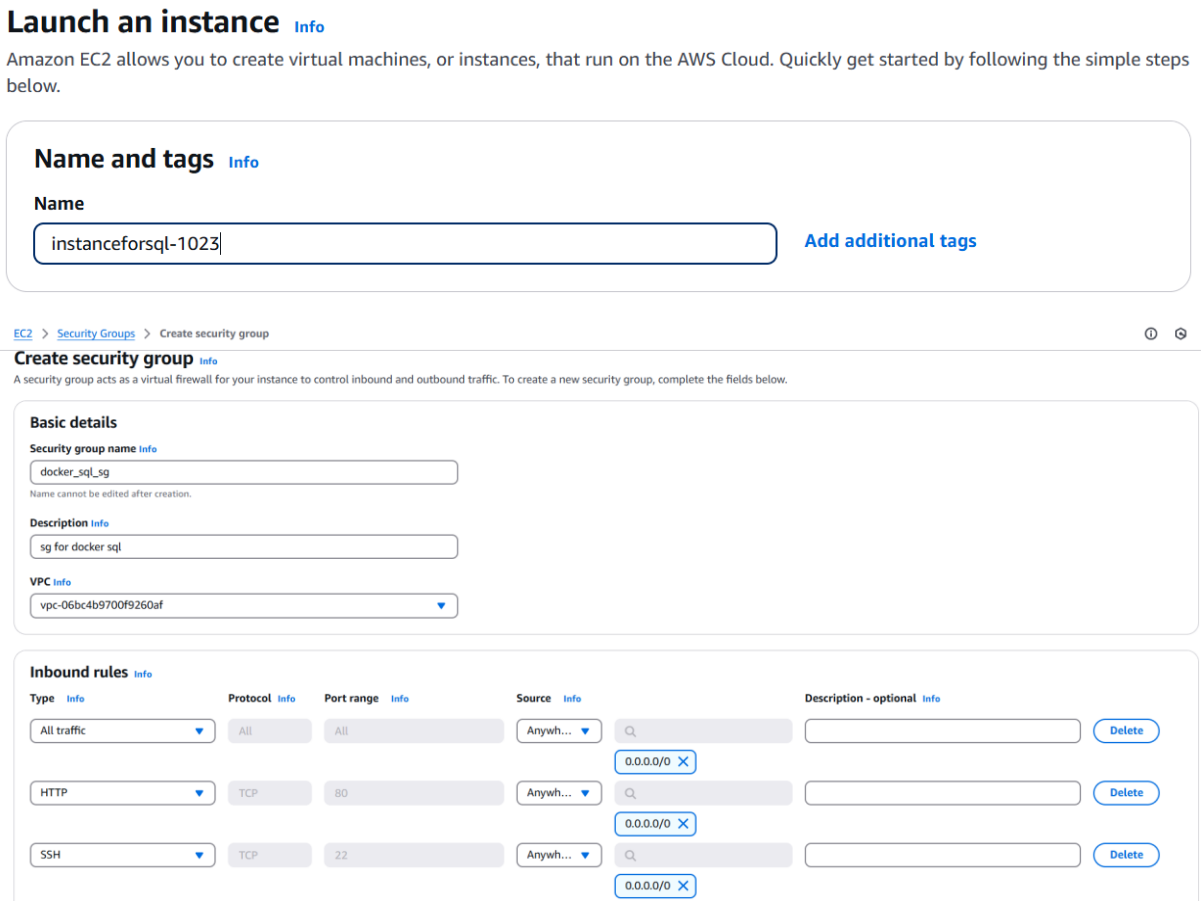
DEMO : SETTING UP A MYSQL CONTAINER AND CONFIGURING DATABASE ACCESS VIA MYSQL CLIENT TO INTERACT WITH RUNNING CONTAINERS

STEP 1: Launch Instance

- Name: instanceforsql-1023
- AMI (OS): Ubuntu Server 24.04 LTS
- Instance type: t2.micro
- Key pair: dockrkey (KP type: RSA, Private key: .pem)
- Security group: All traffic, HTTP, SSH
- Launch Instance



STEP 2: Connect Instance

Commands:

- sudo -I [go into root directory]

1. Install Docker :

- sudo apt-get update
- sudo apt-get install ca-certificates curl
- sudo install -m 0755 -d /etc/apt/keyrings
- sudo curl -fsSL https://download.docker.com/linux/ubuntu/gpg -o /etc/apt/keyrings/docker.asc
- sudo chmod a+r /etc/apt/keyrings/docker.asc

- echo \
  "deb [arch=$(dpkg --print-architecture) signed-by=/etc/apt/keyrings/docker.asc] https://download.docker.com/linux/ubuntu \
  $(. /etc/os-release && echo "${UBUNTU_CODENAME:-$VERSION_CODENAME}") stable" | \
  sudo tee /etc/apt/sources.list.d/docker.list > /dev/null
- sudo apt-get update

2. Install Docker Packages

- sudo apt-get install docker-ce docker-ce-cli containerd.io docker-buildx-plugin docker-compose-plugin

3. Check version of docker installed

- docker -v

```
root@ip-172-31-6-201:~# docker -v
Docker version 28.0.1, build 068a01e
```

4. Pull the MySQL Docker Image

- docker pull mysql

```
root@ip-172-31-6-201:~# docker pull mysql
Using default tag: latest
latest: Pulling from library/mysql
43759093d4f6: Pull complete
d255dceb9ed5: Pull complete
23d22e42ea50: Pull complete
431b106548a3: Pull complete
2be0d473cadf: Pull complete
f56a22f949f9: Pull complete
277ab5f6ddde: Pull complete
df1ba1ac457a: Pull complete
cc9646b08259: Pull complete
893b018337e2: Pull complete
Digest: sha256:146682692a3aa409eae7b7dc6a30f637c6cb49b6ca901c2cd160becc81127d3b
Status: Downloaded newer image for mysql:latest
docker.io/library/mysql:latest
```

5. Run a MySQL Container : (create and start the container)

docker run --name (any name of container) deepu -e MYSQL_ROOT_PASSWORD=shinchan (set any password) -e MYSQL_DATABASE=employeedb (any name of database) -p 3306:3306 -d mysql:latest

```
root@ip-172-31-6-201:~# docker run --name deepu -e MYSQL_ROOT_PASSWORD=shinchan -e MYSQL_DATABASE=employeedb -p 3306:3306 -d mysql:latest
f22832f47f90da643109fc058880c31b60e6b0ceafa510f98b299eb91839493c
```

6. Check if container is running :

- docker ps

```
root@ip-172-31-6-201:~# docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED         STATUS         PORTS                                                  NAMES
f22832f47f90   mysql:latest   "docker-entrypoint.s…"   19 seconds ago   Up 18 seconds   0.0.0.0:3306->3306/tcp, [::]:3306->3306/tcp, 33060/tcp   deepu
root@ip-172-31-6-201:~#
```

7. Access MySQL Inside the Container

- docker exec -it deepu (name of container) mysql -u root -p
- Enter password : shinchan

```
root@ip-172-31-6-201:~# docker exec -it deepu mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 9
Server version: 9.2.0 MySQL Community Server - GPL

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affiliates. Other names may be trademarks of their respective
owners.

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

8. Create a table in mysql and enter data in it:

- create database employeedata;
- use employeedata;
- create table employee(emp_id int unique, emp_name varchar(20), emp_sal int);
- insert into employee values(1,"Debo",20000),(2,"Ella",2390000),(3,"JoJo",12900);
- select * from employee;

```
mysql> select * from employee;
+--------+----------+---------+
| emp_id | emp_name | emp_sal |
+--------+----------+---------+
|      1 | Debo     |   20000 |
|      2 | Ella     | 2390000 |
|      3 | JoJo     |   12900 |
+--------+----------+---------+
3 rows in set (0.00 sec)
```

9. We need to exit from mysql and container :

exit

exit

```
mysql> exit
Bye
root@ip-172-31-6-201:~# exit
logout
ubuntu@ip-172-31-6-201:~$
```

Access MySQL from Outside the Container:

10. Install MySQL client (if not installed):

- sudo apt install mysql-client -y [bash]

```
ubuntu@ip-172-31-6-201:~$ sudo apt install mysql-client -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  mysql-client-8.0 mysql-client-core-8.0 mysql-common
```

11. Connect to MySQL from the host machine:

- mysql -h 127.0.0.1 -P 3306 -u root -p

```
ubuntu@ip-172-31-6-201:~$ mysql -h 127.0.0.1 -P 3306 -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 11
Server version: 9.2.0 MySQL Community Server - GPL

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```

- Enter password set (shinchan)
- use employeedata;
- select * from employee;

```
mysql> use employeedata;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> select * from employee;
+--------+----------+---------+
| emp_id | emp_name | emp_sal |
+--------+----------+---------+
|      1 | Debo     |   20000 |
|      2 | Ella     | 2390000 |
|      3 | JoJo     |   12900 |
+--------+----------+---------+
3 rows in set (0.00 sec)
```

Database Data accessed outside the container ----------