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Kubernetes Comprehensive Cheat Sheet

March 16, 2025

Cluster Management

```
# View cluster info
kubectl cluster-info

# View all nodes
kubectl get nodes

# Describe a node
kubectl describe node <node_name>

# Get cluster events
kubectl get events

# View configuration
kubectl config view
```

Working with Pods

```
# List all pods
kubectl get pods

# Get pods with more details
kubectl get pods -o wide

# Get detailed pod information
kubectl describe pod <pod_name>

# Delete a pod
kubectl delete pod <pod_name>

# Run a temporary pod
kubectl run mypod --image=nginx --restart=Never
```

Deployments and Services

```
# List deployments
kubectl get deployments

# Create a deployment
kubectl create deployment my-deployment --image=nginx

# Scale a deployment
```

```
kubectl scale deployment <deployment_name> --replicas=3

# Update a deployment
kubectl set image deployment/<deployment_name> nginx=nginx:latest

# Rollback a deployment
kubectl rollout undo deployment/<deployment_name>

# Expose a deployment as a service
kubectl expose deployment <deployment_name> --type=NodePort --port=80
```

Working with Namespaces

```
# List all namespaces
kubectl get namespaces

# Create a namespace
kubectl create namespace my-namespace

# Delete a namespace
kubectl delete namespace my-namespace
```

ConfigMaps and Secrets

```
# Create a ConfigMap from a file
kubectl create configmap my-config --from-file=config.yaml

# View ConfigMaps
kubectl get configmaps

# Create a Secret from literals
kubectl create secret generic my-secret --from-literal=username=admin --from-
    literal=password=secret

# View Secrets
kubectl get secrets
```

Logs and Debugging

```
# View logs of a pod
kubectl logs <pod_name>

# Stream logs from a pod
kubectl logs -f <pod_name>

# Get into a running pod
kubectl exec -it <pod_name> -- /bin/sh

# Debug a pod with a temporary container
kubectl debug <pod_name> --image=busybox --target=nginx
```

Persistent Volumes

```
# List Persistent Volumes (PVs)
kubectl get pv

# List Persistent Volume Claims (PVCs)
kubectl get pvc

# Describe a PVC
kubectl describe pvc <pvc_name>
```

Networking

```
# Get all services
kubectl get services

# Get service details
kubectl describe service <service_name>

# Get network policies
kubectl get networkpolicies
```

Helm (Kubernetes Package Manager)

```
# Install a Helm chart
helm install my-release bitnami/nginx

# List installed Helm releases
helm list

# Upgrade a Helm release
helm upgrade my-release bitnami/nginx

# Uninstall a Helm release
helm uninstall my-release
```