Essential Kubernetes and Helm Commands

This document contains a list of essential Kubernetes and Helm commands you will commonly use for managing your Kubernetes cluster and deploying applications using Helm.

# Kubernetes Commands

## Get Pods

Syntax: kubectl get pods

Description: List all the pods in your cluster.

## Get Services

Syntax: kubectl get services

Description: List all the services in your cluster.

## Get Deployments

Syntax: kubectl get deployments

Description: List all the deployments in your cluster.

## Get Namespaces

Syntax: kubectl get namespaces

Description: List all namespaces in the cluster.

## Get Logs

Syntax: kubectl logs <pod-name>

Description: Get logs from a specific pod.

## Describe Resources

Syntax: kubectl describe pod <pod-name>

Description: Describe a pod or service (gives detailed information).

## Apply Configuration (YAML files)

Syntax: kubectl apply -f <file.yaml>

Description: Apply a resource configuration from a YAML file.

## Delete Resources

Syntax: kubectl delete pod <pod-name>

Description: Delete a pod, service, or deployment by name.

## Get Cluster Information

Syntax: kubectl cluster-info

Description: Get information about your Kubernetes cluster.

## Port Forwarding

Syntax: kubectl port-forward <pod-name> <local-port>:<pod-port>

Description: Forward a port from a local machine to a pod.

## Scaling Deployments

Syntax: kubectl scale deployment <deployment-name> --replicas=<number-of-replicas>

Description: Scale the number of replicas in a deployment.

# Helm Commands

## Install a Helm Chart

Syntax: helm install <release-name> <chart-directory-or-repo>

Description: Install a Helm chart to your Kubernetes cluster.

## Upgrade a Helm Release

Syntax: helm upgrade <release-name> <chart-directory-or-repo>

Description: Upgrade a Helm release.

## Uninstall a Helm Release

Syntax: helm uninstall <release-name>

Description: Uninstall (delete) a Helm release and remove the associated resources.

## List Helm Releases

Syntax: helm list

Description: List all the installed Helm releases in your cluster.

## Helm Chart Packaging

Syntax: helm package <chart-directory>

Description: Package a Helm chart into a .tgz file.

## Helm Repo Update

Syntax: helm repo update

Description: Update the Helm chart repository to get the latest versions of charts.

## Helm Search

Syntax: helm search repo <chart-name>

Description: Search for a chart in a Helm repository.

## Helm Template

Syntax: helm template <release-name> <chart-directory>

Description: Render a Helm chart’s Kubernetes manifests locally without installing.

## Helm History

Syntax: helm history <release-name>

Description: Get the history of a release.

## Helm Rollback

Syntax: helm rollback <release-name> <revision-number>

Description: Rollback to a previous release version.

## Install Chart with Custom Values

Syntax: helm install <release-name> <chart> -f <values-file.yaml>

Description: Install a Helm chart with custom values.

# Common kubectl & Helm Commands Summary

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| --- | --- | --- |
| Command | Syntax | Purpose |
| Get Pods | kubectl get pods | List all pods |
| Get Services | kubectl get services | List all services |
| Get Deployments | kubectl get deployments | List all deployments |
| Apply Configuration | kubectl apply -f <file> | Apply a YAML configuration to the cluster |
| Delete Resources | kubectl delete <resource> | Delete a resource |
| Install a Helm Chart | helm install <release-name> <chart> | Install a Helm chart |
| Upgrade a Helm Release | helm upgrade <release-name> <chart> | Upgrade a Helm release |
| Uninstall a Helm Release | helm uninstall <release-name> | Uninstall a Helm release |