04/05

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Assignment-1

Use S3 buckets and host video Streaming

1. Create S3 bucket
Log into AWS Managment Console
Go to S3 and click bucket.
Under Object Ownership, leave it as ACLs disabled (for simplicity).
Block Public Acess Settings: Uncheck Block all public acess if you went public acess 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. Enablig 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

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5. Creating CloudFront Distribution
Go to Cloud Front 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 embade your video

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

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Adv. deops 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:

> Scalablity: 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 maintainance 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:

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

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> Elastic load Balancing: AWS Elastic load Balancing ensures seamless content delivered by distributing incoming application traffic accross multiple servers

> Global Reach: By utilizing AWS Cloud Front (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 dis advantages of Kubernates. Explain how adidas uses Kubernetes.

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

Advantages of Kubernetes

> Scalablity: Kubernetes scales application up or down automatically, depending on traffic

> Portablity: Kubernetes works on diffrent environment (on-premises, public, or hybrid clouds), offering flexiblity.

> High Availiblity: It ensures high availiblity of applications by maintaing multiple container replicas and providing self-healing by replacing failed containers.

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Automation: Kubernetes automates deployment and updates, making continuous dilevery easier.
Resource Manag ment: It efficenty manages computing resources, ensuring optinal use of CPU, memory and storage.

Disadvantages of Kubernetes:

> Complexity: Kubernetes has a steep learning curve, requiring knowledge of containers, networks, and infrastructure.
> Overhod: Managing Kubernetes can add overhead in terms of resource usage and operational costs.
> Security: Configuring and maintaing 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-comerce platforms. Some highlights include:

> Microserives Architecture: Adidas migrated its monolithic e-comerce application to microservices
> Scalablity: During high-traffic events, like product launches, Adidas can dyramically scale its infrastructure using Kubernetes, ensuring that the site remains responsive.
> Cloud Agnosticism: Adidas run its Kubernetes cluster across multiple cloud providers, enhancing availblity and performance.

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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 availiblity of IT infrastructure. It sends alerts when potential issue are detected, enabling proactive managment of system.

How Nagios used in E-services.

> Monitoring Uptime: Nagios monitors the availiblity and uptime of websites, applications, and server to ensure seamless access for users.

> Performance Monitoring: It terms the performance of server, database, and applications, notifying administrator if any services are running slow

> Alerting: Nagios sends alerts if any critical components fail or if theres a deg rading in service quality, allowing for quickly response and resolution.

> Incident Prevention: By continuously monitoring system metrics, Nagios can detect anomalies and trends.

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