DevOps Shack

Top 200 Most Asked Kubernetes Commands for MAANG/FAANG DevOps & SRE Interviews

Basic Kubernetes Commands

1. `kubectl version` – Check the client and server versions of Kubernetes.
2. `kubectl cluster-info` – Display the cluster information.
3. `kubectl get nodes` – List all nodes in the cluster.
4. `kubectl describe node <node-name>` – Get detailed information about a specific node.
5. `kubectl get pods` – List all pods in the current namespace.
6. `kubectl get pods -A` – List all pods across all namespaces.
7. `kubectl describe pod <pod-name>` – Show detailed information about a specific pod.
8. `kubectl get namespaces` – List all available namespaces.

9. `kubectl create namespace <namespace-name>` – Create a new namespace.

10. `kubectl delete namespace <namespace-name>` – Delete a namespace.

Working with Deployments

11. `kubectl create deployment <deployment-name> --image=<image-name>` – Create a new deployment.

12. `kubectl get deployments` – List all deployments.

13. `kubectl describe deployment <deployment-name>` – Get details about a deployment.

14. `kubectl scale deployment <deployment-name> --replicas=<number>` – Scale a deployment.

15. `kubectl rollout status deployment <deployment-name>` – Check the rollout status of a deployment.

16. `kubectl rollout undo deployment <deployment-name>` – Rollback to the previous deployment.

17. `kubectl delete deployment <deployment-name>` – Delete a deployment.

Managing Pods

18. `kubectl run <pod-name> --image=<image-name>` – Create a pod.

19. `kubectl delete pod <pod-name>` – Delete a pod.

20. `kubectl logs <pod-name>` – View logs of a pod.

21. `kubectl logs -f <pod-name>` – Stream the logs of a running pod.

22. `kubectl exec -it <pod-name> -- /bin/sh` – Access a running pod interactively.

23. `kubectl get pod <pod-name> -o yaml` – Get the YAML definition of a pod.

24. `kubectl get pod <pod-name> -o json` – Get the JSON definition of a pod.

25. `kubectl port-forward <pod-name> <local-port>:<pod-port>` – Forward a local port to a pod.

26. `kubectl cp <pod-name>:<path-in-pod> <local-path>` – Copy files from a pod.

27. `kubectl taint nodes <node-name> <key>=<value>:NoSchedule` – Taint a node to prevent scheduling.

Working with Services

28. `kubectl expose deployment <deployment-name> --type=NodePort --port=<port>` – Expose a deployment as a service.

29. `kubectl get services` – List all services.

30. `kubectl describe service <service-name>` – Get details about a service.

31. `kubectl delete service <service-name>` – Delete a service.

32. `kubectl get endpoints` – Show endpoints of services.

ConfigMaps & Secrets

33. `kubectl create configmap <configmap-name> --from-literal=KEY=VALUE` – Create a ConfigMap.

34. `kubectl get configmaps` – List all ConfigMaps.

35. `kubectl describe configmap <configmap-name>` – Get details of a ConfigMap.

36. `kubectl delete configmap <configmap-name>` – Delete a ConfigMap.

37. `kubectl create secret generic <secret-name> --from-literal=KEY=VALUE` – Create a Secret.

38. `kubectl get secrets` – List all secrets.

39. `kubectl describe secret <secret-name>` – Get details of a Secret.

40. `kubectl delete secret <secret-name>` – Delete a Secret.

Working with StatefulSets

41. `kubectl get statefulsets` – List all StatefulSets.

42. `kubectl describe statefulset <statefulset-name>` – Get details of a StatefulSet.

43. `kubectl delete statefulset <statefulset-name>` – Delete a StatefulSet.

DaemonSets

44. `kubectl get daemonsets` – List all DaemonSets.

45. `kubectl describe daemonset <daemonset-name>` – Get details of a DaemonSet.

46. `kubectl delete daemonset <daemonset-name>` – Delete a DaemonSet.

Jobs & CronJobs

47. `kubectl create job <job-name> --image=<image-name>` – Create a job.
48. `kubectl get jobs` – List all jobs.
49. `kubectl describe job <job-name>` – Get details of a job.
50. `kubectl delete job <job-name>` – Delete a job.
51. `kubectl create cronjob <cronjob-name> --schedule="* * * * *" --image=<image-name>` – Create a CronJob.
52. `kubectl get cronjobs` – List all CronJobs.
53. `kubectl delete cronjob <cronjob-name>` – Delete a CronJob.

Networking & Ingress

54. `kubectl get ingress` – List all Ingress resources.
55. `kubectl describe ingress <ingress-name>` – Get details of an Ingress.
56. `kubectl delete ingress <ingress-name>` – Delete an Ingress.

Roles & RoleBindings

57. `kubectl get roles` – List all roles.
58. `kubectl get rolebindings` – List all role bindings.
59. `kubectl describe role <role-name>` – Get details of a role.
60. `kubectl describe rolebinding <rolebinding-name>` – Get details of a role binding.
61. `kubectl delete role <role-name>` – Delete a role.
62. `kubectl delete rolebinding <rolebinding-name>` – Delete a role binding.

Persistent Storage

63. `kubectl get pv` – List PersistentVolumes.
64. `kubectl get pvc` – List PersistentVolumeClaims.
65. `kubectl describe pv <pv-name>` – Get details of a PersistentVolume.
66. `kubectl describe pvc <pvc-name>` – Get details of a PersistentVolumeClaim.
67. `kubectl delete pvc <pvc-name>` – Delete a PersistentVolumeClaim.

Debugging & Troubleshooting

68. `kubectl get events` – View cluster events.

69. `kubectl top nodes` – Show CPU and memory usage of nodes.

70. `kubectl top pods` – Show CPU and memory usage of pods.

71. `kubectl get pods --field-selector=status.phase!=Running` – List non-running pods.

72. `kubectl get pods --field-selector=status.phase=Pending` – List pending pods.

73. `kubectl get pods --sort-by=.metadata.creationTimestamp` – Sort pods by age.

Backup & Restore

74. `kubectl get all -o yaml > backup.yaml` – Backup all Kubernetes resources.

75. `kubectl apply -f backup.yaml` – Restore from a backup.

Custom Resource Definitions (CRDs)

76. `kubectl get crds` – List all Custom Resource Definitions.

77. `kubectl describe crd <crd-name>` – Get details of a CRD.

78. `kubectl delete crd <crd-name>` – Delete a CRD.

Advanced Commands

79. `kubectl edit deployment <deployment-name>` – Edit a deployment live.

80. `kubectl apply -f <file.yaml>` – Apply changes from a YAML file.

81. `kubectl get pod <pod-name> -o wide` – Get pod details including the node it's running on.

82. `kubectl get componentstatuses` – Check the status of cluster components.

83. `kubectl auth can-i delete pods` – Check if the current user can delete pods.

Cluster Management

84. `kubectl drain <node-name>` – Safely evict pods from a node.

85. `kubectl cordon <node-name>` – Mark a node as unschedulable.

86. `kubectl uncordon <node-name>` – Mark a node as schedulable again.

87. `kubectl delete node <node-name>` – Remove a node from the cluster.

88. `kubectl label nodes <node-name> key=value` – Add labels to a node.

Node Management

89. `kubectl label nodes <node-name> key=value` – Add a label to a node.

90. `kubectl label nodes <node-name> key-` – Remove a label from a node.

91. `kubectl annotate node <node-name> description="This is a test node"` – Add an annotation to a node.

92. `kubectl drain <node-name> --ignore-daemonsets --delete-local-data` – Drain a node while ignoring daemonsets and local storage.

93. `kubectl get nodes -o wide` – Get detailed node

information including external IPs.

94. `kubectl top nodes --sort-by=cpu` – Sort nodes based on CPU usage.

95. `kubectl top nodes --sort-by=memory` – Sort nodes based on memory usage.

96. `kubectl debug node/<node-name> -it --image=busybox` – Debug a node by running a container on it.

Pod Debugging & Monitoring

97. `kubectl logs <pod-name> --previous` – Fetch logs from the previous container instance (if restarted).

98. `kubectl logs -l app=<label>` – Get logs for all pods with a specific label.

99. `kubectl exec -it <pod-name> -- env` – Print environment variables inside a pod.

100. `kubectl attach -it <pod-name>` – Attach to a running pod interactively.

101. `kubectl exec -it <pod-name> -- cat /etc/hosts` – View the `/etc/hosts` file inside a pod.

102. `kubectl get pod <pod-name> -o=jsonpath='{.status.phase}'` – Get the current phase of a pod.

103. `kubectl get pods --show-labels` – Display all labels assigned to pods.

104. `kubectl get pod <pod-name> -o jsonpath='{.metadata.name}'` – Get a pod's name using JSONPath.

105. `kubectl get pod <pod-name> -o go-template='{{.status.podIP}}'` – Get a pod's IP using Go templates.

Resource Quotas & Limits

106. `kubectl get resourcequotas` – List all resource quotas in the namespace.

107. `kubectl describe resourcequota <quota-name>` – Get details of a resource quota.

108. `kubectl get limitranges` – Show limits on CPU and memory per namespace.

109. `kubectl describe limitrange <limit-name>` – Describe the limit range in a namespace.

Service Discovery & DNS

110. `kubectl get endpoints` – Get details of service endpoints.

111. `kubectl exec -it <pod-name> -- nslookup <service-name>` – Check DNS resolution inside a pod.

112. `kubectl exec -it <pod-name> -- dig <service-name>` – Use `dig` to check service resolution.

113. `kubectl exec -it <pod-name> -- curl http://<service-name>:<port>` – Test service connectivity.

114. `kubectl get svc --sort-by=.metadata.creationTimestamp` – Sort services by creation time.

115. `kubectl apply -f ingress.yaml` – Apply an Ingress resource from a file.

116. `kubectl logs <ingress-pod-name> -n kube-system` – Check logs of Ingress controller.

117. `kubectl get ingress -o wide` – Get additional details of Ingress resources.

118. `kubectl delete ingress <ingress-name>` – Delete an Ingress rule.

119. `kubectl get networkpolicies` – List all NetworkPolicies.

120. `kubectl describe networkpolicy <policy-name>` – Describe a NetworkPolicy.

121. `kubectl delete networkpolicy <policy-name>` – Delete a NetworkPolicy.

Security & RBAC

122. `kubectl create serviceaccount <sa-name>` – Create a service account.

123. `kubectl get serviceaccounts` – List all service accounts.

124. `kubectl get clusterroles` – List all ClusterRoles.

125. `kubectl get clusterrolebindings` – List all ClusterRoleBindings.

126. `kubectl create role <role-name> --verb=get,list --resource=pods` – Create a Role.

127. `kubectl create clusterrole <role-name> --verb=get,list --resource=pods` – Create a ClusterRole.

128. `kubectl delete clusterrole <role-name>` – Delete a ClusterRole.

129. `kubectl get roles -o wide` – Get detailed role information.

Custom Resource Definitions (CRDs)

130. `kubectl get crds -o wide` – Get detailed CRD information.

131. `kubectl get <custom-resource>` – Get all instances of a CRD.

132. `kubectl delete <custom-resource> <resource-name>` – Delete a custom resource.

133. `kubectl edit crd <crd-name>` – Modify a CRD.

134. `kubectl config view` – View the current Kubeconfig settings.

135. `kubectl config use-context <context-name>` – Switch between Kubernetes contexts.

136. `kubectl config get-contexts` – List all available contexts.

137. `kubectl config delete-context <context-name>` – Delete a Kubernetes context.

138. `kubectl get job --field-selector=status.successful=0` - Find failed jobs.

139. `kubectl get cronjob -o jsonpath='{.items[*].metadata.name}'` - Get the names of all CronJobs.

140. `kubectl patch cronjob <cronjob-name> -p '{"spec" : {"suspend" : true}}'` - Suspend a CronJob.

141. `kubectl events -A --sort-by='.lastTimestamp'` - View the latest cluster events.

142. `kubectl debug pod/<pod-name> -it --image=busybox` - Debug a pod by running a temporary container.

143. `kubectl get pods --all-namespaces -o jsonpath="{.items[*].status.containerStatuses[*].restartCount}"` - Check restart counts.

144. `kubectl get horizontalpodautoscalers` - List all HorizontalPodAutoscalers.

145. `kubectl describe hpa <hpa-name>` - Get details of a HorizontalPodAutoscaler.

146. `kubectl delete hpa <hpa-name>` - Delete a HorizontalPodAutoscaler.

147. `kubectl top pods --containers` – Show resource usage for containers.

148. `helm list` – List all Helm releases.

149. `helm install <release-name> <chart-name>` – Install a Helm chart.

150. `helm upgrade <release-name> <chart-name>` – Upgrade a Helm release.

151. `helm rollback <release-name> <revision>` – Roll back to a previous Helm revision.

152. `helm delete <release-name>` – Delete a Helm release.

Scaling & Load Balancing

153. `kubectl get horizontalpodautoscalers` – List HPA resources.

154. `kubectl autoscale deployment <deployment-name> --cpu-percent=50 --min=1 --max=10` – Set up auto-scaling.

155. `kubectl get all --all-namespaces -o yaml > backup.yaml` – Backup all cluster resources.

156. `kubectl apply -f backup.yaml` – Restore Kubernetes resources.

157. `kubectl get componentstatuses` – Check the health of cluster components.

158. `kubectl get csr` – List all certificate signing requests.

159. `kubectl delete pod --force --grace-period=0 <pod-name>` – Force delete a stuck pod.

160. `kubectl api-resources` – List all available API resources.

161. `kubectl api-versions` – List all available API versions.

Kube Proxy & Debugging

162. `kubectl proxy --port=8001` – Start a proxy to access the Kubernetes API server.

163. `kubectl get --raw /apis` – Fetch raw API server data.

164. `kubectl wait --for=condition=available deployment/<deployment-name>` – Wait until a deployment is available.

165. `kubectl wait --for=condition=complete job/<job-name>` – Wait until a job completes.

166. `kubectl rollout pause deployment <deployment-name>` – Pause the rollout of a deployment.

167. `kubectl rollout resume deployment <deployment-name>` – Resume a paused deployment.

168. `kubectl rollout history deployment <deployment-name>` – View the rollout history of a deployment.

169. `kubectl set env deployment <deployment-name> VAR_NAME=value` – Update an environment variable in a deployment.

170. `kubectl scale statefulset <statefulset-name> --replicas=<number>` – Scale a StatefulSet.

Patch & Modify Resources

171. `kubectl patch deployment <deployment-name> -p '{"spec": {"replicas": 5}}'` – Patch a deployment to update the replica count.

172. `kubectl patch service <service-name> -p '{"spec": {"type": "LoadBalancer"}}'` – Patch a service to change its type.

173. `kubectl label pod <pod-name> environment=production` – Add a label to a pod.

174. `kubectl annotate pod <pod-name> description="Test Pod"` – Add an annotation to a pod.

175. `kubectl label pod <pod-name> environment-` – Remove a label from a pod.

Cluster Access & Authentication

176. `kubectl auth can-i create pods` – Check if the current user has permission to create pods.

177. `kubectl auth can-i delete deployments --namespace=dev` – Check if the user has permissions in a specific namespace.

178. `kubectl get clusterrolebinding -o wide` – List all ClusterRoleBindings with details.

179. `kubectl get rolebinding -n <namespace>` – List role bindings in a specific namespace.

Namespace Management

180. `kubectl config set-context --current --namespace=<namespace>` – Set the default namespace for the current session.

181. `kubectl get all -n <namespace>` – Get all resources in a specific namespace.

182. `kubectl delete namespace <namespace>` – Delete a

namespace and all its resources.

Customizing Output

183. `kubectl get pods -o=jsonpath='{.items[*].metadata.name}'` – Extract pod names using JSONPath.

184. `kubectl get pods -o custom-columns="NAME:.metadata.name,STATUS:.status.phase"` – Customize output columns.

185. `kubectl get pods -o wide --sort-by=.status.startTime` – Sort pods by start time.

Events & Debugging

186. `kubectl get events --sort-by=.metadata.creationTimestamp` – View recent cluster events in order.

187. `kubectl describe pod <pod-name> | grep -i error` – Search for errors in pod descriptions.

188. `kubectl exec -it <pod-name> -- dmesg` – Check kernel logs inside a pod.

189. `kubectl get pv --sort-by=.spec.capacity.storage` – List PersistentVolumes sorted by storage capacity.

190. `kubectl get pvc -o=jsonpath='{.items[*].status.phase}'` – Get the status of all PersistentVolumeClaims.

191. `kubectl get componentstatuses` – Get the status of Kubernetes master components.

192. `kubectl api-resources --verbs=list -o name` – List all resources that support the `list` verb.

193. `kubectl api-versions` – Get all supported API versions in the cluster.

194. `kubectl get endpointslices` – View the endpoint slices for services.

195. `kubectl port-forward svc/<service-name> 8080:80` – Forward a local port to a service.

196. `kubectl delete pod --all --namespace=<namespace>` – Delete all pods in a specific namespace.

197. `kubectl delete all --all` – Delete all resources in the current namespace.

198. `kubectl replace -f <file.yaml>` – Replace an existing resource with an updated version.

199. `kubectl apply --dry-run=client -f <file.yaml>` – Validate YAML without applying it.

200. `kubectl convert -f <old.yaml> --output-version=v1` – Convert Kubernetes resource definitions to a new API version.