

# CLOUD COMPUTING LAB

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Reg No: 2023-BSE-076

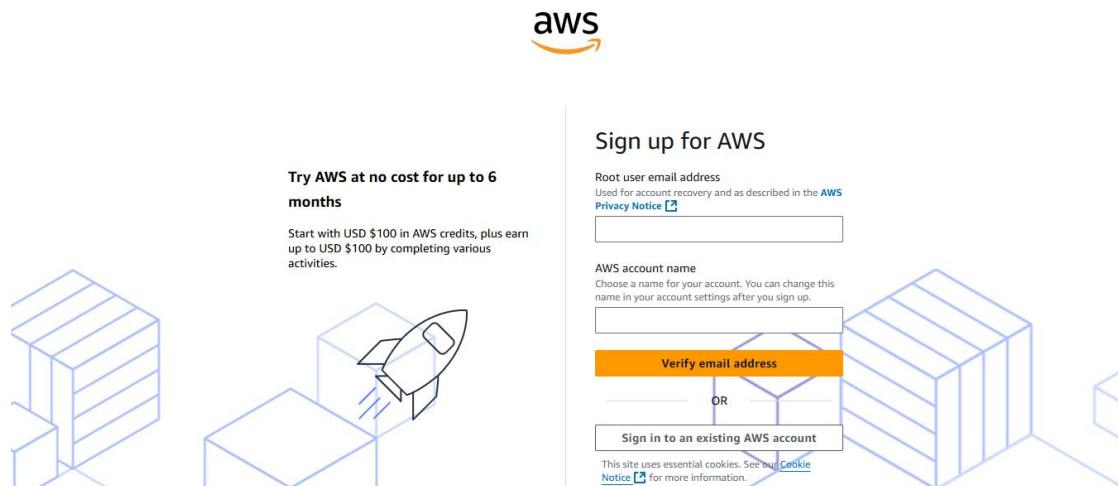
Submitted to: Sir Muhammad Shoaib

Class: 5B

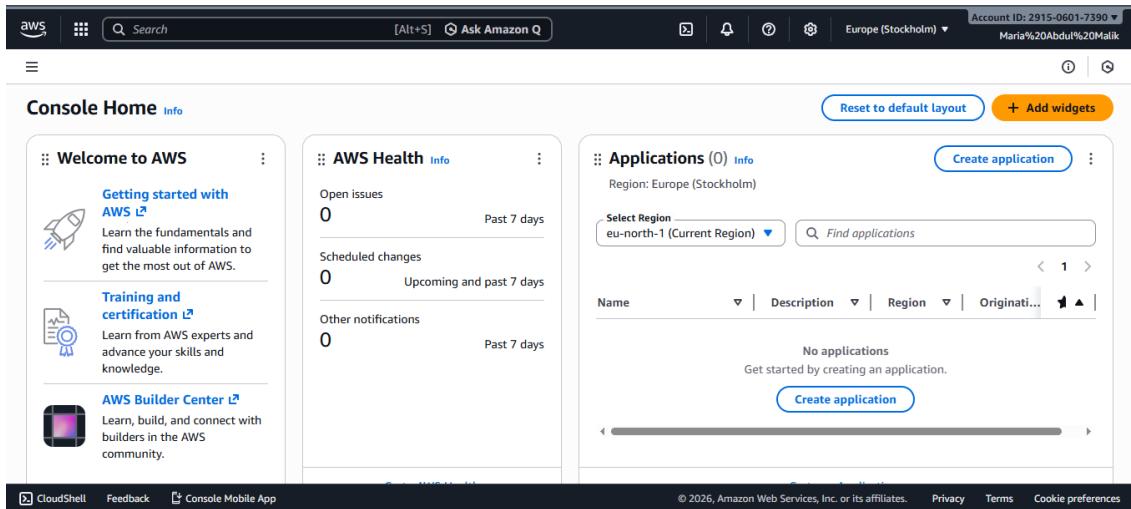
## LAB #08

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

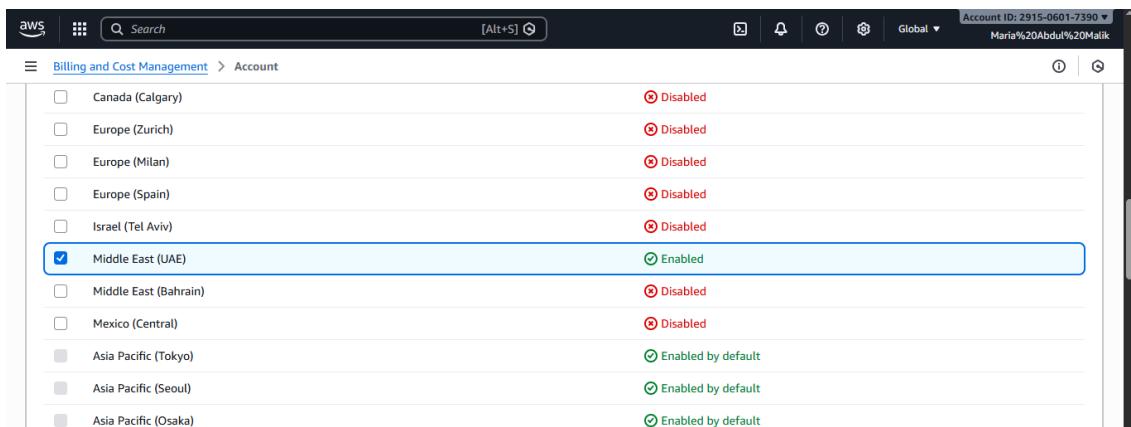
task1\_open\_signup\_page.png



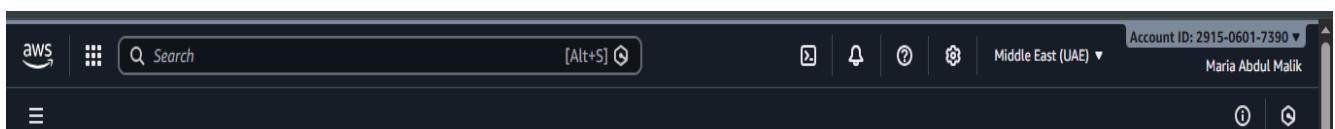
task1\_root\_signed\_in.png



task1\_enable\_region\_me-central-1.png



task1\_summary.png



## Task 2 — Create IAM Admin and Lab8User with console access

task2\_open\_iam\_console.png

The screenshot shows the AWS IAM Dashboard. On the left, there's a sidebar with a search bar and links for Identity and Access Management (IAM), Dashboard, and Access management (User groups, Users, Roles, Policies, Identity providers, Account settings, Root access management, Temporary delegation requests). The main area has a title 'IAM Dashboard' with an info icon. It features a 'Security recommendations' section with a warning about adding MFA for the root user and a note that the root user has no active access keys. Below this is an 'IAM resources' summary table:

User groups	Users	Roles	Policies	Identity providers
0	0	3	0	0

On the right, there's a 'AWS Account' section with the Account ID (291506017390) and a 'Sign-in URL for IAM users in this account' (https://291506017390.signin.aws.amazon.com/console). A 'Quick Links' section includes a link to 'My security credentials'.

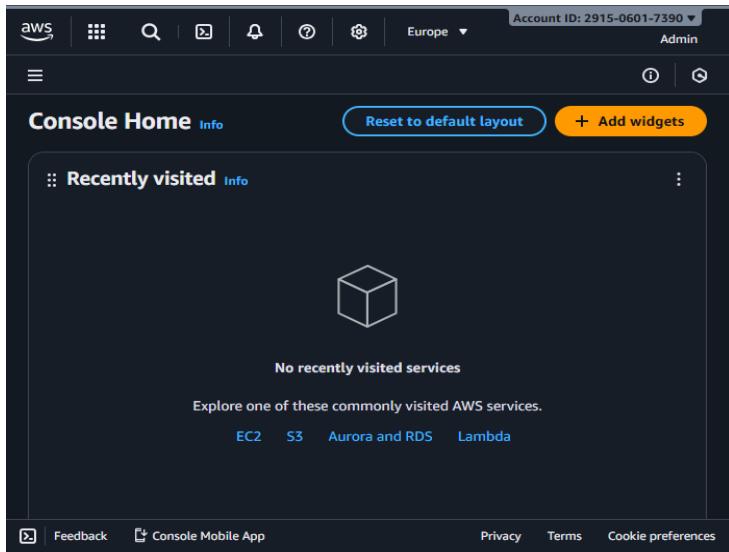
task2\_admin\_create\_confirmation.png

The screenshot shows the 'Create user' confirmation page. The top navigation bar includes the AWS logo, search, and global navigation. The main message is 'User created successfully' with a note: 'You can view and download the user's password and email instructions for signing in to the AWS Management Console.' A 'View user' button is present. Below this, a note says: 'You can view and download the user's password below or email users instructions for signing in to the AWS Management Console. This is the only time you can view and download this password.' The 'Console sign-in details' section displays the 'Console sign-in URL' (https://291506017390.signin.aws.amazon.com/console), 'User name' (Admin), and 'Console password' (redacted). A 'Email sign-in instructions' button is also shown.

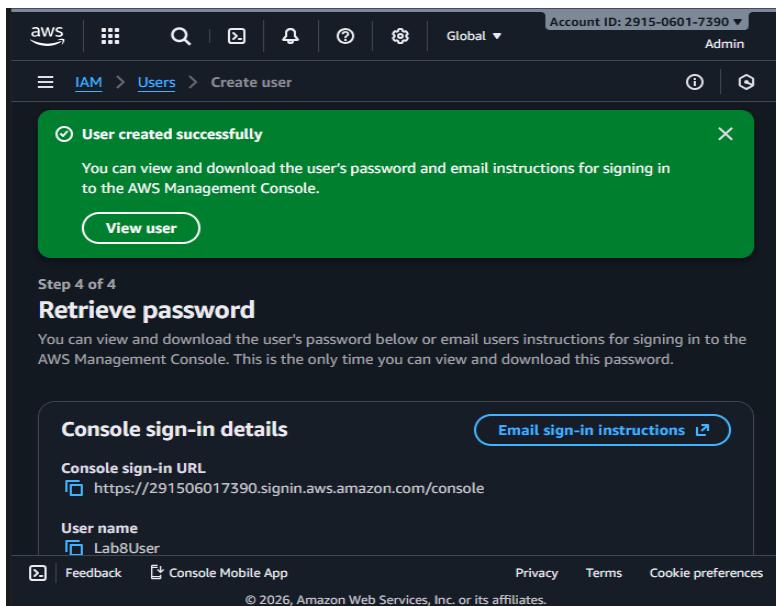
task2\_admin\_csv\_and\_signin\_url.png

A	B	C	D	E	F	G	H
User name	Pass	Console sign-in URL					
Admin	In8	https://291506017390.signin.aws.amazon.com/console					

task2\_admin\_console\_after\_login.png



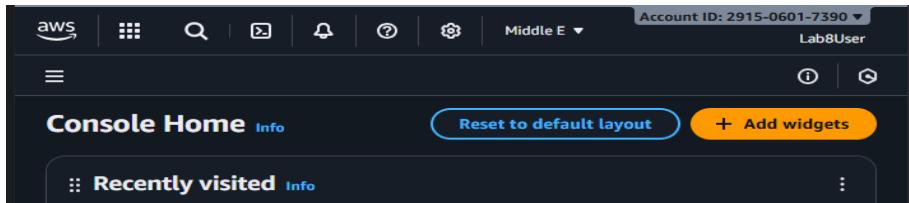
task2\_create\_lab8user\_and\_csv.png



task2\_lab8user\_csv\_saved.png

A	B	C	D	E	F	G	H
User name	Passw	Console sign-in URL					
Lab8User	H!tlFc	https://291506017390.signin.aws.amazon.com/console					

task2\_lab8user\_logged\_in.png

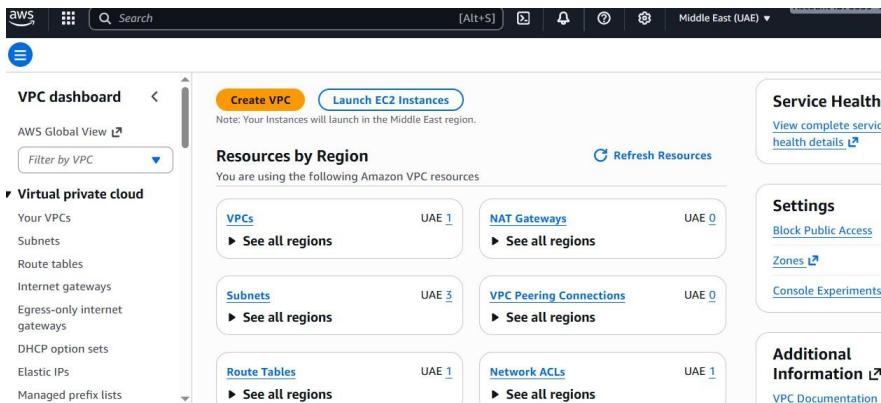


task2\_summary.png

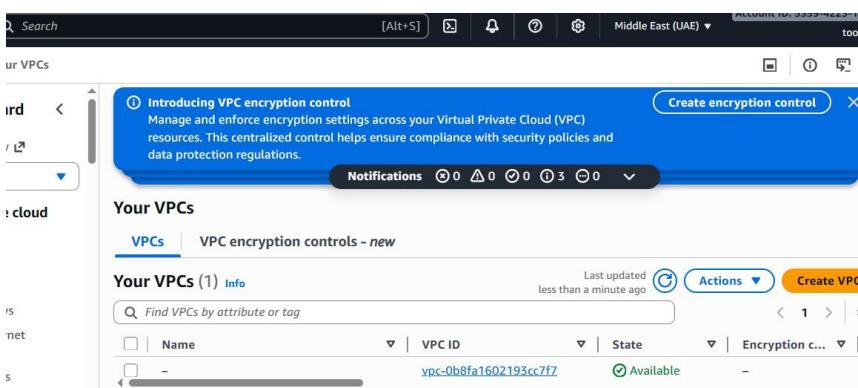


## Task 3 — Inspect VPC resources (in UAE me-central-1)

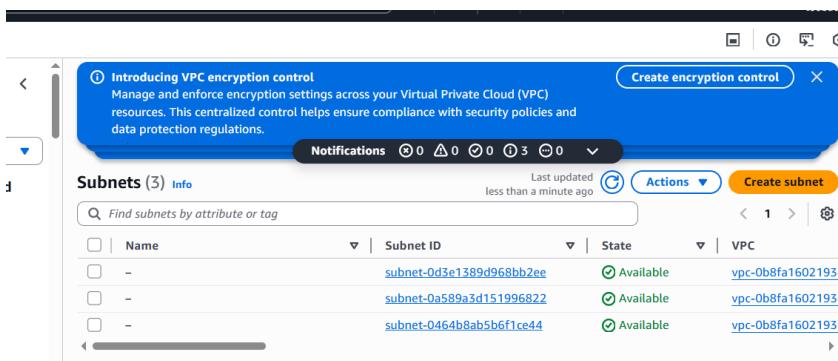
task3\_open\_vpc\_console.png



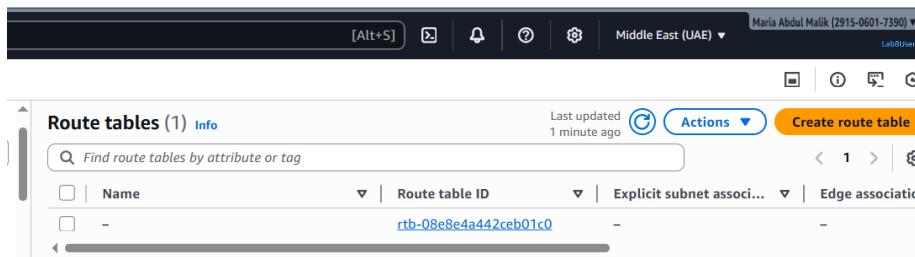
task3\_vpcs\_list.png



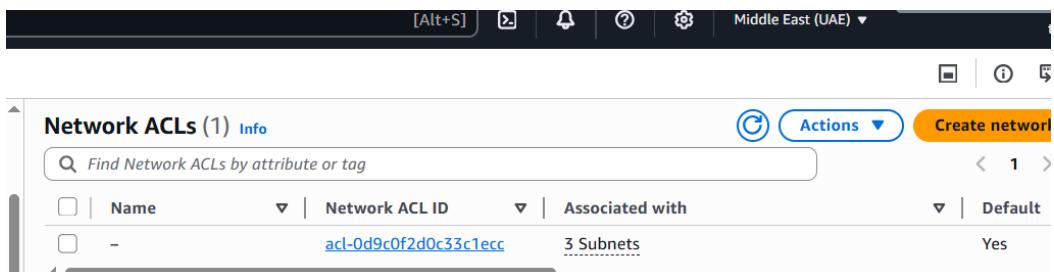
task3\_subnets\_list.png



task3\_route\_tables\_list.png



task3\_network\_acls\_list.png



task3\_summary.png

**Resources by Region**

You are using the following Amazon VPC resources

VPCs	UAE 1	NAT Gateways	UAE 0
▶ See all regions		▶ See all regions	
Subnets	UAE 3	VPC Peering Connections	UAE 0
▶ See all regions		▶ See all regions	
Route Tables	UAE 1	Network ACLs	UAE 1
▶ See all regions		▶ See all regions	
Internet Gateways	UAE 1	Security Groups	UAE 1
▶ See all regions		▶ See all regions	

**Settings**

- Block Public Access
- Zones ↗
- Console Experiments

**Additional Information ↗**

- VPC Documentation
- All VPC Resources
- Forums

## Task 4 — Launch EC2, SSH, install Docker & Docker Compose, deploy Gitea

task4\_open\_ec2\_console.png

The screenshot shows the AWS EC2 Instances page. The left sidebar has 'EC2' selected under 'Instances'. The main content area shows a 'Resources' summary table:

Instances (running)	0	Auto Scaling Groups	0	Capacity Reservations
Dedicated Hosts	0	Elastic IPs	0	Instances
Key pairs	0	Load balancers	0	Placement groups
Security groups	1	Snapshots	0	Volumes

Below the table are two buttons: 'Launch instance' and 'Service health'.

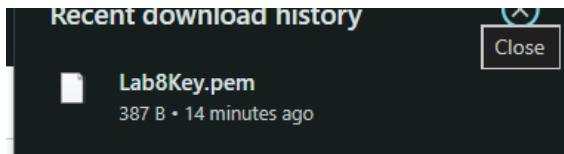
- task4\_launch\_instance\_config.png

☰ EC2 > Instances > Launch an instance

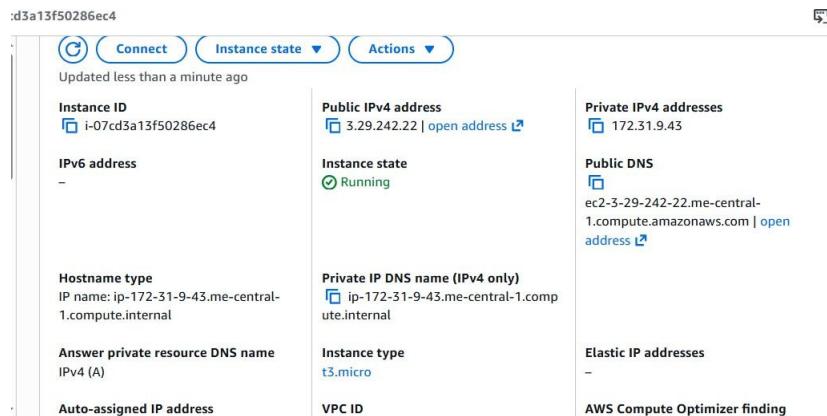
⌚ Success  
Successfully initiated launch of instance ([i-07cd3a13f50286ec4](#))

▶ Launch log

- task4\_keypair\_download.png



task4\_instance\_running\_console.png



- task4\_ssh\_from\_windows\_to\_ec2.png

```
C:\Users\malik\Downloads>ssh -i Lab8Key.pem ec2-user@3.29.242.22
The authenticity of host '3.29.242.22 (3.29.242.22)' can't be established.
ED25519 key fingerprint is SHA256:Pb+oC7dXs/YifCm6CVtqDpfMNZsMgCp90weR7ZA+yKU.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '3.29.242.22' (ED25519) to the list of known hosts.

,
#_
~\_ ####_          Amazon Linux 2023
~~ \#####\
~~  \###|
~~   \#/   _-->
~~    V~'   /
~~. _/   /
~/m/ , /-
[ec2-user@ip-172-31-9-43 ~]$
```

- task4\_ec2\_install\_docker\_compose\_started.png

```
[ec2-user@ip-172-31-9-43 ~]$ sudo mkdir -p /usr/local/lib/docker/cli-plugins
[ec2-user@ip-172-31-9-43 ~]$ sudo curl -SL https://github.com/docker/compose/releases/latest/download/x86_64 -o /usr/local/lib/docker/cli-plugins/docker-compose
% Total    % Received % Xferd  Average Speed   Time   Time     Current
          Dload  Upload Total Spent   Left Speed
 0      0     0     0      0       0  0 --::-- --::-- --::--  0
 0      0     0     0      0       0  0 --::-- --::-- --::--  0
100 29.8M  100 29.8M     0      0  33.7M  0 --::-- --::-- --::-- 33.7M
[ec2-user@ip-172-31-9-43 ~]$ sudo chmod +x /usr/local/lib/docker/cli-plugins/docker-compose
[ec2-user@ip-172-31-9-43 ~]$ sudo systemctl start docker
[ec2-user@ip-172-31-9-43 ~]$
```

- task4\_vim\_compose\_yaml\_paste.png

```
[ec2-user@ip-192-31-8-40 ~]$ pwd
/home/ec2-user
[ec2-user@ip-192-31-8-40 ~]$ sudo yum update -y
Amazon Linux 2023 Kernel Livepatch repository
Dependencies resolved.
Nothing to do.
Complete!
[ec2-user@ip-192-31-8-40 ~]$ sudo yum install -y docker
Last metadata expiration check: 0:00:55 ago on Thu Dec  4 16:14:24 2025.
Dependencies resolved.
-----
```

Package	Architecture	Version	Repository	Size
Installing:				
docker	x86_64	25.0.13-1.amzn2023.0.2	amazonlinux	46 M
Installing dependencies:				
container-selinux	noarch	4:2.242.0-1.amzn2023	amazonlinux	58 k
containerd	x86_64	2.1.4-1.amzn2023.0.2	amazonlinux	23 M
iptables-libc	x86_64	1.8.8-3.amzn2023.0.2	amazonlinux	401 k
iptables-nft	x86_64	1.8.8-3.amzn2023.0.2	amazonlinux	183 k
libcgroup	x86_64	3.0-1.amzn2023.0.1	amazonlinux	75 k
libnftnl	x86_64	1.0.8-2.amzn2023.0.2	amazonlinux	58 k
libnftnl	x86_64	1.0.1-19.amzn2023.0.2	amazonlinux	30 k
pigz	x86_64	2.5-1.amzn2023.0.3	amazonlinux	84 k
		.....		83 k

- task4\_compose\_yaml\_saved\_ls.png

```

    - 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
```

- task4\_compose\_yaml\_saved\_ls.png

```
[ec2-user@ip-192-31-8-40 ~]$ [ec2-user@ip-172-31-9-43 ~]$ ls -l
total 4
-rw-r--r--. 1 root root 1126 Dec  4 16:35 compose.yaml
[ec2-user@ip-192-31-8-40 ~]$ cat compose.yaml
services:
  gitea:
    image: gitea/gitea:latest
    container_name: gitea
    environment:
      - DB_TYPE=postgres
      - DB_HOST=db:5432
      - DB_NAME=gitea
      - DB_USER=gitea
      - DB_PASSWORD=gitea
    restart: always
    volumes:
      - gitea:/data
    ports:
      - 3000:3000
    extra_hosts:
      - "www.jenkins.com:host-gateway"
    networks:
      - webnet
```

- task4\_usermod\_and\_groups\_before\_after.png

```
[ec2-user@ip-192-31-8-40 ~]$ exit
logout
Connection to 3.29.242.22 closed.

C:\Users\malik\Downloads>ssh -i Lab8Key.pem ec2-user@3.29.242.22
,#
~\ #####
~~ \#####
~~ \###
~~ \#/ https://aws.amazon.com/linux/amazon-linux-2023
~~ \#/
~~ \#/
~~ \#/
~~ \#/
Last login: Thu Dec  4 16:26:18 2025 from 175.107.227.5
[ec2-user@ip-192-31-8-40 ]$ pwd
/home/ec2-user
[ec2-user@ip-192-31-8-40 ~]$ groups
ec2-user adm wheel systemd-journal docker
```

- task4\_docker\_compose\_up.png

```
[+] up 22/22-172-31-9-43 ~]$ docker compose up -d
[+] Image postgres:alpine Pulled
[+] Image gitea/gitea:latest Pulled
[+] Network webnet Created
[+] Volume gitea Created
[+] Volume gitea_postgres Created
[+] Container gitea_db Created
[+] Container gitea Created
[ec2-user@ip-192-31-8-40 ~]$
```

- task4\_security\_group\_allow\_3000.png

**Inbound rules** [info](#)

Security group rule ID	Type	Info	Protocol	Port range	Source	Info	Description - optional
sgr-0dca78b11d4ee06b1	SSH	▼	TCP	22	C... ▼	<input type="text"/> 175.107.227.5/3 2	<a href="#">Delete</a>
-	Custom TCP	▼	TCP	3000	A... ▼	<input type="text"/> 0.0.0.0/0	<a href="#">Delete</a>
						<input type="text"/> 0.0.0.0/0	<a href="#">Delete</a>

[Add rule](#)

- task4\_gitea\_install\_page.png

The screenshot shows the Gitea dashboard with a dark theme. At the top, there are navigation links: Issues, Pull Requests, Milestones, and Explore. A user dropdown for 'admin' is visible. The main area has a title 'No Activity' with a small icon. Below it, a message says: 'You are currently not following any repositories or users, so there is no content to display. You can explore repositories or users of interest from the links below.' There are two blue links: 'Explore repositories' and 'Explore users'. On the right, there's a sidebar with tabs for 'Repository' and 'Organization', and a section titled 'Repositories' with a '+ Add' button. Below it, a message says 'There are no repositories yet.'

task4\_gitea\_create\_repo.png

The screenshot shows the Gitea repository creation interface for 'admin / lab8repo'. The top navigation bar includes 'Issues', 'Pull Requests', 'Milestones', 'Explore', and a user dropdown for 'admin'. Below the navigation, there are tabs for 'Code', 'Issues', 'Packages', 'Projects', and 'Wiki', with 'Code' being selected. A 'Quick Guide' section provides instructions for cloning the repository, mentioning 'Need help cloning? Visit [Help](#)'. It includes a code editor with the URL 'http://3.29.242.22:3000/admin/lab8repo.git'. Below the editor, a section titled 'Creating a new repository on the command line' contains a terminal window showing the following commands:

```
touch README.md
git init
git checkout -b main
git add README.md
git commit -m "first commit"
git remote add origin http://3.29.242.22:3000/admin/lab8repo.git
git push -u origin main
```

- task4\_summary.png

The screenshot shows the AWS EC2 Instances page. At the top, there are two tabs: 'Instances | EC2 | me-central-1' and 'admin/lab8repo - lab8repo - Go'. The main content area displays the URL 'apple.aws.amazon.com/ec2/home?region=me-central-1#Instances:'. On the right, it shows 'Account ID: 2915-0601' and 'Middle East (UAE)'. Below this, there are several buttons: '[Alt+S]', a refresh icon, a bell icon, a question mark icon, a gear icon, 'Middle East (UAE)', and a blue square icon with a white square inside.

**Instances (1) Info**

Connect Instance state Actions Launch instances

Find Instance by attribute or tag (case-sensitive)

All states

Name Instance ID Instance state Instance type Status check

Name	Instance ID	Instance state	Instance type	Status check
Lab8Machine	i-07cd3a13f50286ec4	Running	t3.micro	3/3 checks passed

## Cleanup — Remove resources to avoid charges

cleanup\_terminate\_instance.png

A yellow warning box at the top left contains the text: "⚠️ On an EBS-backed instance, the default action is for the root EBS volume to be deleted when the instance is terminated. Storage on any local drives will be lost."

Are you sure you want to terminate these instances?

Instance ID	Termination protection
i-07cd3a13f50286ec4 (Lab8Machine)	Disabled

To confirm that you want to delete the instances, choose the terminate button below. Instances with termination protection enabled will not be terminated. Terminating the instance cannot be undone.

Skip OS shutdown  
This option skips the graceful OS shutdown process. Use only when your instance must be stopped immediately, such as during an emergency or failover.  
 Skip OS shutdown

Cancel Terminate (delete)

- cleanup\_delete\_volumes\_snapshots.png

Volumes Info

Last updated 1 minute ago

Choose filter set ▾

Search

Name Volume ID Type Size IOPS Throughput

You currently have no volumes in this region

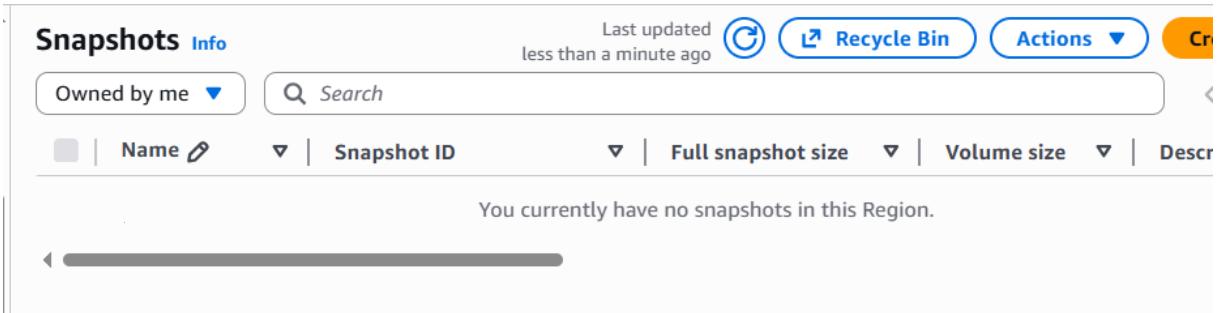
**Snapshots** [Info](#)

Last updated less than a minute ago [Recycle Bin](#) [Actions](#) [Create](#)

Owned by me

	Name	Snapshot ID	Full snapshot size	Volume size	Description
--	------	-------------	--------------------	-------------	-------------

You currently have no snapshots in this Region.



- cleanup\_delete\_security\_group\_and\_keypair.png

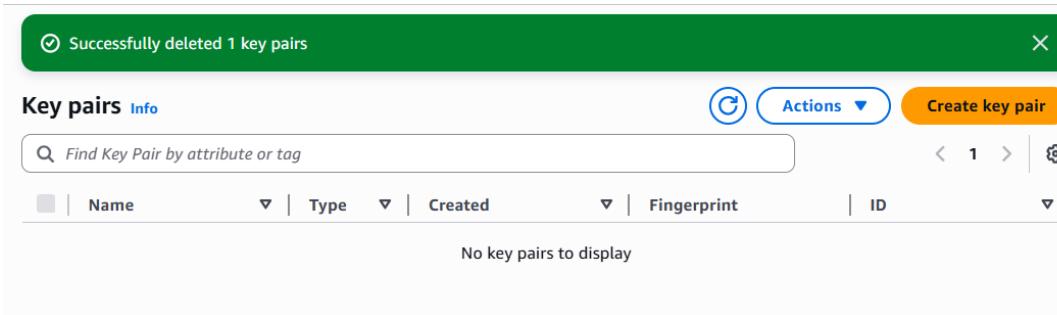
Successfully deleted 1 key pairs

**Key pairs** [Info](#) [Actions](#) [Create key pair](#)

1

	Name	Type	Created	Fingerprint	ID
--	------	------	---------	-------------	----

No key pairs to display



- cleanup\_iam\_users\_deleted.png

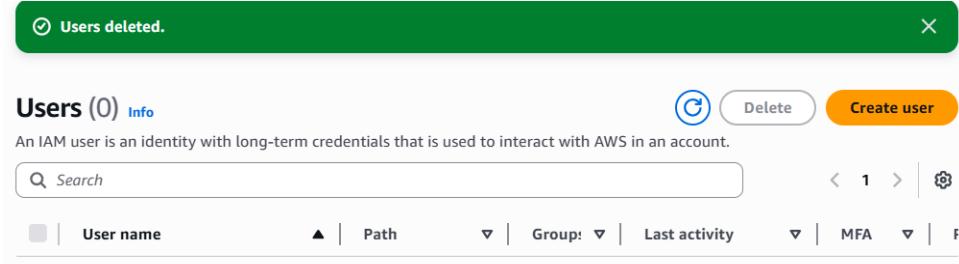
Users deleted.

**Users (0)** [Info](#) [Delete](#) [Create user](#)

An IAM user is an identity with long-term credentials that is used to interact with AWS in an account.

1

	User name	Path	Group:	Last activity	MFA	F
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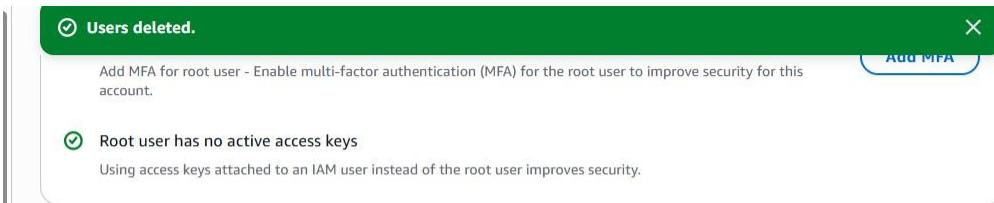


- cleanup\_summary.png

Users deleted.

Add MFA for root user - Enable multi-factor authentication (MFA) for the root user to improve security for this account. [Add MFA](#)

Root user has no active access keys  
Using access keys attached to an IAM user instead of the root user improves security.



**IAM resources**

Resources in this AWS Account

User groups	Users	Roles	Policies	Identity providers
0	0	3	0	0

