05/05

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DISC - 56
Adv Devops Assignment 1
DOB : 27/09/24

Q1] Use S3 bucket and host video streaming.

: To use Amazon S3 bucket for hosting a video streaming, you can use a video embedded in an HTML file.

1) Prepare your video file and HTML file. Add the link / SCR tag your video in the html in the following form.

```
<video width = "640" height = "360" controls >
<source
src = "https://BUCKET-NAME.S3.YOUR-REIGON.amazonaws
.com/video-file.mp4" type = "video/mp4">
Your browser does not support this.
</video>
</body>
</html>
```

2] Create an S3 bucket.
Log in to AWS console, go to Amazon S3 and create a bucket with the appropriate settings

Disable "block public access" as well to make sure it can be accessed anywhere.

3) Upload your video and HTML files to S3 through the "upload" feature in your bucket.

4) Configure bucket permissions.
This is done to make the files available for public access. Under the "permissions" tab, click on "edit" for "Object Ownership" and ensure that "ACLs enables" is checked.
Also add a bucket-policy.

5) Enable static website hosting on S3.

6) Access your video streaming website through the generated URL under the bucket.

Q2] Discuss BMW and Hot Star Case studies using AWS.

→ BMW uses AWS to build and scale its connected car platform, providing services like real time traffic updates, remote locking and vehicle diagnostics.
- Scalability - BMW uses Amazon Elastic Kubernets Servie to manage and scale its micro-service based architecture.

- Data analytics BMW uses services like S3 for storage, Amazon EMR for data processing and Amazon Athena for querying.
- Security. AWS Identity and access management (IAM) and AWS Key management service (KMS) are used for access control and encryption.

Hotsar: It is a popular Streaming site in India.

- Amazon Route 53: uses the port no 53 to provide DNS service to its applications
- Amazon EC2: provides scalability and reliability to the computing capacity in the AWS cloud.
- Amazon cloudfront: low the latency and high transfer speed of 5700 Gbps for hotstar is done through cloudfront as it provides content Delivery Network (CDN) services.
- Amazon S3: storing and fetching data as per requirement.

Q3] Why Kubernets and adv / disadv of it. Explain how adidas uses Kubernetes.

→ K8s is an open source platform that helps automate the deployment, scaling and management of containerized applications. It was developed by Google and is now maintained by the Cloud Native computing Foundation.

Advantages of K8S:

- scalability: it allows you to easily scale your apps up and down as needed.
- portability: Kubernets works across cloud env like Aws, google cloud etc.
- self healing: automatically restarts containers that fail.
- efficient use of resources: can optimize resource usage

Disadvantages of K8s:

- complexity: steep learning curve and requires significant expertise to manage.
- resource consumption: requires a fair amount of computational resources
- setup & maintainence: time consuming process
- cost: very expensive

→ How adidas uses Kubernets.

Adidas has embraced K8S to transform how they develop and deploy software:

- microservice architeture: by breaking down their applications into small, independent services that can be deployed seperately.
- scalability: K8s helps adidas scale its applications according to demand and traffic analysis.
- faster software delivery: to accelerate the software development lifecycle.

- cloud native strategy : adopted kubernetes as part of its cloud native strategy. They use it with public cloud providers.
- automated deploymt : Adidas has implemented continuous integration / continuous delivery (CI/CD) pipelines with K8S.

Q] What are Nagios and explain how Nagios are used in e-services?

→ Nagios is an open source tool used to monitor IT infrastructure like servers, networks, and applications. It alerts admins if something goes wrong and logs these

→ now Nagios is used in e services:

1) Uptime monitoring: ensures that the e-service's systems are always running and alerts if there's a failure.
2) Service monitoring: tracks critical services like e-com apps or online banking to prevent outrages.
3) Performance tracking: monitors server health (CPU, RAM, BW) to avoid slowdowns, helping keep e-services fast and responsive.
4) User experience: stimulates user actions (logins, transactions) to ensure the service is functioning smoothly.