

# Launch Amazon EC2 instance, Launch Amazon RDS Instance, Connecting RDS from EC2 Instance

Level: Intermediate

Amazon EC2    Amazon RDS    Amazon Web Services



0h 52m 38s left



End Lab

Open Console

Validation

## Lab Credentials

User Name ⓘ

Whiz\_User\_80425.22745005



Password ⓘ

a093b129-2731-4ab7-a49c-e96dcbe66b75



Access Key ⓘ

AKIA2ISDNKYNNXAOFYBJ



Secret Key ⓘ

vbA7w5rpRnoWHjyHhJze+Ws0kK6p3OnRdDfUFaV9






## Lab Resources

No Lab Resources Found

## Support Documents

1. [FAQs and Troubleshooting](#)
2. [SSH into EC2 Instance](#)

## Need help?

-  How to use Hands on Lab
-  Troubleshooting Lab
-  FAQs

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 Cloud Architect, Database Engineer, Cloud Administrator

 Storage, Administrator, Database

## Lab Steps

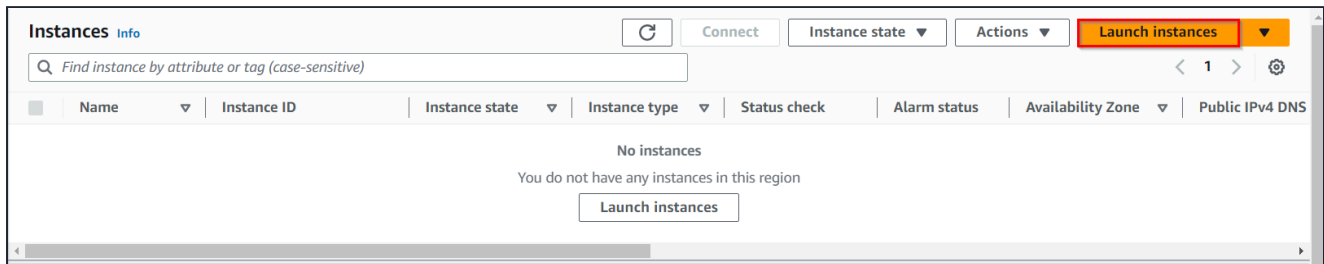
### Task 1: Sign in to AWS Management Console

1. Click on the **Open Console** button, and you will get redirected to AWS Console in a new browser tab.
2. On the AWS sign-in page,
  - Leave the Account ID as default. Never edit/remove the 12-digit Account ID present in the AWS Console. Otherwise, you cannot proceed with the lab.
  - Now copy your **Username** and **Password** in the Lab Console to the **IAM Username and Password** in AWS Console and click on the **Sign-in** button.
3. Once Signed In to the AWS Management Console, make the default AWS Region as **US East (N. Virginia) us-east-1**.

**Note :** If you face any issues, please go through [FAQs and Troubleshooting for Labs](#).

### Task 2: Launch EC2 Instance

1. Make sure you are in **US East (N.Virginia) us-east-1** Region.
2. Navigate to EC2 by clicking on the **Services** menu in the top, then click on the **EC2** in the **Compute** section.
3. Navigate to **Instances** on the left panel and click on **Launch instances**.



4. Name : Enter **MyPublicServer**

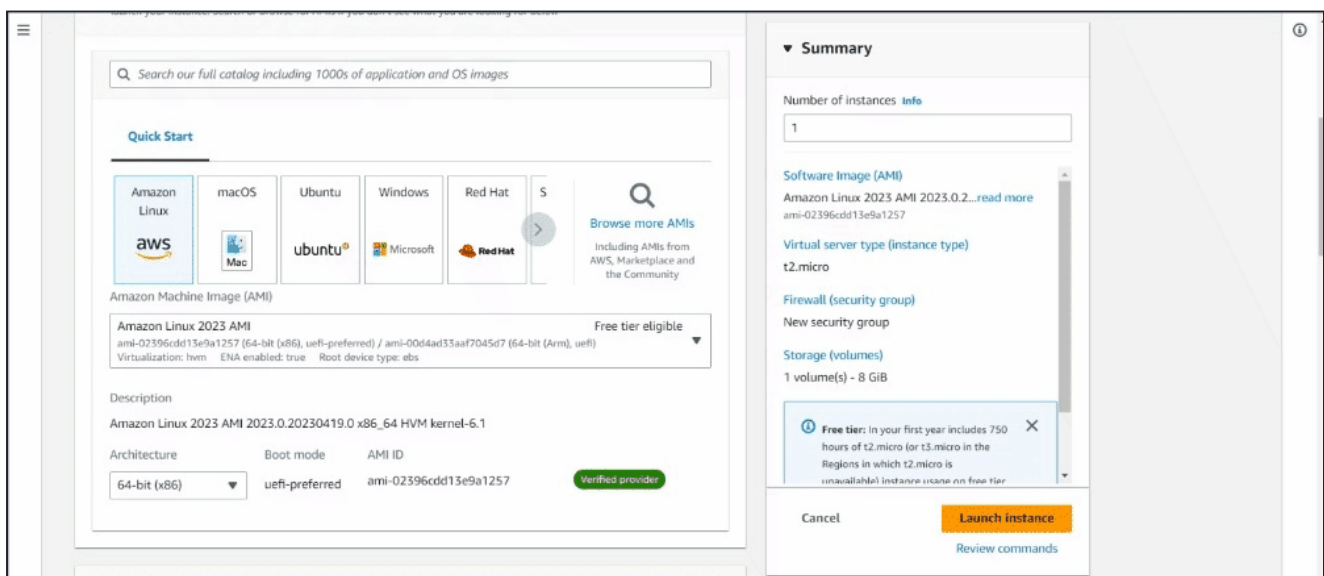
### Name and tags Info

Name

[Add additional tags](#)

5. For **Amazon Machine Image (AMI)**: Search for **Amazon Linux 2 AMI** in Quick Start menu.

6. For Instance Type: select **t2.micro**



7. For **Key pair**: Select **Create a new key pair** Button

- Key pair name: Enter **WhizKey**
- Key pair type: Select **RSA**
- Private key file format: Select **.pem**

8. Select **Create key pair** Button.

9. In Network Settings, Click on **Edit**:

- Auto-assign public IP: **Enable**
- Select **Create new Security group**
- Security group name : Enter **MyEC2Server\_SG**
- Description : Enter **Security Group to allow traffic to EC2**

Auto-assign public IP [Info](#)

Enable

**Firewall (security groups)** [Info](#)

A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

☒ Create security group ☐ Select existing security group

Security group name - *required*

MyEC2Server\_SG

This security group will be added to all network interfaces. The name can't be edited after the security group is created. Max length is 255 characters. Valid characters: a-z, A-Z, 0-9, spaces, and .\_-:/()#,@[]+=&;{}!\$\*

Description - *required* [Info](#)

Security Group to allow traffic to EC2

10. To add **SSH**:

- Choose Type: **SSH**
- Source: **Anywhere**

11. For **RDS**:

- Click on **Add security group role**
- Choose Type: **MySQL/Aurora**
- Source: **Anywhere**

12. Keep rest thing Default and Click on **Launch Instance** Button.

13. Select **View all Instances** to View the Instance you Created

14. **Launch Status:** Your instance is now launching. Click on the instance ID and wait for complete initialization of the instance (until the status changes to running).

### Task 3: Create an Amazon RDS Database

1. Navigate to **RDS** under **Database**.

2. Click on **Create Database** button

3. **Specify DB Details:**

- Database creation method : Select **Standard create**

#### Choose a database creation method [Info](#)







☒ **Standard create**  
You set all of the configuration options, including ones for availability, security, backups, and maintenance.

☐ **Easy create**  
Use recommended best-practice configurations. Some configuration options can be changed after the database is created.

- Engine options : Select **MySQL**
- Version : **Default**


### Engine options

Engine type [Info](#)

<input type="radio"/> Amazon Aurora 	<input checked="" type="radio"/> MySQL 	<input type="radio"/> MariaDB 
<input type="radio"/> PostgreSQL 	<input type="radio"/> Oracle 	<input type="radio"/> Microsoft SQL Server 

Edition

☒ MySQL Community

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

Version

MySQL 8.0.28 ▼

- Templates : Select **Free tier**

### Templates

Choose a sample template to meet your use case.

<input type="radio"/> <b>Production</b> Use defaults for high availability and fast, consistent performance.	<input type="radio"/> <b>Dev/Test</b> This instance is intended for development use outside of a production environment.	<input checked="" type="radio"/> <b>Free tier</b> Use RDS Free Tier to develop new applications, test existing applications, or gain hands-on experience with Amazon RDS. <a href="#">Info</a>
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- DB instance identifier : Enter **mydbinstance**
- Master username : Enter **rdsuser**
- Master password and Confirm password: Enter **whizlabs123**
- **Note:** This is the username/password combo used to log onto your database. Please make note of them somewhere safe.

- DB instance class : **db.t2.micro — 1 vCPU, 1 GiB RAM**

### Instance configuration

The DB instance configuration options below are limited to those supported by the engine that you selected above.

DB instance class [Info](#)

☐ Standard classes (includes m classes)

☐ Memory optimized classes (includes r and x classes)

☒ Burstable classes (includes t classes)

**db.t2.micro**  
1 vCPUs 1 GiB RAM Not EBS Optimized ▼

☐ Include previous generation classes

- Storage type : **General Purpose SSD (gp2)**
- Allocated storage : **20**
- Enable storage autoscaling : Uncheck

### Storage

Storage type [Info](#)

**General Purpose SSD (gp2)**  
Baseline performance determined by volume size ▼

Allocated storage

**20** GiB

(Minimum: 20 GiB. Maximum: 16,384 GiB) Higher allocated storage can improve IOPS performance.

Storage autoscaling [Info](#)

Provides dynamic scaling support for your database's storage based on your application's needs.

☐ **Enable storage autoscaling**  
Enabling this feature will allow the storage to increase after the specified threshold is exceeded.

- Public access : Select **No**
- VPC Security groups : Select **Choose existing**
- Existing VPC security groups : **Remove the default one and Select MyEC2Server\_SG**
- Go to Additional Configuration options
  - Initial database name: Enter **mydbinstance**
  - DB parameter group: **default**
  - Option group: **default**

- Enable automated backups: **uncheck**
- Log Exports: **Not needed for the purpose of this lab.**
- **Note: Leave all the other settings as default**
- Click on **Create database**

4. Navigate to **databases**.

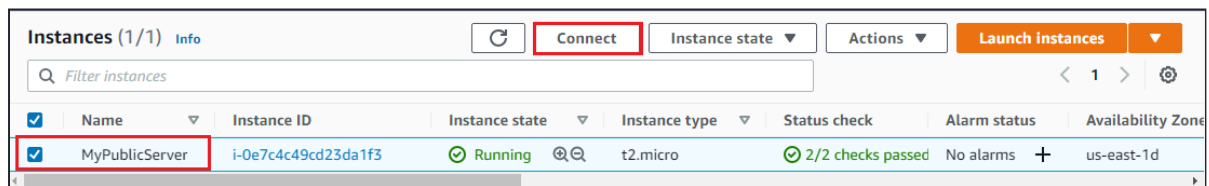
5. On the RDS console, the details for the new DB instance appear. The DB instance has a status of creating until the DB instance is ready to use. When the state changes to **Available**, you can connect to the DB instance. It can take up to 20 minutes before the new instance status becomes **Available**.

6. Once the database becomes **Available**, click on the database name and copy the **Endpoint** under **Connectivity & security** tab.

## Task 4: Create a connection to the Amazon RDS database from the EC2 instance

In this task, we are going to establish a connection between the EC2 instance and the RDS database.

1. Now navigate to EC2 by clicking on the **Services** menu in the top, then click on the **EC2** in the **Compute** section.
2. Navigate to **Instances** on the left panel and select your EC2 instance(**MyPublicServer**) and click on the **Connect** button.



3. Select **EC2 Instance Connect** option and click on **Connect** button.(Keep everything else as default)



Connect to instance

Info

Connect to your instance i-0e7c4c49cd23da1f3 (MyPublicServer) using any of these options

EC2 Instance Connect

Session Manager

SSH client

EC2 Serial Console

Instance ID

i-0e7c4c49cd23da1f3 (MyPublicServer)

Public IP address

54.164.112.247

User name

Connect using a custom user name, or use the default user name ec2-user for the AMI used to launch the instance.

Note:

 In most cases, the guessed user name is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI user name.

Cancel

Connect

4. A new tab will open in the browser where you can execute the CLI Commands.

[illegible]

5. Once connected to the server:

- Change to root user: Enter

```
sudo su
```



- Download some packages for Linux

```
sudo amazon-linux-extras install epel -y
```



- Install the MySQL repository package. Enter **y** wherever asked.

```
sudo yum install https://dev.mysql.com/get/mysql80-community-release-el7-5.noarch.rpm
```



- Install the MySQL community server. Enter **y** wherever asked.

```
sudo yum install mysql-community-server
```



- Verify the version for MySQL.

```
mysql --version
```



6. Connect to the MySQL RDS Instance with the following command:

- Syntax: **mysql -h** <mysql-instance-dns> **-u** <username> **-p**
- In our case: **mysql -h** mydbinstance.c1sh5a4j91dp.us-east-1.rds.amazonaws.com **-u** rdsuser **-p**
- Password : Enter **whizlabs123**

7. You will enter the MYSQL command line.

```
[root@ip-172-31-85-112 ec2-user]# mysql -h mydbinstance.ch5lfbkqdm8y.us-east-1.rds.amazonaws.com -u rdsuser -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 17
Server version: 8.0.32 Source distribution

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owners.

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

mysql>
```

## Task 5: Create a Database, Table and insert data for testing

Lets create a simple database and table to see if it's working.

- Create a database:

```
CREATE DATABASE SchoolDB;
```



- You can see the created database with following command:

```
show databases;
```



```
mysql> CREATE DATABASE SchoolDB;
Query OK, 1 row affected (0.01 sec)

mysql> show databases;
+-----+
| Database |
+-----+
| SchoolDB |
| information_schema |
| mydbinstance |
| mysql |
| performance_schema |
| sys |
+-----+
6 rows in set (0.00 sec)

mysql> 
```

- Switch to the database named **SchoolDB**.

```
use SchoolDB;
```



- Create a sample table consisting of **Subjects**.

```
CREATE TABLE IF NOT EXISTS subjects (subject_id INT
AUTO_INCREMENT,subject_name VARCHAR(255) NOT NULL,teacher
VARCHAR(255),start_date DATE,lesson TEXT,PRIMARY KEY
(subject_id)) ENGINE=INNODB;
```



- Insert some details into the table:

```
INSERT INTO subjects(subject_name, teacher) VALUES ('English',
'John Taylor');
```



```
INSERT INTO subjects(subject_name, teacher) VALUES ('Science',
'Mary Smith');
```



```
INSERT INTO subjects(subject_name, teacher) VALUES ('Maths',
'Ted Miller');
```



```
INSERT INTO subjects(subject_name, teacher) VALUES ('Arts',
'Suzan Carpenter');
```



- Let's check the items we added into the table:

```
select * from subjects;
```



```
MySQL [SchoolDB]> select * from subjects;
+-----+-----+-----+-----+-----+
| subject_id | subject_name | teacher      | start_date | lesson |
+-----+-----+-----+-----+-----+
| 1 | English | John Taylor | NULL | NULL |
| 2 | Science | Mary Smith | NULL | NULL |
| 3 | Maths | Ted Miller | NULL | NULL |
| 4 | Arts | Suzan Carpenter | NULL | NULL |
+-----+-----+-----+-----+-----+
4 rows in set (0.01 sec)
```

- Try out some more SQL commands and play around with the table to strengthen your understanding.
- Run below command to exit the mysql command

```
exit;
```



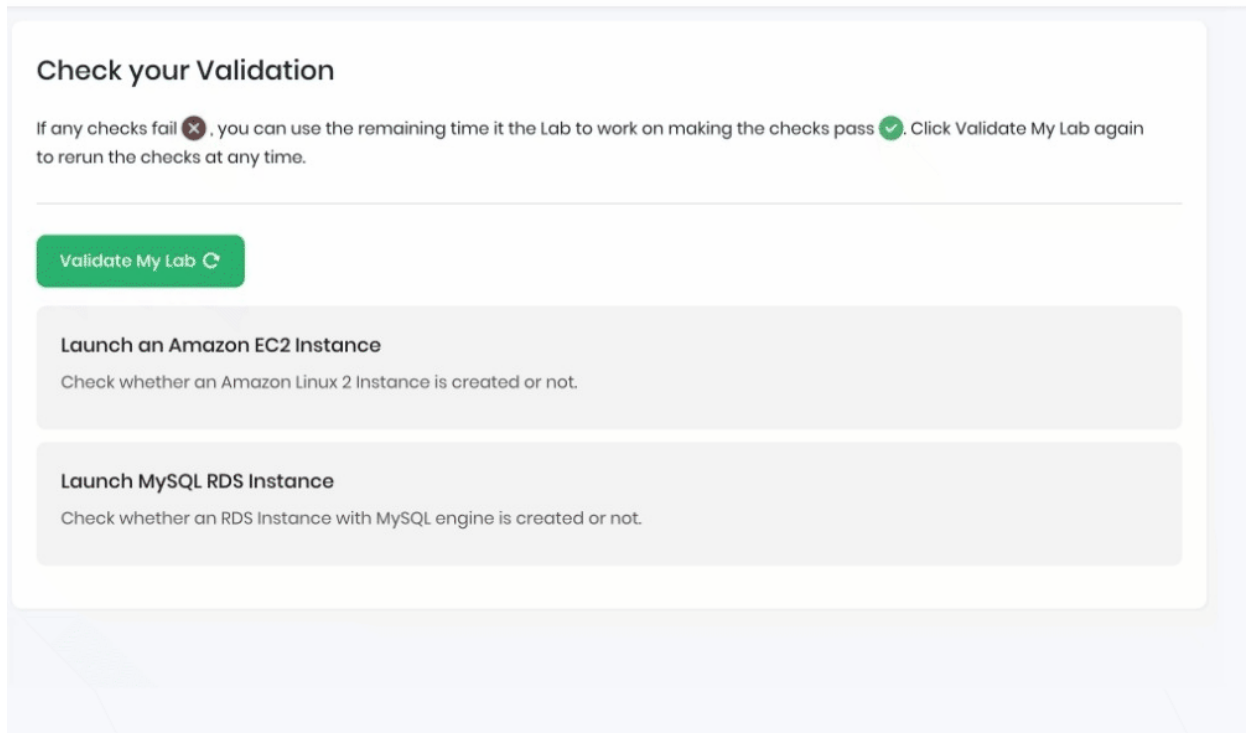
## Do You Know?

The combination of Amazon RDS and Amazon EC2 provides a powerful and scalable infrastructure for building robust and high-performing applications.

### Task 6: Validation Test

1. Once the lab steps are completed, please click on the **Validation** button on the left side panel.
2. This will validate the resources in the AWS account and shows you whether you have completed this lab successfully or not.
3. Sample output :







## Task 7: Delete AWS Resources

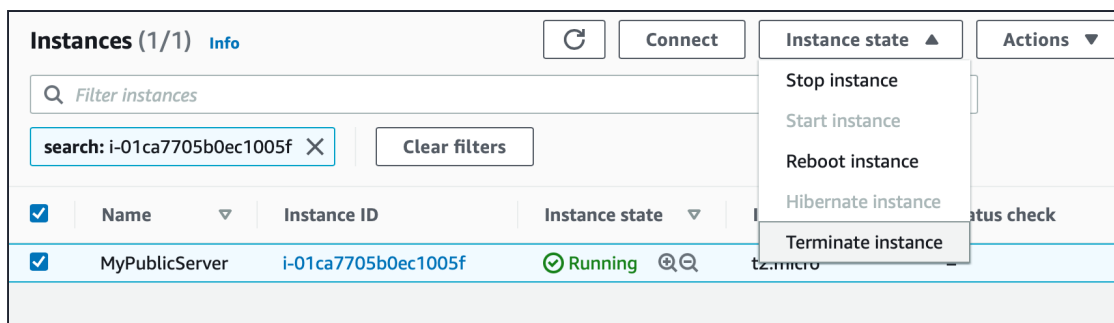
### 7.1 Deleting EC2 Instance

1. Navigate to EC2 by clicking on the **Services** menu in the top, then click on the **EC2** in the **Compute** section.
2. All the EC2 Instances will be listed here,

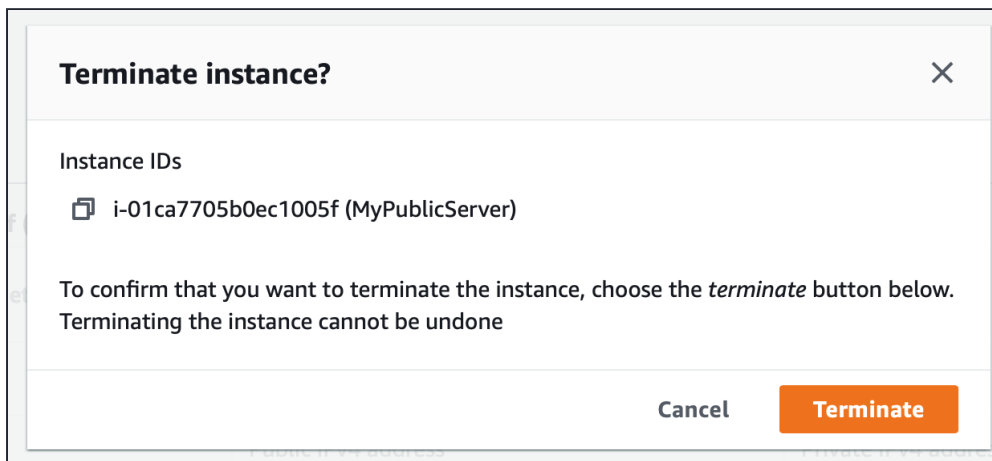
<input checked="" type="checkbox"/>	Name ▾	Instance ID	Instance state ▾	Instance type ▾	Status check
<input checked="" type="checkbox"/>	MyPublicServer	i-01ca7705b0ec1005f	 Running 	t2.micro	–

3. To terminate the EC2, perform the following task:

- Select **MyPublicServer**,
- Click on Instance state (If you don't see an **Instance state** option, click on the **Actions** button and then choose **Instance state**)
- Select **Terminate instance**



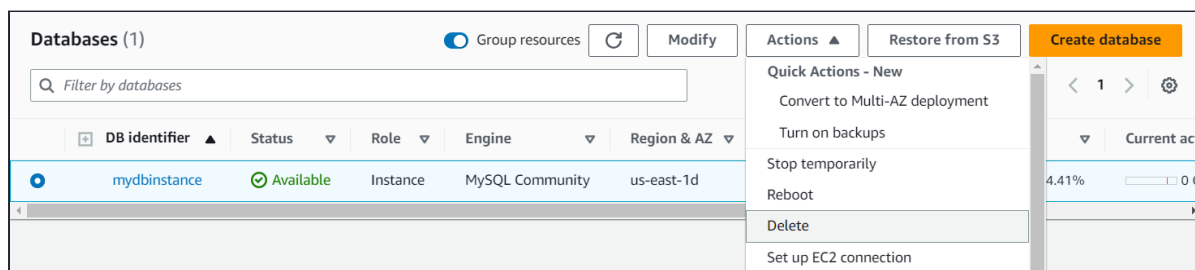
4. Finally, Click on terminate



5. EC2 Instance is terminated.

## 7.2 Deleting RDS DB Instance

1. Navigate to **RDS** by clicking on the **Services** menu available under the **Database** section.
2. Click on DB Instances
3. It will list all the RDS databases
4. Click on **Actions** and select **Delete**



5. To delete, we have to perform several tasks:

- Uncheck the option of **Create final snapshot**,
- Acknowledge by **selecting** the second option,
- Type **delete me** to confirm

- And finally, click on **Delete** button below.


### Delete mydbinstance instance?

Are you sure you want to Delete the **mydbinstance** DB Instance?

☐ Create final snapshot  
Determines whether a final DB Snapshot is created before the DB instance is deleted.

☒ I acknowledge that upon instance deletion, automated backups, including system snapshots and point-in-time recovery, will no longer be available.

To confirm deletion, type *delete me* into the field

 We strongly recommend taking a final snapshot before instance deletion since after your instance is deleted, automated backups will no longer be available.

Cancel Delete

6. It will take around, 5 minutes to delete the instance, you can end the lab now.

## Completion and Conclusion

1. You have successfully launched an EC2 Instance in a default VPC.
2. You successfully ran a MySQL command and performed operations on a database created with Amazon RDS.

## End Lab

1. Sign out of AWS Account.
2. You have successfully completed the lab.
3. Once you have completed the steps, click on **End Lab** from your whizlabs dashboard.

