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CC Assigment-1

Q1. Adv. and Dis. of ~~why~~ using Public and private cloud ?

⇒ Adv. of Public cloud

(1) Scalability: Public cloud provides offers virtually unlimited scalability.

(2) Cost-effectiveness: Public clouds operate on a pay-as-you-go model.

(3) Maintenance Free: cloud providers manage maintenance, updates and security patches.

Dis. of Public cloud

(1) Security Concern: There is potential risk of data breaches.

(2) Limited Customization: It may not provide the level of customization required for security.

Adv. of Private cloud

(1) Enhanced Security: Private clouds provide better control over security.

(2) Customization: Meets specific application performance and security needs.

(3) Dedicated Resources: It can offer more reliability.

disadvantage:

① High Cost: setting up and maintenance cost.
② Limited scalability: More complex.

Q2.

Ans1 Root cause Identification:

① Infrastructure Analysis
② Application Performance Monitoring
③ Database Performance check
④ Network Configuration Review
⑤ Incident Response

Ans2 Ensuring High Availability and Performance:

① Load Balancing
② Auto-scaling
③ Content Delivery Network (CDN)
④ Multi-Region Deployment
⑤ Database Optimization
⑥ Monitoring and Alerts

Ans 3

Comparison of Major cloud

	Strength	Weakness	Pricing Model
Amazon web services (AWS)	Extensive global infrastructure, scalability, wide service offering	Complex pricing, steep learning curve	Pay-as-you-go, reserved
Microsoft Azure	strong integration with enterprise tools.	Can be complex for startups.	Pay-as-you-go, reserved instances.
Google cloud platform (GCP)	Advanced AI/ML services	smaller global reach compared to AWS/Azure.	Pay-as-you-go committed use contracts.

Recommendation: For this scenario, AWS is the best choice due to ~~this~~ its extensive global infrastructure, strong scalability and reliable load balancing.

Question based on scenario:

Ans 1. → Infrastructure as a service (IaaS) provides scalable, on demand resources that allow company to scale quickly.

→ Security features like encryption, access control and threat monitoring help protect against future cyber attacks.

Ans 2. → Virtualization allows multiple Virtual Machine (VMs) to run on a single physical server, reducing hardware costs.

→ It optimizes resource utilization, maintenance expenses.

→ It enables quickly scaling and resource based on demand, improving efficiency.

Ans 3. → Load balancer distribute incomic traffic across multiple servers to prevent overload on a single server.

→ They improve response times and reduce downtime by directing traffic to the least busy or server.

→ Auto-scaling features can dynamically adjust the number of active servers based on real-time demand.

Ans 4. → Use redundant load balancers in different geographical locations to ensure availability even if one fails.

→ Implement failover mechanism to reroute traffic in case of server failure.

→ Combine load balancing with CDN to reduce latency and optimize performance.

Ans 5. → A shared hosting or managed website builder service is the best fit.

→ These options are affordable, easy to use and require minimal technical expertise.

→ Since the website has low traffic, high-performance infrastructure is unnecessary.