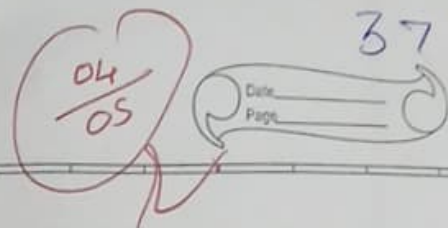


Lawkik Padgaonkar DISC
Assignment - 1



Use S3 buckets and host Video Streaming

1. Create S3 bucket
Log into AWS Management Console
Go to S3 and click bucket.
Under Object Ownership, leave it as ACLs disabled (for simplicity).
Block Public Access Settings: Uncheck Block all public access if you want public access to the video.
Click Create bucket.
2. Upload Video Files to the S3 bucket.
After the bucket is created, click on the bucket.
Click Upload to add your video files
Ensure the files are uploaded with the right MIME
3. Set permission for the video
To make the videos publicly accessible:
Go to the permissions tab of the bucket.
Under Bucket Policy, add the following
4. Enabling S3 Static website Hosting
In S3 bucket as a static website
Go to properties tab.
scroll to Static website hosting Click edit
Enable static website hosting and specify index document

5. Creating CloudFront Distribution

Go to CloudFront from AWS Console

Click create distribution

Under Origin select your S3 bucket from the list

Origin Path: leave empty

Cache Behavior:

Choose Use origin cache header or specify Custom TTL Settings for how long content is cached at edge location.

6. Embed or Access Video Streaming

You can now use following code to embed your video

```
< video width = "640" height = "480" controls >  
  < source src = "YOUR SOURCE of VIDEO" >  
</ video >
```


Adv. deeps assignment

1. BMW Case Study (AWS)

BMW adopted AWS to enhance its customer experience by leveraging AWS's cloud services for connected vehicles, data analytics, and mobility services. BMW uses AWS for:

- > **Scalability:** AWS allows BMW to scale up their connected car services to handle millions of vehicle and customers.
- > **Data Storage:** BMW uses Amazon S3 for storing vehicles and sensor data from millions of cars globally.
- > **Analytics and AI:** By using Amazon Kinesis, BMW streams and processes real-time vehicle data to provide advanced analytics, improving services like predictive maintenance and personalized experiences.
- > **Innovation:** With AWS IoT services, BMW enhances connected vehicle functionalities, offering features like remote vehicle updates, vehicle monitoring.

Hotstar Case study (AWS)

Hotstar, one of India's leading platforms, leverages AWS to handle high traffic, especially during live sports events like IPL cricket matches:

- > **Scalability:** Hotstar uses AWS to scale their services in real-time to handle over 10 million concurrent users.

- > Elastic Load Balancing: AWS Elastic Load Balancing ensures seamless content delivered by distributing incoming application traffic across multiple servers.
- > Global Reach: By utilizing AWS CloudFront (CDN), Hotstar ensures that user around the world can stream content without latency.
- > Data analytics: AWS Lambda and Kinesis are used for processing data streams, allowing real time analytics.

Q.3: Why Kubernetes and advantages and disadvantages of Kubernetes. Explain how adidas uses Kubernetes.

→ Kubernetes is an open-source container orchestration platform used for automating the deployment, scaling and management of containerized applications.

Advantages of Kubernetes

- > Scalability: Kubernetes scales application up or down automatically, depending on traffic.
- > Portability: Kubernetes works on different environments (on-premises, public, or hybrid clouds), offering flexibility.
- > High Availability: It ensures high availability of applications by maintaining multiple container replicas and providing self-healing by replacing failed containers.

Automation: Kubernetes automates deployment and updates, making continuous delivery easier.

Resource Management: It efficiently manages computing resources, ensuring optimal use of CPU, memory and storage.

Disadvantages of Kubernetes:

- > **Complexity:** Kubernetes has a steep learning curve, requiring knowledge of containers, networks, and infrastructure.
- > **Overhead:** Managing Kubernetes can add overhead in terms of resource usage and operational costs.
- > **Security:** Configuring and maintaining security for Kubernetes cluster can be challenging, especially when deploying at scale.

How Adidas Uses Kubernetes

Adidas uses Kubernetes to improve the agility and performance of its e-commerce platforms.

Some highlights include:

- > **Microservices Architecture:** Adidas migrated its monolithic e-commerce application to microservices.
- > **Scalability:** During high-traffic events, like product launches, Adidas can dynamically scale its infrastructure using Kubernetes, ensuring that the site remains responsive.
- > **Cloud Agnosticism:** Adidas runs its Kubernetes cluster across multiple cloud providers, enhancing availability and performance.

4. What is Nagios, and how is it used in E-services?
- Nagios is an open-source monitoring tool used for monitoring the performance, health, and availability of IT infrastructure. It sends alerts when potential issues are detected, enabling proactive management of systems.

How Nagios is Used in E-Services.

- > Monitoring Uptime: Nagios monitors the availability and uptime of websites, applications, and servers to ensure seamless access for users.
- > Performance Monitoring: It tracks the performance of servers, databases, and applications, notifying administrators if any services are running slow.
- > Alerting: Nagios sends alerts if any critical components fail or if there is a degrading in service quality, allowing for quick response and resolution.
- > Incident Prevention: By continuously monitoring system metrics, Nagios can detect anomalies and trends.

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