

Cloud Computing Lab

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BSE-V B

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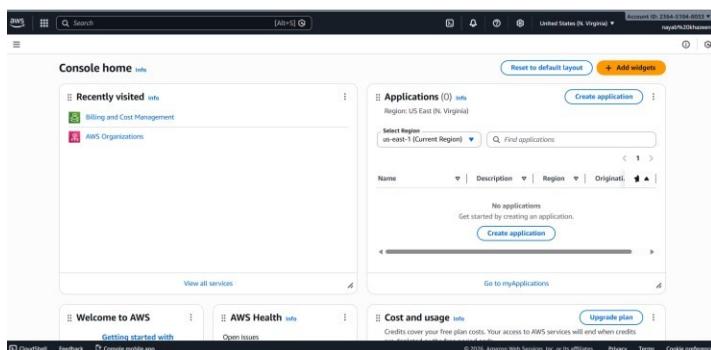
LAB 08

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

- task1_open_signup_page.png



- task1_signed_up_confirmation.png



- task1_root_signed_in.png



- task1_enable_region_me-central-1.png

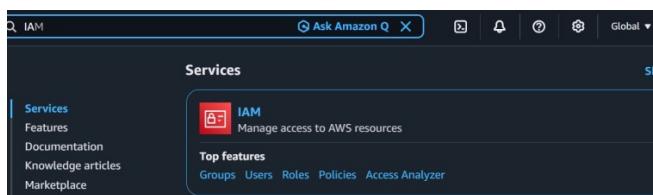


- task1_summary.png

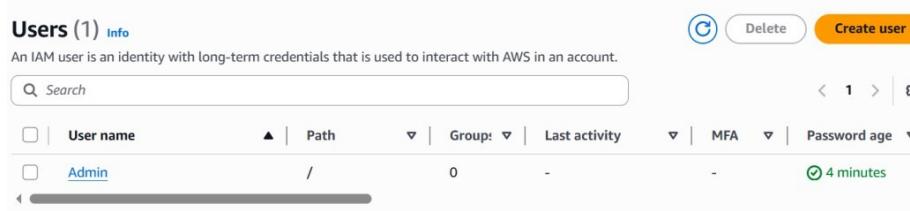


Task 2 — Create IAM Admin and Lab8User with console access

- task2_open_iam_console.png



- task2_admin_create_confirmation.png



- task2_admin_csv_and_signin_url.png

Admin_credentials - Microsoft Excel											
A	B	C	D	E	F	G	H	I	J	K	L
User name	Password	Console sign-in URL									
Admin	zSU34\$13	https://236451048033.signin.aws.amazon.com/console									

- task2_admin_console_after_login.png



- task2_create_lab8user_and_csv.png

Console sign-in details

Console sign-in URL
 <https://236451048033.signin.aws.amazon.com/console>

User name
 Lab8User

Console password
 ***** Show

[Email sign-in instructions ↗](#)

[Cancel](#) [Download .csv file](#) [Return to users list](#)

- task2_lab8user_csv_saved.png

A	B	C	D	E	F	G	H	I
User name	Password	Console sign-in URL						
Lab8User	p!6P14\$4	https://236451048033.signin.aws.amazon.com/console						

- task2_lab8user_logged_in.png

[Alt+S]      Europe (Stockholm) ▾ Account ID: 2364-5104-8033 ▾ Lab8User

- task2_summary.png

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="text" value="Search"/>    										
<input type="checkbox"/>	User name	▲	Path	▼	Group: 	▼	Last activity	▼	MFA	▼	Password age	▼
<input type="checkbox"/>	Admin		/		0		 16 minutes ago		-		 15 minutes	
<input type="checkbox"/>	Lab8User		/		0		 7 minutes ago		-		 1 minute	

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

- task3_open_vpc_console.png

The screenshot shows the AWS VPC dashboard. At the top, there's a search bar and a filter dropdown set to 'Filter by VPC'. Below the search bar, there are two main sections: 'Virtual private cloud' and 'Resources by Region'. The 'Virtual private cloud' section contains links for 'Your VPCs', 'Subnets', 'Route tables', 'Internet gateways', 'Egress only internet gateways', 'DHCP option sets', 'Classic IPNs', 'Managed prefix lists', 'NAT gateways', 'Peering connections', and 'Route servers'. The 'Resources by Region' section is currently expanded, showing resources for the 'Europe (Ireland)' region. It includes sections for 'VPCs' (with a 'See all regions' link), 'Subnets' (with a 'See all regions' link), 'Route Tables' (with a 'See all regions' link), 'Internet Gateways' (with a 'See all regions' link), 'Endpoint Services' (with a 'See all regions' link), 'NAT Gateways' (with a 'See all regions' link), 'VPC Peering Connections' (with a 'See all regions' link), 'Network ACLs' (with a 'See all regions' link), and 'AWS Lambda functions' (with a 'See all regions' link). On the right side of the dashboard, there are 'Service Health' and 'Settings' sections, as well as a 'Additional Information' sidebar with links to 'VPC Documentation', 'All VPC Resources', 'Forums', and 'Report an issue'.

- task3_vpcs_list.png

Your VPCs (1) Info		Last updated 1 minute ago			Actions
		VPC ID	State	Encryption	Encryption control
<input type="checkbox"/>	Name	vpc-0e210a15e8f3fe12f	Available	-	-
<input type="checkbox"/>	-				

- task3 subnets list.png

Subnets (3) [Info](#)

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

<input type="checkbox"/>	Name	Subnet ID	State	VPC	Block Public...
<input type="checkbox"/>	-	subnet-03b14671346f97bd9	Available	vpc-0e210a15e8f3fe12f	<input type="radio"/> Off
<input type="checkbox"/>	-	subnet-002ded545d2f2d2aa	Available	vpc-0e210a15e8f3fe12f	<input type="radio"/> Off
<input type="checkbox"/>	-	subnet-071f97bda8a8ba4c4	Available	vpc-0e210a15e8f3fe12f	<input type="radio"/> Off

- task3_route_tables_list.png

Route tables (1) [Info](#)

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

<input type="checkbox"/>	Name	Route table ID	Explicit subnet associ...	Edge a...
<input type="checkbox"/>	-	rtb-0038a3dae52cf2823	-	-

- task3_network_acls_list.png

Network ACLs (1) [Info](#)

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

<input type="checkbox"/>	Name	Network ACL ID	Associated with	Default
<input type="checkbox"/>	-	acl-04d839ff2bff69563	3 Subnets	Yes

- task3_summary.png

The screenshot shows the AWS VPC dashboard for the Middle East (UAE) region. It displays various VPC components and their counts across regions:

- 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)
- Egress-only Internet Gateways:** UAE 0 (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)
- Security Groups:** UAE 1 (See all regions)

Service Health: View complete service health detail

Settings: Block Public Access, Zones, Console Experiments

Additional Information: VPC Documentation, All VPC Resources, Forums, Report an Issue

Site-to-Site VPN Connect: Amazon VPC enables you to use your isolated resources within the AWS cloud, then connect those resources directly to your own datacenter using industry-standard protocols.

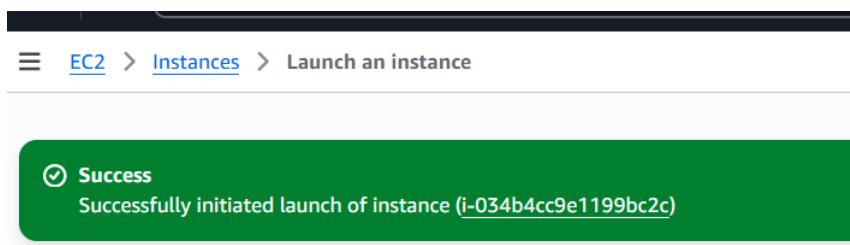
Task 4 — Launch EC2, SSH, install Docker & Docker Compose, deploy Gitea

- Ztask4_open_ec2_console.png

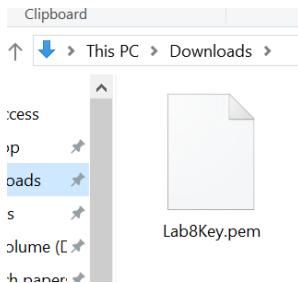
The screenshot shows the AWS EC2 dashboard for the Middle East (UAE) region. It includes the following sections:

- EC2 Global View:** Shows 0 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, 1 Security groups, 1 Snapshots, 0 Volumes.
- Launch instance:** To get started, launch an Amazon EC2 Instance, which is a virtual server in the cloud. Buttons: Launch instance, Migrate a server.
- Service health:** Region: Middle East (UAE), Status: This service is operating normally.
- EC2 cost:** Data range: Past 6 months, Region: Global. Total cost: Data unavailable. Regions: Data unavailable. Data: Data unavailable.
- Account attributes:** Default VPC: vpc-0fbfc75026d628797.

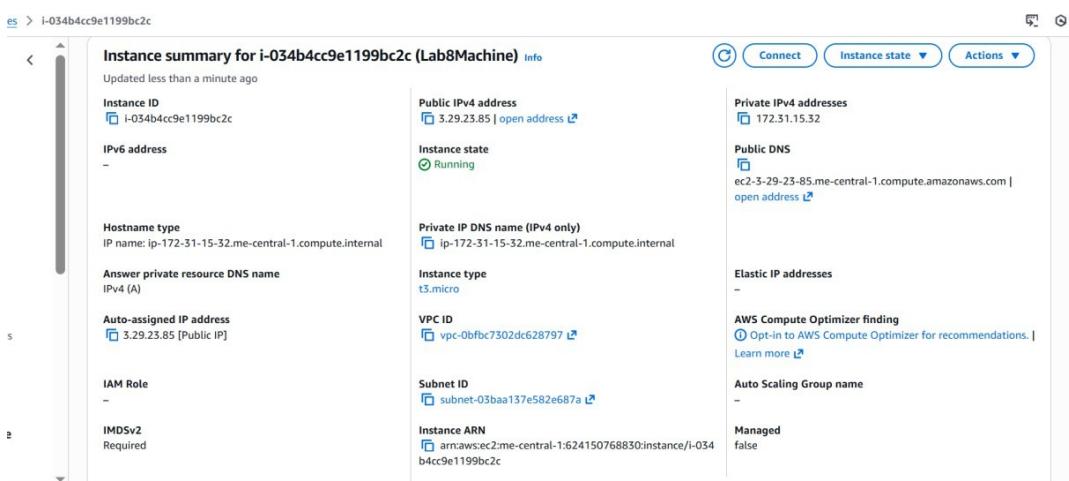
- task4_launch_instance_config.png



- task4_keypair_download.png



- task4_instance_running_console.png



- task4_ssh_from_windows_to_ec2.png

```
C:\Users\sweng>ssh -i Downloads/Lab8Key.pem ec2-user@3.29.23.85
The authenticity of host '3.29.23.85 (3.29.23.85)' can't be established.
ED25519 key fingerprint is SHA256:4FV8UUH1wdpNQLuk4PkIXRYQK5ofhDw9K6BdKMFQ0ZE.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '3.29.23.85' (ED25519) to the list of known hosts.

, #_
~\_ ##### Amazon Linux 2023
~~ \#####|
~~ \###|
~~ \#/ __ https://aws.amazon.com/linux/amazon-linux-2023
~~ V~ ' '-'>
~~ /_/
~~ ._. /_
~~ /_/
~~ /m/'
```

- task4_ec2_install_docker_compose_started.png

```
[ec2-user@ip-172-31-15-32 ~]$ sudo yum update -y
Amazon Linux 2023 Kernel Livepatch Repository
Dependencies resolved.
Nothing to do.
Complete!
[ec2-user@ip-172-31-15-32 ~]$ sudo yum install -y docker
Last metadata expiration check: 0:00:05 ago on Sun Dec 28 16:19:05 2025.
Dependencies resolved.
=====
Version          Repository      Size
=====
docker           x86_64        25.0.13-1.amzn2023.0.2   amazonlinux
                                                               == Installing:
docker           x86_64        25.0.13-1.amzn2023.0.2   amazonlinux
                                                               == Installing:
Installing dependencies:
container-selinux noarch       4:2.242.0-1.amzn2023
containerd         x86_64       1.2.5-1.amzn2023.0.1
libselinux         x86_64       1.15.3-1.amzn2023.0.1
iptables-nft      x86_64       1.8.8-3.amzn2023.0.2
libgroup          x86_64       3.0-1.amzn2023.0.1
libnftnl-link     x86_64       1.0.1-19.amzn2023.0.2
libnftnl          x86_64       1.0.1-19.amzn2023.0.2
libnftnl-link     x86_64       1.2.2-2.amzn2023.0.2
pigz              x86_64       2.5-1.amzn2023.0.3
punc              x86_64       1.3.3-2.amzn2023.0.1
=====
Transaction Summary
=====
Total download size: 74 M
=====
Install 11 Packages

Total download size: 74 M
=====
Dependencies Resolved
=====
Preparing Packages
  (1/11): docker-25.0.13-1.amzn2023.noarch.rpm
  (2/11): iptables-libns-1.8.8-3.amzn2023.0.2.x86_64.rpm
=====
Running Transaction Test
=====
Performing Dependency Resolution
=====
开始安装
=====
  docker-25.0.13-1.amzn2023.0.2.x86_64
  iptables-nft-1.8.8-3.amzn2023.0.2.x86_64
  libnftnl-link-1.0.1-19.amzn2023.0.2.x86_64
  runc-1.3.3-2.amzn2023.0.1.x86_64
=====
  docker-25.0.13-1.amzn2023.0.2.x86_64
  libgroup-3.0-1.amzn2023.0.1.x86_64
  libnftnl-1.3.2-2.amzn2023.0.2.x86_64
=====
Completed!
[ec2-user@ip-172-31-15-32 ~]$ sudo mkdir -p /usr/local/lib/docker/cli-plugins
[ec2-user@ip-172-31-15-32 ~]$ curl -S https://github.com/docker/compose/releases/latest/download/docker-compose-linux-x86_64 -o /usr/local/lib/docker/cli-compose
[ec2-user@ip-172-31-15-32 ~]$ chmod +x /usr/local/lib/docker/cli-plugins/docker-compose
[ec2-user@ip-172-31-15-32 ~]$ sudo systemctl start docker
[ec2-user@ip-172-31-15-32 ~]$
```

- task4_vim_compose_yaml_paste.png

```
  Select ec2-user@ip-172-31-15-32:~
```

```
networks:
  - webnet

junes:
  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=dawZCgnBtUw
```

- task4_compose_yaml_saved_ls.png

```
[ec2-user@ip-172-31-15-32 ~]$ ls -l  
total 8  
-rw-r--r--. 1 root root 7127 Dec 28 16:26 compose.yaml  
[ec2-user@ip-172-31-15-32 ~]$
```

- task4 usermod and groups before after.png

- task4 docker compose up.png

```

> EOF
[ec2-user@ip-172-31-15-32 ~]$ sudo docker compose up -d
[+] up 15/18
[+] up 23/tgtes: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
    0df86289dd1 Pull complete
    98eecc0da868 Pull complete
    b747867e61cb Pull complete
  Image gitea/gitea:latest Pulled
    2d35ebdb57d9 Pull complete
    9f4ee672c1f34 Pull complete
    4da94b3cc809 Pull complete
    8e016ece0bd3 Pull complete
    346e493cb6cb Pull complete
    95215379f1d1 Pull complete
  Network webnet Created
  Volume gitea_postgres Created
  Volume gitea Created
  Container gitea_db Created
  Container gitea Created

```

- task4_security_group_allow_3000.png

Security group rule ID	IP version	Type	Protocol	Port range	Source
sgr-019a65865e3e0580d	IPv4	SSH	TCP	22	0.0.0.0/0
sgr-0466ba9835039cf58	IPv4	Custom TCP	TCP	3000	0.0.0.0/0

- task4_gitea_install_page.png



Installing now, please wait...

- task4_gitea_create_repo.png

Repository	Organization
Repositories 1	
Search repos... All 1 Sources Forks Mirrors Collaborative admin/Administrative-2	

- task4_summary.png

The left pane shows a CloudWatch Metrics dashboard for 'admin' with a search bar and a timeline from Jan to Dec. It displays 1 contribution in the last 12 months. The right pane shows the 'Details' tab for a security group named 'Lab8SecurityGroup' with the ID 'sg-0d1a401cb871173e6'. It includes sections for Description, Owner, and Inbound rules count (2). The Inbound rules table lists two entries: SSH (TCP port 22) and Custom TCP (TCP port 3000).

Cleanup — Remove resources to avoid charges

- cleanup_terminate_instance.png

A screenshot of the AWS Lambda console showing the successful termination of an instance. The message 'Successfully initiated termination (deletion) of i-034b4cc9e1199bc2c' is displayed. The instance summary for 'i-034b4cc9e1199bc2c (Lab8Machine)' is shown, including its Public IP address (3.29.23.95), Instance type (t3.micro), and VPC ID (vpc-0bfbc7302dc628797).

- cleanup_delete_volumes_snapshots.png

Screenshots of the AWS Volumes and Snapshots consoles. Both show empty lists with the message 'You currently have no volumes in this region.' and 'You currently have no snapshots in this Region.'

- cleanup_delete_security_group_and_keypair.png

A screenshot of the AWS Lambda console showing the deletion of a security group. A confirmation dialog box asks if you want to delete 'sg-0d1a401cb871173e6 - Lab8SecurityGroup'. To the right, a message indicates 'Successfully deleted 1 key pair'.

- cleanup_iam_users_deleted.png

A screenshot of the AWS IAM console showing the deletion of a user. A message at the top says 'User "Lab8User" deleted.' Below it, the 'Users (1/2)' table shows one user entry. Buttons for 'Delete' and 'Create user' are visible.

- 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

0

Users

0

Roles

3

Policies

0

Identity providers

0

