

## School of Computer Science, Engineering and Applications(SCSEA)

### B.C.A. TY (CCSA)

### Subject: Containers & Orchestration

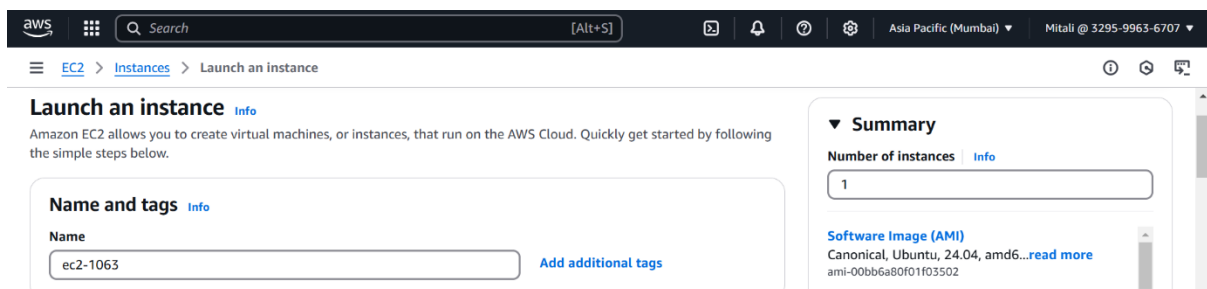
**Name of the Student:** Mitali Bhattad

**PRN:** 20220801063

**Title of Practical:** Setting Up a MySQL Container and Configuring Database Access via MySQL Client to Interact with Running Containers

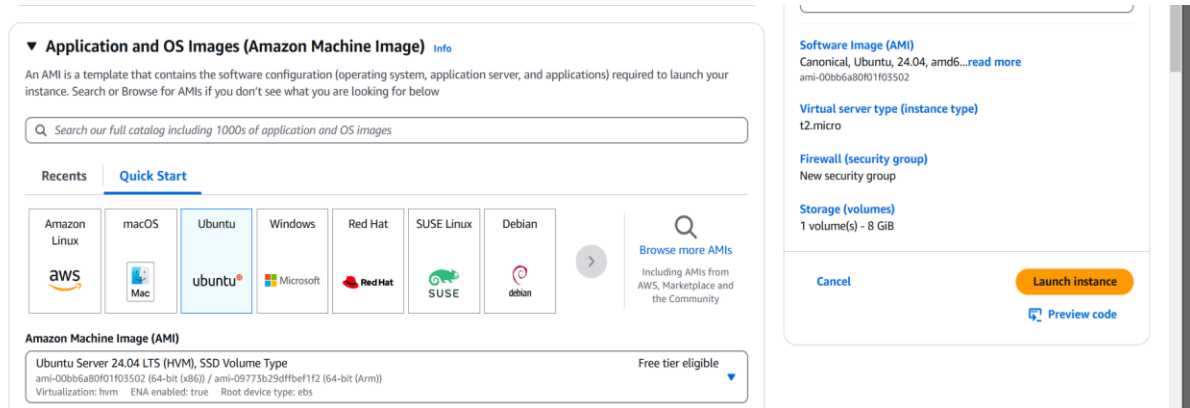
#### Step1: Launch an EC2 Instance

##### - Name the Instance



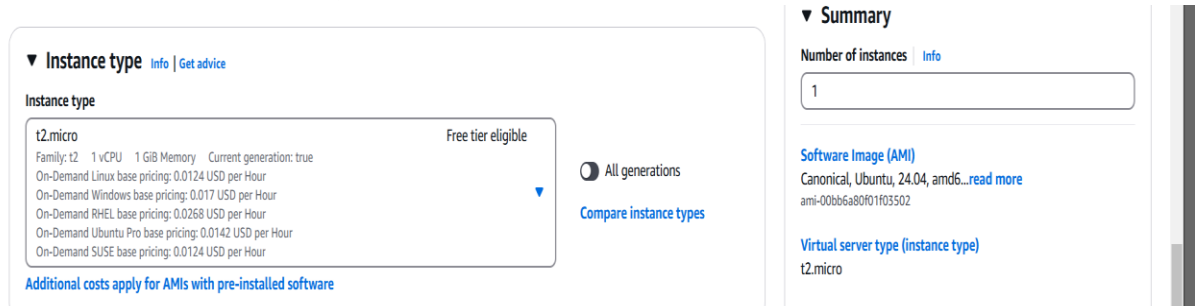
The screenshot shows the AWS Management Console 'Launch an instance' page. The 'Name and tags' section has a text input field containing 'ec2-1063'. The 'Summary' section on the right shows 'Number of instances' as 1 and 'Software Image (AMI)' as 'Canonical, Ubuntu, 24.04, amd64...read more'.

##### - Choose AMI: Ubuntu



The screenshot shows the 'Choose AMI' page. Under 'Application and OS Images (Amazon Machine Image)', the 'Quick Start' tab is active, showing various OS options. 'Ubuntu' is selected. Below, the 'Amazon Machine Image (AMI)' section shows 'Ubuntu Server 24.04 LTS (HVM), SSD Volume Type' as the selected AMI. The 'Summary' section on the right shows 'Software Image (AMI)' as 'Canonical, Ubuntu, 24.04, amd64...read more'.

##### - Select the instance type: t2 micro



The screenshot shows the 'Select instance type' page. The 'Instance type' section shows 't2.micro' as the selected instance type. The 'Summary' section on the right shows 'Number of instances' as 1 and 'Software Image (AMI)' as 'Canonical, Ubuntu, 24.04, amd64...read more'.

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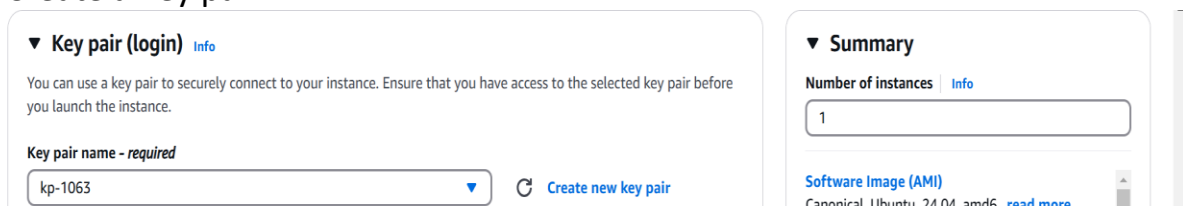
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**- Create a Key pair**



▼ Key pair (login) [Info](#)

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name - *required*

kp-1063 [Create new key pair](#)

▼ Summary

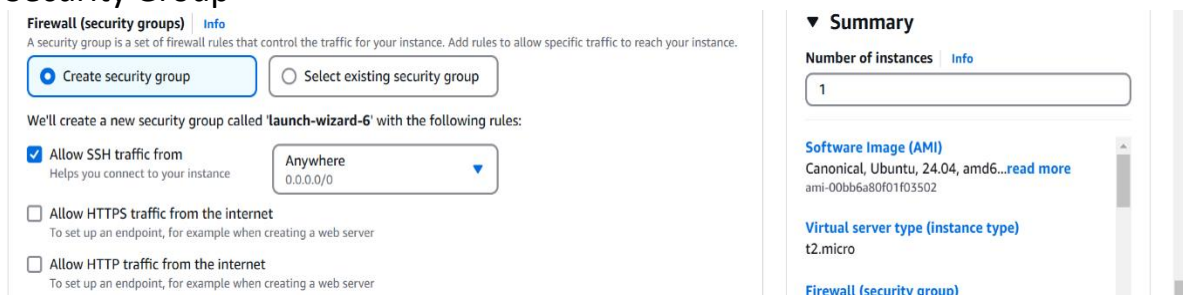
Number of instances [Info](#)

1

Software Image (AMI)

Canonical, Ubuntu, 24.04, amd64...[read more](#)

**- Security Group**



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

We'll create a new security group called 'launch-wizard-6' with the following rules:

☒ Allow SSH traffic from

☐ Allow HTTPS traffic from the internet  
To set up an endpoint, for example when creating a web server

☐ Allow HTTP traffic from the internet  
To set up an endpoint, for example when creating a web server

▼ Summary

Number of instances [Info](#)

1

Software Image (AMI)

Canonical, Ubuntu, 24.04, amd64...[read more](#)

ami-00bb6a80f01f03502

Virtual server type (instance type)

t2.micro

Firewall (security group)

**- Launch the instance**

Step 2: Connect the EC2 Instance and run the following commands:

1. Switch to root user and update and upgrade system packages

- sudo -i

- sudo apt-get update && sudo apt-get upgrade -y

```
ubuntu@ip-172-31-13-88:~$ sudo -i
root@ip-172-31-13-88:~# sudo apt-get update && sudo apt-get upgrade -y
```

3. Install Docker

- sudo apt install docker.io -y

```
root@ip-172-31-13-88:~# sudo apt install docker.io -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
```

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**4. Pull mysql image**

- docker pull mysql:latest

```
root@ip-172-31-13-88:~# docker pull mysql: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
df1balac457a: Pull complete
cc9646b08259: Pull complete
893b018337e2: Pull complete
Digest: sha256:146682692a3aa409eae7b7dc6a30f637c6cb49b6ca901c2cd160becc81127d3b
Status: Downloaded newer image for mysql:latest
docker.io/library/mysql:latest
root@ip-172-31-13-88:~#
```

**5. Run Mysql Container**

- docker run --name mysql\_container -e MYSQL\_ROOT\_PASSWORD=MITALI -p 3306:3306 -d mysql:latest

```
root@ip-172-31-13-88:~# docker run --name mysql_container -e MYSQL_ROOT_PASSWORD=MITALI -p 3306:3306 -d mysql:latest
3cale883c5981a9bd5412ec872c8cab74bd0572b14626db4c2ecfc2c6751c99f
```

**6. Execute the following command to access the MySQL shell inside a running Docker container:**

- docker exec -it mysql\_container mysql -u root -p

```
root@ip-172-31-13-88:~# docker exec -it mysql_container 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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owners.

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

mysql>
```



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**7. Create a table and insert values in it**

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

mysql> USE HELLO;
Database changed
mysql> CREATE TABLE SUBJECTS (
  -> Subject varchar(50),
  -> Credit int
  -> );
Query OK, 0 rows affected (0.03 sec)

mysql> INSERT INTO SUBJECTS (Subject,Credit) VALUES ('Cloud Computing', 6), ('Python', 6);
Query OK, 2 rows affected (0.02 sec)
Records: 2 Duplicates: 0 Warnings: 0

mysql> Select * from SUBJECTS;
+-----+-----+
| Subject          | Credit |
+-----+-----+
| Cloud Computing  | 6      |
| Python           | 6      |
+-----+-----+
2 rows in set (0.00 sec)
```

**8. Install Mysql client**

- sudo apt-get install mysql-client

```
root@ip-172-31-13-88:~# sudo apt-get install mysql-client
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
```

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9. Connect to MySQL server using the following command:

- mysql -u root -h (ip add) -P3306 -pMITALI

```
root@ip-172-31-13-88:~# mysql -u root -h 43.204.143.82 -P3306 -pMITALI
mysql: [Warning] Using a password on the command line interface can be insecure.
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 10
Server version: 9.2.0 MySQL Community Server - GPL
```

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

10. Read the content of table

```
mysql> USE HELLO;
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 SUBJECTS;
```

```
+-----+-----+
| Subject          | Credit |
+-----+-----+
| Cloud Computing  | 6      |
| Python           | 6      |
+-----+-----+
2 rows in set (0.00 sec)
```