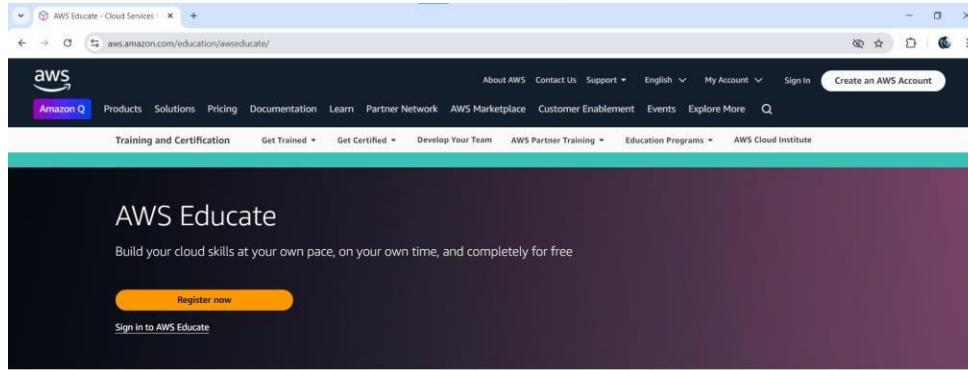


Practical : 1

Setting up an AWS Educate Account.

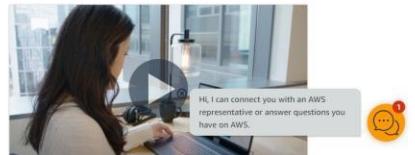
Step 1: visit <https://aws.amazon.com/education/awseducate/> then click on register now.



Start your cloud journey with AWS Educate today

AWS Educate is open to any individual, regardless of where they are in their education, technical experience, or career journey.

If you're overwhelmed by too many choices when it comes to learning about the cloud, AWS Educate is here to help. Cloud beginners like you are invited to check out our free, self-paced online training resources and labs designed to help you learn, practice, and evaluate your cloud skills without having to create an Amazon account.



Step 2: Then fill the fields, select the program(s) and check the check box. click on create account.

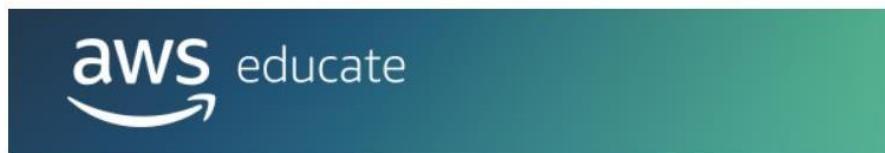
A screenshot of a web browser showing the 'Registration_Detail' page of the AWS Educate website. The left side of the page has a teal gradient background with icons and text: 'Register with just an email address, no credit card required', 'Content and resources designed for beginners like you', 'Explore, search for, and apply for jobs through the AWS Educate Job Board', and 'Gain an invite to the AWS Emerging Talent Community when you earn digital badges'. The right side is a 'Create your account' form with fields for First name, Middle name - optional, Last name, Country (with a dropdown menu showing 'Select'), State or province (with a dropdown menu showing 'Select'), City, Birth month (with a dropdown menu showing 'Select'), and Birth year. Above the form, there is a note: 'Fill out the fields below to create your account. Looking to hire cloud talent? Sign up as a recruiter.' At the bottom of the page, there are links for 'FAQ', 'Contact us', 'Cookie preferences', and copyright information: '© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Site terms'.

Step 3: then you will receive a verification mail on the email account filled. Click on **verify my email** to get verified.

AWS Educate - Verify your email Inbox x



AWS Educate Support <support@awseducate.com>
to me ▾



Thank you for applying to AWS Educate!

Please verify your email address to complete your registration by selecting the button below.

[Verify my email](#)

Thank you,

AWS Educate

Need help? [Contact us here.](#)

Step 4: After clicking you will be verified and will be redirected to a web site. Now click on AWS educate to go to the home page. There click on **I already have an account**.

The screenshot shows a web browser window with the URL awseducate.com/registration/s/?language=en_US. The page has a dark header with the AWS Educate logo. The main content area has a light gray background. At the top, it asks "What's your goal?" with two options: "Learn cloud skills" (with a person icon) and "Hire for my company" (with a briefcase icon). Below this, there is a section for educators with the text "Are you an educator? Educator tools have moved to [AWS Academy](#), the new central tool for secondary and higher education." At the bottom right, there is a blue link that says "I already have an account". The browser's address bar, tabs, and status bar are visible at the top.

Step 5: Now you will be redirected to the login page, since password wasn't used for the creation of account, you'll have to reset the password by clicking on **forgot password**.



Email

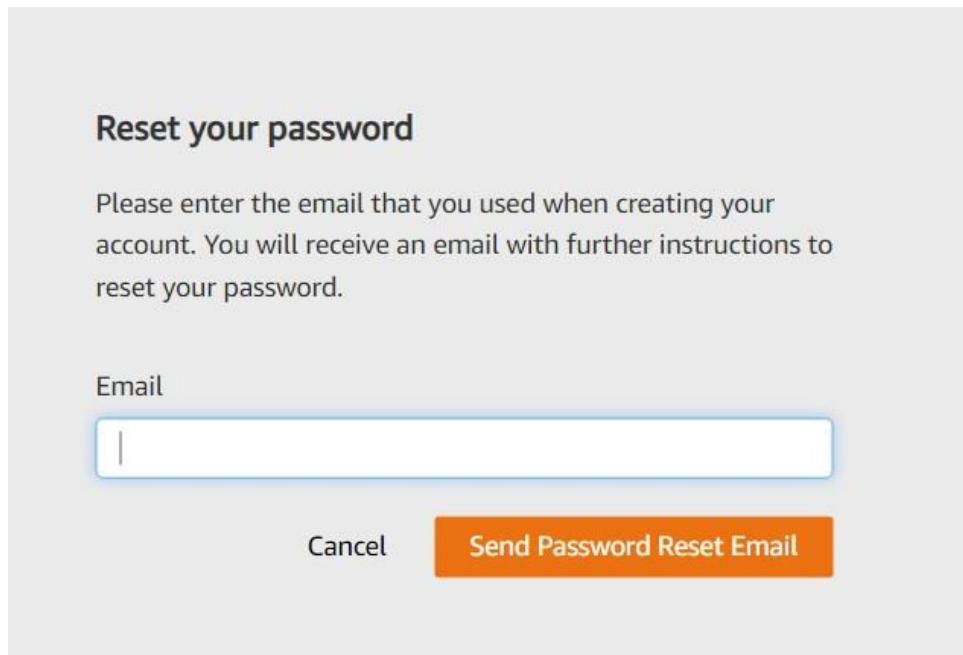
Password

Sign In

[Forgot password?](#)

Not an AWS Educate member? [Apply now.](#)

Step 6: Now Enter Your registered email address and then click on **send password reset email**.

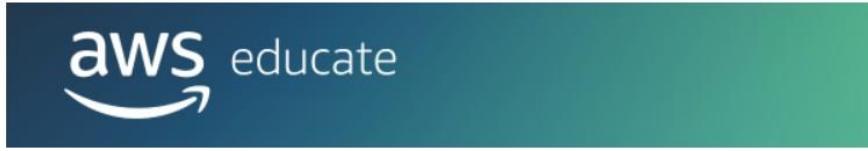


The image shows a modal window titled "Reset your password". It contains instructions: "Please enter the email that you used when creating your account. You will receive an email with further instructions to reset your password." Below this is an "Email" input field with a placeholder "Email" and a cursor. At the bottom are two buttons: "Cancel" and a highlighted orange "Send Password Reset Email" button.

Step 7: Then you'll receive an email to reset password.

Get started with AWS Educate Inbox x

AWS Educate Support <support@awseducate.com>
to me ▾



Welcome to AWS Educate!

You can now access hundreds of hours of free, self-paced online training resources, as well as hands-on practice on the AWS Console with course labs. Follow content recommendations by category, or discover courses at your pace. Earn learner badges that demonstrate your skill mastery, and also check out other helpful AWS resources.

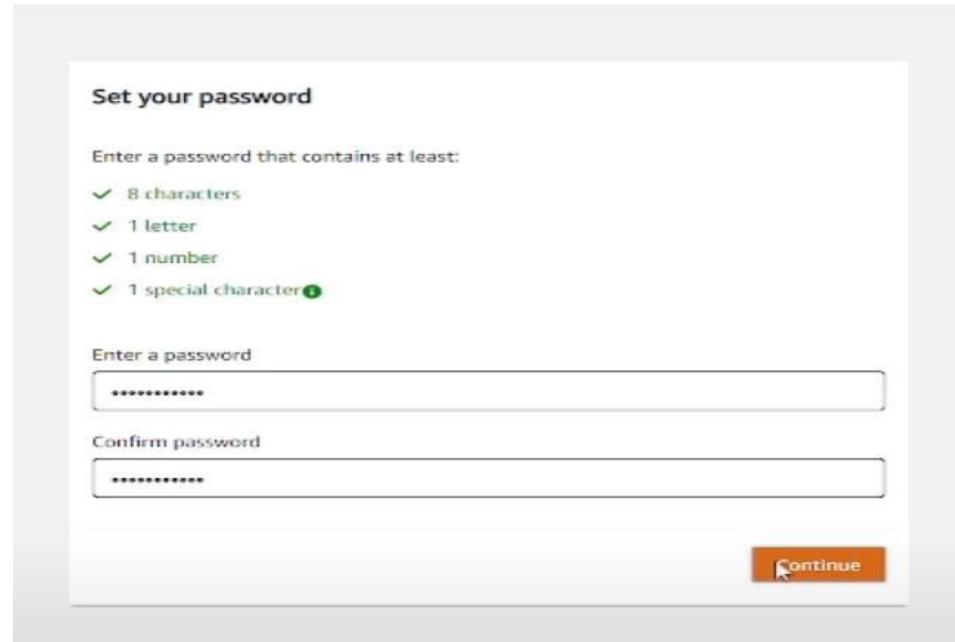
Begin by setting your password below.

[Click here to set a password](#)

Don't forget to bookmark the AWS Educate homepage for easy access, or [click here](#) to sign in directly.

We hope you enjoy the program,

Step 8: Set your password by following the password creation criteria.



Set your password

Enter a password that contains at least:

- 8 characters
- 1 letter
- 1 number
- 1 special character ⓘ

Enter a password

Confirm password

[Continue](#)

Step 9: Then again go to login page and login with email and password you just created and then you will be redirected to Home page.

The screenshot shows the AWS Educate student dashboard. At the top, there's a banner with the text "Your cloud journey starts here" and "No matter your goal, we've gathered the most useful content to build your cloud skills.". Below this, on the left, is a sidebar titled "Filters" with options for Course Features, Skills, Level, and Duration. The main area is titled "In progress" and displays three course cards:

- Getting Started with Databases**: Foundational | 2 hour(s) completed 33%. Category: Cloud Computing.
- Logging into a Linux Instance Using Amazon EC2 Instance Connect**: Intermediate | 0.75 hour(s) completed 50%. Category: Cloud Computing.
- Getting Started with Compute**: Foundational | 2 hour(s) completed 33%. Category: Cloud Computing.

On the right side, there's an "Explore" sidebar with links to "Tell us about your AWS Educate experience", "Share your feedback now", "Fast-track your future", "Apply Today!", "Interested in building your AI skills", "Visit this AWS T&C blog", and "Did you know that AWS Educate allows you to earn digital badges". At the bottom of the page, there are links for "FAQ", "Contact us", "Cookie preferences", "Privacy", and "Site terms".

Practical : 2

Explain the different services provided by AWS in detail with suitable example. Also distinguish them based on different service models (IaaS, PaaS, SaaS).

AWS:

Amazon Web Services (AWS) is the world's most comprehensive and broadly adopted cloud, offering over 200 fully featured services from data centers globally. Millions of customers—including the fastest-growing startups, largest enterprises, and leading government agencies—are using AWS to lower costs, become more agile, and innovate faster.

different types of Amazon AWS services:

Compute Amazon EC2 Amazon EC2 Auto Scaling Amazon Elastic Container Service Amazon Elastic Container Service for Kubernetes Amazon Elastic Container Registry Amazon Lightsail AWS Batch AWS Elastic Beanstalk AWS Fargate AWS Lambda AWS Serverless Application Repository Elastic Load Balancing VMware Cloud on AWS	Networking & Content Delivery Amazon VPC Amazon CloudFront Amazon Route 53 Amazon API Gateway AWS Direct Connect Elastic Load Balancing	Machine Learning Amazon SageMaker Amazon Comprehend Amazon Lex Amazon Polly Amazon Rekognition Amazon Machine Learning Amazon Translate Amazon Transcribe AWS DeepLens AWS Deep Learning AMIs Apache MXNet on AWS TensorFlow on AWS	AR & VR Amazon Sumerian
Storage Amazon Simple Storage Service (S3) Amazon Elastic Block Storage (EBS) Amazon Elastic File System (EFS) Amazon Glacier AWS Storage Gateway AWS Snowball AWS Snowball Edge AWS Snowmobile	Developer Tools AWS CodeStar AWS CodeCommit AWS CodeBuild AWS CodeDeploy AWS CodePipeline AWS Cloud9 AWS Lambda AWS Tools & SDKs	Analytics Amazon Athena Amazon EMR Amazon CloudSearch Amazon Elasticsearch Service Amazon Kinesis Amazon Redshift Amazon QuickSight AWS Data Pipeline AWS Glue	Application Integration Amazon MQ Amazon Simple Queue Service (SQS) Amazon Simple Notification Service (SNS) AWS AppSync AWS Step Functions
Database Amazon Aurora Amazon RDS Amazon DynamoDB Amazon ElastiCache Amazon Redshift Amazon Neptune AWS Database Migration Service	Management Tools Amazon CloudWatch AWS Auto Scaling AWS CloudFormation AWS CloudTrail AWS Config AWS OpsWorks AWS Service Catalog AWS Systems Manager AWS Trusted Advisor AWS Personal Health Dashboard AWS Command Line Interface AWS Management Console AWS Managed Services	Security, Identity & Compliance AWS Identity and Access Management (IAM) Amazon Cloud Directory Amazon Cognito Amazon GuardDuty Amazon Inspector Amazon Macie AWS Certificate Manager AWS CloudHSM AWS Directory Service AWS Firewall Manager AWS Key Management Service AWS Organizations AWS Secrets Manager	Customer Engagement Amazon Connect Amazon Pinpoint Amazon Simple Email Service (SES)
Migration AWS Migration Hub AWS Application Discovery Service AWS Database Migration Service AWS Server Migration Service	Media Services Amazon Elastic Transcoder Amazon Kinesis Video Streams AWS Elemental MediaConvert AWS Elemental MediaLive AWS Elemental MediaPackage AWS Elemental MediaStore		Business Productivity Alexa for Business Amazon Chime Amazon WorkDocs Amazon WorkMail
			Desktop & App Streaming Amazon WorkSpaces Amazon AppStream 2.0
			Internet of Things AWS IoT Core Amazon FreeRTOS AWS Greengrass AWS IoT 1-Click AWS IoT Analytics AWS IoT Button AWS IoT Device Defender AWS IoT Device Management
			Game Development Amazon GameLift Amazon Lumberyard
			Software AWS Lambda

AWS Compute Services

- Amazon EC2**

A Linux-based/Windows-based/Mac-based virtual server that you can provision. You are limited to running On-Demand Instances per your vCPU-based On-Demand Instance limit, purchasing 20 Reserved Instances, and requesting Spot Instances per your dynamic Spot limit per region.

- Amazon Elastic Container Registry**

A managed AWS Docker registry service. Amazon ECR is a regional service.

- Amazon Elastic Container Service**

A container management service to run, stop and manage Docker containers on a cluster. ECS can be used to create a consistent deployment and build experience, manage, and scale batch and Extract-Transform-Load (ETL) workloads, and build

sophisticated application architectures on a microservices model. Amazon ECS is a regional service.

- **AWS Elastic Beanstalk**

Allows you to quickly deploy and manage applications in the AWS Cloud without worrying about the infrastructure that runs those applications. Elastic Beanstalk automatically handles the details of capacity provisioning, load balancing, scaling, and application health monitoring for your applications. It is a Platform-as-a-Service.

- **AWS Lambda**

A serverless compute service. Lambda executes your code only when needed and scales automatically. Lambda functions are stateless – no affinity to the underlying infrastructure.

AWS Storage Services

- **Amazon EBS**

Block level storage volumes for use with EC2 instances. Well-suited for use as the primary storage for file systems, databases, or for any applications that require fine granular updates and access to raw, unformatted, block-level storage.

- **Amazon EFS**

A fully-managed **file storage service** that makes it easy to set up and scale file storage in the Amazon Cloud.

- **Amazon FSx**

Amazon FSx is a fully managed third-party file system solution. It uses SSD storage to provide fast performance with low latency.

- **Amazon S3 Glacier**

Long-term archival solution optimized for infrequently used data, or “cold data.” Glacier is a REST-based web service. You can store an unlimited number of archives and an unlimited amount of data.

- **Amazon S3**

S3 stores data as objects within buckets. An object consists of a file and optionally any metadata that describes that file. A key is a unique identifier for an object within a bucket. Storage capacity is virtually unlimited.

AWS Database Services.

- **Amazon Aurora**

A fully managed relational database engine that's compatible with MySQL and PostgreSQL. With some workloads, Aurora can deliver up to five times the throughput of MySQL and up to three times the throughput of PostgreSQL.

- **Amazon DocumentDB**

Fully managed document database service designed to be fast, scalable, and highly available. Data is stored in JSON-like documents. Compatible with MongoDB.

- **Amazon DynamoDB**

NoSQL database service that provides fast and predictable performance with seamless scalability. Offers encryption at rest.

- **Amazon ElastiCache**
ElastiCache is a distributed **in-memory cache** environment in the AWS Cloud. ElastiCache works with both the **Redis** and **Memcached** engines.
- **Amazon MemoryDB for Redis**
An in-memory database service for microservices-based applications. MemoryDB stores all of your data in memory, allowing you to achieve microsecond read and single-digit millisecond write latency and high throughput.

AWS Migration Services

- **AWS Database Migration Service**
AWS Database Migration Service supports homogeneous migrations such as Oracle to Oracle, as well as heterogeneous migrations between different database platforms, such as Oracle or Microsoft SQL Server to Amazon Aurora.
- **AWS DataSync**
An online data transfer service that simplifies, automates, and accelerates copying large amounts of data to and from AWS storage services over the internet or AWS Direct Connect.
- **AWS Snowball Edge**
A type of Snowball device with on-board storage and compute power for select AWS capabilities. It can undertake local processing and edge-computing workloads in addition to transferring data between your local environment and the AWS Cloud.
- **AWS Snowmobile**
An exabyte-scale data transfer service used to move extremely large amounts of data to AWS. You can transfer up to 100PB per Snowmobile.
- **Migration Evaluator**
Migration Evaluator is a service that helps organizations assess their on-premises infrastructure and plan a migration to AWS. It provides insights into the costs of running current workloads on AWS and recommends optimized AWS resources based on usage patterns.

AWS Networking & Content Delivery

- **Amazon API Gateway**
Enables developers to create, publish, maintain, monitor, and secure APIs at any scale. This is a HIPAA eligible service. Allows creating, deploying, and managing a RESTful API to expose backend HTTP endpoints, Lambda functions, or other AWS services.
- **Amazon CloudFront**
A web service that speeds up distribution of your static and dynamic web content to your users. A Content Delivery Network (CDN) service.
- **Amazon Route 53**
A highly available and scalable Domain Name System (DNS) web service used for domain registration, DNS routing, and health checking.

- **Amazon VPC**
Create a virtual network in the cloud dedicated to your AWS account where you can launch AWS resources. Amazon VPC is the networking layer of Amazon EC2
- **AWS Direct Connect**
Using Direct Connect, data can now be delivered through a private network connection between AWS and your data center or corporate network.

AWS Security & Identity Services

- **Amazon Cognito**
A user management and authentication service that can be integrated to your web or mobile applications. Amazon Cognito also enables you to authenticate users through an external identity provider and provides temporary security credentials to access your app's backend resources in AWS or any service behind Amazon API Gateway. Amazon Cognito works with external identity providers that support SAML or OpenID Connect, social identity providers (Facebook, Twitter, Amazon, Google, Apple) and you can also integrate your own identity provider.
- **Amazon Detective**
The service automatically collects log data from your AWS resources and uses machine learning, statistical analysis, and graph theory to build a linked set of data that enables you to easily conduct faster and more efficient security investigations.
- **Amazon GuardDuty**
An intelligent threat detection service. It analyzes billions of events across your AWS accounts from AWS CloudTrail (AWS user and API activity in your accounts), Amazon VPC Flow Logs (network traffic data), and DNS Logs (name query patterns).
- **Amazon Inspector**
An automated security assessment service that helps you test the network accessibility of your EC2 instances and the security state of your applications running on the instances.
- **Amazon Macie**
A security service that uses machine learning to automatically discover, classify, and protect sensitive data in AWS. Macie recognizes sensitive data such as personally identifiable information (PII) or intellectual property.

AWS Management Tools

- **Amazon CloudWatch**
Monitoring tool for your AWS resources and applications. Display metrics and create alarms that watch the metrics and send notifications or automatically make changes to the resources you are monitoring when a threshold is breached.
- **AWS Auto Scaling**
Configure automatic scaling for the AWS resources quickly through a scaling plan that uses dynamic scaling and predictive scaling.

- **AWS Compute Optimizer**
A service that recommends optimal AWS resources to reduce costs and improve performance of your workloads. Uses machine learning to analyze historical utilization metrics.
- **AWS CloudFormation**
A service that gives developers and businesses an easy way to create a collection of related AWS resources and provision them in an orderly and predictable fashion.
- **AWS CloudShell**
A terminal that you can access from the AWS Management Console to interact with your AWS resources without installing any software on your local computer.

AWS Analytics Services

- **Amazon Athena**
An interactive query service that makes it easy to analyze data directly in Amazon S3 and other data sources using SQL.
- **Amazon CloudSearch**
A fully-managed service in the AWS Cloud that makes it easy to set up, manage, and scale a search solution for your website or application.
- **Amazon OpenSearch Service**
Amazon OpenSearch lets you search, analyze, and visualize your data in real-time. This service manages the capacity, scaling, patching, and administration of your Elasticsearch clusters for you, while still giving you direct access to the Elasticsearch APIs.
- **Amazon EMR**
A managed cluster platform that simplifies running big data frameworks, such as Apache Hadoop and Apache Spark, on AWS to process and analyze vast amounts of data.
- **Amazon Kinesis**
Makes it easy to collect, process, and analyze real-time, streaming data. Kinesis can ingest real-time data such as video, audio, application logs, website clickstreams, and IoT telemetry data for machine learning, analytics, and other applications.

AWS Billing and Cost Management

- Cost Explorer tracks and analyzes your AWS usage. It is free for all accounts.
- Use Budgets to manage budgets for your account.
- Use Bills to see details about your current charges.
- Use Payment History to see your past payment transactions.

AWS Developer Tools

- **AWS AppConfig**
AWS AppConfig allows software developers to quickly and securely adjust application behavior in production environments without needing to deploy code. It enhances the

frequency of software releases, improves application resilience, and enables rapid response to emergent issues.

- **AWS CodeBuild**

A fully managed continuous integration service that compiles source code, runs tests, and produces software packages that are ready to deploy.

- **AWS CodeCommit**

A fully-managed source control service that hosts secure Git-based repositories, similar to Github.

- **AWS CodeDeploy**

A fully managed deployment service that automates software deployments to a variety of compute services such as Amazon EC2, AWS Fargate, AWS Lambda, and your on-premises servers.

- **AWS CodePipeline**

A fully managed continuous delivery service that helps you automate your release pipelines for application and infrastructure updates.

AWS Application Services

- **Amazon AppFlow**

An integration service that automates data flows by securely integrating third-party applications and AWS services without writing any code.

- **Amazon EventBridge**

Amazon EventBridge is a service that allows applications to communicate with each other using data from different sources in real time. It is a serverless event bus that acts as a centralized hub for ingesting events from various sources and directing them to the appropriate applications and services. This makes connecting applications easier and enables them to respond to data in real time.

- **Amazon SES**

Amazon SES is for applications that need to send communications via email. Amazon SES supports custom email header fields and many MIME types.

- **Amazon SNS**

A web service that makes it easy to set up, operate, and send notifications from the cloud. SNS follows the “publish-subscribe” (pub-sub) messaging paradigm, with notifications being delivered to clients using a “push” mechanism rather than to periodically check or “poll” for new information and updates.

- **Amazon SQS**

A hosted queue that lets you integrate and decouple distributed software systems and components. SQS supports both standard and FIFO queues. SQS uses pull based (polling) not push based

AWS Front-end Web & Mobile Services

- **AWS Amplify**

AWS Amplify is a platform that simplifies building and deploying full-stack applications with pre-built UI components, hosting options, and easy integration with

AWS services. It's flexible and scalable, making it easy to add new features and adapt to changing requirements.

- **AWS AppSync**

A serverless GraphQL and Pub/Sub API service that streamlines the development of modern web and mobile applications

- **AWS Device Farm**

AWS Device Farm allows you to examine and interact with your Android, iOS, and web applications on actual, physical devices maintained by Amazon Web Services (AWS).

AWS Desktop and App Streaming

- **Amazon WorkSpaces**

A fully-managed, secure cloud desktop service.

AWS Machine Learning and AI

- **Amazon Augmented AI**

Amazon A2I is a service that helps you easily integrate human reviews in a machine learning workflow. Simplifies managing a large number of human reviewers at scale. Has direct integration with Amazon Textract and Amazon Rekognition.

- **Amazon Bedrock**

Amazon Bedrock enables you to construct and expand applications powered by generative AI. These applications have the capability to produce text, images, audio, and artificial data in reaction to specific prompts.

- **Amazon Comprehend**

A managed Natural Language Processing (NLP) service that you can use to extract meaningful information from unstructured texts so you can analyze them in a human-like context.

- **Amazon Elastic Inference**

Allows attaching low-cost GPU-powered inference acceleration to EC2 instances, SageMaker instances, or ECS tasks. Reduce machine learning inference costs by up to 75%.

- **Amazon Kendra**

Amazon Kendra is a highly scalable, intelligent enterprise search service. It utilizes machine learning to search unstructured data and improve accuracy in search results. It's tightly integrated with other AWS services, such as Amazon S3 and Amazon Lex. It offers enterprise-grade security.

Use of AWS:

AWS is used by organizations of all sizes, from startups to large enterprises, for various purposes. Here are some common uses of AWS:

1. Website and Web Application Hosting
2. Data Storage and Backup

3. Big Data Processing and Analytics
4. Machine Learning and Artificial Intelligence
5. Application Development and Testing
6. Disaster Recovery and Business Continuity
7. Internet of Things (IoT)
8. Gaming
9. Mobile and Web Application Backend
10. Enterprise IT and Cloud Migration
11. E-commerce

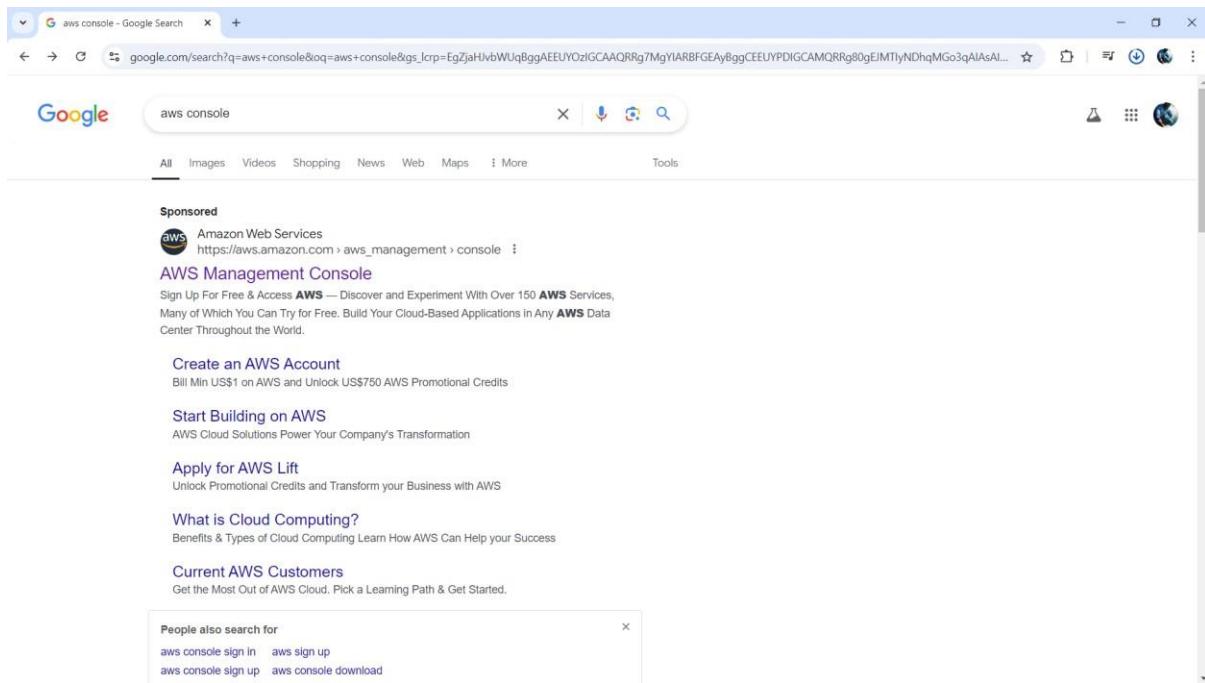
Cloud service types:

Service Model	Definition	AWS Example Services	Use Case
IaaS	Provides the basic infrastructure (compute, storage, networking)	Amazon EC2, Amazon S3, Amazon VPC	Provision virtual machines (EC2), store large amounts of data (S3), or create virtual networks (VPC)
PaaS	Provides platforms that allow developers to build applications without managing the infrastructure	AWS Elastic Beanstalk, AWS Lambda, Amazon RDS	Deploy web applications (Elastic Beanstalk), run serverless code (Lambda), or use managed databases (RDS)
SaaS	Delivers software applications over the internet, fully managed by AWS	Amazon WorkSpaces, Amazon Chime, AWS CloudEndure	Access virtual desktops (WorkSpaces), use communication tools (Chime), or ensure disaster recovery (CloudEndure)

Practical : 3

Find a procedure to set up an account with AWS, services it offers. Support your procedure with screenshots.

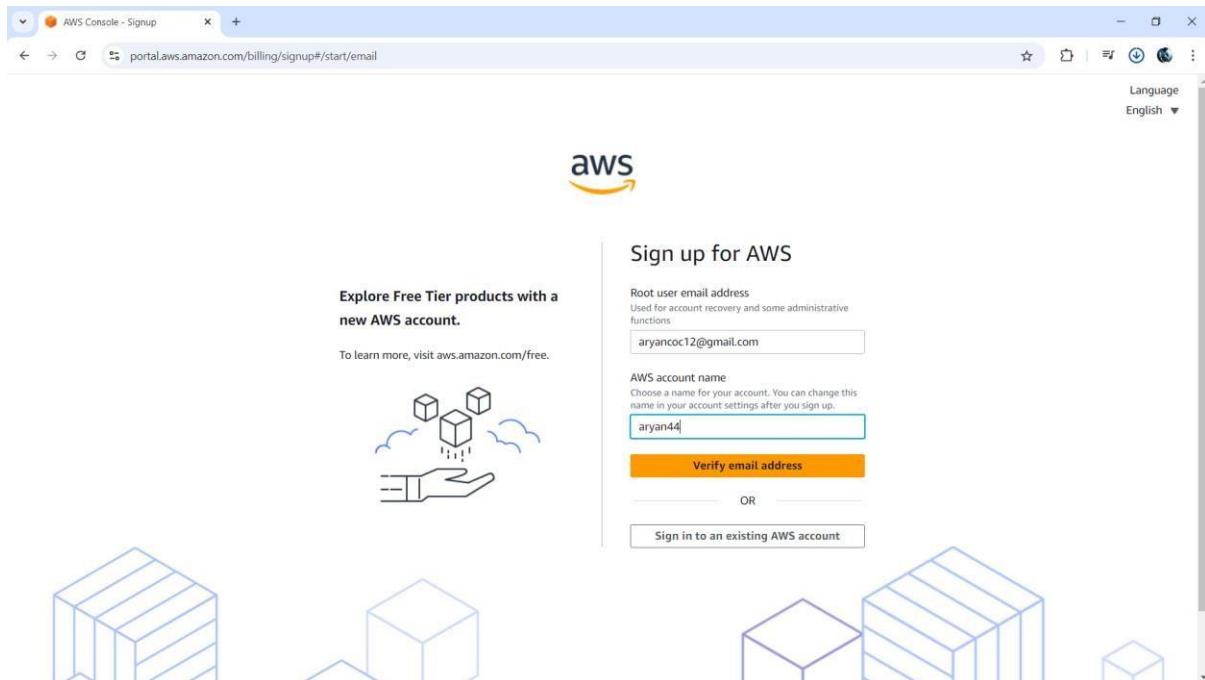
Step 1: First Open your web browser and search for AWS Login Console and click on the first link.



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



Step 3: Verify your email address.



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

This screenshot shows the "Create your password" step of the sign-up process. It features a green success message box stating "It's you! Your email address has been successfully verified." Below this, instructions say "Your password provides you with sign in access to AWS, so it's important we get it right." There are fields for "Root user password" and "Confirm root user password". An orange "Continue (step 1 of 5)" button is at the bottom. The background includes the same 3D geometric shapes as the previous screenshot.

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

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 personal use then click on “Personal Account” else use “Company Account”, Accept the Terms and condition 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)

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**.

Sign up for AWS

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 MASTERCARD AMEX RuPay

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 Country. Here I have provided India, so Amazon charged **2 INR**.

Verified by VISA 06 Feb 2022 12:09:55

Card Number
XXXX XXXX XXXX 8208

Merchant
AMAZON

Amount
Rs 2.00

Mobile
X6XXXX7XX7 

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

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 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.

The screenshot shows the AWS sign-up process. At the top is the AWS logo. Below it, the heading "Sign up for AWS" is followed by "Select a support plan". A note says "Choose a support plan for your business or personal account. Compare plans and pricing examples" and includes a link "You can change your plan anytime in the AWS Management Console". Three support plan options are listed in boxes:

- Basic support - Free** (radio button selected):
 - Recommended for new users just getting started with AWS
 - 24x7 self-service access to AWS resources
 - For account and billing issues only
 - Access to Personal Health Dashboard & Trusted Advisor
- Developer support - From \$29/month** (radio button):
 - Recommended for developers experimenting with AWS
 - Email access to AWS Support during business hours
 - 12 (business)-hour response times
- Business support - From \$100/month** (radio button):
 - Recommended for running production workloads on AWS
 - 24x7 tech support via email, phone, and chat
 - 1-hour response times
 - Full set of Trusted Advisor best-practice recommendations

Below the plans is a section for "Need Enterprise level support?" which links to a page for \$15,000/month. At the bottom is a large orange "Complete sign up" button.

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.

The screenshot shows the AWS registration confirmation page. The top navigation bar includes links for Contact Sales, Support, English, My Account, and "Sign In to the Console". The main content area has a purple header "Welcome to Amazon Web Services" and a message: "Thank you for creating an Amazon Web Services Account. We are activating your account, which should only take a few minutes. You will receive an email when this is complete." To the right, there are three buttons: "Sign In to the Console" (yellow), "Check your tax details for accurate invoicing" (white), and "Contact Sales" (white).

Log in to the AWS Console

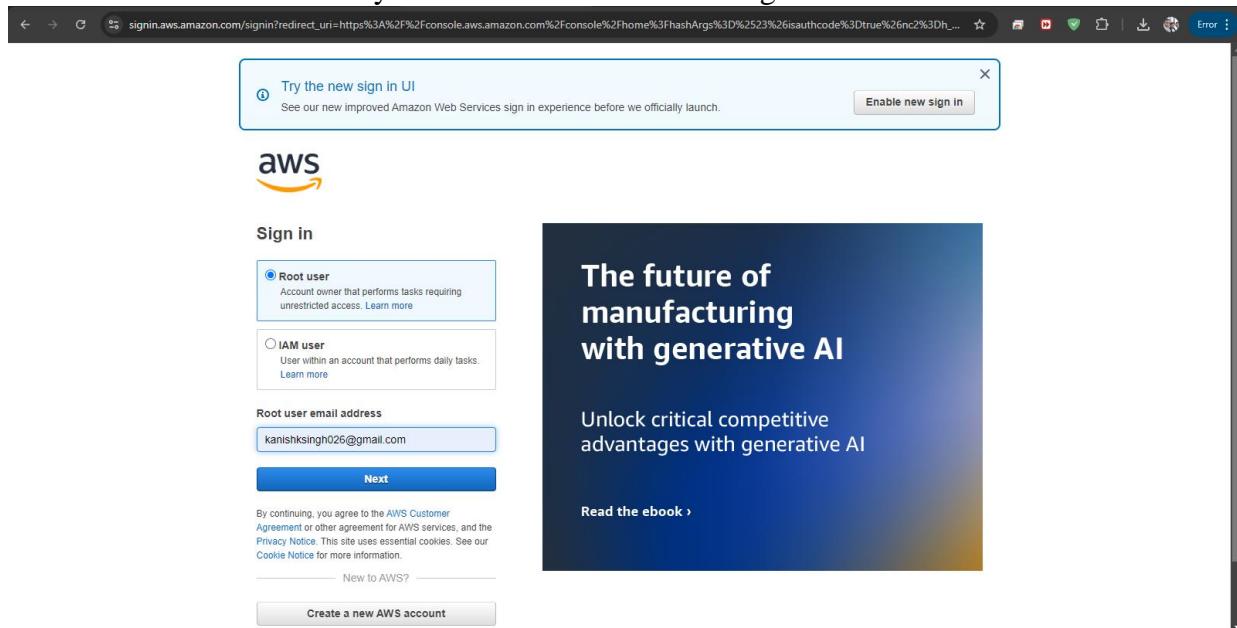
Step 1:

Open your web browser, navigate to <https://aws.amazon.com/console/>, and **Click on sign-in to the console.**



Step 2:

Enter the **username** which you have chosen while creating the account and **click on Next.**



Step 3:

Root user sign in

Email: aryncoc12@gmail.com

Password Forgot password?

[Sign in to a different account](#)

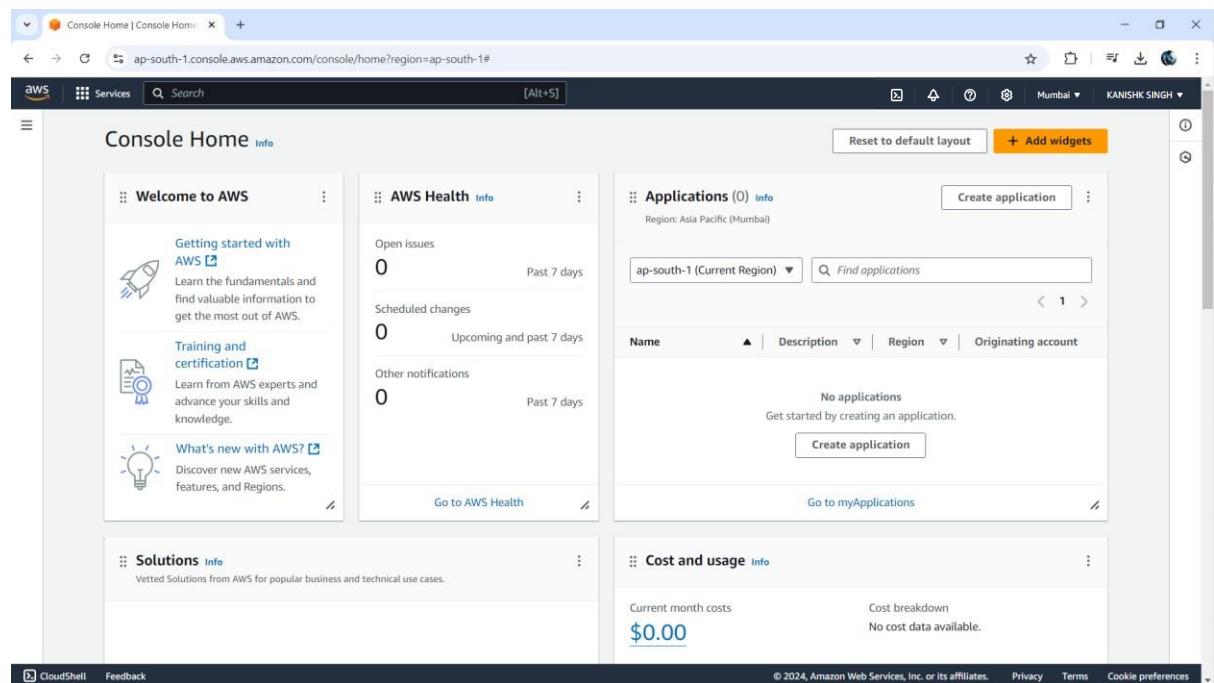
[Create a new AWS account](#)



Enter the **password**, associated with the user and then click on **Sign in**.

Step 4:

You can see the below home screen after you log in.



The screenshot shows the AWS Console Home page for the region ap-south-1. The top navigation bar includes links for Services, Search, and the user KANISHK SINGH. The main dashboard features several cards: "Welcome to AWS" (Getting started with AWS, Training and certification, What's new with AWS?), "AWS Health" (Open issues, Scheduled changes, Other notifications), "Applications" (0), "Cost and usage" (\$0.00), and "Solutions". The bottom of the page includes links for CloudShell, Feedback, and various legal and preference links.

Practical : 4

Analyse the services provided by AWS EC2 and VPC.

AWS EC2

Amazon EC2 is a web service that provides resizable compute capacity (virtual servers) in the cloud. It allows users to launch virtual machines, called instances, which can be customized in terms of CPU, memory, storage, and networking capabilities.

Key Features:

- **Elasticity:** You can scale up or down the number of instances based on demand. It supports auto-scaling, meaning you can automatically add or remove instances according to traffic load.
- **Customizable Instance Types:** EC2 provides various instance types optimized for different use cases (e.g., compute-optimized, memory-optimized, GPU instances, storage-optimized).
- **Variety of Operating Systems:** EC2 supports multiple operating systems, including Linux, Windows, and custom AMIs (Amazon Machine Images) to create pre-configured instances.
- **Security:** EC2 instances are secured using **Security Groups** and **Key Pairs**. Security Groups act as virtual firewalls, controlling inbound and outbound traffic, while Key Pairs manage access.
- **Storage Options:** EC2 supports multiple storage options like **Elastic Block Store (EBS)** for persistent block storage, **EC2 Instance Store** for temporary storage, and **Amazon S3** for object storage.
- **Pricing Models:** EC2 offers several pricing models:
 - **On-Demand Instances:** Pay for compute capacity by the second.
 - **Reserved Instances:** Pre-pay for instances at a discounted rate over a set period.
 - **Spot Instances:** Use unused EC2 capacity at a significantly reduced price.
 - **Savings Plans:** Flexible pricing based on long-term commitments.

AWS VPC

Amazon VPC allows you to provision a logically isolated virtual network in the AWS Cloud. It enables you to define your own network configurations, including IP address ranges, subnets, route tables, and network gateways, giving you control over your network environment.

Key Features:

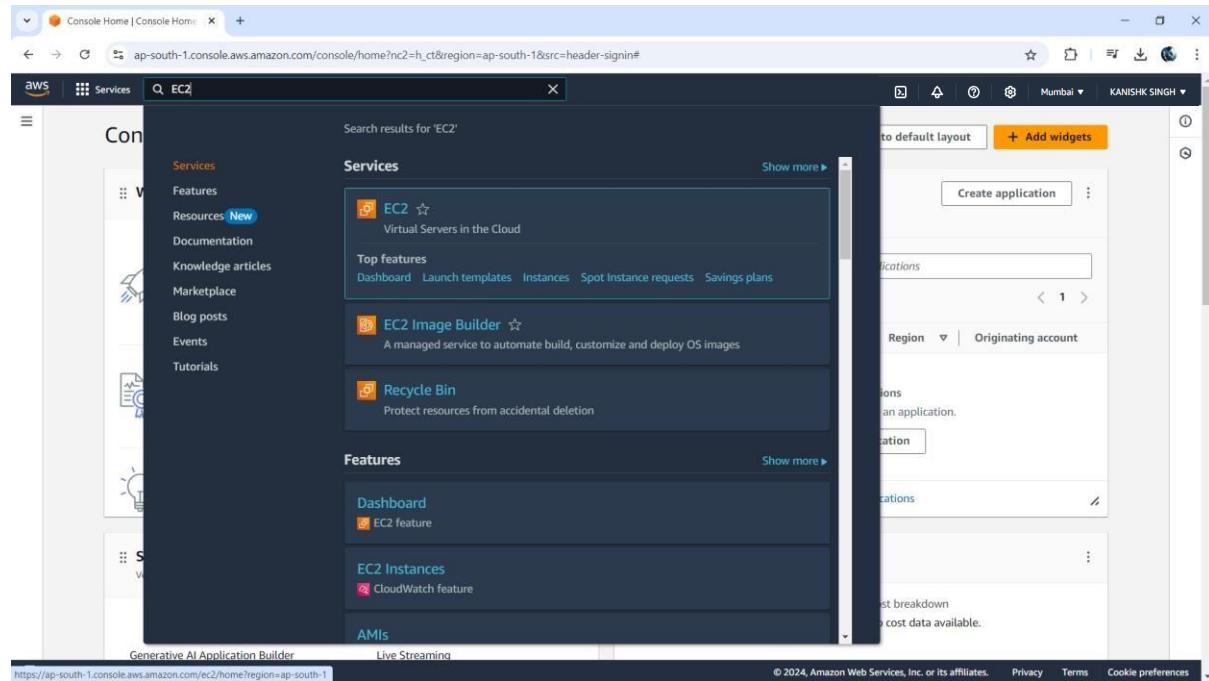
- **Subnets:** VPCs can be divided into subnets, which can be private (internal traffic) or public (accessible from the internet). You can segment your resources within a VPC for security and organizational purposes.

- **Custom IP Ranges:** You can define custom IP address ranges using **Classless Inter-Domain Routing (CIDR)** blocks. This allows you to tailor your network to your application's needs.
- **Network Security:** VPC offers multiple security features:
 - **Security Groups:** Control traffic to and from EC2 instances within the VPC.
 - **Network Access Control Lists (NACLs):** Provide an additional layer of security at the subnet level.
 - **VPC Peering:** Allows VPCs to connect to each other privately.
- **Internet Gateways and NAT Gateways:** These gateways manage outbound and inbound internet traffic.
 - **Internet Gateway (IGW):** Allows instances in the VPC to access the internet.
 - **NAT Gateway:** Enables private instances (instances without direct internet access) to connect to the internet securely.
- **VPN and Direct Connect:** You can establish secure connections between your VPC and on-premises data centers using **AWS VPN** or **AWS Direct Connect**.
- **Elastic Load Balancing (ELB):** VPC works with ELB to distribute incoming application traffic across multiple EC2 instances for high availability.

Practical : 5

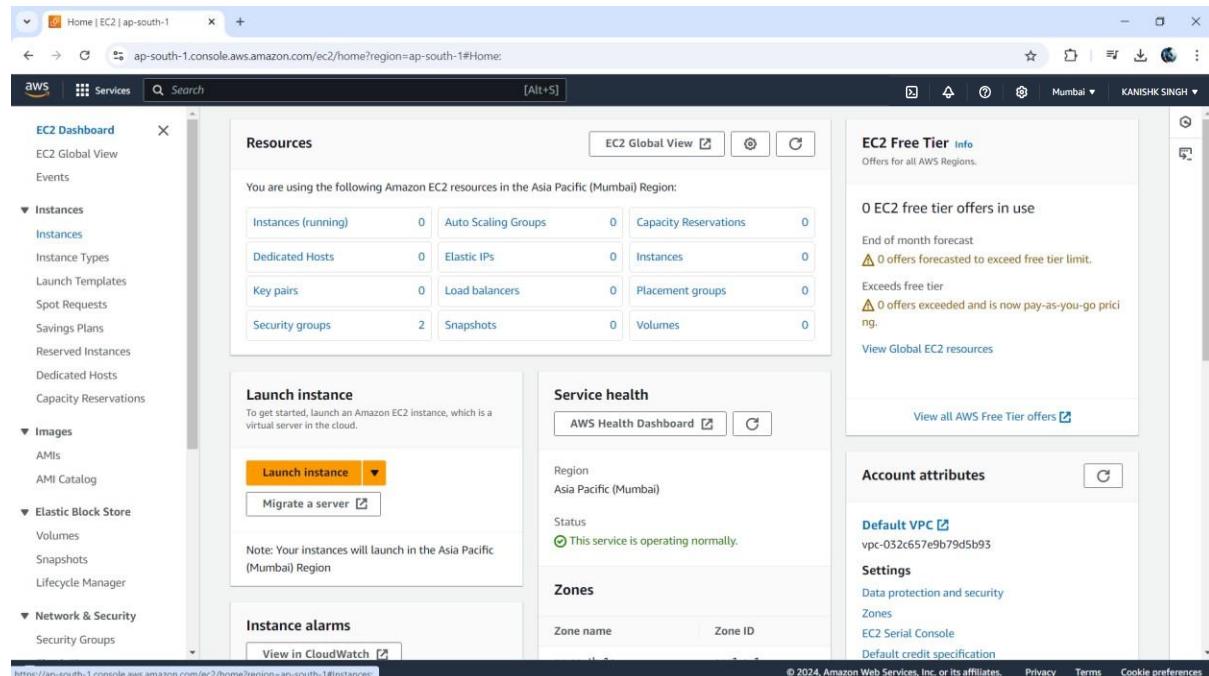
Demonstrate the steps with screenshots to add a new instance and create a virtual machine in Amazon Web Service using EC2.

Step 1: Search EC2 in search bar and then click on the EC2 icon shown.



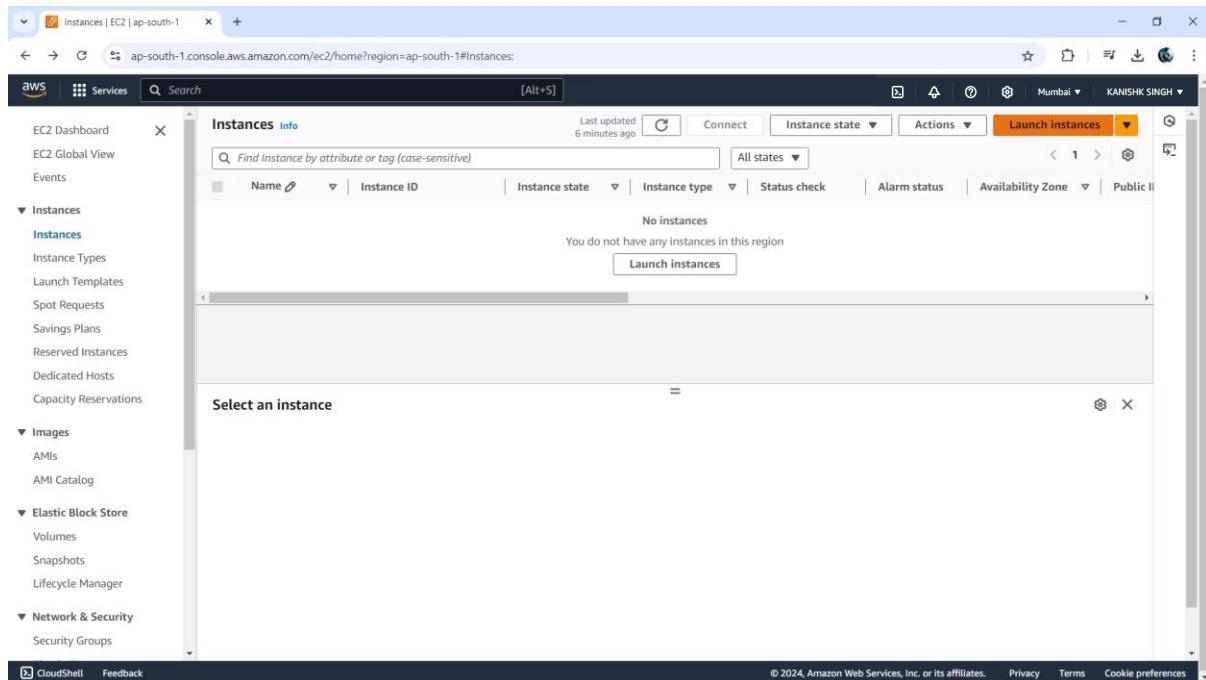
The screenshot shows the AWS Console Home page. In the search bar at the top, 'EC2' is typed. Below the search bar, the results for 'EC2' are displayed under the 'Services' section. The first result is 'EC2' with the subtext 'Virtual Servers in the Cloud'. This card is highlighted with a blue border. Other services listed include 'EC2 Image Builder' and 'Recycle Bin'. To the right of the search results, there is a sidebar with options like 'Create application', 'Regions', and 'Originating account'. At the bottom of the page, there are links for 'Generative AI Application Builder', 'Live Streaming', and copyright information for 2024, Amazon Web Services, Inc. or its affiliates.

Step 2: on EC2 dashboard, click on instances in left side bar.

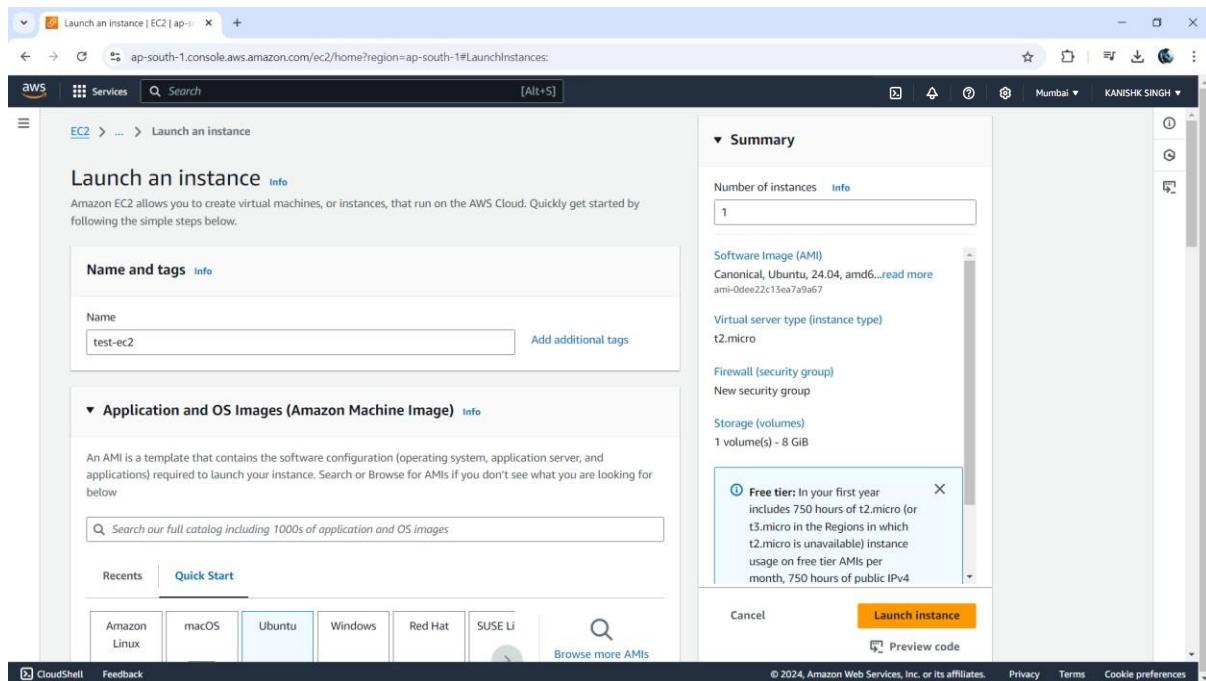


The screenshot shows the EC2 Dashboard. On the left, a sidebar menu is open, with 'Instances' selected and expanded. Under 'Instances', there are sub-options: Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Images, AMIs, AMI Catalog, Elastic Block Store, Volumes, Snapshots, Lifecycle Manager, Network & Security, and Security Groups. The main content area displays 'Resources' and 'Launch instance' sections. The 'Resources' section shows metrics for Instances (running), Auto Scaling Groups, Capacity Reservations, Dedicated Hosts, Elastic IPs, Instances, Key pairs, Load balancers, Placement groups, Security groups, Snapshots, and Volumes. The 'Launch instance' section has a prominent orange 'Launch instance' button. The right side of the dashboard shows 'Service health' (AWS Health Dashboard) and 'Account attributes' (Default VPC, Status: operating normally, Settings). The bottom of the page includes copyright information for 2024, Amazon Web Services, Inc. or its affiliates.

Step 3: select region nearest to you for better latency and then click on launch instance.



Step 4: instance configuration:



- give name of the instance:

following the simple steps below.

Name and tags Info

Name

test-ec2

Add additional tags

- select 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.

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

Recents **Quick Start**

Amazon Machine Image (AMI)

Ubuntu Server 24.04 LTS (HVM), SSD Volume Type Free tier eligible ▾
 ami-0dee22c13ea7a9a67 (64-bit (x86)) / ami-0c8eea98010057bd0 (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>).

Architecture	AMI ID	Username
64-bit (x86) ▾	ami-0dee22c13ea7a9a67	ubuntu Verified provider

- select instance type:

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

Instance type

t2.micro Free tier eligible ▾

Family: t2 1 vCPU 1 GiB Memory Current generation: true
 On-Demand Linux base pricing: 0.0124 USD per Hour
 On-Demand Windows base pricing: 0.017 USD per Hour
 On-Demand RHEL base pricing: 0.0268 USD per Hour
 On-Demand SUSE base pricing: 0.0124 USD per Hour

All generations [Compare instance types](#)

Additional costs apply for AMIs with pre-installed software

- create a key pair for login:

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

Proceed without a key pair (Not recommended) Default value ▾  [Create new key pair](#)

- Network setting:

▼ Network settings [Info](#)

Network [Info](#)
vpc-032c657e9b79d5b93

Subnet [Info](#)
No preference (Default subnet in any availability zone)

Auto-assign public IP [Info](#)
Enable
Additional charges apply when outside of free tier allowance

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:

<input checked="" type="checkbox"/> Allow SSH traffic from Helps you connect to your instance	Anywhere 0.0.0.0/0
<input checked="" type="checkbox"/> Allow HTTPS traffic from the internet To set up an endpoint, for example when creating a web server	
<input checked="" type="checkbox"/> Allow HTTP traffic from the internet To set up an endpoint, for example when creating a web server	

- Configure 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 X

Add new volume

The selected AMI contains more instance store volumes than the instance allows. Only the first 0 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](#)

Step 5: Now after completion of configuration of instance launch the EC2 instance.

Step 6: After the click it will take some time and show a success message with the instance ID.



Step 7: Click on the instance ID which will redirect to the instances page there you can see all the information related to instances.

The screenshot shows the AWS EC2 Instances page. On the left, a sidebar lists various services like EC2 Dashboard, EC2 Global View, Events, Instances, Images, Elastic Block Store, and Network & Security. The main area displays a table titled 'Instances (1) Info' with one row. The row details a single instance: Name is 'test-ec2', Instance ID is 'i-05f2e7f8efe42de2c', State is 'Running', Type is 't2.micro', Status check is '2/2 checks passed', Alarm status is 'View alarms', Availability Zone is 'ap-south-1b', and Public IP is 'ec2-65-0-1'. A search bar at the top allows filtering by instance ID or tag. A 'Launch instances' button is visible at the top right. The bottom of the page includes standard AWS footer links for CloudShell, Feedback, and legal notices.

Step 8: select the instance and connect to it by clicking on connect button.

The screenshot shows the 'Connect to instance' dialog for the instance 'i-05f2e7f8efe42de2c'. The dialog has tabs for 'EC2 Instance Connect', 'Session Manager', 'SSH client', and 'EC2 serial console'. The 'EC2 Instance Connect' tab is active. It contains a warning message about port 22 being open to all IPv4 addresses. Below this, the instance ID 'i-05f2e7f8efe42de2c (test-ec2)' is listed. Under 'Connection Type', the 'Public IPv4 address' option is selected, showing '65.0.183.106'. There is also an option for 'IPv6 address'. A 'Username' field is set to 'ubuntu'. At the bottom, a note states that the default username is 'ubuntu' but advises checking AMI usage instructions. Buttons for 'Cancel' and 'Connect' are at the bottom right. The page footer includes standard AWS links.

Step 9: after clicking a console window will be opened.

The screenshot shows a CloudShell terminal window with the following content:

```
System information as of Sun Oct 13 09:20:13 UTC 2024
System load: 0.0 Processes: 103
Usage of /: 22.9% of 6.71GB Users logged in: 0
Memory usage: 20% IPV4 address for enx0: 172.31.9.167
Swap usage: 0%

Expanded Security Maintenance for Applications is not enabled.
0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*copyright.

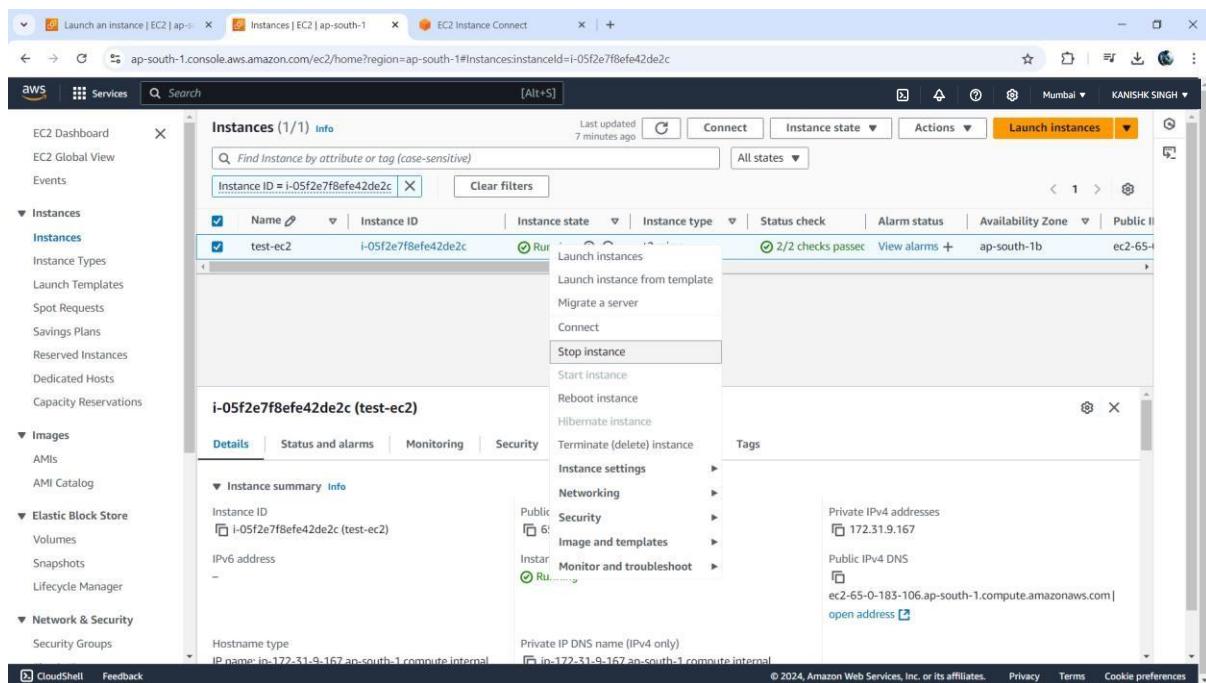
Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-9-167:~$
```

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

Step 10: after using we can close/terminate instance.



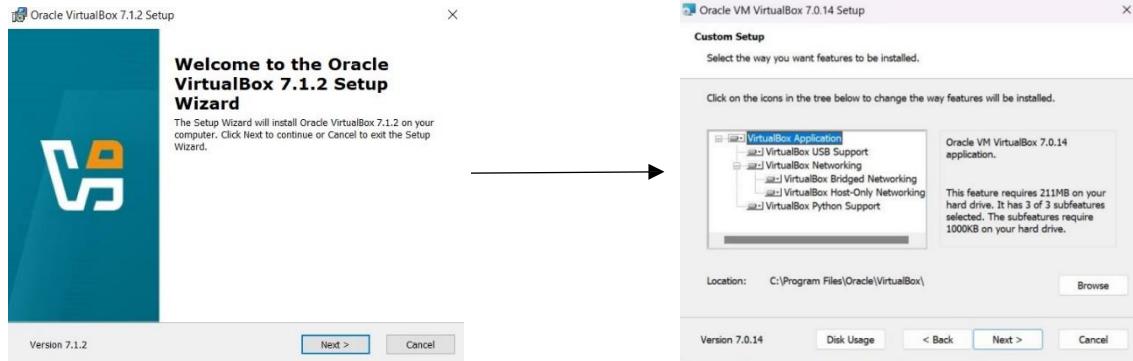
Practical : 6

Install VirtualBox or VMware Workstation on a Windows Operating System and set up various Flavors of Linux or Windows as virtual machines.

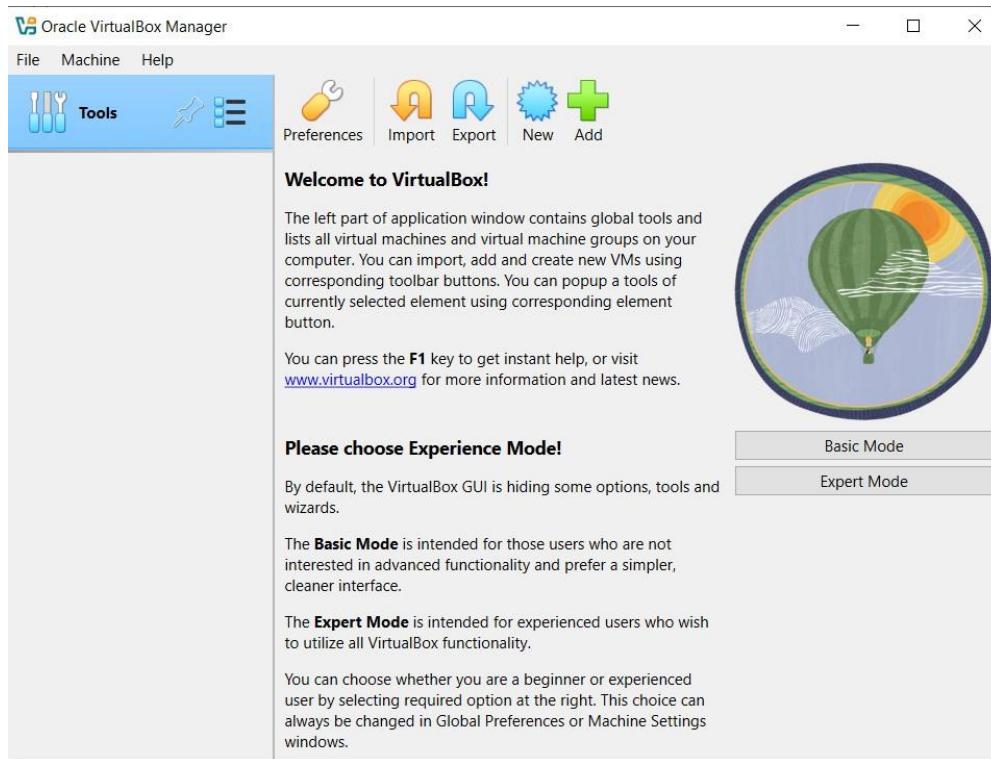
Step 1: Install virtualBox by visiting official website <https://www.virtualbox.org/>.

Step 2: click on download button, select platform.

Step 3: Run the downloaded exe file. After running click next on the wizard and follow the instructions.

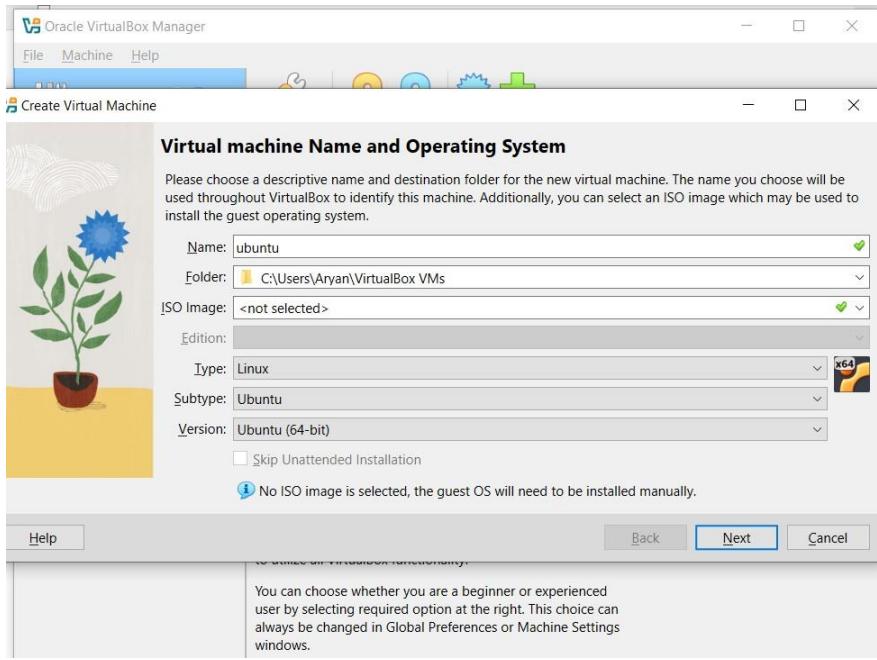


Step 4: finish installation and then start the VirtualBox.

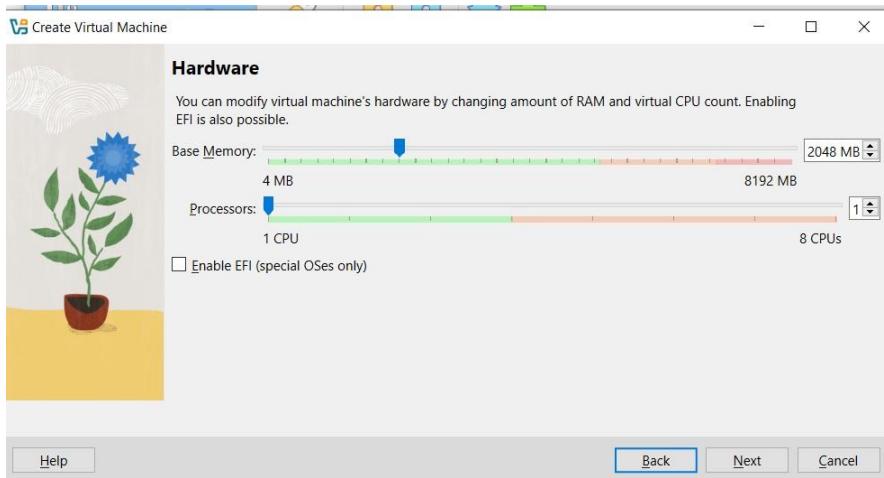


Step 5: click on new to create a new VM.

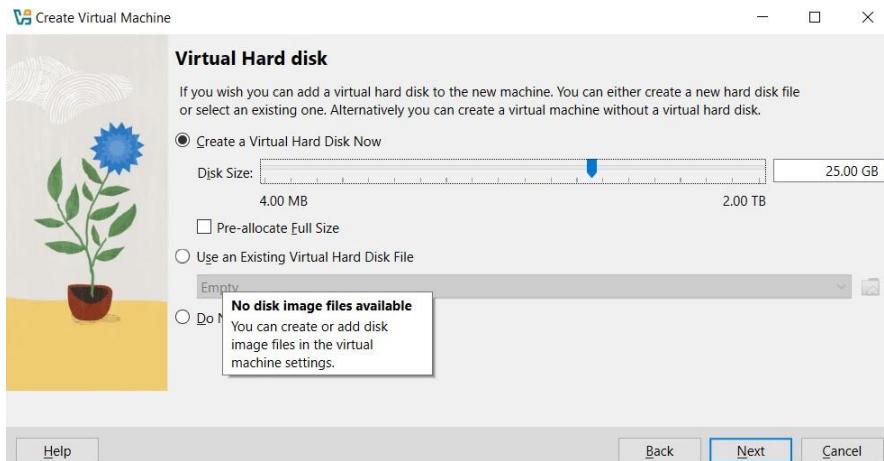
- Enter a name for your virtual machine and select the type and version of the operating system you want to install.



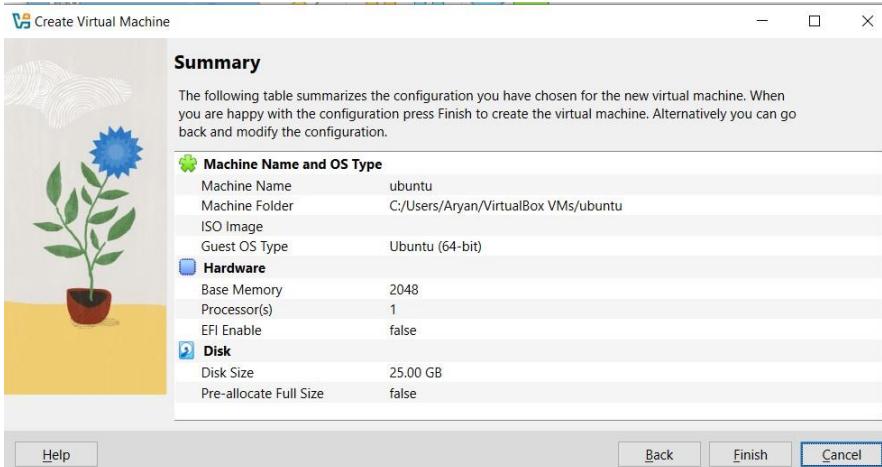
- Memory allocation: Choose the amount of RAM (memory) you want to allocate to the virtual machine.



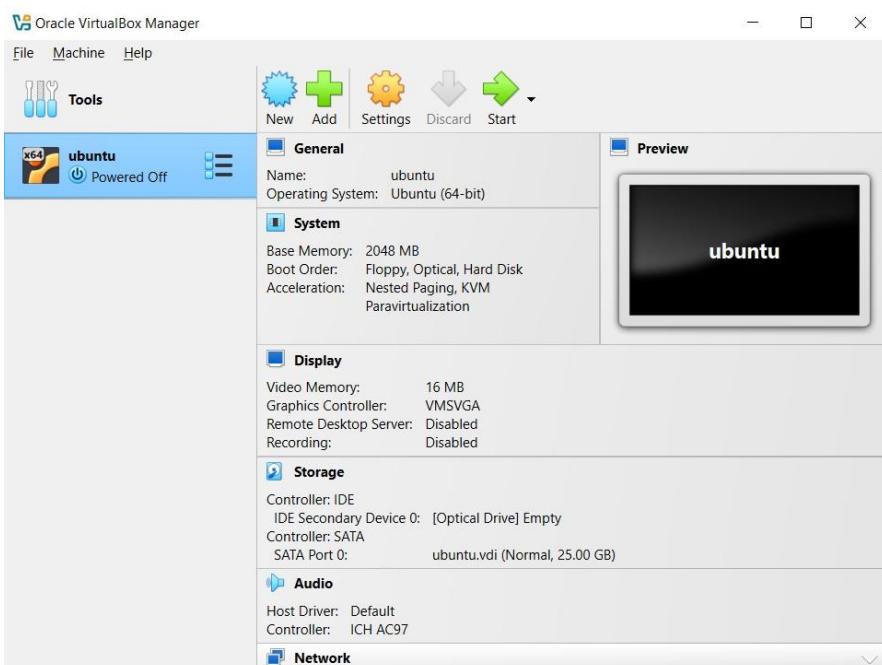
- Setup virtual hard disk: Choose whether to create a new virtual hard disk or use an existing one. If creating a new one, follow the prompts to set the disk size and type.



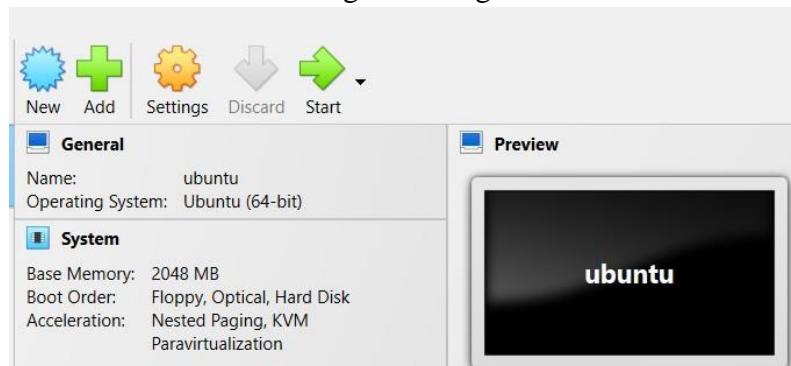
- Check summary of the configuration chosen: select back if you want to change in the configuration or finish to create virtual machine.



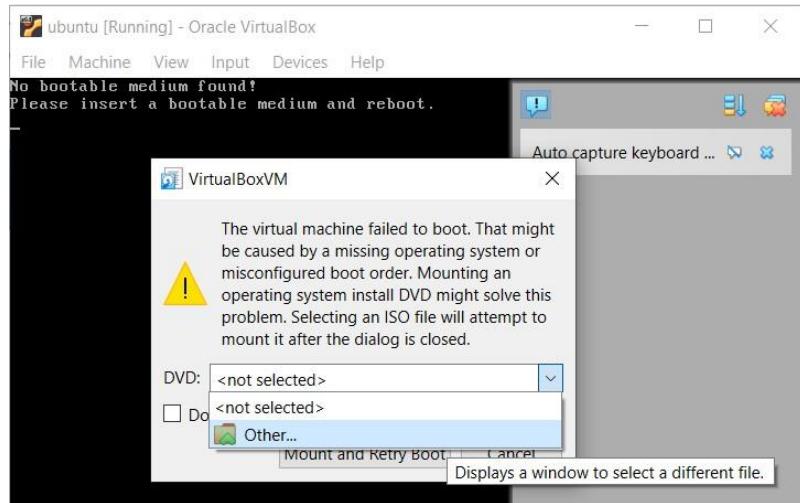
- After creation of VM.



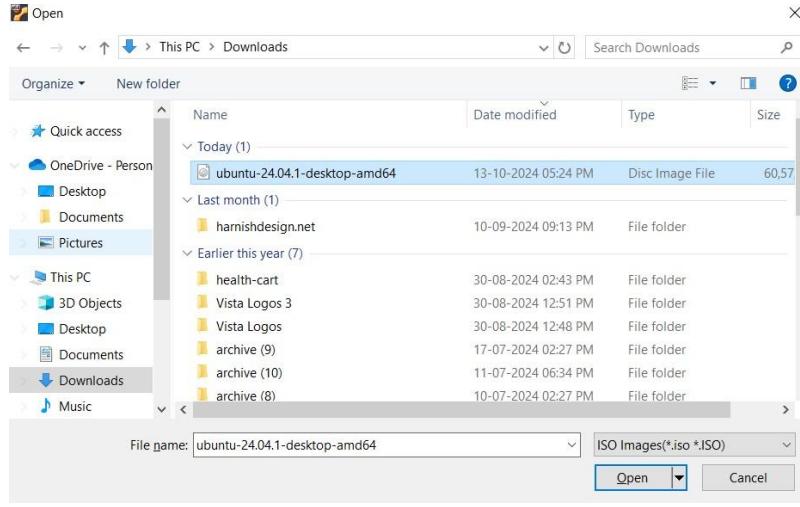
- Install operating system (Ubuntu): With the virtual machine created, select it in the VirtualBox Manager and click on the "Start" button. Follow the prompts to install the operating system from an ISO image or physical installation media.
 - Click on “start”. You will get a dialogue box.



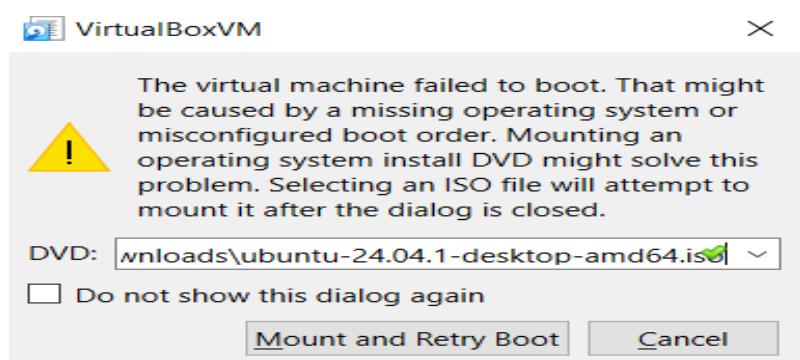
- In the given dialogue box, click on the dropdown symbol in DVD section and choose other.



- Choose the ISO file which you want to install. Click on “open”.



- Now, click on the “Mount and Retry Boot” button. Follow the procedures and install the OS.



Practical : 7

Analyze the services provided by AWS S3 and EBS.

Amazon S3 is a scalable object storage service used for storing and retrieving any amount of data at anytime from anywhere on the web. It is designed to store objects (files) and is highly durable, secure, and scalable.

Key Features:

- **Object Storage:** Data in S3 is stored as objects, with each object consisting of a file, metadata, and a unique identifier (key). Objects are stored in containers called **buckets**.
- **Scalability:** S3 automatically scales to handle large amounts of data without any manual intervention. It can store terabytes or even petabytes of data.
- **High Durability and Availability:** S3 is designed for **99.999999999% durability (11 9s)**, meaning your data is almost never lost. Data is replicated across multiple Availability Zones (AZs) for redundancy.
- **Flexible Data Access:** S3 can be accessed from anywhere via standard APIs. It provides various ways to manage access, such as access control lists (ACLs), bucket policies, and integration with AWS Identity and Access Management (IAM).
- **Storage Classes:** S3 offers different storage classes for varying cost and performance needs:
 - **S3 Standard:** General-purpose storage with low latency.
 - **S3 Intelligent-Tiering:** Automatically moves data between different access tiers based on usage.
 - **S3 Standard-IA (Infrequent Access):** Lower-cost storage for data accessed less frequently.
 - **S3 Glacier and Glacier Deep Archive:** Low-cost, long-term archival storage.
- **Versioning and Lifecycle Policies:** S3 supports versioning of objects, allowing you to retain multiple versions of a file. You can set **lifecycle policies** to automatically move data to cheaper storage tiers or delete data after a certain period.
- **Security:** S3 supports **encryption** of data both at rest (server-side encryption) and in transit (using SSL). It integrates with **AWS Key Management Service (KMS)** for managing encryption keys.
- **Data Access Controls:** You can control access at the bucket or object level using policies, ACLs, or **S3 Block Public Access** settings to prevent unauthorized access.
- **Event Notifications:** S3 can trigger events in other AWS services (like **AWS Lambda** or **SNS**) when objects are uploaded, modified, or deleted.
- **Global Availability:** S3 is globally available, with data stored in specific regions of your choice.

Amazon EBS is a block storage service that provides persistent, high-performance storage volumes for use with Amazon EC2 instances. Unlike S3, which is object-based, EBS is designed for block-level storage, akin to a physical hard drive.

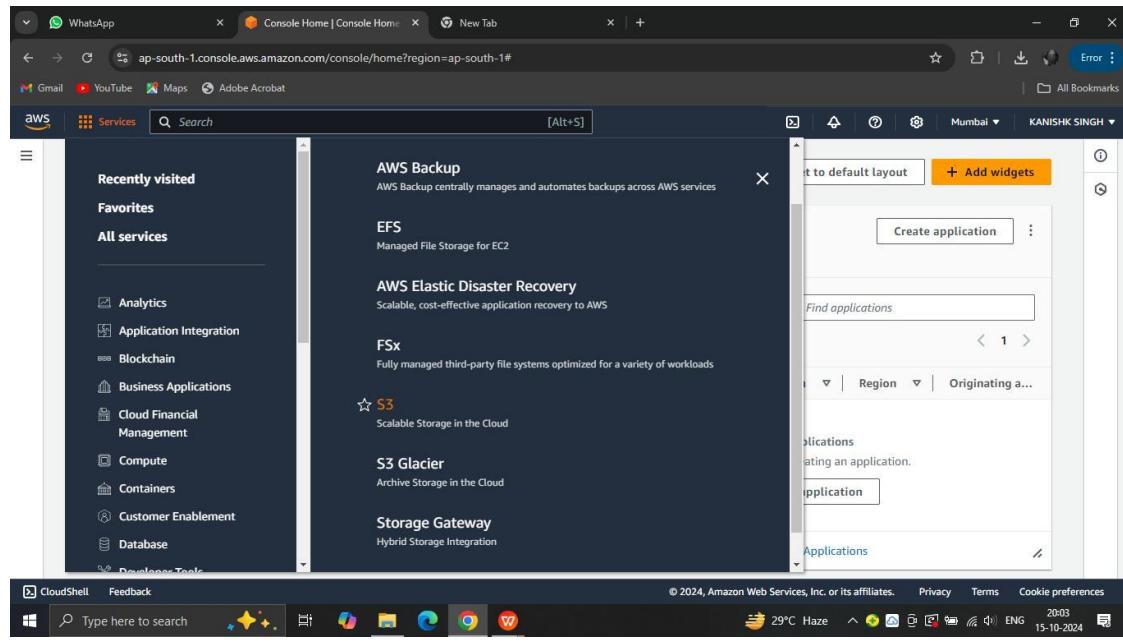
Key Features:

- **Block Storage:** EBS volumes act like raw, unformatted block devices that can be attached to EC2 instances and used for traditional file systems, databases, or applications requiring high-performance storage.
- **Persistent Storage:** EBS volumes persist independently of EC2 instances, so even if an EC2 instance is stopped or terminated, the data on the EBS volume remains intact.
- **High Availability and Durability:** EBS volumes are replicated within an AvailabilityZone (AZ) to protect against failure. However, they are confined to a single AZ (unlike S3, which replicates data across AZs).
- **Multiple Volume Types:** EBS offers several types of volumes optimized for different workloads:
 - **General Purpose SSD (gp3/gp2):** Balances price and performance for most workloads.
 - **Provisioned IOPS SSD (io1/io2):** For applications requiring high IOPS performance, such as databases.
 - **Throughput Optimized HDD (st1):** For large, sequential workloads, such as big data analytics.
 - **Cold HDD (sc1):** Lowest-cost storage for infrequently accessed workloads.
- **Snapshots:** EBS volumes can be backed up using **snapshots**, which are stored in S3. Snapshots are incremental, meaning only the blocks that have changed since the last snapshot are saved.
- **Encryption:** EBS supports encryption of data at rest using AWS KMS-managed keys. All data is automatically encrypted before being written to the disk.
- **Attach and Detach Flexibility:** You can attach and detach EBS volumes from EC2 instances easily, allowing you to move storage between instances as needed.
- **Backup and Restore:** Snapshots can be used to create backups of EBS volumes and restore them at any time.

Practical 8:

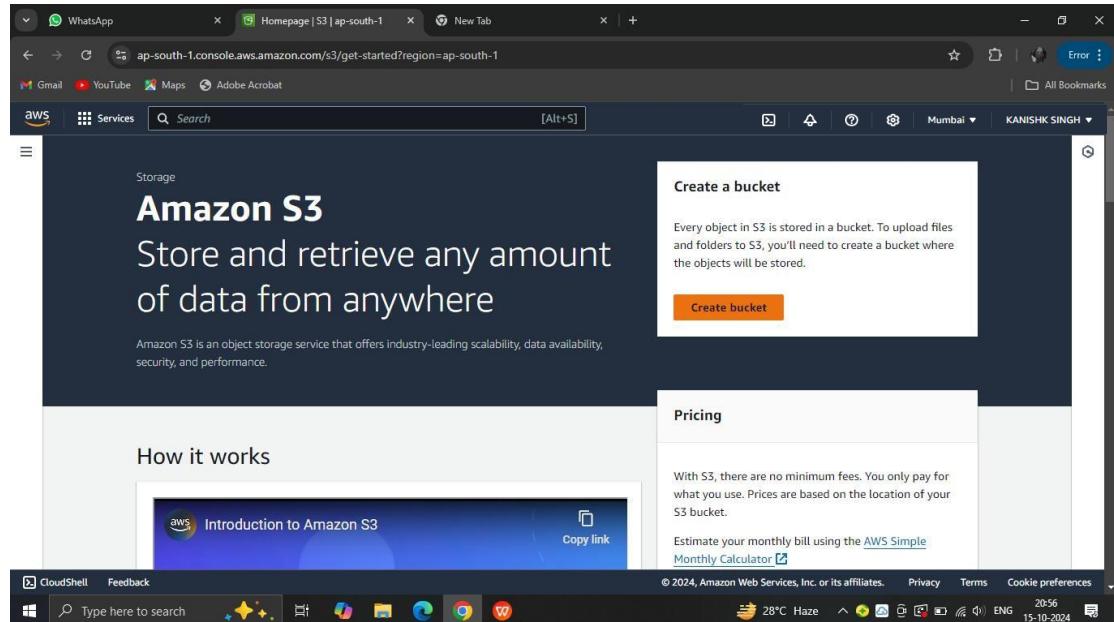
You are working for a startup that wants to store user-uploaded files in Amazon S3. The company needs to create a bucket for storing these files, upload sample files, and manage accessibility to ensure that only authorized users can access them.

Step 1: Login to your AWS Console and Go to Services → Storage → S3



10

Step 2: Now click on “Create Bucket” to create a bucket.



Step 3: Enter a unique name for your bucket and then scroll down to select the option “Create Bucket”.

The screenshot shows the 'Create bucket' page in the AWS S3 console. In the 'Bucket name' field, the value 'mybucket243' is entered. Below the input field, a note states: 'Bucket name must be unique within the global namespace and follow the bucket naming rules. See rules for bucket naming.' A 'Choose bucket' button is available for copying settings from an existing bucket. The 'Format: s3://bucket/prefix' placeholder is visible. The top navigation bar includes tabs for 'Amazon S3 > Buckets > Create bucket' and a search bar. The bottom navigation bar shows standard browser controls and system status indicators.

The screenshot shows the continuation of the 'Create bucket' process. Under the 'Encryption type' section, the 'Server-side encryption with Amazon S3 managed keys (SSE-S3)' option is selected. Other options include 'Server-side encryption with AWS Key Management Service keys (SSE-KMS)' and 'Dual-layer server-side encryption with AWS Key Management Service keys (DSSE-KMS)'. A note states: 'Secure your objects with two separate layers of encryption. For details on pricing, see DSSE-KMS pricing on the Storage tab of the Amazon S3 pricing page.' Below this, the 'Bucket Key' section indicates that SSE-KMS reduces costs by lowering calls to AWS KMS. It offers 'Disable' or 'Enable' options, with 'Enable' selected. A 'Cancel' button and a prominent orange 'Create bucket' button are at the bottom right. The interface is consistent with the previous screenshot, showing the same navigation and status bars.

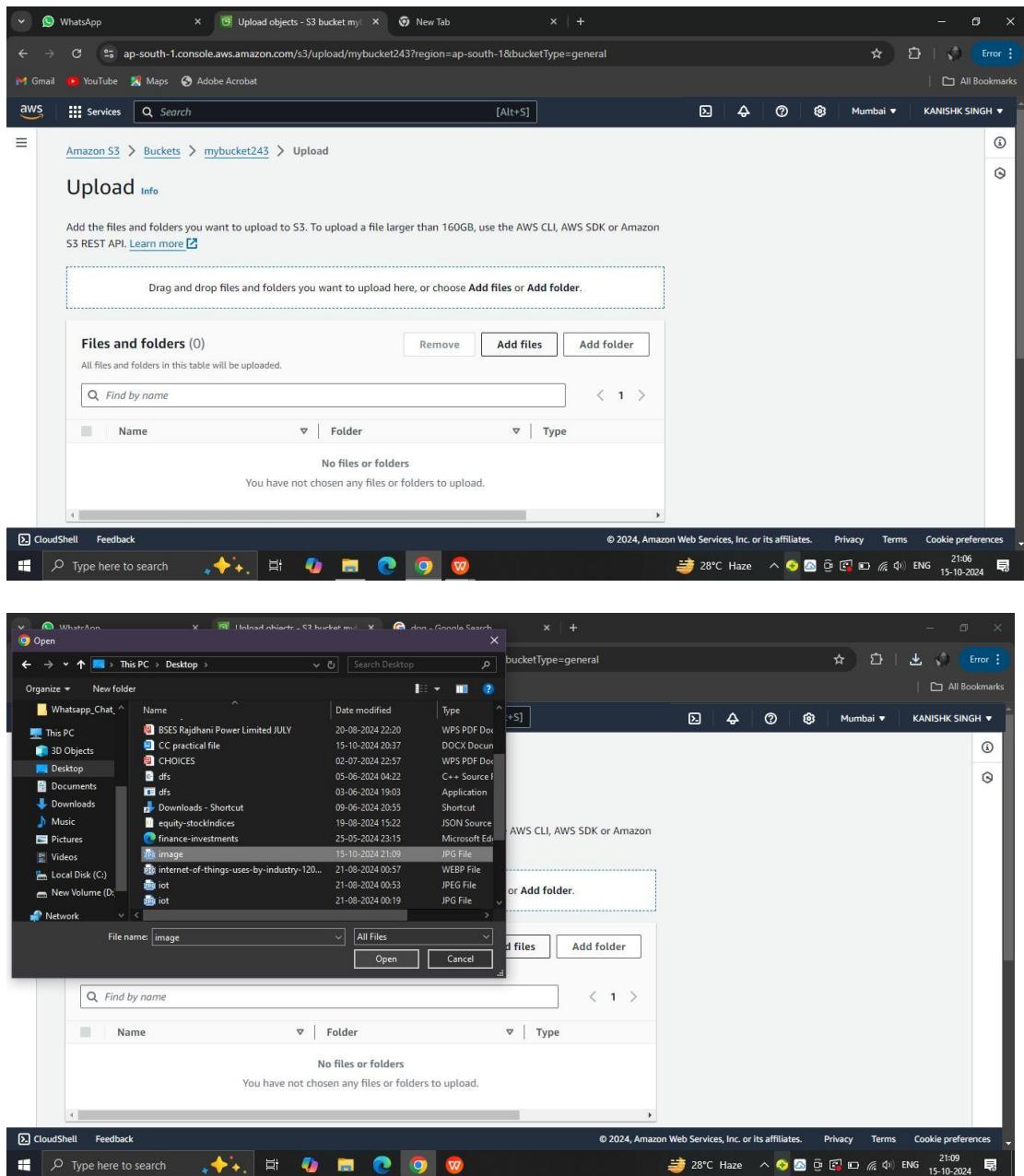
Step 4: Now your bucket is created. Click on your bucket to view and upload files.

The screenshot shows the AWS S3 console with a green success banner at the top stating "Successfully created bucket 'mybucket243'". Below the banner, there's an "Account snapshot" section and a "General purpose buckets" table. The table lists one bucket, "mybucket243", with details: Name (mybucket243), AWS Region (Asia Pacific (Mumbai) ap-south-1), IAM Access Analyzer (View analyzer for ap-south-1), and Creation date (October 15, 2024, 21:05:00 (UTC+05:30)).

Step 5: Click on “Upload” to add objects to your bucket.

The screenshot shows the "Objects" tab of the "mybucket243" bucket. It displays a table with no objects, indicating "No objects" and "You don't have any objects in this bucket.". At the bottom of the table is a prominent orange "Upload" button.

- Click on “Add files” and select the files you want to upload.



Step 6: After your file gets added scroll down and click on “Upload”. Your file will get uploaded.

The screenshot shows the AWS S3 console with the URL `ap-south-1.console.aws.amazon.com/s3/upload/mybucket243?region=ap-south-1&bucketType=general`. The page title is "Upload objects - S3 bucket myl". The main area is titled "Upload" with a "Info" link. It contains instructions to add files or folders via drag-and-drop or buttons for "Add files" or "Add folder". A table lists one file: "image.jpg" (image/jpeg). Below this is a "Destination" section with a table showing the destination as "s3://mybucket243". At the bottom are "Permissions" and "Properties" sections, followed by a "Cancel" and an orange "Upload" button.

This screenshot shows the continuation of the upload process. The "Destination" section now includes a "Destination details" table with a single row for "Bucket settings that impact new objects stored in the specified destination". The "Upload" button is highlighted in orange at the bottom.

The screenshot shows the AWS S3 console interface. At the top, there are three tabs: WhatsApp, Upload objects - S3 bucket my..., and dog - Google Search. Below the tabs, the URL is ap-south-1.console.aws.amazon.com/s3/upload/mybucket243?region=ap-south-1&bucketType=general. The main content area has a green header bar with the message "Upload succeeded". Below this, a "Summary" section shows the destination as "s3://mybucket243" with one file uploaded successfully (854.2 KB) and zero files failed. There are two tabs at the bottom: "Files and folders" (selected) and "Configuration". Under "Files and folders", it shows "1 Total, 854.2 KB" with a table containing one row: "image.jpg" (image/jpeg, 854.2 KB, Succeeded). The status bar at the bottom indicates "© 2024, Amazon Web Services, Inc. or its affiliates." and shows the date and time as 15-10-2024.

- You can click on the object to view its info.

The screenshot shows the AWS S3 object details page for "image.jpg". The URL is ap-south-1.console.aws.amazon.com/s3/object/mybucket243?region=ap-south-1&bucketType=general&prefix=image.jpg. The left sidebar shows "Amazon S3" with sections for "Buckets", "Access Grants", "Access Points", "Object Lambda Access Points", "Multi-Region Access Points", "Batch Operations", "IAM Access Analyzer for S3", and "Storage Lens" (with sub-options for Dashboards, Storage Lens groups, and AWS Organizations settings). The main content area shows the object "image.jpg" with an "Info" tab selected. It displays the "Properties" tab, which includes fields for Object name (a3b6fc217df9f6865cdac636b5e7a61a82363d9a8dde92ca48aa4353c45ea), AWS Region (Asia Pacific (Mumbai) ap-south-1), Last modified (October 15, 2024, 21:12:43 (UTC+05:30)), and Size. To the right, there are links for "S3 URI" (s3://mybucket243/image.jpg), "Amazon Resource Name (ARN)" (arn:aws:s3:::mybucket243/image.jpg), "Entity tag (Etag)" (d90db3129a600491d9e8f074cc725366), and "Object URL". At the bottom, there are buttons for "Copy S3 URI", "Download", "Open", and "Object actions". The status bar at the bottom indicates "© 2024, Amazon Web Services, Inc. or its affiliates." and shows the date and time as 15-10-2024.

Step 7: Set Bucket Permissions

- Go to the Permissions tab of your newly created bucket.
- Under Block public access settings for this bucket, click Edit.
- Uncheck the options to allow public access (if needed) and click Save changes

The screenshot shows the AWS S3 console. The URL is ap-south-1.console.aws.amazon.com/s3/buckets/mybucket243?region=ap-south-1&bucketType=general&tab=permissions. The page title is "mybucket243". The navigation bar includes "Objects", "Properties", **Permissions**, "Metrics", "Management", and "Access Points". The main content area is titled "Permissions overview". It contains sections for "Access finding" and "Block public access (bucket settings)". The "Edit" button is visible in the "Block public access (bucket settings)" section. The status bar at the bottom shows "CloudShell", "Feedback", "Type here to search", and system icons.

The screenshot shows the "Edit" dialog for "Block public access (bucket settings)". The URL is ap-south-1.console.aws.amazon.com/s3/bucket/mybucket243/property/bpa/edit?region=ap-south-1&bucketType=general. The dialog lists four settings under "Block all public access":

- Block public access to buckets and objects granted through new access control lists (ACLS)**: "S3 will block public access permissions applied to newly added buckets or objects, and prevent the creation of new public access ACLs for existing buckets and objects. This setting doesn't change any existing permissions that allow public access 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."

At the bottom are "Cancel" and "Save changes" buttons. The status bar at the bottom shows "CloudShell", "Feedback", "Type here to search", and system icons.

Step 8: Deletion of a bucket

- To delete a bucket first empty the bucket by deleting its objects
- Go to buckets and select the bucket you want to delete and click on “empty”
- Type “permanently delete” to confirm and click on “empty”.

The image consists of three vertically stacked screenshots from the AWS S3 console.

Screenshot 1: Shows the 'Buckets' page. A single bucket named 'mybucket243' is listed under 'General purpose buckets'. The bucket details show it was created on October 16, 2024, at 01:06:04 (UTC+05:30) in the Asia Pacific (Mumbai) region. Action buttons include 'Copy ARN', 'Empty', 'Delete', and 'Create bucket'.

Screenshot 2: Shows the 'Empty bucket' confirmation dialog. It contains a warning message about the不可逆性 of emptying the bucket, a note about lifecycle rules, and a text input field containing 'permanently delete'. A large orange 'Empty' button is prominent at the bottom.

Screenshot 3: Shows the confirmation step after clicking 'Empty'. The text input field now contains 'permanently delete' and the 'Empty' button is highlighted in orange.

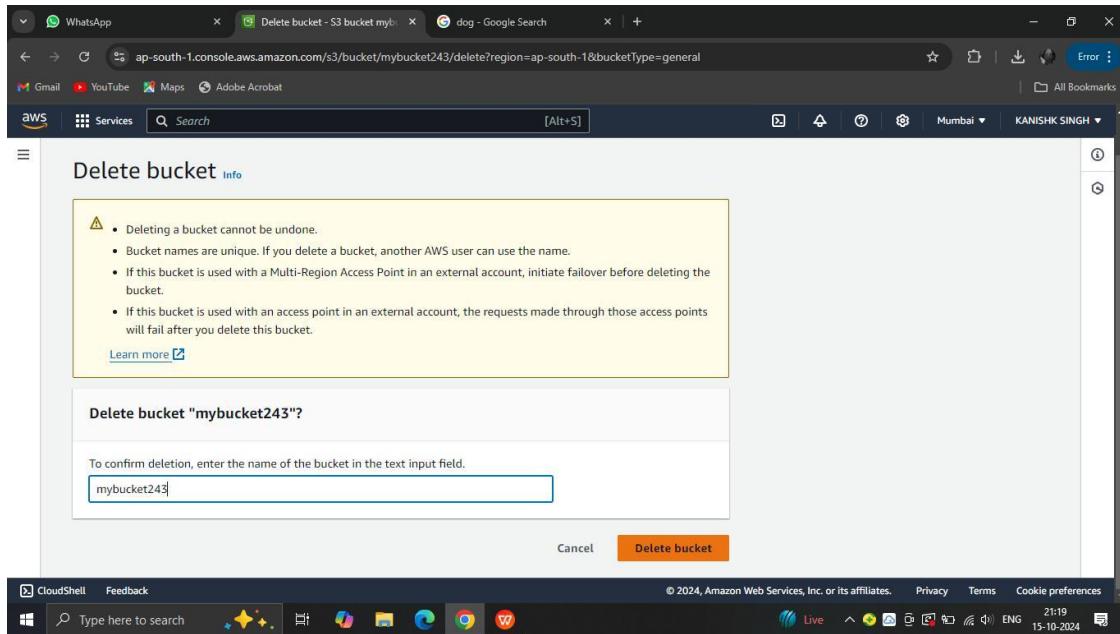
- The bucket is emptied successfully.

The screenshot shows the AWS S3 console with the URL <https://ap-south-1.console.aws.amazon.com/s3/bucket/mybucket243/empty?region=ap-south-1&bucketType=general>. A green success message at the top states: "Successfully emptied bucket 'mybucket243'. View details below. If you want to delete this bucket, use the [delete bucket configuration](#)." Below this, a summary table shows the results: "Source s3://mybucket243" with "Successfully deleted 1 object, 854.2 KB" and "Failed to delete 0 objects". A section titled "Failed to delete (0)" shows a table with no data. The bottom of the page includes standard AWS navigation links and a footer with copyright information.

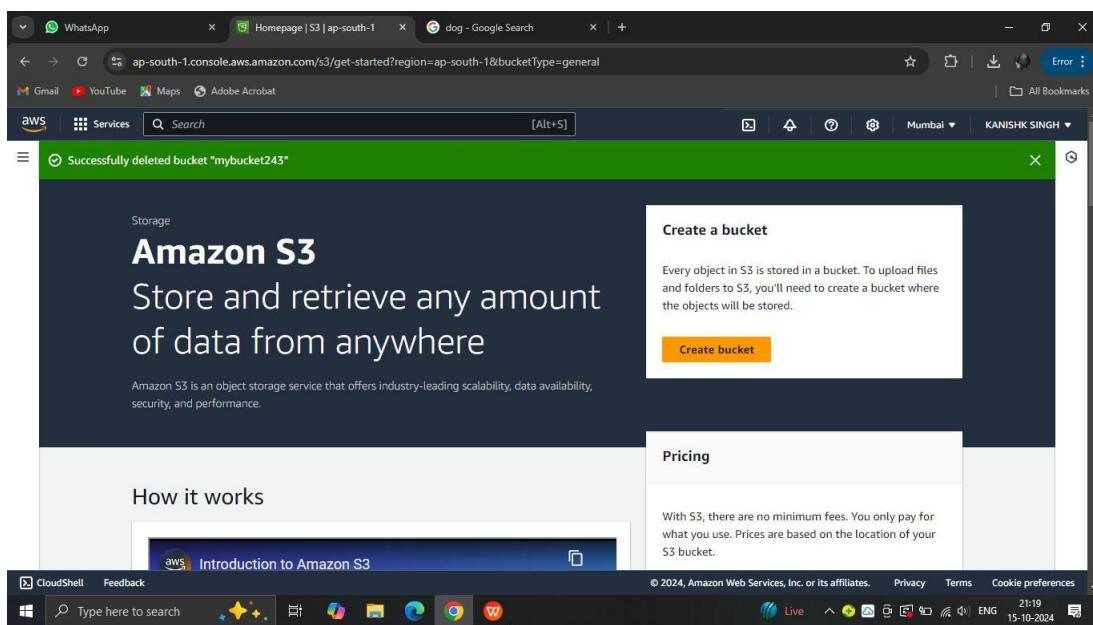
Step 9: Now go to the “Buckets” tab, select the bucket that you want to delete and Click on “Delete”.

The screenshot shows the AWS S3 console with the URL <https://ap-south-1.console.aws.amazon.com/s3/buckets?region=ap-south-1&bucketType=general®ion=ap-south-1>. The "Buckets" tab is selected. An account snapshot is shown with one general purpose bucket. The "General purpose buckets (1)" table has one row: "mybucket243" (Name), "Asia Pacific (Mumbai) ap-south-1" (AWS Region), "View analyzer for ap-south-1" (IAM Access Analyzer), and "October 15, 2024, 21:05:00 (UTC+05:30)" (Creation date). Action buttons include "Copy ARN", "Empty", "Delete", and "Create bucket". The bottom of the page includes standard AWS navigation links and a footer with copyright information.

- Type the name of your bucket to confirm the deletion and then click on “Delete bucket”.



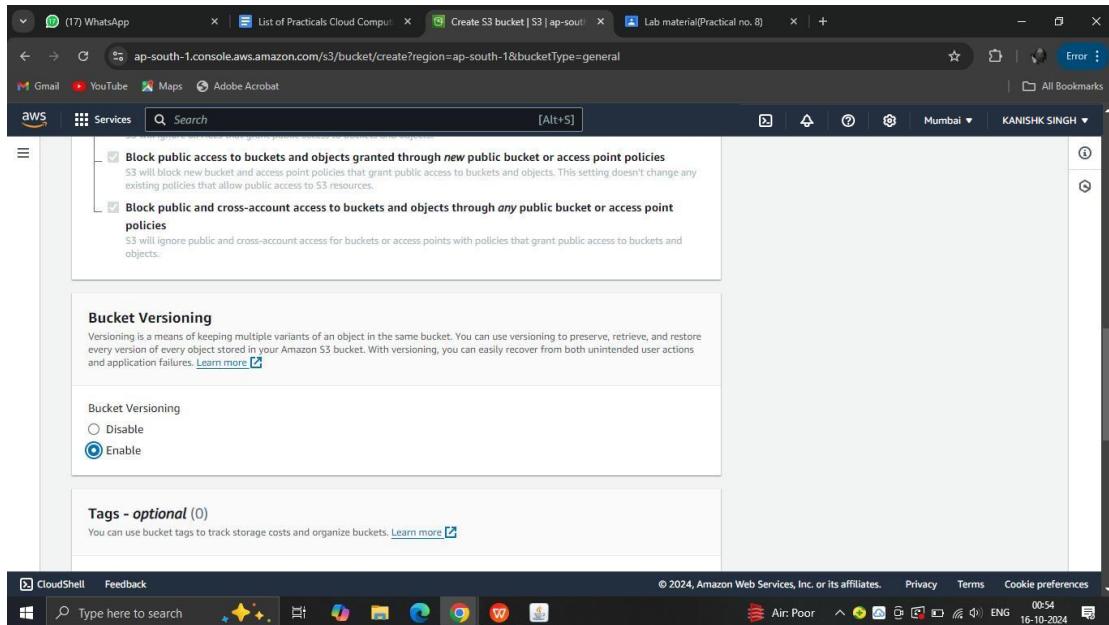
- Your bucket will be deleted successfully.



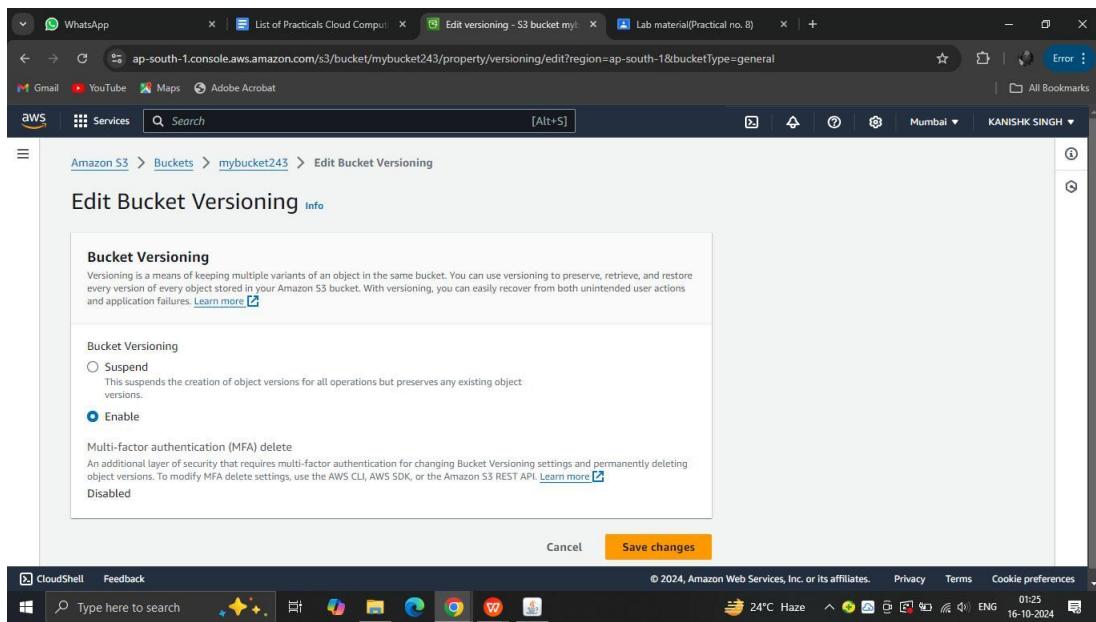
Practical 9

You are working as a cloud solutions architect for a company that stores and manages files in Amazon S3. The company has various types of data stored in different buckets, and they want to ensure that their data is protected against accidental deletion or overwrites. The team has decided to enable versioning for critical buckets to maintain historical versions of files.

Step 1: Create an S3 Bucket with Versioning Enabled. While creating a bucket scroll down to view the option “Bucket Versioning” and enable it.



- If not enabled while creating the bucket then you can go to the properties tab of your created bucket and then enable it.



Step 2: Upload a file and then overwrite the file by re-uploading the file with same name (different content). Amazon S3 will store both versions of the file.

The screenshot shows the AWS S3 console interface. At the top, there are three tabs: 'mybucket243 - S3 bucket | S3' (selected), 'List of Practicals Cloud Comput...', and 'Lab material(Practical no. 8)'. The browser address bar shows the URL: ap-south-1.console.aws.amazon.com/s3/buckets/mybucket243?region=ap-south-1&bucketType=general&tab=objects. The AWS logo and services navigation bar are at the top left. The user's name, KANISHK SINGH, is at the top right. The main content area displays two buckets: 'mybucket243' and 'mybucket243'. The 'mybucket243' bucket is selected. It shows one object named 'file_1.txt' with the following details:

Name	Type	Last modified	Size	Storage class
file_1.txt	txt	October 16, 2024, 01:29:04 (UTC+05:30)	1.9 KB	Standard

Below this, there is a 'CloudShell' tab and a Windows taskbar at the bottom.

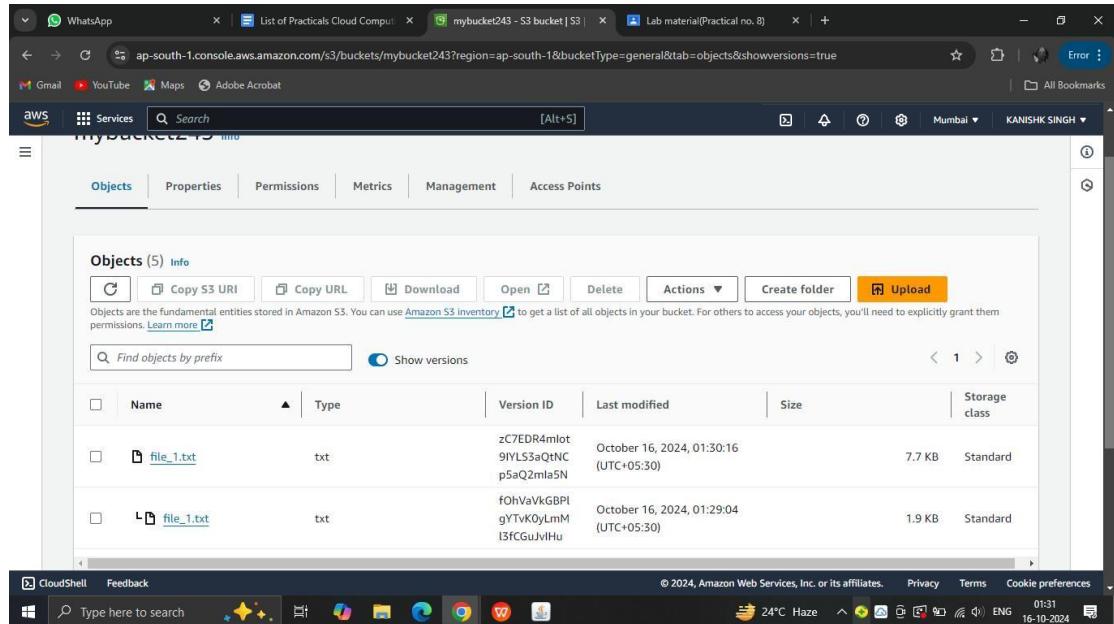
Second Screenshot:

The second screenshot shows the same AWS S3 console interface, but the 'mybucket243' bucket has been renamed to 'mybucket243'. The object 'file_1.txt' remains in the bucket. The details are as follows:

Name	Type	Last modified	Size	Storage class
file_1.txt	txt	October 16, 2024, 01:30:16 (UTC+05:30)	7.7 KB	Standard

Below this, there is a 'CloudShell' tab and a Windows taskbar at the bottom.

Step 3: In the bucket, click Show versions (located in the Objects tab) to view all versions of the file, including the original and overwritten versions.

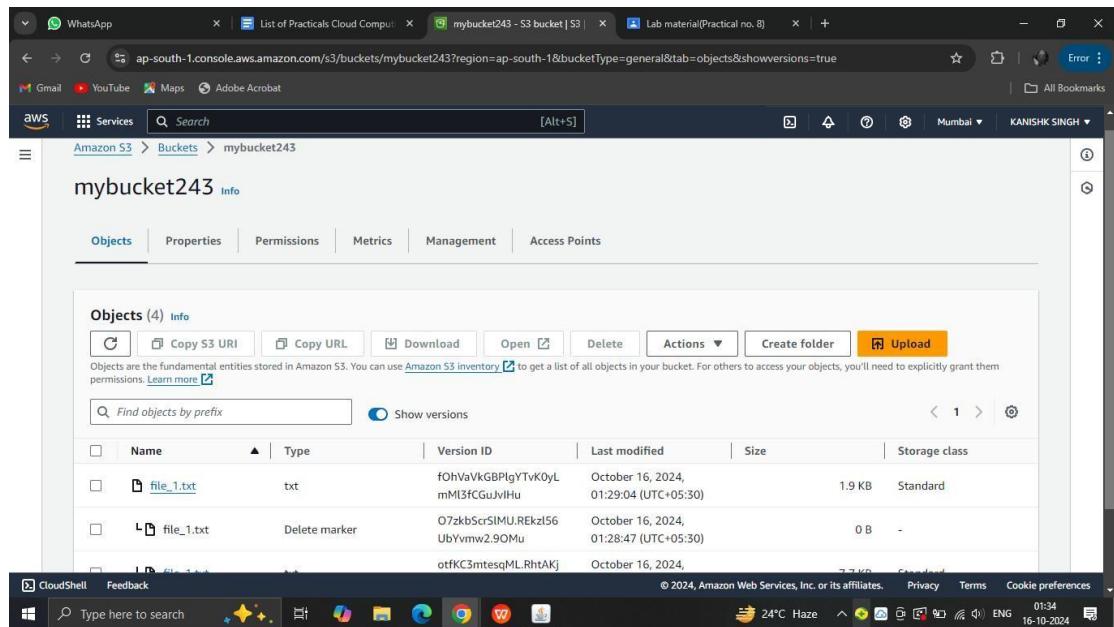


The screenshot shows the AWS S3 console with the 'Objects' tab selected. There are two versions of a file named 'file_1.txt' listed:

Name	Type	Version ID	Last modified	Size	Storage class
file_1.txt	txt	zC7EDR4mlot9YL53aQnCp5aQ2mla5N	October 16, 2024, 01:30:16 (UTC+05:30)	7.7 KB	Standard
file_1.txt	txt	fOhVaVkBPlgYTvK0yLmI3fcGuJvHu	October 16, 2024, 01:29:04 (UTC+05:30)	1.9 KB	Standard

Step 4: Delete Object (ex. Accidental Deletion)

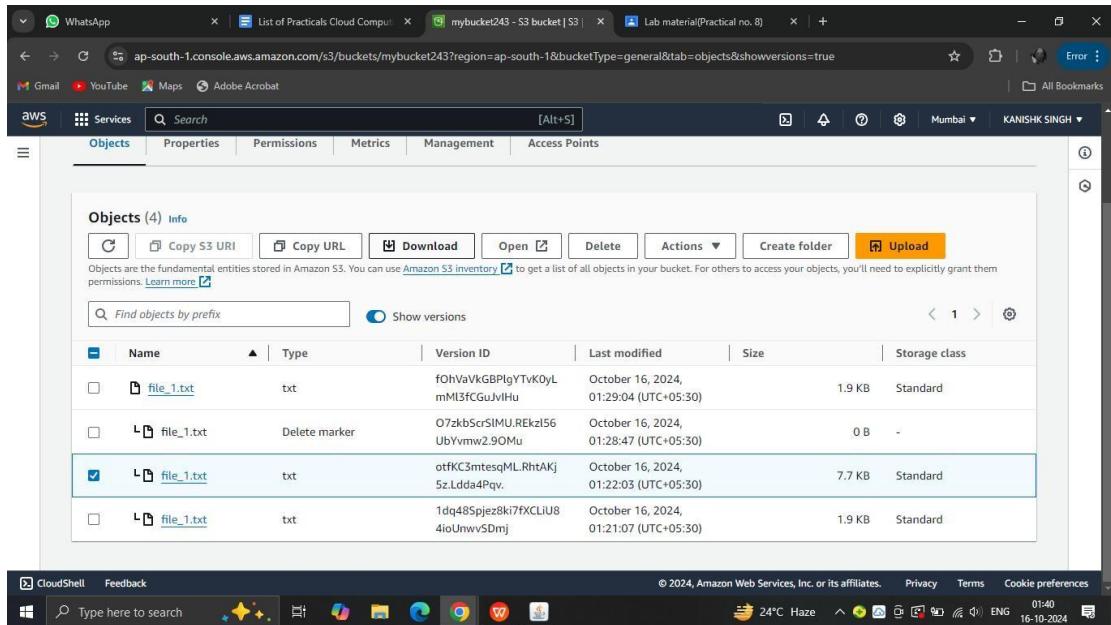
- Delete the File from the bucket.
- The file will not be completely removed. Instead, Amazon S3 will insert a delete marker, which hides the current version.



The screenshot shows the AWS S3 console with the 'Objects' tab selected. A 'Delete marker' has been inserted for the file 'file_1.txt'.

Name	Type	Version ID	Last modified	Size	Storage class
file_1.txt	txt	fOhVaVkBPlgYTvK0yLmI3fcGuJvHu	October 16, 2024, 01:29:04 (UTC+05:30)	1.9 KB	Standard
file_1.txt	Delete marker	O7zkbScr\$IMU.REkz!56UbYvmw2.9OMu	October 16, 2024, 01:28:47 (UTC+05:30)	0 B	-

- To Restore Previous Version, You will see a delete marker along with the previous versions of the file, Select a previous version and either download it or use the version ID to restore it.



The screenshot shows the AWS S3 console with the URL <https://ap-south-1.console.aws.amazon.com/s3/buckets/mybucket243?region=ap-south-1&bucketType=general&tab=objects&showversions=true>. The 'Objects' tab is selected. The table lists four objects:

Name	Type	Version ID	Last modified	Size	Storage class
file_1.txt	txt	fOhVaVkBGPPlgYTvK0yLmMI3fCGuJvIHu	October 16, 2024, 01:29:04 (UTC+05:30)	1.9 KB	Standard
file_1.txt	Delete marker	07zkbscr5IMU.REkzI56UbYvmw2.9OMu	October 16, 2024, 01:28:47 (UTC+05:30)	0 B	-
file_1.txt	txt	otFKC3mtesqML.RhtAKj5z.Ldda4Pqv.	October 16, 2024, 01:22:03 (UTC+05:30)	7.7 KB	Standard
file_1.txt	txt	1d4q85pjczk7FXCLIU84ioUnwvSDmj	October 16, 2024, 01:21:07 (UTC+05:30)	1.9 KB	Standard

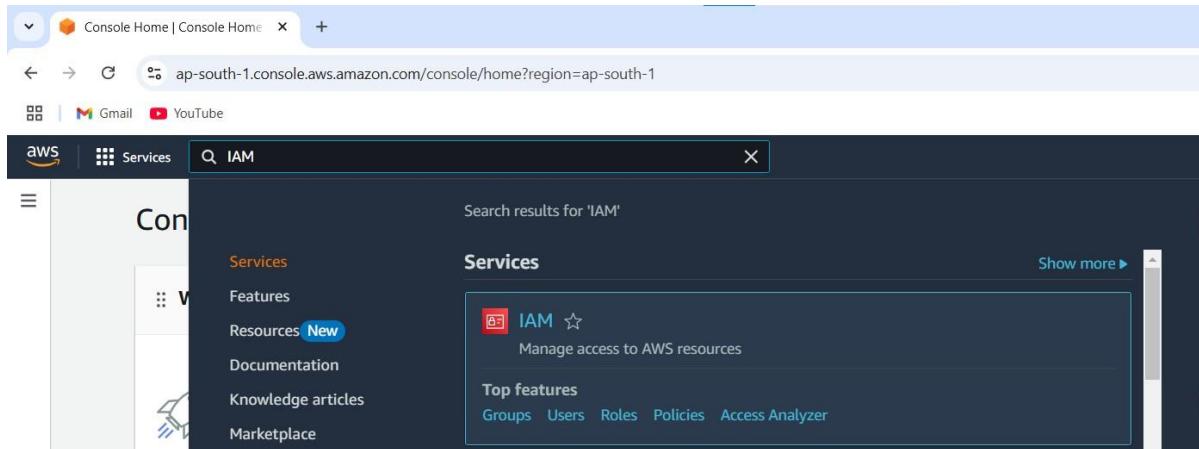
The third row, which contains the 'Delete marker', has a checked checkbox next to it. The bottom of the screen shows the Windows taskbar with various icons and system status.

Practical 10

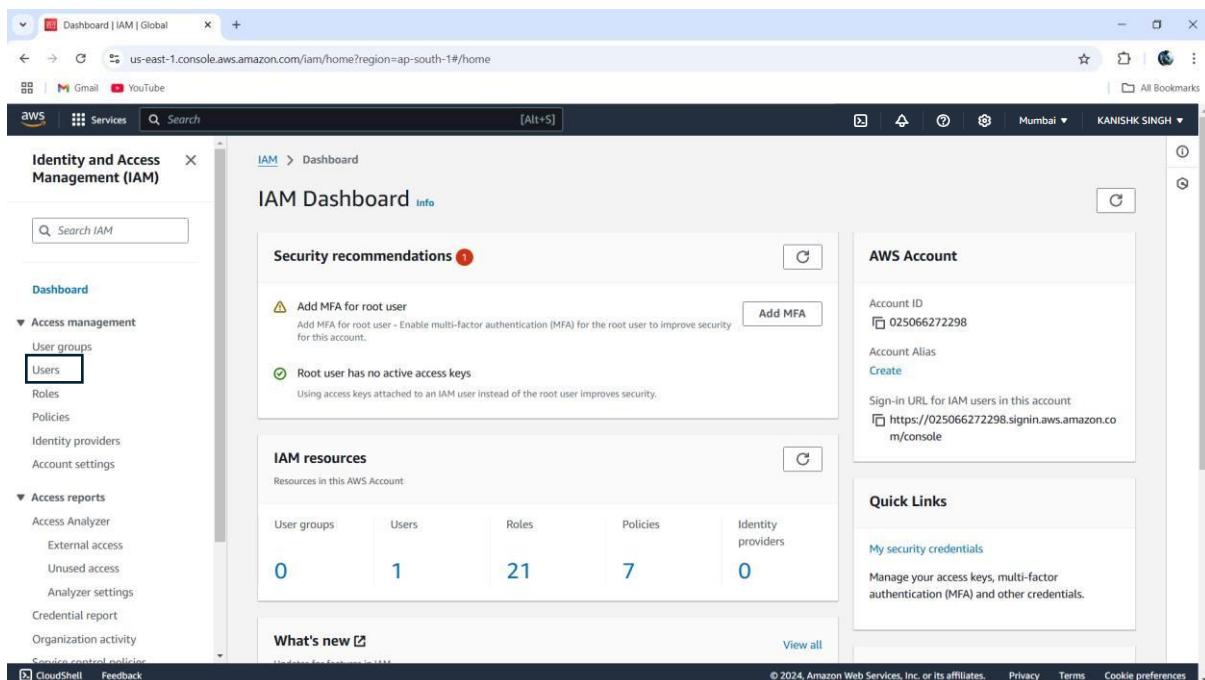
Create an IAM account on AWS. Analyse the IAM services. [Paste the screenshot in a practical file].

Step1: Go to the Amazon web services Sign-In console. Try signing in with your root username and password.

Step 2: Search in the search box entering "IAM user" as shown in the image.



Step 3: After you enter the IAM user page, you can see the IAM dashboard then go to the "users" option by clicking on it.



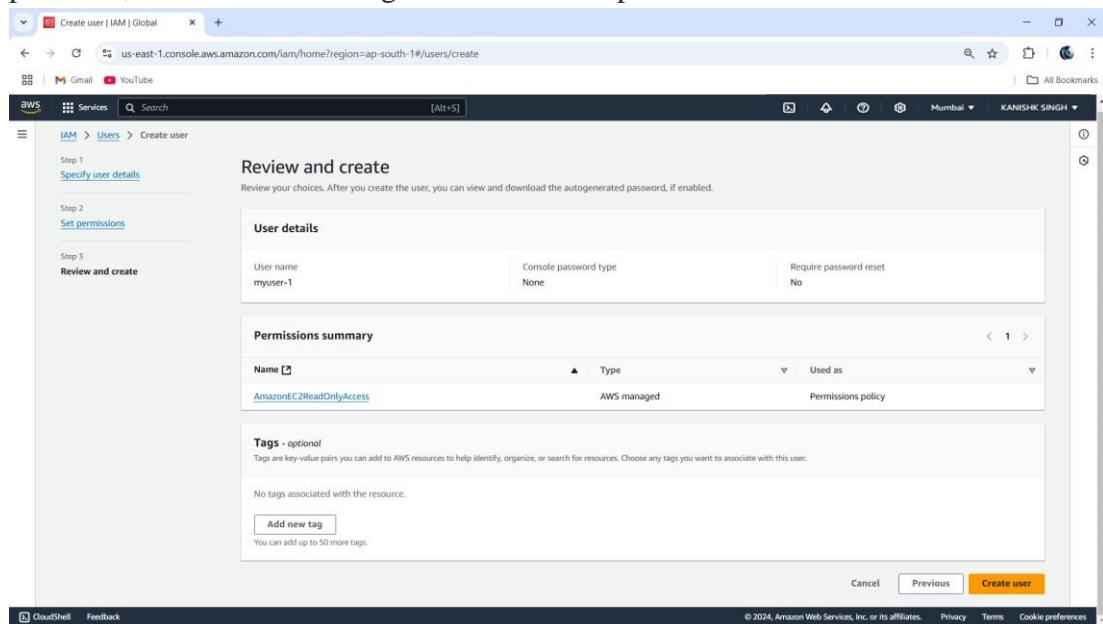
Step 4: In the user sections try creating a user by clicking on the "create user" button, now you will follow through with 3 phases for creating an IAM user.

The screenshot shows the AWS IAM 'Users' page. On the left, there's a sidebar with 'Identity and Access Management (IAM)' and a search bar. The main area has a heading 'Users (1) Info' with a note: 'An IAM user is an identity with long-term credentials that is used to interact with AWS in an account.' Below this is a table with one row for 'cognitoUser'. The table columns include 'User name', 'Path', 'Group', 'Last activity', 'MFA', 'Password age', and 'Console last sign-in'. A 'Create user' button is located at the top right of the table area.

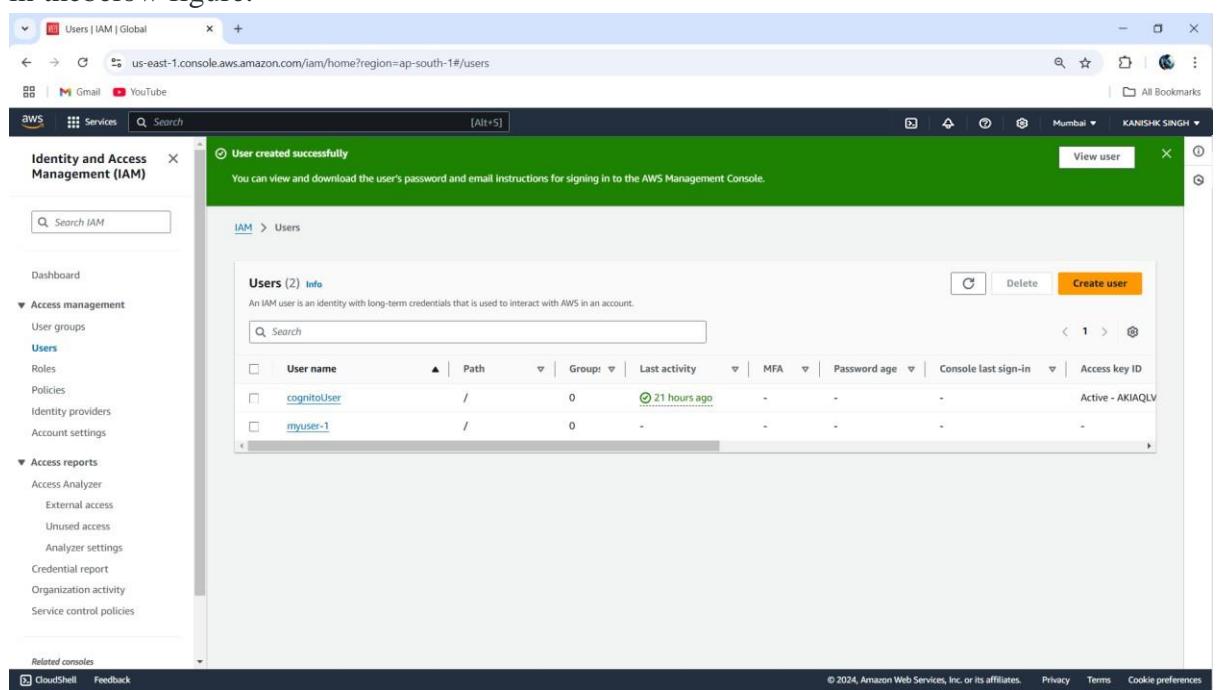
- i. **Specifying the user details:** Provide the username that you would like to create as an IAM user.
- ii. **Setup the permissions:**
 - Select the attach policies directly option, It's meant to assign the policies individually for the IAM user.
 - In the Permissions policies section go to the search box and enter EC2ReadOnly, you can see the policy name with AmazonEC2ReadOnly select it to provide this policy access to creating IAM user.
 - Similarly you can add on whatever permissions that you would like from the pre-created policies as per the requirement.
 - They will be a case in which we can't find the require based policies in that moment, you have to create policies as your own.

The screenshot shows the 'Set permissions' step of the IAM User creation wizard. It has three tabs: Step 1 (Specify user details), Step 2 (Set permissions - currently selected), and Step 3 (Review and create). Under 'Permissions options', there are three choices: 'Add user to group', 'Copy permissions', and 'Attach policies directly'. The 'Attach policies directly' option is selected. Below this, the 'Permissions policies' section shows a table with one row for 'AmazonEC2ReadOnlyAccess'. At the bottom, there's a note about setting a permissions boundary.

- iii. **Review and create:** In this step you have to review the information that you provided, once verified then go for the create option.



Finally, the IAM user has been created and you can see it on the dashboard as shown in the below figure.



Practical 11

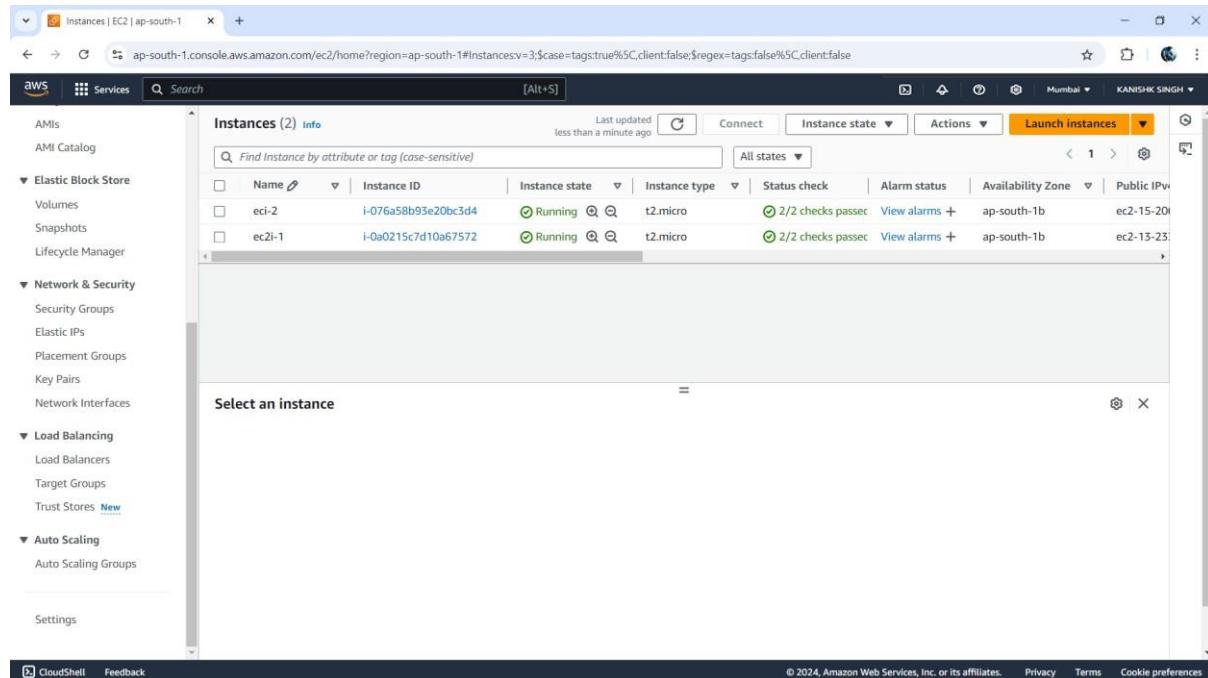
Perform Load Balancing on various virtual machines using AWS services.

Step 1: First, we have to Log in to the AWS account.

Step 2: Now here we must verify the region in which the infrastructure will be created in the upper right corner and set the region according to the requirements.

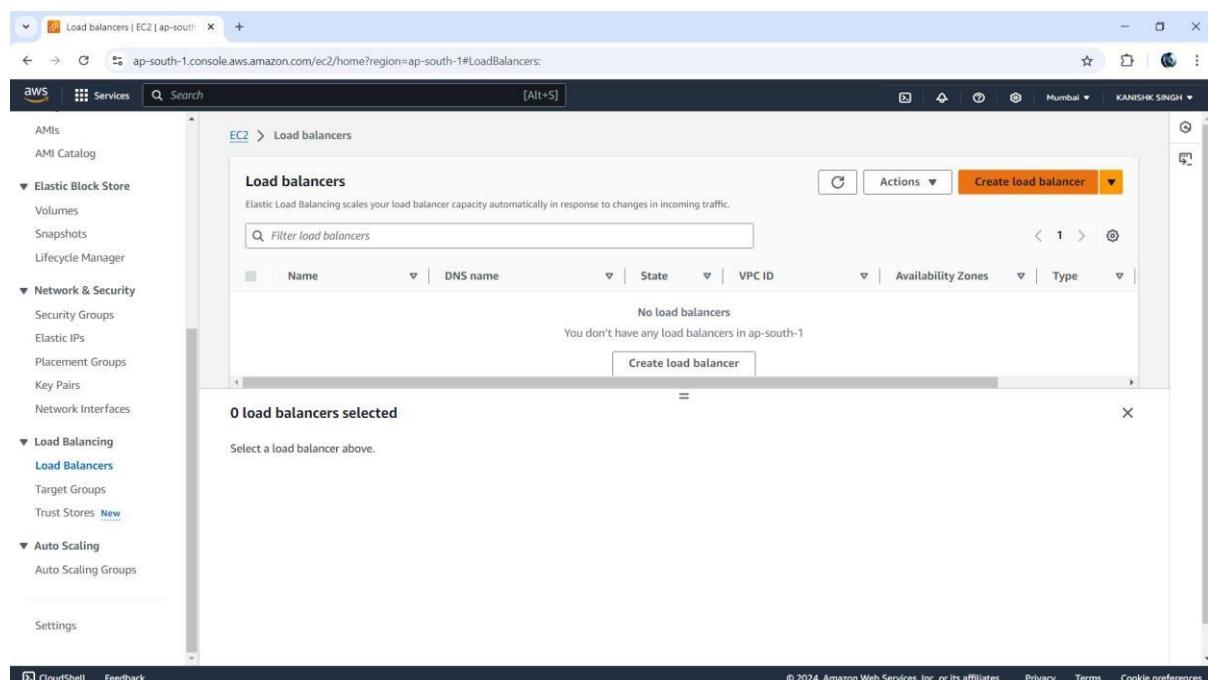
Step 3: Now select the EC2 Services.

Step 4: on left bar scroll to the bottom and select load balancers.



The screenshot shows the AWS EC2 Instances page. On the left sidebar, under the 'Load Balancing' section, the 'Load Balancers' option is selected. The main content area displays a table of instances. There are two entries: 'eci-2' and 'ec2i-1'. Both instances are listed as 'Running' with a status check of '2/2 checks passed'. They are both assigned to the 'ap-south-1b' availability zone and have public IP addresses starting with 'ec2-15-20' and 'ec2-13-23' respectively. A modal window titled 'Select an instance' is open at the bottom, listing the same two instances.

Step 5: Now here we have to press the button to create a load Balancer.



The screenshot shows the AWS Load Balancers page. On the left sidebar, under the 'Load Balancing' section, the 'Load Balancers' option is selected. The main content area has a heading 'Load balancers' with a sub-instruction: 'Elastic Load Balancing scales your load balancer capacity automatically in response to changes in incoming traffic.' Below this is a table with a single row: 'No load balancers'. A message states 'You don't have any load balancers in ap-south-1'. At the bottom of the table is a large orange button labeled 'Create load balancer'. A modal window titled '0 load balancers selected' is open at the bottom, with the instruction 'Select a load balancer above.'

Step 6: Now here we have to select the type of load balancer. Here we are using applicationload balancer.

Compare and select load balancer

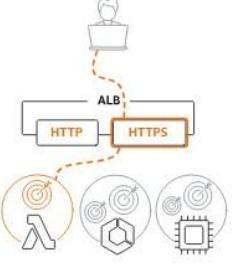
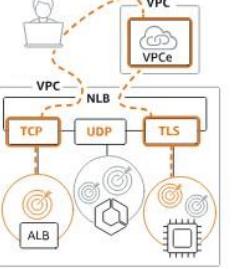
ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#SelectC

aws Services Search [Alt+S]

EC2 > Load balancers > Compare and select load balancer type

Compare and select load balancer type

A complete feature-by-feature comparison along with detailed highlights is also available. [Learn more](#)

Load balancer types		
Application Load Balancer Info  <p>Choose an Application Load Balancer when you need a flexible feature set for your applications with HTTP and HTTPS traffic. Operating at the request level, Application Load Balancers provide advanced routing and visibility features targeted at application architectures, including microservices and containers.</p> <p>Create</p>	Network Load Balancer Info  <p>Choose a Network Load Balancer when you need ultra-high performance, TLS offloading at scale, centralized certificate deployment, support for UDP, and static IP addresses for your applications. Operating at the connection level, Network Load Balancers are capable of handling millions of requests per second securely while maintaining ultra-low latencies.</p> <p>Create</p>	Gateway Load Balancer Info  <p>Choose a Gateway Load Balancer when you need to deploy and manage a fleet of third-party virtual appliances that support GENEVE. These appliances enable you to improve security, compliance, and policy controls.</p> <p>Create</p>
<p>► Classic Load Balancer - previous generation</p>		

[Close](#)

Step 7: Load Balancer configuration:

- **Basic configuration:** give load balancer name, select scheme and Load balancer IP address type

Basic configuration

Load balancer name
Name must be unique within your AWS account and can't be changed after the load balancer is created.
A maximum of 32 alphanumeric characters including hyphens are allowed, but the name must not begin or end with a hyphen.

Scheme [Info](#)
Scheme can't be changed after the load balancer is created.

Internet-facing
An internet-facing load balancer routes requests from clients over the internet to targets. Requires a public subnet. [Learn more](#)

Internal
An internal load balancer routes requests from clients to targets using private IP addresses. Compatible with the IPv4 and Dualstack IP address types.

Load balancer IP address type [Info](#)
Select the front-end IP address type to assign to the load balancer. The VPC and subnets mapped to this load balancer must include the selected IP address types. Public IPv4 addresses have an additional cost.

IPv4
Includes only IPv4 addresses.

Dualstack
Includes IPv4 and IPv6 addresses.

- **Network mapping:** select a VPC and availability zones (at least two).

Network mapping [Info](#)

The load balancer routes traffic to targets in the selected subnets, and in accordance with your IP address settings.

VPC [Info](#)

The load balancer will exist and scale within the selected VPC. The selected VPC is also where the load balancer targets must be hosted unless routing to Lambda or on-premises targets, or if using VPC peering. To confirm the VPC for your targets, view [target groups](#). For a new VPC, create a VPC

-
vpc-032c657e9b79d5b93
IPv4 VPC CIDR: 172.31.0.0/16



Mappings [Info](#)

Select at least two Availability Zones and one subnet per zone. The load balancer routes traffic to targets in these Availability Zones only. Availability Zones that are not supported by the load balancer or the VPC are not available for selection.

Availability Zones

ap-south-1a (aps1-az1)

Subnet

subnet-0ac51e195152b2b6e
IPv4 subnet CIDR: 172.31.32.0/20

The selected subnet is not a private subnet. This means that your internal load balancer can receive internet traffic.
You can proceed with this selection; however, to prevent internet traffic from reaching your load balancer, you must choose a private subnet or update this subnet's route table in the [VPC console](#).

IPv4 address

Assigned from CIDR 172.31.32.0/20

ap-south-1b (aps1-az3)

Subnet

subnet-01c88a9a3c044a1e6
IPv4 subnet CIDR: 172.31.0.0/20

The selected subnet is not a private subnet. This means that your internal load balancer can receive internet traffic.
You can proceed with this selection; however, to prevent internet traffic from reaching your load balancer, you must choose a private subnet or update this subnet's route table in the [VPC console](#).

IPv4 address

Assigned from CIDR 172.31.0.0/20

ap-south-1c (aps1-az2)

- **Security groups:** select the set firewall rules.

Security groups Info

A security group is a set of firewall rules that control the traffic to your load balancer. Select an existing security group, or you can create a new security group [\[Create\]](#).

Security groups

Select up to 5 security groups

default sg-0cb64273173b37668 VPC: vpc-032c657e9b79d5b93

- **Listeners and routing:** select protocol, port number, select target group, if not then create one.

Listeners and routing Info

A listener is a process that checks for connection requests using the port and protocol you configure. The rules that you define for a listener determine how the load balancer routes requests to its registered targets.

▼ Listener **HTTP:80**

Protocol Port Default action Info

HTTP	: 80	Forward to myTargetGroup Target type: Instance, IPv4	HTTP	[Edit]
------	------	--	------	--------

Create target group [\[Create\]](#)

Listener tags - optional

Consider adding tags to your listener. Tags enable you to categorize your AWS resources so you can more easily manage them.

Add listener tag

You can add up to 50 more tags.

Add listener

- **Creating a target group:**

Step i: Basic configuration: select target type, target group name, protocol and port number, IP address type, VPC, protocol version, and keep health as default and then click on “next”.

Basic configuration

Settings in this section can't be changed after the target group is created.

Choose a target type

Instances

- Supports load balancing to instances within a specific VPC.
- Facilitates the use of Amazon EC2 Auto Scaling [\[Create\]](#) to manage and scale your EC2 capacity.

IP addresses

- Supports load balancing to VPC and on-premises resources.
- Facilitates routing to multiple IP addresses and network interfaces on the same instance.
- Offers flexibility with microservice based architectures, simplifying inter-application communication.
- Supports IPv6 targets, enabling end-to-end IPv6 communication, and IPv4-to-IPv6 NAT.

Lambda function

- Facilitates routing to a single Lambda function.
- Accessible to Application Load Balancers only.

Application Load Balancer

- Offers the flexibility for a Network Load Balancer to accept and route TCP requests within a specific VPC.
- Facilitates using static IP addresses and PrivateLink with an Application Load Balancer.

Target group name

myTargetGroup

A maximum of 32 alphanumeric characters including hyphens are allowed, but the name must not begin or end with a hyphen.

Protocol : Port

Choose a protocol for your target group that corresponds to the Load Balancer type that will route traffic to it. Some protocols now include anomaly detection for the targets and you can set mitigation options once your target group is created. This choice cannot be changed after creation

HTTP	: 80
------	------

1-65535

IP address type

Only targets with the indicated IP address type can be registered to this target group.

IPv4

Each instance has a default network interface (eth0) that is assigned the primary private IPv4 address. The instance's primary private IPv4 address is the one that will be applied to the target.

IPv6

Each instance you register must have an assigned primary IPv6 address. This is configured on the instance's default network interface (eth0). Learn more [\[More\]](#)

VPC

Select the VPC with the instances that you want to include in the target group. Only VPCs that support the IP address type selected above are available in this list.

- vpc-032c657e9b79d5b93
- IPv4 VPC CIDR: 172.31.0.0/16

Protocol version

HTTP1

Sends requests to targets using HTTP/1.1. Supported when the request protocol is HTTP/1.1 or HTTP/2.

HTTP2

Sends requests to targets using HTTP/2. Supported when the request protocol is HTTP/2 or gRPC, but gRPC-specific features are not available.

gRPC

Sends requests to targets using gRPC. Supported when the request protocol is gRPC.

Health checks

The associated load balancer periodically sends requests, per the settings below, to the registered targets to test their status.

Health check protocol

HTTP

Health check path

Use the default path of "/" to perform health checks on the root, or specify a custom path if preferred.

/

Up to 1024 characters allowed.

► Advanced health check settings

Step ii: select instances and include it in pending below list and then register pending targets and then create target group.

The screenshot shows the AWS EC2 console interface. In the 'Available instances' section, there are two instances listed: 'ec2-2' and 'ec2-1', both in the 'Running' state. In the 'Targets' section, the same two instances are listed with port 80 selected. At the bottom, there is a 'Pending' button, which is typically used to register pending targets for a target group.

Step iii: after successfully completing the creation of group you will see:

The screenshot shows the AWS Target Groups console for the 'myTargetGroup'. The 'Details' section displays the following information:

- Protocol: Port HTTP: 80
- Protocol version: HTTP1
- VPC: vpc-032c657e9b79d5b93
- Total targets: 0
- Healthy: 0
- Unhealthy: 0
- Unused: 0
- Initial: 0
- Draining: 0

Step 8: keep rest settings as default and then create load balancer. after successfully creation you will see:

The screenshot shows the AWS EC2 Load Balancers console. A success message at the top states: "Successfully created load balancer: myLoadBalancer. It might take a few minutes for your load balancer to fully set up and route traffic. Targets will also take a few minutes to complete the registration process and pass initial health checks." The main view shows the details of the load balancer "myLoadBalancer". Key information includes:

- Load balancer type:** Application
- Status:** Provisioning
- VPC:** vpc-032c657e9b79d5b93
- Load balancer IP address type:** IPv4
- Scheme:** Internal
- Hosted zone:** ZP97RAFLXTNZK
- Availability Zones:** subnet-0ac51e195152b2b6e (ap-south-1a), subnet-01c88a9a3c044a1e6 (ap-south-1b)
- Date created:** October 17, 2024, 17:18 (UTC+05:30)
- Load balancer ARN:** arn:aws:elasticloadbalancing:ap-south-1:025066272298:loadbalancer/app/myLoadBalancer/81410fbdb803b61d
- DNS name:** internal-myLoadBalancer-1876732000.ap-south-1.elb.amazonaws.com (A Record)

Below the details, there are tabs for "Listeners and rules", "Network mapping", "Resource map - new", "Security", "Monitoring", "Integrations", "Attributes", and "Tags".

Step 9: after creation the state of balancer will switch from provisioning to active state insometime.

Step 10: when the state is active select the balancer and copy its DNS.

The screenshot shows the AWS EC2 Load Balancers console. The "Load balancers" table lists one item: "myLoadBalancer" (Status: Active). The "Actions" dropdown menu for this item has an option "Create load balancer". Below the table, the "Load balancer: myLoadBalancer" details page is shown. The "Details" section includes:

- Load balancer type:** Application
- Status:** Active
- VPC:** vpc-032c657e9b79d5b93
- Load balancer IP address type:** IPv4
- Scheme:** Internal
- Hosted zone:** ZP97RAFLXTNZK
- Availability Zones:** subnet-0ac51e195152b2b6e (ap-south-1a), subnet-01c88a9a3c044a1e6 (ap-south-1b)
- Date created:** October 17, 2024, 17:18 (UTC+05:30)
- Load balancer ARN:** arn:aws:elasticloadbalancing:ap-south-1:025066272298:loadbalancer/app/myLoadBalancer/81410fbdb803b61d
- DNS name:** internal-myLoadBalancer-1876732000.ap-south-1.elb.amazonaws.com (A Record)

A "Copy DNS name of load balancer myLoadBalancer to clipboard" button is visible below the DNS name field.

Step 11: paste that link in new page to check.