

Advance Devops - Assignment 1

1. Use S3 bucket and host video streaming.
- These are the steps for using S3 bucket to host video streaming:
 1. Log in to your AWS account.
 2. From services select S3 and click on create bucket.
 3. Provide a unique bucket name.
 4. Uncheck the block all public access option.
 5. Select 'create bucket'.
 6. Now the created bucket will be listed with other buckets, select it to open your bucket.
 7. choose the add files option to upload the video.
 8. After video is uploaded successfully go to the permissions tab of the created bucket and navigate to bucket policy.
 9. Edit the bucket policy to allow public access to the videos.
 10. Now to enable static website hosting go to the properties tab of the bucket.
 11. Navigate to static website hosting and click on enable.
 12. Enter the home or name of the index document.
(Create a basic index.html file and upload it to the bucket by following same steps as followed to upload the video.)
 13. Save the changes.
 14. Now click on the video file in the S3 bucket and copy the object URL, embed this URL in the index.html file using video tags.
 15. Finally click on the index file and select the URL. This will open the webpage with the video embedded.

2. Discuss BMW and hotstar case studies using AWS.

→ BMW case study :

The BMW group is a global manufacturer of premium automobiles and motorcycles. It decided to re-architect and migrate its on-premises data lake to the cloud using AWS in order to innovate and scale for its global stakeholder demand.

BMW uses AWS for the following :

- Data analysis : BMW utilizes AWS for big data analytics allowing them to process vast amounts of data from connected vehicles.
- IoT integration : It uses AWS IoT services to connect vehicles to the cloud enabling real time data collection and analysis.
- Data - driven ecosystem : BMW group uses AWS serverless analytics for data driven ecosystem.

→ Hotstar case study :

~~Hot~~ Hotstar, now known as Disney + Hotstar is a streaming service in India that offers wide array of content including movies, TV shows and live sports.

Hotstar ~~uses~~ backend is powered by AWS. All the traffic is served by the EC2 instances and S3 object store is used as the data store. The services use a mix of on-demand and spot instances to keep costs optimized. Terabytes of data is generated in any regular day and is processed by AWS EMR clusters. AWS EMR is a managed Hadoop framework for processing massive amounts of data across EC2 instances.

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

→ Kubernetes :

Kubernetes is a compact, portable open-source platform for managing containerized workloads, services and applications. It focuses on automating deployment, scaling and other forms of containerized application management.

Advantages :

- i) Scalability : Automatically scales applications up or down based on demand
- ii) High availability : Ensures applications are running and can automatically restart failed containers.
- iii) Load balancing : Distributes traffic effectively across containers improving performance and reliability.

Disadvantages :

- i) Steeper learning curve due to its extensive features and configurations.
- ii) May introduce unnecessary overhead for small applications or simpler use cases.
- iii) Debugging issues can be more challenging due to distributed nature of applications.

use of Kubernetes by Adidas :

- i) Adidas has adopted a microservices architecture allowing different components of its applications to be developed, deployed and scaled independently. Kubernetes facilitates this by managing containerized microservices efficiently.
- ii) With the high demand for online shopping and seasonal spikes, Adidas uses Kubernetes to automatically scale its

applications based on traffic and performance needs.

iii) By using Kubernetes Adidas can implement a multi-cloud strategy, running applications across different cloud providers. This enhances flexibility.

4. What are nagios and explain how nagios are used in E-services.

→ Nagios is an open source IT system monitoring tool which was designed to run on the Linux operating system and can monitor devices running Linux, Windows and Unix OS. Nagios software runs periodic checks on critical parameters of application, network and server resources. Nagios can monitor memory use, disk use, microprocessor load, log files.

use of nagios in E-services :

- 1) Nagios monitors servers and network devices that host e-services, ensuring they are up and running.
- 2) Nagios checks the availability of critical services such as web servers, databases and API's.
- 3) It tracks the performance of e-services, allowing organizations to identify bottlenecks and optimize resource allocation.
- 4) As an e-service grows, Nagios can scale to monitor additional services and infrastructure without complete overhaul of the monitoring setup.

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