



CLOUD COMPUTING LAB **BSE (V-B)**

Submitted By:

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Roll No:

2023-BSE-068

Submitted To:

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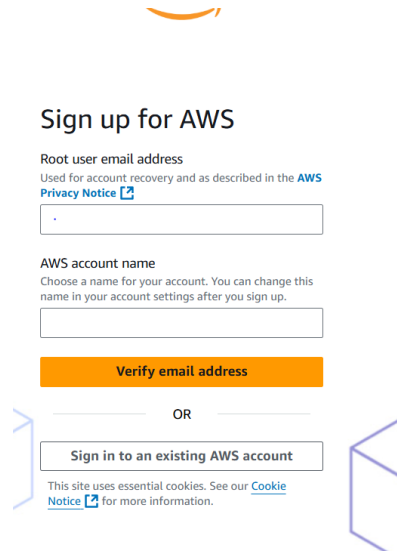
LAB 08

AWS: Account Setup, IAM, VPC Inventory,
EC2, Docker & Gitea

Task 1

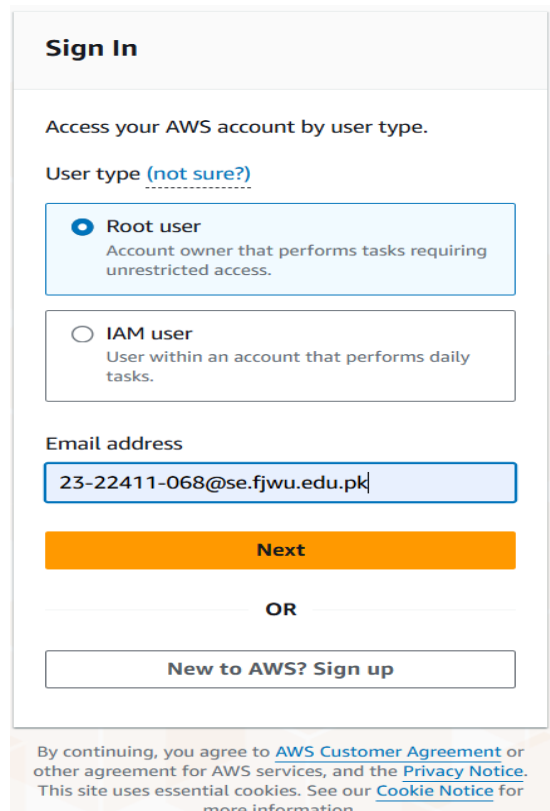
Create an AWS account and enable UAE (me-central-1)

- AWS signup page:



The image shows the AWS 'Sign up for AWS' page. At the top is the AWS logo. Below it, the heading 'Sign up for AWS' is followed by the text 'Root user email address' and a subtext 'Used for account recovery and as described in the [AWS Privacy Notice](#)'. There is an input field for the email address. Below that is the text 'AWS account name' and a subtext 'Choose a name for your account. You can change this name in your account settings after you sign up.' followed by an input field. A large orange button labeled 'Verify email address' is below the name field. In the center, there is a horizontal line with 'OR' in the middle. Below the line is a button labeled 'Sign in to an existing AWS account'. At the bottom, there is a small text: 'This site uses essential cookies. See our [Cookie Notice](#) for more information.'

- Root user signed in:



The image shows the AWS 'Sign In' page. The heading 'Sign In' is at the top. Below it is the text 'Access your AWS account by user type.' followed by 'User type (not sure?)'. There are two radio button options: 'Root user' (selected) with the description 'Account owner that performs tasks requiring unrestricted access.' and 'IAM user' with the description 'User within an account that performs daily tasks.' Below these is the text 'Email address' followed by an input field containing '23-22411-068@se.fjwu.edu.pk'. A large orange button labeled 'Next' is below the email field. In the center, there is a horizontal line with 'OR' in the middle. Below the line is a button labeled 'New to AWS? Sign up'. At the bottom, there is a small text: 'By continuing, you agree to [AWS Customer Agreement](#) or other agreement for AWS services, and the [Privacy Notice](#). This site uses essential cookies. See our [Cookie Notice](#) for more information.'

- Enable region me-central-1:

<input type="checkbox"/>	Europe (Zurich)	⊗ Disabled
<input type="checkbox"/>	Europe (Milan)	⊗ Disabled
<input type="checkbox"/>	Israel (Tel Aviv)	⊗ Disabled
<input checked="" type="checkbox"/>	Middle East (UAE)	✓ Enabled
<input type="checkbox"/>	Middle East (Bahrain)	⊗ Disabled
<input type="checkbox"/>	Africa (Cape Town)	⊗ Disabled

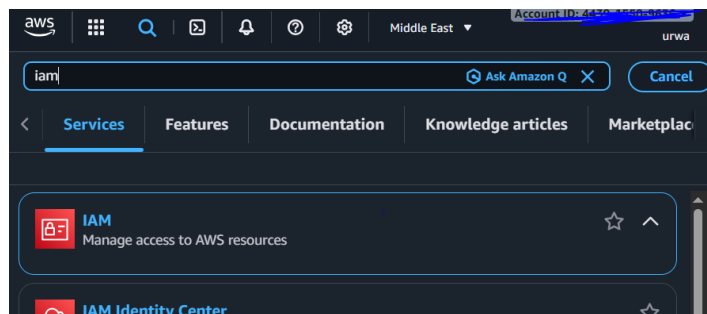
- task1 summary:



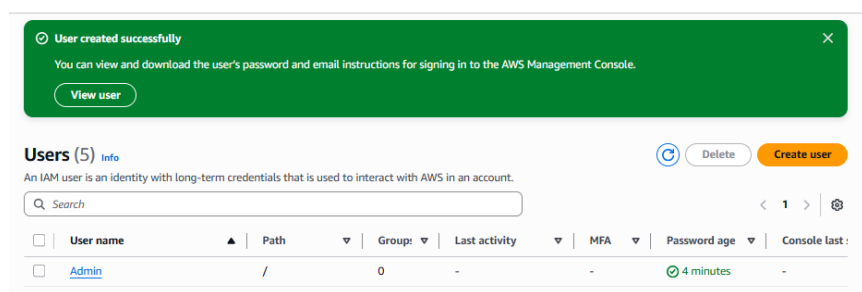
Task 2

Create IAM Admin and Lab8User with console access

- open iam console:



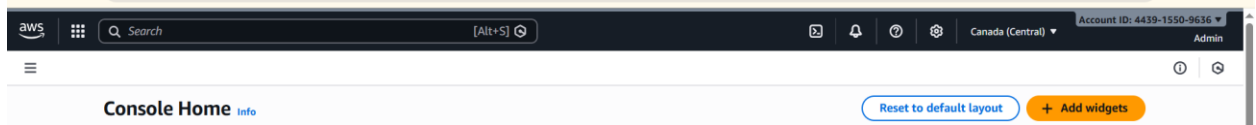
- admin create confirmation:



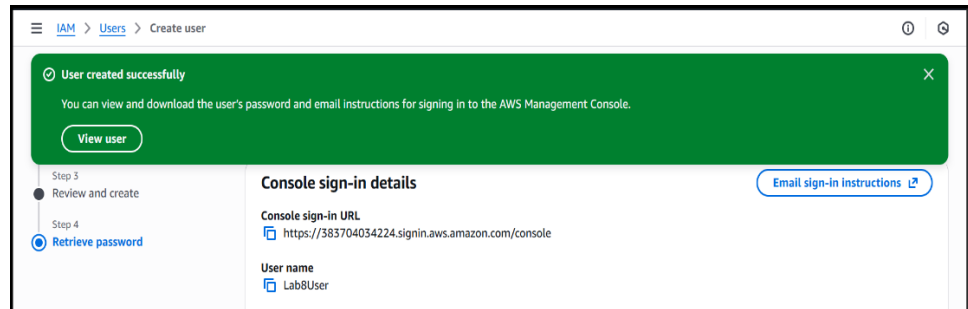
- admin csv and signin url:

Admin_credentials	1/1/2026 6:57 PM	Microsoft Excel Co...	1 KB
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- admin console after login:



- create lab8user and csv:



- lab8user csv saved:

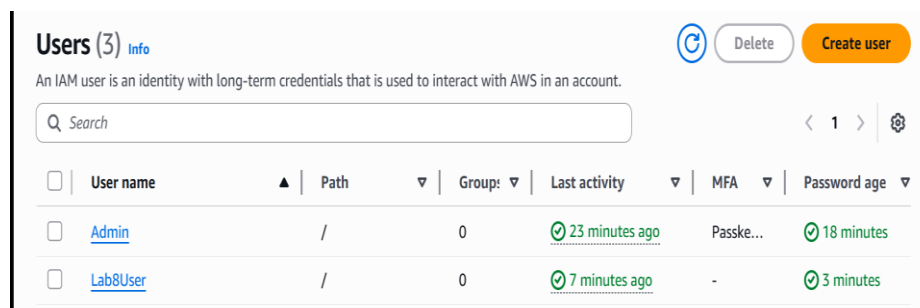
▼ Today (16)

Lab8User_credentials	1/1/2026 8:40 PM	Microsoft Excel Co...	1 KB
Admin_credentials (2)	1/1/2026 8:28 PM	Microsoft Excel Co...	1 KB

- lab8user logged in:



- task2 summary:



Task 3

Inspect VPC resources (in UAE me-central-1)

- open_vpc_console:

aws

Search

[Alt+S]

Middle East (UAE)

Lab8User

Create VPC

Launch EC2 Instances

Note: Your Instances will launch in the Middle East region.

Resources by Region

You are using the following Amazon VPC resources

VPCs

UAE 1

See all regions

Subnets

UAE 3

See all regions

Route Tables

UAE 1

See all regions

Internet Gateways

UAE 1

See all regions

Endpoint Services

UAE 0

See all regions

NAT Gateways

UAE 0

See all regions

VPC Peering Connections

UAE 0

See all regions

Network ACLs

UAE 1

See all regions

Service Health

View complete service health details

Settings

Block Public Access

Zones

Console Experiments

Additional Information

VPC Documentation

All VPC Resources

Forums

Report an Issue

Site-to-Site VPN Connections

• **vpcs_list:**

VPCs

VPC encryption controls

Your VPCs (1)

Info

Last updated 2 minutes ago

Actions

Find VPCs by attribute or tag

<input type="checkbox"/>	Name	VPC ID	State	Encryption c...	Encryption control ...	Block Public...	IPv4 CIDR
<input type="checkbox"/>	-	vpc-0b7740d2d5f400590	Available	-	-	Off	172.31.0.0/16

• **subnets_list:**

Network ACLs (1)

Info

Actions

Find Network ACLs by attribute or tag

<input type="checkbox"/>	Name	Network ACL ID	Associated with	Default	VPC ID
<input type="checkbox"/>	-	acl-01df7ed8d9a6dbaf8	3 Subnets	Yes	vpc-0b7740d2d5f400590

• **route_tables_list:**

Route tables (1)

Info

Last updated less than a minute ago

Actions

Create

Find route tables by attribute or tag

<input type="checkbox"/>	Name	Route table ID	Explicit subnet associ...	Edge associations	Main	VPC
<input type="checkbox"/>	-	rtb-0fe7eb609d5f5f080	-	-	Yes	vpc-05943c1fc6a6f3e7

• **network_acls_list:**

Network ACLs (1)

Info

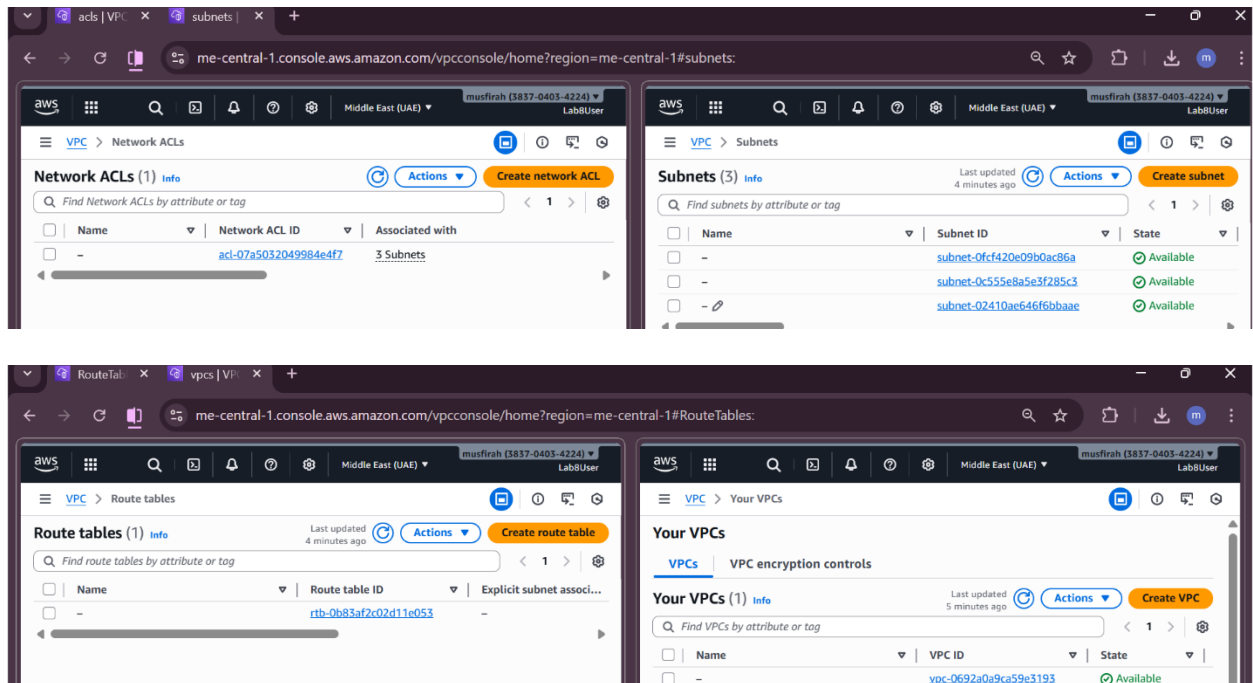
Actions

Create network ACL

Find Network ACLs by attribute or tag

<input type="checkbox"/>	Name	Network ACL ID	Associated with	Default	VPC ID	Inbo
<input type="checkbox"/>	-	acl-000ff5d8a55f611d1	3 Subnets	Yes	vpc-05943c1fc6a6f3e7	2 Inb

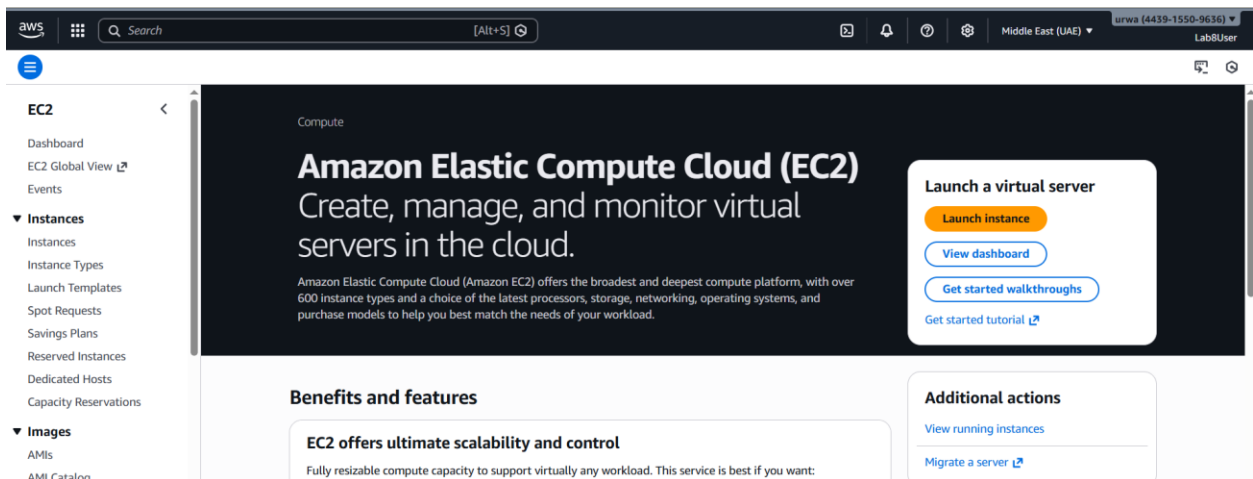
• **summary:**



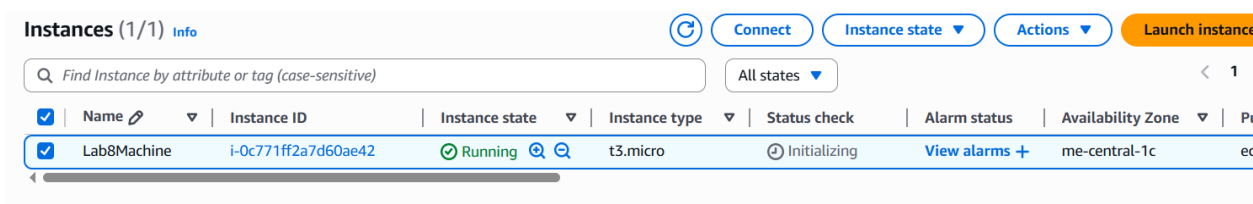
Task 4

Launch EC2, SSH, install Docker & Docker Compose, deploy Gitea



- Open EC2 Console



- Launch Instance Config




- **Keypair Download**

 Lab8Key.pem	1/1/2026 10:04 PM	PEM File	1 KB
 Lab8User credentials	1/1/2026 8:40 PM	Microsoft Excel Co...	1 KB

- **Instance Running Console**

Instance summary for i-0c771ff2a7d60ae42 (Lab8Machine) [Info](#)


Updated less than a minute ago

Instance ID
 i-0c771ff2a7d60ae42

IPv6 address
-


Hostname type
IP name: ip-172-31-14-113.me-central-1.compute.internal


Answer private resource DNS name
IPv4 (A)


Auto-assigned IP address
 3.29.239.65 [Public IP]

IAM Role
-


IMDSv2


Public IPv4 address
 3.29.239.65 | [open address](#)

Instance state
 **Running**

Private IP DNS name (IPv4 only)
 ip-172-31-14-113.me-central-1.compute.internal


Instance type
t3.micro

VPC ID
 vpc-0b7740d2d5f400590


Subnet ID
 subnet-084d8a124fcd07aa5

Instance ARN

Private IP address
-

Public IP address
 ec2-3.29.239.65 | [open](#)

Elastic IP address
-

AWS IAM role
 [Learn more](#)

Auto-assigning public IP
-

Managed by

- **SSH From Windows To EC2**

```
PS D:\> ssh -i "D:\Lab8Key.pem" ec2-user@3.29.239.65
#_
~\_####_ Amazon Linux 2023
~~\#####\
~~\####|
~~\#/____ https://aws.amazon.com/linux/amazon-linux-2023
~~V~' '->
NNN
NN_._.
  _/
  _/m/'
[ec2-user@ip-172-31-14-113 ~]$
```

- **EC2 Install Docker Compose Started**

```
[ec2-user@ip-172-31-14-113 ~]$ sudo yum update -y
/usr/local/lib/docker/cli-plugins
sudo curl -SL https://github.com/docker/compose/releases/latest/download/docker-compose-linux-x86_64 -o /usr/local/lib/docker/cli-plugins/docker-compose
sudo chmod +x /usr/local/lib/docker/cli-plugins/docker-compose
sudo systemctl start dockersudo yum install -y docker
sudo mkdir -p /usr/local/lib/docker/cli-plugins
sudo curl -SL https://github.com/docker/compose/releases/latest/download/docker-compose-linux-x86_64 -o /usr/local/lib/docker/cli-plugins/docker-compose
sudo chmod +x /usr/local/lib/docker/cli-plugins/docker-compose
sudo systemctl start docker
Amazon Linux 2023 Kernel Livepatch repository                               252 kB/s | 29 kB
Dependencies resolved.
Nothing to do.
Complete!
[ec2-user@ip-172-31-14-113 ~]$
```

- **Vim Compose YAML Paste**

```
ec2-user@ip-172-31-14-113:~
services:
  gitea:
    image: gitea/gitea:latest
    container_name: gitea
    environment:
      - DB_TYPE=postgres
      - DB_HOST=db:5432
      - DB_NAME=gitea
      - DB_USER=gitea
      - DB_PASSWD=gitea
    restart: always
    volumes:
      - gitea:/data
    ports:
      - 3000:3000
    extra_hosts:
      - "www.jenkins.com:host-gateway"
    networks:
      - webnet

  db:
    image: postgres:alpine
    container_name: gitea_db
    environment:
      - POSTGRES_USER=gitea
      - POSTGRES_PASSWORD=gitea
      - POSTGRES_DB=gitea
    restart: always
    volumes:
      - gitea_postgres:/var/lib/postgresql/data
    expose:
      - 5432
    networks:
      - webnet

volumes:
  gitea_postgres:
    name: gitea_postgres
  gitea:
    name: gitea

networks:
  webnet:
    name: webnet
#   external: true

# Gitea is not allowed to webhook to Jenkins follow these steps
# 1) Go to Gitea Container
# 2) cat /data/gitea/conf/app.ini
# 3) echo "[webhook]" >> /data/gitea/conf/app.ini
# 4) echo "ALLOWED_HOST_LIST = 192.168.65.2" >> /data/gitea/conf/app.ini
# Gitea Tutorials : https://www.youtube.com/watch?v=daw2cq8tUA
```

- **Compose YAML Saved LS**


```
[ec2-user@ip-172-31-14-113 ~]$ ls -l
total 4
-rw-r--r--. 1 root root 1132 Jan  1 18:15 compose.yaml
[ec2-user@ip-172-31-14-113 ~]$
```


- ## ● Usermod And Groups Before After

```
[ec2-user@ip-172-31-14-113 ~]$ groups
ec2-user adm wheel systemd-journal
[ec2-user@ip-172-31-14-113 ~]$ sudo usermod -ag docker $USER
[ec2-user@ip-172-31-14-113 ~]$ groups
ec2-user adm wheel systemd-journal
[ec2-user@ip-172-31-14-113 ~]$ exit
logout
connection to 3.29.239.65 closed.
```

TT@DELL MINGW64 /d

```
$ ssh -i "D:\Lab8key.pem" ec2-user@3.29.239.65
** WARNING: connection is not using a post-quantum key exchange algorithm.
** This session may be vulnerable to "store now, decrypt later" attacks.
** The server may need to be upgraded. See https://openssh.com/pq.html
```



Amazon Linux 2023

<https://aws.amazon.com/linux/amazon-linux-2023>

```
Last login: Thu Jan 1 18:11:51 2026 from 39.33.154.125
[ec2-user@ip-172-31-14-113 ~]$ groups
ec2-user adm wheel systemd-journal docker
```

- **Docker Compose Up**

```
[ec2-user@ip-172-31-14-113 ~]$ docker compose up -d
[+] Running 18/18
  ✔ gitea 6 layers [#####] 0B/0B Pulled 6.2s
    ✔ 2d35ebdb57d9 Pull complete 0.6s
    ✔ 9f46e72c1f34 Pull complete 0.7s
    ✔ 4da94b3cc809 Pull complete 0.6s
    ✔ 8e016ece0bd3 Pull complete 1.2s
    ✔ 346e493cb6cb Pull complete 1.6s
    ✔ 95215379f1d1 Pull complete 1.4s
  ✔ db 10 layers [#####] 0B/0B Pulled 10.7s
    ✔ 1074353eec0d Pull complete 2.2s
    ✔ 51a9324a2bdc Pull complete 2.3s
    ✔ 1e827ac0fafe Pull complete 2.5s
    ✔ 0629ac8b8cc5 Pull complete 3.1s
    ✔ 2e50a444bddf Pull complete 4.0s
    ✔ 4465107e1675 Pull complete 3.4s
    ✔ cc2ee20b6816 Pull complete 4.0s
    ✔ 0dfdd86289dd1 Pull complete 4.3s
    ✔ 98eccc0da868 Pull complete 4.9s
    ✔ b747867e61cb Pull complete 4.9s
[+] Running 2/5
! Network webnet Created 1.3s
! Volume "gitea_postgres" Created 1.1s
! Volume "gitea" Created 1.1s
  ✔ Container gitea Started 1.1s
  ✔ Container gitea_db Started 1.1s
[ec2-user@ip-172-31-14-113 ~]$
```

- **Security Group Allow 3000**

	Name	Security group rule ID	IP version	Type	Protocol	Port range	Source	Description
	- [edit]	sgr-06becdc3ce6ff910e	IPv4	Custom TCP	TCP	3000	0.0.0.0/0	Gitea

- **Gitea Install Page**

Initial Configuration

If you run Gitea inside Docker, please read the [documentation](#) before changing any settings.

Database Settings

Gitea requires MySQL, PostgreSQL, MSSQL, SQLite3 or TiDB (MySQL protocol).

Database Type * PostgreSQL

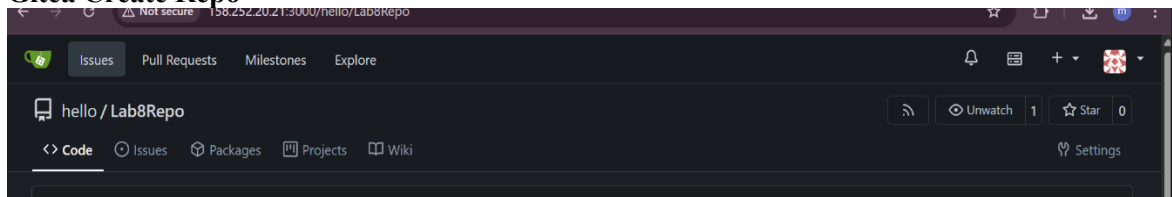
Host * db:5432

Username * gitea

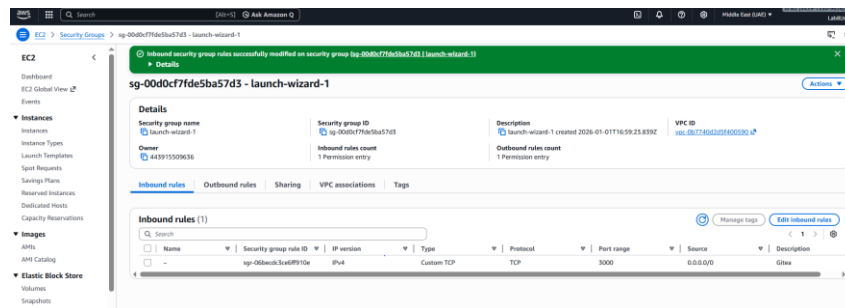
Password * *****

Database Name * gitea

- **Gitea Create Repo**

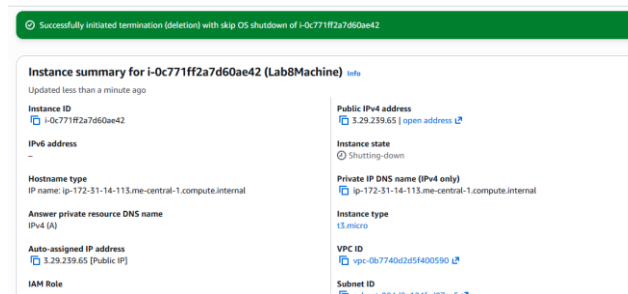


- **Summary**



Cleanup — Remove resources to avoid charges

- **cleanup_terminate_instance**



- **cleanup_delete_volumes_snapshots**



- `cleanup_delete_security_group_and_keypair`



- `cleanup_iam_users_deleted`

