60 Kubernetes interview questions to assess candidates at all levels

Questions

1. Can you explain what Kubernetes is and why it's important?
2. What's the difference between a pod and a container in Kubernetes?
3. How would you handle a situation where a pod keeps crashing?
4. Can you explain the concept of rolling updates in Kubernetes?
5. What is a Kubernetes Service and why is it important?
6. How does Kubernetes handle network security between pods?
7. What is a Kubernetes Ingress and when would you use it?
8. How do you manage application secrets in Kubernetes?
9. Can you explain the concept of Kubernetes namespaces?
10. How would you approach scaling a Kubernetes application?
11. What is the purpose of a Kubernetes node?
12. Can you explain what a ReplicaSet is and how it works?
13. How do you monitor the health of your Kubernetes cluster?
14. Describe the role of etcd in a Kubernetes cluster.
15. What is a ConfigMap and how do you use it?
16. How would you troubleshoot a deployment issue in Kubernetes?
17. What is the difference between a StatefulSet and a Deployment?
18. Can you explain the role of kubelet in a Kubernetes cluster?
19. What steps would you take to upgrade a Kubernetes cluster?
20. How do you implement resource limits and requests in Kubernetes?
21. How would you approach debugging a pod that's in a CrashLoopBackOff state?
22. Can you explain the difference between a DaemonSet and a Deployment?
23. How do you handle persistent storage in Kubernetes?
24. What strategies would you use to optimize resource utilization in a Kubernetes cluster?
25. How would you implement a blue-green deployment in Kubernetes?
26. Explain the concept of Kubernetes Operators and when you might use them.
27. How would you secure communication between microservices in a Kubernetes cluster?
28. What is a Kubernetes Admission Controller and how would you use it?
29. How would you implement auto-scaling in Kubernetes based on custom metrics?
30. Explain the concept of Kubernetes Finalizers and when you might use them.
31. Can you describe the architecture of the Kubernetes control plane?
32. What are the primary components of a Kubernetes cluster and their roles?
33. How does Kubernetes achieve high availability for its components?
34. Can you explain the function of a Kubernetes API server?
35. How does Kubernetes handle scheduling of pods onto nodes?
36. What is the role of a controller manager in Kubernetes?
37. How does the Kubernetes scheduler work, and what factors does it consider?
38. What is the purpose of the cluster DNS in Kubernetes?
39. How does kube-proxy facilitate networking in a Kubernetes cluster?
40. Can you explain the concept of taints and tolerations in Kubernetes?
41. What mechanisms does Kubernetes use for service discovery?
42. How does Kubernetes manage configuration and secrets at the architectural level?
43. How do you handle a situation where a pod becomes unresponsive or is stuck in a Pending state?
44. Can you describe the process of creating and managing a Helm chart for application deployment?
45. What steps would you take to implement a canary release in Kubernetes?
46. How would you set up a CI/CD pipeline to automate deployments in a Kubernetes environment?
47. Can you explain how you would perform a rollback in a Kubernetes deployment?
48. What strategies would you use to ensure zero downtime during application updates in Kubernetes?
49. How do you manage inter-pod communication in a multi-tenant Kubernetes cluster?
50. What methods would you use to gather metrics and logs from your Kubernetes applications?
51. How do you ensure compatibility and versioning when deploying microservices in Kubernetes?
52. Can you explain the concept of pod disruption budgets and their importance in managing availability?
53. Can you explain how Kubernetes manages internal and external traffic?
54. What is a Network Policy in Kubernetes and why is it important?
55. How does Kubernetes ensure network isolation between different namespaces?
56. Can you describe the role of a Service Mesh in a Kubernetes environment?
57. What are the different types of services in Kubernetes and when would you use each?
58. How do you troubleshoot networking issues in a Kubernetes cluster?
59. What is CNI (Container Network Interface) and how does it work in Kubernetes?
60. How does Kubernetes handle DNS resolution within a cluster?