CHRIST
(DEEMED TO BE UNIVERSITY)
BANGALORE · INDIA

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Cloud computing

Lab-2

1. Describe IaaS

IaaS (Infrastructure as a Service) in AWS is like renting a virtual data center. Instead of buying and managing your own servers, storage, and networking equipment, you provision these resources in the cloud on a pay-as-you-go basis. This frees you from upfront costs and allows you to scale your resources up or down quickly to meet your application's needs. AWS offers a wide range of IaaS services, including:

- **Amazon EC2 (Elastic Compute Cloud):** Provides virtual servers with various configurations (CPU, memory, storage) to run your applications.
- **Amazon S3 (Simple Storage Service):** Highly scalable object storage for any type of data, from backups to website content.
- **Amazon EBS (Elastic Block Store):** Block-level storage for attaching high-performance disk volumes to your EC2 instances.
- **Amazon VPC (Virtual Private Cloud):** Lets you create a logically isolated network segment within the AWS cloud for secure deployment of your resources.

2. List the Compute and Storage services available in AWS and GCP.

a. Compute

i. **AWS:**

1. **Amazon EC2 (Elastic Compute Cloud):** The core compute service, offering a vast selection of virtual machine configurations for diverse workloads. You have full control over the operating system and instance settings.
2. **AWS Lambda:** Serverless compute service ideal for short-lived tasks triggered by events. You only pay for the resources your code consumes, making it cost-effective for spiky workloads.

ii. **GCP:**

1. **Google Compute Engine:** Similar to EC2, offering virtual machines with various configurations. GCP integrates well with other Google Cloud services.
2. **Google Kubernetes Engine (GKE):** Managed Kubernetes service for deploying and managing containerized applications. GKE simplifies container orchestration, a complex task in traditional deployments.

b. Storage Services:

i. **AWS:**

1. **Amazon S3 (Simple Storage Service):** Object storage designed for scalability and durability. Ideal for storing large datasets, backups, and static website content.
2. **Amazon EBS (Elastic Block Store):** Block storage for attaching high-performance disks to EC2 instances. EBS provides persistent storage for applications that require frequent disk access.

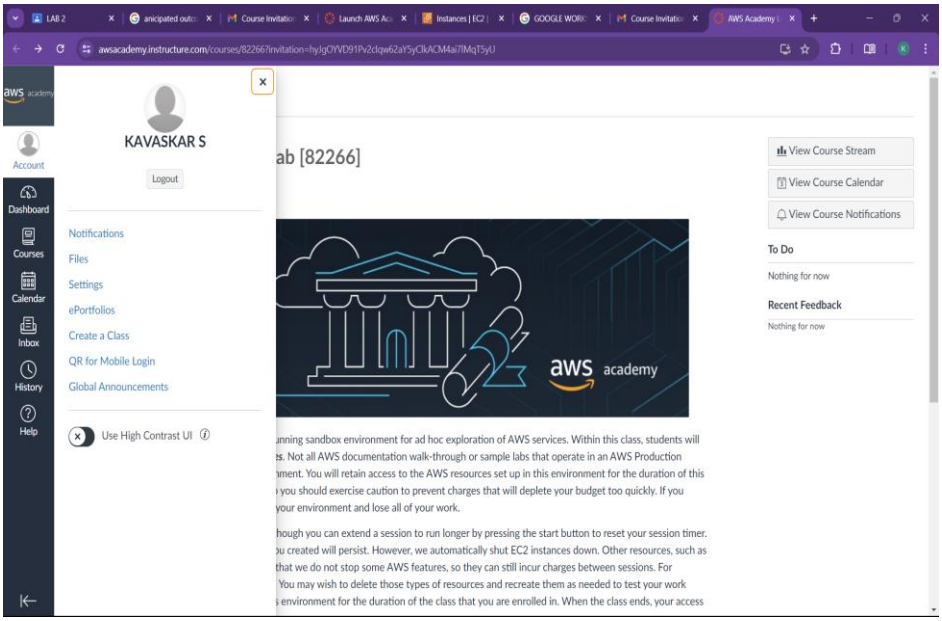
ii. **GCP:**

1. **Google Cloud Storage:** Similar to S3, offering object storage for various data needs. Integrates seamlessly with other GCP services.
2. **Google Persistent Disk:** Block storage for persistent data attached to virtual machines in Google Compute Engine. Offers similar functionality to Amazon EBS.

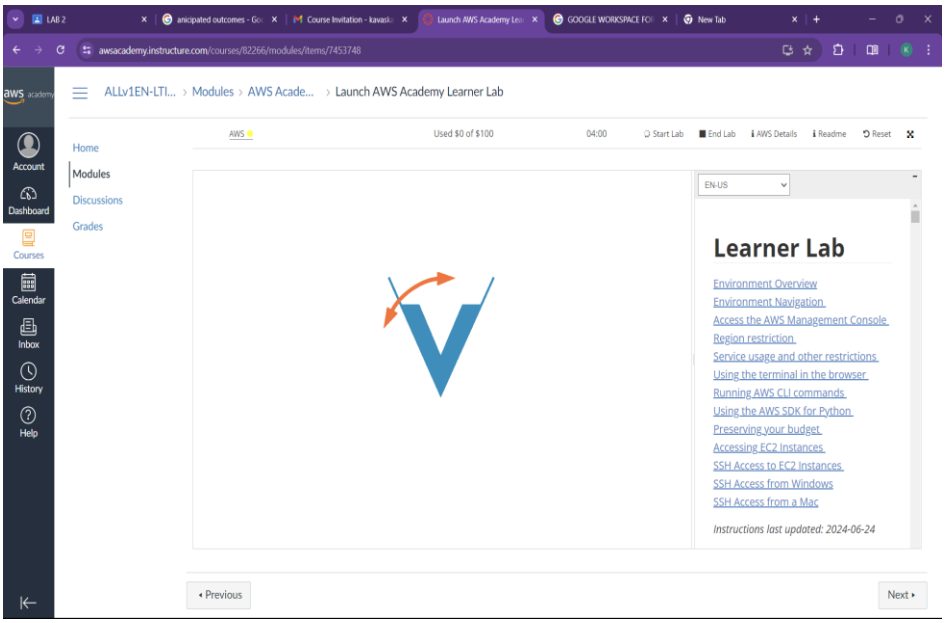
3. **Create 2 Identical AWS EC2 Instances (Instance Name: Regno_EC2_VM1, Regno_EC2_VM2) and install the necessary packages to execute a program of your choice in 'Regno_EC2_VM1'.**

STEPS:

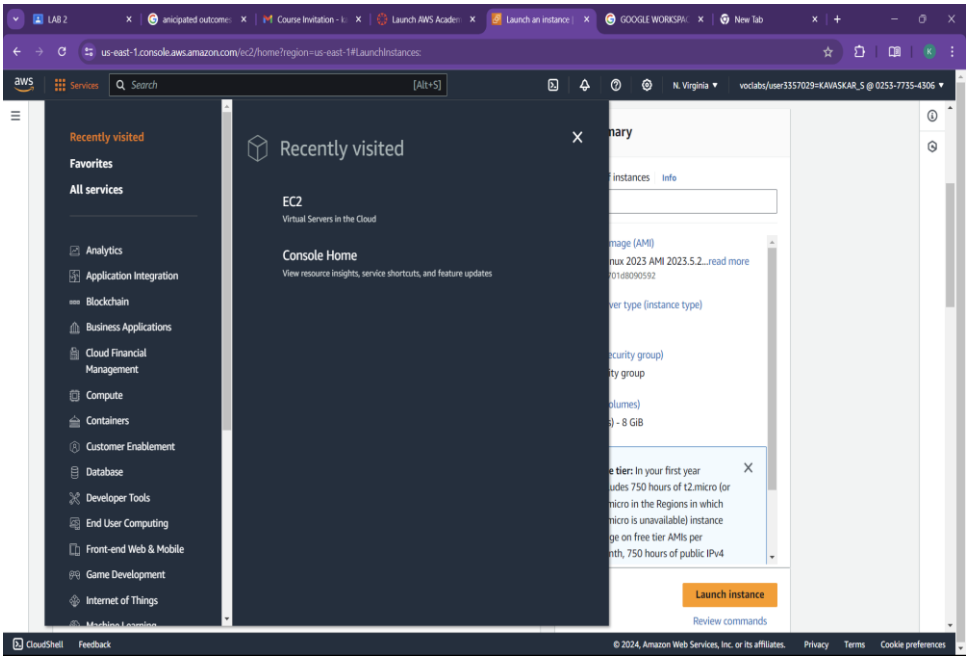
a. Login to Learner Lab



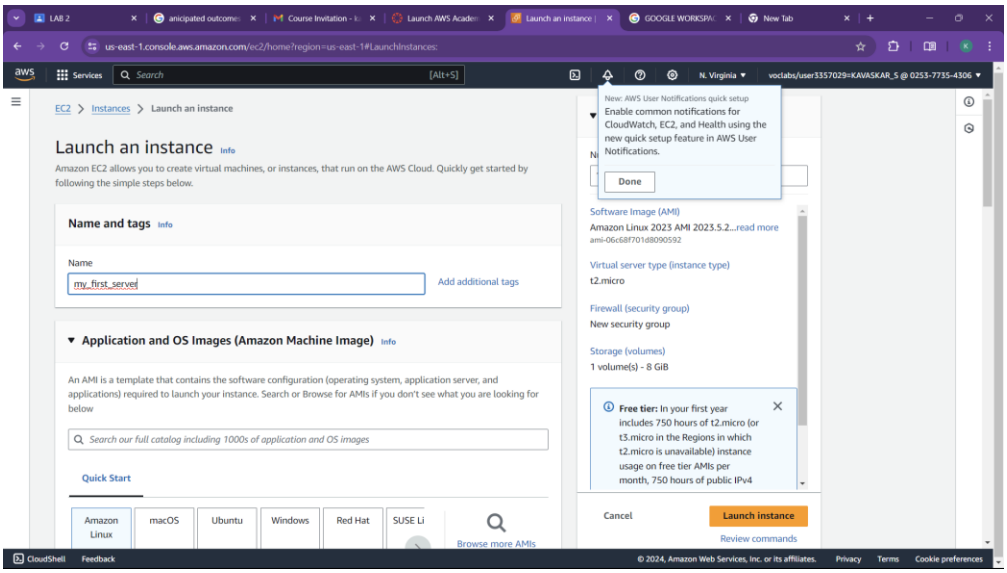
b. Launch Learner Lab



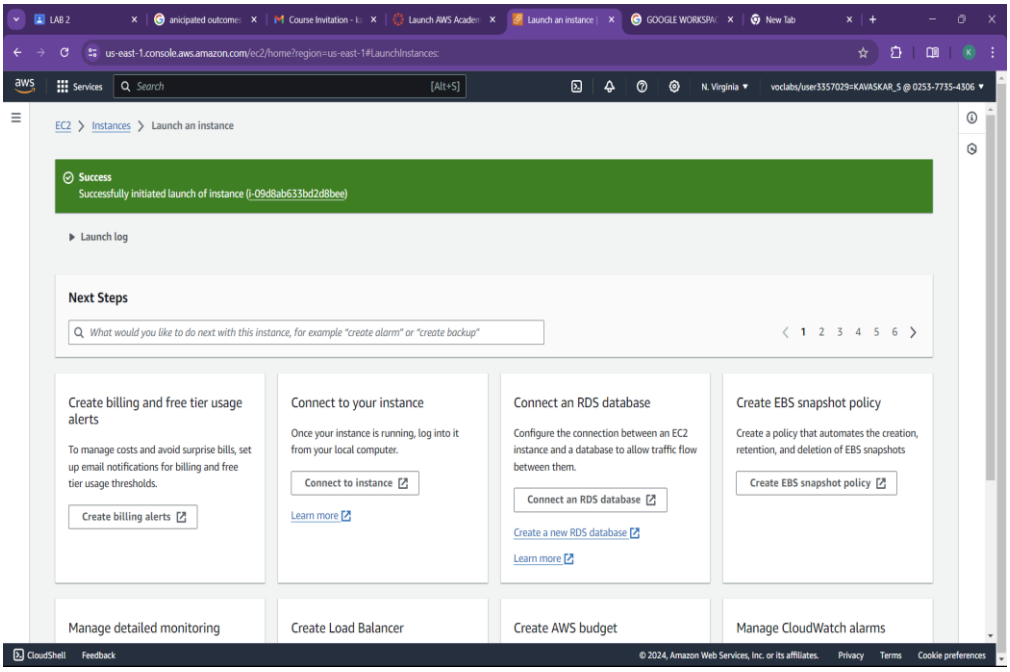
c. Go to services and Select EC2



d. Give a name to the instance and select further options



e. Click Launch instance to create to create a instance



f. Finally go the instance dashboard to see the list of instance created