

CLOUD COMPUTING LAB: 08

Submitted By:

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Registration. No:

2023-BSE-060

Submitted To:

Engr. Shoaib

Section:

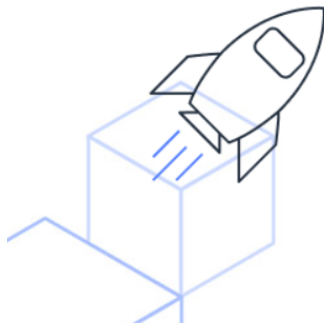
5B

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



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.



Sign up for AWS

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.

AWS Regions [info](#)

[Disable](#) [Enable](#) [⌵](#)

Region	Status
<input type="checkbox"/> Africa (Cape Town)	⛔ Disabled
<input type="checkbox"/> Asia Pacific (Hong Kong)	⛔ Disabled
<input type="checkbox"/> Asia Pacific (Taipei)	⛔ Disabled
<input type="checkbox"/> Asia Pacific (Hyderabad)	⛔ Disabled
<input type="checkbox"/> Asia Pacific (Jakarta)	⛔ Disabled
<input type="checkbox"/> Asia Pacific (Melbourne)	⛔ Disabled
<input type="checkbox"/> Asia Pacific (Malaysia)	⛔ Disabled
<input type="checkbox"/> Asia Pacific (New Zealand)	⛔ Disabled
<input type="checkbox"/> Asia Pacific (Thailand)	⛔ Disabled
<input type="checkbox"/> Canada (Calgary)	⛔ Disabled
<input type="checkbox"/> Europe (Zurich)	⛔ Disabled
<input type="checkbox"/> Europe (Milan)	⛔ Disabled
<input type="checkbox"/> Europe (Spain)	⛔ Disabled
<input type="checkbox"/> Israel (Tel Aviv)	⛔ Disabled
<input checked="" type="checkbox"/> Middle East (UAE)	✅ Enabled
<input type="checkbox"/> Middle East (Bahrain)	⛔ Disabled

Task 2 — Create IAM Admin and Lab8User with console access

The screenshot displays the AWS IAM console interface. At the top, the 'Services' section highlights 'IAM' with the description 'Manage access to AWS resources'. Below this, the 'Users (0)' section is shown, indicating no users are currently present. A table with columns for 'User name', 'Path', 'Group', 'Last activity', 'MFA', 'Password age', and 'Console' is visible, but it is empty. The 'Console sign-in details' section at the bottom provides information for a user named 'Admin', including the sign-in URL and password age.

Users (0) Info

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

Search

<input type="checkbox"/>	User name	Path	Group	Last activity	MFA	Password age	Console
No resources to display							

Users (1) Info

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

Search

<input type="checkbox"/>	User name	Path	Group	Last activity	MFA	Password age	Console
<input type="checkbox"/>	Admin	/	0	-	-	1 minute	-

Console sign-in details

Console sign-in URL

<https://791666871664.signin.aws.amazon.com/console>

User name

Admin

Console password

aws

Search

[Alt+S]

Europe (Stockholm)

Account ID: 7916-6687-1664

Admin

Console Home

Info

Reset to default layout

Add widgets

Recently visited

Info

No recently visited services

Explore one of these commonly visited AWS services.

EC2S3Aurora and RDSLambda

Applications (0)

Info

Create application

Region: Europe (Stockholm)

Select Region

eu-north-1 (Current Region)

Find applications

< 1 >

NameDescriptionRegionOriginati...

No applications

Get started by creating an application.

Create application

Users (2)

Info

Delete

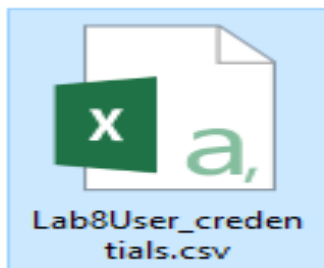
Create user

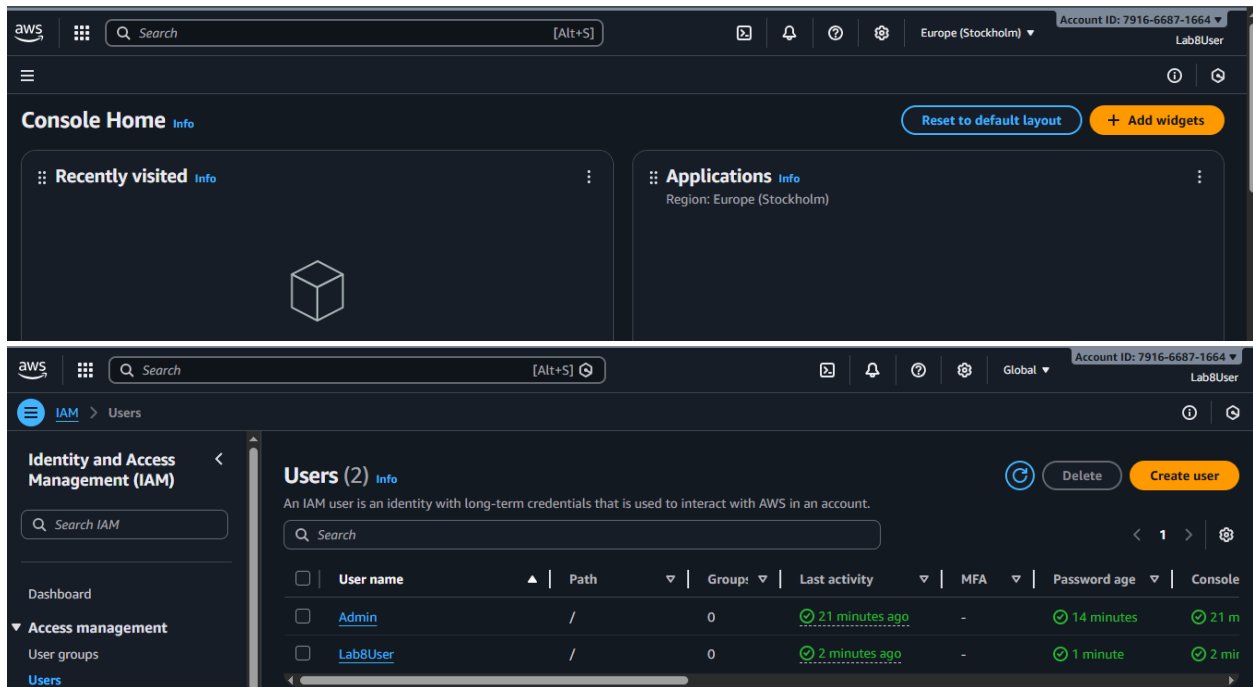
An IAM user is an identity with long-term credentials that is used to interact with AWS in an account.

Search

< 1 >

	User name	Path	Group	Last activity	MFA	Password age	Console
<input type="checkbox"/>	Admin	/	0	11 minutes ago	-	4 minutes	11 m
<input type="checkbox"/>	Lab8User	/	0	-	-	Now	-





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

Q VPC

Ask Amazon Q

Services

Show more

Services

Features

Resources

VPC

Isolated Cloud Resources

Create VPC

Launch EC2 Instances

Note: Your Instances will launch in the Europe region.

Service Health

View complete service health details

Resources by Region

Refresh Resources

You are using the following Amazon VPC resources

VPCs

Stockholm 1

See all regions

Endpoint Services

Stockholm 0

See all regions

Subnets

Stockholm 3

See all regions

NAT Gateways

Stockholm 0

See all regions

Route Tables

Stockholm 1

See all regions

VPC Peering Connections

Stockholm 0

See all regions

Internet Gateways

Stockholm 1

See all regions

Network ACLs

Stockholm 1

See all regions

Settings

Block Public Access

Zones

Console Experiments

Additional Information

VPC Documentation

All VPC Resources

Forums

Report an Issue

Subnets (3)

Info

Last updated 2 minutes ago

Actions

Create subnet

Find subnets by attribute or tag

	Name	Subnet ID	State	VPC	Block Public.
<input type="checkbox"/>	-	subnet-0c5da435ab3e5b46b	Available	vpc-0be30d1beb39c1848	Off
<input type="checkbox"/>	-	subnet-0bdbc334ba9665dba	Available	vpc-0be30d1beb39c1848	Off
<input type="checkbox"/>	-	subnet-01bdd76844f20e481	Available	vpc-0be30d1beb39c1848	Off

Route tables (1)

Info

Last updated less than a minute ago

Actions

Create route table

Find route tables by attribute or tag

	Name	Route table ID	Explicit subnet associ...	Edge associations	Main	VPC
<input type="checkbox"/>	-	rtb-0e647fa4ed429fbc3	-	-	Yes	vpc-0l

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
<input type="checkbox"/>	-	acl-0e6a983ccd7afa58d	3 Subnets	Yes	vpc-0be30d1beb39c1848

aws Search

VPC dashboard <

[AWS Global View](#)

Filter by VPC

Virtual private cloud

- Your VPCs
- Subnets
- Route tables
- Internet gateways
- Egress-only internet gateways
- DHCP option sets
- Elastic IPs
- Managed prefix lists
- NAT gateways
- Peering connections
- Route servers

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

EC2

Ask Amazon Q


Services

Show more

Services

Features

Resources

 **EC2**
Virtual Servers in the Cloud

Launch an instance Info

Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.

Name and tags Info

Name

Lab8Machine

Add additional tags

Application and OS Images (Amazon Machine Image) Info

An AMI contains the operating system, application server, and applications for your instance. If you don't see a suitable AMI below, use the search field or choose [Browse more AMIs](#).

Search our full catalog including 1000s of application and OS images

Quick Start

Amazon

macOS

Ubuntu

Windows

Red Hat

SUSE Linux

Del

Summary

Number of instances Info

1

Software Image (AMI)

Amazon Linux 2023 AMI 2023.9.2...[read more](#)
ami-0b46816ffa1234887

Virtual server type (instance type)

t3.micro

Firewall (security group)

New security group

Storage (volumes)

1 volume(s) - 8 GiB

Cancel

Launch instance

Preview code

Network settings Info

VPC - *required* Info

vpc-0be30d1beb39c1848
172.31.0.0/16

(default)

Subnet Info

No preference

Create new subnet

Availability Zone Info

No preference

Enable additional zones

Auto-assign public IP Info

Enable

Firewall (security groups) Info

A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

Create security group

Select existing security group

Security group name - *required*

Lab8SecurityGroup

This security group will be added to all network interfaces. The name can't be edited after the security group is created. Max length is 255 characters. Valid characters: a-z, A-Z, 0-9, spaces, and -x/!@!+&*~

Summary

Number of instances Info

1

Software Image (AMI)

Amazon Linux 2023 AMI 2023.9.2...[read more](#)
ami-0b46816ffa1234887

Virtual server type (instance type)

t3.micro

Firewall (security group)

New security group

Storage (volumes)

1 volume(s) - 8 GiB

Cancel

Launch instance

Preview code

Key pair name

Key pairs allow you to connect to your instance securely.

Lab8Key|

The name can include up to 255 ASCII characters. It can't include leading or trailing spaces.

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](#)



Lab8Key.pem

Info



Instance state ▼



Instance ID
i-0f9b66288eb530c24

IP name: ip-172-31-46-80.eu-north-1.compute.internal

Answer private resource DNS name
IPv4 (A)

56.228.41.241 [Public IP]

56.228.41.241 | open address ↗

Running

ip-172-31-46-80.eu-north-1.compute.internal

Instance type
t3.micro

 [vpc-0be30d1beb39c1848](#)

172.31.46.80

ec2-56-228-41-241.eu-north-1.compute.amazonaws.com | c

- ❶ Opt-in to AWS Compute Optimizer for recommendations.

[Learn more ↗](#)

```

~
~###
~\#####
~\#####|
~\###|
~\#|
~V~'~>
~
~_+
~_+
~/m/'
[ec2-user@ip-172-31-46-80 ~]$

```

Installing	: runc-1.3.3-2.amzn2023.0.1.x86_64	1/11
Installing	: containerd-2.1.5-1.amzn2023.0.1.x86_64	2/11
Running scriptlet:	: containerd-2.1.5-1.amzn2023.0.1.x86_64	2/11
Installing	: pigz-2.9-1.amzn2023.0.3.x86_64	3/11
Installing	: libnftnl-1.2.2-2.amzn2023.0.2.x86_64	4/11
Installing	: libnftnl-devel-1.0.1-19.amzn2023.0.2.x86_64	5/11
Installing	: libnftfilter_conntrack-1.0.8-2.amzn2023.0.2.x86_64	6/11
Installing	: iptables-libs-1.8.8-3.amzn2023.0.2.x86_64	7/11
Installing	: iptables-nft-1.8.8-3.amzn2023.0.2.x86_64	8/11
Running scriptlet:	: iptables-nft-1.8.8-3.amzn2023.0.2.x86_64	8/11
Installing	: libcgroup-3.0-1.amzn2023.0.1.x86_64	9/11
Running scriptlet:	: container-selinux-4:2.242.0-1.amzn2023.noarch	10/11
Installing	: container-selinux-4:2.242.0-1.amzn2023.noarch	10/11
Running scriptlet:	: container-selinux-4:2.242.0-1.amzn2023.noarch	10/11
Running scriptlet:	: docker-25.0.13-1.amzn2023.0.2.x86_64	11/11
Installing	: docker-25.0.13-1.amzn2023.0.2.x86_64	11/11
Running scriptlet:	: docker-25.0.13-1.amzn2023.0.2.x86_64	11/11
Created symlink /etc/systemd/system/sockets.target.wants/docker.socket + /usr/lib/systemd/system/docker.socket.		
Running scriptlet:	: container-selinux-4:2.242.0-1.amzn2023.noarch	11/11
Running scriptlet:	: docker-25.0.13-1.amzn2023.0.2.x86_64	11/11
Verifying	: container-selinux-4:2.242.0-1.amzn2023.noarch	1/11
Verifying	: containerd-2.1.5-1.amzn2023.0.1.x86_64	2/11
Verifying	: docker-25.0.13-1.amzn2023.0.2.x86_64	3/11
Verifying	: iptables-libs-1.8.8-3.amzn2023.0.2.x86_64	4/11
Verifying	: iptables-nft-1.8.8-3.amzn2023.0.2.x86_64	5/11
Verifying	: libcgroup-3.0-1.amzn2023.0.1.x86_64	6/11
Verifying	: libnftfilter_conntrack-1.0.8-2.amzn2023.0.2.x86_64	7/11
Verifying	: libnftnl-devel-1.0.1-19.amzn2023.0.2.x86_64	8/11
Verifying	: libnftnl-1.2.2-2.amzn2023.0.2.x86_64	9/11
Verifying	: pigz-2.9-1.amzn2023.0.3.x86_64	10/11
Verifying	: runc-1.3.3-2.amzn2023.0.1.x86_64	11/11

```

Installed:
container-selinux-4:2.242.0-1.amzn2023.noarch    containerd-2.1.5-1.amzn2023.0.x86_64    docker-25.0.13-1.amzn2023.0.x86_64    iptables-libs-1.8.8-3.amzn2023.0.x86_64
iptables-nft-1.8.8-3.amzn2023.0.2.x86_64        libgroup-3.0.1-1.amzn2023.0.1.x86_64    libnetfilter_conntrack-1.0.8-2.amzn2023.0.x86_64    libnftnl-1.0.1-19.amzn2023.0.2.x86_64
libnftnl-1.0.2-1.amzn2023.0.2.x86_64            p12-2.5-1.amzn2023.0.3.x86_64            runc-1.1.3-2.amzn2023.0.1.x86_64

```

```
complete!
ec2-user@ip-172-31-46-80 ~$ sudo mkdir -p /usr/local/lib/docker/cli-plugins
ec2-user@ip-172-31-46-80 ~$ sudo mkdir -p /usr/local/lib/docker/cli-plugins
ec2-user@ip-172-31-46-80 ~$ 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
% Total    % Received % Xferd Average Speed   Time    Time     Current
                                 Dload  Upload   Total   Spent    Left      Speed
  0     0    0     0    0     0 --:--:-- --:--:-- --:--:--    0
100 29.8M 100 29.8M    0     0 57.9M --:--:-- --:--:-- --:--:-- 57.9M
ec2-user@ip-172-31-46-80 ~$ sudo chmod +x /usr/local/lib/docker/cli-plugins/docker-compose
ec2-user@ip-172-31-46-80 ~$ sudo systemctl start docker
```

ec2-user@ip-172-31-46-80:~

```
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=dan2CqH8TUA
```

[ec2-user@ip-172-31-46-80 ~]\$ ls -l

total 4

-rw-r--r--. 1 root root 1129 Dec 25 18:55 compose.yaml

[ec2-user@ip-172-31-46-80 ~]\$

```

[ec2-user@ip-172-31-46-80 ~]$ groups
ec2-user adm wheel systemd-journal
[ec2-user@ip-172-31-46-80 ~]$ sudo usermod -aG docker $USER
[ec2-user@ip-172-31-46-80 ~]$ client_loop: send disconnect: Connection reset
PS C:\Users\Waseem> ssh -i <path>/Lab8Key.pem ec2-user@<public-IP>
At line:1 char:8
+ ssh -i <path>/Lab8Key.pem ec2-user@<public-IP>
+ ~
The '<' operator is reserved for future use.
+ CategoryInfo          : ParserError: (:) [], ParentContainsErrorRecordException
+ FullyQualifiedErrorId : RedirectionNotSupported

PS C:\Users\Waseem> ssh -i C:\Users\Waseem\Downloads\Lab8Key.pem ec2-user@56.228.41.241
ssh: connect to host 56.228.41.241 port 22: Unknown error
PS C:\Users\Waseem> ssh -i C:\Users\Waseem\Downloads\Lab8Key.pem ec2-user@56.228.41.241
The authenticity of host '56.228.41.241 (56.228.41.241)' can't be established.
ED25519 key fingerprint is SHA256:155ImMBSJKvOMKMfvJB1FaMPcKusVW96bFMG6YJSQ8.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Failed to add the host to the list of known hosts (C:\\Users\\Waseem\\.ssh\\known_hosts).
hostfile_replace_entries: mkstemp: Permission denied
update_known_hosts: hostfile_replace_entries failed for C:\\Users\\Waseem\\.ssh\\known_hosts: Permission denied

      _#_
     _###_      Amazon Linux 2023
    _####_
   _####_
  _####_
 _####_
/###/
V- ->      https://aws.amazon.com/linux/amazon-linux-2023

Last login: Thu Dec 25 18:42:07 2025 from 119.152.254.155
[ec2-user@ip-172-31-46-80 ~]$ groups
ec2-user adm wheel systemd-journal docker
[ec2-user@ip-172-31-46-80 ~]$

```

```

[ec2-user@ip-172-31-46-80 ~]$ docker compose up -d
[+] up 16/18
[+] up 23/23ea/gitea:latest Pulled
  Image gitea/gitea:latest Pulled
  2d35ebdb57d9 Pull complete
  9f4e672c1f34 Pull complete
  4da94b3cc809 Pull complete
  8e016ece0bd3 Pull complete
  346e493cb6cb Pull complete
  95215379f1d1 Pull complete
  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
  98e0cc0da868 Pull complete
  b747867e61cb Pull complete
  Network webnet Created
  Volume gitea Created
  Volume gitea_postgres Created
  Container gitea Created
  Container gitea_db Created
[ec2-user@ip-172-31-46-80 ~]$

```

EC2 > Security Groups > sg-0c925367ae74a7fe9 - Lab8SecurityGroup > Edit inbound rules

Edit inbound rules

Inbound rules control the incoming traffic that's allowed to reach the instance.

Inbound rules

Security group rule ID

Type

Protocol

Port range

Source

Description - optional

sg-02fc8889aa544bbc2

Custom TCP

TCP

3000

Any...

0.0.0.0/0

Delete

Add rule

0.0.0.0/0

Not secure 56.228.41.241:3000

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

Host

Username

Password

Database Name

SSL

Schema

PostgreSQL

db:5432

gitea

.....

gitea

Disable

Leave blank for database default ("public").

General Settings

Not secure 56.228.41.241:3000/admin/lab8-repo

Issues Pull Requests Milestones Explore

admin / lab8-repo

Unwatch 1 Star 0

Code Issues Packages Projects Wiki

Settings

Quick Guide

Clone this repository

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

New File

Upload File

HTTP

SSH

http://56.228.41.241:3000/admin/lab8-repo.git

Instances (1)

Connect

Instance state

Actions

Launch insta

Find Instance by attribute or tag (case-sensitive)


All states

<input type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status
<input type="checkbox"/>	Lab8Machine	i-0f9b66288eb530c24	Running	t3.micro	3/3 checks passed	View alarms +

Cleanup — Remove resources to avoid charges

Terminate (delete) instance



 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-0f9b66288eb530c24 (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)

Snapshots

Info

Last updated
less than a minute ago



 Recycle Bin

Actions

Create snapshot

Owned by me

Search

<input type="checkbox"/>	Name	Snapshot ID	Full snapshot size	Volume size	Description	Storage tier
--------------------------	------	-------------	--------------------	-------------	-------------	--------------

You currently have no snapshots in this Region.



Delete security groups



Are you sure that you want to delete this security group?

- sg-0c925367ae74a7fe9 - Lab8SecurityGroup

Cancel

Delete

Lab8Key could be associated with one or more instances. ✕

Delete Lab8Key

To confirm deletion, type *Delete* in the field


Cancel

Delete

Delete Lab8User? ✕

Delete **Lab8User** permanently? This will also delete all its user data, security credentials and inline policies.

User name	Last activity
Lab8User	23 minutes ago

Note: Recent activity usually appears within 4 hours. Data is stored for a maximum of 365 days, depending when your region began supporting this feature. [Learn more](#) 

To avoid accidental deletions, we ask you to provide additional written consent.

To confirm this deletion, type "confirm".

Cancel

Delete user