**(3) Create an RDS connection with EC2 instance and use it to create an SQL database and a sample table.**

**Theory:**

**RDS:**

Amazon Relational Database Service (RDS) is a managed SQL database service provided by Amazon. Amazon RDS is a service that provides database connectivity through the Internet. RDS makes it very simple and easy to set up a relational database in the cloud.

Instead of concentrating on database features, you can concentrate more on the application to provide high availability, security, and compatibility. RDS is a fully managed RDBMS service.

**Benefits of Amazon RDS**

1. Reduced Administration Burden
2. Cost-effective
3. Security
4. High Availability and Durability
5. Scalability
6. Free Tier

**Creating a MySQL RDS Instance and Connecting It to MySQL Shell**

**Step 1 :** Click on RDS in the Services drop-down

**Step 2 :** Click on **Create database**. Then, choose **MySQL** database engine.

**Step 3 :** now we have to provide the **DB instance identifier**, **Master username**, which is given as intellipaat here, and **Master password**. Then, click on **Next.**

**Step 4 : Now click on create database,wait until the database is created and available.**

**Step 5 : Steps for lauch instances:**

**Step 1: Set up an EC2 instance**

If at some point in the future, you wanted to create an application using the resources you’ve stored on S3, you’ll need to create an instance EC2.

**Step 2 : Choosing an AMI (Amazon Machine Image)**

An AMI is a template that is used to create a new instance—or virtual machine—based on user requirements. The AMI will contain information about the software, operating system, volume, and access permissions. There are two types of AMIs:

**Step 3 : Choosing an instance type**

An instance type specifies the hardware specifications that are required in the machine from the previous step.Instance types are fixed, and their configurations cannot be altered.

**Step 4 : Configure Instance**

You have to specify the number of instances, purchasing options, the kind of network, the subnet, assign a public IP, set the [IAM](https://www.simplilearn.com/tutorials/aws-tutorial/aws-iam) role, the shutdown behavior, etc. On that note, stopping the system and terminating the system under ‘Shutdown behavior’ are completely different things.

**Step 5 : Adding Storage**

You’re tasked with deciding the type of storage.The size (in GBs), volume type, where the disk is mounted, and whether the volume needs to be encrypted needs to be specified. Free users get to access up to 30 GBs of SSD or magnetic storage (which can be found under ‘Volume Type’).

**Step 6 : Adding tags**

This helps to identify instances more quickly.

**Step 7 : Configuring security groups**

These are used to specify rules based on which users are given access to the EC2 instance. You set up the type of security, protocol, the port range, and source (from where the incoming traffic is coming from). Incoming traffic has to be explicitly specified, and outgoing traffic is open.

**Step 9 : Review**

Click on ‘Launch’ and the instance is created.

**Step 6 :** Now go to rds and select the created database and in connectivity and security we have set up EC2 connection,click that option.Now select the Instances that was created earlier and click continue.Now review and confirm page will be displayed,now click next.

Connection was successfully setup between RDS database and EC2 instances

**Step 7 :** Now connect the instance and before installing we have to update the system using the command “sudo yum update -y” and now install mysql using the command “sudo yum install mysql”

**Step 8 :** Now connect the database to the instances using the command

“mysql -h database\_link -P port\_number -u username -p”

Now enter the password for authentication purpose.

**Step 9 :** Now check whether the connection was established completely or not using any sql command

“SELECT CURRENT\_TIMESTAMP;”

**Step 10 :** Now create database using the command:

“CREATE DATABASE database\_name;”

Now run the command “USE database\_name;”

**Step 11 :** Now create a table using the command

*CREATE TABLE table\_name(*

column1 datatype*,*    column2 datatype*,*    column3 datatype*,  
   ....*

*);*

**Step 12 :** To check whether the tables was created or not use the command “SHOW TABLES;”.

**Step 13 :** Now insert the data into tables using the insert command.

INSERT INTO table\_name (column1, column2, column3, ...)

VALUES (value1, value2, value3, ...);

**Step 14 :** To display all the data in the table use the command

“SELECT \* FROM table\_name;”