

# Cloud Application Development

## Week -9

WEEK-9:AWS – EC2 Establish an AWS account. Use the AWS Management Console to launch an EC2 instance and connect to it.

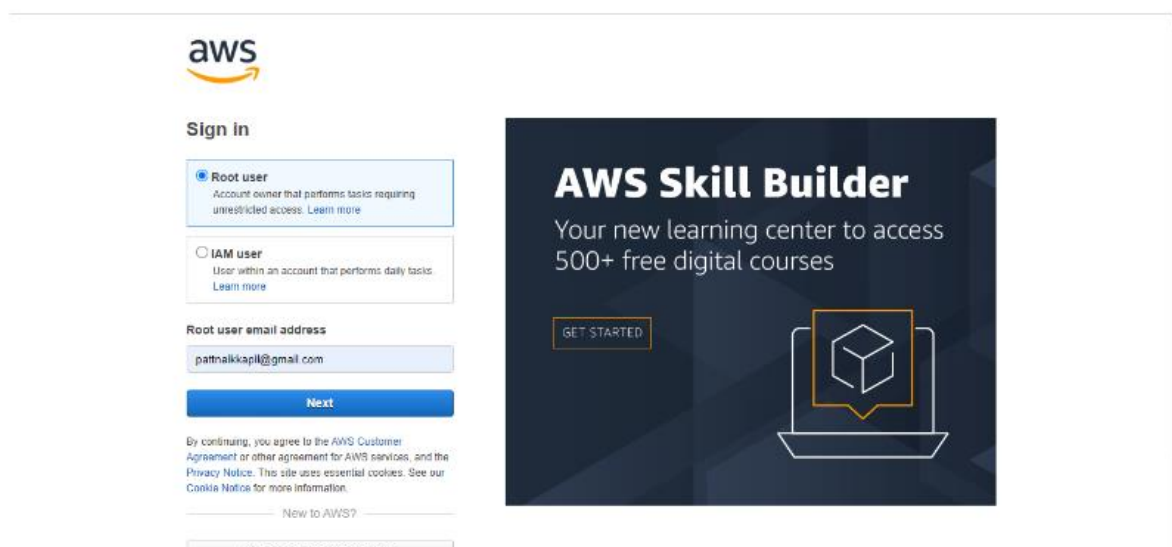
### **What is EC2?**

Amazon Elastic Compute Cloud (EC2) is a web service provided by Amazon Web Services (AWS) that allows users to rent virtual servers (referred to as "instances") on which they can run their applications. EC2 instances are essentially virtual machines that can be launched in the cloud and scaled up or down as needed. EC2 provides a wide range of instance types to choose from, allowing users to select the instance size and configuration that best fits their needs.

### **Why do we need an EC2 instance?**

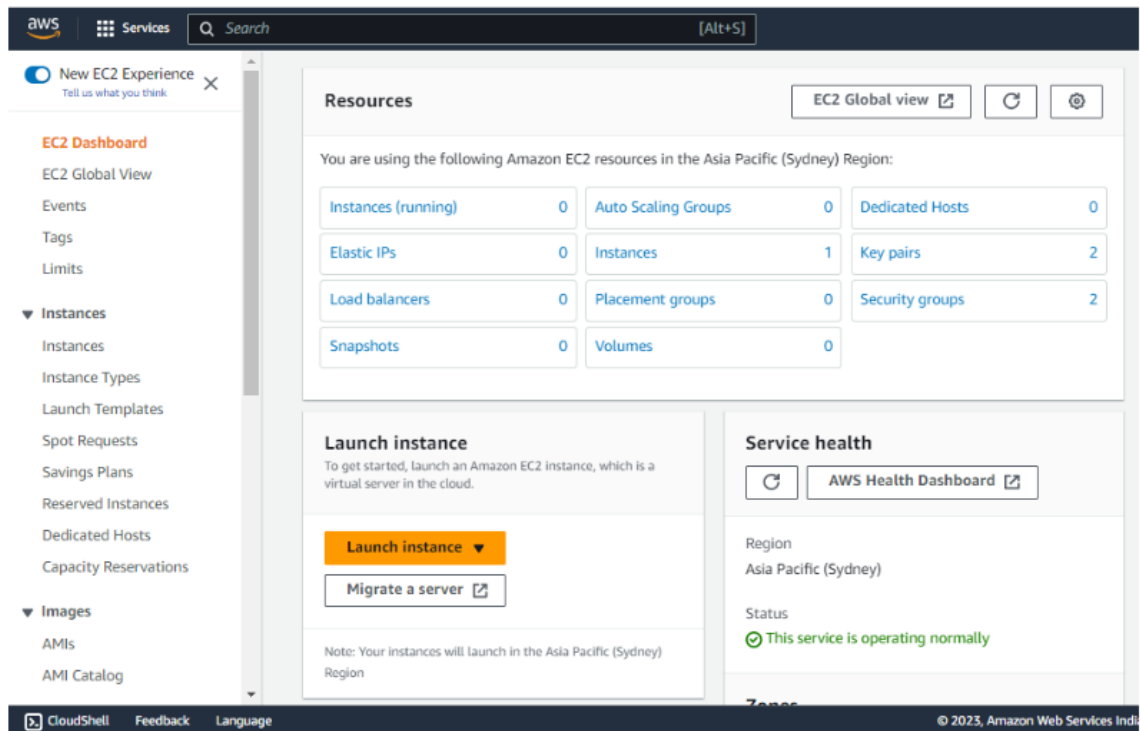
One of the main reasons we need EC2 instances is because they offer scalability and flexibility. We can launch EC2 instances on demand and scale up or down as needed to match our workload requirements. This means we can easily provision resources when we need them and only pay for what we use.

### **Creating an EC2 instance.**



The screenshot shows the AWS Management Console sign-in page. On the left, there is a 'Sign in' section with two options: 'Root user' (selected) and 'IAM user'. Below these options is a text input field for the 'Root user email address' containing 'patnalkapil@gmail.com'. A blue 'Next' button is positioned below the email field. At the bottom of the sign-in section, there is a small disclaimer about the AWS Customer Agreement and a link to the Privacy Notice. On the right side of the page, there is a dark blue promotional banner for 'AWS Skill Builder' with the text 'Your new learning center to access 500+ free digital courses'. A yellow 'GET STARTED' button is located on the banner, along with an icon of a laptop displaying a cube.

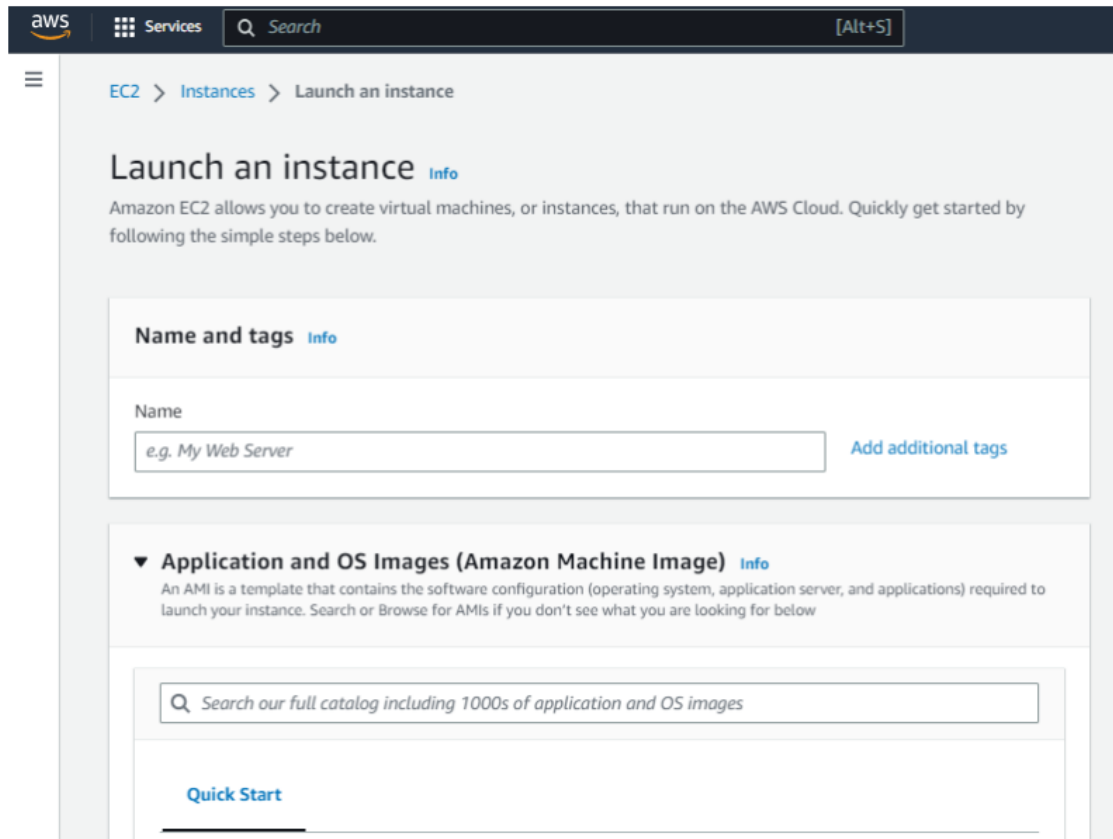
## Step 1: Sign in to the AWS Management Console



EC2 dashboard

To create an EC2 instance, you first need to sign in to the AWS Management Console. If you don't already have an AWS account, you'll need to create one. Once you're signed in, navigate to the EC2 dashboard and Launch an instance.

## Step 2: Choose a name of your instance



The screenshot shows the AWS Management Console interface for launching an EC2 instance. The top navigation bar includes the AWS logo, a 'Services' menu, a search bar, and a keyboard shortcut '[Alt+S]'. The breadcrumb trail indicates the path: 'EC2 > Instances > Launch an instance'. The main heading is 'Launch an instance' with an 'Info' link. Below this, a descriptive paragraph states: '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 form is divided into sections. The first section, 'Name and tags', has an 'Info' link and contains a 'Name' label, a text input field with the placeholder 'e.g. My Web Server', and an 'Add additional tags' link. The second section, 'Application and OS Images (Amazon Machine Image)', also has an 'Info' link and includes a paragraph explaining that an AMI is a template containing software configuration. Below this text is a search bar with the placeholder 'Search our full catalog including 1000s of application and OS images'. At the bottom of the form, there is a 'Quick Start' link.

aws Services Q Search [Alt+S]

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

[Add additional tags](#)

#### ▼ Application and OS Images (Amazon Machine Image) [Info](#)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

[Quick Start](#)

Select a name of your instance as per your likability

### Step 3: Choose an Amazon Machine Image (AMI)

▼ **Application and OS Images (Amazon Machine Image)** [Info](#)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

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

Quick Start

Amazon Linux  
aws

macOS  
Mac

Ubuntu  
ubuntu

Windows  
Microsoft

Red Hat  
Red Hat

Browse more AMIs

Including AMIs from AWS, Marketplace and the Community

Amazon Machine Image (AMI)

Amazon Linux 2023 AMI

Free tier eligible

ami-0d0175e9dbb94e0d2 (64-bit (x86), uefi-preferred) / ami-0f9027638c7635698 (64-bit (Arm), uefi)  
Virtualization: hvm ENA enabled: true Root device type: ebs

Selecting AMI for your instance

### Step 4: Choose an Instance Type

▼ **Instance type** [Info](#)

Instance type

t2.micro

Free tier eligible

Family: t2 1 vCPU 1 GiB Memory  
On-Demand Linux pricing: 0.0146 USD per Hour  
On-Demand Windows pricing: 0.0192 USD per Hour  
On-Demand SUSE pricing: 0.0146 USD per Hour  
On-Demand RHEL pricing: 0.0746 USD per Hour

Compare instance types

An instance type determines the computing resources (CPU, RAM, storage, etc.) available to your EC2 instance. There are a variety of instance types to choose from, ranging from small and low-cost to large and high-performance. Select the instance type that best fits your needs and budget.


## Step 5: Create a key pair

**▼ 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*

Select ▼

 [Create new key pair](#)

Create a key pair if you have never created one and store it in a safe place because it will act as a key to log in to your instance.

## Step 6: Configure Security Group

**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. 

Security groups act as virtual firewalls for your EC2 instance, controlling inbound and outbound traffic. You can configure security groups to allow or deny traffic from specific IP addresses, protocols, and ports. In this step, you'll need to create a new security group or select an existing one.

## Step 7: Add Storage

▼ **Configure storage** [Info](#) Advanced

1x  GiB  ▼

Root volume (Not encrypted)

ⓘ

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage

×

Add new volume

0 x File systems

Edit

EC2 instances require storage for the operating system, applications, and data. In this step, you can add and configure storage volumes for your instance. You can choose from different types of storage, including Amazon Elastic Block Store (EBS) volumes and instance store volumes.

## Step 8: Review and Launch

### ▼ Summary

Number of instances [Info](#)

#### Software Image (AMI)

Amazon Linux 2023 AMI 2023.0.2...[read more](#)  
ami-0d0175e9dbb94e0d2

#### Virtual server type (instance type)

t2.micro


#### Firewall (security group)

New security group

New security group

Storage (volumes)

1 volume(s) - 8 GiB

 **Free tier:** In your first year includes 750 hours of t3.micro for t3.micro in the

Cancel

Launch instance

Review commands

Before launching your instance, review all the details to make sure everything is correct. You can also modify any settings that need to be changed. Once you're ready, click the "Launch" button to start your EC2 instance.


## Step 9: Connect to Your Instance


EC2 > Instances > i-09b40e9969c55ea11 > Connect to instance

**Connect to instance** [Info](#)


Connect to your instance i-09b40e9969c55ea11 using any of these options

EC2 Instance Connect | Session Manager | SSH client | EC2 serial console

Instance ID  
 i-09b40e9969c55ea11

Public IP address  
 54.206.31.155

User name  
Enter the user name defined in the AMI used to launch the instance. If you didn't define a custom user name, use the default user name, ec2-user.

 **Note:** In most cases, the default user name, ec2-user, is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI user name.

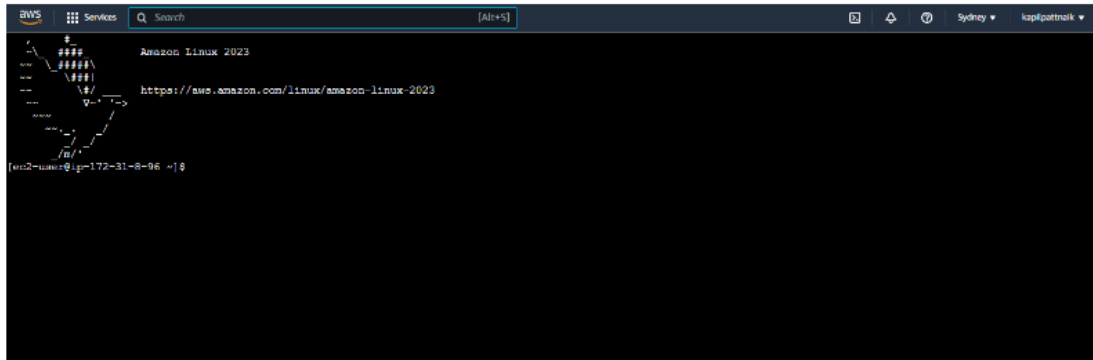
Cancel

Connect



After launching your instance, you can connect to it using various methods, such as SSH or Remote Desktop Protocol (RDP). You can also use the AWS Systems Manager Session Manager to connect to your instance securely without the need for a public IP address.

## Conclusion



Creating an EC2 instance in AWS is a simple and straightforward process. With just a few clicks, you can launch a virtual machine in the cloud and start using it right away. By following the steps outlined in this guide, you can create your own EC2 instance in no time.

