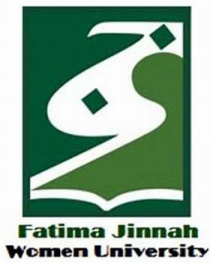
CLOUD COMPUTING

LAB 08



Submitted To:

Engr. Shoaib

Submitted By:

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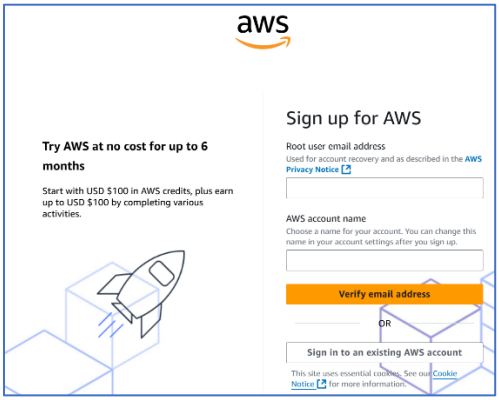
BSE V-A

2023-BSE-031

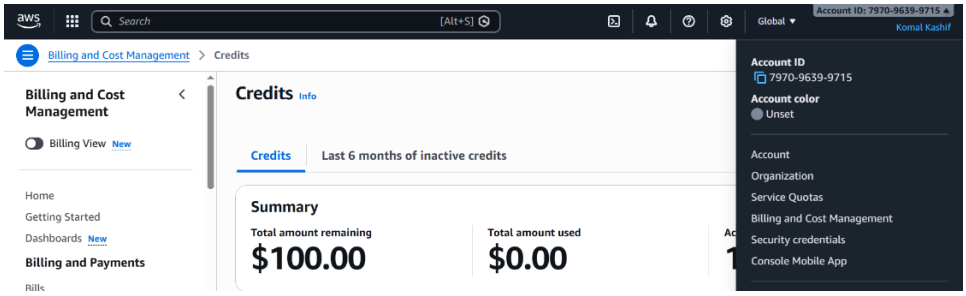
Task 1 — Create an AWS account and enable UAE

Steps

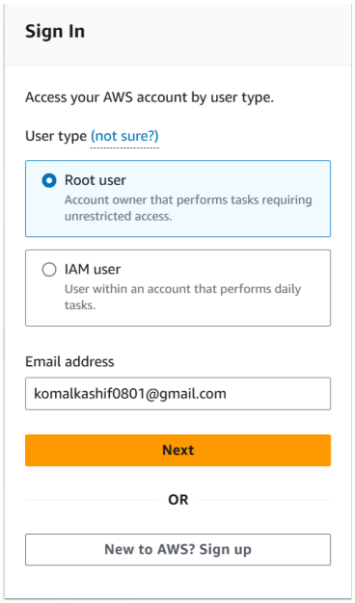
1. Open your browser and go to: [AWS Signup]



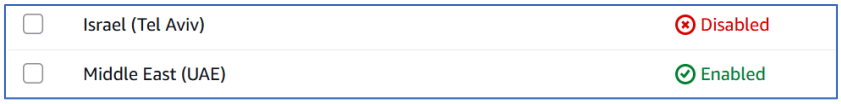
2. Complete registration (Account type: Personal, Plan: AWS Paid Plan), fill contact, billing (credit card) and phone details, complete verification



3. Sign in as the root user (root email).



4. From the Console, open the region selector and enable UAE (me-central-1), then switch to me-central-1.

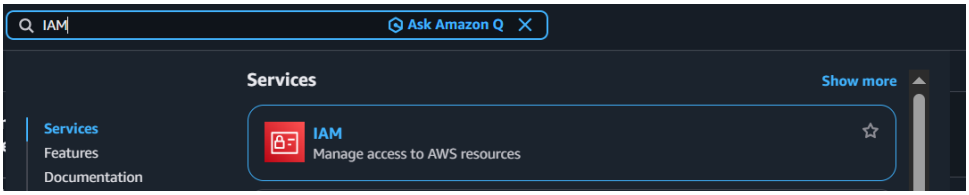


5. Task 1 summary screenshot:

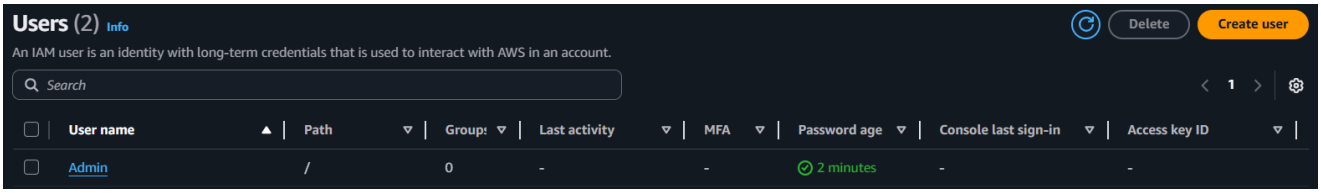
Task 2 — Create IAM Admin and Lab8User with console access

Steps

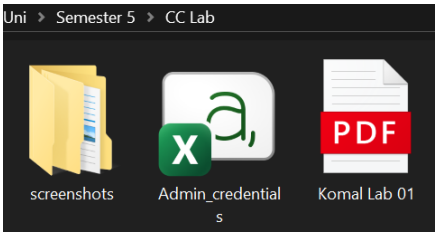
1. Open IAM via Console search (Alt+S → "IAM").



2. Create the Admin user: IAM → Users → Create user.

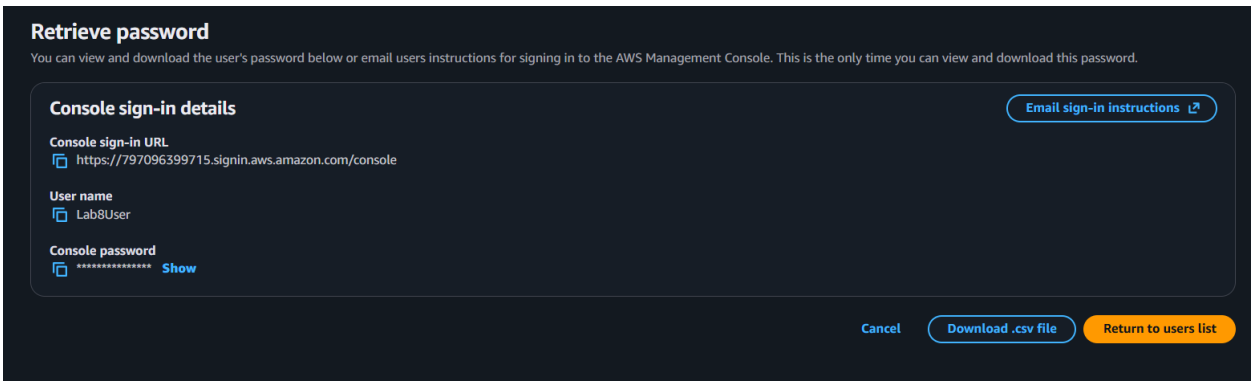


3. Download the Admin .csv and show its presence on your Windows host (do not display the password text)



4. Sign out of root, then sign in using the Admin account (use the signin URL from the .csv). Capture after successful Admin login:

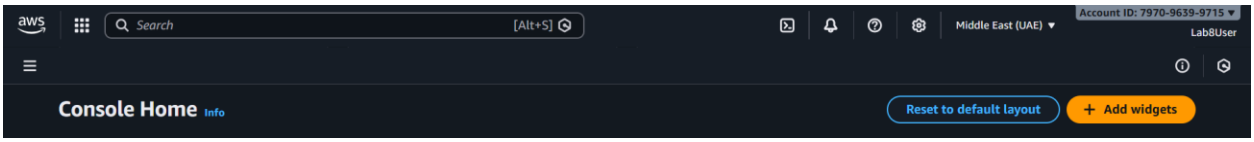
5. While logged in as Admin, create Lab8User:



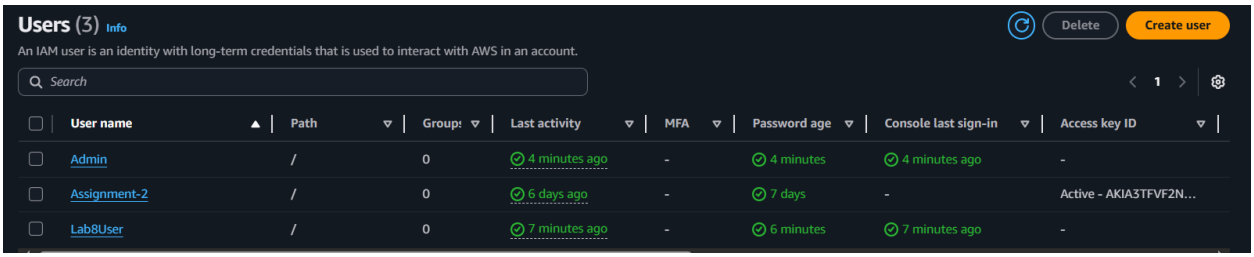
6. Download/save the Lab8User CSV on your Windows host (do not show password).

User name	Console sign-in URL
Lab8User	https://797096399715.signin.aws.amazon.com/console

7. Logout Admin and login as Lab8User (use the Lab8User signin URL and credentials).



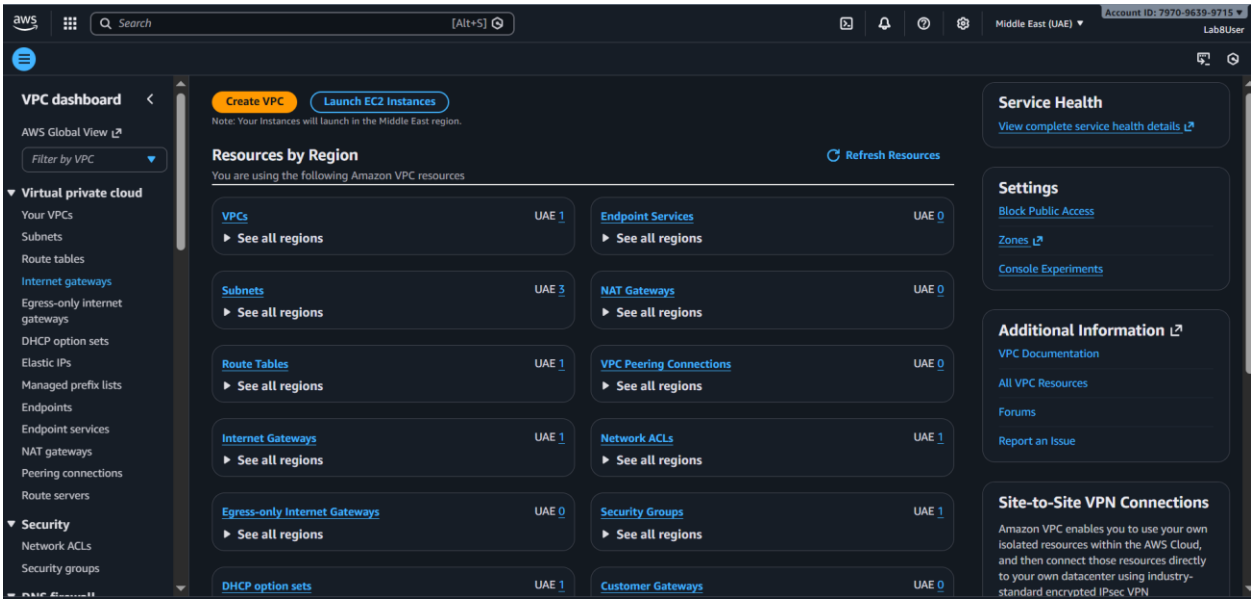
8. Task 2 summary



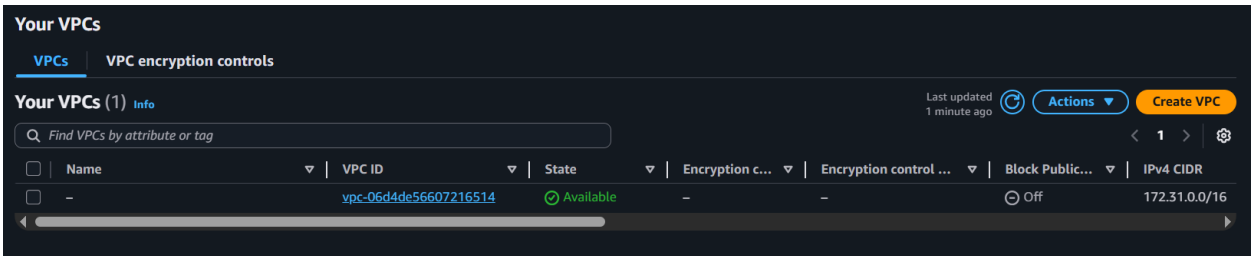
Task 3 — Inspect VPC resources

Steps

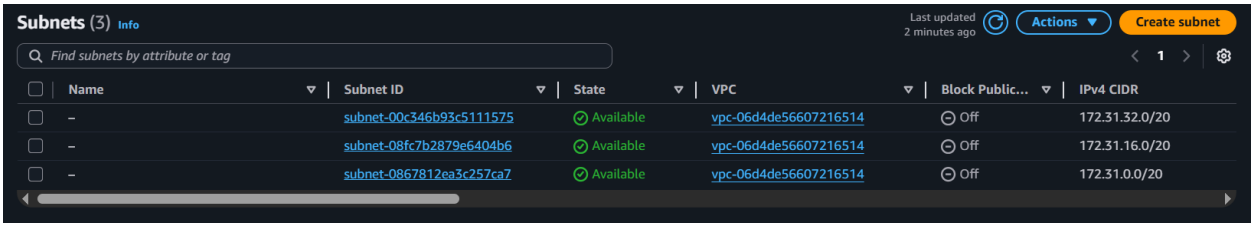
1. Open VPC console (Alt+S → "VPC") while region is me-central-1.



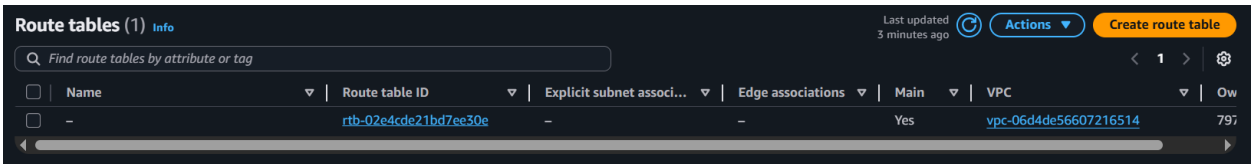
2. View VPCs list.



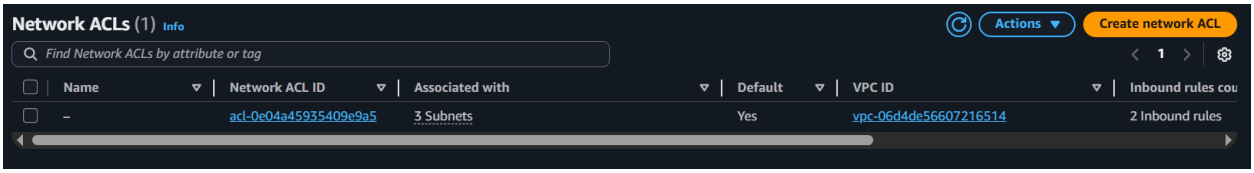
3. View Subnets list.



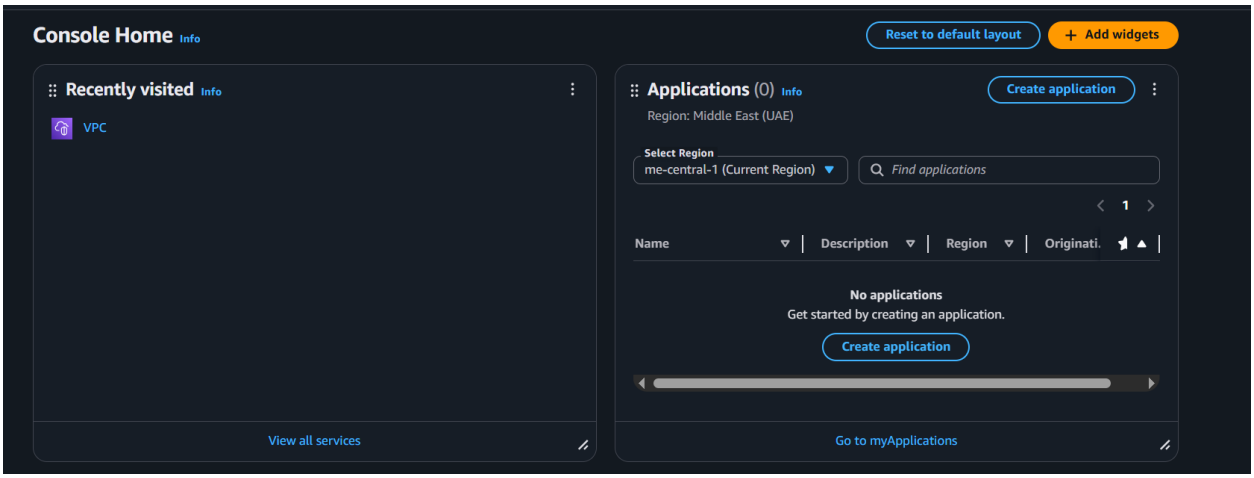
4. View Route Tables list.



5. View Network ACLs list.



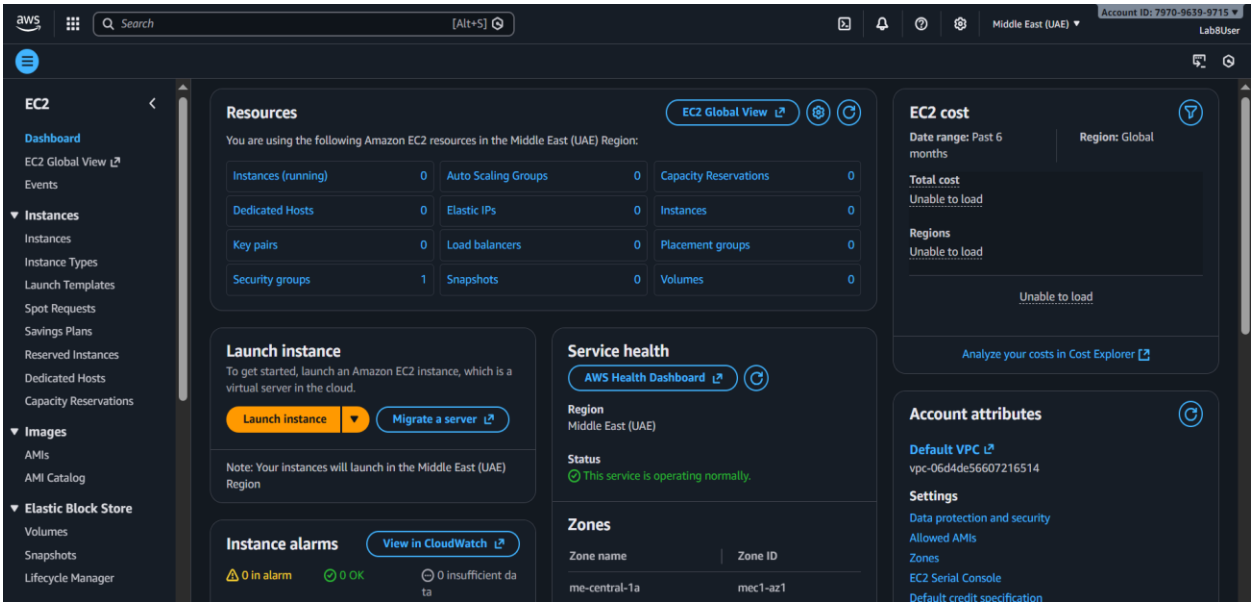
6. Task 3 summary



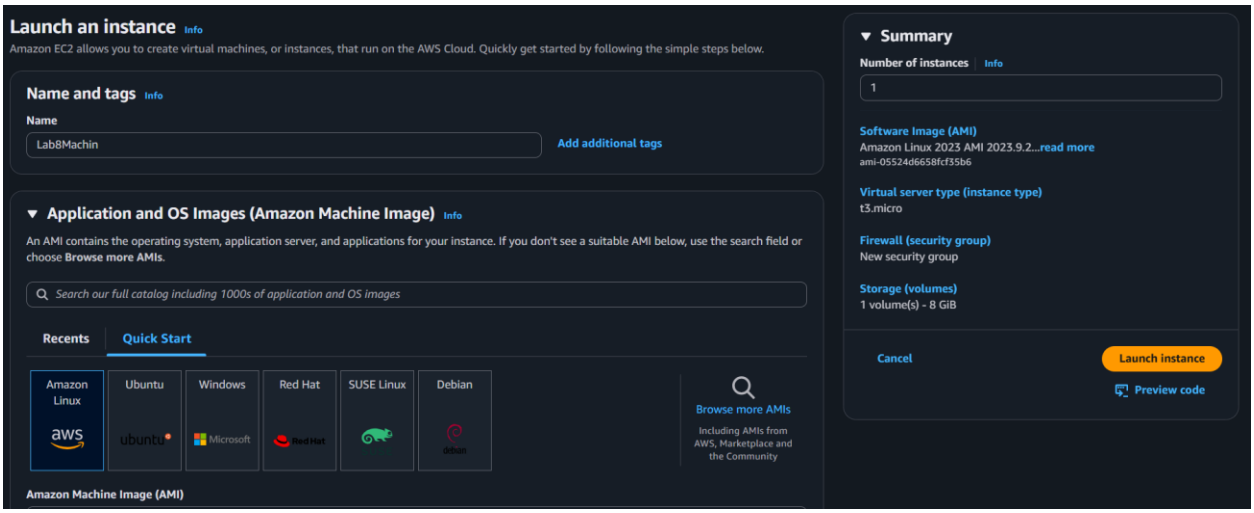
Task 4 — Launch EC2, SSH, install Docker & Docker Compose, deploy Gitea

Steps

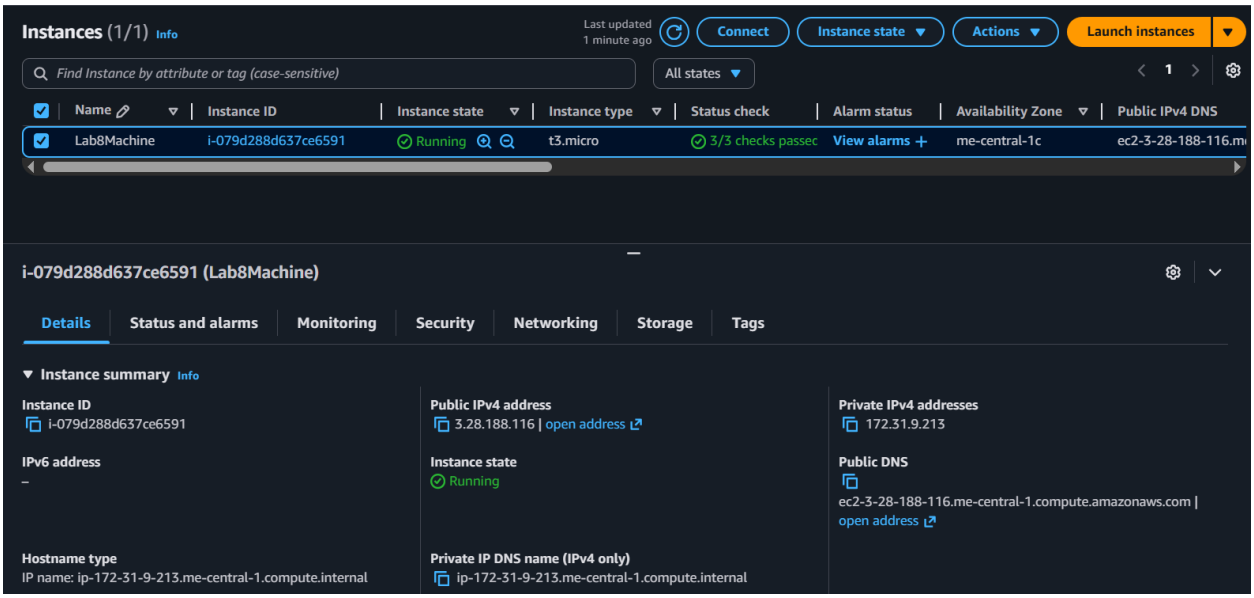
1. Open EC2 Console (Alt+S → "EC2") (me-central-1).



2. Instance Launch configuration (during review before launching).



3. After launch, EC2 Instances list showing Lab8Machine in "running" state and public IPv4 visible.



4. On Windows host, run SSH using the downloaded .pem (PowerShell/Git Bash/Windows Terminal):

```
Dell@DESKTOP-OPCO1NF MINGW64 /d/Uni/Semester 5/CC Lab/CC-KomalKashif-031 (main)
$ ssh -i "D:\Uni\Semester 5\CC Lab\Lab8Key.pem" ec2-user@3.29.91.65
The authenticity of host '3.29.91.65 (3.29.91.65)' can't be established.
ED25519 key fingerprint is SHA256:gdW/zTBnH9Dmb8mlV0LBOsER3GGCwp61OvPXOIaomqc.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '3.29.91.65' (ED25519) to the list of known hosts.
   ,     #_
   ~\_  ####_        Amazon Linux 2023
  ~~  \_#####\
  ~~     \###|
  ~~       \#/ ___   https://aws.amazon.com/linux/amazon-linux-2023
   ~~       V~' '->
    ~~~         /
      ~~._.   _/
         _/ _/
       _/m/'
[ec2-user@ip-172-31-9-213 ~]$
```

5. Run the docker install commands on the EC2 shell:

```
sudo yum update -y

sudo 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
```

```
Complete!
Last metadata expiration check: 0:00:02 ago on Sat Jan 17 14:10:33 2026.
Dependencies resolved.
================================================================================
 Package                  Arch     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   2.1.5-1.amzn2023.0.1     amazonlinux    23 M
 iptables-libs            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
 libnetfilter_conntrack   x86_64   1.0.8-2.amzn2023.0.2     amazonlinux    58 k
 libnfnetlink             x86_64   1.0.1-19.amzn2023.0.2    amazonlinux    30 k
 libnftnl                 x86_64   1.2.2-2.amzn2023.0.2     amazonlinux    84 k
 pigz                     x86_64   2.5-1.amzn2023.0.3       amazonlinux    83 k
 runc                     x86_64   1.3.3-2.amzn2023.0.1     amazonlinux   3.9 M

Transaction Summary
================================================================================
Install  11 Packages

Total download size: 74 M
Installed size: 280 M
Downloading Packages:
(1/11): container-selinux-2.242.0-1.amzn2023.no 1.5 MB/s |  58 kB     00:00
(2/11): iptables-libs-1.8.8-3.amzn2023.0.2.x86_  10 MB/s | 401 kB     00:00
(3/11): iptables-nft-1.8.8-3.amzn2023.0.2.x86_6 6.7 MB/s | 183 kB     00:00
(4/11): libcgroup-3.0-1.amzn2023.0.1.x86_64.rpm 2.2 MB/s |  75 kB     00:00
(5/11): libnetfilter_conntrack-1.0.8-2.amzn2023 1.9 MB/s |  58 kB     00:00
(6/11): libnfnetlink-1.0.1-19.amzn2023.0.2.x86_ 1.0 MB/s |  30 kB     00:00
(7/11): libnftnl-1.2.2-2.amzn2023.0.2.x86_64.rp 2.4 MB/s |  84 kB     00:00
(8/11): containerd-2.1.5-1.amzn2023.0.1.x86_64.  65 MB/s |  23 MB     00:00
(9/11): pigz-2.5-1.amzn2023.0.3.x86_64.rpm      680 kB/s |  83 kB     00:00
(10/11): runc-1.3.3-2.amzn2023.0.1.x86_64.rpm    51 MB/s | 3.9 MB     00:00
(11/11): docker-25.0.13-1.amzn2023.0.2.x86_64.r  68 MB/s |  46 MB     00:00
--------------------------------------------------------------------------------
```

6. Create/edit compose.yaml on the EC2 instance (sudo vim compose.yaml) and paste content from the repo: Gitea . While pasting, capture the editor content:

```
ec2-user@ip-172-31-9-213:~
version: "3"

services:
  gitea:
    image: gitea/gitea:latest
    container_name: gitea
    environment:
      - USER_UID=1000
      - USER_GID=1000
    restart: always
    ports:
      - "3000:3000"
      - "222:22"
    volumes:
      - gitea-data:/data

volumes:
  gitea-data:
```

7. Save and verify file exists:

```
[ec2-user@ip-172-31-9-213 ~]$ sudo vim compose.yaml
[ec2-user@ip-172-31-9-213 ~]$ ls -l
total 4
-rw-r--r--. 1 root root 281 Jan 17 14:15 compose.yaml
```

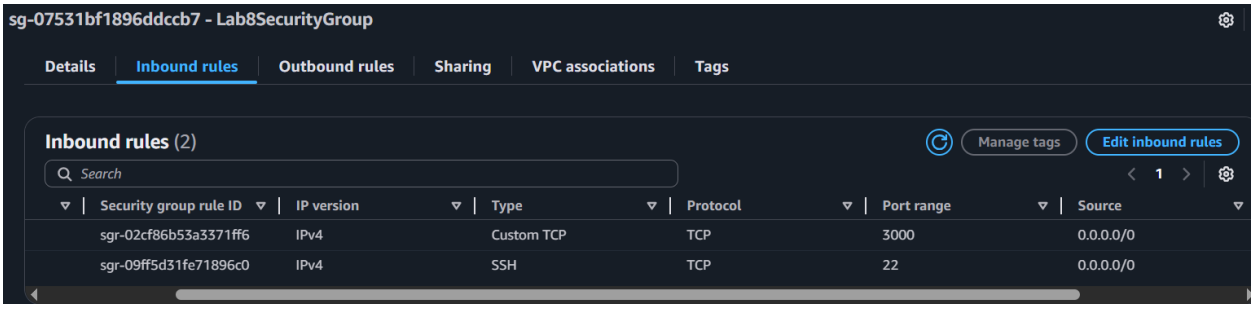
8. Add ec2-user to docker group, show groups before re-login, exit and reconnect, show groups after reconnect:

```
[ec2-user@ip-172-31-9-213 ~]$ groups
ec2-user adm wheel systemd-journal
[ec2-user@ip-172-31-9-213 ~]$ sudo usermod -aG docker $USER
[ec2-user@ip-172-31-9-213 ~]$ groups
ec2-user adm wheel systemd-journal
Dell@DESKTOP-OPCO1NF MINGW64 /d/Uni/Semester 5/CC Lab/CC-KomalKashif-031 (main)
$ ssh -i "D:\Uni\Semester 5\CC Lab\Lab8Key.pem" ec2-user@3.29.91.65
       #_
   ~\_  ####_        Amazon Linux 2023
  ~~  \_#####\
  ~~     \###|
  ~~       \#/ ___   https://aws.amazon.com/linux/amazon-linux-2023
   ~~       V~' '->
    ~~~         /
      ~~._.   _/
         _/ _/
       _/m/'
Last login: Sat Jan 17 14:09:03 2026 from 103.229.252.81
[ec2-user@ip-172-31-9-213 ~]$ groups
ec2-user adm wheel systemd-journal docker
```

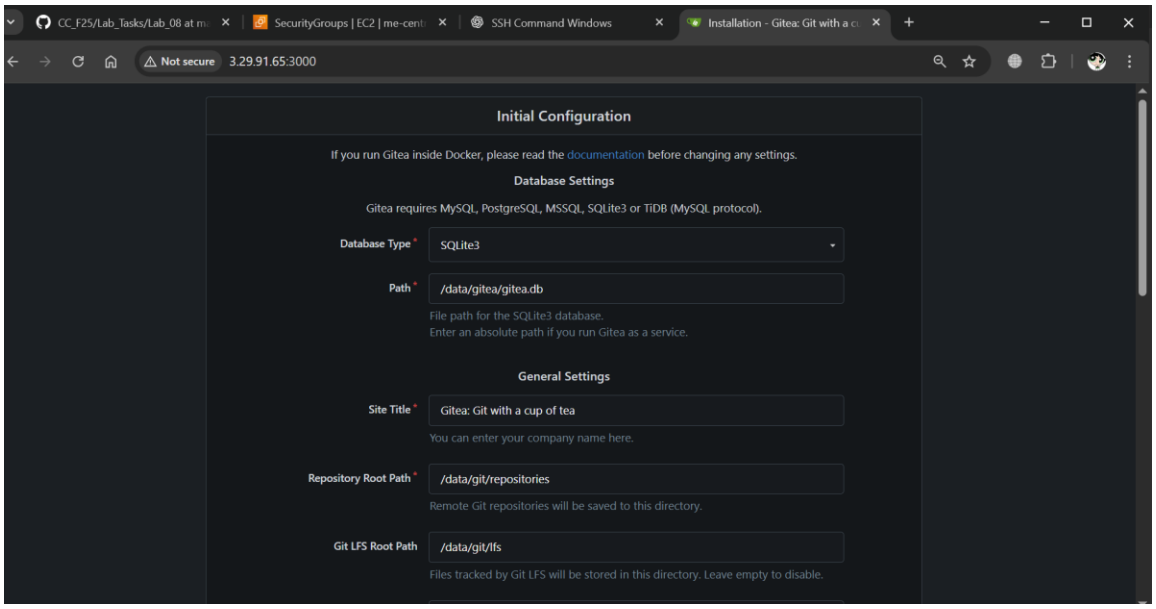
9. Run docker compose up -d from the directory with compose.yaml:

```
[ec2-user@ip-172-31-9-213 ~]$ docker compose up -d
WARN[0000] /home/ec2-user/compose.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to av
oid potential confusion
[+] up 5/7
[+] up 10/10ea/gitea:latest [⣿⣿⣿⣿⣿⣿⣿] 73.11MB / 75.48MB Pulling                                                  12.1s
 ✔ Image gitea/gitea:latest   Pulled                                                                              12.2s
   ✔ 2d35ebdb57d9            Pull complete                                                                        2.0s
   ✔ 9f4e672c1f34            Pull complete                                                                        3.1s
   ✔ 4da94b3cc809            Pull complete                                                                        3.2s
   ✔ 8e016ece0bd3            Pull complete                                                                        3.2s
   ✔ 346e493cb6cb            Pull complete                                                                        8.8s
   ✔ 95215379f1d1            Pull complete                                                                        9.0s
 ✔ Network ec2-user_default   Created                                                                             0.1s
 ✔ Volume ec2-user_gitea-data Created                                                                             0.0s
 ✔ Container gitea            Created                                                                             0.2s
[ec2-user@ip-172-31-9-213 ~]$
```

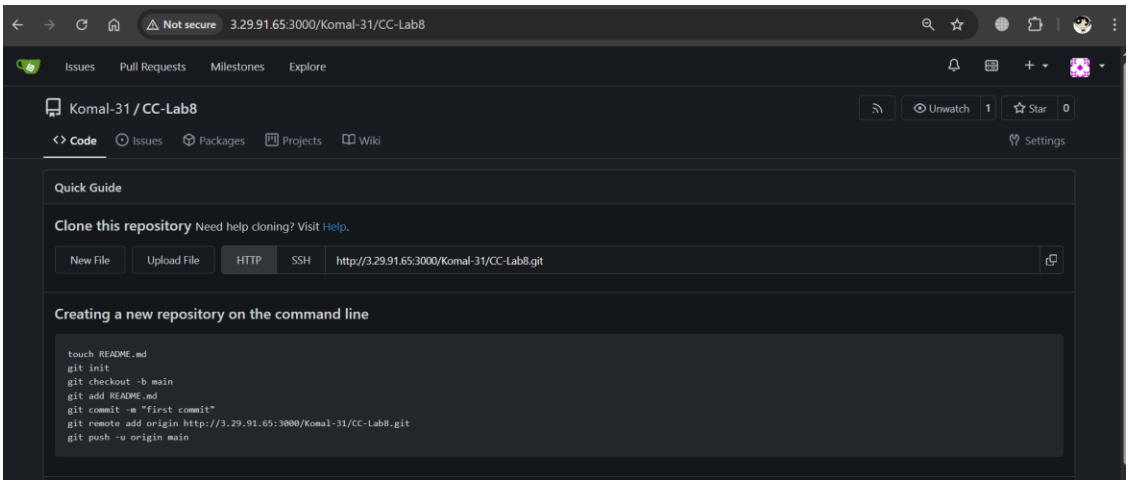
10. Edit the security group Lab8SecurityGroup inbound rules in the EC2 console: add Custom TCP rule port 3000 source 0.0.0.0/0 and save. Capture the inbound rules after saving:



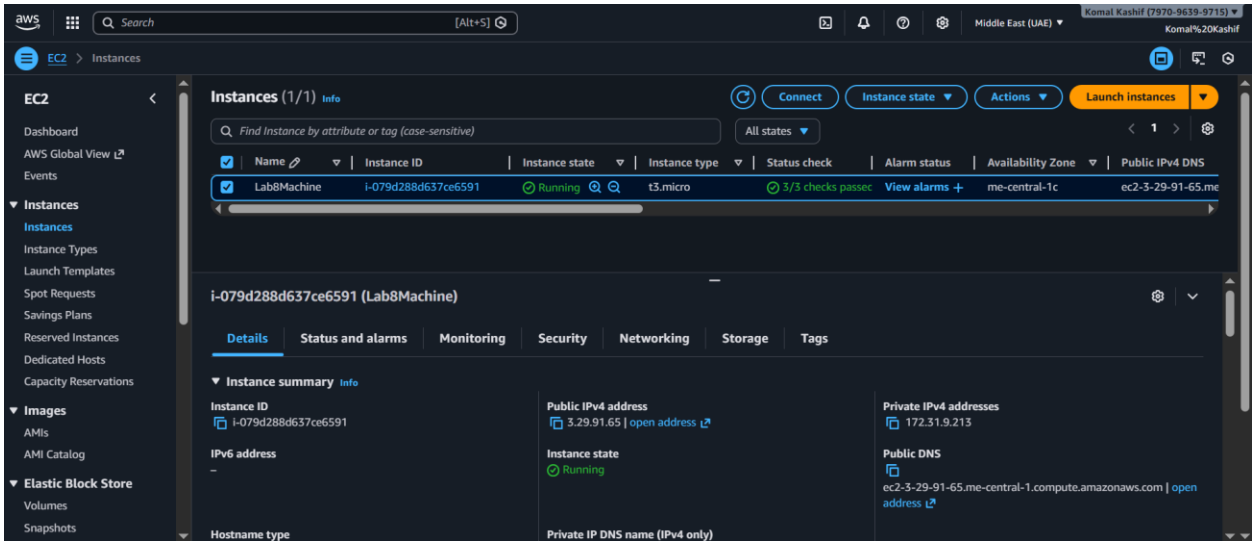
11. From your Windows browser navigate to: http://Public-IP:3000 — capture the Gitea setup/install page:



12. Complete initial Gitea setup (create admin user, create a repo) and capture Gitea showing the created repository:

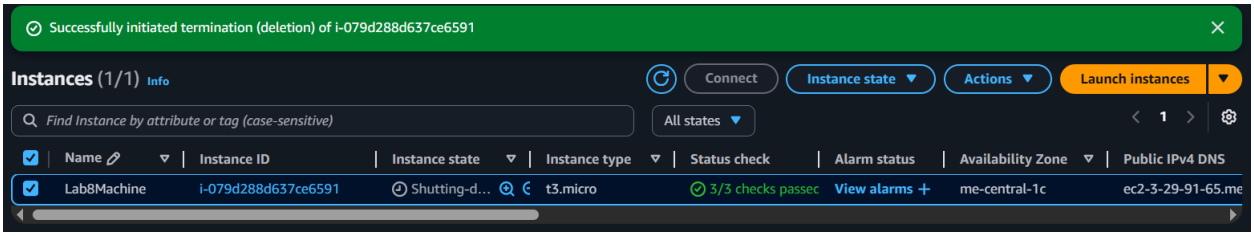


13. Task 4 summary

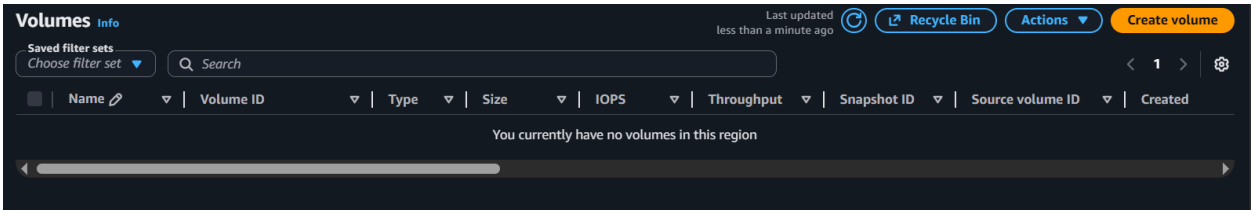


Cleanup — Remove resources to avoid charges

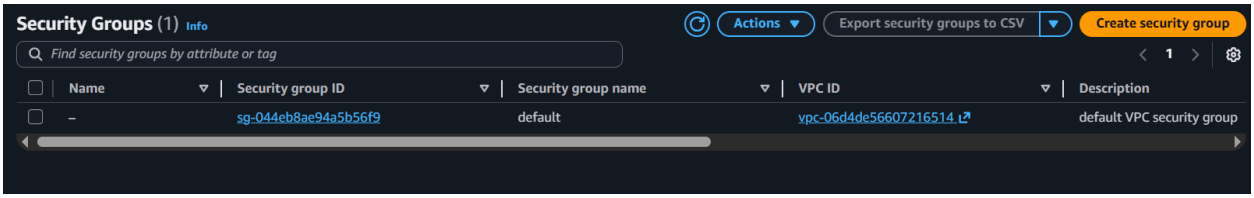
1. Terminate the EC2 instance Lab8Machine.



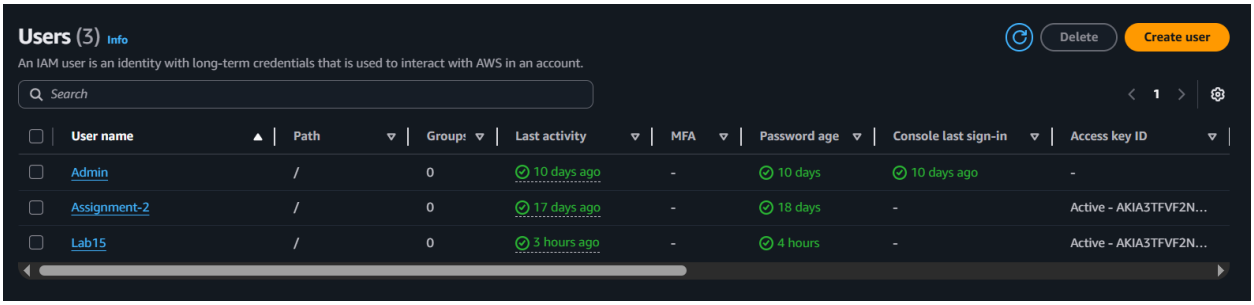
2. Delete associated EBS volumes and snapshots



3. Delete security group Lab8SecurityGroup and key pair Lab8Key from the EC2 console



4. Delete IAM users Lab8User and any access keys.



5. Final cleanup summary