KUBERNETES QUESTIONS FOR INTERVIEW(2023/2024)

1. What is Kubernetes, and what problem does it solve?

2. Explain the architecture of Kubernetes.

3. What is a Pod in Kubernetes?

4. How do you scale applications in Kubernetes?

5. Describe the role of a Deployment in Kubernetes.

6. What is the purpose of a Service in Kubernetes?

7. Explain the difference between a StatefulSet and a Deployment.
8. How does Kubernetes handle storage?

9. What are ConfigMaps and Secrets in Kubernetes?

10. How do you troubleshoot a pod that is not starting?

11. Explain the role of a Kubernetes Ingress.

12. What is the role of kube-proxy in Kubernetes?

13. How do you manage environment variables in a Kubernetes pod?

14. What is the role of etcd in a Kubernetes cluster?

15. Explain how rolling updates work in Kubernetes.
16. What is the purpose of readiness probes and liveness probes?

17. How do you monitor Kubernetes clusters?

18. Explain the concept of labels and selectors in Kubernetes.

19. What is the difference between a DaemonSet and a ReplicaSet?

20. How do you upgrade a Kubernetes cluster?

21. Explain the role of kubelet in a Kubernetes node.

22. What is a Kubernetes Operator, and why might you use one?

23. How does Horizontal Pod Autoscaling work in Kubernetes?
24. What is the role of a Helm chart in Kubernetes?

25. Describe the difference between a Pod and a Node.

26. Explain the use of init containers in Kubernetes.

27. How can you limit resource usage for containers in a pod?

28. What is the role of a Taint and Tolerations in a Kubernetes node?

29. Explain the differences between a Job and a CronJob in Kubernetes.

30. How does Kubernetes handle secret rotation?

31. What is the purpose of the Kubernetes control plane?

32. Explain how network policies work in Kubernetes.

33. How do you perform a rollback in Kubernetes?

34. What are affinity and anti-affinity rules in Kubernetes?

35. Explain how to perform a canary deployment in Kubernetes.

36. How do you secure communication between pods in a Kubernetes cluster?

37. What is the role of kube-scheduler in Kubernetes?

38. How does Kubernetes handle DNS for service discovery?

39. Explain the concept of Helm Releases in Kubernetes.

40. What is the purpose of a Kubernetes ConfigMap volume?

41. How do you monitor resource usage for a specific pod in Kubernetes?

42. Explain the difference between a LoadBalancer service and an Ingress in Kubernetes.

43. What is the role of the kube-apiserver in the Kubernetes control plane?

44. How do you perform a rolling restart for a Deployment in Kubernetes?

45. What is the role of the kube-controller-manager in Kubernetes?

46. Explain the use of PodDisruptionBudgets in Kubernetes.

47. How do you handle secrets rotation in Kubernetes?

48. What is the role of kube-proxy in a Kubernetes cluster?

49. Explain how to use Helm to manage Kubernetes deployments.

50. What are the best practices for securing a Kubernetes cluster?

51. How do you configure a pod to use a specific service account in Kubernetes?

52. What is the purpose of ResourceQuotas in Kubernetes?

53. Explain how to implement rolling updates with zero downtime in Kubernetes.

54. How does Kubernetes handle node failures, and what mechanisms are in place for node recovery?

55. Explain the differences between a Pod and a Deployment.

56. What is the purpose of the Horizontal Pod Autoscaler (HPA), and how does it work?

57. How do you configure and manage Ingress controllers in Kubernetes?

58. Explain the concept of a Headless Service in Kubernetes.

59. What is the role of a PersistentVolume (PV) in Kubernetes, and how is it different from a PersistentVolumeClaim (PVC)?

60. How can you expose a service outside of the cluster securely in Kubernetes?

61. What is the purpose of the downward API, and how is it used in Kubernetes pods?

62. Explain the concept of network policies in Kubernetes, and how do they enhance cluster security?

63. How do you handle application configuration in a Kubernetes environment?

64. What is the purpose of a PodSecurityPolicy in Kubernetes, and how is it enforced?

65. How can you share storage between containers in the same pod?

66. Explain how the InitContainer differs from a regular container in Kubernetes.
67. How do you handle rolling updates with configuration changes in Kubernetes?

68. What are affinity rules in Kubernetes, and how can they be utilized?

69. Explain the differences between a Helm Release and a Helm Chart.

70. How can you secure communication between nodes in a Kubernetes cluster?

71. What is the purpose of a PodAntiAffinity rule, and when might you use it?

72. How does Kubernetes handle secrets management, and what are the best practices?

73. Explain the significance of kubelet's eviction policies in Kubernetes.

74. What is the role of kube-apiserver's admission controllers in Kubernetes?

75. How can you perform rolling updates for a StatefulSet in Kubernetes?

76. Explain how to set up a multi-node Kubernetes cluster using kubeadm.

77. What are PodPresets, and how do they simplify pod configuration in Kubernetes?
78. How does Kubernetes handle node affinity, and what scenarios might require its use?

79. What is the role of kube-scheduler predicates in the scheduling process?

80. Explain how the Kubernetes scheduler selects a node for a pod.

81. How do you manage resource constraints for pods in Kubernetes?

82. What is a DaemonSet in Kubernetes, and when might you use it?

83. Explain how to troubleshoot networking issues in a Kubernetes cluster.

84. What is the role of kube-proxy in Kubernetes, and how does it implement service networking?

85. How do you manage and upgrade Kubernetes cluster add-ons like CoreDNS?

86. Explain the role of kube-apiserver's etcd storage backend in Kubernetes.

87. What is the purpose of a readiness probe, and how is it different from a liveness probe?

88. How do you implement custom resource definitions (CRDs) in Kubernetes?

89. Explain how the Kubernetes garbage collector works.

90. What is the role of the kube-controller-manager's cloud-controller-manager?

91. How can you achieve high availability for the control plane in a Kubernetes cluster?

92. Explain how Kubernetes handles service discovery within the cluster.

93. What is the significance of kubeconfig files, and how do they work in Kubernetes?

94. How do you set resource quotas for namespaces in Kubernetes?

95. Explain the role of an admission controller in Kubernetes, and provide examples.

96. What are the differences between a PersistentVolume (PV) and a PersistentVolumeClaim (PVC)?

97. How do you perform a canary release in Kubernetes, and what considerations are involved?

98. Explain the use of pod affinity and anti-affinity in Kubernetes scheduling.

99. What is a PodSecurityContext, and how does it influence pod behavior in Kubernetes?

100. How can you ensure the security of container images used in Kubernetes deployments?

101. How does Kubernetes handle node failures, and what mechanisms are in place for node recovery?

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Kubernetes Basics:

201. What is the main problem that Kubernetes solves?
202. Describe the high-level architecture of Kubernetes.
203. Explain the fundamental concept of a Pod in Kubernetes.
204. How do you scale applications effectively in a Kubernetes cluster?

205. Define the role of a Deployment in the context of Kubernetes.

Service Management:

206. What is the primary purpose of a Service in Kubernetes?
207. Differentiate between a StatefulSet and a Deployment.
208. How does Kubernetes handle storage, and what are PersistentVolumes?
209. Explain the significance of ConfigMaps and Secrets in Kubernetes.

Troubleshooting and Monitoring:

210. Walk through the steps you would take to troubleshoot a non-starting pod.
211. Describe the roles of readiness probes and liveness probes in Kubernetes.
212. How would you monitor the health of a Kubernetes cluster?

Networking and Ingress:

213. Elaborate on the role of kube-proxy in Kubernetes.
214. Manage environment variables in a Kubernetes pod.
215. What is the purpose of Kubernetes Ingress, and how do you configure and manage it?
216. Explain the concept of a Headless Service in Kubernetes.

Storage and Configuration:

217. Define the role of PersistentVolumes (PV) in Kubernetes and distinguish them from PersistentVolumeClaims (PVC).
218. Securely expose a service outside the Kubernetes cluster.
219. Describe the use of the downward API in Kubernetes pods.
220. How does Kubernetes handle application configuration?

Security and Policies:

221. Explain the concept of network policies in Kubernetes and their impact on cluster security.

222. Define and discuss PodSecurityPolicy in Kubernetes and its enforcement.
223. How do you manage secrets rotation in a Kubernetes environment?

Advanced Concepts and Automation:

224. Describe the purpose and usage of Helm charts in Kubernetes.
225. What are affinity rules in Kubernetes, and how can they be employed?
226. Differentiate between a Helm Release and a Helm Chart.
227. Explain the role of Kubernetes Operators and situations where they are beneficial.

228. How does Horizontal Pod Autoscaling work in Kubernetes?

Cluster Operations:

229. Explain the role of kubelet in a Kubernetes node.
230. How can you perform rolling updates for a StatefulSet in Kubernetes?
231. Set up a multi-node Kubernetes cluster using kubeadm.

Scheduler and Node Operations:

232. Describe the role of kube-scheduler and how it selects nodes for pods.

233. Explain how Kubernetes handles node affinity and scenarios requiring its use.

234. What is a DaemonSet in Kubernetes, and when would you use it?

Miscellaneous:

235. How do you troubleshoot networking issues in a Kubernetes cluster?

236. How does Kubernetes handle node failures, and what mechanisms ensure node recovery?

237. Define the purpose of the kube-apiserver's admission controllers in Kubernetes.

GUYS,,,,IF THERE ARE ANY REPEATED QUESTIONS,,,IGNORE THEM OR RELEARN THEM…

GOOD LUCK…ON YOUR JOURNEY…

YOUR WELL-WISHER

SIDDHANTA DASH

DEVOPS AND CLOUD ENGINEER

14-12-2023,BANGALORE