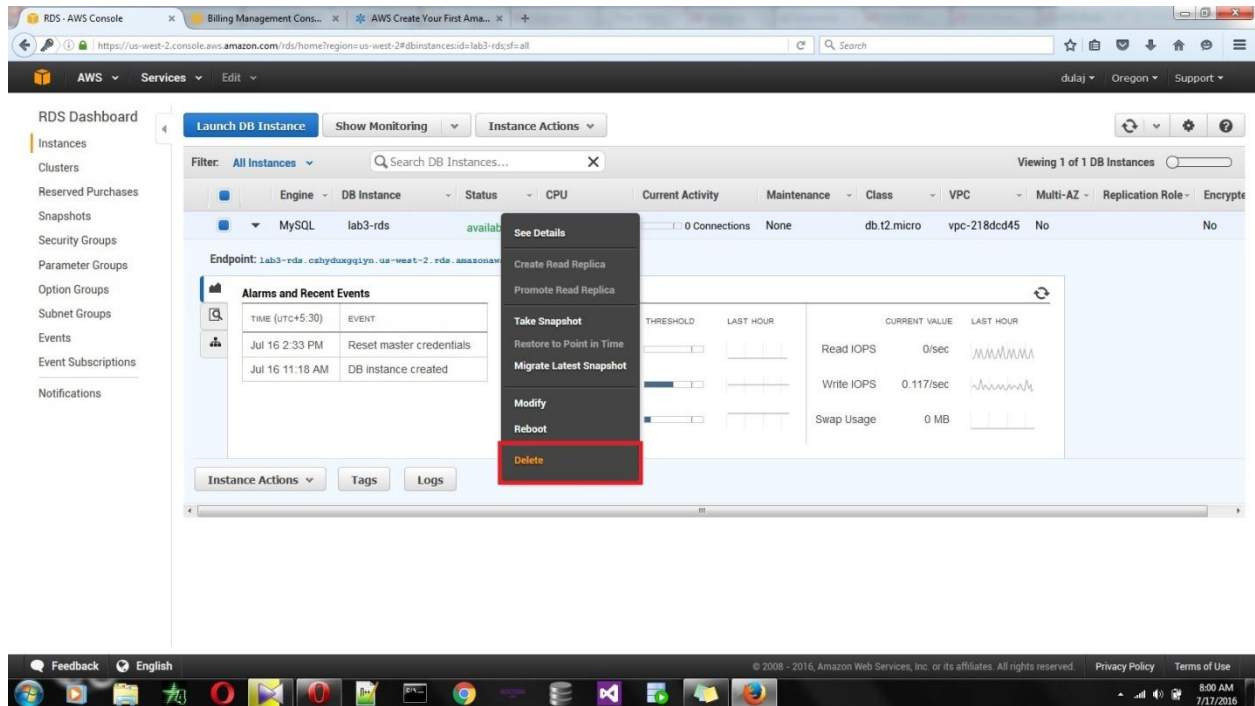
mysql> insert into Users(id, name) values(2, 'Nadun');
Query OK, 1 row affected (0.31 sec)

mysql> select * from Users;
+----+-----+
| id | name |
+----+-----+
| 1 | Shanaka |
| 2 | Lahiru |
| 2 | Nadun |
+----+-----+
3 rows in set (0.31 sec)

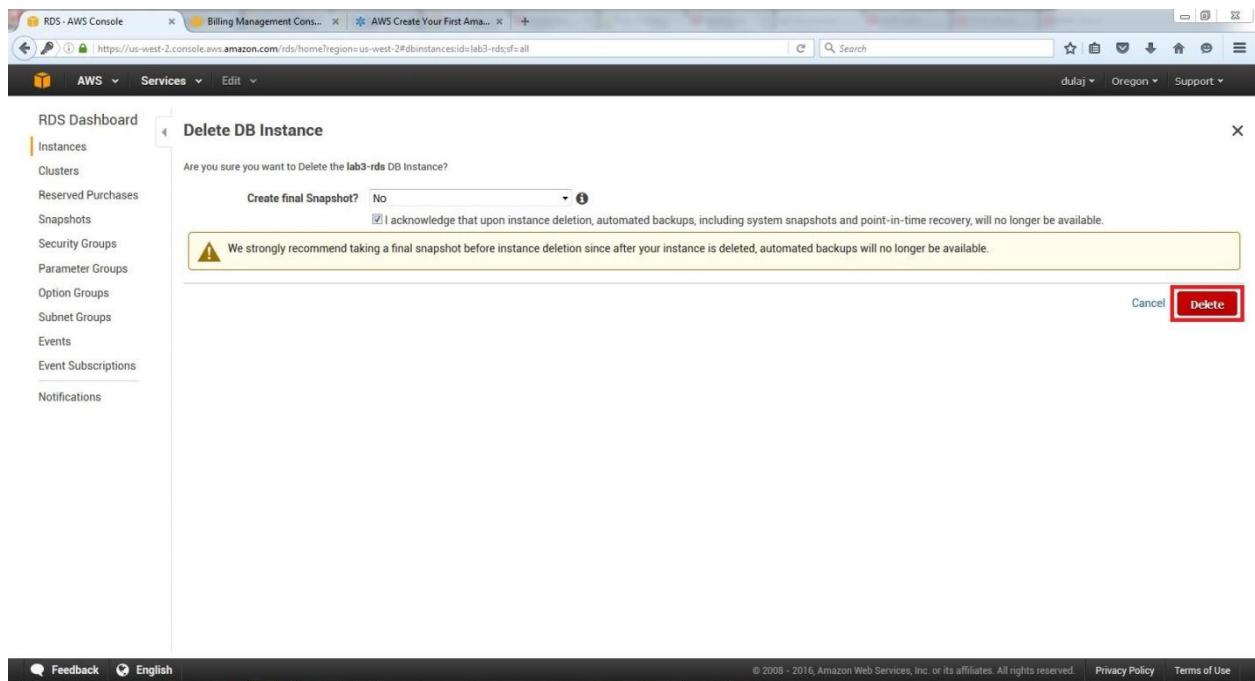
mysql>
```

Step 14

To remove the RDS instance, right click on the instance and click “Delete”.



You will need to confirm the deletion of the instance. Click “Delete” on “Delete DB Instance”.



Under instance tab, you can see the “Status” of the instance as “deleting”.

RDS - AWS Console

https://us-west-2.console.aws.amazon.com/rds/home?region=us-west-2#instances:id=lab3-rds;cf=all

AWS Services Edit

dulaj Oregon Support

RDS Dashboard

Instances

Clusters

Reserved Purchases

Snapshots

Security Groups

Parameter Groups

Option Groups

Subnet Groups

Events

Event Subscriptions

Notifications

Launch DB Instance Show Monitoring Instance Actions

Filter: All Instances Search DB Instances... Viewing 1 of 1 DB Instances

Engine	DB Instance	Status	CPU	Current Activity	Maintenance	Class	VPC	Multi-AZ	Replication Role	Encrypt
MySQL	lab3-rds	deleting	1.00%	0 Connections	None	db.t2.micro	vpc-218dcd45	No	No	No

Endpoint: lab3-rds.cshgduogqlyo.us-west-2.rds.amazonaws.com:3306 (authorized)

Alarms and Recent Events

TIME (UTC+5:30)	EVENT
Jul 16 2:33 PM	Reset master credentials
Jul 16 11:18 AM	DB instance created

Monitoring

	CURRENT VALUE	THRESHOLD	LAST HOUR
CPU	0.915%		
Memory	542 MB		
Storage	4,540 MB		
Read IOPS	0/sec		
Write IOPS	0.5/sec		
Swap Usage	0 MB		

Instance Actions Tags Logs

Feedback English

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End of Assignment 3