

Enterprise Standards and Best Practices for IT Infrastructure

Lab Report

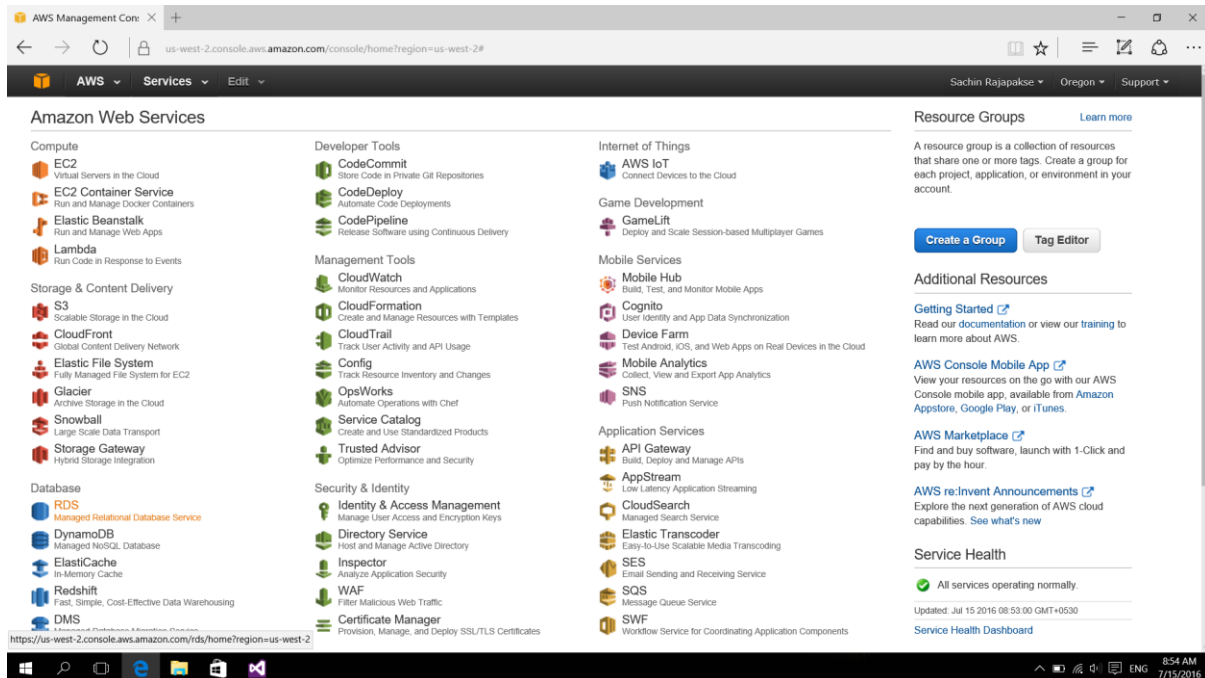
Lab 03 - Creating an Amazon RDS Database

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

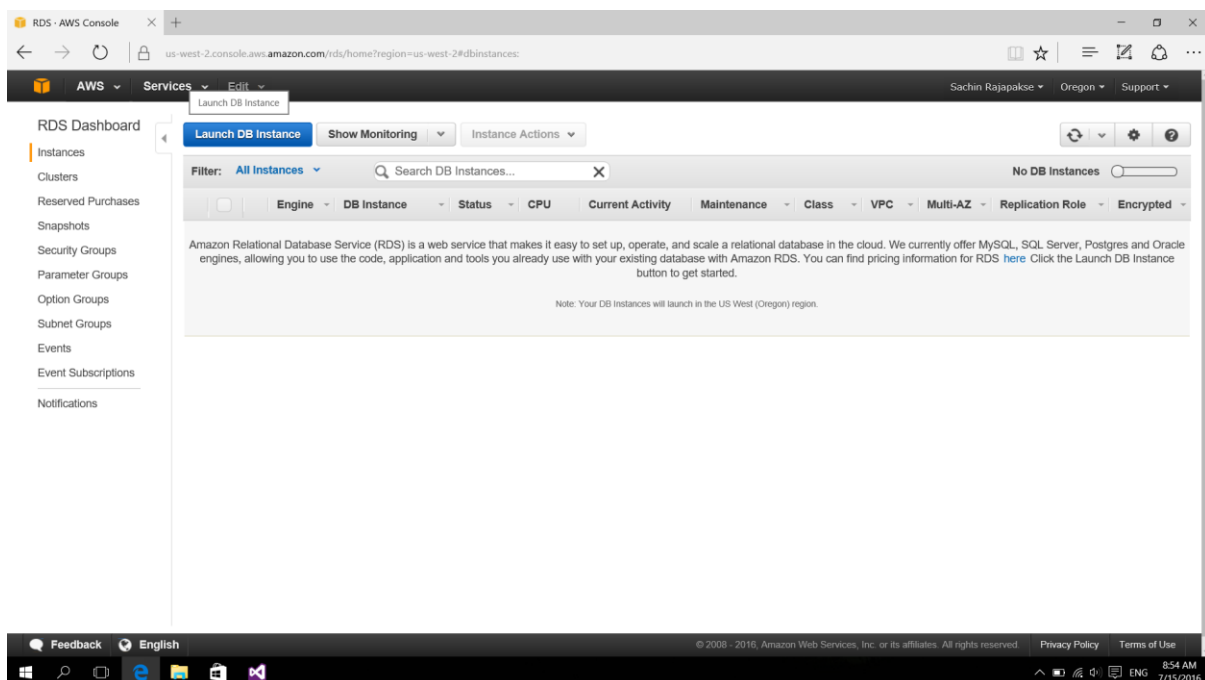
Creating an Amazon RDS Database

Step 01: Select RDS from Amazon Web Services. (Services -> RDS)

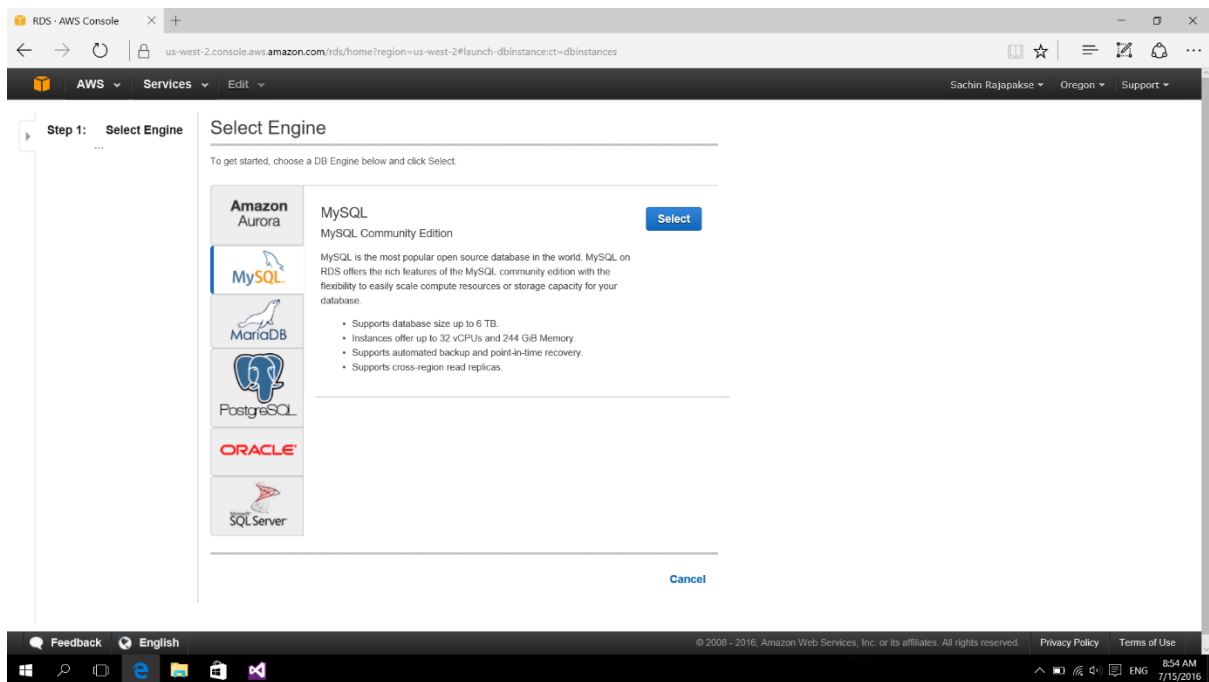


Step 02: Choose Instances from RDS Dashboard.

Select Launch DB Instance.

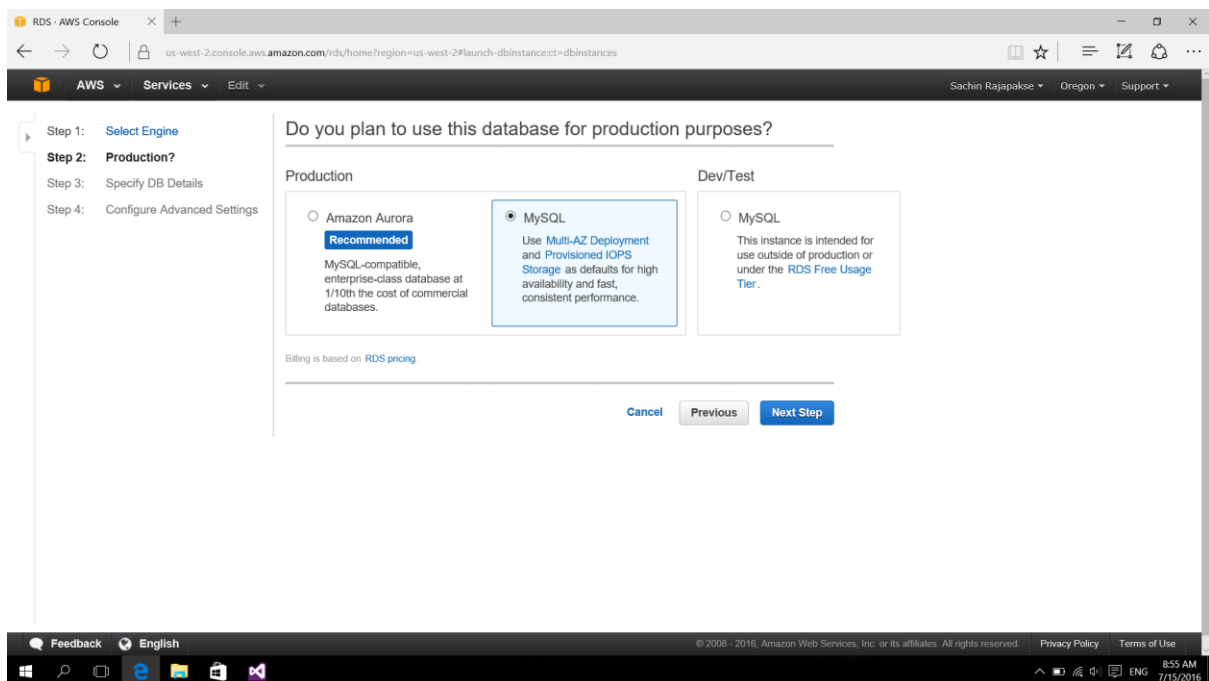


Step 03: Choose MySQL from 'Select Engine' tab.



Step 04: Select MySQL under 'Production' category.

Then proceed to next step.



Step 05: Specify the DB details. (Instance Specifications and Settings)

License Model: general-public-license

DB Engine Version: 5.6.19a

DB Instance Class: db.t2.micro – 1 vCPU, 1 GiB RAM

Multi-AZ Deployment: No

Storage Type: General Purpose (SSD)

Allocated Storage: 15 GB

Provide a DB instance identifier, a master username and a master password.

RDS - AWS Console

us-west-2.console.aws.amazon.com/rds/home?region=us-west-2#launch-dbinstancect=dbinstances

AWS Services Edit

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

Your current selection is eligible for the free tier.
[Learn More.](#)

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

Specify DB Details

Instance Specifications

DB Engine: mysql
License Model: general-public-license
DB Engine Version: 5.6.19a
[Review the Known Issues/Limitations to learn about potential compatibility issues with specific database versions.](#)

DB Instance Class: db.t2.micro — 1 vCPU, 1 GiB RAM
Multi-AZ Deployment: No
Storage Type: General Purpose (SSD)
Allocated Storage*: 15 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*: NewInstance
Master Username*: newinstance

Specify a string that defines the password for the master user. Master Password must be at least eight characters long, as in "mypassword".

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RDS - AWS Console

us-west-2.console.aws.amazon.com/rds/home?region=us-west-2#launch-dbinstancect=dbinstances

AWS Services Edit

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DB Engine Version: 5.6.19a

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

DB Instance Class: db.t2.micro — 1 vCPU, 1 GiB RAM
Multi-AZ Deployment: No
Storage Type: General Purpose (SSD)
Allocated Storage*: 15 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*: NewInstance
Master Username*: newinstance
Master Password*:
Confirm Password*:

Specify a string that defines the password for the master user. Master Password must be at least eight characters long, as in "mypassword".

* Required

Cancel Previous Next Step

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Step 06: Give a database name in 'Configure Advanced Settings' tab. (Database Options)

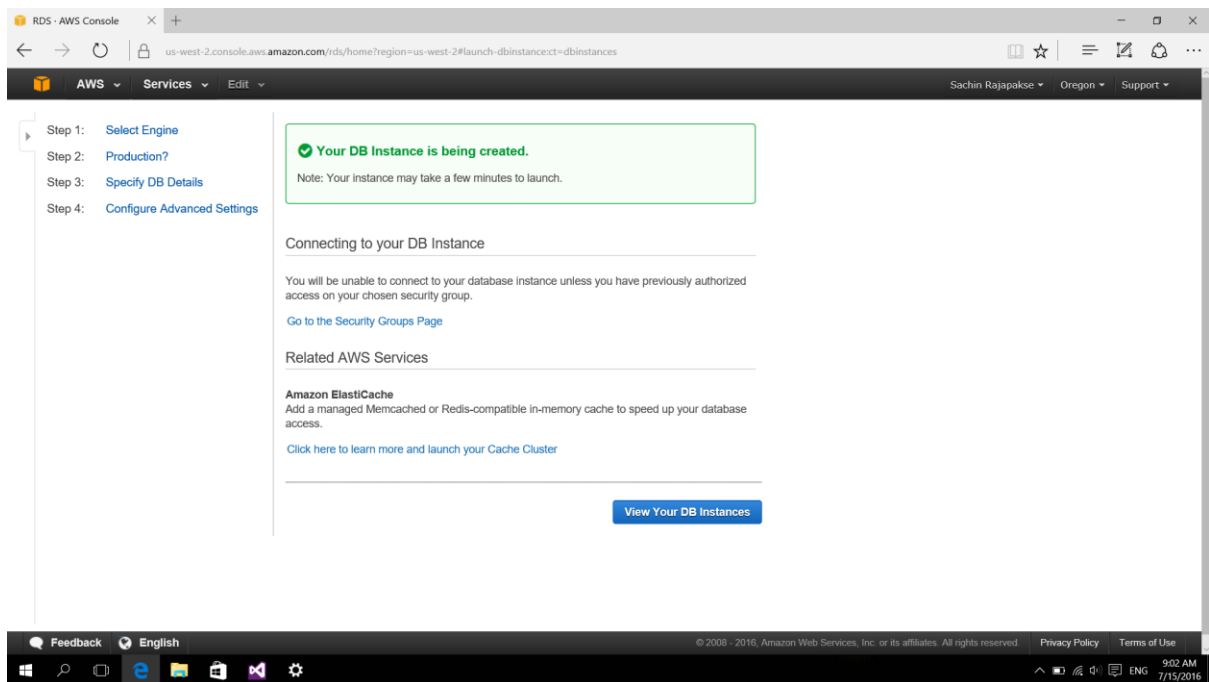
Choose 'No' in Enable Enhanced Monitoring. (Monitoring)

Click 'Launch DB Instance'.

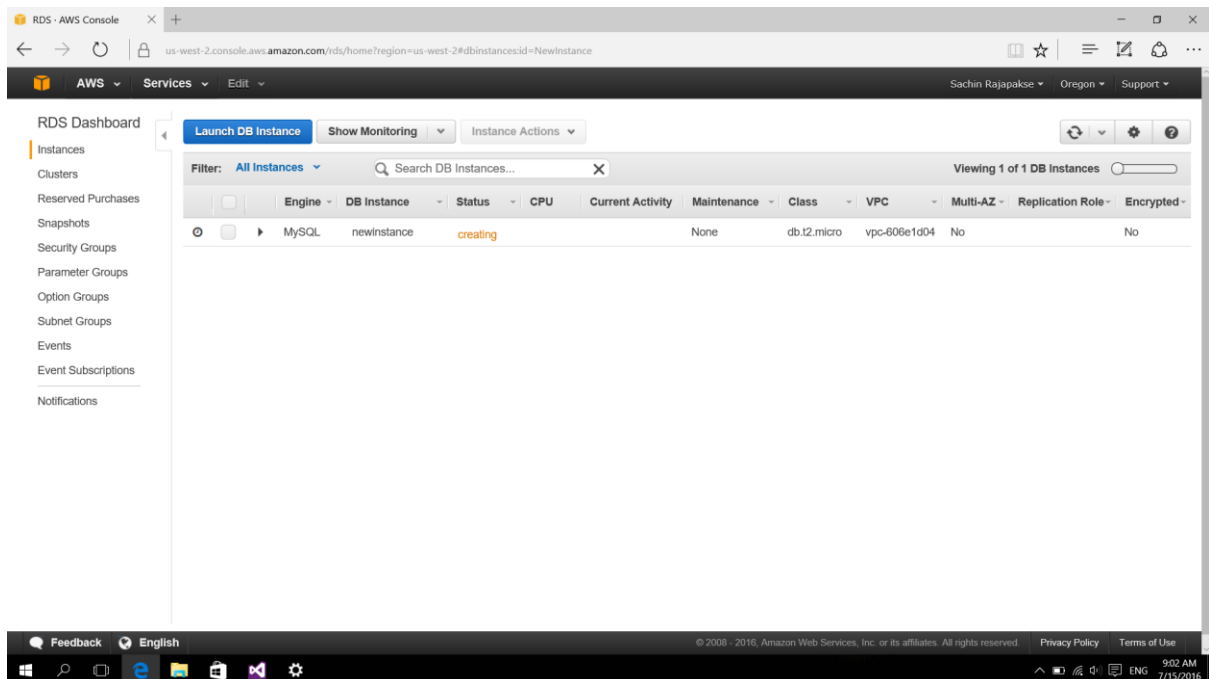
The screenshot shows the 'Configure Advanced Settings' tab in the AWS RDS console, specifically the 'Network & Security' section. The left sidebar shows the progression: Step 1: Select Engine, Step 2: Production?, Step 3: Specify DB Details, and Step 4: Configure Advanced Settings. The main content area has a 'Network & Security' section with the following settings: VPC (Default VPC (vpc-606e1d04)), Subnet Group (default), Publicly Accessible (Yes), Availability Zone (No Preference), and VPC Security Group(s) (a dropdown menu showing 'Create new Security Group', 'default (VPC)', 'launch-wizard-1 (VPC)', and 'launch-wizard-2 (VPC)'). Below this is the 'Database Options' section with: Database Name (newDatabase), Database Port (3306), DB Parameter Group (default.mysql5.6), Option Group (default.mysql5-6), Copy Tags To Snapshots (unchecked), and Enable Encryption (No). A note on the right states: '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.'

The screenshot shows the 'Configure Advanced Settings' tab in the AWS RDS console, specifically the 'Backup', 'Monitoring', and 'Maintenance' sections. The 'Database Options' section from the previous screenshot is partially visible at the top. The 'Backup' section includes a note about automated backups for InnoDB storage engine only, a 'Backup Retention Period' of 7 days, and a 'Backup Window' of 'No Preference'. The 'Monitoring' section has 'Enable Enhanced Monitoring' set to 'No'. The 'Maintenance' section has 'Auto Minor Version Upgrade' set to 'Yes' and 'Maintenance Window' set to 'No Preference'. At the bottom, there are buttons for 'Cancel', 'Previous', and 'Launch DB Instance'. A note on the right states: 'If you do not specify a database name, Amazon RDS does not create a database when it creates the DB instance.'

Step 07: Click 'View Your DB Instances' from next window.



Step 08: Wait until the instance status change to 'available' from 'creating'.
(creating -> backing-up -> available)



RDS - AWS Console

us-west-2.console.aws.amazon.com/rds/home?region=us-west-2#dbinstances:id=NewInstance

AWS Services Edit

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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	Encrypted
<input type="checkbox"/>	MySQL	newinstance	backing-up			None	db.t2.micro	vpc-806e1d04	No		No

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RDS - AWS Console

us-west-2.console.aws.amazon.com/rds/home?region=us-west-2#dbinstances:id=NewInstance

AWS Services Edit

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RDS Dashboard

- Instances
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- Event Subscriptions
- Notifications

Launch DB Instance Show Monitoring Instance Actions

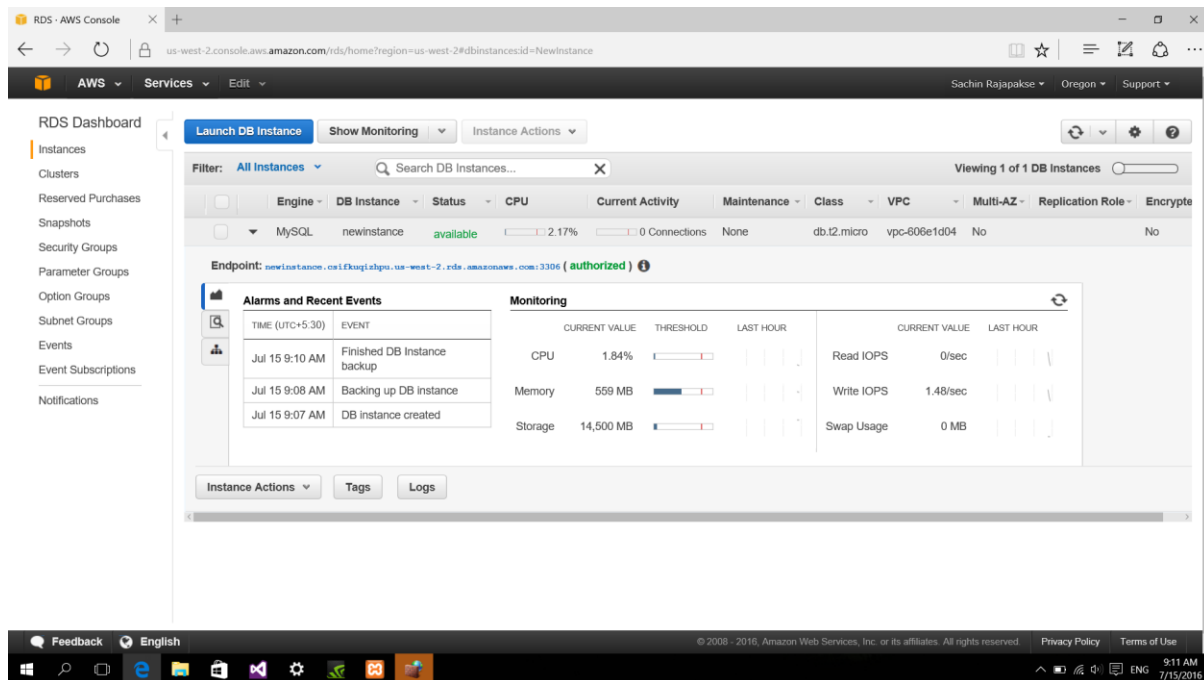
Filter: All Instances Search DB Instances... Viewing 1 of 1 DB Instances

	Engine	DB Instance	Status	CPU	Current Activity	Maintenance	Class	VPC	Multi-AZ	Replication Role	Encrypted
<input type="checkbox"/>	MySQL	newinstance	available	1.80%	0 Connections	None	db.t2.micro	vpc-806e1d04	No		No

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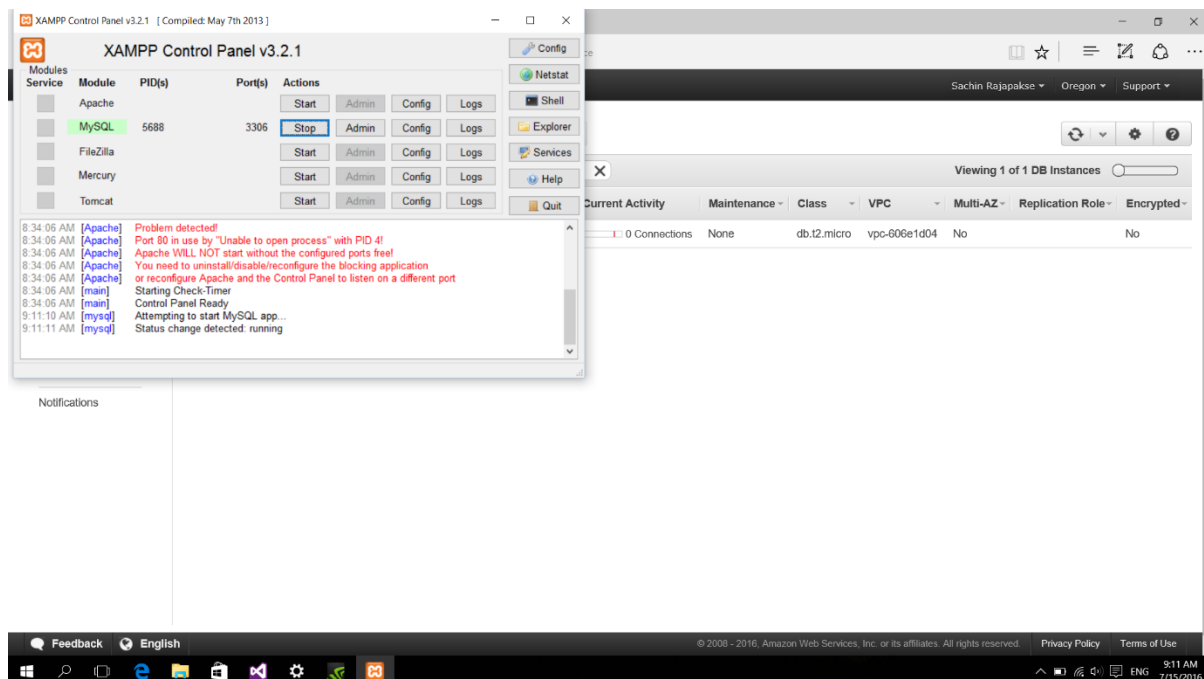
Step 09: Expand the instance to view Endpoint.

Copy the Endpoint without the port number.



Step 10: Open XAMPP Control Panel.

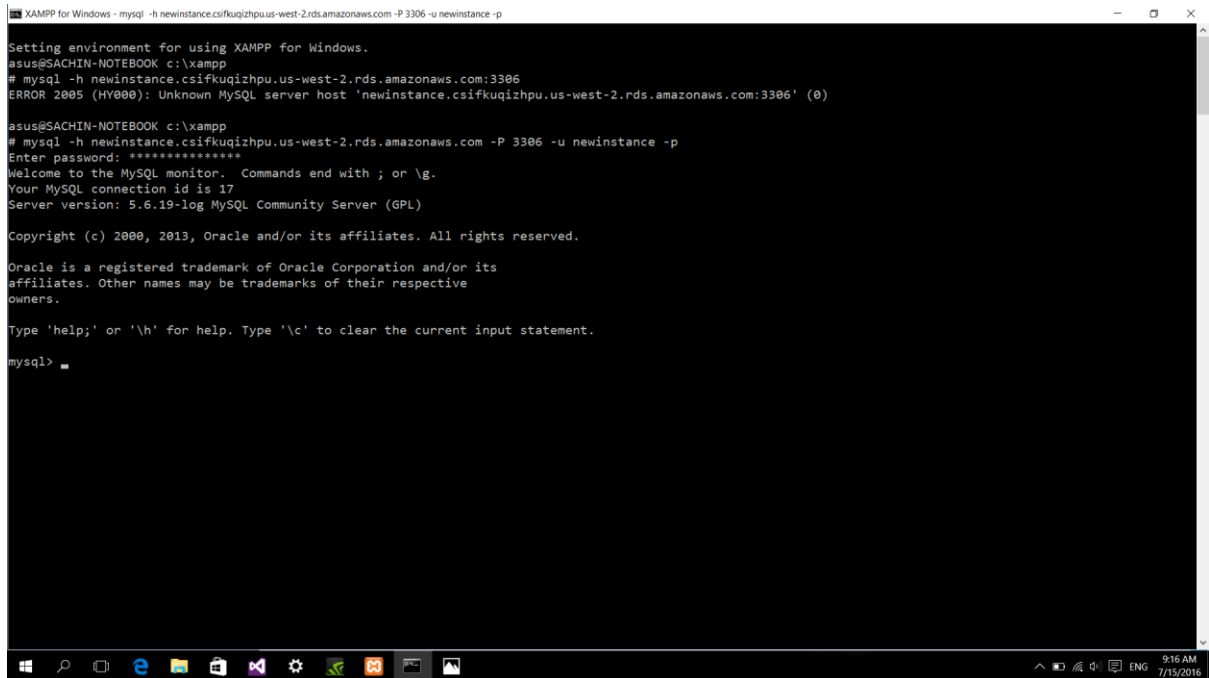
Start MySQL.



Step 11: Go to the Shell in XAMPP Control Panel.

Type the command. (mysql -h <endpoint> -P <portnumber> -u <instancename> -p)

Enter master password.



```
XAMPP for Windows - mysql -h newinstance.csifkuqizhpu.us-west-2.rds.amazonaws.com -P 3306 -u newinstance -p

Setting environment for using XAMPP for Windows.
asus@SACHIN-NOTEBOOK c:\xampp
# mysql -h newinstance.csifkuqizhpu.us-west-2.rds.amazonaws.com:3306
ERROR 2005 (HY000): Unknown MySQL server host 'newinstance.csifkuqizhpu.us-west-2.rds.amazonaws.com:3306' (0)

asus@SACHIN-NOTEBOOK c:\xampp
# mysql -h newinstance.csifkuqizhpu.us-west-2.rds.amazonaws.com -P 3306 -u newinstance -p
Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 17
Server version: 5.6.19-log MySQL Community Server (GPL)

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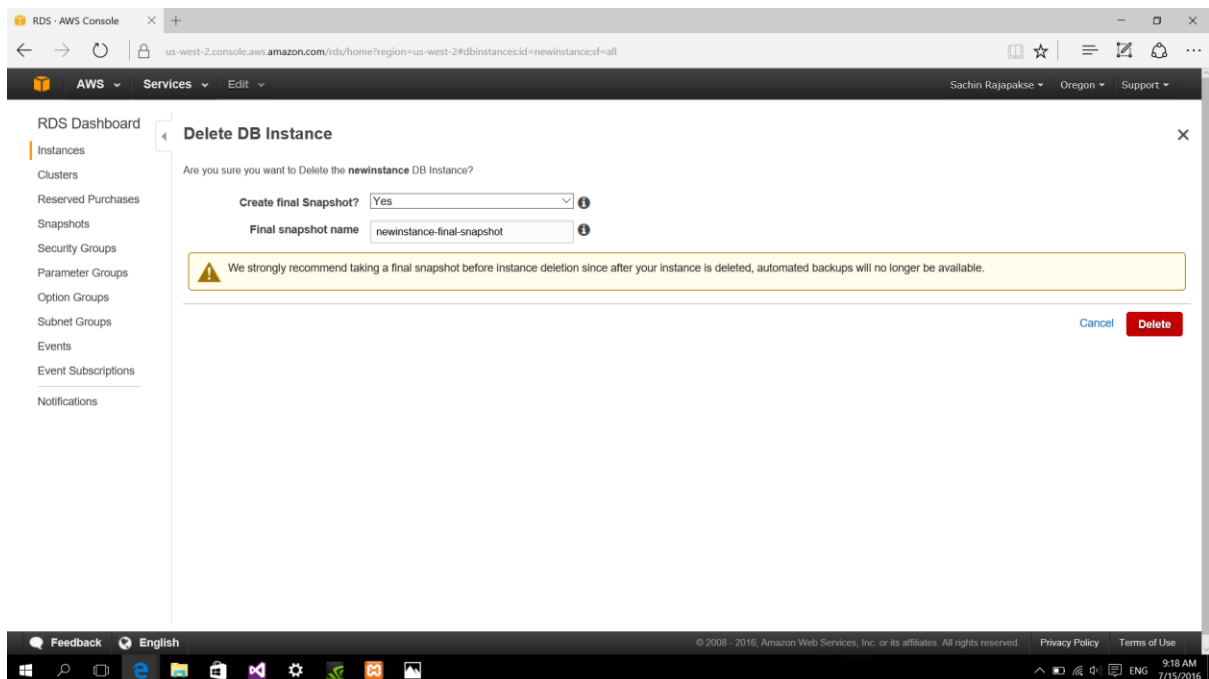
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owners.

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

mysql>
```

Step 12: Delete the created DB instance. (Instance Actions -> Delete)

Confirm delete by clicking 'Delete'.



RDS - AWS Console

us-west-2.console.aws.amazon.com/rds/home?region=us-west-2#dbinstancesid=newinstancesf=all

AWS Services Edit

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RDS Dashboard

- Instances
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- Security Groups
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- 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	newinstance	deleting	1.15%	0 Connections	None	db.t2.micro	vpc-606e1d04	No	No	No

Endpoint: newinstance.cs1fkugishpu.us-west-2.rds.amazonaws.com:3306 (authorized)

Alarms and Recent Events

TIME (UTC+5:30)	EVENT
Jul 15 9:10 AM	Finished DB Instance backup
Jul 15 9:08 AM	Backing up DB Instance
Jul 15 9:07 AM	DB instance created

Monitoring

	CURRENT VALUE	THRESHOLD	LAST HOUR	CURRENT VALUE	LAST HOUR
CPU	0.915%			Read IOPS	0/sec
Memory	556 MB			Write IOPS	0.408/sec
Storage	14,500 MB			Swap Usage	0 MB

Instance Actions **Tags** **Logs**

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RDS - AWS Console

us-west-2.console.aws.amazon.com/rds/home?region=us-west-2#dbinstances:

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RDS Dashboard

- Instances
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- Security Groups
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- Notifications

Launch DB Instance **Show Monitoring** **Instance Actions**

Filter: All Instances Search DB Instances... No DB Instances

Engine DB Instance Status CPU Current Activity Maintenance Class VPC Multi-AZ Replication Role Encrypted

Amazon Relational Database Service (RDS) is a web service that makes it easy to set up, operate, and scale a relational database in the cloud. We currently offer MySQL, SQL Server, Postgres and Oracle engines, allowing you to use the code, application and tools you already use with your existing database with Amazon RDS. You can find pricing information for RDS [here](#). Click the Launch DB Instance button to get started.

Note: Your DB Instances will launch in the US West (Oregon) region.

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