04/05

ASSIGNMENT NO.: 1

Q1. Use S3 bucket and host video streaming. Give proper each and every step for this in short but all the steps.

Soln: Step1: Create an S3 bucket

1. Sign in to AWS management console
2. Navigate to S3.
- In AWS management console, select S3.
3. Create a Bucket
- click on create bucket
- enter a unique bucket name.

Step 2: Upload video to S3 bucket:

1. Open your Bucket by clicking on bucket name you created.
2. Upload files
- click on upload.
- Drag and drop your files and click upload.
3. Set permissions:
- for public access under permissions, check grant public read access.

Step3:

- for public access under permissions, check grant public read access.

Step4: Create a cloudfront Distribution.

1. Navigate to cloudfront from aws console.
2. Click on create distribution
- choose web as delivery method.

3. Configure the distribution.
- origin Domain name: select your S3 bucke
- viewer protocol policy: choose redirect H
to HTTPS for secure access.
- cache Behaviour setting: Configure cachin
- click create distribution.

Step 4: Configure Cloudfront for secure ac
1. Create an origin access identity (OAI).
- In Cloudfront origin console, go to
distribution settings.
- under origins and origin group, click E
- create a new origin access identity.
2. Update S3 bucket policy.
- Go to your S3 bucket.
- Click on permission & then bucket poli
- Add to policy to grant access to OAI.

Steps: Access the video through Cloudfront
1. Get the cloudfront URL.
- In Cloudfront console, go to your distri
-bution.
- copy the domain name.
2. Use the URL.
- Use this URL in your web application
to stream the video.

Q2. Discuss BMW and Hot Star case studies using AWS.

BMW case study:

Overview: BMW leverages AWS to enhance its digital transformation, focusing on innovation in connected vehicles and improving operational efficiency.

Key points:

① Data Analytics

BMW uses AWS for big data analytics, enabling real time processing of vehicles data.

② Cloud Infrastructure

By migrating to AWS, BMW benefits from scalable & flexible cloud infrastructure, reducing its costs & enhancing agility.

③ Connected vehicles:

AWS supports BMW's connected car initiatives allowing for seamless integration of services.

④ Security & compliance:

AWS provides robust security measures that help BMW maintain compliance with automotive industry standards.

Hot Star Case Study:

Overview: Hot star, a popular streaming service in Asia, utilize AWS to deliver high quality content to millions of user.

key points:

① Scalability: During peak events (like spo finals), Hotstar scales its infrastructure dynamically with AWS services to handl massive spikes in user traffic.

② Content delivery: The use of Amazon Clou -front enhances the delivery of streami content globally, ensuring low latency a high availability.

③ Machine learning: Hotstar employs AWS machine learning services to personalize user experiences & optimize content recom -dation.

④ Cost management:
By using AWS pay-as-you-go ~~metho~~ mod Hotstar manages operational costs effectiv aligning expenses with user demand.

Conclusion:
Both BMW and HotStar demonstrate how can drive innovation & operational efficie in different industries.

Q3. Why Kubernetes and advantages and disadvantages of kubernetes. Explain how adidas uses kubernetes.

Ans: kubernetes is an open-source container orchestration platform designed to automate deploying scaling & managing containerized applications.

Advantages of kubernetes:

1. Scalability: Automatically adjusts resources based on demand.
2. Portability: Consistent performance across cloud and on-premises environments.
3. High availability: self-heals and ensures uptime.
4. load balancing: Distributes traffic effectively.

Disadvantages of kubernetes:

1. Complexity: steep learning curve & setup time.
2. Resource Intensive: Requires significant computing resources.
3. Operational Overhead: Needs continuous management and monitoring.
4. Networking Challenges: Complicated configuratio - ns can be tricky to troubleshoot.

How Adidas uses kubernetes:
Adidas uses kubernetes to scale their e-commerce platform globally. It allows them to manage microservices efficiently. By adopting a microservice architecture with kubernetes, Adidas can handle high traffic events like product launches with ease through auto-scaling, ensuring reli performance.
kubernetes also supports their CI/CD pipelines allowing for faster updates a feature rollouts without downtime.

Q4. What are Nagios and explain how Nagios are used in E-services?

Soln: Nagios is an open source monitoring tool used to oversee systems, networks services. It helps detect ~~us~~ issues by continuously monitoring resources.
Key features of Nagios:
1. Monitoring of Network services: Nagios monitors services such as HTTP, FTP, SMTP, etc.
2. Monitoring of Host resources CPU usage, memory, disk space, etc. can be tracked for servers and network devices.
3. Alerting System: When critical thresholds are reached, Nagios sends alerts via emails, sms.

4. Web Interface: It offers a web-based interface for viewing system statuses, logs & trends.
5. Scalability: It can be used to monitor both small & large infrastructure.

How Nagios is used in E-services:
① Uptime monitoring: It monitors the availability of e-services, ensuring that websites, payment gateways & other critical components remain operational.
② Performance monitoring: Nagios tracks the performance of server resources, databases & networks, ensuring that services are delivered efficiently to users.
③ Incident detection: If there's a system failure, service outage or performance degradation, Nagios instantly detects the issue and ~~all~~ alerts the IT team to take actions.
④ Security monitoring: Nagios can track suspicious activities, detect unauthorized access & monitor the health of security systems.
⑤ Capacity planning: By monitoring resources usage trends over time, Nagios helps in planning upgrades or resources allocation to avoid slow downs or outages.