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D15C 50

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Assignment 1

Q1] Use S3 bucket and host video streaming

→ Step 1: Create an S3 bucket.

i) Navigate to S3 bucket

ii) create a new bucket
- → Click on "Create bucket"
- → Enter bucket name.
- → Choose a region
- → Create bucket

ii) Configure bucket permissions
- → Click on your bucket
- → Go to permissions tab
- → Edit block public acces setting
- → Add bucket policy to allow

iii) Upload video files
- → Use console, AWS CLI or SDKs to upload files on supported formats.

→ Step 2: Set up CloudFront

i) → Open cloudfront
- → Create origin access identities and give name.

iii) → Go to create CloudFront distribution
→ Select legacy access identities, select identity that you created.

iv) In default cache behaviour, select redirect HTTP to HTTPs.

v) To access, copy domain name of distributer

vi) Go to S3 bucket and click on the name of the video you uploaded.

vii) Combine domain name and key of distribution and video respectively to make the final link.

Q2) Discuss BMW & hotstar case studies using aws.

→ i) BMW case study
Objective: BMW aims to enhance connected vehicle services & improve data management.

AWS Utilization:
→ ~~BMW lever~~
→ a) Data storage & Analytics:
BMW leverages amazon S3 for storing vast amounts of data collected from vehicles and is analyzed by AWS using Redshift or athena.

b) IoT integration:
The company employs AWS IOT core to securely connect its vehicles to the cloud facilitating real time data transfers.

c) Machine Learning:
BMW utilizes Amazon sage maker for developing machine learning models that enhance customer experiences.

ii) Hotstar case study

Objective: Hotstar, a leading Streaming service provider, aims to deliver high quality video content to millions of users.

AWS utilization:

a) Scalable infrastructure:
Hotstar uses EC2 instances to scale its computing resources dynamically based on demand.

b) Content delivery:
Platform uses Amazon CloudFront to distribute video globally, ensuring low latency and high availability.

c) Data analytics.
Hotstar employs AWS analytic service to gain insights into user preferences and viewing habits.

Q3) Why Kubernetes & advantages, disadvantages of kubernetes. How adidas uses kubernetes

→ Kubernetes is an open source container orchestration platform that automates deployment, scaling and management of containerized applications.

- Advantages:

1 Scalability:
→ Kubernetes can automatically scale applications based on demand.

2 High availability:-
→ Provides mechanisms for automatic restarts, replication & load balancing.

3 Resource Optimization
→ Schedules & manages containers effectively.

4 Portability:
→ Applications can run consistently across various environments.

- Disadvantages
i) Complexity:
→ Has a steep learning curve.

ii) Overhead

iii) Security challenges
→ Misconfigurations can lead to vulnerabilities.

iv) Monitoring needs.
→ Effective monitoring is essential.

* How Adidas uses Kubernetes.
→ Adidas uses it to manage its microservices architecture enabling rapid deployment and development of application

→ Its benifits include:

i) Support for Ecommerce Operations

ii) Enhanced Collaboration

iii) Improved resource management.

Q4 What are Nagios & explain how Nagios is are used in E services?

→ Nagios is an open source monitoring system that helps organizations monitor the health and performance of IT infrastructure

→ Nagios in E-services:

1 Monitoring uptime & downtime:
Nagios monitors availability of e services, ~~monitoring key~~ such as websites, email servers or cloud platforms ensuring that these services stay online.

2 Performance monitoring:
It tracks the performance of E services, monitoring key metrix.

3 Alerts and notifications:
Nagios can be configured to send notifications via email or SMS.

4. Log Monitoring

5. Custom plugins:
→ Allows installation of custom plugins for monitoring specific e-services.

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