

Assignment 5

- Q1) Use S3 bucket to host video streaming using AWS S3 bucket
- To host video streaming, 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:
 - After creating bucket, go to bucket properties tab under static website hosting, enable the option & provide index document.
 - 3) Set Bucket policy for public access
 - To make your videos publicly 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 for adaptive bitrate streaming. Convert adaptive: HLS format.
 - 6) Enable CORS config if you are using JS language for frontend to access videos, configure on S3 bucket.
 - 7) To improve video streaming performance, especially for global users set up Amazon CloudFront.
 - Create new cloud front distribution. Select S3 bucket as origin, enable caching for smooth playback.
 - 8) Use video player to embed video on your site.

7. Amazon Fi

Q) Visit S3 website URL from S3 buckets or Cloud front to view eg. video streaming. Similarly

Q2) Discuss BMW and Hofstar using AWS

→ Both BMW & Hofstar have used AWS to scale their operations, chance customer experience & innovation in respective industries.

① BMW Case Study using AWS

- 1) BMW uses AWS to build a connected car platform. The platform collects & process data from millions of vehicles data from millions of vehicles in real time enables services like remote diagnosis, navigation, etc.
- 2) Cars have a IoT device & vehicle provides real time vehicle insights & maintains alerts enhancing both safety & user experience.

3) With Services like Amazon Sage, NLP, BMW is leveraging AWS to provide vehicle production process & improve in cost experiences for user.

② Hofstar Case Study using AWS:

- 1) Scalability during high traffic events like SOL, Hofstar with uses of unpredicted user traffic spikes up millions of concurrent user streams from service.
- 2) Hofstar relies on Amazon Cloud front, global content delivery network to distribute video contents to viewers at high speeds. Thus ensuring a smooth video during high demand period.

Q3) Why Kubernetes? Advantages & disadvantages of Kubernetes
 Explain how it adds value to DevOps.

→ 1) Advantages of Kubernetes:

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

2) Disadvantages of Kubernetes:

- ① Steep learning curve: Requires exposure to manage effectively.
- ② Resource intensive: High operation & high infrastructure cost.
- ③ Complexity: Setup & management can be challenging.
- ④ Security config: Needs config setup to avoid vulnerabilities.
- ⑤ Operational overhead: Managing clusters & scaling requires dedicated resources.

3) Adidas uses Kubernetes to modernize its infrastructure & accelerate its digital transformation journey.

- ① Scalability: Adidas handles traffic spike during events with automatic resource scaling via Kubernetes.

- (2) Global management: ~~keeps track of standardise deployment framework for constituents~~ global performance
- (3) Agile deployment: Releases updates faster by deploying microservices independently within kubernetes

Q4) Ques on Nagios & explain how Nagios can be used in E-Services?

- > It is a tool that widely used to monitor IT infrastructure. It helps the status of network devices server, application & services in real-time.
- 2) It is used to monitor large range of network service including HTTP, SMTP, POP3, etc.
- 3) It also sends notifications through email/sms when issue arises or unresolved.
- 4) Custom plugins: supports variety of plugins extend functionality. One can also custom plugin as per requirements.
- 5) Use of Nagios:

- (1) Service availability: Checks availability of e-service like websites, databases, payment gateway, etc.
- (2) Performance monitoring: Ensures servers don't overload & network function smoothly.
- (3) User experience: Ensures reliable, fast service by monitoring key infra components.