

KUBERNETES COMMANDS

CHEATSHEET

(A COMPLETE QUICK-REFERENCE GUIDE)



1. Notation & Conventions

- `<angle-brackets>` : placeholders you must replace (e.g., `<namespace>`, `<pod-name>`)
- `[square-brackets]` : optional flags/parts
- `-o yaml|json|wide` : control output format for most kubectl commands
- `-n <namespace>` : target specific namespace
- `--context <name>` : use specific kubeconfig context
- `--dry-run=client -o yaml` : show manifest without applying (good for generating YAML)

2. Basics & Context

- `kubectl version --short` – Show client & server versions.
- `kubectl cluster-info` – Show cluster master & services info.
- `kubectl api-resources` – List all API resource types.
- `kubectl api-versions` – List available API versions.
- `kubectl config view` – Show kubeconfig.
- `kubectl config get-contexts` – List contexts.
- `kubectl config current-context` – Show current context.
- `kubectl config use-context <context>` – Switch context.
- `kubectl config set-context <ctx> --namespace=<ns>` – Set default namespace for a context.
- `kubectl get componentstatuses` (or `kubectl get cs`) – Cluster components health (legacy).

3. Namespaces

- `kubectl get namespaces` or `kubectl get ns` – List namespaces.
- `kubectl create namespace <name>` – Create namespace.
- `kubectl delete namespace <name>` – Delete namespace.

- `kubectl get all -n <namespace>` – All resources in a namespace.

4. Nodes & Cluster Objects

- `kubectl get nodes` – List nodes.
- `kubectl describe node <node-name>` – Detailed info of a node.
- `kubectl cordon <node>` – Mark node unschedulable.
- `kubectl uncordon <node>` – Mark node schedulable.
- `kubectl drain <node> --ignore-daemonsets --delete-emptydir-data` – Safely evict workloads from node.
- `kubectl taint nodes <node> key=value:NoSchedule` – Add taint to node.
- `kubectl taint nodes <node> key=value:NoSchedule-` – Remove taint.

5. Workloads – Pods

- `kubectl get pods` – List pods in current namespace.
- `kubectl get pods -A` – List pods in all namespaces.
- `kubectl get pods -o wide` – With node & IP info.
- `kubectl describe pod <pod>` – Detailed pod info.
- `kubectl logs <pod>` – Logs from pod (single-container).
- `kubectl logs <pod> -c <container>` – Logs from specific container.
- `kubectl logs -f <pod>` – Stream logs (follow).
- `kubectl exec -it <pod> -- <cmd>` – Run command inside pod (e.g., bash).
- `kubectl port-forward pod/<pod> <local_port>:<pod_port>` – Forward local port to pod.
- `kubectl delete pod <pod>` – Delete pod.
- `kubectl delete pod <pod> --force --grace-period=0` – Force delete.

Create pods:

- `kubectl run <name> --image=<image> [--restart=Never]` – Create a pod quickly.

- `kubectl run <name> --image=<image> --port=<port> --expose` – Create pod + service.

6. Workloads – Deployments, ReplicaSets, DaemonSets, Jobs

Deployments

- `kubectl get deployments` or `kubectl get deploy` – List deployments.
- `kubectl describe deploy <name>` – Deployment details.
- `kubectl create deployment <name> --image=<image> [--port=<port>]` – Quick deployment.
- `kubectl scale deployment <name> --replicas=<n>` – Scale deployment.
- `kubectl set image deployment/<name> <container>=<image:tag>` – Update image (rolling update).
- `kubectl rollout status deployment/<name>` – Watch rollout status.
- `kubectl rollout history deployment/<name>` – Show rollout history.
- `kubectl rollout undo deployment/<name> [--to-revision=<rev>]` – Roll back.
- `kubectl delete deployment <name>` – Delete deployment.

ReplicaSets

- `kubectl get rs` – List ReplicaSets.
- `kubectl describe rs <name>` – Details.
- `kubectl delete rs <name>` – Delete ReplicaSet.

DaemonSets

- `kubectl get ds` – List DaemonSets.
- `kubectl describe ds <name>` – Details.
- `kubectl rollout restart ds/<name>` – Restart pods of DaemonSet.

Jobs & CronJobs

- `kubectl get jobs` – List Jobs.

- `kubectl create job <name> --image=<image> -- <cmd>` – One-off job.
- `kubectl get cronjobs` – List CronJobs.
- `kubectl create cronjob <name> --image=<image> --schedule="*/5 * * * *"` – CronJob.
- `kubectl delete job <name> / kubectl delete cronjob <name>` – Delete.

7. Services & Network

Services

- `kubectl get services or kubectl get svc` – List services.
- `kubectl describe svc <name>` – Service details.
- `kubectl expose deployment <deploy> --port=<port> --target-port=<pod-port> --type=ClusterIP|NodePort|LoadBalancer` – Create service from deployment.
- `kubectl delete svc <name>` – Delete service.

Endpoints & DNS

- `kubectl get endpoints` – List endpoints.
- `kubectl get endpointslices` – EndpointSlices.

Ingress

- `kubectl get ingress or kubectl get ing` – List Ingress resources.
- `kubectl describe ingress <name>` – Ingress details.
- `kubectl delete ingress <name>` – Delete.

Port-forwarding

- `kubectl port-forward svc/<service> <local_port>:<service_port>` – Forward service port.

8. ConfigMaps & Secrets

ConfigMaps

- `kubectl get configmaps or kubectl get cm` – List ConfigMaps.

- `kubectl describe configmap <name>` – Details.
- `kubectl create configmap <name> --from-literal=key=value` – From literal key/value.
- `kubectl create configmap <name> --from-file=<file>` – From file.
- `kubectl delete configmap <name>` – Delete.

Secrets

- `kubectl get secrets` – List Secrets.
- `kubectl describe secret <name>` – Details (base64 encoded).
- `kubectl create secret generic <name> --from-literal=key=value` – Generic secret.
- `kubectl create secret generic <name> --from-file=<file>` – From file.
- `kubectl create secret docker-registry <name> --docker-server=<server> --docker-username=<user> --docker-password=<pwd> --docker-email=<email>` – Image pull secret.
- `kubectl delete secret <name>` – Delete.

9. Storage – PV, PVC, & Volumes

- `kubectl get storageclass` or `kubectl get sc` – List StorageClasses.
- `kubectl describe storageclass <name>` – Details.

PersistentVolumes (PV)

- `kubectl get pv` – List PVs.
- `kubectl describe pv <name>` – PV details.

PersistentVolumeClaims (PVC)

- `kubectl get pvc` – List PVCs.
- `kubectl describe pvc <name>` – PVC details.
- `kubectl delete pvc <name>` – Delete PVC.

PVCs are mounted in pod specs using volumes + volumeMounts (via YAML).

10. Labels, Selectors & Annotations

- `kubectl get pods --show-labels` – Show labels.
- `kubectl label pods <pod> key=value` – Add/change label.
- `kubectl label pods <pod> key-` – Remove label.
- `kubectl get pods -l key=value` – List using label selector.
- `kubectl annotate pod <pod> key=value` – Add annotation.
- `kubectl annotate pod <pod> key-` – Remove annotation.

11. YAML, Apply, and Generating Manifests

- `kubectl get <resource> <name> -o yaml` – Get YAML for resource.
- `kubectl apply -f <file|dir>` – Create or update from YAML.
- `kubectl create -f <file>` – Create from YAML (fails if exists).
- `kubectl delete -f <file>` – Delete resources in file.
- `kubectl diff -f <file>` – Show diff between live & local.
- `kubectl create deployment <name> --image=<image> --dry-run=client -o yaml > deploy.yaml` – Generate YAML.

12. Logs, Debugging & Monitoring

- `kubectl logs <pod>` – Pod logs.
- `kubectl logs <pod> -c <container>` – Logs for container.
- `kubectl logs -f <pod>` – Follow logs.
- `kubectl logs <pod> --previous` – Logs from previous crashed container.
- `kubectl describe <resource> <name>` – Events & detailed info (primary debug tool).
- `kubectl get events` – Cluster events (sorted by time).
- `kubectl top nodes` – Node metrics (requires Metrics Server).
- `kubectl top pods [-A]` – Pod metrics.

- `kubectl debug node/<node> --image=<image>` – Ephemeral debug pod on node (newer clusters).
- `kubectl debug pod/<pod> -it --image=<image>` – Debug ephemeral container.

13. Security, Service Accounts & RBAC

Service Accounts

- `kubectl get serviceaccounts` or `kubectl get sa` – List SAs.
- `kubectl create serviceaccount <name>` – Create SA.
- `kubectl delete sa <name>` – Delete SA.

Roles & RoleBindings

- `kubectl get roles` / `kubectl get clusterroles` – List roles.
- `kubectl create role <name> --verb=get,list,watch --resource=pods -n <ns>` – Simple namespaced Role.
- `kubectl create clusterrole <name> --verb=* --resource=pods` – ClusterRole.
- `kubectl create rolebinding <name> --role=<role> --serviceaccount=<ns>:<sa>` – Bind Role.
- `kubectl create clusterrolebinding <name> --clusterrole=<role> --serviceaccount=<ns>:<sa>` – Bind ClusterRole.
- `kubectl describe rolebinding <name>` – View bindings.

Pod Security (basic)

- Security context, PSP replacement (PodSecurity admission) are mainly via YAML; common check:
 - `kubectl get pods -o yaml | grep -i securityContext` (rough inspection).

14. Helm (Optional – Package Manager)

If you use Helm charts (similar to Docker Swarm section in Docker PDF):

- `helm version` – Helm version.
- `helm repo list` – List chart repos.
- `helm repo add <name> <url>` – Add chart repo.
- `helm repo update` – Update repo indexes.
- `helm search repo <keyword>` – Search in repos.
- `helm install <release> <chart> [flags]` – Install chart.
- `helm upgrade <release> <chart> [flags]` – Upgrade release.
- `helm uninstall <release>` – Remove release.
- `helm list [-A]` – List releases.
- `helm status <release>` – Release status.
- `helm get values <release>` – Show values used.

15. Troubleshooting & Cleanup

- `kubectl get pods -A -o wide` – Quick view of everything running.
- `kubectl describe pod <pod>` – First step when pod not running.
- `kubectl get events --sort-by=.lastTimestamp` – Recent issues.
- `kubectl delete pod <pod>` – Restart pod managed by Deployment/ReplicaSet (will be recreated).
- `kubectl delete pod <pod> --grace-period=0 --force` – Force stuck pod deletion.
- `kubectl delete job <job> --force --grace-period=0` – Force-delete job.
- `kubectl config delete-context <ctx>` – Remove unused context from kubeconfig.
- `kubectl config unset contexts.<ctx> / kubectl config unset users.<user>` – Clean kubeconfig entries.