



Enterprise Standards and Best Practices for IT Infrastructure

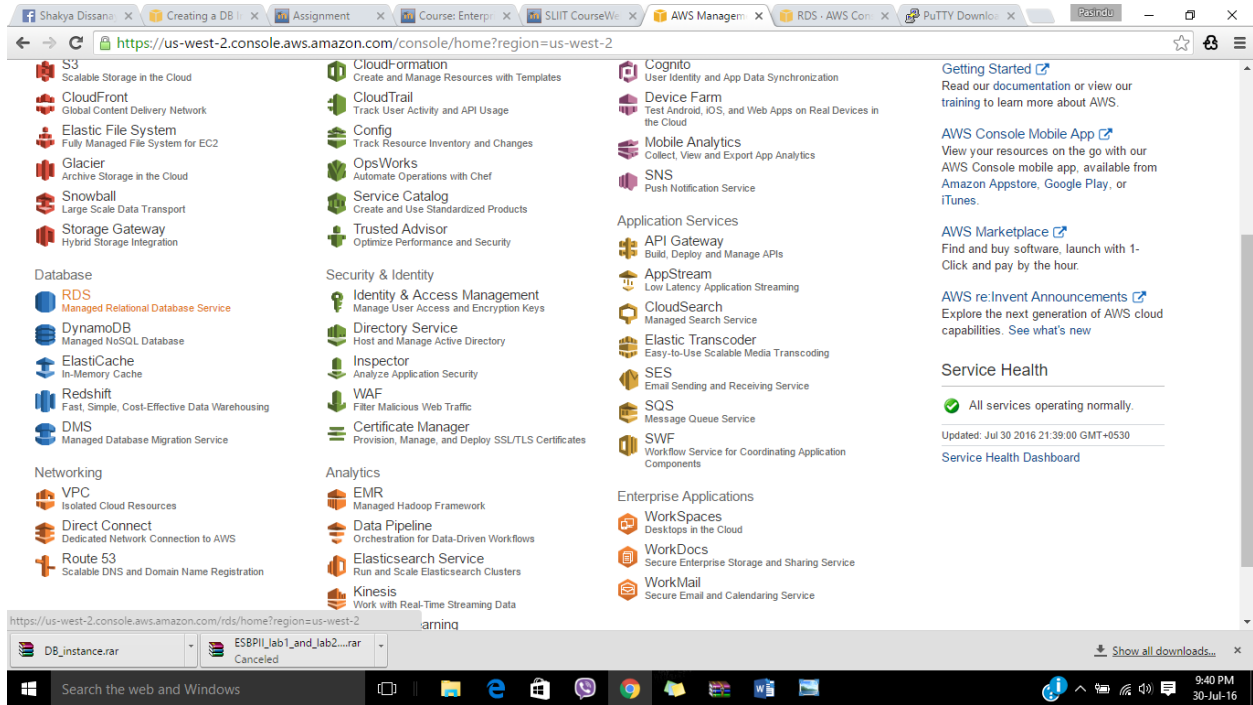
Lab Assignment 03

Creating a DB Instance Running the MySQL Database Engine

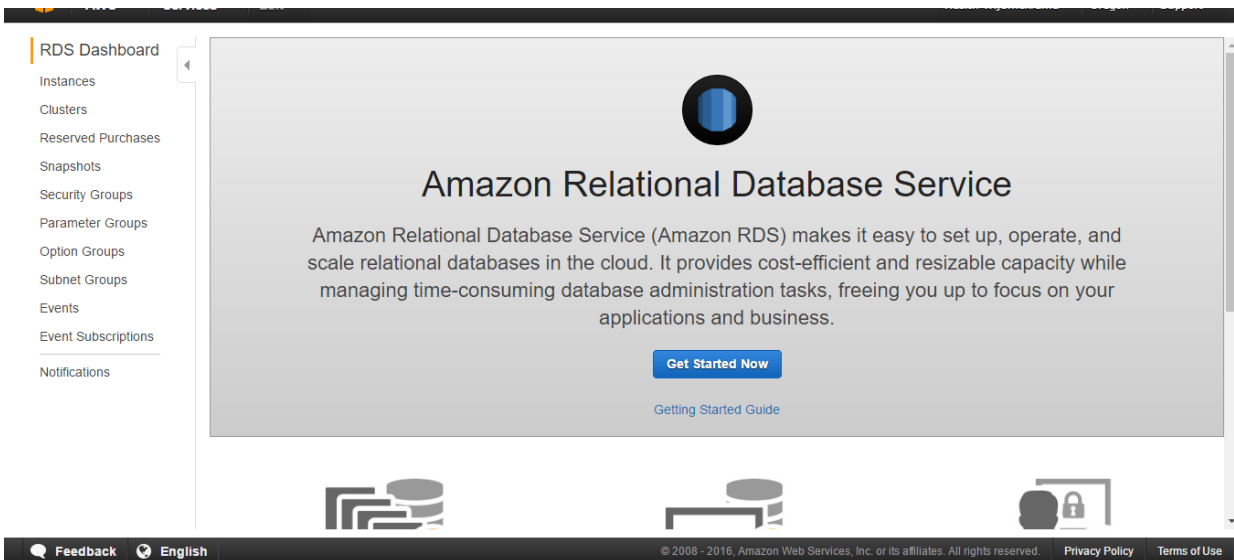
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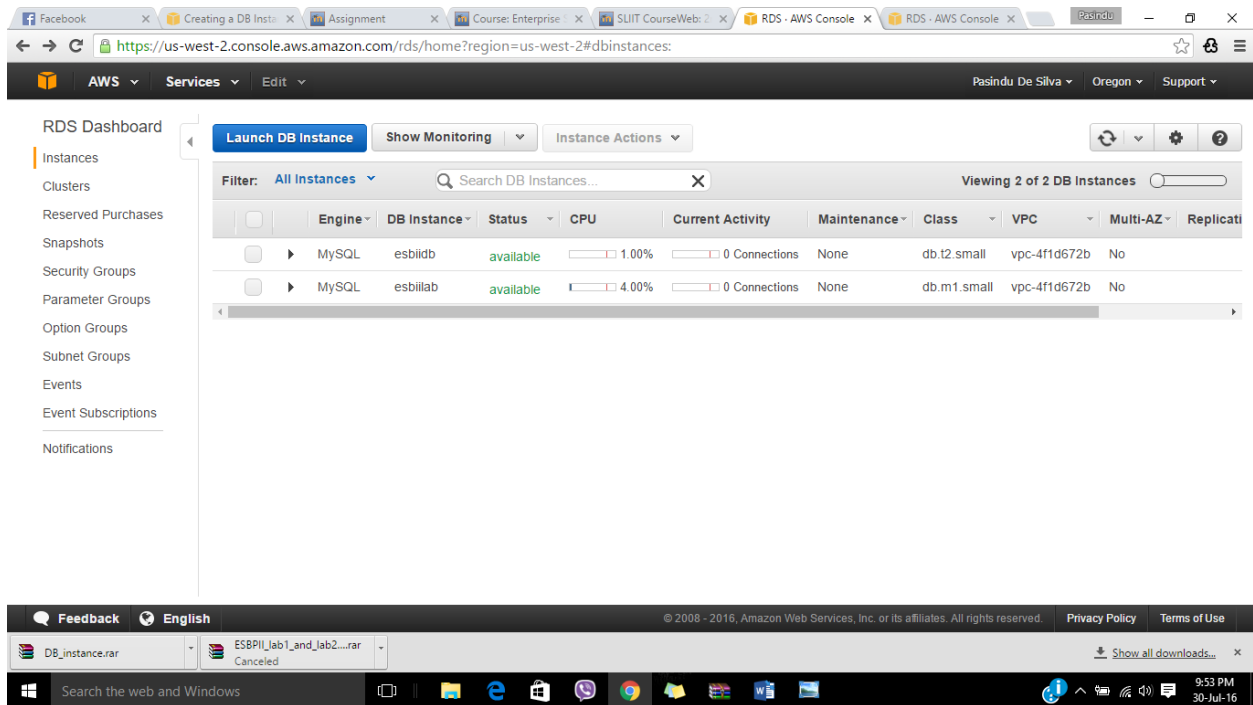
1. First of all login to your amazon account. From there select RDS under the Database category.



2. Click on Get Started Now to create the db instance.



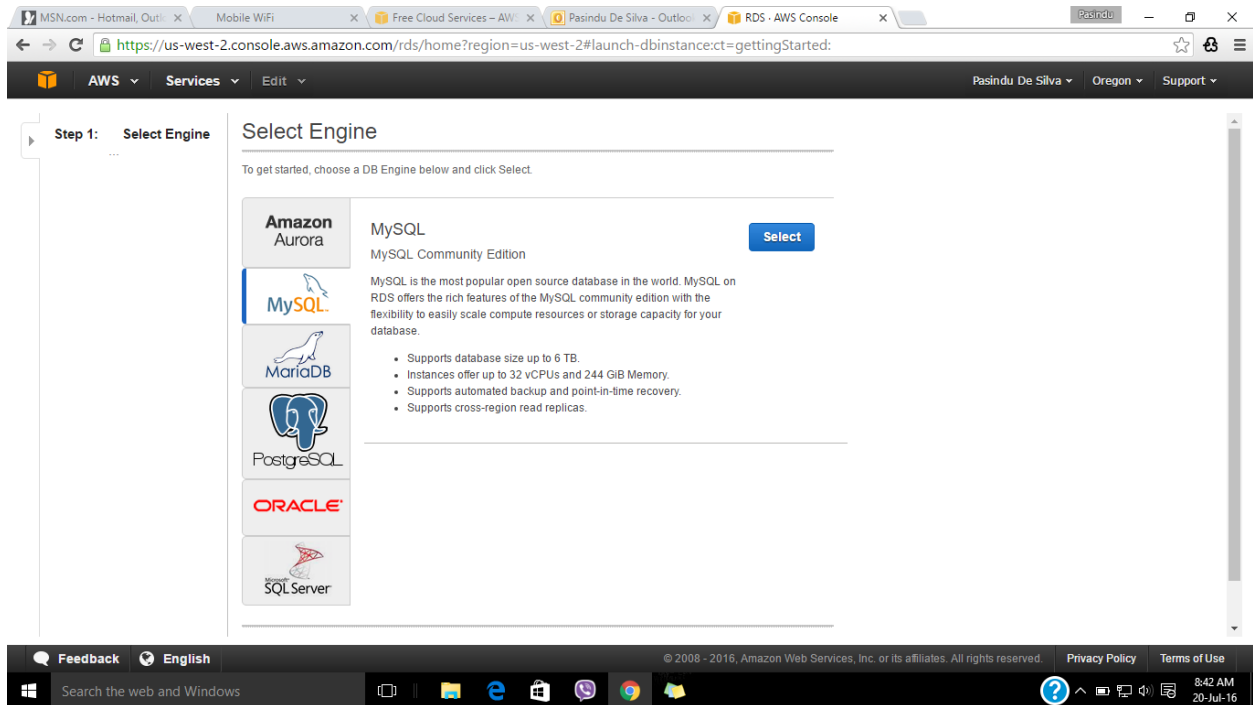
3. Click Launch DB Instance to the start the Launch DB Instance Wizard.



The screenshot shows the AWS RDS Dashboard in a web browser. The left sidebar contains a navigation menu with options like Instances, Clusters, Reserved Purchases, Snapshots, Security Groups, Parameter Groups, Option Groups, Subnet Groups, Events, Event Subscriptions, and Notifications. The main area is titled 'RDS Dashboard' and features a 'Launch DB Instance' button. Below this, there's a table of existing instances. The table has columns for Engine, DB Instance, Status, CPU, Current Activity, Maintenance, Class, VPC, Multi-AZ, and Replication. Two instances are listed: 'MySQL esbldb' and 'MySQL esbllab', both with a status of 'available'.

	Engine	DB Instance	Status	CPU	Current Activity	Maintenance	Class	VPC	Multi-AZ	Replication
<input type="checkbox"/>	MySQL	esbldb	available	1.00%	0 Connections	None	db.t2.small	vpc-4f1d672b	No	
<input type="checkbox"/>	MySQL	esbllab	available	4.00%	0 Connections	None	db.m1.small	vpc-4f1d672b	No	

4. Select Mysql as the database engine.



The screenshot shows the 'Select Engine' step of the AWS RDS Launch DB Instance Wizard. The left sidebar indicates 'Step 1: Select Engine'. The main area is titled 'Select Engine' and contains a list of database engines: Amazon Aurora, MySQL, MariaDB, PostgreSQL, ORACLE, and SQL Server. The MySQL option is selected, and a 'Select' button is visible next to it. Below the engine list, there's a description of MySQL and its features.

Amazon Aurora

MySQL

MySQL Community Edition

MySQL is the most popular open source database in the world. MySQL on RDS offers the rich features of the MySQL community edition with the flexibility to easily scale compute resources or storage capacity for your database.

- 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.

5. Select Mysql.

The screenshot shows the AWS RDS console interface. On the left, a sidebar lists four steps: Step 1: Select Engine, Step 2: Production?, Step 3: Specify DB Details, and Step 4: Configure Advanced Settings. The main area is titled 'Do you plan to use this database for production purposes?'. It has two columns: 'Production' and 'Dev/Test'. Under 'Production', there are two options: 'Amazon Aurora' (marked 'Recommended') and 'MySQL'. The 'MySQL' option under 'Production' has a description: 'Use Multi-AZ Deployment and Provisioned IOPS Storage as defaults for high availability and fast, consistent performance.' Under 'Dev/Test', there is a 'MySQL' option with a description: 'This instance is intended for use outside of production or under the RDS Free Usage Tier.' At the bottom, there are buttons for 'Cancel', 'Previous', and 'Next Step'. The 'Next Step' button is highlighted in blue.

6. Change the DB instance class, Allocated storage and other fields as mentioned below. Give a DB Instance identifier any name and for Master Username any username.

The screenshot shows the AWS RDS console 'Instance Specifications' screen. On the left, a sidebar contains a warning message: '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.' Below this is a link to 'Estimate your monthly costs for the DB Instance using the RDS Instance Cost Calculator.' The main area is titled 'Instance Specifications'. It contains several fields: 'DB Engine' (mysql), 'License Model' (general-public-license), 'DB Engine Version' (5.6.27), 'DB Instance Class' (db.t2.small — 1 vCPU, 2 GiB RAM), 'Multi-AZ Deployment' (- Select One -), 'Storage Type' (General Purpose (SSD)), and 'Allocated Storage*' (5 GB). A red warning box states: '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.' Below these fields is a 'Settings' section with a 'DB Instance Identifier' field containing 'esbiidb'. On the right, there is a 'Details: db.t2.small' section with a table of specifications:

Details: db.t2.small	
Type	Micro Instance - Current Generation
vCPU	1 vCPU
Memory	2 GiB
EBS Optimized	No
Network Performance	Low
Free Tier Eligible	No

7. Give a DB Instance identifier any name and for Master Username any username.

DB Instance using the [RDS Instance Cost Calculator](#).

DB Instance Class: db.m1.small — 1 vCPU, 1.7 GiB RAM

Multi-AZ Deployment: - Select One -

Storage Type: General Purpose (SSD)

Allocated Storage*: 5 GB

Warning: 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*: esbillab

Master Username*: pasindub

Master Password*:

Confirm Password*:

Retype the value you specified for Master Password.

* Required

Cancel Previous Next Step

8. Choose the VPC Security Group as Create new security group and give a Database name under Database options. Do not change other options and then launch DB instance.

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-4f1d672b)

Subnet Group: default

Publicly Accessible: Yes

Availability Zone: No Preference

VPC Security Group(s): Create new Security Group

Database Options

Database Name: esbillabdb

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

Option Group: default.mysql5-6

Specify a string of up to 64 alpha-numeric characters that define the name given to a database that Amazon RDS creates when it creates the DB instance, as in "mydb". If you do not specify a database name, Amazon RDS does not create a database when it creates the DB instance.

Cancel Previous Next Step

9. Now your DB instance is created in the amazon cloud.

The screenshot shows the AWS RDS console interface. On the left, a navigation pane lists steps: Step 1: Select Engine, Step 2: Production?, Step 3: Specify DB Details, and Step 4: Configure Advanced Settings. The main content area displays a green success message: "Your DB Instance is being created." Below this, a note states: "Note: Your instance may take a few minutes to launch." Further down, there is a section titled "Connecting to your DB Instance" with instructions on security group authorization and a link to "Go to the Security Groups Page". Below that is a "Related AWS Services" section featuring "Amazon ElastiCache" with a description and a link to learn more. At the bottom right, there is a blue button labeled "View Your DB Instances". The footer of the console shows the date and time as 8:46 AM on 20-Jul-16.

10. You can view created DB instance.

The screenshot shows the AWS RDS console interface with a list of DB instances. The left navigation pane includes links for Launch DB Instance, Show Monitoring, and Instance Actions. The main content area displays a table of DB instances. The first instance is a MySQL instance named 'esbldb' with a status of 'creating'. Below the table, there is a section for 'Alarms and Recent Events' and a 'Monitoring' section. The 'Monitoring' section shows a table with columns for Current Value, Threshold, and Last Hour for various metrics like CPU, Memory, Storage, Read IOPS, Write IOPS, and Swap Usage. The second instance in the table is a MySQL instance named 'esbllab' with a status of 'creating'. The footer of the console shows the date and time as 8:47 AM on 20-Jul-16.

Engine	DB Instance	Status	CPU	Current Activity	Maintenance	Class	VPC	Multi-AZ	Replication Role
MySQL	esbldb	creating			None	db.t2.small	vpc-4f1d672b	No	
MySQL	esbllab	creating			None	db.m1.small	vpc-4f1d672b	No	

11. Now it is ready to work.

The screenshot shows the AWS RDS console for a MySQL instance named 'esbiidb'. The instance is in the 'available' state with a CPU usage of 1.00% and 0 connections. The endpoint is 'esbiidb.cjpp9jbeyhue.us-west-2.rds.amazonaws.com:3306'. The console also displays a table of recent events and monitoring metrics for CPU, Memory, Storage, Read IOPS, Write IOPS, and Swap Usage.

TIME (UTC+5:30)	EVENT
Jul 20 8:55 AM	Finished DB Instance backup
Jul 20 8:54 AM	Backing up DB instance
Jul 20 8:52 AM	DB instance created
Jul 20 8:51 AM	DB instance restarted

Metric	Current Value	Threshold	Last Hour
CPU	0.99%		
Memory	1,500 MB		
Storage	4,540 MB		
Read IOPS	0/sec		
Write IOPS	0.475/sec		
Swap Usage	0 MB		

12. Open xampp enable MySQL then select 'shell' and type as ***mysql -h end instance -P 3306 -u marlonDB -p*** and provide password previously you provided

The screenshot shows the AWS RDS console with a terminal window open. The terminal displays the command to connect to the MySQL instance via XAMPP, followed by the password prompt and the successful connection message.

```
Pasindu@PASINDU c:\xampp
# mysql -h esbiidb.cjpp9jbeyhue.us-west-2.rds.amazonaws.com -P 3306 -u pasindubd -p
Enter password: *****
ERROR 1045 (28000): Access denied for user 'ODBC'@'175.157.161.54' (using password: YES)

Pasindu@PASINDU c:\xampp
# mysql -h esbiidb.cjpp9jbeyhue.us-west-2.rds.amazonaws.com -P 3306 -u pasindubd -p
Enter password: *****
ERROR 1045 (28000): Access denied for user 'ODBC'@'175.157.161.54' (using password: YES)

Pasindu@PASINDU c:\xampp
# mysql -h esbiidb.cjpp9jbeyhue.us-west-2.rds.amazonaws.com -P 3306 -u pasindubd -p
Enter password: *****
ERROR 1045 (28000): Access denied for user 'ODBC'@'175.157.161.54' (using password: YES)

Pasindu@PASINDU c:\xampp
# mysql -h esbiidb.cjpp9jbeyhue.us-west-2.rds.amazonaws.com -P 3306 -u pasindubd -p
Enter password: *****
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MySQL connection id is 30
Server version: 5.6.27-log MySQL Community Server (GPL)

Copyright (c) 2000, 2016, Oracle, MariaDB Corporation Ab and others.

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

MySQL [(none)]>
```

13. Open MySQL Workbench and go to 'Database' tab and click 'Connect to Database'.

