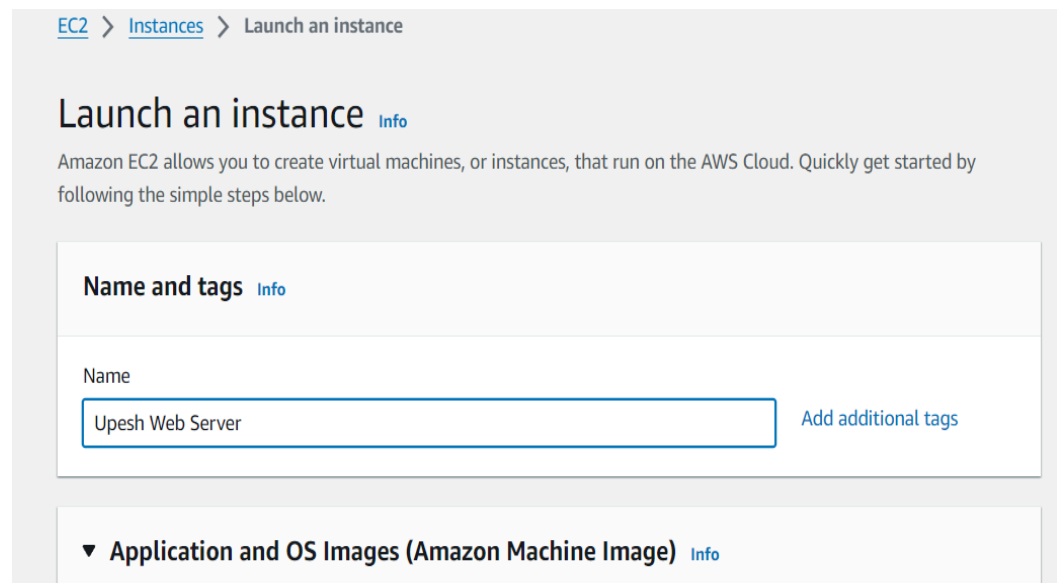


Basic Labs

1. EC2 Basics Lab

- **Objective:** To understand the process of setting up and managing an Amazon EC2 instance.
- **Approach:** Students will start by launching a new EC2 instance, selecting an appropriate instance type and configuring the instance details. They will then create and configure a new Security Group, and allocate an Elastic IP address to the instance. The lab will also include connecting to the instance via SSH.
- **Goal:** By the end of this lab, students should be able to launch and manage an EC2 instance, understand instance types, security groups, and IP addressing in AWS.

1. Launching EC2 Instance



The screenshot shows the 'Launch an instance' page in the AWS Management Console. The breadcrumb navigation at the top reads 'EC2 > Instances > Launch an instance'. The main heading is 'Launch an instance' with an 'Info' link. Below the heading is a descriptive paragraph: '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.' The page is divided into sections. The first section, 'Name and tags', has an 'Info' link and contains a 'Name' label and a text input field with the value 'Upesh Web Server'. To the right of the input field is a link 'Add additional tags'. The second section, 'Application and OS Images (Amazon Machine Image)', is partially visible at the bottom and also has an 'Info' link.

2. Selecting Instance Type and creating key value pair

▼ Instance type [Info](#) | [Get advice](#)

Instance type

t2.micro

Free tier eligible

Family: t2 1 vCPU 1 GiB Memory Current generation: true
On-Demand Windows base pricing: 0.0162 USD per Hour
On-Demand SUSE base pricing: 0.0116 USD per Hour
On-Demand RHEL base pricing: 0.0716 USD per Hour
On-Demand Linux base pricing: 0.0116 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*

KeyPairTest

[Create new key pair](#)

Create key pair



Key pair name

Key pairs allow you to connect to your instance securely.

KeyPairTest

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

3. Selecting appropriate Network Settings

▼ Network settings [Info](#)

[Edit](#)

Network [Info](#)

vpc-09def53eb1315ff84

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-5**' 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



4. Creating a single Instance

▼ Summary

Number of instances [Info](#)

1

Software Image (AMI)

Amazon Linux 2023 AMI 2023.3.2...[read more](#)
ami-0e731c8a588258d0d

Virtual server type (instance type)

t2.micro

Firewall (security group)

New security group

Storage (volumes)

1 volume(s) - 8 GiB

i **Free tier:** In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance **×**

Cancel

Launch instance

[Review commands](#)

EC2 > Instances > Launch an instance

Success
Successfully initiated launch of instance [\(i-0d42294ff770a9d60\)](#)

▶ Launch log

5.Elastic Ip allocation for Instance

Elastic IP address allocated successfully.
Elastic IP address 54.204.190.93

Associate this Elastic IP address

Elastic IP addresses (1/1)

Find resources by attribute or tag

Public IPv4 address : 54.204.190.93

Clear filters

< 1 >

| <input checked="" type="checkbox"/> | Name | Allocated IPv4 addr... | Type | Allocation ID | Reverse DNS record |
|-------------------------------------|------|------------------------|------|---------------|--------------------|
|-------------------------------------|------|------------------------|------|---------------|--------------------|

Successfully terminated i-0fb5d0936ad139336,i-0a422aec290cbb63e

Instances (3) Info

Find Instance by attribute or tag (case-sensitive)

Any state

Connect Instance state Actions Launch instances


| <input type="checkbox"/> | Name | Instance ID | Instance state | Instance type | Status check | Alarm status | Availability Zone | Public IPv4 D |
|--------------------------|-----------------|-------------------------------------|----------------|---------------|-------------------|--------------|-------------------|---------------|
| <input type="checkbox"/> | Upesh Web Se... | i-0d42294ff770a9d60 | Running | t2.micro | 2/2 checks passed | View alarms | us-east-1c | ec2-54-227-6- |
| <input type="checkbox"/> | | i-0fb5d0936ad139336 | Shutting-d... | t2.micro | 2/2 checks passed | View alarms | us-east-1b | ec2-3-219-28- |
| <input type="checkbox"/> | | i-0a422aec290cbb63e | Shutting-d... | t2.micro | 2/2 checks passed | View alarms | us-east-1f | ec2-3-238-229 |

Elastic IP address: 54.204.190.93

Resource type

Choose the type of resource with which to associate the Elastic IP address.

- ☒ Instance
- ☐ Network interface

 If you associate an Elastic IP address with an instance that already has an Elastic IP address associated, the previously associated Elastic IP address will be disassociated, but the address will still be allocated to your account. [Learn more](#)

If no private IP address is specified, the Elastic IP address will be associated with the primary private IP address.

Instance

 i-0d42294ff770a9d60



Private IP address

The private IP address with which to associate the Elastic IP address.

 Choose a private IP address

Reassociation

Specify whether the Elastic IP address can be reassociated with a different resource if it already associated with a resource.

☐ Allow this Elastic IP address to be reassociated

Cancel

Associate


Instance: i-0d42294ff770a9d60 (Upesh Web Server)



[Details](#) | [Status and alarms](#) [New](#) | [Monitoring](#) | [Security](#) | [Networking](#) | [Storage](#) | [Tags](#)

▼ Instance summary [Info](#)

Instance ID

 i-0d42294ff770a9d60 (Upesh Web Server)

IPv6 address

—

Hostname type

IP name: ip-172-31-80-164.ec2.internal

Public IPv4 address

 54.204.190.93 [open address](#)

Instance state

 Running

Private IP DNS name (IPv4 only)

 ip-172-31-80-164.ec2.internal

Private IPv4 addresses

 172.31.80.164

Public IPv4 DNS

 ec2-54-204-190-93.compute-1.amazonaws.com [open address](#)


7. Connecting to the instance via SSH

```
Test987@DESKTOP-F6TOPKG MINGW64 ~/Downloads
$ chmod 400 "KeyPairTest.pem"
> AC

Test987@DESKTOP-F6TOPKG MINGW64 ~/Downloads
$ ec2-54-204-190-93.compute-1.amazonaws.com"
> AC

Test987@DESKTOP-F6TOPKG MINGW64 ~/Downloads
$ ec2-54-204-190-93.compute-1.amazonaws.com
bash: ec2-54-204-190-93.compute-1.amazonaws.com: command not found

Test987@DESKTOP-F6TOPKG MINGW64 ~/Downloads
$ ssh -i "KeyPairTest.pem" ec2-user@ec2-54-204-190-93.compute-1.amazonaws.com
The authenticity of host 'ec2-54-204-190-93.compute-1.amazonaws.com (54.204.190.93)' can't be established.
ED25519 key fingerprint is SHA256:yUGGHBBZlajUhhkFVCfRuTSr/2YqDAwe2xEAHA2yB8.
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 'ec2-54-204-190-93.compute-1.amazonaws.com' (ED25519)
to the list of known hosts.
```



```
#
~ \###
~~ ~\#####
~~ ~\####
~~ ~/#/
~~~~ ~V~>
~~~~ ~_.._
~~~~ ~/_m/'

Amazon Linux 2023

https://aws.amazon.com/linux/amazon-linux-2023

[ec2-user@ip-172-31-80-164 ~]$ |
```