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# Assignment-1

04/05/2

Q.1 Use S3 bucket and host video streaming.

→ ① create an amazon S3 bucket -
Login to AWS console and navigate to AWS management console. then go to S3 services from the list of AWS services. To create a bucket click on create bucke and provide a unique bucket name and choose the region. Leave other setting as default or configure as per your needs. click on create bucket.

② configure bucket for static web hosting-
After creating the bucket, click on bucket name an go to the properties tab.
Scroll down to the static web hosting section. and enable static website hosting and specify the index document. If you want error document, specify it here too. save the settings.

③ Upload your video files -
Go to the objects tab in your bucket. click on upl and select your video files. configure permissions o properties as necessary. click 'Upload' to start the pr make the video files publicly accessible. Go to the permissions tab. click on bucket policy to set public acess permissions.

④ Implement content delievery network (CDN) -
For faster and smooth video delievery, you can use cloudfront as a content delievery network (CDN).
go to the AWS management console and select clou

Teacher's Sign.:

create a new cloudfront distribution. set the origin domain to the s3 bucket URL. configure other option like catching, pricing and security. deploy the distribution.
By following these steps, you can successfully host and stream videos from an amazon s3 bucket. using s3 with options like cloudfront for CDN can ensure high availability, low latency and secure video deliv

Q.2] Discuss BMW and hot star case studies using AWS.

→ BMW one of the world's leading automotive companies leverage AWS to enhance its digital services, connected vehicle capabilities and data management systems. AWS provides BMW with the necessary cloud infrastructu to handle the vast amount of data generated by connected cars, allowing for improved vehicle monitorin predictive maintainence and enhanced customer service.

key services include amazon s3 for scalable data storage and amazon EMR for large scale data analyti This setup allows BMW to analyze data from connecte vehicles to provide features like predictive maintainc reducing breakdows and improving overall vehicle reliability. BMW's connected drive platform, support by AWS, integrates cloud based services such as real time traffic updates, remote vehicle monitor and safety features for millions of customers worldwide.

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AWS's IOT services play a crucial role in processing real time data from cars, enabling BMW to offer smarter, connected driving experience. By using AWS's cloud infrastructure, BMW can innovate quickly deploying new features without the need to manage physical servers. The agility provided by AWS has allowed BMW to accelerate its digital stategy, focusing on delievering a seamless and personalized driving experience.

Hotstar case study using AWS -

Hotstar, is the india's largest video streaming platfo known for delieving content like movies, TV shows and live sports, including major events like the indian premium league (IPL). AWS enables hotstar to handle massive traffic spikes especially during live events, providing seamless video streaming to millions of users concurrently.

For real time analytics, hotstar uses amazon kines and amazon redshift to monitor user behavior, optimize content delievery, and adjust infrastructure in real time. This real time data analysis alleus hotstar to manage server loads during peak events and personalize user recommandations based on viewi habits. AWS' pay as you go model also helps hotstar optimize costs by scaling infrastructure up during high demand events and down during off peak hours, ensuring efficient resource management.

Q 8] Why kubernates and advantages and disadvantages of kubernates. Explain how adidas uses kubernates

→ kubernates, often abbreviated as k8s, in an open source container orchestration platform designed to automate the deployment, scaling and manageme of containerized applications. With the increasing popularity of containerization, kubernetes has become the de factor standard for managing containers in production environments. Here are some reasons why kubernetes is widely adopted.

i) container orchestration - kubernetes automate the deployment, scaling and operation of applica containers across cluster of hosts, providing contain management at scale.

ii) scalibility - It enables horizontal scaling, allow applications to scale up or down automatically based on demand.

iii) High availability - kubernates ensures applicatio availability through self healing capabilities, such as restarting failed containers, rescheduling them on healthy nodes and replicating containe

- Advantages -

i) flexibility - It supports various programming languages, frameworks and infrastructure, making it suitable for diverse application environment.

ii) Improved Developer productivity - Developer can fo on writing code rather than worrying about deploy and infrastructure management.

Teacher's Sign.:

iii) Microservices architecture - Kubernetes simplifies the management of microservices by handling communication, scaling and deployment separately for each service.

iv) community support - Being open source, kubern has a large community that contributes to its continuous improvement making it a mature and reliable platform.

•Disadvantages -

i) Complexity - kubernetes has a steep learning curv and can be complex to set up and manage, especial for smaller teams without dedicated DevOps resour

ii) Resource overhead - Running kubernetes can requi significant resource, including memory and CPU whi may be a disadvantage for small scale applications.

Adidas, the global sportwear brand, has embraced kubernates as part of its digital transformation stategy to improve its e commerce capabilities and enhance customer experience.

Adidas has adopted microservices architecture to bu and deploy applications independtly. Kubernetes fa this by managing deployment and scaling of thes microservices, allowing adidas to deliever features and updates rapidly.

Teacher's Sign.

Q.2) What are Nagios and explain how Nagios are used in E commerce ?

→ Nagios is an open source monitoring system that helps organizations monitor their IT infrastructure, including servers, networks and applications. It provides real time insights into the health and performance of IT system.

① It plays critical role in ensuring the reliability, availability and performance of online platforms and applications.

② service avability - It continuously checks the availability of critical services such as HTTP, HTTPS, FTP and SMTP. If a service becomes unavailibity. Nagios trigger alerts, allowing administrators to resolve issues quickly.

③ Network monitoring - For e-services that rely on robust networking, Nagios monitors the health of routers, switches and firewalls. It can detect issues like high latency, packet loss, or network outages, ensuring that data flows smoothly.

④ Application performance monitoring - Nagios can monitor the performance of applications, track response times, transaction rates, and error rates. This ensures that e services delieve a positive user experience.

⑤ Proactive problem detection - By setting thresh for various metrics, Nagios can proactively alert administrators about potential problem before they escalate. For example, if CPU usage consistently approaches 90%. an alert can be generated to investigate.