[Kubernetes Operations] (CheatSheet)

1. Basic Configuration

- **Set Kubeconfig**: kubectl config use-context my-cluster-name
- **View Current Context**: kubectl config current-context
- **List All Contexts**: kubectl config get-contexts
- **Switch Context**: kubectl config set-context my-cluster-name
- **View Cluster Info**: kubectl cluster-info

2. Working with Namespaces

- **List Namespaces**: kubectl get namespaces
- **Create Namespace**: kubectl create namespace my-namespace
- **Delete Namespace**: kubectl delete namespace my-namespace
- **Switch Namespace for Context**: kubectl config set-context --current --namespace=my-namespace
- **Describe Namespace**: kubectl describe namespace my-namespace

3. Deployments and Pods

- **Create Deployment**: kubectl create deployment my-deployment --image=my-image
- **List Deployments**: kubectl get deployments
- **Delete Deployment**: kubectl delete deployment my-deployment
- **Scale Deployment**: kubectl scale deployment my-deployment --replicas=3
- **List Pods**: kubectl get pods
- **Describe Pod**: kubectl describe pod my-pod
- **Delete Pod**: kubectl delete pod my-pod
- **Edit Deployment**: kubectl edit deployment my-deployment
- **Get Deployment YAML**: kubectl get deployment my-deployment -o yaml
- **Rollout Status of Deployment**: kubectl rollout status deployment/my-deployment

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4. Services and Networking

- **Create Service**: kubectl expose deployment my-deployment --type=LoadBalancer --name=my-service
- **Get Services**: kubectl get services
- **Delete Service**: kubectl delete service my-service
- **Describe Service**: kubectl describe service my-service
- **Port Forward to Pod**: kubectl port-forward pod/my-pod 8080:80
- **Apply Network Policy**: kubectl apply -f network-policy.yaml
- **List Network Policies**: kubectl get networkpolicy

5. Configuration and Secrets

- **Create ConfigMap**: kubectl create configmap my-config --from-literal=key1=value1 --from-literal=key2=value2
- **Get ConfigMaps**: kubectl get configmaps
- **Delete ConfigMap**: kubectl delete configmap my-config
- **Create Secret**: kubectl create secret generic my-secret --from-literal=key1=value1
- **Get Secrets**: kubectl get secrets
- **Delete Secret**: kubectl delete secret my-secret

6. Ingress and Routing

- **Create Ingress**: kubectl apply -f ingress.yaml
- **List Ingresses**: kubectl get ingresses
- **Delete Ingress**: kubectl delete ingress my-ingress
- **Describe Ingress**: kubectl describe ingress my-ingress

7. Volumes and Persistent Storage

- **Create Persistent Volume**: kubectl apply -f persistent-volume.yaml
- **Get Persistent Volumes**: kubectl get pv
- **Delete Persistent Volume**: kubectl delete pv my-pv
- **Create Persistent Volume Claim**: kubectl apply -f persistent-volume-claim.yaml
- **Get Persistent Volume Claims**: kubectl get pvc

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- **Delete Persistent Volume Claim**: kubectl delete pvc my-pvc

8. Jobs and CronJobs

- **Create Job**: kubectl create -f job.yaml
- **List Jobs**: kubectl get jobs
- **Delete Job**: kubectl delete job my-job
- **Create CronJob**: kubectl create -f cronjob.yaml
- **List CronJobs**: kubectl get cronjobs
- **Delete CronJob**: kubectl delete cronjob my-cronjob

9. Logs and Troubleshooting

- **View Pod Logs**: kubectl logs my-pod
- **Stream Pod Logs**: kubectl logs -f my-pod
- **Exec into Pod**: kubectl exec -it my-pod -- /bin/bash
- **Describe for Troubleshooting**: kubectl describe pod/service/deployment my-name
- **Get Events**: kubectl get events
- **Attach to Running Container**: kubectl attach my-pod -i
- **Copy Files from/to Pod**: kubectl cp /tmp/foo_dir my-pod:/tmp/bar_dir
- **Port Forward to Service**: kubectl port-forward svc/my-service 8080:80

10. Advanced Kubectl Commands

- **Apply YAML File**: kubectl apply -f my-resource.yaml
- **Get Resource Details in YAML**: kubectl get pod my-pod -o yaml
- **Explain Resources**: kubectl explain pods,svc
- **Autoscale Deployment**: kubectl autoscale deployment my-deployment --min=2 --max=5 --cpu-percent=80
- **Rolling Update Deployment**: kubectl set image deployment/my-deployment my-container=new-image
- **Rollback Deployment**: kubectl rollout undo deployment/my-deployment
- **Pause/Resume Rollout**: kubectl rollout pause/resume deployment/my-deployment

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- **Record Command for Future Rollbacks**: kubectl apply -f my-deployment.yaml --record
- **Get Top Node or Pod**: kubectl top node/pod
- **Drain Node**: kubectl drain my-node
- **Cordon/Uncordon Node**: kubectl cordon/uncordon my-node
- **Taint Node**: kubectl taint nodes my-node key=value:taint-effect
- **Patch Resource**: kubectl patch pod my-pod -p '{"spec":{"containers":[{"name":"my-container","image":"new-image"}]}}'

11. Working with Custom Resources

- **Create Custom Resource**: kubectl apply -f custom-resource.yaml
- **Get Custom Resources**: kubectl get my-custom-resource
- **Delete Custom Resource**: kubectl delete my-custom-resource my-resource-name

12. Labeling and Annotations

- **Add Label to Pod**: kubectl label pods my-pod new-label=awesome
- **Remove Label from Pod**: kubectl label pod my-pod new-label-
- **Add Annotation**: kubectl annotate pod my-pod my-annotation="12345"
- **Get Pods with Specific Label**: kubectl get pods -l label-name=label-value

13. Resource Quotas and Limits

- **Create Resource Quota**: kubectl apply -f resource-quota.yaml
- **Describe Resource Quota**: kubectl describe quota
- **Set Limits on Namespace**: kubectl apply -f limit-range.yaml

14. Role-Based Access Control (RBAC)

- **Create Role**: kubectl create role my-role --verb=get --verb=list --resource=pods
- **Create ClusterRole**: kubectl create clusterrole my-clusterrole --verb=get --verb=list --resource=nodes

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- **Create RoleBinding**: kubectl create rolebinding my-rolebinding --role=my-role --user=my-user
- **Create ClusterRoleBinding**: kubectl create clusterrolebinding my-clusterrolebinding --clusterrole=my-clusterrole --group=my-group

15. Using Helm (Package Manager)

- **Install Helm Chart**: helm install my-release helm-chart-repo/my-chart
- **List Helm Releases**: helm list
- **Upgrade Helm Release**: helm upgrade my-release helm-chart-repo/my-chart
- **Uninstall Helm Release**: helm uninstall my-release

16. Working with Helm Charts

- **Create Helm Chart**: helm create my-chart
- **Package Helm Chart**: helm package my-chart
- **Lint Helm Chart**: helm lint my-chart
- **View Helm Chart Dependencies**: helm dependency list my-chart

17. StatefulSets and DaemonSets

- **Create StatefulSet**: kubectl apply -f statefulset.yaml
- **Get StatefulSets**: kubectl get statefulsets
- **Delete StatefulSet**: kubectl delete statefulset my-statefulset
- **Create DaemonSet**: kubectl apply -f daemonset.yaml
- **Get DaemonSets**: kubectl get daemonsets
- **Delete DaemonSet**: kubectl delete daemonset my-daemonset

18. Kubernetes Dashboard

- **Access Dashboard**: kubectl proxy
- **Create Dashboard Admin User**: kubectl create -f dashboard-adminuser.yaml

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19. Monitoring and Metrics

- **Get Metrics for Nodes**: `kubectl top nodes`
- **Get Metrics for Pods**: `kubectl top pods`
- **Accessing the Kubernetes Dashboard for Monitoring**: `kubectl apply -f https://raw.githubusercontent.com/kubernetes/dashboard/v2.0.0/aio/deploy/recommended.yaml`

20. Managing Persistent Volumes

- **List All Persistent Volumes**: `kubectl get pv`
- **Get Detailed Info on a Specific Persistent Volume**: `kubectl describe pv my-pv`
- **Deleting a Persistent Volume**: `kubectl delete pv my-pv`

21. Managing Persistent Volume Claims

- **List All Persistent Volume Claims (PVCs)**: `kubectl get pvc`
- **Get Detailed Info on a Specific PVC**: `kubectl describe pvc my-pvc`
- **Deleting a PVC**: `kubectl delete pvc my-pvc`

22. Working with ConfigMaps

- **Create a ConfigMap from a File**: `kubectl create configmap my-config --from-file=path/to/config-file`
- **Get ConfigMaps in a Namespace**: `kubectl get configmaps -n my-namespace`
- **Describe a Specific ConfigMap**: `kubectl describe configmap my-config`

23. Managing Secrets

- **Create a Secret from a File**: `kubectl create secret generic my-secret --from-file=path/to/file`
- **Get Secrets in a Namespace**: `kubectl get secrets -n my-namespace`
- **Describe a Specific Secret**: `kubectl describe secret my-secret`

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24. Advanced Pod Management

- **Run a Pod Interactively**: `kubectl run my-pod --image=my-image --stdin --tty`
- **Execute a Command Inside a Running Pod**: `kubectl exec my-pod -- ls /`
- **Copy Files from/to a Pod**: `kubectl cp /local/path my-pod:/pod/path`

25. Advanced Deployment Management

- **Updating a Deployment's Image**: `kubectl set image deployment/my-deployment my-container=my-image:v2`
- **Check Rollout History of a Deployment**: `kubectl rollout history deployment/my-deployment`
- **Undo a Deployment to an Earlier Revision**: `kubectl rollout undo deployment/my-deployment --to-revision=2`

26. Working with Network Policies

- **List All Network Policies**: `kubectl get networkpolicies`
- **Describe a Specific Network Policy**: `kubectl describe networkpolicy my-network-policy`
- **Delete a Network Policy**: `kubectl delete networkpolicy my-network-policy`

27. Using Custom Resource Definitions (CRDs)

- **Create a CRD**: `kubectl apply -f my-crd.yaml`
- **List All CRDs**: `kubectl get crds`
- **Delete a CRD**: `kubectl delete crd my-crd`

28. Handling Jobs and CronJobs

- **List Jobs in a Namespace**: `kubectl get jobs -n my-namespace`
- **Get Detailed Info on a Specific Job**: `kubectl describe job my-job`
- **Deleting a Job**: `kubectl delete job my-job`
- **List CronJobs in a Namespace**: `kubectl get cronjobs -n my-namespace`

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- **Get Detailed Info on a Specific CronJob**: kubectl describe cronjob my-cronjob

29. Advanced Service Management

- **Create a LoadBalancer Service**: kubectl expose deployment my-deployment --type=LoadBalancer --name=my-service
- **Create a NodePort Service**: kubectl expose deployment my-deployment --type=NodePort --name=my-service
- **Patch a Service**: kubectl patch service my-service -p '{"spec": {"type": "NodePort"}}'

30. Advanced Ingress Management

- **List All Ingress Resources**: kubectl get ingress
- **Get Detailed Info on a Specific Ingress**: kubectl describe ingress my-ingress
- **Edit an Ingress Resource**: kubectl edit ingress my-ingress

31. Using Labels and Selectors

- **Label a Resource**: kubectl label pods my-pod my-label=my-value
- **Delete Resources by Label**: kubectl delete pods -l my-label=my-value
- **Get Resources with Specific Labels**: kubectl get pods -l my-label=my-value

32. Managing DaemonSets

- **List All DaemonSets**: kubectl get daemonsets
- **Get Detailed Info on a Specific DaemonSet**: kubectl describe daemonset my-daemonset
- **Delete a DaemonSet**: kubectl delete daemonset my-daemonset

33. Managing StatefulSets

- **List All StatefulSets**: kubectl get statefulsets
- **Get Detailed Info on a Specific StatefulSet**: kubectl describe statefulset my-statefulset
- **Delete a StatefulSet**: kubectl delete statefulset my-statefulset

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34. Utilizing Helm for Kubernetes

- **List Installed Helm Charts**: `helm list --all-namespaces`
- **Install a Helm Chart**: `helm install my-release my-chart`
- **Upgrade an Installed Helm Chart**: `helm upgrade my-release my-chart`