**PROJECT 1**

**Configure and Connect a MySQL Database Instance with a Web Server**

**FOLLOWING STEPS IN CREATING EC2 INSTANCE**

1. Go to AWS Management Console -> Services -> EC2

2. Click on Launch Instance

3. You will be asked to select Amazon Machine Image(AMI)

4. Select Amazon Linux 2 AMI

5. Select instance type t2.micro

6. Click next configure instance details

7. Keep everything as default

8. Click next add storage default general purpose

9. Click next add tags

10. In tags click on add tag

11. Add the tags given below • Key: Name • Value: Web Server

12. Click next Configure security group

13. Click on create a new security group • • Security Group name: Web Security Group • Description: Enable HTTP Access You will have SSH as a default rule

14. Now Add Rule • 1st Rule • Type: HTTP • Source: Anywhere •

15. Now if you see you have 3 rules SSH, HTTPS

16. Click on review and launch

17. In the key pair dialog box select Create a new key pair, download the new key pair, select the acknowledgement box, then click launch instances.

18. Now you will get the instance ready scroll down click on view instances

19.Connect to your Linux instance and install mysql client

yum install mysql

**CREATING RDS DATABASE INSTANCE**

1. Go to AWS Management Console
2. Go to Databases
3. Click on Create Database
4. Click on Standard Create
5. Select Engine Type as MySQL
6. You can proceed with selected MySQL Version
7. Select the production template
8. Set DB instance identifier as PROJECTDB
9. Set username and password as PROADMIN AND GOTO1234
10. Select burstable classes and set db.t2.micro as the instance class
11. Change storage to General Purpose and allocated as 20 GB
12. Disable storage autoscaling option, select do not create a standby instance, for VPC go with default VPC, default subnet group, no preference for availability zone and default database port
13. Change initial database name to PROJECTINSTANCE
14. Disable automatic backups, enhanced monitoring and disable deletion protection
15. Click on Create database.
16. The database may take some time to become ready.
17. Go to the security group of your RDS instance and edit the default rule. Change the source to security group of your EC2 Instance.

**Endpoint :** projectinstance.cyks1hqcx4yo.us-east-1.rds.amazonaws.com

**Port: 3306**

**Availability zone: us-east-1b**

**Install an Apache web server with PHP**

1. Connect to the EC2 instance that you have already created.
2. Update the software/fixes bugs with using command

**sudo yum update –y**

1. After the updates complete, install the PHP software using command

**sudo amazon-linux-extras install -y lamp-mariadb10.2-php7.2 php7.2**

1. Install the Apache web server and start web server using command

**sudo yum install -y httpd**

**sudo systemctl start httpd**

1. Configure the web server to start with each system boot

**sudo systemctl enable httpd**

1. To allow ec2-user to manage files in the default root directory for your Apache web server, modify the ownership and permissions of the /var/www directory
2. add a group named www to your EC2 instance. Then you give that group ownership of the /var/www directory and add write permissions for the group. Any members of that group can then add, delete, and modify files for the web server
3. To set file permissions for the Apache web server

**sudo groupadd www**

**sudo usermod -a -G www ec2-user**

**exit**

1. Log back in again and verify that the www group exists with the groups command

**groups**

1. Change the group ownership of the /var/www directory and its contents to the www group.

**sudo chgrp -R www /var/www**

1. Change the directory permissions of /var/www and its subdirectories to add group write permissions and set the group ID on subdirectories created in the future

**sudo chmod 2775 /var/www**

**find /var/www -type d -exec sudo chmod 2775 {} +**

1. Recursively change the permissions for files in the /var/www directory and its subdirectories to add group write permissions

**find /var/www -type f -exec sudo chmod 0664 {} +**

## Connect your Apache web server to your DB instance

1. **While still connected to your EC2 instance, change the directory to /var/www and create a new subdirectory named inc**

**cd /var/www**

**mkdir inc**

**cd inc**

1. **Create a new file in the inc directory named dbinfo.inc, and then edit the file by calling nano**

**dbinfo.inc**

**nano dbinfo.inc**

1. Add the following contents to the dbinfo.inc file

<?php

define('DB\_SERVER', ' projectinstance.cyks1hqcx4yo.us-east-1.rds.amazonaws.com ');

define('DB\_USERNAME', 'proadmin');

define('DB\_PASSWORD', 'goto1234');

define('DB\_DATABASE', 'employee');

?>

1. Save and close the dbinfo.inc file.
2. Change the directory to /var/www/html

**cd /var/www/html**

1. Create a new file in the html directory named **Project1**.php, and then edit the file

**Project1.php**

**nano Project1.php**

1. Add the following contents to the **Project1**.php file

<?php include "../inc/dbinfo.inc"; ?>

<html>

<body>

<h1>Sample page</h1>

<?php

$connection = mysqli\_connect(DB\_SERVER, DB\_USERNAME, DB\_PASSWORD, DB\_DATABASE);

if (mysqli\_connect\_errno()) echo "Failed to connect to MySQL: " . mysqli\_connect\_error();

$employee\_code = htmlentities($\_POST['emp\_code']);

$employee\_name = htmlentities($\_POST['emp\_name']);

$employee\_dept = htmlentities($\_POST['emp\_dept']);

if (strlen($employee\_name) || strlen($employee\_dept)) {

AddEmployee($connection, $employee\_name, $employee\_ dept, $employee\_code);

}

?>

<form action=”proj1.php” method="POST">

<table border="0">

<tr>

<td>ID</td>

<td>NAME</td>

<td>DEPARTMENT</td>

</tr>

<tr>

<td>

<input type="text" name="CODES" maxlength="45" size="30" />

</td>

<td>

<input type="text" name="NAME" maxlength="45" size="30" />

</td>

<td>

<input type="text" name="DEPT" maxlength="90" size="60" />

</td>

<td>

<input type="submit" value="Add Data" />

</td>

</tr>

</table>

</form>

<!-- Display table data. -->

<table border="1" cellpadding="2" cellspacing="2">

<tr>

<td>ID</td>

<td>NAME</td>

<td>DEPARTMENT</td>

</tr>

<?php

$result = mysqli\_query($connection, "SELECT \* FROM employee\_det");

while($query\_data = mysqli\_fetch\_row($result)) {

echo "<tr>";

echo "<td>",$query\_data[0], "</td>",

"<td>",$query\_data[1], "</td>",

"<td>",$query\_data[2], "</td>";

echo "</tr>";

}

?>

</table>

<?php

mysqli\_free\_result($result);

mysqli\_close($connection);

?>

</body>

</html>

<?php

function AddEmployee($connection, $name, $DEPT,$de) {

$n = mysqli\_real\_escape\_string($connection, $name);

$a = mysqli\_real\_escape\_string($connection, $DEPT);

$b = mysqli\_real\_escape\_string($connection, $de);

$query = "INSERT INTO employee\_det (emp\_code,emp\_name, emp\_dept) VALUES ('”.$b.”','”.$n.”','”.$a.”');";

if(!mysqli\_query($connection, $query)) echo("<p>Error adding employee data.</p>");

}

?>

Save and close the project1.php file

Verify that your web server successfully connects to your DB instance by opening a web browser and browsing to

[**http://ec2-54-175-126-31.compute-1.amazonaws.com/proj1.php**](http://ec2-54-175-126-31.compute-1.amazonaws.com/proj1.php)

