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: DLSA - 37.

Assignment No. 1 04/03

ADVANCE DEV OPS

Q1) Use S3 bucket & host video streaming.

To host video streaming using Amazon S3 bucket follow these steps:

1) Creating S3 bucket:
login to AWS management console.
Navigate to S3 & create new bucket. Give bucket a unique name & choose a region.

2) Enable static website Hosting.

3) After creating bucket, go to bucket properties tab.
Use static website hosting, enable the option & provide index document.

2) Set Bucket policy for public access.
To make your videos publically accessible, go to permission tab.
Set a bucket policy to allow public access to files.

4) Upload your video files (MP4, WebM, etc). to S3 bucket using AWS console or AWS CLI.

5) Use HLS (HTTP live Streaming) for adaptive bitrate streaming. convert adaptive HLS format.

6) Enable CORS configurations if you are using JS language for frontend to access videos, configure on S3 bucket.

7) To improve video streaming performance, especially for global user set up Amazon cloudfront.
create new cloudfront distribution select S3 bucket as origin, enable caching for smooth playback.

8) Use video player to embed video on your site.

9) Visit static website URL from S3 bucket or cloudfront to verify video streaming smoothly.

Teacher's Sign.:

Q.2) Discuss BMW and Hotstar using AWS.

→ Both BMW & Hotstar have used AWS to scale their operations, change customer experience & innovate respective industries.

① BMW case study using AWS:

1) BMW uses AWS to build a connected car platform. The platform collects & processes data from millions of vehicles data from millions of vehicles in real time, enable services like remote diagnosis, navigation, etc.

2) Cars have a IOT devices having equipped with sensor that generate large amount of data. AWS IoT Service allow BMW to collect, process & vehicle provide real-time vehicle insight & maintain vast enhance both safety & user experience

3) With services like Amazon SageMaker, BMW is leverage ML to predict vehicle production process & improve in-car experience for user.

② Hotstar case study using AWS:

1) Scalability During high traffic events like IPL, Hotstar witness unprecedented traffic spikes, with millions of concurrent user streaming the service.

2) Hotstar relies on amazon cloudfront, a global content delivery network, to distribute video content to viewers at high speed. This ensures a smooth UX during high demand periods.

3) Using services like Amazon Cloud watch & AWS shield, Hotstar monitor its application performance & protect its infrastructure DDoS services even under high traffic loads.

Teacher's Sign:

Q.3) Why kubernets & advantages & disadvantages of kubernets. Explain how addidas uses kubernets.

→ 1) Advantages of kubernetes:

(1) Portability: Works across various environments
(2) Scalibility: Automatically scales application based on demand
(3) High availability: Ensures uptime with self-healing & load balancing.
(4) Automated update: Manages rollouts & rollbacks with zero downtime.
(5) Efficient Resource management: Optimizes CPU & memory usage.

2) Disadvantages of kubernets:

(1) Step learning curve: Requires expertise to manage effectively.
(2) Resource intensive: High operation & high infrastructure cost.
(3) Complexity: setup & management can be challenged.
(4) Security configuration: Needs careful setup to avoid vulnerabilities.
(5) Operational overhead: Managing clusters & scaling requires dedicated resources.

3) Addidas uses kubernetes to modernize its infrastructure & accelerate its digital transformation journey.

(1) Scalability: Addidas handles traffic spikes during events with automatic resource scaling via kubernetes.
(2) Global management: kubernets standardizes addidas deployment for consistent global performance.
(3) Agile deployment: Releases updates faster, deploying microservices independently with kubernetes.
(4) High availability: Ensures Addidas platforms stays quick from failures.

Teacher's Sign.:

Q.4) What on Nagios & explain how Nagios are used in E-services?

→ 1) It is a tool that widely used to monitor IT infrastructure. It helps the status of network devices, servers, applications & services in real-time.

2) It is used to monitor large range of network services including HTTP, SMTP, POP3, etc.

3) It also sends notifications through email, SMS when issues arises or are resolved

4) Custom plugins: supports variety of plugins extend functionality & you can also custom plugins as per requirements

5) Uses of Nagios:

(1) Service availability: checks availability of e-services like website, database, payment gateways, etc.

(2) Performance Monitoring: Ensures servers network overload & network function smoothly.

(3) Security Monitoring: Tracks unauthorized access & unusual traffic, protecting sensetive data in e-services.

(4) User experience: Ensures reliable, fast services by monitoring key infrastructure components.

Teacher's Sign.: