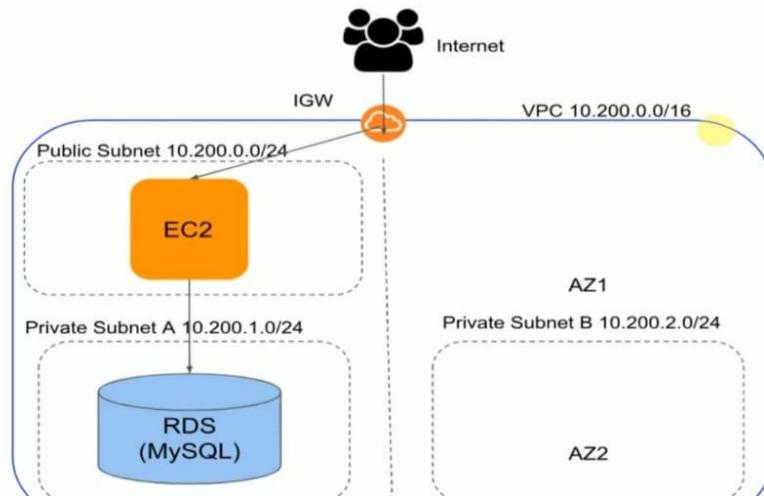
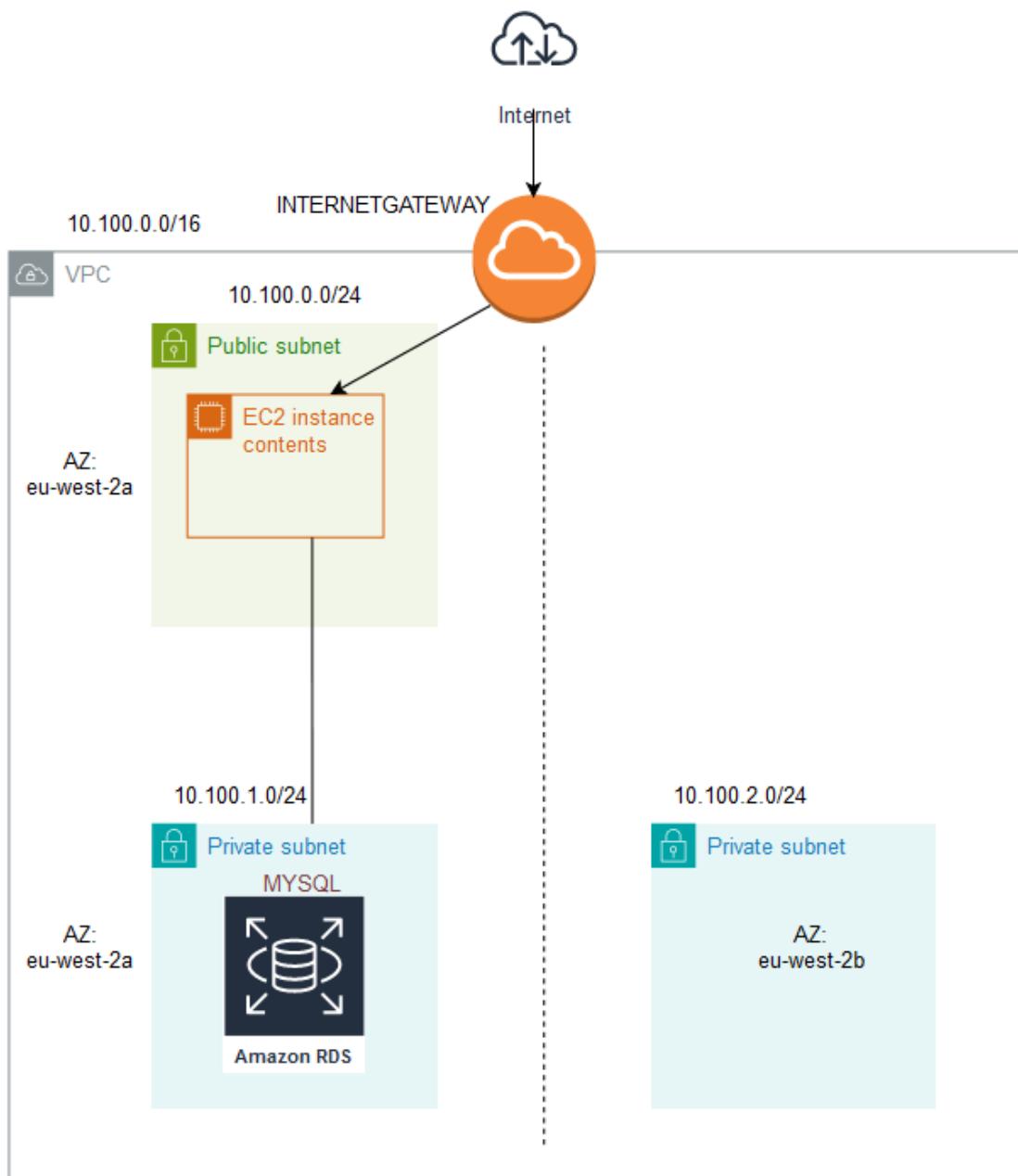


LAUNCH MYSQL RDS AND CONNECT:

1. Create a VPC, Internet Gateway
2. Create 1 Public subnet and 2 private subnets in different AZs
3. Go to RDS -> Create DB Subnet group and add above 2 private subnets
- 4 Launch MySQL instance (db.t2.micro, Single AZ)
- 5 Go to RDS Security group and allow port 3306 access to VPC CIDR
6. Launch EC2 instance in Public Subnet with SSH (22) access for your IP
7. Login to EC2 over SSH and execute following commands (use your details)
> sudo yum install mysql
> mysql -h <your db instance endpoint> -P 3306 -u master -p
> show databases;
> use mydb:
> create table awstraining (name VARCHAR(30), batch INT(2), phone VARCHAR(10), email VARCHAR(30));
> insert into awstraining values ('Shrikanth C R', 2, 8884420120, 'shrikanthcr888@amail.com');





The screenshot shows the AWS VPC dashboard with the RDS service selected. A success message at the top indicates that subnet associations were updated successfully. The main table displays one VPC entry:

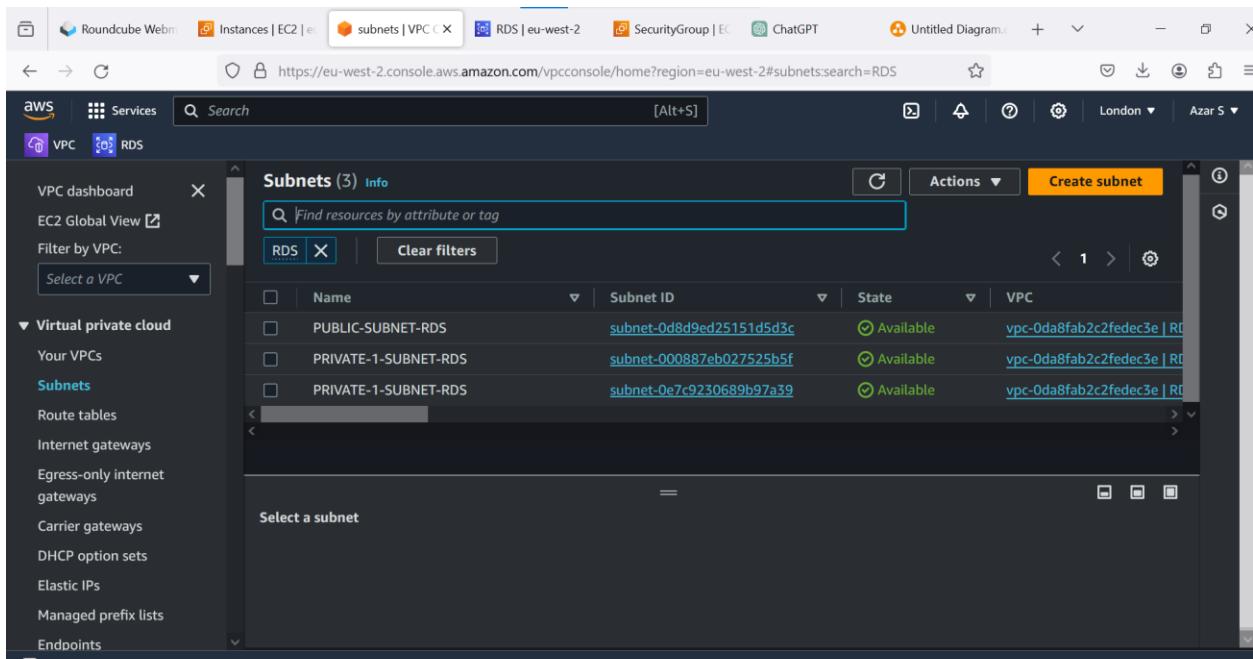
Name	VPC ID	State	IPv4 CIDR
RDS	vpc-0da8fab2c2fedec3e	Available	10.100.0.0/16

Below the table, there is a note: "Select a VPC above".

The screenshot shows the AWS VPC dashboard with the Internet gateways service selected. The main table displays one internet gateway entry:

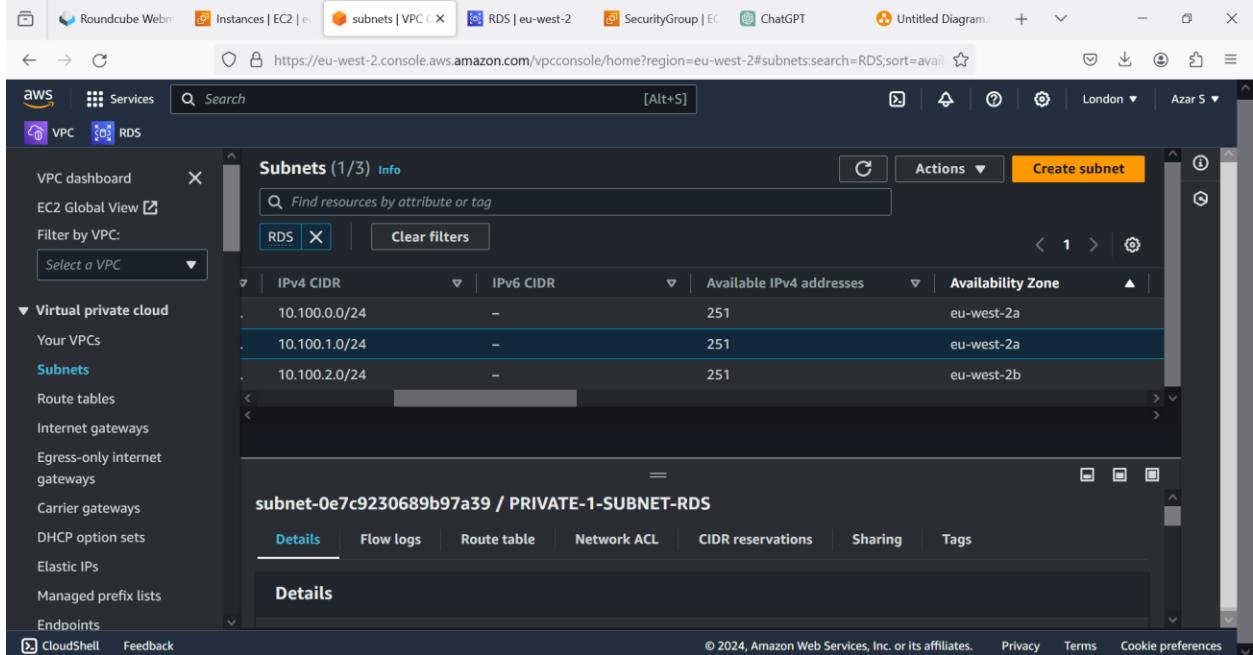
Name	Internet gateway ID	State	VPC ID
RDS	igw-0f8e56bc24cec84d9	Attached	vpc-0da8fab2c2fedec3e

Below the table, there is a note: "Select an internet gateway above".



The screenshot shows the AWS VPC Subnets list for the eu-west-2 region. There are three subnets listed:

Name	Subnet ID	State	VPC
PUBLIC-SUBNET-RDS	subnet-0d8d9ed25151d5d3c	Available	vpc-0da8fab2c2fedec3e RDS
PRIVATE-1-SUBNET-RDS	subnet-000887eb027525b5f	Available	vpc-0da8fab2c2fedec3e RDS
PRIVATE-1-SUBNET-RDS	subnet-0e7c9230689b97a39	Available	vpc-0da8fab2c2fedec3e RDS



The screenshot shows the details of the subnet subnet-0e7c9230689b97a39, which is part of the PRIVATE-1-SUBNET-RDS. The subnet has three CIDR ranges: 10.100.0.0/24, 10.100.1.0/24, and 10.100.2.0/24. It is associated with the eu-west-2a and eu-west-2b availability zones.

IPv4 CIDR	IPv6 CIDR	Available IPv4 addresses	Availability Zone
10.100.0.0/24	-	251	eu-west-2a
10.100.1.0/24	-	251	eu-west-2a
10.100.2.0/24	-	251	eu-west-2b

The screenshot shows the AWS VPC Route Tables page. The left sidebar is collapsed. The main area displays a table of route tables:

Name	Route table ID	Explicit subnet associations	Edge associations
RDS-RT-PUBLIC	rtb-08e2fda2b884bf2ae	subnet-0d8d9ed25151d5...	-
RDS-RT-PRIVATE	rtb-0fcf6a7ff940420fc	2 subnets	-

The screenshot shows the same AWS VPC Route Tables page, but the RDS-RT-PUBLIC route table is selected. The main area displays the 'Routes' tab of the selected route table:

Destination	Target	Status	Propagated
0.0.0.0/0	igw-0f8e56bc24cec84d9	Active	No
10.100.0.0/16	local	Active	No

The screenshot shows the AWS VPC Route Tables page. The left sidebar is collapsed. The main area displays two route tables:

Name	Route table ID	Explicit subnet associations	Edge associations
RDS-RT-PUBLIC	rtb-08e2fda2b884bf2ae	subnet-0d8d9ed25151d5d3c	-
RDS-RT-PRIVATE	rtb-0fcf6a7ff940420fc	2 subnets	-

Below the table, the "Subnet associations" tab is selected, showing the following subnet association:

Name	Subnet ID	IPv4 CIDR	IPv6 CIDR
PUBLIC-SUBNET-RDS	subnet-0d8d9ed25151d5d3c	10.100.0.0/24	-

The screenshot shows the AWS VPC Route Tables page. The left sidebar is collapsed. The main area displays the RDS-RT-PRIVATE route table:

Name	Route table ID	Explicit subnet associations	Edge associations
RDS-RT-PRIVATE	rtb-0fcf6a7ff940420fc	2 subnets	-

Below the table, the "Subnet associations" tab is selected, showing the following subnet associations:

Name	Subnet ID	IPv4 CIDR	IPv6 CIDR
PRIVATE-1-SUBNET-RDS	subnet-000887eb027525b5f	10.100.2.0/24	-
PRIVATE-1-SUBNET-RDS	subnet-0e7c9230689b97a39	10.100.1.0/24	-

The screenshot shows the AWS VPC Route tables page. The left sidebar is expanded to show 'Route tables' under 'Virtual private cloud'. A single route table is listed:

Name	Route table ID	Explicit subnet associations	Edge associations
RDS-RT-PRIVATE	rtb-0fcf6a7ff940420fc	2 subnets	-

Below the table, the details for 'rtb-0fcf6a7ff940420fc / RDS-RT-PRIVATE' are shown. The 'Routes' tab is selected, displaying one route:

Destination	Target	Status	Propagated
10.100.0.0/16	local	Active	No

The screenshot shows the AWS RDS Subnet groups page. The left sidebar is expanded to show 'Subnet groups' under 'Amazon RDS'. A single DB subnet group is listed:

Name	Description	Status	VPC
rds-subnet-group	RDS-SUBNET-GROUP	Complete	vpc-0da8fab2c2fedec3e

The screenshot shows the AWS RDS console interface for creating a new DB subnet group. The top navigation bar includes links for Roundcube Webmail, Instances | EC2, Route tables | VPC, RDS | eu-west-2, SecurityGroup | EC, ChatGPT, and Untitled Diagram. The main title is "Create DB subnet group". A sub-header indicates: "To create a new subnet group, give it a name and a description, and choose an existing VPC. You will then be able to add subnets related to that VPC." The "Subnet group details" section contains fields for "Name" (RDS-SUBNETGROUP) and "Description" (RDS-SUBNETGROUP). The "VPC" section allows selecting a VPC identifier. The "Add subnets" section lists subnets from the eu-west-2b and eu-west-2a VPCs, with several subnets checked. The subnets listed are: eu-west-2b (subnet-000887eb027525b5f (10.100.2.0/24), subnet-0e7c9230689b97a39 (10.100.1.0/24)), and eu-west-2a (subnet-0d8d9ed25151d5d3c (10.100.0.0/24)).

Choose the subnets that you want to add. The list includes the subnets in the selected Availability zones.

Select subnets

- subnet-000887eb027525b5f (10.100.2.0/24) X
- subnet-0e7c9230689b97a39 (10.100.1.0/24) X

For Multi-AZ DB clusters, you must select 3 subnets in 3 different Availability Zones.

Subnets selected (2)

Availability zone	Subnet ID	CIDR block
eu-west-2b	subnet-000887eb027525b5f	10.100.2.0/24
eu-west-2a	subnet-0e7c9230689b97a39	10.100.1.0/24

Create

RDS > Subnet groups

Subnet groups (1)

Name	Description	Status	VPC
rds-subnet-group	RDS-SUBNET-GROUP	Complete	vpc-0da8fab2c2fedec3e

Create DB subnet group

Amazon RDS

Databases (1)

Databases (1)

Group resources Modify Actions ▾ Restore from S3 Create database

Filter by databases

DB identifier	Status	Role	Engine	Region & AZ	Size
aurora-sandbox-1	Available	Instance	MySQL, Community	eu-west-2a	db.t2.micro

CloudShell Feedback Language

RDS > Create database

Create database

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

Engine type [Info](#)

- Aurora (MySQL Compatible)
- Aurora (PostgreSQL Compatible)

MySQL

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 64 TiB.
- Supports General Purpose, Memory Optimized, and Burstable Performance instance classes.
- Supports automated backup and point-in-time recovery.
- Supports up to 15 Read Replicas per instance, within

CloudShell Feedback Language

The screenshot shows the AWS RDS console interface. At the top, there are tabs for Roundcube Webmail, Instances | EC2, Route tables | VPC, RDS | eu-west-2, SecurityGroup | EC, ChatGPT, and Untitled Diagram. Below the tabs, the URL is https://eu-west-2.console.aws.amazon.com/rds/home?region=eu-west-2#launch-dbinstance:.

The main navigation bar includes AWS, Services (selected), Search, [Alt+S], and links for VPC, EC2, and RDS.

The left sidebar lists database engines: MySQL (selected), MariaDB, PostgreSQL, Oracle, Microsoft SQL Server, and IBM Db2.

The right panel is titled "MySQL" and provides information about MySQL, including its popularity as the most popular open-source database, its features, and a bulleted list of benefits:

- Supports database size up to 64 TiB.
- Supports General Purpose, Memory Optimized, and Burstable Performance instance classes.
- Supports automated backup and point-in-time recovery.
- Supports up to 15 Read Replicas per instance within a region.

The bottom section shows the configuration for MySQL 8.0.35. It includes a "Templates" section with options: Production, Dev/Test, and Free tier (selected). The Free tier option is described as using RDS Free Tier to develop new applications, test existing ones, or gain hands-on experience with Amazon RDS. It also includes an "Info" link.

The "Availability and durability" section shows deployment options: Single DB instance (not supported for Multi-AZ DB cluster snapshot).

At the bottom, there are links for CloudShell, Feedback, Language, and the footer text: © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences.

The screenshot shows the AWS RDS Settings page. In the 'DB instance identifier' field, the value 'RDS-DATABASE' is entered. A tooltip or validation message indicates that the identifier must be unique across all DB instances owned by the current AWS account in the current Region.

The screenshot shows the AWS RDS Settings page. The 'Master username' field contains 'admin'. Under 'Credentials management', the 'Self managed' option is selected. A tooltip for 'Self managed' explains that users can create their own password or have RDS generate one.

Connectivity Info

Compute resource
Choose whether to set up a connection to a compute resource for this database. Setting up a connection will automatically change connectivity settings so that the compute resource can connect to this database.

- Don't connect to an EC2 compute resource
Don't set up a connection to a compute resource for this database. You can manually set up a connection to a compute resource later.
- Connect to an EC2 compute resource
Set up a connection to an EC2 compute resource for this database.

Virtual private cloud (VPC) Info
Choose the VPC. The VPC defines the virtual networking environment for this DB instance.

RDS (vpc-0da8fab2c2fdec3e)
3 Subnets, 2 Availability Zones

Only VPCs with a corresponding DB subnet group are listed.

ⓘ After a database is created, you can't change its VPC.

DB subnet group Info

Choose the DB subnet group. The DB subnet group defines which subnets and IP ranges the DB instance can use in the VPC that you selected.

rds-subnet-group
2 Subnets, 2 Availability Zones

Public access Info

- Yes
RDS assigns a public IP address to the database. Amazon EC2 instances and other resources outside of the VPC can connect to your database. Resources inside the VPC can also connect to the database. Choose one or more VPC security groups that specify which resources can connect to the database.
- No
RDS doesn't assign a public IP address to the database. Only Amazon EC2 instances and other resources inside the VPC can connect to your database. Choose one or more VPC security groups that specify which resources can connect to the database.

VPC security group (firewall) Info
Choose one or more VPC security groups to allow access to your database. Make sure that the security group rules allow the appropriate incoming traffic.

Choose existing
Choose existing VPC security groups

Create new
Create new VPC security group

MySQL

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 64 TiB.
- Supports General Purpose, Memory Optimized, and Burstable Performance instance classes.
- Supports automated backup and point-in-time recovery.
- Supports up to 15 Read Replicas per instance, within

The screenshot shows the AWS RDS console interface. The top navigation bar includes links for Roundcube Webmail, Instances | EC2, Route tables | VPC, RDS | eu-west-2, SecurityGroup | EC, ChatGPT, and Untitled Diagram. The main menu bar has Services, Search, and a user dropdown for London and Azar S.

In the center, there's a form for creating a VPC security group:

- VPC security group (firewall) Info**: A note states "RDS doesn't assign a public IP address to the database. Only Amazon EC2 instances and other resources inside the VPC can connect to your database. Choose one or more VPC security groups that specify which resources can connect to the database." Below this are two options: "Choose existing" and "Create new".
- New VPC security group name**: A text input field containing "RDS-VPC-SG".
- Availability Zone Info**: A dropdown menu set to "eu-west-2a".
- RDS Proxy**: A note about RDS Proxy and its benefits. An unchecked checkbox for "Create an RDS Proxy" is present, with a note below it stating: "RDS automatically creates an IAM role and a Secrets Manager secret for the proxy. RDS Proxy has additional costs. For more information, see [Amazon RDS Proxy pricing](#)".
- Certificate authority - optional Info**: A note about certificate authorities and their validation.

On the right side, a sidebar titled "MySQL" provides information about the MySQL database service, including its popularity, features like support for up to 64 TiB, and automated backup and recovery.

This screenshot shows the continuation of the RDS instance creation process. The left panel displays the "Estimated monthly costs" for the Amazon RDS Free Tier, listing benefits such as 750 hrs of Amazon RDS in a Single-AZ db.t2.micro, db.t3.micro or db.t4g.micro Instance, 20 GB of General Purpose Storage (SSD), and 20 GB for automated backup storage and any user-initiated DB Snapshots. It also links to "Learn more about AWS Free Tier".

The right panel continues the MySQL information sidebar, reiterating its features and benefits.

At the bottom of the screen, there are "Cancel" and "Create database" buttons.

The screenshot shows the AWS RDS Databases page. The left sidebar has 'Databases' selected. The main area displays a table for 'Databases (1)'. The single entry is for a database named 'rds' with the following details:

DB identifier	Status	Role	Engine	Region & AZ	Size
rds	Available	Instance	MySQL Community	eu-west-2a	db.t3.micro

The screenshot shows the AWS RDS Connectivity & security page for the 'rds' database. The left sidebar has 'Databases' selected. The main area has tabs for 'Connectivity & security', 'Monitoring', 'Logs & events', 'Configuration', and 'Maintenance & backups'. The 'Connectivity & security' tab is active. It displays the following information:

Endpoint & port	Networking	Security
Endpoint rds.cfku2ea6ke3d.eu-west-2.rds.amazonaws.com	Availability Zone eu-west-2a VPC RDS (vpc-0da8fab2c2fdec3e)	VPC security groups rds-vpc-sg (sg-0d8ea7e36c43f5341) Active
Port 3306	Subnet group rds-subnet-group Subnets subnet-0e7c9230689b97a 39 subnet-000887eb027525b	Publicly accessible No Certificate authority Info rds-ca-rsa2048-g1 Certificate authority date May 22, 2061, 05:16 (UTC+05:30)

The screenshot shows the AWS EC2 Security Groups page. A single security group named "rds-vpc-sg" is listed, associated with VPC ID "vpc-0da8fab2c". The search bar at the top contains the identifier "sg-0d8ea7e36c43f5341".

The screenshot shows the "Edit inbound rules" section of the AWS EC2 ModifyInboundSecurityGroupRules page. It displays a single inbound rule:

- Security group rule ID:** sgr-07e41b026ed85fc8b
- Type:** MySQL/Aurora
- Protocol:** TCP
- Port range:** 3306
- Source:** 10.100.0.0/16
- Description - optional:** (empty)

Buttons at the bottom include "Add rule", "Cancel", "Preview changes", and "Save rules".

```
[root@ip-10-100-0-140 ec2-user]# mysql -h rds.cfkuea6ke3d.eu-west-2.rds.amazonaws.com -P 3306 -u admin -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MySQL connection id is 40
Server version: 8.0.35 Source distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

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

MySQL [(none)]> show databases;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| simtekway |
| sys |
+-----+
5 rows in set (0.00 sec)

MySQL [(none)]> create database Simtekway
->
->
->
->
->
->
->
-> ;
Query OK, 1 row affected (0.00 sec)
```

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```
MySQL [(none)]> show databases;
+-----+
| Database |
+-----+
| Simtekway |
| information_schema |
| mysql |
| performance_schema |
| simtekway |
| sys |
+-----+
6 rows in set (0.00 sec)

MySQL [(none)]> use Simtekway;
Database changed
MySQL [Simtekway]> show tables;
Empty set (0.00 sec)

MySQL [Simtekway]> create tables awstraining (name VARCHAR(30), batch INT(2), phone VARCHAR(30), email VARCHAR(30));
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'tables awstraining (name VARCHAR(30), batch INT(2), phone VARCHAR(30), email VAR' at line 1
MySQL [Simtekway]> create table awstraining (name VARCHAR(30), batch INT(2), phone VARCHAR(30), email VARCHAR(30));
Query OK, 0 rows affected, 1 warning (0.03 sec)

MySQL [Simtekway]> show tables;
+-----+
| Tables_in_Simtekway |
+-----+
| awstraining |
+-----+
1 row in set (0.00 sec)
```

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The screenshot shows a terminal window titled 'rds' with the session name '2.rds'. The terminal interface includes a menu bar with 'Terminal', 'Sessions', 'View', 'X server', 'Tools', 'Games', 'Settings', 'Macros', 'Help', and various icons for session management. The main pane displays MySQL commands and their results:

```

MySQL [Simtekway]> show tables;
+-----+
| Tables_in_Simtekway |
+-----+
| awstraining |
+-----+
1 row in set (0.00 sec)

MySQL [Simtekway]> insert into awstraining values('Shrikanth C R' , 2 , '8884420120' , 'shrikanthcr888@gmail.com');
Query OK, 1 row affected (0.01 sec)

MySQL [Simtekway]> select * from awstraining;
+-----+-----+-----+
| name | batch | phone | email |
+-----+-----+-----+
| Shrikanth C R | 2 | 8884420120 | shrikanthcr888@gmail.com |
+-----+-----+-----+
1 row in set (0.00 sec)

MySQL [Simtekway]> insert into awstraining values('MAADHU M.G' , 2 , '9972591453' , 'maadhumg3@gmail.com');
Query OK, 1 row affected (0.00 sec)

MySQL [Simtekway]> select * from awstraining;
+-----+-----+-----+
| name | batch | phone | email |
+-----+-----+-----+
| Shrikanth C R | 2 | 8884420120 | shrikanthcr888@gmail.com |
| MAADHU M.G | 2 | 9972591453 | maadhumg3@gmail.com |
+-----+-----+-----+
2 rows in set (0.00 sec)

MySQL [Simtekway]>

```

At the bottom of the terminal window, there is a message: "UNREGISTERED VERSION - Please support MobaXterm by subscribing to the professional edition here: <https://mobaxterm.mobatek.net>".

SQL COMMANDS:

Connect with ec2 :

```
mysql -h rds.cfku2ea6ke3d.eu-west-2.rds.amazonaws.com -P 3306 -u admin -p admin123
```

Create Database:

```
create database simtekway;
```

```
show databases;
```

```
use simtekway;
```

Create Table:

```
create table awstraining (name VARCHAR(30), batch INT(2), phone VARCHAR(30), email VARCHAR(30));
```

```
show tables;
```

```
insert into awstraining values('Shrikanth C R' , 2 , '8884420120' , 'shrikanthcr888@gmail.com');
```

```
insert into awstraining values('MAADHU M.G' , 2 , '9972591453' , 'maadhumg3@gmail.com');
```

```
select * from awstraining;
```

```
MySQL [Simtekway]> select * from awstraining;
+-----+-----+-----+
| name      | batch | phone      | email
+-----+-----+-----+
| Shrikanth C R |    2 | 8884420120 | shrikanthcr888@gmail.com |
| MAADHU M.G   |    2 | 9972591453 | maadhumg3@gmail.com  |
+-----+-----+-----+
2 rows in set (0.00 sec)
```