Bansilal Ramnath Agarwal Charitable Trust's
VISHWAKARMA INSTITUTE OF TECHNOLOGY – PUNE

CLOUD COMPUTING

Branch	CS - AIML
Division	A
Batch	2
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Roll no	54
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Experiment No. 1:

TITLE: To Setup AWS Accounts and Launch Instances.

OBJECTIVES:
To set up an AWS (Amazon Web Services) account and launch a virtual server (EC2 instance) to host applications or services on demand, ensuring scalability, availability, and flexibility.

PROBLEM STATEMENT
With the rapid adoption of cloud computing, organizations and individuals require efficient, scalable, and cost-effective computing resources. Traditional on-premise infrastructure demands high upfront investment, complex maintenance, and limited scalability.

THEORY:

Cloud Computing is the on-demand delivery of computing services over the internet with pay-as-you-go pricing.
AWS (Amazon Web Services) is a leading cloud service provider offering Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS).

1. Key AWS Services Involved in this task:

- **AWS Management Console** – A web-based interface to manage AWS services.
- **Amazon EC2 (Elastic Compute Cloud)** – A service to launch virtual servers in the cloud.
- **Amazon Machine Image (AMI)** – Pre-configured templates for instances.
- **Key Pair** – A security mechanism for secure login (SSH/RDP) to the instance.
- **Security Groups** – Virtual firewalls controlling inbound and outbound traffic.

2. Advantages of AWS for launching instances:

- Scalability on demand.
- Global data center availability.
- Cost efficiency with pay-as-you-use.
- Easy integration with other AWS services.

PROCEDURE:

A. Setting up AWS Account

1. Visit the AWS official website: https://aws.amazon.com
2. Click on Create an AWS Account.
3. Fill in email, password, and account name.
4. Enter contact information (Personal or Professional).
5. Provide payment details (credit/debit card).
6. Complete identity verification using OTP.
7. Select a support plan (choose *Basic* for free tier).
8. Sign in to the AWS Management Console.

B. Launching an EC2 Instance

1. In the AWS Management Console, search for EC2 service.
2. Click Launch Instance.
3. Enter Name for your instance.
4. Choose an Amazon Machine Image (AMI) (e.g., Amazon Linux 2, Ubuntu).
5. Select Instance Type (e.g., t2.micro for free tier).
6. Configure Key Pair for secure access.
7. Set Security Group rules (allow SSH for Linux or RDP for Windows).

8. Review all settings and click Launch Instance.
9. Wait until the instance status checks pass.

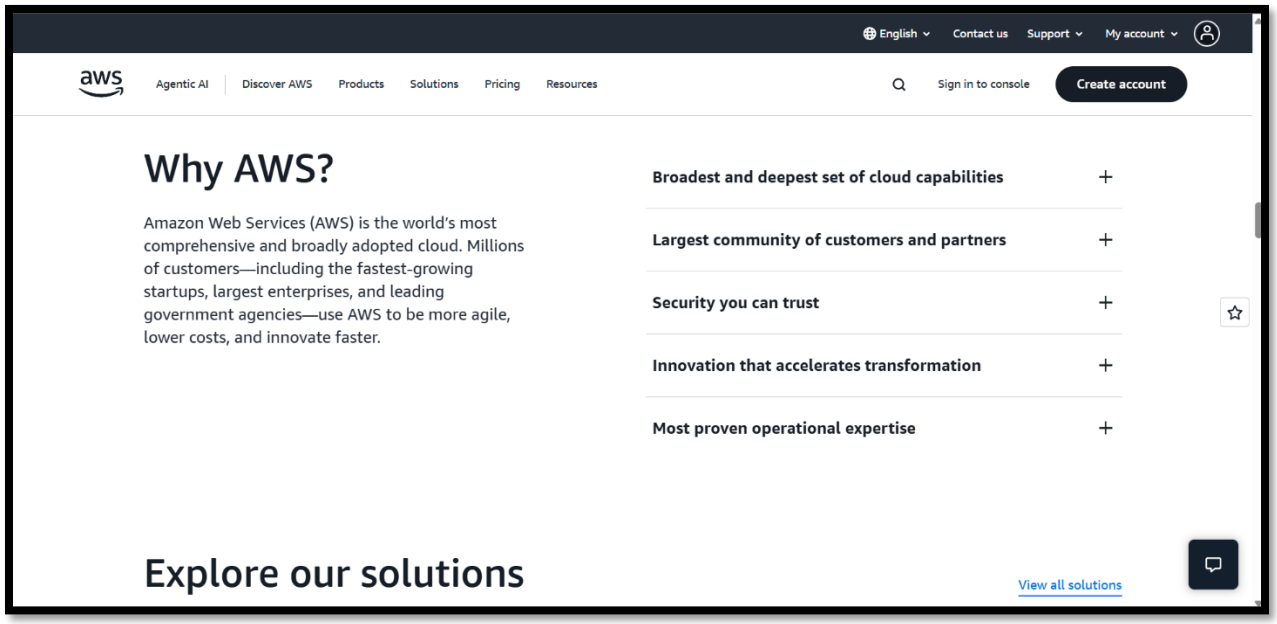
C. Connecting to the Instance

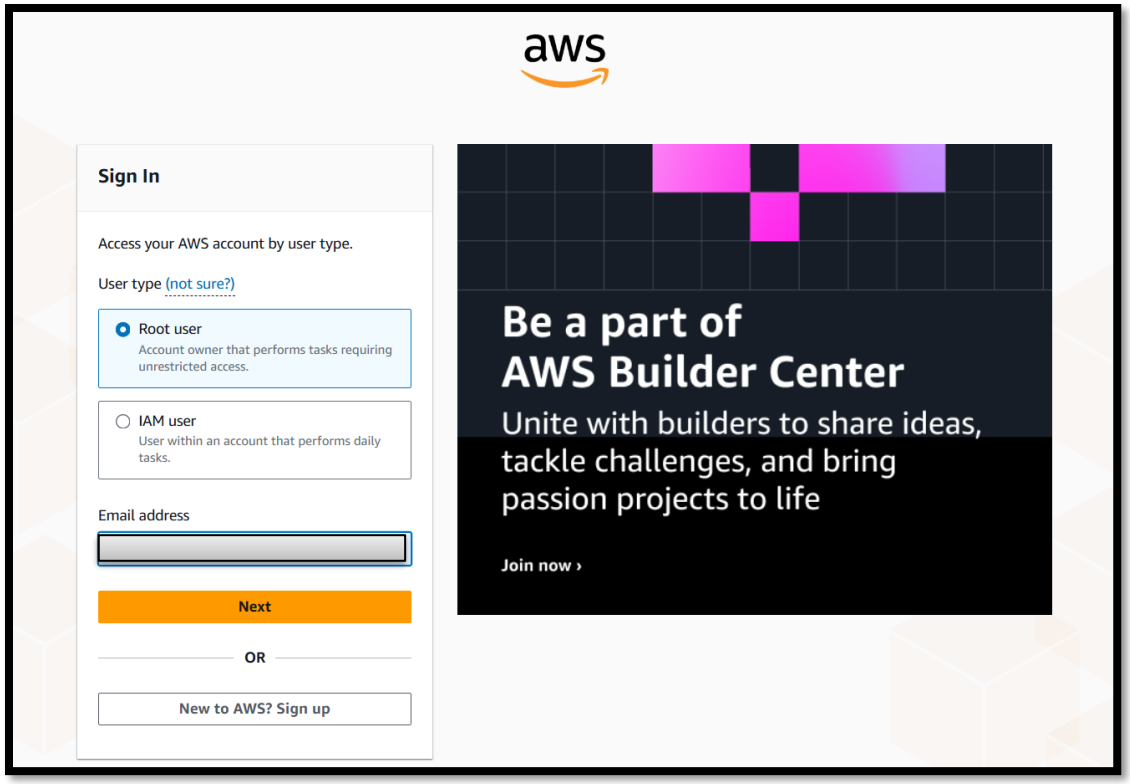
- For Linux Instance: Use SSH client or browser-based terminal.
- For Windows Instance: Download RDP file and login with Administrator password.

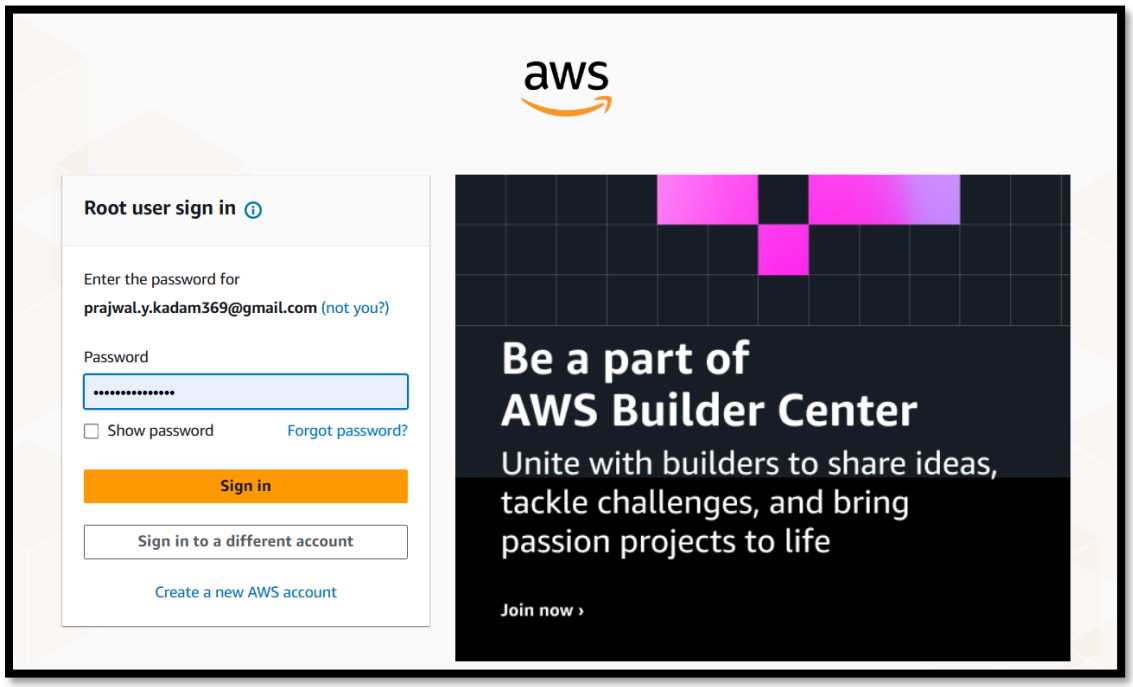
FLOWCHART:

SCREENSHOTS:

A. Setting up AWS Account




aws
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.
Email address
Next
OR
New to AWS? Sign up
Be a part of AWS Builder Center
Unite with builders to share ideas, tackle challenges, and bring passion projects to life
Join now ›


aws
Root user sign in
Enter the password for
prajwal.y.kadam369@gmail.com (not you?)
Password
Show password
Forgot password?
Sign in
Sign in to a different account
Create a new AWS account
Be a part of AWS Builder Center
Unite with builders to share ideas, tackle challenges, and bring passion projects to life
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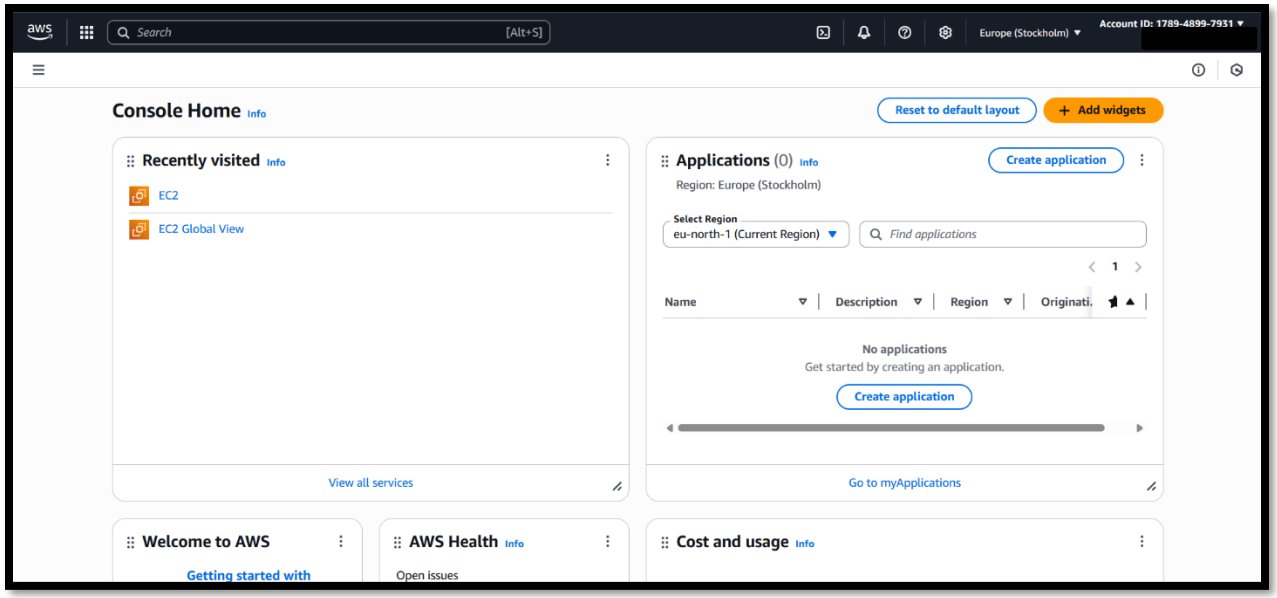
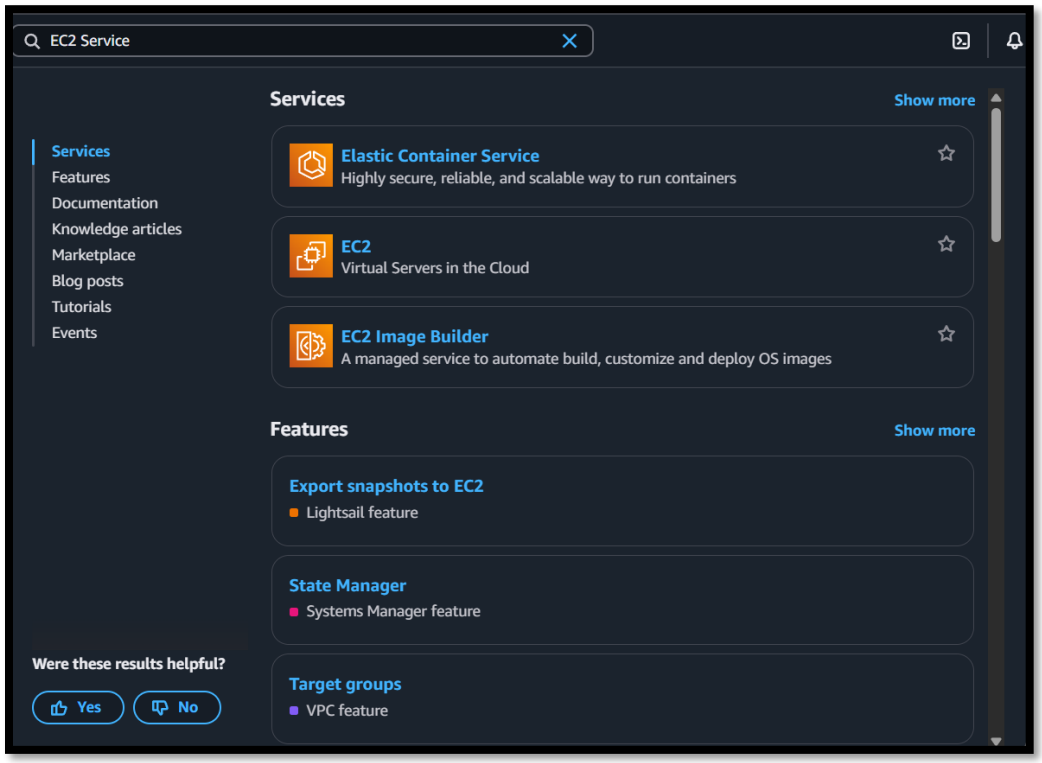
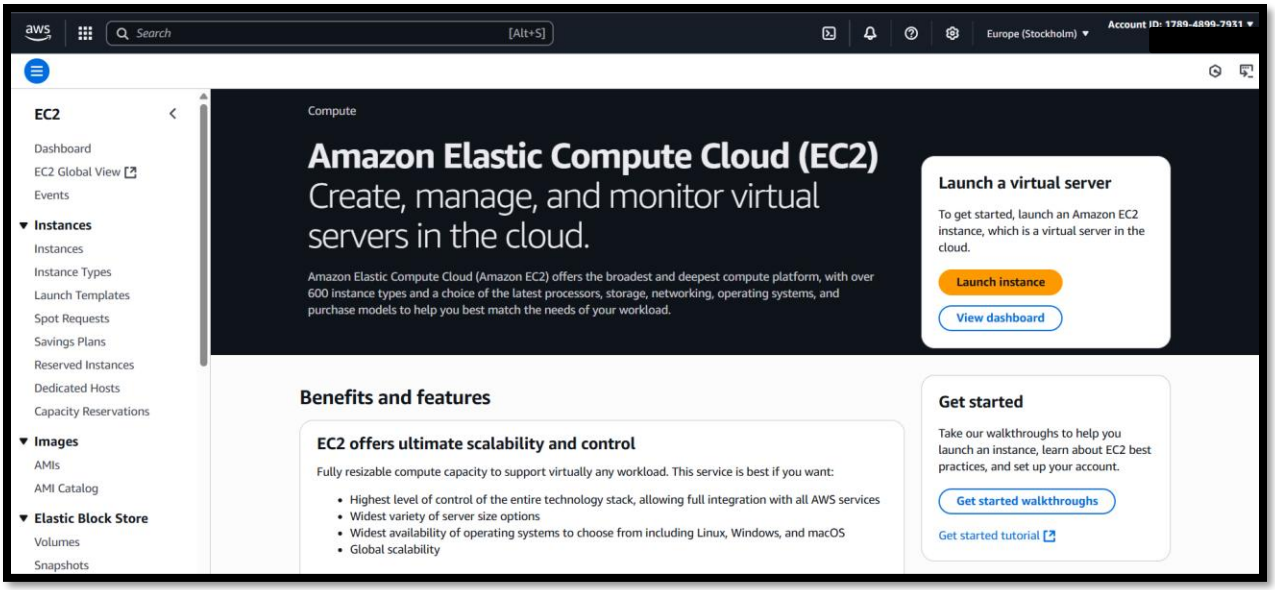
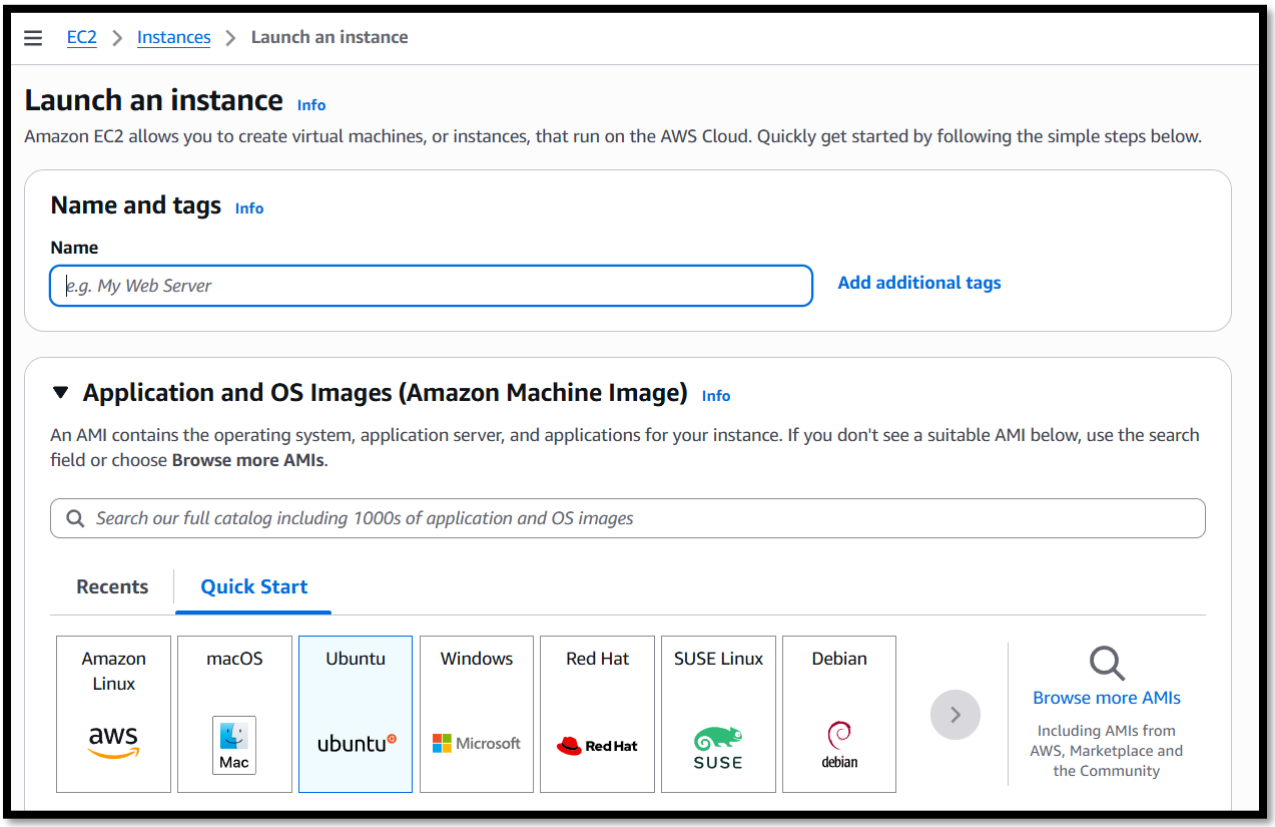
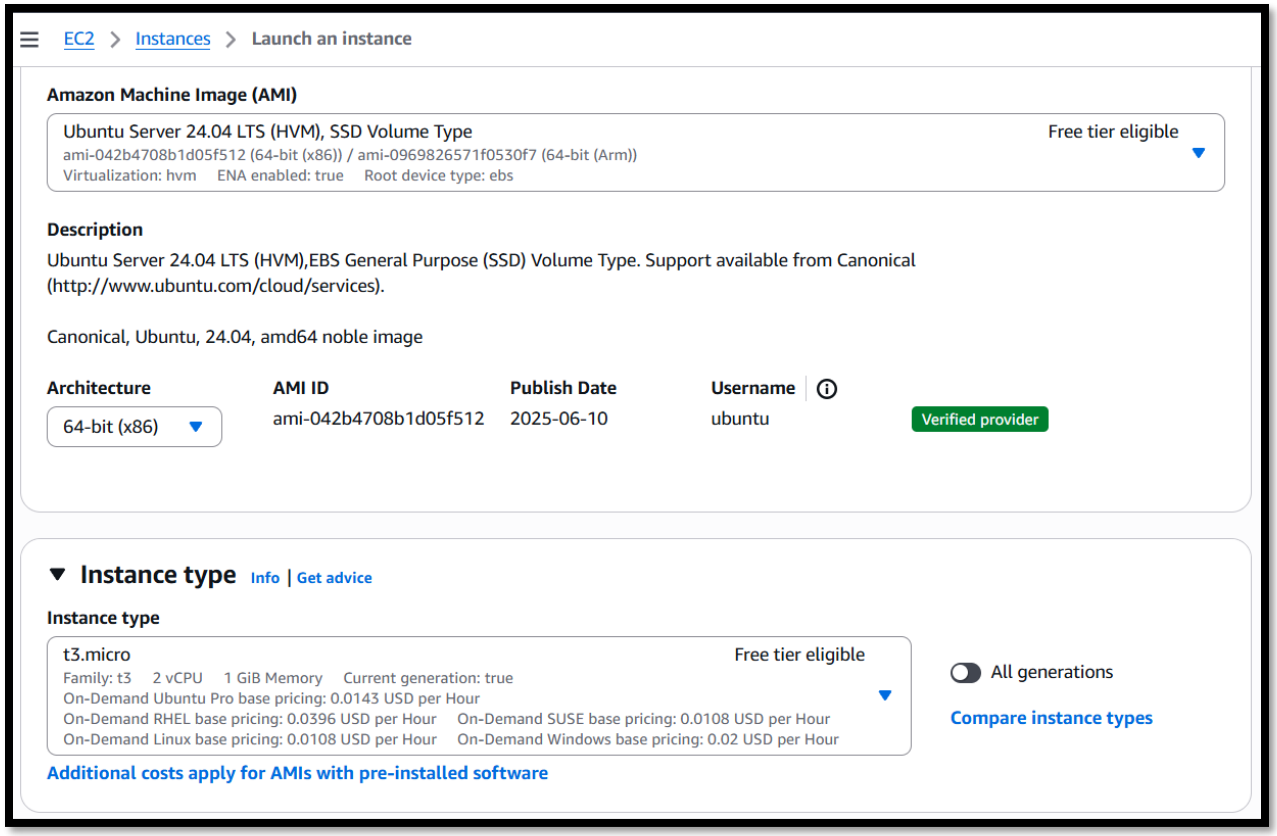


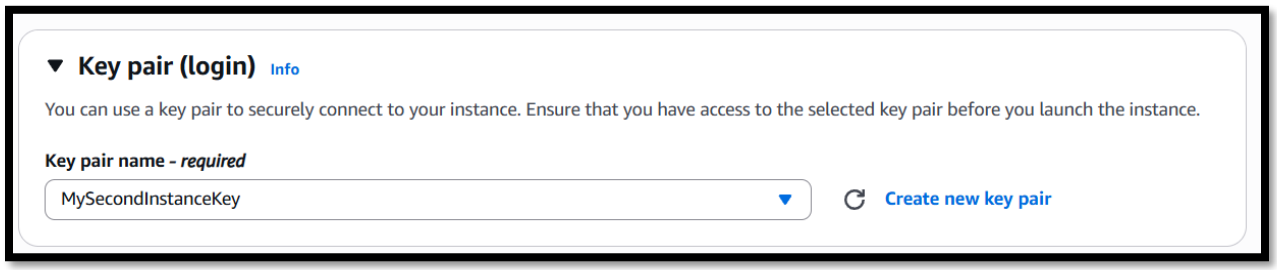
B. Launching an EC2 Instance

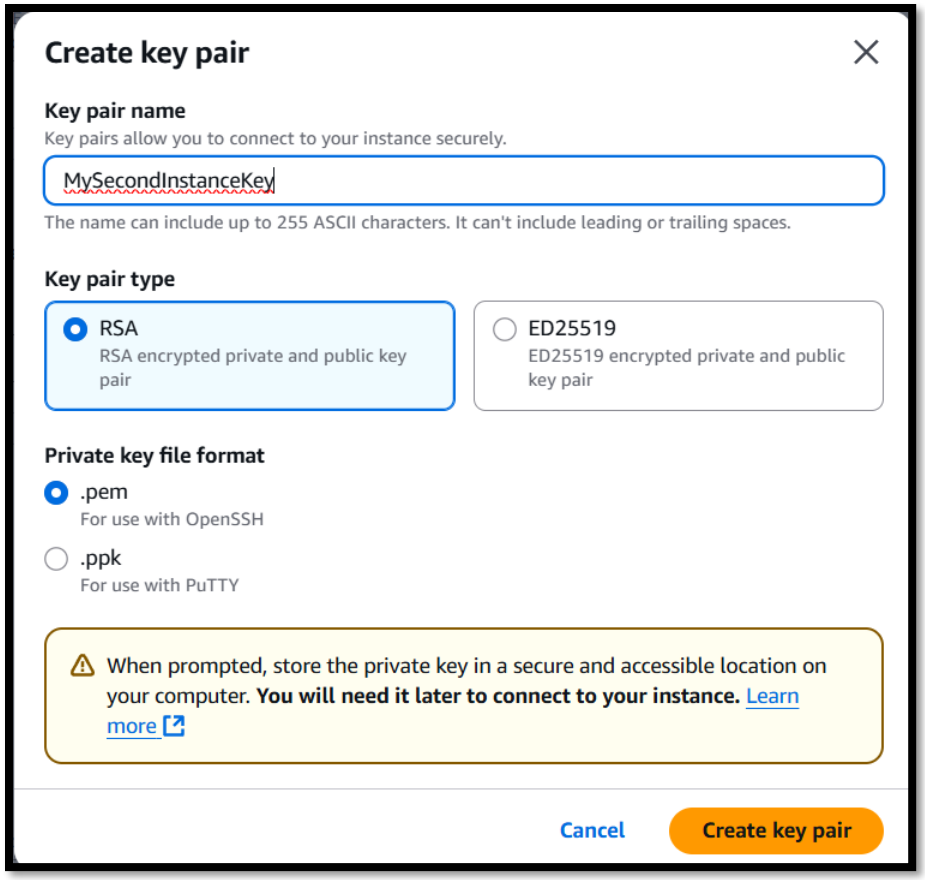


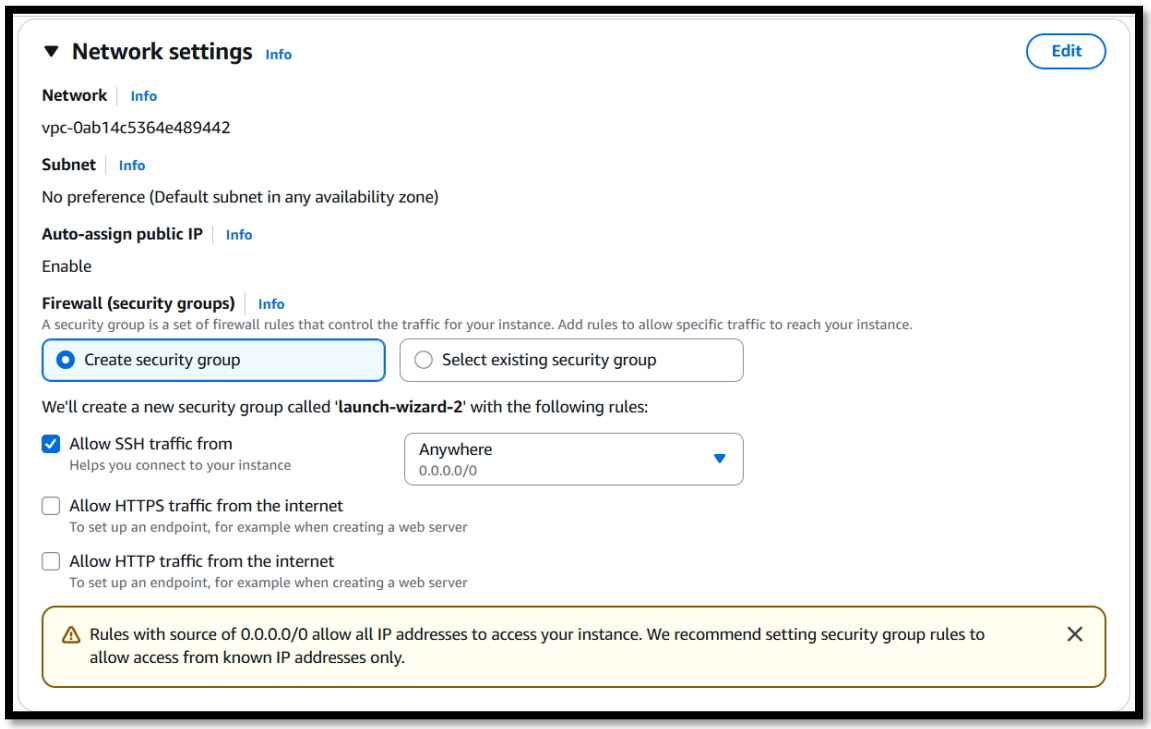

Search
[Alt+S]
Europe (Stockholm)
EC2
Dashboard
EC2 Global View
Events
Instances
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations
Images
AMIs
AMI Catalog
Elastic Block Store
Volumes
Snapshots
Compute
Amazon Elastic Compute Cloud (EC2)
Create, manage, and monitor virtual servers in the cloud.
Amazon Elastic Compute Cloud (Amazon EC2) offers the broadest and deepest compute platform, with over 600 instance types and a choice of the latest processors, storage, networking, operating systems, and purchase models to help you best match the needs of your workload.
Launch a virtual server
To get started, launch an Amazon EC2 instance, which is a virtual server in the cloud.
Launch instance
View dashboard
Benefits and features
EC2 offers ultimate scalability and control
Fully resizable compute capacity to support virtually any workload. This service is best if you want:
Highest level of control of the entire technology stack, allowing full integration with all AWS services
Widest variety of server size options
Widest availability of operating systems to choose from including Linux, Windows, and macOS
Global scalability
Get started
Take our walkthroughs to help you launch an instance, learn about EC2 best practices, and set up your account.
Get started walkthroughs
Get started tutorial

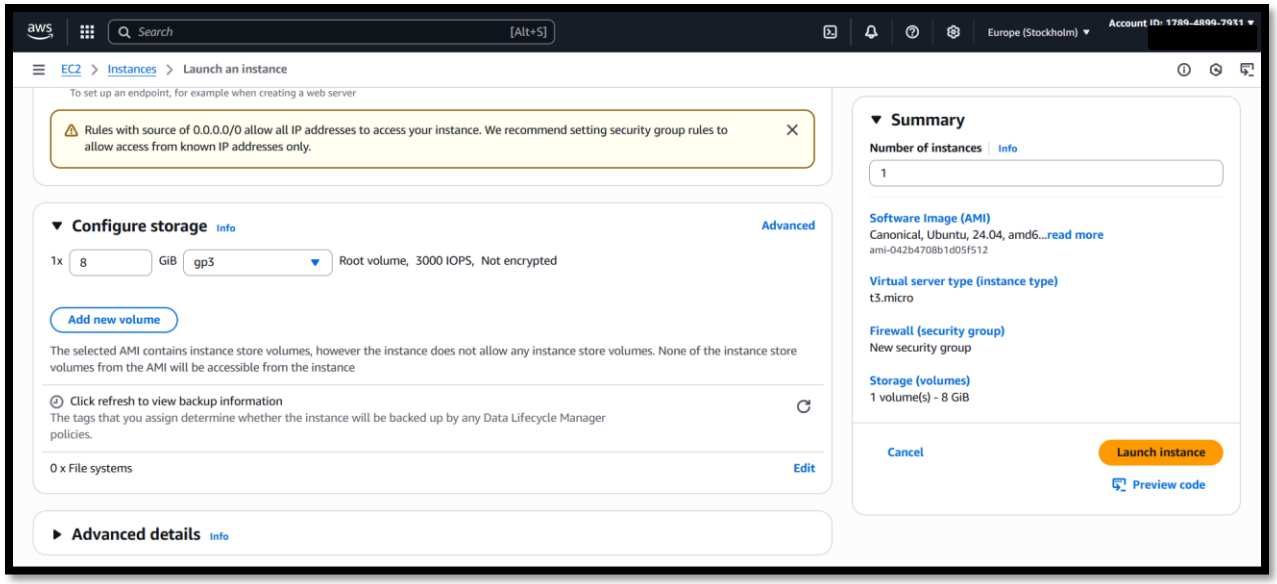

EC2 > Instances > Launch an instance
Launch an instance Info
Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.
Name and tags Info
Name
e.g. My Web Server
Add additional tags
Application and OS Images (Amazon 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
Recents
Quick Start
Amazon Linux
macOS
Ubuntu
Windows
Red Hat
SUSE Linux
Debian
Browse more AMIs
Including AMIs from AWS, Marketplace and the Community

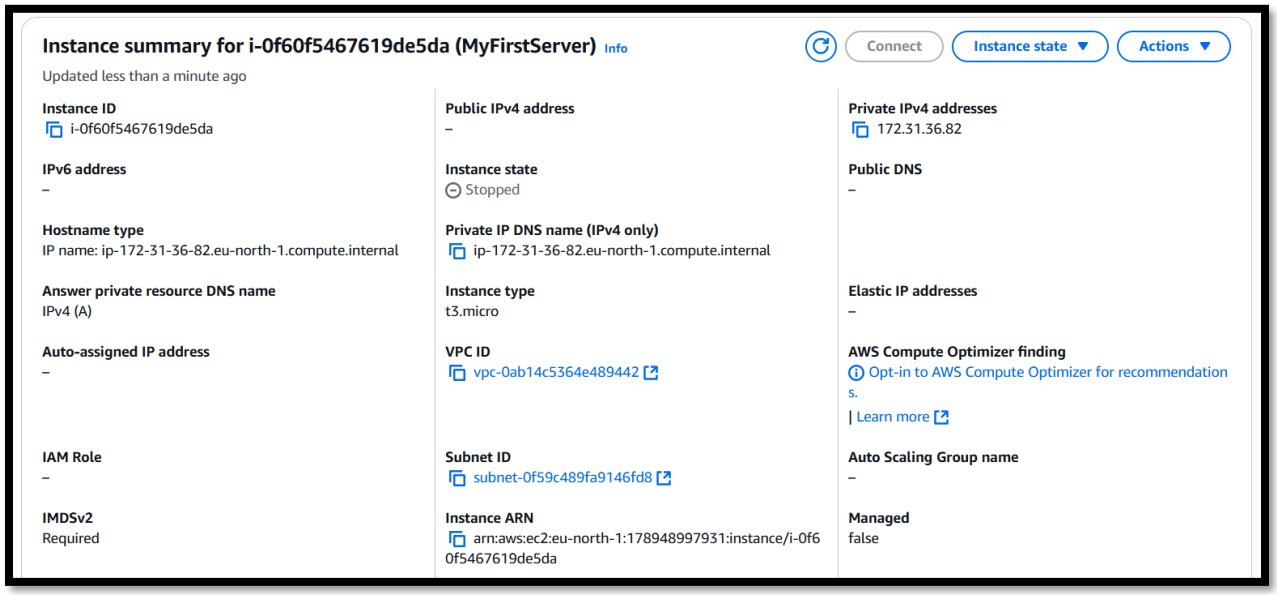

EC2 > Instances > Launch an instance
Amazon Machine Image (AMI)
Ubuntu Server 24.04 LTS (HVM), SSD Volume Type
Free tier eligible
ami-042b4708b1d05f512 (64-bit (x86)) / ami-0969826571f0530f7 (64-bit (Arm))
Virtualization: hvm ENA enabled: true Root device type: ebs
Description
Ubuntu Server 24.04 LTS (HVM),EBS General Purpose (SSD) Volume Type. Support available from Canonical (http://www.ubuntu.com/cloud/services).
Canonical, Ubuntu, 24.04, amd64 noble image
Architecture
64-bit (x86)
AMI ID
ami-042b4708b1d05f512
Publish Date
2025-06-10
Username
ubuntu
Verified provider
Instance type Info | Get advice
Instance type
t3.micro
Free tier eligible
Family: t3 2 vCPU 1 GiB Memory Current generation: true
On-Demand Ubuntu Pro base pricing: 0.0143 USD per Hour
On-Demand RHEL base pricing: 0.0396 USD per Hour On-Demand SUSE base pricing: 0.0108 USD per Hour
On-Demand Linux base pricing: 0.0108 USD per Hour On-Demand Windows base pricing: 0.02 USD per Hour
All generations
Compare instance types
Additional costs apply for AMIs with pre-installed software

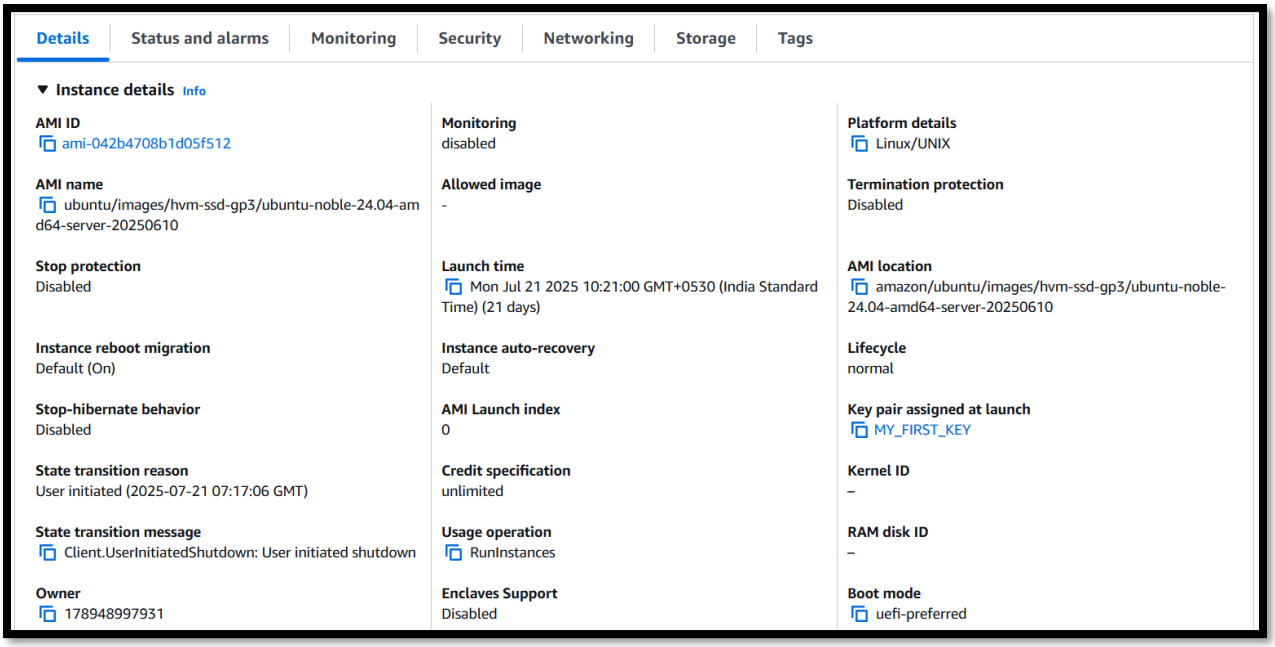

Key pair (login) Info
You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.
Key pair name - required
MySecondInstanceKey
Create new key pair

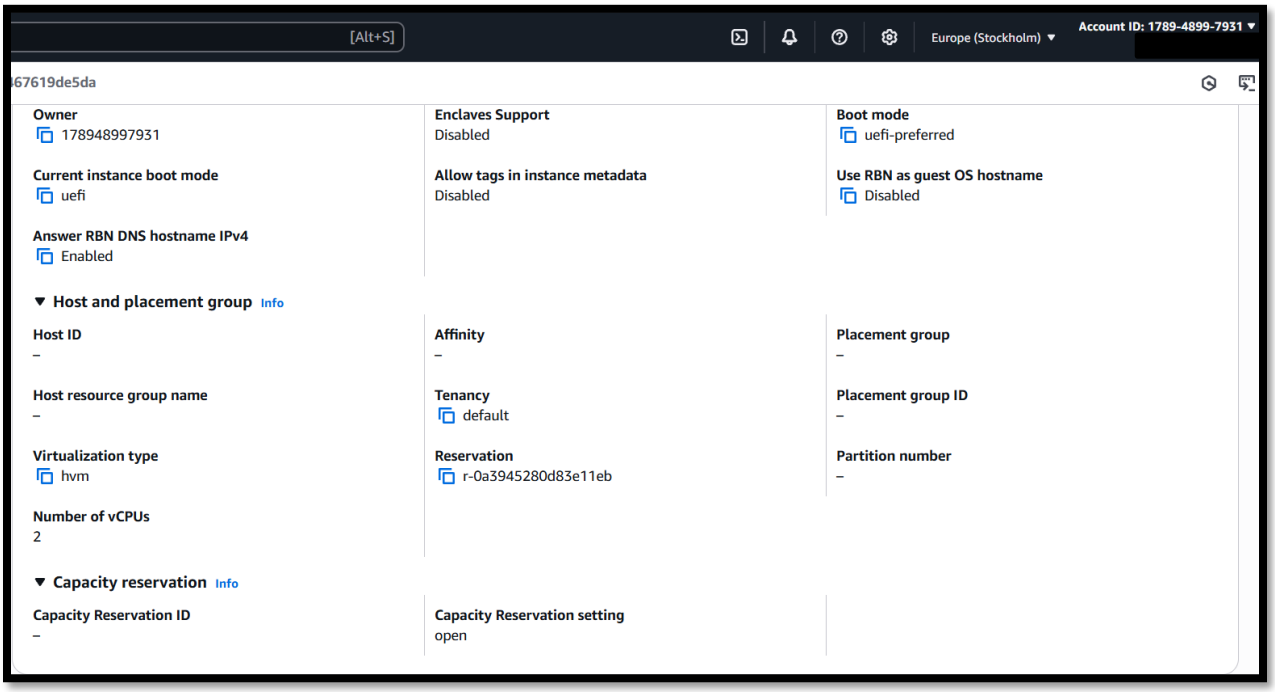

Create key pair
Key pair name
Key pairs allow you to connect to your instance securely.
MySecondInstanceKey
The name can include up to 255 ASCII characters. It can't include leading or trailing spaces.
Key pair type
RSA
RSA encrypted private and public key pair
ED25519
ED25519 encrypted private and public 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
Cancel
Create key pair


Network settings Info
Edit
Network Info
vpc-0ab14c5364e489442
Subnet Info
No preference (Default subnet in any availability zone)
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
We'll create a new security group called 'launch-wizard-2' with the following rules:
Allow SSH traffic from
Helps you connect to your instance
Anywhere
0.0.0.0/0
Allow HTTPS traffic from the internet
To set up an endpoint, for example when creating a web server
Allow HTTP traffic from the internet
To set up an endpoint, for example when creating a web server
Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.


aws
Search
[Alt+S]
Europe (Stockholm)
Account ID: 1789-4899-7931
EC2 > Instances > Launch an instance
To set up an endpoint, for example when creating a web server
Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.
Configure storage Info
Advanced
1x 8 GiB gp3 Root volume, 3000 IOPS, Not encrypted
Add new volume
The selected AMI contains instance store volumes, however the instance does not allow any instance store volumes. None of the instance store volumes from the AMI will be accessible from the instance
Click refresh to view backup information
The tags that you assign determine whether the instance will be backed up by any Data Lifecycle Manager policies.
0 x File systems
Edit
Advanced details Info
Summary
Number of instances Info
1
Software Image (AMI)
Canonical, Ubuntu, 24.04, amd6...read more
ami-042b4708b1d05f512
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


Instance summary for i-0f60f5467619de5da (MyFirstServer) Info
Updated less than a minute ago
Connect
Instance state
Actions
Instance ID
i-0f60f5467619de5da
IPv6 address
–
Hostname type
IP name: ip-172-31-36-82.eu-north-1.compute.internal
Answer private resource DNS name
IPv4 (A)
Auto-assigned IP address
–
IAM Role
–
IMDSv2
Required
Public IPv4 address
–
Instance state
Stopped
Private IP DNS name (IPv4 only)
ip-172-31-36-82.eu-north-1.compute.internal
Instance type
t3.micro
VPC ID
vpc-0ab14c5364e489442
Subnet ID
subnet-0f59c489fa9146fd8
Instance ARN
arn:aws:ec2:eu-north-1:178948997931:instance/i-0f60f5467619de5da
Private IPv4 addresses
172.31.36.82
Public DNS
–
Elastic IP addresses
–
AWS Compute Optimizer finding
Opt-in to AWS Compute Optimizer for recommendations.
| Learn more
Auto Scaling Group name
–
Managed
false





CONCLUSION:

By following the above procedure, we successfully created an AWS account and launched an EC2 instance. This process demonstrates the ease and flexibility of deploying virtual servers using AWS, reducing the need for physical infrastructure. It also shows how cloud computing enables instant scalability, global access, and cost savings for individuals and businesses.