



*Fatima Jinnah Women University*

*Opening Portals of Excellence Through Higher Education*

**DEPARTMENT OF SOFTWARE ENGINEERING**

**LAB#8**

**SUBMITTED TO:**

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**REG NO: 2021-BSE-024**

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

**aws**

**Sign up for AWS**

**Try AWS at no cost for up to 6 months**

Start with USD \$100 in AWS credits, plus earn up to USD \$100 by completing various activities.



Root user email address  
Used for account recovery and as described in the [AWS Privacy Notice](#)

AWS account name  
Choose a name for your account. You can change this name in your account settings after you sign up.

**Verify email address**

OR

**Sign in to an existing AWS account**

This site uses essential cookies. See our [Cookie Notice](#) for more information.

✓ Your payment method has been set as default successfully.

### Notifications

## Sign In

Access your AWS account by user type.

User type ([not sure?](#))

Root user

Account owner that performs tasks requiring unrestricted access.

IAM user

User within an account that performs daily tasks.

Screenshot of the AWS Console home page. The top navigation bar shows the account ID (4395-6388-0912) and region (United States (Ohio)). The main area displays 'Recently visited' services (No recently visited services) and 'Applications' (0). A message indicates 'The data couldn't be fetched. Try again later.'

Name	Description	Region	Originati...
<p>✖ The data couldn't be fetched. Try again later.</p>			

Region: US East (Ohio)

Select Region: us-east-2 (Current Region)

Find applications

No recently visited services

Explore one of these commonly visited AWS services.

EC2 S3 Aurora and RDS Lambda

Screenshot of the AWS Region Selection interface. It lists various AWS regions with their status: Europe (Milan), Europe (Spain), Israel (Tel Aviv), Middle East (UAE), Middle East (Bahrain), Mexico (Central), Asia Pacific (Tokyo), Asia Pacific (Seoul), Asia Pacific (Osaka), Asia Pacific (Mumbai), and Asia Pacific (Singapore). The Middle East (UAE) region is selected and marked as 'Enabled'.

Task 2 – Create IAM Admin and Lab8User with console access

Services

IAM Manage access to AWS resources

Show more

Middle East (UAE)

**User created successfully**

You can view and download the user's password and email instructions for signing in to the AWS Management Console.

[View user](#)

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Step 2  
Set permissions

Step 3  
Review and create

Step 4  
[Retrieve password](#)

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.

<p><b>Console sign-in details</b></p> <p><b>Console sign-in URL</b>  <a href="https://439563880912.signin.aws.amazon.com/console">https://439563880912.signin.aws.amazon.com/console</a></p> <p><b>User name</b>   Admin</p> <p><b>Console password</b>   ***** <a href="#">Show</a></p>	<p><a href="#">Email sign-in instructions</a> </p>
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The screenshot shows the AWS IAM 'Create user' success page. At the top, there's a navigation bar with the AWS logo, a search bar, and account information. Below it, the breadcrumb trail shows 'IAM > Users > Create user'. A green success message box contains the text 'User created successfully' and instructions to view or download password/email instructions. A 'View user' button is present. On the left, a vertical navigation pane lists steps: Step 2 (Set permissions), Step 3 (Review and create), Step 4 (Retrieve password), and the current step, Step 5 (Retrieve password), which is highlighted with a blue circle. The main content area displays 'Console sign-in details' with fields for 'Console sign-in URL' (a link to https://439563880912.signin.aws.amazon.com/console), 'User name' (Lab8User), and 'Console password' (a masked password). A 'Email sign-in instructions' button is also shown.

User created successfully

You can view and download the user's password and email instructions for signing in to the AWS Management Console.

[View user](#)

Step 2  
Set permissions

Step 3  
Review and create

Step 4  
Retrieve password

Step 5  
Retrieve password

**Console sign-in details**

Console sign-in URL  
<https://439563880912.signin.aws.amazon.com/console>

User name  
 Lab8User

Console password  
 \*\*\*\*\* [Show](#)

[Email sign-in instructions](#)

Lab8User\_credentials

	A	B	C	D	E	F
1	User name	Password	Console sign-in URL			
2	Lab8User		<a href="https://439563880912.signin.aws.amazon.com/console">https://439563880912.signin.aws.amazon.com/console</a>			

aws Search [Alt+S] Account ID: 4395-6388-0912 Lab8User

Console home Info Reset to default layout + Add widgets

Recently visited Info



No recently visited services

Explore one of these commonly visited AWS services.

EC2 S3 Aurora and RDS Lambda

Applications (0) Info Create application

Region: Europe (Stockholm)

Select Region - eu-north-1 (Current Region) Find applications

Name	Description	Region	Originati...
No applications Get started by creating an application.			

Create application

Account ID: 4395-6388-0912 Khadija\_Malik

Users (2) Info Delete Create user

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

<input type="checkbox"/>	User name	Path	Group:	Last activity	MFA	Password age	Console
<input type="checkbox"/>	<a href="#">Admin</a>	/	0	15 minutes ago	-	14 minutes	15 m
<input type="checkbox"/>	<a href="#">Lab8User</a>	/	0	6 minutes ago	-	5 minutes	6 mir

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

**VPC dashboard**

**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

<b>VPCs</b> ▶ See all regions	UAE 1
<b>Endpoint Services</b> ▶ See all regions	UAE 0
<b>Subnets</b> ▶ See all regions	UAE 3
<b>NAT Gateways</b> ▶ See all regions	UAE 0
<b>Route Tables</b> ▶ See all regions	UAE 1
<b>VPC Peering Connections</b> ▶ See all regions	UAE 0
<b>Internet Gateways</b> ▶ See all regions	UAE 1
<b>Network ACLs</b>	UAE 1

**Service Health**  
View complete service health details

**Settings**  
Block Public Access  
Zones  
Console Experiments

**Additional Information**  
VPC Documentation  
All VPC Resources

**Your VPCs**

**VPCs**   **VPC encryption controls**

**Your VPCs (1) Info**

Last updated 3 minutes ago

Name	VPC ID	State	Encryption c...	Encryption control...
-	vpc-0e3c6b14397a2a4bf	Available	-	-

Select a VPC above

**Subnets (3) Info**

Last updated 4 minutes ago

Name	Subnet ID	State	VPC	Block Public.
-	subnet-061c17d65ed05b507	Available	vpc-0e3c6b14397a2a4bf	Off
-	subnet-051ea03e6247c9be1	Available	vpc-0e3c6b14397a2a4bf	Off
-	subnet-0c802fa66938bd1af	Available	vpc-0e3c6b14397a2a4bf	Off

**Route tables (1) Info**

Last updated 4 minutes ago

Name	Route table ID	Explicit subnet assoc...	Edge associations	Main	VPC
-	rtb-06c6333febc88b3b7	-	-	Yes	vpc-0

The screenshot displays two related AWS management console pages for a VPC setup.

**Top Page: Network ACLs (1) Info**

- Header: Account ID: 4395-6388-0912, Middle East (UAE), Khadija\_Malik.
- Section: Network ACLs (1) Info
- Table:

Name	Network ACL ID	Associated with	Default	VPC ID
-	acl-0e36ebac085d02e28	3 Subnets	Yes	vpc-0e3c6b14397a2a4bf
- Buttons: Actions ▾, Create network ACL.

**Bottom Page: Resources by Region**

- Header: Account ID: 4395-6388-0912, Middle East (UAE), Khadija\_Malik.
- Left sidebar: Filter by VPC, Virtual private cloud, Security, DNS firewall, Network Firewall.
- Section: Resources by Region
- Table:

Category	Count
VPCs	UAE 1
Subnets	UAE 3
Route Tables	UAE 1
Internet Gateways	UAE 1
Endpoint Services	UAE 0
NAT Gateways	UAE 0
VPC Peering Connections	UAE 0
Network ACLs	UAE 1
- Right sidebar: Settings (Block Public Access, Zones, Console Experiments), Additional Information (VPC Documentation, All VPC Resources, Forums, Report an Issue).

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

AWS Search [Alt+S] Account ID: 4395-6388-0912 Middle East (UAE) Khadija\_Ma

**EC2**

**Dashboard** EC2 Global View Events

**Instances** Instances Instance Types Launch Templates Spot Requests Savings Plans Reserved Instances Dedicated Hosts Capacity Reservations

**Images** AMIs

**Resources** You are using the following Amazon EC2 resources in the Middle East (UAE) Region:

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

**EC2 cost** Date range: Past 6 months Region: Global

Total cost **0**

Regions **0**

Cost (\$)

**Launch instance** To get started, launch an Amazon EC2 instance, which is a virtual server in the cloud.

**Service health** AWS Health Dashboard

### ▼ Summary

**Number of instances** | [Info](#)

1

**Software Image (AMI)**  
Amazon Linux 2023 AMI 2023.9.2...[read more](#)  
ami-05524d6658fcf35b6

**Virtual server type (instance type)**  
t3.micro

**Firewall (security group)**  
New security group

**Storage (volumes)**  
1 volume(s) - 8 GiB

[Cancel](#) [Launch instance](#)

### Key pair type

#### RSA

RSA encrypted private and public key pair

#### ED25519

ED25519 encrypted private and public key pair

### Private key file format

#### .pem

For use with OpenSSH

#### .ppk

For use with PuTTY

**⚠️** When prompted, store the private key in a secure and accessible location on your computer. You will need it later to connect to your instance. [Learn more ↗](#)

[Cancel](#)

[Create key pair](#)

### i-03975b975835787a1 (Lab8Machine)

[Details](#)

[Status and alarms](#)

[Monitoring](#)

[Security](#)

[Networking](#)

[Storage](#)

[Tags](#)

#### ▼ Instance summary [Info](#)

##### Instance ID

[i-03975b975835787a1](#)

##### IPv6 address

-

##### Hostname type

IP name: ip-172-31-1-52.me-central-1.compute.internal

##### Answer private resource DNS name IPv4 (A)

##### Public IPv4 address

[3.28.183.146 | open address ↗](#)

##### Instance state

[Running](#)

##### Private IP DNS name (IPv4 only)

[ip-172-31-1-52.me-central-1.compute.internal](#)

##### Instance type

[t3.micro](#)

##### Private IPv4 addresses

[172.31.1.52](#)

##### Public DNS

[ec2-3-28-183-146.me-central-1.compute.amazonaws.com | open address ↗](#)

##### Elastic IP addresses

-

```
ec2-user@ip-172-31-1-52:~  
Microsoft Windows [Version 10.0.19045.6466]  
(c) Microsoft Corporation. All rights reserved.  
  
C:\Users\DELL>ssh -i Downloads/Lab8Key.pem ec2-user@3.28.183.146  
The authenticity of host '3.28.183.146 (3.28.183.146)' can't be established.  
ED25519 key fingerprint is SHA256:3RaL9espXyznMnQ7VHytlw/BZtciQC4aT78JutmpDjo.  
This key is not known by any other names.  
Are you sure you want to continue connecting (yes/no/[fingerprint])? y  
Please type 'yes', 'no' or the fingerprint: yes  
Warning: Permanently added '3.28.183.146' (ED25519) to the list of known hosts.  
 , #  
 ~\_\ #####_ Amazon Linux 2023  
 ~~ \_\#####\|  
 ~~ \###|  
 ~~ \#/ __ https://aws.amazon.com/linux/amazon-linux-2023  
 ~~ \~' '-->  
 ~~~ /  
 ~~_. /  
 _/m/  
[ec2-user@ip-172-31-1-52 ~]$
```

```
[ec2-user@ip-172-31-1-52 ~]$ sudo yum update -y  
Amazon Linux 2023 Kernel Livepatch repository  
Dependencies resolved.  
Nothing to do.  
Complete!  
[ec2-user@ip-172-31-1-52 ~]$ sudo yum install -y docker
```

```
[ec2-user@ip-172-31-1-52 ~]$ sudo yum install -y docker  
Last metadata expiration check: 0:00:18 ago on Fri Dec 26 05:17:50 2025.  
Dependencies resolved.  
=====  
          Version           Repository      Size  
=====  
Installing:  
 docker           x86_64        25.0.13-1.amzn2023.0.2    amazonlinux   46 M  
=====  
Installing:  
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  
 libcgroupl            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
```

```
Installed:  
 container-selinux-4:2.242.0-1.amzn2023.noarch  
 docker-25.0.13-1.amzn2023.0.2.x86_64  
 iptables-nft-1.8.8-3.amzn2023.0.2.x86_64  
 libnetfilter_conntrack-1.0.8-2.amzn2023.0.2.x86_64  
 libnftnl-1.2.2-2.amzn2023.0.2.x86_64  
 runc-1.3.3-2.amzn2023.0.1.x86_64  
 containerd-2.1.5-1.amzn2023.0.1.x86_64  
 iptables-libs-1.8.8-3.amzn2023.0.2.x86_64  
 libcgroupl-3.0-1.amzn2023.0.1.x86_64  
 libnfnetlink-1.0.1-19.amzn2023.0.2.x86_64  
 pigz-2.5-1.amzn2023.0.3.x86_64  
  
Complete!  
[ec2-user@ip-172-31-1-52 ~]$ sudo mkdir -p /usr/local/lib/docker/cli-plugins  
[ec2-user@ip-172-31-1-52 ~]$ sudo curl -SL https://github.com/docker/compose/releases/latest/download/docker-compose  
[ec2-user@ip-172-31-1-52 ~]$ ls  
[ec2-user@ip-172-31-1-52 ~]$ curl https://github.com/docker/compose/releases/latest/download/docker-compose -o docker-compose  
[ec2-user@ip-172-31-1-52 ~]$ chmod +x docker-compose  
[ec2-user@ip-172-31-1-52 ~]$ sudo systemctl start docker  
[ec2-user@ip-172-31-1-52 ~]$
```

```
[ec2-user@ip-172-31-1-52:~]
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:
```

```
[ec2-user@ip-172-31-1-52 ~]$ sudo vim compose.yaml
[ec2-user@ip-172-31-1-52 ~]$ ls -l
total 4
-rw-r--r--. 1 root root 2980 Dec 26 05:33 compose.yaml
[ec2-user@ip-172-31-1-52 ~]$
```

```
[ec2-user@ip-172-31-1-52 ~]$ sudo chmod +x /usr/local/lib/docker/cli-plugins/docker-compose
[ec2-user@ip-172-31-1-52 ~]$ sudo systemctl start docker
[ec2-user@ip-172-31-1-52 ~]$ sudo vim compose.yaml
[ec2-user@ip-172-31-1-52 ~]$ ls -l
total 4
-rw-r--r--. 1 root root 2980 Dec 26 05:33 compose.yaml
[ec2-user@ip-172-31-1-52 ~]$ groups
ec2-user adm wheel systemd-journal
[ec2-user@ip-172-31-1-52 ~]$ sudo usermod -aG docker $USER
[ec2-user@ip-172-31-1-52 ~]$ groups
ec2-user adm wheel systemd-journal
[ec2-user@ip-172-31-1-52 ~]$ exit
logout
```

Connection to 3.28.183.146 closed.

```
C:\Users\Dell>ssh -i Downloads/Lab8Key.pem ec2-user@3.28.183.146
   _#
  ~\_ ####_      Amazon Linux 2023
  ~\_ \#####\
  ~~ \###|
  ~~ \#/  _> https://aws.amazon.com/linux/amazon-linux-2023
  ~~  \~' /_
  ~~. _/ /
  / /_/
  /m/'

Last login: Fri Dec 26 05:16:30 2025 from 58.65.217.106
[ec2-user@ip-172-31-1-52 ~]$ groups
ec2-user adm wheel systemd-journal docker
[ec2-user@ip-172-31-1-52 ~]$
```

```
[ec2-user@ip-172-31-1-52 ~]$ docker compose up -d
[+] up 16/18
[+] up 23/23tgres:alpine [████████████] 112MB / 112MB Pulling
  □ Image postgres:alpine Pulled
    □ 1074353eec0d Pull complete
    □ 51a9324a2bdc Pull complete
    □ 1e827ac0fa1e Pull complete
    □ 0629ac8b8cc5 Pull complete
    □ 2e50a444bddf Pull complete
    □ 4465107e1675 Pull complete
    □ cc2ee20b6816 Pull complete
    □ 0dfd86289dd1 Pull complete
    □ 98eecc0da868 Pull complete
    □ b747867e61cb Pull complete
  □ Image gitea/gitea:latest Pulled
    □ 2d35ebdb57d9 Pull complete
    □ 9f4e672c1f34 Pull complete
    □ 4da94b3cc809 Pull complete
    □ 8e016ece0bd3 Pull complete
    □ 346e493cb6cb Pull complete
    □ 95215379f1d1 Pull complete
  □ Network webnet Created
  □ Volume gitea Created
  □ Volume gitea_postgres Created
  □ Container gitea_db Created
  □ Container gitea Created
[ec2-user@ip-172-31-1-52 ~]$
```

ⓘ Inbound security group rules successfully modified on security group (sg-0891c0af53bcc9063 | Lab8SecurityGroup) X

▶ Details

Details			
Security group name	Security group ID	Description	VPC ID
<a href="#">Lab8SecurityGroup</a>	<a href="#">sg-0891c0af53bcc9063</a>	<a href="#">launch-wizard-1 created 2025-12-26T05:03:32.331Z</a>	<a href="#">vpc-0e3c6b14397a2a4bf</a> ↗
Owner	Inbound rules count	Outbound rules count	
<a href="#">439563880912</a>	1 Permission entry	1 Permission entry	

[Inbound rules](#) | [Outbound rules](#) | [Sharing](#) | [VPC associations](#) | [Tags](#)

**Inbound rules (1)**
[Manage tags](#) | [Edit inbound rules](#)

Name	Security group rule ID	IP version	Type	Protocol	Port range
-	sgr-032713d432983d2f4	IPv4	Custom TCP	TCP	3000

⚠ Not secure 3.28.183.146:3000

## 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
SSL *	Disable
Schema	

Leave blank for database default ("public").

Issues Pull Requests Milestones Explore

admin / lab8repo Private

Code Issues Packages Projects Wiki Settings

Quick Guide

Clone this repository Need help cloning? Visit [Help](#).

New File Upload File HTTP SSH http://3.28.183.146:3000/admin/lab8repo.git

Creating a new repository on the command line

**EC2 Instances**

**Details**

Security group name	Security group ID	Description	VPC ID
Lab8SecurityGroup	sg-0891c0af53bcc9063	launch-wizard-1 created 2025-12-26T05:03:33Z	VPC-0e3c6b14397a2a4bf
Owner	439563880912	Inbound rules count 1 Permission entry	Outbound rules count 1 Permission entry

**Inbound rules (1)**

Protocol	Port range	Source
TCP	3000	58.65.217.106/32

## Cleanup — Remove resources to avoid charges

**Instances (1/1) Info**

**Volumes**

You currently have no volumes in this region

**Fault tolerance for all volumes in this Region**

**Snapshot summary**

Recently backed up volumes / Total # volumes  
**0 / 0**

Last updated on Fri, Dec 26, 2025, 11:39:52 AM (GMT+05:00)

Data Lifecycle Manager default policy for EBS Snapshots status  
No default policy set up | Create policy

The screenshot shows two browser tabs open in a split-screen view. Both tabs are from the AWS CloudWatch Metrics Insights interface, with the URL being [me-central-1.console.aws.amazon.com/cloudwatch-metrics-insights/](https://me-central-1.console.aws.amazon.com/cloudwatch-metrics-insights/).  
The left tab displays a query results page with the following output:

```
SELECT * FROM Metrics WHERE MetricName = 'CloudWatch Metrics Insights Usage' AND Namespace = 'AWS/MetricsInsights' AND MetricName = 'CloudWatch Metrics Insights Usage' AND Namespace = 'AWS/MetricsInsights'
```

The right tab shows the CloudWatch Metrics Insights configuration page, where a new metric stream named "CloudWatch Metrics Insights Usage" has been created. The configuration includes the following details:

- Source ARN:** arn:aws:cloudwatch-metrics:us-east-1:123456789012:metric-stream/CloudWatch Metrics Insights Usage
- Metrics:** CloudWatch Metrics Insights Usage
- Dimensions:** Namespace (AWS/MetricsInsights)
- Period:** 1 minute
- Unit:** None

END