

Assignment 1 – IaaS and FaaS

Get access to the AWS console through AWS Academy. In the AWS Academy account:

1. Spin up an EC2 instance.
 - a. Allow HTTP:80 port from the world (0.0.0.0/0) in the Network Setting panel.
 - b. Expand Advanced Settings, and select the LabInstanceProfile.
2. Configure a web server on EC2.
 - a. Select the instance
 - b. Hit Connect
 - c. Select the “Session Manager” tab and hit Connect.
 - d. To install and customize a web server:

`sudo -s => Logging as a root user so you can start the HTTPD service`

`yum install httpd -y => Installing a web server`

`service httpd start => Starting the server`

`cd /var/www/html => Changing the directory to customize the default Apache page.`

`nano index.html => Create the index.html and write your name here as HTML.`

3. Creating a lambda function returns an array of strings. Make it an API by enabling the public URL.
 - a. Choose the LabRole as IAM
 - b. Enable URL and enable CORS
4. Call the API in React and deploy the front-end app in S3.
 - a. Install NodeJS on your laptop
 - b. `npx create-react-app appname`
 - c. `npm install axios`
 - d. `npm start` – to start your front-end app
 - e. `npm run build` – after testing, build the app
 - f. create a bucket and deselect “Block public access”
 - g. drop all files inside the build folder into the bucket.
 - h. Write a policy that makes all objects in the bucket public. Refer to the next section.
 - i. Enable “static website hosting” and define the index.html as the index and error page.
5. [personal account] Create your own AWS account. You must add your payment method. Otherwise, services will be unavailable. Do the following 3 tasks. Then don’t do anything else without my approval. Otherwise, It will charge you. If you want to practice something in AWS, use the Academy account.
 - a. Enable MFA for the root user.
 - b. Create an admin group with an administrator policy. Create a user for yourself in that group. Always use that IAM user. Not your root user.
 - c. Set up a billing alarm.
 - i. **Make sure the region is North Virginia**
 - ii. Go to CloudWatch
 - iii. In Alarms, you will see billing that selects the billing metric automatically.

Snippets

The bucket policy that makes all objects inside it public:

```
{  
  "Id": "Policy1650912821527",  
  "Version": "2012-10-17",  
  "Statement": [  
    {  
      "Sid": "Stmt1650912820312",  
      "Action": [  
        "s3:GetObject"  
      ],  
      "Effect": "Allow",  
      "Resource": "arn:aws:s3:::<yourbucket>/*",  
      "Principal": "*"  
    }  
  ]  
}
```

```
import axios from "axios";  
import { useEffect, useState } from "react";  
  
export default function App() {  
  const [students, setstudents] = useState([]);  
  
  useEffect(() => {  
    async function fetchStudents() {  
      const studentsFromLambda = (  
        await axios.get(  
          "your lambda URL"  
        )  
      ).data;  
      setstudents(studentsFromLambda);  
      console.log(studentsFromLambda);  
    }  
  
    fetchStudents();  
  }, [ ]);  
  return (  
    <div>  
      Cloud Computing course  
      <ol>  
        {students.map((student) => (  
          <li>{student}</li>  
        ))}  
      </ol>  
    </div>  
  );  
}
```

Setting up a web server on EC2

Get access to the AWS console through AWS Academy. In the AWS Academy account:

1. Spin up an EC2 instance.
 - a. Allowed HTTP:80 port from the world (0.0.0.0/0) in the Network Setting panel.
 - b. Expand Advanced Settings, and select the LabInstanceProfile.

The screenshot shows the AWS Academy Learner Lab interface. On the left is a sidebar with icons for Account, Dashboard, Courses, Calendar, Inbox, History, and Help. The main area shows the path: ALLv1-28910 > Modules > Learner Lab > Learner Lab. At the top right, there are buttons for Start Lab (highlighted with a red box), End Lab, AWS Details, Readme, and Reset. A status message says "Used \$0 of \$100". Below the buttons is a red arrow pointing from the "AWS" link in the status bar to the "Start Lab" button. Another red arrow points from the text "1 click start lab and wait till AWS become green" to the "Start Lab" button. To the right, there's a "Learner Lab" section with links to Environment Overview, Environment Navigation, Access the AWS Management Console, Region restriction, Service usage and other restrictions, and Using the terminal in the... section. At the bottom are "Previous" and "Next" buttons.

This screenshot is similar to the previous one but shows a different step. The "Start Lab" button is now grayed out. Instead, the "AWS" link in the status bar is highlighted with a red box. Below it, the text "2. Now click AWS hyperlink" is displayed. The rest of the interface is identical to the first screenshot, including the sidebar, main navigation, and the "Learner Lab" section on the right.

The screenshot shows the AWS search results page. The search bar at the top contains the query "EC2". Below the search bar, there is a sidebar with links to various AWS services and features. The main content area displays search results for "EC2". The first result, "EC2" (Virtual Servers in the Cloud), is highlighted with a red box. Other results listed include "EC2 Image Builder", "AWS Firewall Manager", and "GuardDuty".

The screenshot shows the AWS EC2 Instances management page. The left sidebar is expanded to show the "Instances" section, specifically the "Instances" sub-section. The main content area displays the "Instances Info" table, which is currently empty. At the bottom of the table, there is a "Launch instances" button. A red box highlights this button, and a red arrow points to it with the text "click on this launch instances".

Quick Start for developer select default Amazon Linux

Amazon Linux

macOS Ubuntu Windows Red Hat

Amazon Machine Image (AMI)

Amazon Linux 2 AMI (HVM) - Kernel 5.10, SSD Volume Type

ami-09d3b3274b6c5d4aa (64-bit (x86)) / ami-081dc0707789c2daf (64-bit (Arm))

Virtualization: hvm ENA enabled: true Root device type: ebs

Description

Amazon Linux 2 Kernel 5.10 AMI 2.0.20221004.0 x86_64 HVM gp2

Architecture

AMI ID

64-bit (x86)

Verified provider

Number of instances

1

Software Image (AMI)

Amazon Linux 2 Kernel 5.10 AMI...read more

ami-09d3b3274b6c5d4aa

Virtual server type (instance type)

t2.micro

Firewall (security group)

New security group

Storage (volumes)

1 volume(s) - 8 GiB

Amazon Linux 2 Kernel 5.10 AMI 2.0.20221004.0 x86_64 HVM gp2

Architecture

AMI ID

64-bit (x86)

Verified provider

Instance type

t2.micro

Family: t2 1 vCPU 1 GiB Memory

On-Demand Linux pricing: 0.0116 USD per Hour

On-Demand Windows pricing: 0.0162 USD per Hour

Free tier eligible

Compare instance types

Key pair (login)

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

MUM Global Online Education | Dashboard | Learner Lab | EC2 Management Console

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#LaunchInstances

AWS Services Search for services, features, blogs, docs, and more [Alt+S]

CloudFront

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 Anywhere
Helps you connect to your instance

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

Enable Allow HTTP traffic from the internet in Network Settings

⚠ 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

Feedback Looking for language selection? Find it in the new Unified Settings © 2022, Am

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us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#LaunchInstances

AWS Services Search for services, features, blogs, docs, and more [Alt+S]

CloudFront

Instance type: t2.micro

Key pairs allow you to connect to your instance securely.

Enter the name of the key pair below. 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](#)

Key pair name: myfirstserverkeyp

The name can include up to 255 ASCII characters. It can't include leading or trailing spaces.

Key pair type: RSA

ED25519

Private key file format: .pem For use with OpenSSH

.ppk For use with PuTTY

We use Session Manager to connect to the instance with the help of IAM profile. In case the session manager is not working, you can use this Key Pair to connect to the instance. PEM for MacOS, Linux. PPK for Windows.

MUM Global Online Education | Dashboard | Learner Lab | EC2 Management Console

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#LaunchInstances:

Services | CloudFront

Search for services, features, blogs, docs, and more [Alt+S]

Advanced details [Info](#)

Purchasing option [Info](#)

Request Spot Instances

Request Spot Instances at the Spot price, capped at the On-Demand price

Domain join directory [Info](#)

Select [Create new directory](#)

IAM instance profile [Info](#)

Select [Create new IAM profile](#)

arn:aws:iam::475249589989:instance-profile/EMR_EC2_DefaultRole

LabInstanceProfile
arn:aws:iam::475249589989:instance-profile/LabInstanceProfile

DNS Hostname: LabInstanceProfile

Enable IP name IPv4 (A record) DNS requests

select LabInstanceProfile as IAM instance profile

Dashboard | Learner Lab | Launch an instance | EC2 Management | Assignment 1 - IaaS and FaaS.d | + | N. Virginia | vclabs/user2243686=supriya @ 8468-6651-5154

EC2 > Instances > Launch an instance

Success
Successfully initiated launch of instance (i-0d69a3af05362f65)

Launch log

Initializing requests	Succeeded
Creating security groups	Succeeded
Creating security group rules	Succeeded
Launch initiation	Succeeded

Next Steps

Create billing and free tier usage | Connect to your instance | Connect an RDS database [New](#)

https://us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Instances: [S3](#)

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Show all [X](#)

MyFirstServerOneck.ppk

MUM Global Online Education X Dashboard X Learner Lab X EC2 Management Console X Portfolio X

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Instances:

aws Services Search for services, features, blogs, docs, and more [Alt+S] N. Virginia v vocabs/user2196930>Test_Student @ 4752-4958-9989 ▾

CloudFront

New EC2 Experience Tell us what you think X

EC2 Dashboard EC2 Global View Events Tags Limits

Instances Instances New Instance Types Launch Templates Spot Requests Savings Plans Reserved Instances New Dedicated Hosts Scheduled Instances Capacity Reservations

Instances (1/1) Info Find instance by attribute or tag (case-sensitive)

Name Instance ID Instance state Instance type Status check Alarm status Available

MyFirstServer i-0a0768f4266727104 Running t2.micro 2/2 checks passed No alarms + us-east-1

Instance: i-0a0768f4266727104 (MyFirstServer)

Details Security Networking Storage Status checks Monitoring Tags

Instance summary Info

Instance ID i-0a0768f4266727104 (MyFirstServer)

IPv6 address -

Public IPv4 address 3.85.86.201 | open Address ↗ this is public ipv4 address of initiated instances

Private IPv4 addresses 172.31.87.143

Instance state Running

Public IPv4 DNS ec2-3-85-86-201.compute-1.amazonaws.com | open address ↗

2. Configure a web server on EC2.

- Select the instance
- Hit Connect
- Select the “Session Manager” tab and hit Connect.

Dashboard X Learner Lab X Connect to instance X AWS Systems Manager X Instance details | EC2 X Assignment 1 - lab X

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#ConnectToInstance:instanceId=i-0d69a3af0d05362f65

aws Services Search for services, features, blogs, docs, and more [Alt+S] N. Virginia v vocabs/user2243686=supriya @ 8468-6651-5154 ▾

EC2 > Instances > i-0d69a3af0d05362f65 > Connect to instance

Connect to instance Info Connect to your instance i-0d69a3af0d05362f65 (MyFirstServerOnekp) using any of these options

Session Manager RDP client EC2 serial console

Session Manager usage:

- Connect to your instance without SSH keys or a bastion host.
- Sessions are secured using an AWS Key Management Service key.
- You can log session commands and details in an Amazon S3 bucket or CloudWatch Logs log group.
- Configure sessions on the Session Manager Preferences page.

Cancel Connect

https://us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#InstanceDetails:instanceId=i-0d69a3af0d05362f65 © 2022, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

MyFirstServerOnekp.ppk Show all

- d. To install and customize a web server:

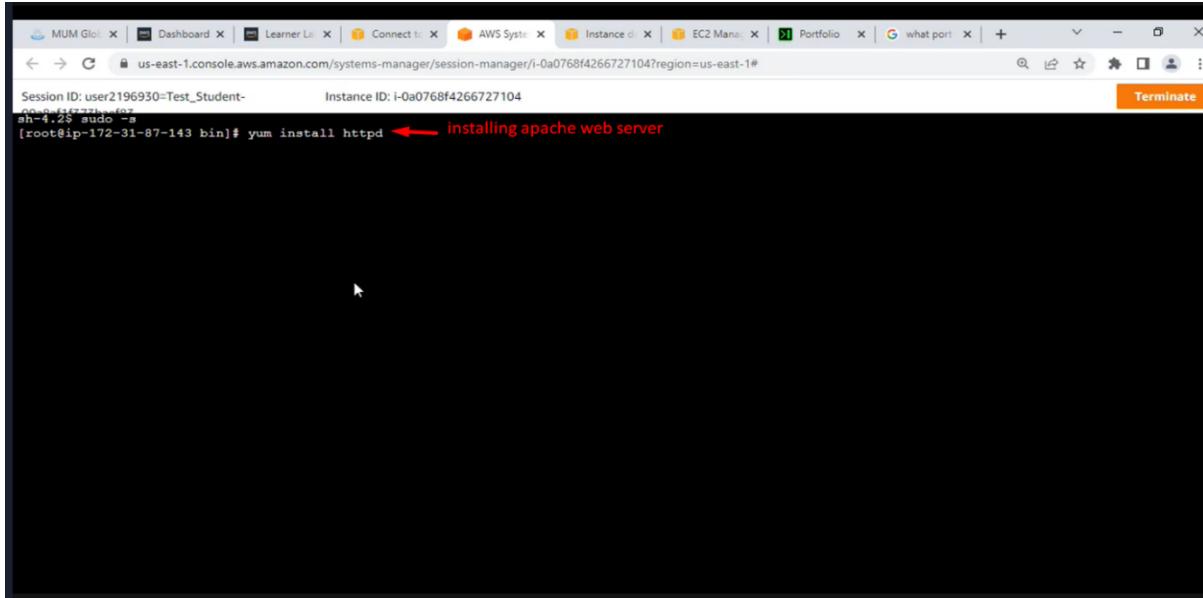
sudo -s => Logging as a root user so you can start the HTTPD service

yum install httpd -y => Installing a web server

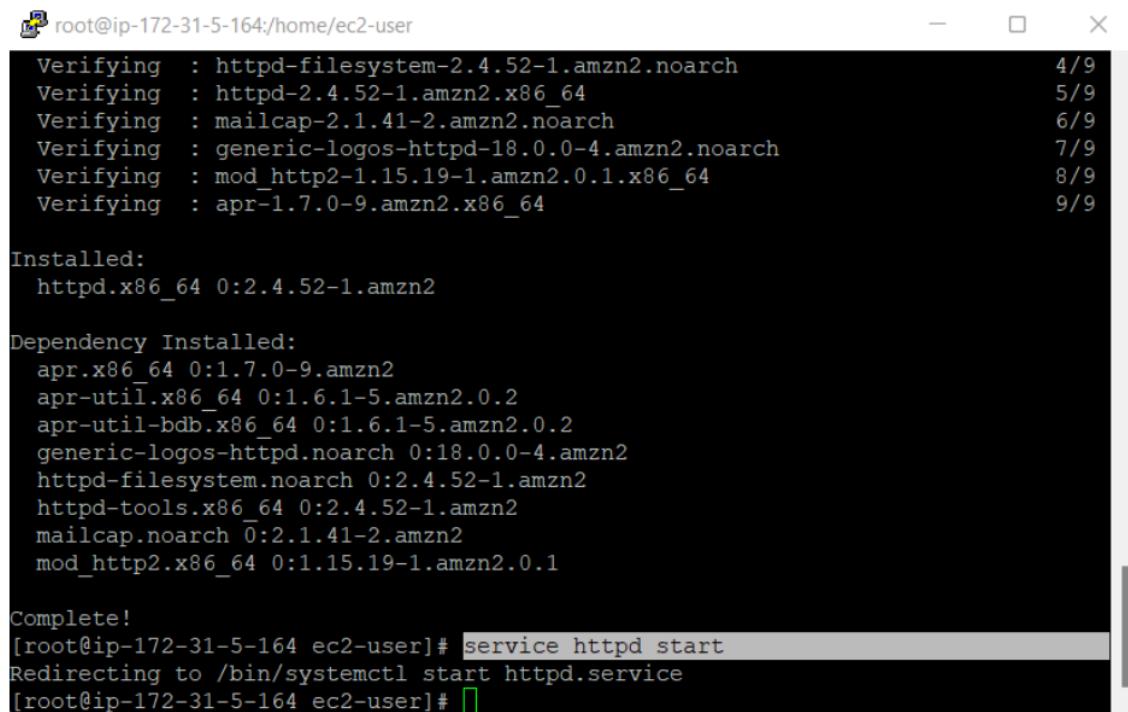
service httpd start => Starting the server

cd /var/www/html => Changing the directory to customize the default Apache page.

nano index.html => Create the index.html and write your name here as HTML.



MUM Global Dashboard Learner Lab Connect to AWS Systems Manager Instance Details EC2 Manager Portfolio what port? Session ID: user2196930=Test_Student- Instance ID: i-0a0768f4266727104# sh-4.2\$ sudo -s [root@ip-172-31-87-143 bin]# yum install httpd ← installing apache web server

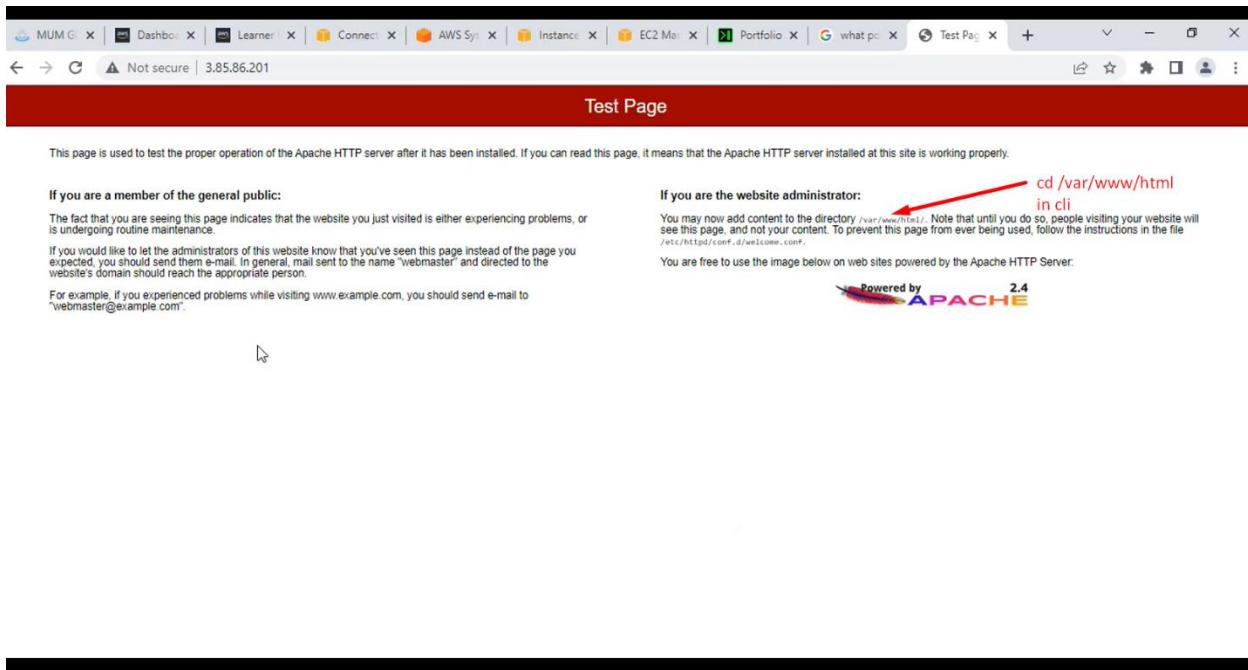


```
root@ip-172-31-5-164:/home/ec2-user
Verifying : httpd-filesystem-2.4.52-1.amzn2.noarch 4/9
Verifying : httpd-2.4.52-1.amzn2.x86_64 5/9
Verifying : mailcap-2.1.41-2.amzn2.noarch 6/9
Verifying : generic-logos-httpd-18.0.0-4.amzn2.noarch 7/9
Verifying : mod_http2-1.15.19-1.amzn2.0.1.x86_64 8/9
Verifying : apr-1.7.0-9.amzn2.x86_64 9/9

Installed:
httpd.x86_64 0:2.4.52-1.amzn2

Dependency Installed:
apr.x86_64 0:1.7.0-9.amzn2
apr-util.x86_64 0:1.6.1-5.amzn2.0.2
apr-util-bdb.x86_64 0:1.6.1-5.amzn2.0.2
generic-logos-httpd.noarch 0:18.0.0-4.amzn2
httpd-filesystem.noarch 0:2.4.52-1.amzn2
httpd-tools.x86_64 0:2.4.52-1.amzn2
mailcap.noarch 0:2.1.41-2.amzn2
mod_http2.x86_64 0:1.15.19-1.amzn2.0.1

Complete!
[root@ip-172-31-5-164 ec2-user]# service httpd start
Redirecting to /bin/systemctl start httpd.service
[root@ip-172-31-5-164 ec2-user]# 
```



```
root@ip-172-31-5-164:/var/www/html
Verifying : mod_http2-1.15.19-1.amzn2.0.1.x86_64 8/9
Verifying : apr-1.7.0-9.amzn2.x86_64 9/9

Installed:
  httpd.x86_64 0:2.4.52-1.amzn2

Dependency Installed:
  apr.x86_64 0:1.7.0-9.amzn2
  apr-util.x86_64 0:1.6.1-5.amzn2.0.2
  apr-util-bdb.x86_64 0:1.6.1-5.amzn2.0.2
  generic-logos-htpd.noarch 0:18.0.0-4.amzn2
  httpd-filesystem.noarch 0:2.4.52-1.amzn2
  httpd-tools.x86_64 0:2.4.52-1.amzn2
  mailcap.noarch 0:2.1.41-2.amzn2
  mod_http2.x86_64 0:1.15.19-1.amzn2.0.1

Complete!
root@ip-172-31-5-164 ec2-user]# service httpd start
Redirecting to /bin/systemctl start httpd.service
root@ip-172-31-5-164 ec2-user]# cd /var/www/html/
root@ip-172-31-5-164 html]# touch index.html
root@ip-172-31-5-164 html]# ls
index.html
root@ip-172-31-5-164 html]# nano index.html
```

The terminal window shows the root user performing several actions: verifying dependencies, installing httpd, listing installed packages, and then performing configuration tasks. Red arrows point to the command to start the service, the directory change, the file creation, the listing command, and the nano editor command.

The screenshot shows a terminal window titled "root@ip-172-31-5-164:/var/www/html". It displays the contents of the "index.html" file, which contains the text "<p>Welcome to the cloud computing course, MIU </p>". Below the terminal is a browser window with the URL "3.80.161.145/" in the address bar. The page content is "Welcome to the cloud computing course, MIU".

Creating a Lambda endpoint

3. Creating a lambda function returns an array of strings. Make it an API by enabling the public URL.
 - a. Choose the LabRole as IAM
 - b. Enable URL and enable CORS

Creating Lambda with public URL



Screenshot of the AWS Lambda 'Create function' wizard.

Basic information

- Function name:** MyFirstLambdaFunction (highlighted with a red box)
- Runtime:** Node.js 16.x
- Architecture:** x86_64 (highlighted with a red arrow)
- Permissions:** Existing role: LabRole (highlighted with a red box)

Advanced settings

- Enable function URL:** checked (highlighted with a red arrow)
- enable cors:** checked (highlighted with a red arrow)
- Enable tags:** unchecked
- Enable VPC:** unchecked

Buttons: Cancel, Create function

The screenshot shows the AWS Lambda console interface for the function 'MyFirstLambdaFunc'. The top navigation bar includes 'Services', 'Search', 'Lambda > Functions > MyFirstLambdaFunc', and account information 'N. Virginia' and 'vodlabs/user2243686=supriya @ 8468-6651-5154'.

Function overview (Info) Throttle Copy ARN Actions

Description: -
Last modified: yesterday
Function ARN: arn:aws:lambda:us-east-1:846866515154:function:MyFirstLambdaFunc

Function URL (Info): <https://wq3u5pe7eatdrsmkjfq22lippa0ezam.lambda-url.us-east-1.on.aws/>

Code source (Info) Upload from

Test (highlighted with red arrow 2) Deploy

index.js (highlighted with red box 1)

```
1  exports.handler = async (event) => {
2      // TODO implement
3      console.log("Hello from my lambda!");
4      const stringifiedEvent = JSON.stringify(event);
5      const response = {
6          statusCode: 200,
7          body: JSON.stringify(["Supriya Ghising", "Anna", "Siaran"]),
8      };
9      return response;
10 };
11 
```

Code properties

Package size 508.0 byte	SHA256 hash rCzIQc/qb16pDwRl3zsSETZhFc2Y/+KG0cNV+P5cm4=	Last modified November 1, 2022 at 05:58 PM CDT
----------------------------	--	---

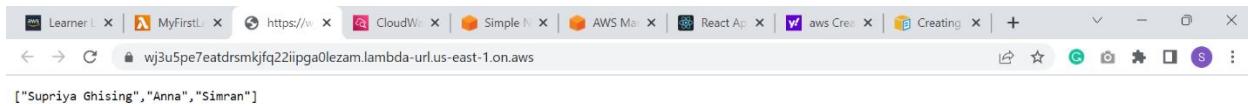
Runtime settings (Info) Edit

Runtime Node.js 16.x	Handler Info index.handler	Architecture Info x86_64
-------------------------	--	--

Layers (Info) Edit Add a layer

Merge order	Name	Layer version	Compatible runtimes	Compatible architectures	Version ARN
There is no data to display.					

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A screenshot of the AWS CloudWatch service in the AWS Management Console. The left sidebar shows navigation options like Dashboards, Alarms, Logs (with Log groups selected), Metrics, X-Ray traces, Events, Application monitoring, Insights, Settings, and Getting Started. The main pane shows the 'Log groups (1)' section. It includes a search bar, an 'Actions' dropdown, a 'View in Logs Insights' button, and a 'Create log group' button. A table lists one log group: '/aws/lambda/MyFirstLambdaFunc' with a retention period of 'Never expire'. There are also filters for Metric filters and Contributor Insights.

4. Call the API in React and deploy the front-end app in S3.
 - a. Install NodeJS on your laptop
 - b. npx create-react-app appname
 - c. npm install axios
 - d. npm start – to start your front-end app
 - e. npm run build – after testing, build the app
 - f. create a bucket and deselect “Block public access”

- g. drop all files inside the build folder into the bucket.
- h. Write a policy that makes all objects in the bucket public. Refer to the next section.
- i. Enable “static website hosting” and define the index.html as the index and error page.

Deploying a React app to S3

- 1) Deploy the front-end app in S3. Run in command prompt, npm run build

Go to S3 AWS service and create Bucket

The screenshot shows the AWS Lambda search results. A red box highlights the search bar at the top with the query "S3". Another red box highlights the "S3" service entry in the search results, which is described as "Scalable Storage in the Cloud". To the right of the search results, there is a detailed view of a Lambda function named "MyFirstLambda".

The screenshot shows the AWS S3 buckets list. A red box highlights the "Create bucket" button in the top right corner of the bucket list table. The table lists three existing buckets: "cs516nov-2022.com", "csnov2022demo", and "elasticbeanstalk-us-east-1-846866515154".

Name	AWS Region	Access	Creation date
cs516nov-2022.com	US East (N. Virginia) us-east-1	Public	November 1, 2022, 18:2
csnov2022demo	US East (N. Virginia) us-east-1	Bucket and objects not public	November 2, 2022, 10:2
elasticbeanstalk-us-east-1-846866515154	US East (N. Virginia) us-east-1	Objects can be public	November 1, 2022, 22:1

Amazon S3 > Buckets > Create bucket

Create bucket Info

Buckets are containers for data stored in S3. [Learn more](#)

General configuration

Bucket name Bucket name must be globally unique and must not contain spaces or uppercase letters. See rules for bucket naming.

AWS Region US East (N. Virginia) us-east-1

Copy settings from existing bucket - optional Only the bucket settings in the following configuration are copied. [Choose bucket](#)

Object Ownership Info

Control ownership of objects written to this bucket from other AWS accounts and the use of access control lists (ACLs). Object ownership determines who can specify access to objects.

ACLs disabled (recommended) All objects in this bucket are owned by this account. Access to this bucket and its objects is specified using access points.

ACLs enabled Objects in this bucket can be owned by other AWS accounts. Access to this bucket and its objects can be specified using ACLs.

Object Ownership Bucket owner enforced

Block Public Access settings for this bucket

Public access is granted to buckets and objects through access control lists (ACLs), bucket policies, access point policies, or all. In order to prevent public access to your buckets and objects, AWS recommends that you turn on Block all public access. If your application needs to access private objects, AWS recommends that you turn off Block all public access, but before applying any of these settings, ensure that your applications will work correctly without public access. If you require some level of public access to this bucket or objects within, you can customize the individual settings before to set your specific usage cases. [Learn more](#)

Block all public access ← uncheck
 Turning this setting on is the same as turning on all four settings below. Each of the following settings are independent of one another.

Block public access to buckets and objects granted through new access control lists (ACLs) S3 will block public access permissions from newly added buckets or objects, and prevent the creation of new public access ACLs for buckets and objects. This setting does not affect existing public access that may have been granted to S3 resources using ACLs.

Block public access to buckets and objects granted through any access control lists (ACLs) S3 will ignore all ACLs that grant public access to buckets and objects.

Block public access to buckets and objects granted through new public bucket or access point policies S3 will block new bucket and access point policies that grant public access to buckets and objects. This setting doesn't change any existing policies that allow public access to S3 resources.

Block public and cross-account access to buckets and objects through any public bucket or access point policies S3 will ignore public and cross-account access for buckets or access points with policies that grant public access to buckets and objects.

← check
 I acknowledge that the current settings might result in this bucket and the objects within becoming public. AWS recommends that you turn on block all public access, unless public access is required for specific and verified use cases such as static website hosting.

Bucket Versioning

Versioning is a means of keeping multiple variants of an object in the same bucket. You can use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. With versioning, you can easily recover from both unintended user actions and application failures. [Learn more](#)

Disable
 Enable

Tags (0) - optional

Track storage cost or other criteria by tagging your bucket. [Learn more](#)

No tags associated with this bucket. [Add tag](#)

Default encryption

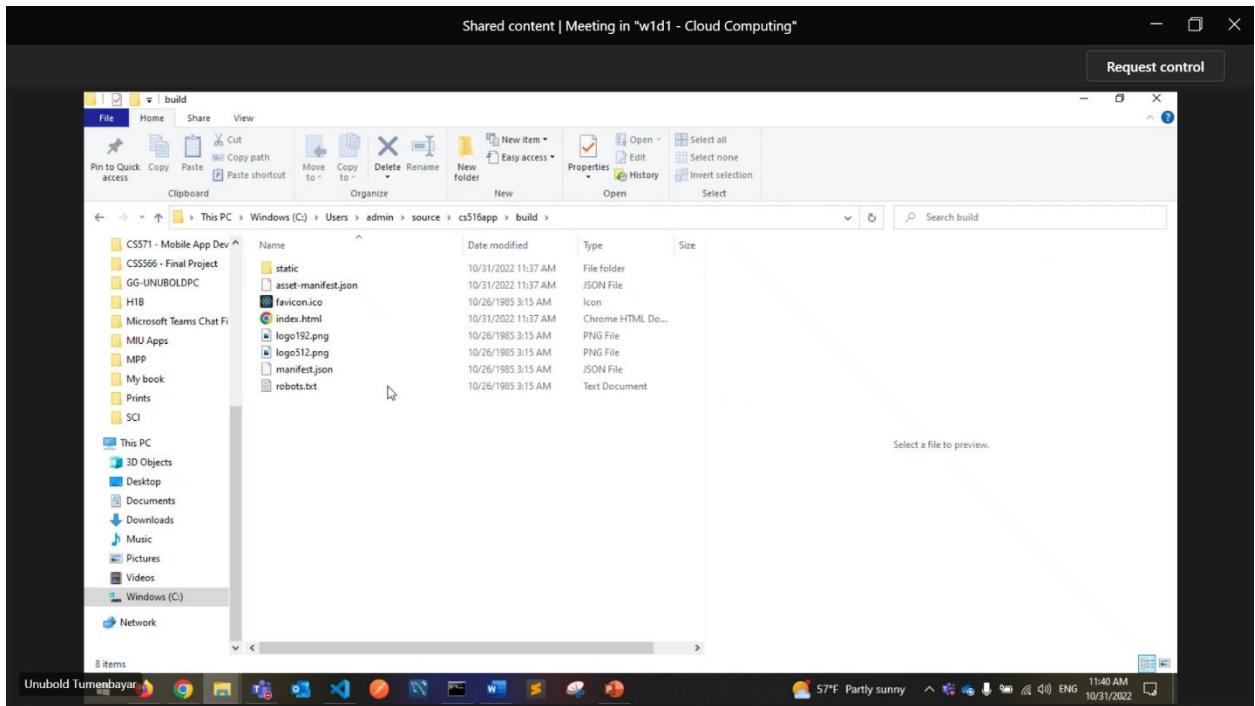
Automatically encrypt new objects stored in this bucket. [Learn more](#)

Server-side encryption
 Disable
 Enable

Advanced settings

After creating the bucket you can upload files and folders to the bucket, and configure additional bucket settings.

[Cancel](#) [Create bucket](#)



Buckets (2) Info				
Create bucket				
Buckets are containers for data stored in S3. <small>Learn more</small>				
<input type="text"/> Find buckets by name				
Name	AWS Region	Access	Creation date	
cloudbucketlesson	US East (N. Virginia) us-east-1	Objects can be public	April 26, 2022, 23:01:12 (UTC-05:00)	Copy ARN Empty Delete
elasticbeanstalk-us-east-1-068007615521	US East (N. Virginia) us-east-1	Objects can be public	April 25, 2022, 23:04:58 (UTC-05:00)	

Go to the **cloudbucketlesson** bucket to upload build folders files of project.

click to the created bucket and upload files or folders of project, you can upload images, videos

Upload Info

Add the files and folders you want to upload to S3. To upload a file larger than 160GB, use the AWS CLI, AWS SDK or Amazon S3 REST API. [Learn more](#)

Drag and drop files and folders you want to upload here, or choose **Add files**, or **Add folders**.

Files and folders (14 Total, 760.8 KB)

All files and folders in this table will be uploaded.

[Remove](#)

[Add files](#)

[Add folder](#)

<input type="checkbox"/>	Name	Folder	Type	Size
<input type="checkbox"/>	787.4637bb57.chunk.js	static/js/	-	4.5 KB
<input type="checkbox"/>	787.4637bb57.chunk.js.map	static/js/	-	10.0 KB
<input type="checkbox"/>	asset-manifest.json	-	application/json	517.0 B
<input type="checkbox"/>	favicon.ico	-	image/x-icon	3.8 KB
<input type="checkbox"/>	index.html	-	text/html	644.0 B
<input type="checkbox"/>	logo192.png	-	image/png	5.2 KB
<input type="checkbox"/>	logo512.png	-	image/png	9.4 KB

After uploading complete go to the properties tab of bucket.

cloudbucketlesson Info

[Objects](#) [Properties](#) [Permissions](#) [Metrics](#) [Management](#) [Access Points](#)

Static website hosting

Disable

Enable

Index document

Specify the home or default page of the website.

index.html

Error document - optional

This is returned when an error occurs.

index.html

Then save changes.

Amazon S3 > Buckets > cs516nov-2022-frontend.com > Edit bucket policy

Edit bucket policy Info

Bucket policy
The bucket policy, written in JSON, provides access to the objects stored in the bucket. Bucket policies don't apply to objects owned by other accounts.
[Learn more](#)

[Policy examples](#) [Policy generator](#)

Bucket ARN
`arn:aws:s3:::cs516nov-2022-frontend.com`

Policy

```
1 * {
2   "Version": "2012-10-17",
3   "Id": "Policy1650912821527",
4   "Statement": [
5     {
6       "Sid": "Stmt1650912820312",
7       "Effect": "Allow",
8       "Principal": "*",
9       "Action": "s3:GetObject",
10      "Resource": "arn:aws:s3:::cs516nov-2022-frontend.com/*"
11    }
12  ]
13 }
```

Edit statement

Select a statement
Select an existing statement in the policy or add a new statement.

[+ Add new statement](#)

Edit bucket policy to getObject

[+ Add new statement](#)

JSON Ln 13, Col 1

Security: 0 Errors: 0 Warnings: 0 Suggestions: 0 [Preview external access](#)

Cancel [Save changes](#)

AWS Services Search [Alt+S] Global v vocabs/user2243686=supriya @ 8468-6651-5154

Amazon S3 > Buckets > cs516nov-2022-frontend.com > Upload

Upload Info

Add the files and folders you want to upload to S3. To upload a file larger than 160GB, use the AWS CLI, AWS SDK or Amazon S3 REST API. [Learn more](#)

Drag and drop files and folders you want to upload here, or choose Add files, or Add folder.

Files and folders (14 Total, 727.7 KB)

All files and folders in this table will be uploaded.

<input type="checkbox"/>	Name	Folder	Type	Size
<input type="checkbox"/>	787.36db6797.chunk.js	static/js/	text/javascript	4.5 KB
<input type="checkbox"/>	787.36db6797.chunk.js.map	static/js/	-	10.3 KB
<input type="checkbox"/>	asset-manifest.json	-	application/json	517.0 B
<input type="checkbox"/>	favicon.ico	-	image/x-icon	3.8 KB
<input type="checkbox"/>	index.html	-	text/html	644.0 B
<input type="checkbox"/>	logo192.png	-	image/png	5.2 KB
<input type="checkbox"/>	logo512.png	-	image/png	9.4 KB
<input type="checkbox"/>	main.2dbd410b.js	static/js/	text/javascript	174.8 KB
<input type="checkbox"/>	main.2dbd410b.js.LICENSE.txt	static/js/	text/plain	1.1 KB
<input type="checkbox"/>	main.2dbd410b.js.map	static/js/	-	515.9 KB

Destination

Destination
<s3://cs516nov-2022-frontend.com>

▶ **Destination details**
Bucket settings that impact new objects stored in the specified destination.

▶ **Permissions**
Grant public access and access to other AWS accounts.

▶ **Properties**
Specify storage class, encryption settings, tags, and more.

Cancel **Upload**

Feedback Looking for language selection? Find it in the new Unified Settings [\[\]](#)

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AWS Services Search [Alt+S] Global v voclabs/user2243686=supriya @ 8468-6651-5154 ▾

Uploading
Total remaining: 11 files: 538.0 KB(73.94%)
Estimated time remaining: a few seconds
Transfer rate: 13.9 KB/s

Cancel Close

Upload: status

The information below will no longer be available after you navigate away from this page.

Summary

Destination	Succeeded	Failed
s3://cs516nov-2022-frontend.com	3 files, 189.6 KB (26.06%)	0 files, 0 B (0%)

Files and folders (14 Total, 727.7 KB)

Name	Folder	Type	Size	Status	Error
787.36db6797.chunk.js	static/js/	text/javascript	4.5 KB	✓ Succeeded	-
787.36db6797.chunk.js.map	static/js/	-	10.3 KB	✓ Succeeded	-
asset-manifest.json	-	application/json	517.0 B	⌚ Pending	-
favicon.ico	-	image/x-icon	3.8 KB	⌚ Pending	-
index.html	-	text/html	644.0 B	⌚ Pending	-
logo192.png	-	image/png	5.2 KB	⌚ Pending	-
logo512.png	-	image/png	9.4 KB	⌚ Pending	-
main.2dbd410b.js	static/js/	text/javascript	174.8 KB	✓ Succeeded	-
main.2dbd410b.js.LICENSE.txt	static/js/	text/plain	1.1 KB	⌚ In Progress (100%)	-
main.2dbd410b.js.map	static/js/	-	515.9 KB	⌚ Pending	-

Screenshot of the AWS S3 console showing the "Edit static website hosting" configuration page for a bucket named "cs516nov-2022-frontend.com".

The "Static website hosting" section is displayed, with the "Enable" radio button selected (indicated by a red arrow). The "Hosting type" is set to "Host a static website".

Under "Index document", the value "index.html" is entered. A note states: "For your customers to access content at the website endpoint, you must make all your content publicly readable. To do so, you can edit the S3 Block Public Access settings for the bucket. For more information, see Using Amazon S3 Block Public Access".

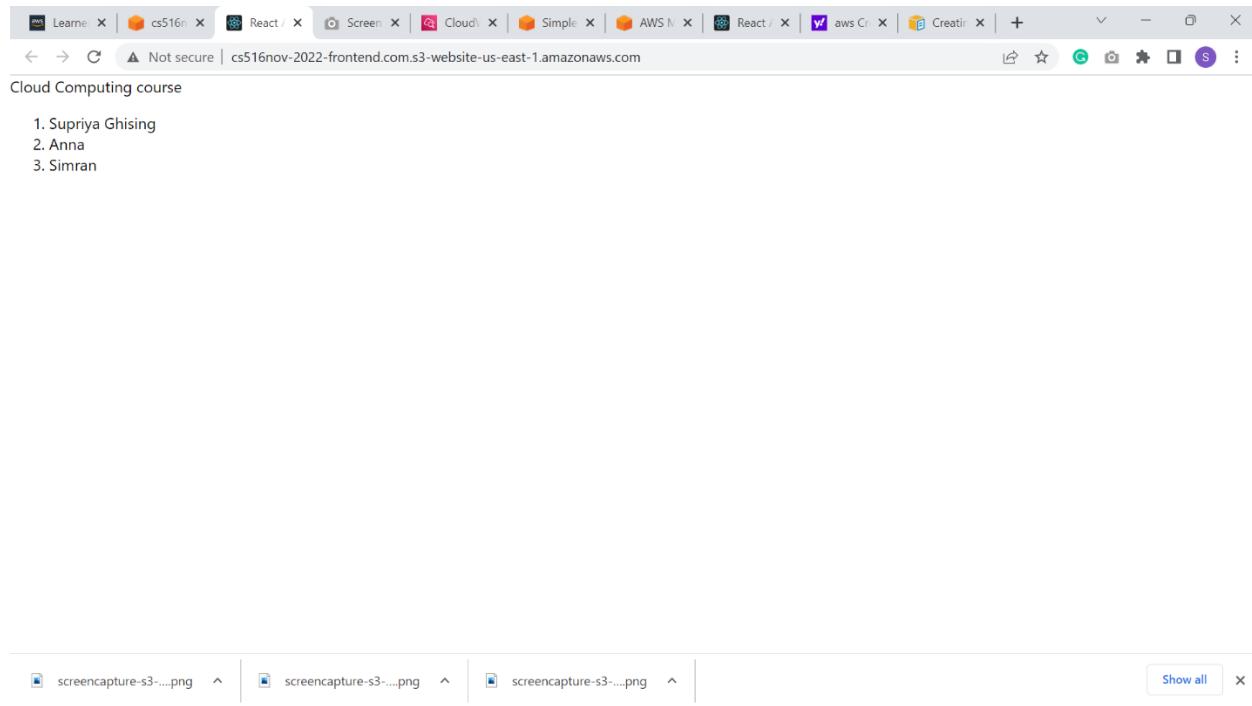
Under "Error document - optional", the value "index.html" is entered.

At the bottom right, there are "Cancel" and "Save changes" buttons.

Screenshot of the AWS S3 console showing the "Static website hosting" configuration page for the same bucket.

The "Static website hosting" section shows "Enabled" status and "Bucket hosting" as the "Hosting type".

The "Bucket website endpoint" section displays the URL: <http://cs516nov-2022-frontend.com.s3-website-us-east-1.amazonaws.com>. This URL is highlighted with a red box and labeled "static website hosting url".



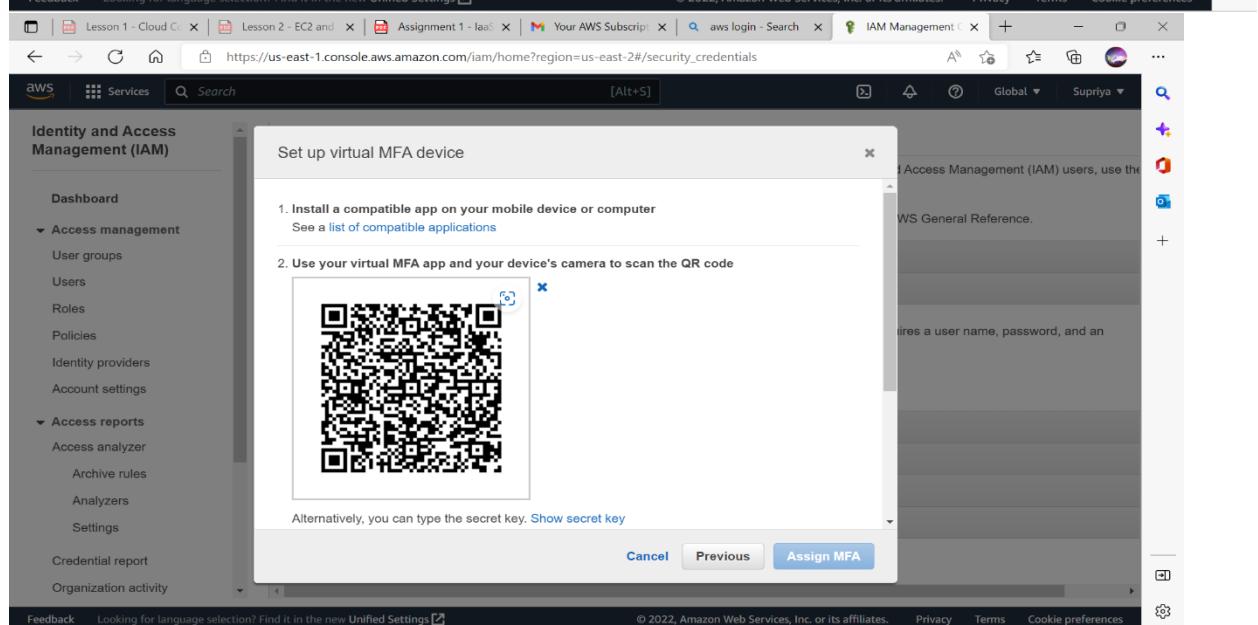
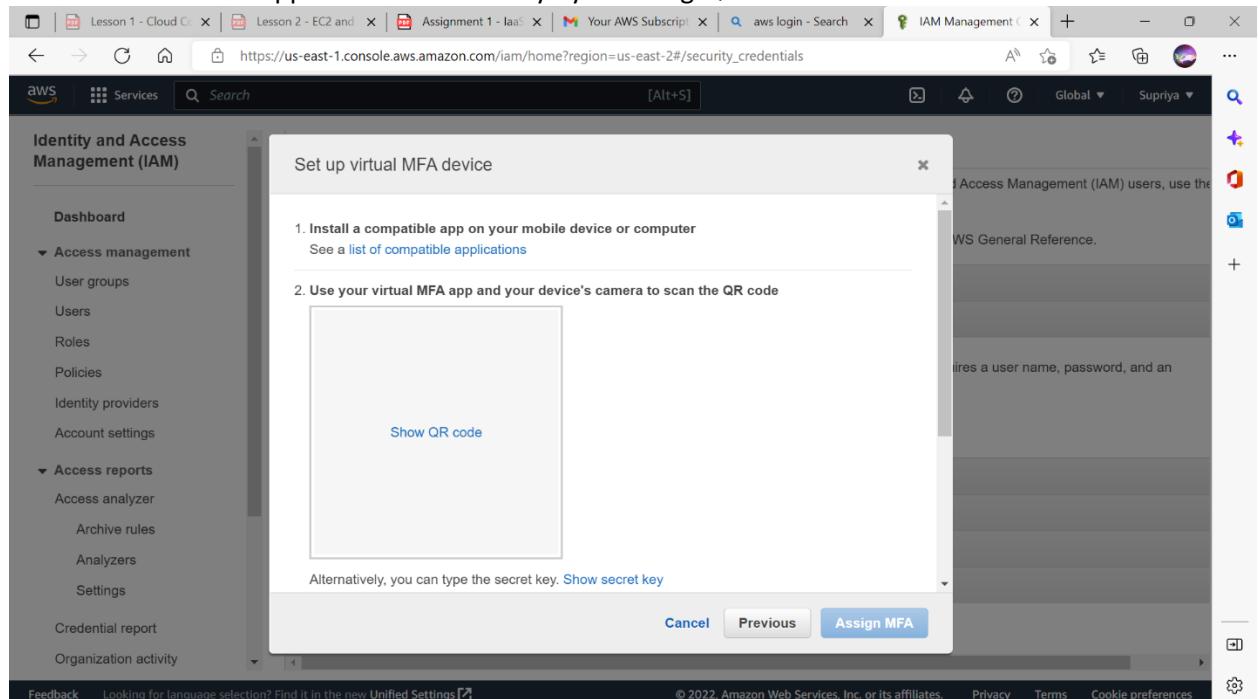
Create your own AWS account.

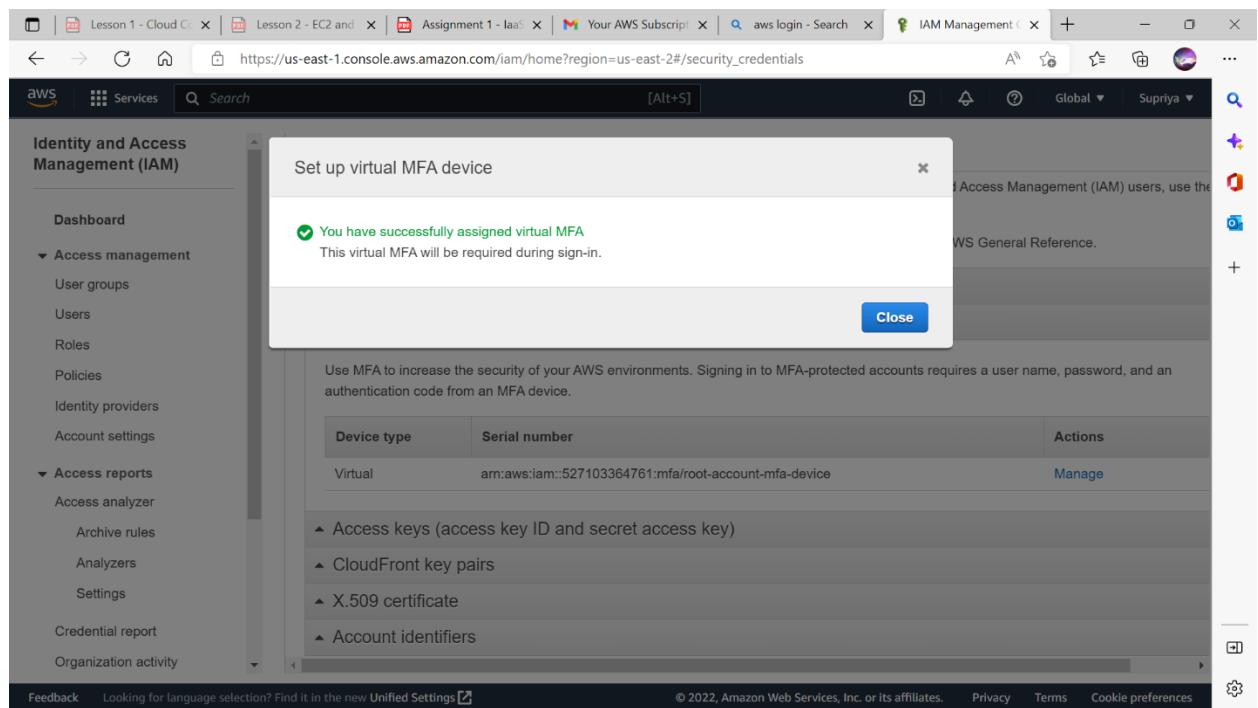
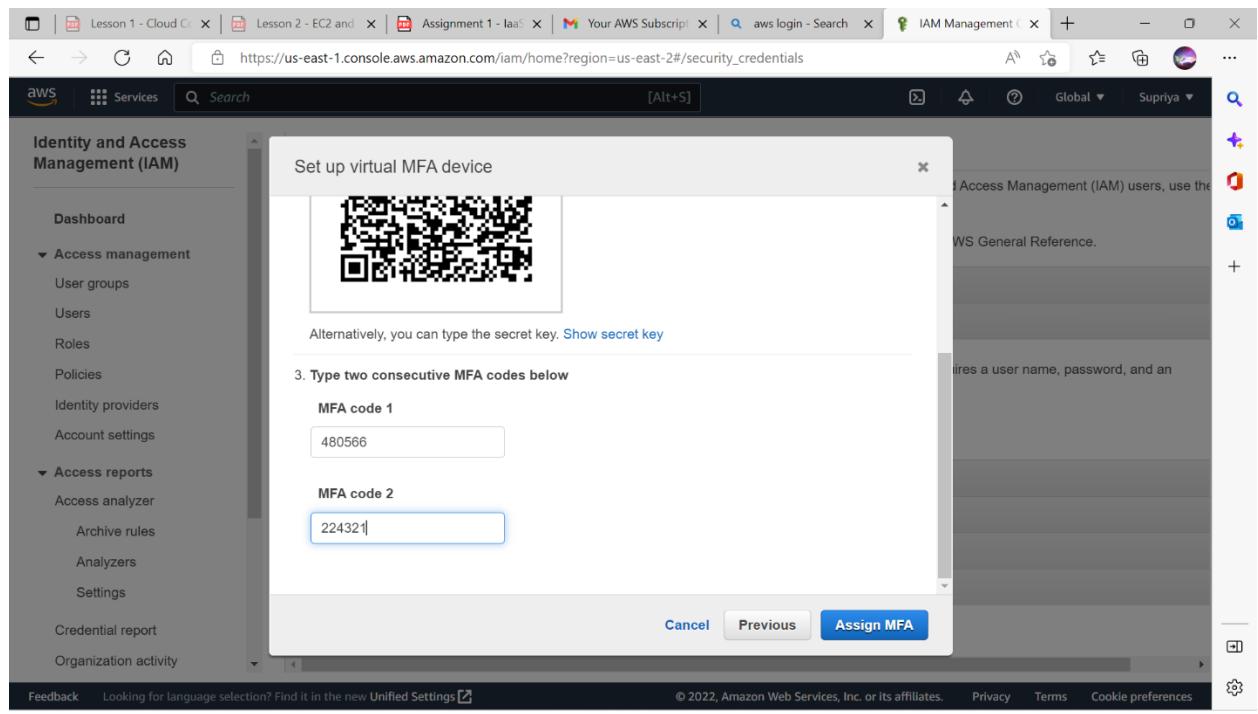
You must connect your credit or bank card otherwise, services will be unavailable. Do the following 3 tasks. Then don't do anything else without my approval. Otherwise, It will charge you. If you want to practice something in AWS, use the Academy account.

- a. Enable MFA for the root user.
- b. Create an admin group with an administrator policy. Create a user for yourself in that group. Always use that IAM user. Not your root user.
- c. Set up a billing alarm.

[For Enabling MFA:](#) Create your own account first. Then, you will be directed to

Install Authenticator app in mobile and verify by scanning QR.





Create IAM profile User:

The screenshot shows two browser windows side-by-side. The left window is the 'IAM Management Console' at <https://us-east-1.console.aws.amazon.com/iamv2/home#/users>. It displays a message about the new Users list experience and shows a table with columns for User name, Groups, and Last activity. The right window is the 'Billing Management Console' at <https://console.aws.amazon.com/billing/home#/account>. It shows account details like Account ID: 5271-0336-4761 and various settings sections such as Account, Organization, Service Quotas, Billing Dashboard, Security credentials, and Settings.

▼ IAM User and Role Access to Billing Information

Edit

Use the **Activate IAM Access** setting to allow IAM users and roles access to pages of the Billing and Cost Management console. This setting alone doesn't grant IAM users and roles the necessary permissions for these console pages. In addition to activating IAM access, you must also attach the required IAM policies to those users or roles. For more information, see [Granting access to your billing information and tools](#).

If this setting is deactivated, then IAM users and roles in this account can't access the Billing and Cost Management console pages, even if they have administrator access or the required IAM policies.

The **Activate IAM Access** setting does not control access to:

- The console pages for AWS Cost Anomaly Detection, Savings Plans overview, Savings Plans inventory, Purchase Savings Plans, and Savings Plan cart
- The Cost Management view in the AWS Console Mobile Application
- The Billing and Cost Management SDK APIs (AWS Cost Explorer, AWS Budgets, and AWS Cost and Usage Report APIs)
- The Customer Carbon Footprint Tool on the Cost & Usage Reports console page

IAM user/role access to billing information is activated. after doing check in checkbox here gives this information

► Reserved Instance Marketplace Settings

▼ Account Contract Information

Edit

If this account is being used to service public sector customer, please provide the contract details in the fields below.

Now create User with administrator role:

https://docs.aws.amazon.com/IAM/latest/UserGuide/getting-started_create-admin-group.html

Setting up a billing alarm on CloudWatch

Go to the CloudWatch Display. Search or Find under All Services Management & Governance Group

Search results for 'cloudwatch'

Services (2)

- Features (8)
- Documentation (47,836)
- Marketplace (168)

Services

CloudWatch
Monitor Resources and Applications

Amazon EventBridge
Serverless event bus that connects application data from your own apps, SaaS, and ...

Go to the Alarms Display. You must select us-east-1 N.Virginia region. Otherwise, billing metric is not there.

1) Click on Alarms

Make sure region is N.Virginia

You can also click on Billing. It will automatically selects the EstimatedCharge billing in the alarm creation wizard.

Create Billing Alarm

1) Click on Create Alarm

Create alarm

Name	State	Last state update	Conditions	Actions
AppLogAlarm	Insufficient data	2021-07-06 20:30:20	LogErrorFilter > 0 for 1 datapoints within 5 minutes	1 action(s) enabled Warning
CourseTable-courseName-index-ReadCapacityUnitsLimit-BasicAlarm	OK	2021-07-05 13:01:53	ConsumedReadCapacityUnits >= 48 for 60 datapoints within 1 hour	1 action(s) enabled Warning
CourseTable-WriteCapacityUnitsLimit-BasicAlarm	OK	2021-07-05 13:01:32	ConsumedWriteCapacityUnits >= 48 for 5 datapoints within 5 minutes	1 action(s) enabled Warning

...

Step 1
Specify metric and conditions

Step 2
Configure actions

Step 3
Add name and description

Step 4
Preview and create

Specify metric and conditions

Metric

Graph

Preview of the metric or metric expression and the alarm threshold.

Select metric

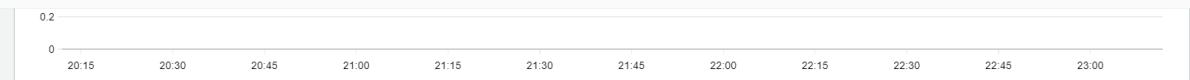
2) Click Select Metric

Cancel

Next

...

Select metric



▼ AWS Namespaces

ApiGateway	11	ApplicationELB	177	Billing	14	DynamoDB	23
EBS	189	EC2	392	Events	5	Lambda	26

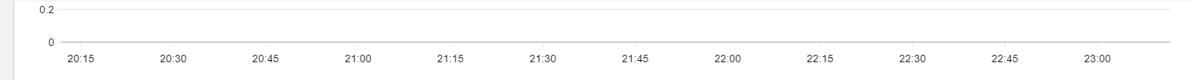
3) Click Billing

Cancel

Select a single metric to continue

...

Select metric



Metrics (14)

All > Billing

Graph search

View graphed metrics

By Service	13	Total Estimated Charge	1
------------	----	------------------------	---

4) Click Total Estimated Charge

Cancel

Select a single metric to continue

...

Metrics (1)

All > Billing > Total Estimated Charge

Search for any metric, dimension or resource id

Currency (1)

USD

Metric Name

EstimatedCharges

5) Select USD Currency

6) Click Select Metric

Select metric

This screenshot shows the AWS Metrics search interface. A red arrow points to the 'USD' currency selection, with the text '5) Select USD Currency' overlaid. Another red arrow points to the 'Select metric' button, with the text '6) Click Select Metric' overlaid.

CloudWatch > Alarms > Create alarm

Step 1 Specify metric and conditions

Step 2 Configure actions

Step 3 Add name and description

Step 4 Preview and create

Specify metric and conditions

Metric

Graph

This alarm will trigger when the blue line goes above the red line for 1 datapoints within 6 hours.

No unit

1

0.8

0.6

0.4

0.2

0

07/01 07/03 07/05 07/07

EstimatedCharges

Namespace

AWS/Billing

Metric name

EstimatedCharges

Currency

USD

Statistic

Maximum

Period

6 hours

This screenshot shows the 'Specify metric and conditions' step of the CloudWatch Create alarm wizard. It displays a graph for the 'EstimatedCharges' metric over a period from July 1 to July 7. The graph shows a single data series named 'EstimatedCharges'. On the right, configuration options are shown for the alarm: Namespace (AWS/Billing), Metric name (EstimatedCharges), Currency (USD), Statistic (Maximum), and Period (6 hours). Red boxes highlight the 'EstimatedCharges' metric in the graph and the 'Maximum' statistic in the configuration section.

Conditions

Threshold type

Static

Use a value as a threshold

Anomaly detection

Use a band as a threshold

Whenever EstimatedCharges is...

Define the alarm condition.

Greater

> threshold

Greater/Equal

\geq threshold

Lower/Equal

\leq threshold

Lower

$<$ threshold

than...

Define the threshold value.

1

USD

7) Pick Some Conditions

Must be a number

► Additional configuration

Cancel

Next

8) Click Next

Step 1
Specify metric and conditions

Step 2
Configure actions

Step 3
Add name and description

Step 4
Preview and create

Configure actions

Notification

Alarm state trigger

Define the alarm state that will trigger this action.

In alarm

The metric or expression is outside of the defined threshold.

OK

The metric or expression is within the defined threshold.

Remove

Insufficient data

The alarm has just started or not enough data is available.

Select an SNS topic

Define the SNS (Simple Notification Service) topic that will receive the notification.

Select an existing SNS topic

Create new topic

Use topic ARN

9) Select Create New SNS Topic

Create a new topic...

The topic name must be unique.

MyBillingAlarm

10) Name Topic

SNS topic names can contain only alphanumeric characters, hyphens (-) and underscores (_).

Email endpoints that will receive the notification...

Add a comma-separated list of email addresses. Each address will be added as a subscription to the topic above.

jc@miu.edu

user1@example.com, user2@example.com

11) Enter Email

Create topic

Add notification

12) Click Create Topic

...

Send a notification to...

MyBillingAlarm

X

Only email lists for this account are available.

Email (endpoints)

jc@miu.edu - [View in SNS Console](#)

Add notification

Auto Scaling action

Add Auto Scaling action

EC2 action

This action is only available for EC2 Per-Instance Metrics.

Add EC2 action

Systems Manager action [Info](#)

This action will create an Incident or OpsItem in Systems Manager when the alarm is **In alarm** state.

Add Systems Manager action

13) Click Next

Cancel

Previous

Next

...

Add name and description

Name and description

Alarm name 14) Name Alarm

MyBillingAlarm

Alarm description - optional

Alarm description

Up to 1024 characters (0/1024)

15) Click Next

Cancel Previous Next

Step 3: Add name and description Edit

Name and description

Name
MyBillingAlarm

Description
-

16) Preview Alarm and Click Create Alarm

Cancel Previous Create alarm