**Kubernetes Topics to Master Before Your Interview 🚀**

Here's a **comprehensive list** of Kubernetes topics you should cover before your interview.

**🔹 1. Basics of Kubernetes**

✅ What is Kubernetes?  
✅ Difference between Docker & Kubernetes  
✅ Kubernetes architecture (Master Node, Worker Nodes)  
✅ Components of Kubernetes (API Server, Controller Manager, etc.)  
✅ Pods, Containers, and Deployments  
✅ ReplicaSets & Replication Controllers  
✅ Difference between Pods, Deployments & ReplicaSets

**🔹 2. Kubernetes Workloads & Resources**

✅ **Pods**: Lifecycle, multi-container pods, how to create/manage them  
✅ **Deployments**: Scaling, Rolling Updates, Rollbacks  
✅ **StatefulSets**: When to use them (for databases, etc.)  
✅ **DaemonSets**: Running on every node (e.g., monitoring agents)  
✅ **Jobs & CronJobs**: One-time & scheduled tasks

**🔹 3. Kubernetes Services & Networking**

✅ **Services**: ClusterIP, NodePort, LoadBalancer, ExternalName  
✅ **Service Discovery**: How services find each other  
✅ **Ingress Controller**: Exposing applications using Nginx Ingress  
✅ **Kubernetes Networking**: CNI, network policies, pod-to-pod communication  
✅ **DNS in Kubernetes**

**🔹 4. Storage in Kubernetes**

✅ **Volumes**: EmptyDir, HostPath, Persistent Volumes (PV & PVC)  
✅ **Storage Classes**: Dynamic provisioning of storage  
✅ **ConfigMaps & Secrets**: Storing configurations securely

**🔹 5. Kubernetes Security**

✅ **RBAC (Role-Based Access Control)**  
✅ **Service Accounts & User Authentication**  
✅ **Network Policies**: Controlling pod communication  
✅ **Secrets Management**

**🔹 6. Kubernetes Monitoring & Logging**

✅ **Logging in Kubernetes** (kubectl logs, Fluentd, Elasticsearch, Kibana)  
✅ **Monitoring with Prometheus & Grafana**  
✅ **Liveness & Readiness Probes** (Health checks)

**🔹 7. Helm Charts & Operators**

✅ What is **Helm**? How to deploy applications using Helm?  
✅ Helm Charts structure (values.yaml, Chart.yaml)  
✅ **Kubernetes Operators**: Automating complex workloads

**🔹 8. Kubernetes CI/CD & GitOps**

✅ Deploying applications using **GitHub Actions, ArgoCD, FluxCD**  
✅ Integrating Kubernetes with Jenkins  
✅ Blue-Green & Canary Deployments

**🔹 9. Kubernetes Autoscaling & Load Balancing**

✅ **Horizontal Pod Autoscaler (HPA)**  
✅ **Vertical Pod Autoscaler (VPA)**  
✅ **Cluster Autoscaler** (Scaling nodes automatically)

**🔹 10. Kubernetes Multi-Cluster Management**

✅ **Namespaces** for multi-tenant clusters  
✅ **Managing 100+ Kubernetes clusters**  
✅ **KubeFed (Kubernetes Federation)**

**🔹 11. Troubleshooting & Debugging in Kubernetes**

✅ Debugging pods (kubectl describe pod, kubectl logs, kubectl exec)  
✅ Checking events (kubectl get events)  
✅ Common Kubernetes errors & solutions

**💡 Advanced Topics (Optional, but Good to Know)**

🔹 Kubernetes on Cloud (AWS EKS, Azure AKS, GCP GKE)  
🔹 Service Mesh (Istio, Linkerd)  
🔹 Kubernetes Hardening & Best Practices  
🔹 Kubernetes Disaster Recovery & Backup