

LAB # 08:
CLOUD COMPUTING :

FROM:

ALINA IMAN

2023-BSE-005

SECTION A

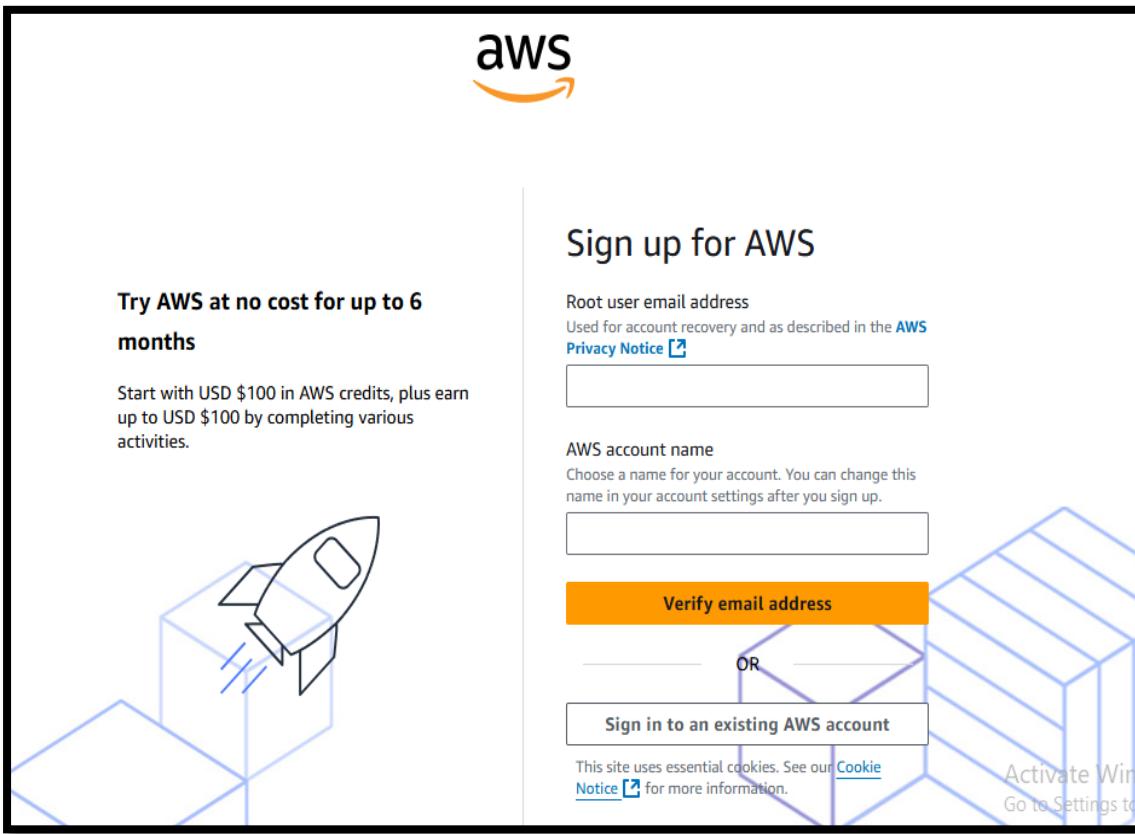
TO:

SIR SHOAIB

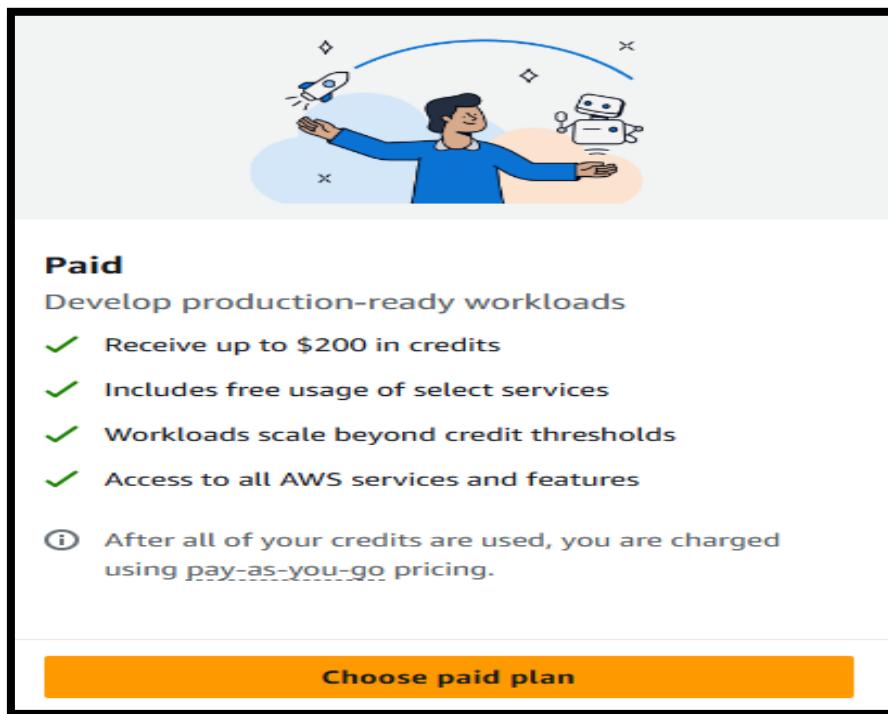
TITLE:

**AWS: ACCOUNT SETUP, IAM, VPC INVENTORY, EC2, DOCKER &
GITEA**

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



The screenshot shows the AWS sign-up process. At the top right, the AWS logo is displayed. Below it, the heading "Sign up for AWS" is centered. To the left, there is promotional text: "Try AWS at no cost for up to 6 months" and "Start with USD \$100 in AWS credits, plus earn up to USD \$100 by completing various activities." An illustration of a rocket launching from a launch pad is shown. On the right side, there are input fields for "Root user email address" and "AWS account name". A large orange button labeled "Verify email address" is prominent. Below it, there is a link "Sign in to an existing AWS account". At the bottom, a note about cookie usage is present, along with links for "Cookie Notice" and "Activate Win".



The screenshot displays the "Paid" plan options. At the top, there is an illustration of a person interacting with a robot and a small flying device. Below the illustration, the word "Paid" is bolded. Underneath, the text "Develop production-ready workloads" is followed by a bulleted list of benefits:

- ✓ Receive up to \$200 in credits
- ✓ Includes free usage of select services
- ✓ Workloads scale beyond credit thresholds
- ✓ Access to all AWS services and features

After the list, a note states: "After all of your credits are used, you are charged using pay-as-you-go pricing." At the bottom, a large orange button labeled "Choose paid plan" is visible.

Sign up for AWS

Contact Information

How do you plan to use AWS?

- Business - for your work, school, or organization
- Personal - for your own projects

Who should we contact about this account?

Full Name



Sign up for AWS

Confirm your identity

Verify code

SMS PIN required

[Continue \(step 4 of 5\)](#)

Having trouble? Sometimes it takes up to 10 minutes to retrieve a verification code. If it's been longer than that, [return to the previous page](#) and try again.

Sign up for AWS

Select a support plan

Choose a support plan for your business or personal account. [Compare plans and pricing examples](#). You can change your plan anytime in the AWS Management Console.

Basic support - Free

- Recommended for new users just getting started with AWS
- 24x7 self-service access to AWS resources
- For account and billing issues only
- Access to Personal Health Dashboard & Trusted Advisor

AWS Business Support+ Starts at \$29/month

Limited time offer: Get full refund for first 60 days

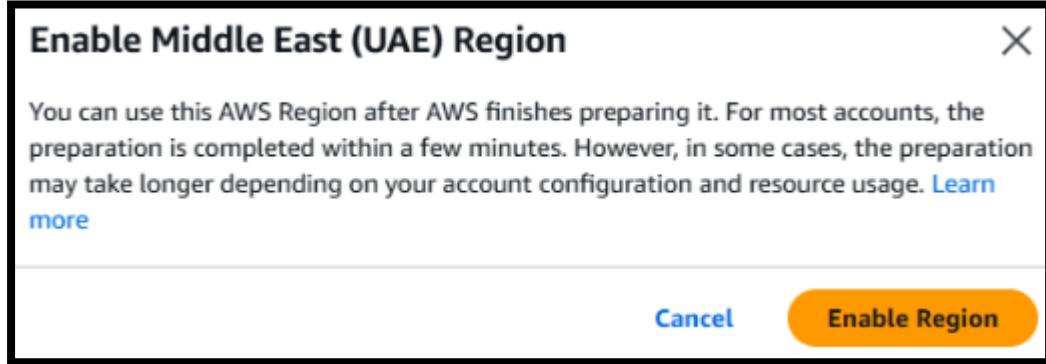
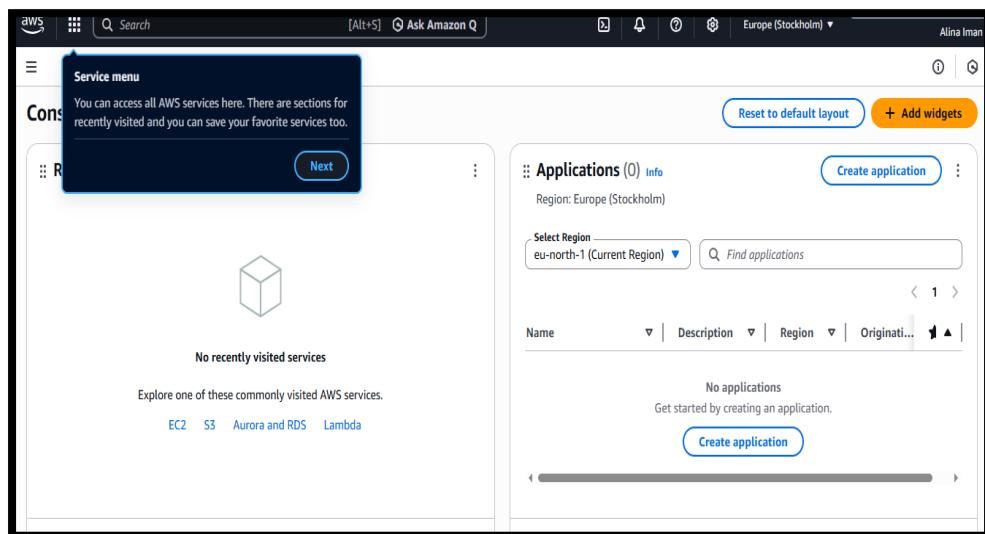
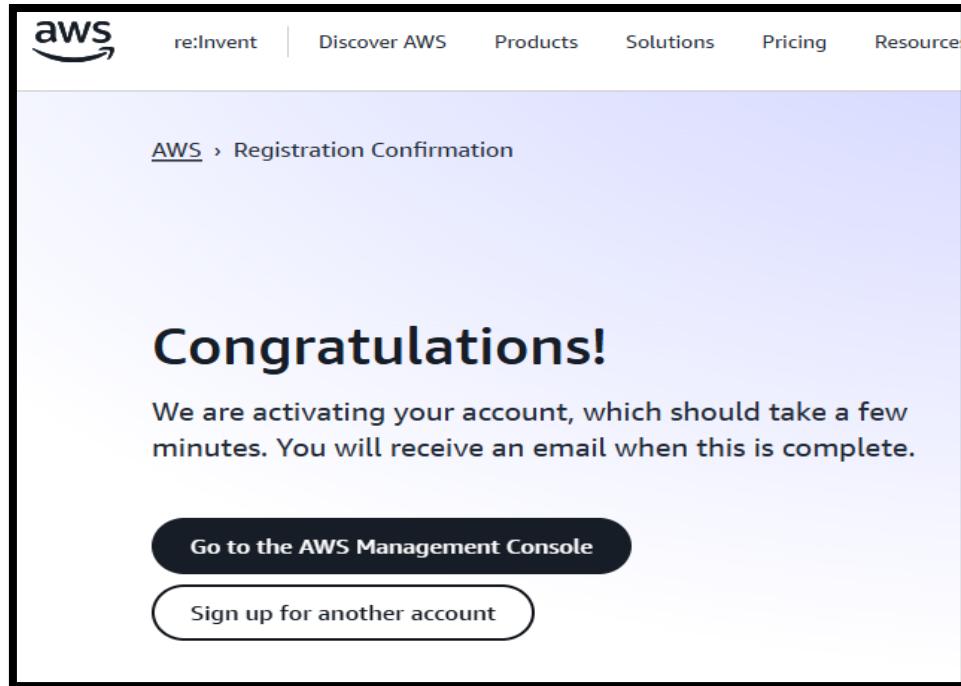
- Unlimited troubleshooting (genAI)
- 24x7 access to AWS experts
- <30 mins response for business critical issues
- Full set of Trusted Advisor checks
- AI driven cost optimization
- By selecting this offer you agree to the offer's terms and conditions

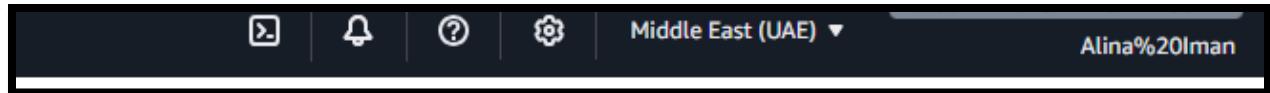


Need Enterprise level support?

From \$15,000 a month you will receive 15-minute response times and concierge-style experience with an assigned Technical Account Manager. [Learn more](#)

[Complete sign up \(step 5 of 5\)](#)





Task 2 — Create IAM Admin and Lab8User with console access

The screenshot shows the AWS Services menu with the IAM service selected. The menu includes links for Services, Features, and Documentation.

User details

User name
Admin
The user name can have up to 64 characters. Valid characters: A-Z, a-z, 0-9, and + = , . @ _ - (hyphen)

Provide user access to the AWS Management Console - optional
In addition to console access, users with SignInLocalDevelopmentAccess permissions can use the same console credentials for programmatic access without the need for access keys.

Console password

Autogenerated password
You can view the password after you create the user.

Custom password
Enter a custom password for the user.

• Must be at least 8 characters long
• Must include at least three of the following mix of character types: uppercase letters (A-Z), lowercase letters (a-z), numbers (0-9), and symbols ! @ # \$ % ^ & * () _ + - (hyphen) = [] { } | '
 Show password

Users must create a new password at next sign-in - Recommended
Users automatically get the [IAMUserChangePassword](#) policy to allow them to change their own password.

If you are creating programmatic access through access keys or service-specific credentials for AWS CodeCommit or Amazon Keyspaces, you can do so by clicking the "Activate Windows" button.

Set permissions

Add user to an existing group or create a new one. Using groups is a best-practice way to manage user's permissions by job functions. [Learn more](#)

Permissions options

Add user to group
Add user to an existing group, or create a new group. We recommend using groups to manage user permissions by job function.

Copy permissions
Copy all group memberships, attached managed policies, and inline policies from an existing user.

Attach policies directly
Attach a managed policy directly to a user. As a best practice, we recommend attaching policies to a group instead. Then, add the user to the appropriate group.

Permissions policies (1/1440)

Choose one or more policies to attach to your new user.

Filter by Type

Policy name	Type	Attached entities
<input type="checkbox"/> AccessAnalyzerServiceRolePolicy	AWS managed	0
<input type="checkbox"/> AccountManagementFromVercel	AWS managed	0
<input checked="" type="checkbox"/> AdministratorAccess	AWS managed - job function	0
<input type="checkbox"/> AdministratorAccess-Amplify	AWS managed	0

[Create policy](#)

aws | Search [Alt+S] Ask Amazon Q

IAM > Users > Admin

Identity and Access Management (IAM)

Admin Info

Summary

ARN Console access Access key 1

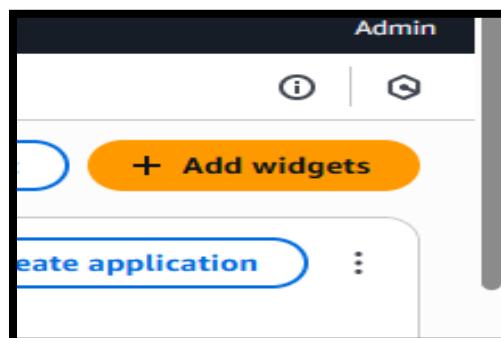
⌚ User created successfully

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

[View user](#)

This PC > Downloads

Name	Date modified	Type	Size
Admin_credentials	12/30/2025 1:35 AM	Microsoft Excel C...	1 KB



User details

User name

The user name can have up to 64 characters. Valid characters: A-Z, a-z, 0-9, and + = , . @ _ - (hyphen)

Provide user access to the AWS Management Console - optional
In addition to console access, users with SignInLocalDevelopmentAccess permissions can use the same console credentials for programmatic access without the need for access keys.

Console password

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- Must be at least 8 characters long
- Must include at least three of the following mix of character types: uppercase letters (A-Z), lowercase letters (a-z), numbers (0-9), and symbols ! @ # \$ % ^ & * (hyphen) = [] { } | \

Show password

Users must create a new password at next sign-in - Recommended
Users automatically get the IAMUserChangePassword policy to allow them to change their own password.

[Activate Windows](#) [Go to Settings](#)

Permissions options

Add user to group
Add user to an existing group, or create a new group. We recommend using groups to manage user permissions by job function.

Copy permissions
Copy all group memberships, attached managed policies, and inline policies from an existing user.

Attach policies directly
Attach a managed policy directly to a user. As a best practice, we recommend attaching policies to a group instead. Then, add the user to the appropriate group.

Permissions policies (1/1440)

Choose one or more policies to attach to your new user.

Filter by Type			
<input type="text" value="Search"/>	All types	Create policy	
<input type="checkbox"/> Policy name	▲	Type	▼ Attached entities
<input type="checkbox"/> AccessAnalyzerServiceRolePolicy		AWS managed	0
<input type="checkbox"/> AccountManagementFromVercel		AWS managed	0
<input checked="" type="checkbox"/> AdministratorAccess		AWS managed - job function	1
<input type="checkbox"/> AdministratorAccess-Amplify		AWS managed	0

This PC > Downloads

Name	Date modified	Type	Size
▼ Today (2)			
Admin_credentials	12/30/2025 1:35 AM	Microsoft Excel C...	1 KB
Lab8User_credentials	12/30/2025 1:55 AM	Microsoft Excel C...	1 KB

The screenshot shows the AWS Applications dashboard. At the top, it displays the region as "Europe (Stockholm)" and the user as "Lab8User". Below the header are two buttons: "Reset to default layout" and "+ Add widgets". A main section titled "Applications (0) Info" shows the region as "Europe (Stockholm)". It includes a "Create application" button and a "Find applications" search bar. A "Select Region" dropdown is set to "eu-north-1 (Current Region)".

The screenshot shows the AWS IAM Users dashboard. It lists two users: "Admin" and "Lab8User". The "Admin" user was last active 18 minutes ago and has been inactive for 13 minutes. The "Lab8User" user was last active 3 minutes ago and has been inactive for 1 minute. The dashboard includes a search bar, a table header with columns for User name, Path, Group, Last activity, MFA, Password age, and Console, and a "Create user" button.

The screenshot shows the AWS VPC Resources dashboard. It features several buttons: "Create VPC", "Launch EC2 Instances", "Refresh Resources", and "Service Health" (with a link to "View complete service health details"). A note says "Note: Your Instances will launch in the Europe region." The main section, "Resources by Region", displays the following counts for the Stockholm region:

Resource Type	Count
VPCs	1
Subnets	3
Route Tables	1
Internet Gateways	1
Endpoint Services	0
NAT Gateways	0
VPC Peering Connections	0
Network ACLs	1

On the right side, there are sections for "Settings" (links to "Block Public Access", "Zones", "Console Experiments"), "Additional Information" (links to "VPC Documentation", "All VPC Resources", "Forums", and "Activate Windows"), and a "Service Health" summary.

VPC dashboard

AWS Global View ↗

Filter by VPC

Virtual private cloud

- Your VPCs
- Subnets
- Route tables
- Internet gateways
- Egress-only internet

Your VPCs

VPCs | VPC encryption controls

Your VPCs (1) Info

Find VPCs by attribute or tag

Name	VPC ID	State
-	vpc-0f88344f2b4c96005	Available

Select a VPC above

VPC Subnets

AWS Global View ↗

Filter by VPC

Virtual private cloud

- Your VPCs
- Subnets**
- Route tables
- Internet gateways
- Egress-only internet

Subnets

Subnets (3) Info

Last updated 3 minutes ago

Actions

Find subnets by attribute or tag

Name	Subnet ID	State	VPC
-	subnet-023be2df684514691	Available	vpc-0f88344f2b4c96005
-	subnet-091612920dda3957d	Available	vpc-0f88344f2b4c96005
-	subnet-0ceb1847087889aad	Available	vpc-0f88344f2b4c96005

Select a subnet

VPC Route tables

AWS Global View ↗

Filter by VPC

Virtual private cloud

- Your VPCs
- Subnets
- Route tables**
- Internet gateways
- Egress-only internet

Route tables

Route tables (1) Info

Last updated 4 minutes ago

Actions

Find route tables by attribute or tag

Name	Route table ID	Explicit subnet assoc...	Edge associations
-	rtb-03fa5578f9e352639	-	-

Select a route table

VPC Network ACLs

AWS Global View ↗

Filter by VPC

Virtual private cloud

- Managed prefix lists
- NAT gateways
- Peering connections
- Route servers
- Network ACLs**
- Security groups

PrivateLink and Lattice

- Getting started
- Endpoints

Network ACLs

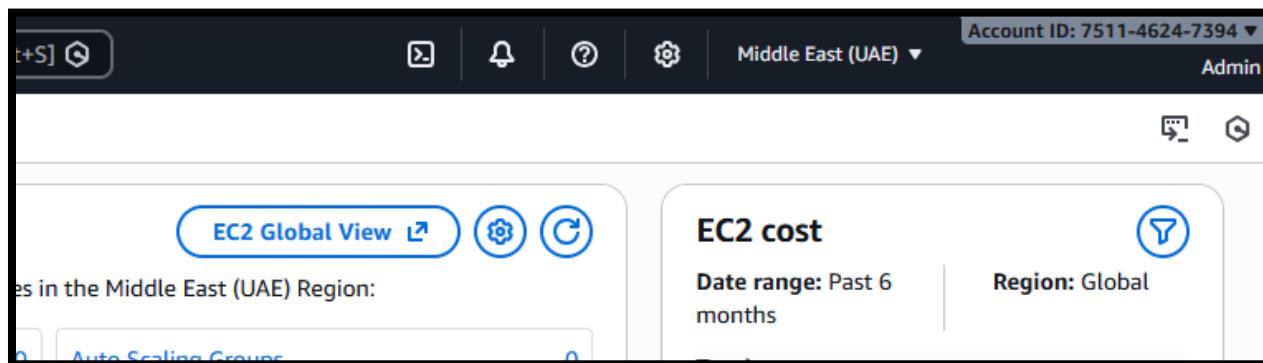
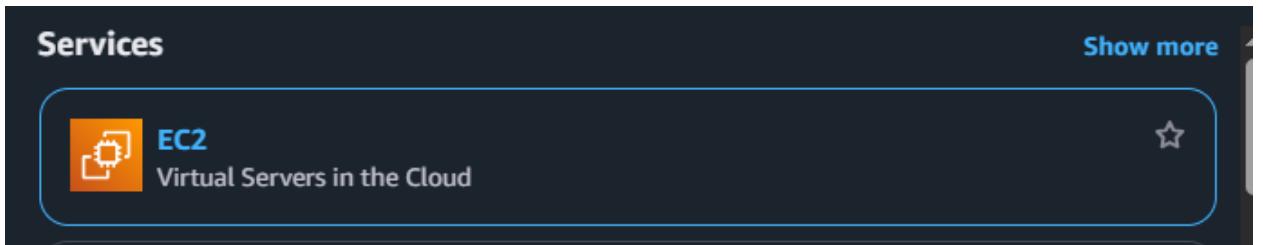
Network ACLs (1) Info

Find Network ACLs by attribute or tag

Name	Network ACL ID	Associated with	Default	⋮
-	acl-01be47e536141b9e8	3 Subnets	Yes	⋮

Select a network ACL

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



Create key pair

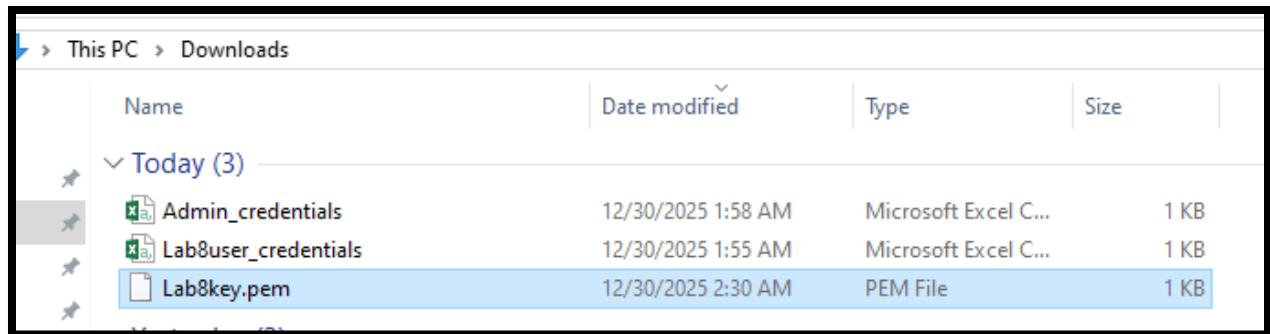
Key pair name
Key pairs allow you to connect to your instance securely.
 Lab8key
The name can include up to 255 ASCII characters. It can't include leading or trailing spaces.

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

Cancel **Create key pair**



AWS EC2 Instances Launch an instance page. The security group configuration section is shown:

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 _-:/()#@[]+=;&;!\$*

Description - required | Info
Lab 8 security group

Inbound Security Group Rules

▼ Security group rule 1 (TCP, 22, 154.192.18.61/32) Remove

Type Info	Protocol Info	Port range Info
ssh	TCP	22

Source type | Info
My IP

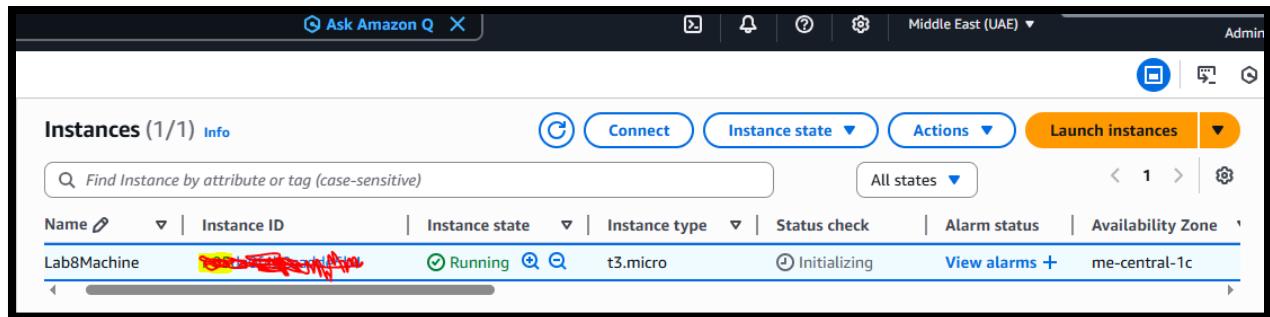
Name | Info
Add CIDR, prefix list or security group
154.192.18.61/32

Description - optional | Info
e.g. SSH for admin desktop

AWS EC2 Instances Launch an instance page. The success message is displayed:

Success
Successfully initiated launch of instance (ami-0...)

Launch log



```
PS C:\Users\123\Downloads> cd $env:USERPROFILE\Downloads
>> ssh -i Lab8Key.pem ec2-user@3.28.192.99
The authenticity of host '3.28.192.99 (3.28.192.99)' can't be established.
ED25519 key fingerprint is SHA256:v/Viu4eiJ5OJKuagphIstW2aw62tJi6COfL1g71a03M.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '3.28.192.99' (ED25519) to the list of known hosts.

,      #
~\_ ####_      Amazon Linux 2023
~~ \####\_
~~  \###|
~~    \#/   https://aws.amazon.com/linux/amazon-linux-2023
~~     V~'-->
~~
~~ ._. /
~~ /_/
~~ /m/
[ec2-user@ip-172-31-9-57 ~]$
```

```
ec2-user@ip-172-31-9-57:~
```

```
[ec2-user@ip-172-31-9-57 ~]$ sudo yum update -y
Amazon Linux 2023 Kernel Livepatch repository
Dependencies resolved.
Nothing to do.
Complete!
[ec2-user@ip-172-31-9-57 ~]$ sudo yum install -y docker
Last metadata expiration check: 0:00:17 ago on Mon Jan  5 22:16:56 2026.
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          2.1.5-1.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
libnfnetwork      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.noarch.rpm      1.4 MB/s |  58 kB  00:00
(2/11): iptables-libs-1.8.8-3.amzn2023.0.2.x86_64.rpm      11 MB/s | 401 kB  00:00
(3/11): iptables-nft-1.8.8-3.amzn2023.0.2.x86_64.rpm      7.0 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.amzn2023.0.2.x86_64.rpm 1.7 MB/s |  58 kB  00:00
(6/11): libnfnetwork-1.0.1-19.amzn2023.0.2.x86_64.rpm      1.1 MB/s |  30 kB  00:00
(7/11): libnftnl-1.2.2-2.amzn2023.0.2.x86_64.rpm          3.0 MB/s |  84 kB  00:00
(8/11): pigz-2.5-1.amzn2023.0.3.x86_64.rpm                2.8 MB/s |  83 kB  00:00
(9/11): containerd-2.1.5-1.amzn2023.0.1.x86_64.rpm        65 MB/s | 23 MB  00:00
(10/11): runc-1.3.3-2.amzn2023.0.1.x86_64.rpm            31 MB/s | 3.9 MB  00:00
(11/11): docker-25.0.13-1.amzn2023.0.2.x86_64.rpm        67 MB/s | 46 MB  00:00
```

```
[ec2-user@ip-172-31-9-57:~]$ sudo yum install docker-25.0.13-1.amzn2023.0.2.x86_64 -y
[ec2-user@ip-172-31-9-57:~]$ curl -SL https://github.com/docker/compose/releases/latest/download/docker-compose-linux-x86_64 -o /usr/local/lib/docker/cli-plugins/docker-compose
[ec2-user@ip-172-31-9-57:~]$ ls -l
total 4
-rw-r--r--. 1 root root 1128 Jan  5 22:31 compose.ymal
[ec2-user@ip-172-31-9-57:~]$
```

Output of the command:

```
Installing : libnetfilter_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   : libnetfilter_conntrack-1.0.8-2.amzn2023.0.2.x86_64 7/11
Verifying   : libnftnetlink-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-2.5-1.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
  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
  libcgroup-3.0-1.amzn2023.0.1.x86_64
  libnftnetlink-1.0.1-19.amzn2023.0.2.x86_64
  pigz-2.5-1.amzn2023.0.3.x86_64

Complete!
[ec2-user@ip-172-31-9-57 ~]$ sudo mkdir -p /usr/local/lib/docker/cli-plugins
[ec2-user@ip-172-31-9-57 ~]$ 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
[ec2-user@ip-172-31-9-57 ~]$ ls -l
total 4
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 42.9M 0 --:--:-- --:--:-- --:--:-- 42.9M
[ec2-user@ip-172-31-9-57 ~]$ sudo chmod +x /usr/local/lib/docker/cli-plugins/docker-compose
[ec2-user@ip-172-31-9-57 ~]$ sudo systemctl start docker
[ec2-user@ip-172-31-9-57 ~]$
```

```
[ec2-user@ip-172-31-9-57 ~]$ sudo vim compose.ymal
[ec2-user@ip-172-31-9-57 ~]$ [ec2-user@ip-172-31-9-57 ~]$ ls -l
total 4
-rw-r--r--. 1 root root 1128 Jan  5 22:31 compose.ymal
[ec2-user@ip-172-31-9-57 ~]$
```

