

Cloud Computing Lab

Experiment-3

Create an Amazon EC2 instance and set up a web-server on the instance and associate an IP address with the instance.

Amazon Web Services (AWS) provides a powerful cloud computing platform with a wide range of services. One of the core services offered by AWS is Amazon Elastic Compute Cloud (EC2), which allows users to launch virtual servers in the cloud.

An Amazon EC2 instance is a virtual server in the cloud that allows users to run applications and workloads on AWS. It's essentially renting a computer in a data center, providing on-demand computing resources that can be scaled up or down as needed. EC2 instances offer various configurations of CPU, memory, storage, and networking, allowing users to choose the best fit for their specific requirements.

AWS Free Tier Limits

- Monthly **750 hours** of Amazon EC2 Cloud computing capability that is scalable.
- **5 GB of basic storage on Amazon S3**, Infrastructure for scalable, robust, and secure object storage.
- Monthly database usage allotted to **Amazon RDS 750 hours** (for relevant database engines) SQL Server, MariaDB, PostgreSQL, and MySQL managed relational database services.
- **5 GB of Amazon EFS storage**. A shared file storage solution that is easy to use and scales for Amazon EC2 instances.
- **30 GB** of General Purpose (SSD) or Magnetic Elastic Block Storage from **Amazon Elastic Store** are long-lasting, dependable, low-latency block-level storage volumes for EC2 instances.

REGISTER FOR AWS FREE-TIER ACCOUNT

Step 1: First, open your web browser and navigate to the [AWS Free Tier Page](#)

Step 2: On the middle click of Create a Free Account



Step 3: Verify your email address.

The screenshot shows the AWS sign-up process. On the left, there's a promotional message about Free Tier products and a hand icon holding three cubes. A red arrow points from this icon to the 'Verify email address' button on the right. The right side has fields for 'Root user email address' (containing '@k21academy.com') and 'AWS account name' (with a placeholder). Below these are 'Verify email address' and 'Sign in to an existing AWS account' buttons, separated by an 'OR' link.

aws

Sign up for AWS

Explore Free Tier products with a new AWS account.

To learn more, visit aws.amazon.com/free.

Root user email address
Used for account recovery and some administrative functions
@k21academy.com

AWS account name
Choose a name for your account. You can change this name in your account settings after you sign up.
[Placeholder]

Verify email address

OR

Sign in to an existing AWS account

- Provide password: Provide the details that you want to use to log in to your AWS account, and click on Continue

The screenshot shows the AWS sign-up process continuing to 'Create your password'. It features a success message box ('It's you! Your email address has been successfully verified.') and fields for 'Root user password' and 'Confirm root user password'. Below these is a 'Continue (step 1 of 5)' button and an 'OR' link to sign in.

Sign up for AWS

Create your password

It's you! Your email address has been successfully verified.

Your password provides you with sign in access to AWS, so it's important we get it right.

Root user password

Confirm root user password

Continue (step 1 of 5)

OR

Sign in to an existing AWS account

- Email address: Enter the email ID that hasn't been registered yet with Amazon AWS
- Password: Type your Password
- Confirm password: Confirm the Password
- Captcha: Enter the given security check

Choose your Option, we will be going with a 6-month Free.

Sign up for AWS

Choose your account plan



Free (6 months)

Learn, experiment, and build prototypes

- 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 6 month free period or when all credits are used, you can choose to upgrade to a paid plan. Otherwise, your account closes automatically.

[Choose free plan](#)



Paid

Develop production-ready workloads

- 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 all of your credits are used, you are charged using pay-as-you-go pricing.

[Choose paid plan](#)

Step 4: Contact Information

Select your AWS type (Professional/ Personal). Fill in the correct information to validate your account if you're going to create a personal use account, then click on "Personal Account" otherwise, use "Company Account", accept the Terms and Conditions, and then click on Create Account and Continue

Free Tier offers

All AWS accounts can explore 3 different types of free offers, depending on the product used.



Always free
Never expires



12 months free
Start from initial sign-up date



Trials
Start from service activation date

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

Phone Number

Country or Region

Address

Apartment, suite, unit, building, floor, etc.

City

State, Province, or Region

Postal Code

Customers with an Indian contact address are served by Amazon Web Services India Private Limited, the local seller for AWS services in India.

I have read and agree to the terms of the AWS Customer Agreement [\[Link\]](#).

[Continue \(step 2 of 5\)](#)

Note: Make sure to provide proper contact details and mobile number to get the Verification code from AWS.

Step 5: Payment and PAN information: In this step, you must fill in your credit card /Debit Card info and billing address and click on Secure Submit.

Secure verification

We will not charge you for usage below AWS Free Tier limits. We may temporarily hold up to \$1 USD (or an equivalent amount in local currency) as a pending transaction for 3-5 days to verify your identity.

Billing Information

Credit or Debit card number

VISA

AWS accepts most major credit and debit cards. To learn more about payment options, review our FAQ.

Expiration date: March 2027

Security code

Cardholder's name

Save card information for faster future payments.
Securely save card information payments as per RBI guidelines. Learn more.

Billing address:

Use my contact address

Use a new address

Do you have a PAN?

Permanent Account Number (PAN) is a ten-digit alphanumeric number issued by the Indian Income Tax Department. This 10-digit number is printed on the front of your PAN card.

Yes
 No
You can go on the Tax Settings Page on Billing and Cost Management Console to update your PAN information.

Verify and Continue (step 3 of 5)

You might be redirected to your bank's website to authorize the verification charge.

Step 6: In this step, it will take you to the payment gateway to validate your payment information, and for your credit card verification, Amazon will charge the minimum price based on your Country. Here I have provided India, so Amazon charged 2 INR.

Verified by VISA 06 Feb 2022 12:09:55

ICICI Bank

Card Number: XXXX XXXX XXXX 8208

An OTP (One Time Password) has been sent to your registered mobile number. Please authenticate the transaction using this OTP.

Enter OTP:

Resend OTP

OTPs are SECRET. DO NOT disclose it to anyone. Bank NEVER asks for OTP.

Submit Cancel

This page will automatically timeout after 180 seconds.

Step 7: Phone verification: Here you will be taken to an identity verification page that will already have your phone number, so you just have to select either “Text message or Voice call” Provide a valid phone number, Solve the captcha, and then click on Send SMS or Call Me Now(depending upon your selection).



Sign up for AWS

Confirm your identity

Before you can use your AWS account, you must verify your phone number. When you continue, the AWS automated system will contact you with a verification code.

How should we send you the verification code?

Text message (SMS)

Voice call

Country or region code

India (+91)

Mobile phone number

7017083421

Security check



Type the characters as shown above

Send SMS (step 4 of 5)

Step 8: After clicking on Send SMS or Call me Now, you will immediately receive a call or SMS from Amazon for a verification code. Enter your code, then click on Verify Code.



Sign up for AWS

Confirm your identity

Verify code

7674

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.

Step 9: Support plan: AWS support offers a selection of plans to meet your business needs.

Select your suitable plan then click continue.



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.

- | | | |
|--|--|---|
| <input checked="" type="radio"/> Basic support - Free <ul style="list-style-type: none">Recommended for new users just getting started with AWS24x7 self-service access to AWS resourcesFor account and billing issues onlyAccess to Personal Health Dashboard & Trusted Advisor  | <input type="radio"/> Developer support - From \$29/month <ul style="list-style-type: none">Recommended for developers experimenting with AWSEmail access to AWS Support during business hours12 (business)-hour response times  | <input type="radio"/> Business support - From \$100/month <ul style="list-style-type: none">Recommended for running production workloads on AWS24x7 tech support via email, phone, and chat1-hour response timesFull set of Trusted Advisor best-practice recommendations  |
|--|--|---|



Need Enterprise level support?

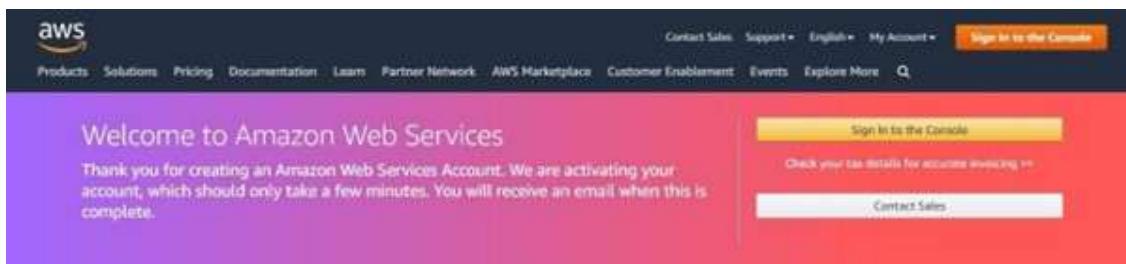
From \$15,000 a month you will receive 15-minute response times and concierge-style experience with an assigned Technical Account Manager. [Learn more \[?\]](#)

[Complete sign up](#)

Note: All customers receive free basic support.

Step 10: Registration Confirmation page.

Once you completed all the above steps and processes. You'll get the confirmation page below. Now your account will be processed for activation. It may take somewhere between 30 minutes to 1 hour for you to receive an email confirmation that your Amazon Cloud Services account has been activated.



we have successfully created the AWS Free Tier Account.

Here's a step-by-step guide to **create an Amazon EC2 instance, set up a web server, and associate an IP address** with it:

Step 1: Launch an EC2 Instance

1. **Log in** to your AWS Management Console.
2. Go to **EC2** under Services.
3. Click "**Launch Instance**".
4. **Configure Instance Details:**
 - Name: e.g., MyWebServer
 - AMI: Choose **Amazon Linux 2 AMI**
 - Instance type: e.g., **t2.micro** (free tier eligible)
 - Key pair: Create or choose an existing key pair (used for SSH access)
 - Network: Default VPC (or your custom one)
5. **Configure Storage** (default 8GB is fine)
6. **Security Group Settings:**
 - Add rule: HTTP, Port 80, Source: Anywhere (0.0.0.0/0)
 - Add rule: SSH, Port 22, Source: Your IP
7. Click **Launch Instance**

Step 2: Connect to Your Instance

1. Once the instance is running, click "**Connect**".
2. Choose **SSH Client** tab.
3. Open terminal (Linux/macOS) or PowerShell (Windows).
4. Use the command provided (something like):

```
ssh -i "your-key.pem" ec2-user@<your-public-ip>
```

Step 3: Install and Start a Web Server

Once connected via SSH:

1. **Update packages:**

```
sudo yum update -y
```

2. **Install Apache (httpd):**

```
sudo yum install httpd -y
```

3. **Start Apache:**

```
sudo systemctl start httpd
```

4. **Enable Apache on boot:**

```
sudo systemctl enable httpd
```

5. **Verify by editing the homepage:**

```
echo "<h1>Hello from EC2 Web Server</h1>" | sudo tee  
/var/www/html/index.html
```

Step 4: Associate a Static IP (Elastic IP)

1. Go to **EC2 > Network & Security > Elastic IPs**.
2. Click **Allocate Elastic IP address**.
3. Once allocated, select the new IP and click **Actions > Associate IP**.
4. Associate it with your instance's network interface.

Step 5: Test Your Web Server

- Open a browser and enter your **Elastic IP**.
- You should see:
Hello from EC2 Web Server

Let me know if you want to automate this with a script or use a specific OS like Ubuntu