cognizant

DEVOPS ENIGNEER

SCENARIO-BASED INTERVIEW QUESTIONS

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Question:

Scenario: Your company deploys applications across AWS and GCP, but monitoring and logging are inconsistent between platforms. How would you create a unified observability strategy?
Follow-up:
- What multi-cloud logging and monitoring tools would you recommend?
- How would you ensure log correlation across multiple cloud providers?

Scenario: Your infrastructure-as-code (IaC) setup reports drift (differences between declared and actual infrastructure). How would you handle this?
Follow-up:
- How would you detect and correct configuration drift in real time?
- How would you enforce compliance using policy-as-code tools like OPA or Sentinel?
- What best practices would you implement to prevent future drift?

Scenario: Your multi-cloud application experiences high latency due to cross-cloud traffic. How would you address this?
Follow-up:
- How would you optimize routing and peering between cloud providers?
- How would you use content delivery networks (CDNs) to reduce latency?

Question:

Scenario: Your organization must comply with GDPR and HIPAA for data storage. How would you ensure your infrastructure meets these requirements?
Follow-up:
- How would you enforce encryption for data at rest and in transit?
- How would you implement access controls and audit logging?

Scenario: Your team wants to deploy an application across multiple cloud providers to improve availability and reduce vendor lock-in. How would you design this deployment?
Follow-up:
- How would you manage network connectivity and latency between clouds?
- How would you synchronize configurations and monitor multiple environments?

Scenario: Your API gateway exposes several services, and security vulnerabilities in one of the services are exploited. How would you secure the API gateway?
Follow-up:
- How would you enforce authentication, authorization, and rate-limiting at the gateway level?
- How would you implement WAF (Web Application Firewall) rules for protection?

Scenario: Your CI/CD pipeline takes a long time to download and distribute artifacts across multiple environments. How would you optimize this?
Follow-up:
- How would you use artifact caching or local repositories?
- How would you implement a global content delivery network (CDN) for artifacts?

Question:

Scenario: Sensitive secrets accidentally get committed to a Git repository. How would you address this and prevent it from happening again?
Follow-up:
- How would you remove secrets from Git history?
- How would you enforce secret scanning in CI/CD pipelines?

Scenario: Applications inside containers experience slow communication over the network. How would you troubleshoot this?
Follow-up:
- How would you analyze container network configurations and overlays?
- How would you optimize Kubernetes CNI plugins for better performance?

Scenario: Your application runs in multiple cloud providers, and you need a unified logging solution. How would you design this?
Follow-up:
- How would you use centralized tools like Elastic Stack, Fluentd, or Loki?
- How would you address cross-region log aggregation latency?

Scenario: Your CI/CD pipeline takes over an hour to complete, delaying releases. How would you diagnose and optimize pipeline performance?
Follow-up:
- How would you parallelize tasks in the pipeline to reduce overall runtime?
- How would you use caching mechanisms (e.g., Docker layers, Maven/Gradle caches)?

Question:

Scenario: One of your microservices is unavailable, but others that depend on it are still functional. How would you minimize the impact of this partial outage?
Follow-up:
- How would you implement retries, fallbacks, or circuit breakers in service-to-service communication?
- How would you design your microservices architecture to reduce cascading failures?

Scenario: Applications running across on-premises and cloud environments experience high network latency. How would you troubleshoot and resolve this?
Follow-up:
- How would you optimize routing and latency between environments?
- How would you monitor network performance using tools like Ping or Traceroute?

Scenario: Your application relies on outdated libraries with known vulnerabilities. How would you manage and update these dependencies without breaking the system?
Follow-up:
- How would you use tools like Dependabot or Renovate to track dependencies?
- How would you test updates in a staging environment before production?

Scenario: Debugging issues in your distributed microservices architecture is becoming increasingly complex. How would you improve observability?
Follow-up:
- How would you implement distributed tracing with OpenTelemetry or Jaeger?
- How would you correlate logs, metrics, and traces for holistic debugging?

Question:

Scenario: After deploying an application, the cluster starts running out of resources (memory, CPU) over time, even though usage is not consistently high. How would you identify and resolve the issue?
Follow-up:
- How would you monitor for memory leaks or excessive pod resource usage?
- How would you enforce resource limits and requests to avoid resource starvation?

Scenario: A misconfigured script accidentally deletes production data. How would you recover from this situation?
Follow-up:
- How would you design a backup and restore strategy to prevent prolonged downtime?
- How would you implement safeguards (e.g., RBAC, version control) to avoid similar incidents?

Scenario: You need to containerize a legacy monolithic application that was not designed for cloud-native deployment. What challenges would you anticipate, and how would you address them?
Follow-up:
- How would you handle dependencies and persistent storage?
- How would you test and validate the containerized version before deployment?

Scenario: Your APIs are exposed to the public and are at risk of attacks. How would you secure them?
Follow-up:
- How would you use API gateways to enforce rate limiting and authentication?
- How would you protect against common vulnerabilities like SQL injection or DDoS attacks?

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