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lab 03

Assignment 1 Advdevops

Q1 Use S3 bucket and host video streaming

→ The step by step procedures as follows

Step 1) Create S3 bucket
1. Log into your AWS management console
2. Navigate to S3 under Storage section
3. Click create bucket and provide unique bucket name.
4. configure permissions
5. Complete the bucket creation process.

Step 2) Upload video files on S3
1) click on your bucket name.
2) Use the upload button to add your video file.
3) Set the access control list to allow public read access.

Step 3) Enable static website hosting
1) Inside the S3 bucket go inside the properties tab.
2) Scroll to static website hosting section and enable it.
3) Set the index document and provide an optional error document

Step 4) Configure bucket permissions to allow public access.

Step 5) 1) Create an index html file containing a video player using the <video>
2) Upload this index html to your S3 bucket.

Step 6) Access your hosted video would be playable in embedded html mode

Q → Discuss BMW and Hotstar case studies using AWS.
Overview: BMW, a leading automobile manuf. achieved turned to Amazon web services (AWS) to enhance its it infrastructure and support its digital transformation initiatives. The company aimed to improve operational efficiency, speed up to the development and connected car devices and provide better customer experiences.
Key Uses of AWS
(1) Data Management: BMW uses AWS to collect and manage data from millions of connected vehicles. This data helps in real time analysis predictive maintaince and enhance vehicle performance.
(2) Scalability: AWS scalable cloud services enable BMW to handle fluctuating workloads, particularly during peak times like new vehicle launches or software updates.
Case Study of Hotstar and AWS.
(1) Elasticity: Hotstar leverages AWS elastic computing resources to automatically scale up during high traffic events and scale down afterward, optimizing cost efficiency.
(2) ~~Data analytics~~ Delivery: BMW leveraged AWS for Big data analytics to gain insights from vehicle data customer preference and market trends this enables maintanance, safety features. and customer engagement through connected car services.

Q3 Why kubernetes and advantages and disadvantages of kubernetes. Explain how it aides using containerization

→ Kubernetes is an open source container orchestration platform designed to automate the development, scaling and management of contained applications. It was originally developed by google and becomes standard in cloud native development

Advantages of kubernetes

① Scalability: Kubernetes can automically scale applications up or down based on demand ensuring efficient resource use.

② High availability: It provides self healing properties or rescheduling in case of failure

③ Portability: It allows applications to run consistently across different environments.

④ Declarative configuration: Users can define desired states and configurations through yaml or JSON files, simplifying managements

⑤ Ecosystem: A rich ecosystem of tools and services built around kubernetes, enhancing its capabilities

Disadvantages of kubernetes.

① Complexity: The learning curve can be steep due to its components and configuration required skilled personnel.

② Resource intensive: Running kubernetes can require significant computing resources, especially for small scale applications.

③ Management overhead: Managing a kubernetes

cluster involves monitoring, logging and maintaining security

How addidas use kubernetes?

Addidas has embraced Kubernetes as part of its digital transformation strategy to enhance its online presence and improve operational efficiency.

① Microservices architecture: Addidas use kubernetes to manage microservices, allowing for faster deployment and scaling of individual services.

② CI/CD pipeline: Kubernetes facilitates continuous integration and continuous deployment, leading to quicker cycles

③ Global reach: with a global customer base. addidas use kubernetes to manage workloads efficiently across multiple data centres and cloud providers, ensuring low latency and high availability

④ Innovation and experimentation: The platform allows addidas to experiment with new technologies and frameworks with risk of impacting entire system, fostering a culture of innovation

4 What are Nagios and explain how Nagios are used in E services

→ Nagios is an open source monitoring system that provides monitoring and alerting for servers, network devices and applications. It help organisations ensure their IT infrastructure runs smoothly by monitoring system

Key features of Nagios

① Monitoring : Nagios check the status of services and hosts, providing real time visibility into health of systems

② Alerting : It sends alert via email or sms when issues are detected, allowing teams to respond quickly to outages or performance degradation.

③ Plugin : Nagios can be extended with plug enabling it to monitor a wide variety of applications, services, devices.

④ Web interface : Nagios include web based dashboard for view system status, alert a performence data

⑤ How Nagios is used in Devops

① Uptime Monitoring : Nagios continuously check the availability of web servers and applicati If a service goes down it immediately alerts the IT team, allowing for quick reme

② Performance monitoring : It track metrics su as response time and server loads helping organisation identify performance bottlenecks that could affect user experience

③ Resource usage monitoring : Nagios monitors C memory disk usage, network bandwidth providing insights into system health and capacity planning.

④ Transaction monitoring : In E commerce, Nagi can monitor specific transactions to ensur they are functionally correctly, alerting

team if any fails.
⑧ device dependency tracking: Datadog allows users to define service dependencies, helping to reduce alert noise by suppressing alerts for dependent services when a critical service is down.
⑨ security monitoring: It can monitor log files for suspicious activity or policy violations contributing to security posture of services.
⑩ Reporting and Auditing: Datadog can generate reports on system performance, availability and incidents, which are useful for compliance and performance reviews.