# kubectl Cheat Sheet

## Installation

Install the `kubectl` command line tool to interact with the Kubernetes API:
https://kubernetes.io/docs/tasks/tools/#kubectl

Set up autocompletion in bash:

```
echo "source <(kubectl completion bash)" >> ~/.bashrc
```

## Global flags

| Flag | Description |
|---|---|
| `--namespace <namespace>` | The name of the namespace to use |
| `--help` | Show information about a given command |

## Context and configuration

| Command | Description |
|---|---|
| `kubectl config get-contexts` | List all contexts |
| `kubectl config current-context` | Display the current context |
| `kubectl config use-context <context>` | Switch to another context |
| `kubectl config delete-context <context>` | Delete the specified context from the kubeconfig |

## Display resources

| Command | Description |
|---|---|
| `kubectl get <resource>` | List all resources of this type in the current namespace |
| `kubectl get <resource> -o wide` | List all resources with more details |
| `kubectl get <resource> -A` | List all resources of this type in all namespaces |
| `kubectl get <resource> <name>` | List a particular resource |
| `kubectl get <resource> <name> -o yaml` | Print a particular resource in YAML format |
| `kubectl get <resource> <name> -l <key1>=<value1>` | List resources where label <key1> contains <value1> |
| `kubectl describe <resource>` | Show detailed information about a resource |

## Apply configuration manifests

| Command | Description |
|---|---|
| `kubectl apply -f <file>` | Apply a manifest from a file |
| `kubectl apply -f <dir>` | Apply all manifests in a directory |
| `kubectl apply -k <dir>` | Apply resources from a kustomize directory |

## Create resources manually

| Command | Description |
|---|---|
| `kubectl run <name> --image=<image>` | Start a pod |
| `kubectl create deployment <name> --image=<image>` | Create a deployment |
| `kubectl expose pod <pod> --port=<port>` | Create a service for an existing pod |
| `kubectl expose deployment <name> --port=<port>` | Create a service for an existing deployment |
| `kubectl create ingress <name> --rule=<host/path=svc:port>` | Create an ingress that routes traffic to a service |
| `kubectl create job <name> --image=<image>` | Create a job |
| `kubectl create job <name> --from=cronjob/<name>` | Create a job from a cronjob |
| `kubectl create cronjob <name> --image=<image> --schedule=<schedule>` | Create a cronjob, using a schedule in Cron format |
| `kubectl create secret generic <name> --from-literal=<key>=<value>` | Create a secret containing <key> and <value> |
| `kubectl create secret docker-registry <name> --docker-server=<server> --docker-username=<username> --docker-password=<password>` | Create a secret for a Docker registry |

## Generate YAML configuration manifests

| Command | Description |
|---|---|
| `kubectl create deployment <name> --image=<image> --dry-run=client -o yaml` | Generate a deployment manifest |
| `kubectl expose deployment <name> --port=<port> --dry-run=client -o yaml` | Generate a service manifest for a deployment |

## Edit resources

| Command | Description |
|---|---|
| `kubectl edit <resource> <name>` | Edit a resource in a text editor |
| `kubectl set image <resource> <name> <container>=<image>` | Update the image of a container in a pod |

## Set labels and annotations

| Command | Description |
|---|---|
| `kubectl label <resource> <name> <key>=<value>` | Add a label to a resource |
| `kubectl annotate <resource> <name> <key>=<value>` | Add an annotation to a resource |

## Delete resources

| Command | Description |
|---|---|
| `kubectl delete <resource> <name>` | Delete a particular resource |
| `kubectl delete <resource> --all` | Delete all resources of a particular type in the current namespace |
| `kubectl delete -f <file>` | Delete a resource from a file |

## Manage deployments

| Command | Description |
|---|---|
| `kubectl rollout status deployment <name>` | Show the status of a deployment rollout |
| `kubectl rollout history deployment <name>` | View the rollout history of a deployment |
| `kubectl rollout undo deployment <name>` | Undo a previous rollout deployment |
| `kubectl rollout restart deployment <name>` | Restart a deployment |
| `kubectl scale deployment <name> --replicas=<n>` | Scale a deployment to <n> replicas |
| `kubectl autoscale deployment <name> --min=<min> --max=<max>` | Autoscale a deployment between <n> and <n> replicas |

## Execute commands

| Command | Description |
|---|---|
| `kubectl exec <pod> -- <command>` | Execute a command in a running pod |
| `kubectl exec -it <pod> -- sh` | Open a shell in a running pod |

## View logs

| Command | Description |
|---|---|
| `kubectl logs <pod>` | Print the logs for a pod |
| `kubectl logs -f <pod>` | Print the logs for a pod and keep streaming |

## Resource usage

| Command | Description |
|---|---|
| `kubectl top node` | Show resource (CPU/memory) usage of nodes |
| `kubectl top pod` | Show resource (CPU/memory) usage of pods |

## Other commands

| Command | Description |
|---|---|
| `kubectl version` | Show the version of the client and server |
| `kubectl api-resources` | Print the supported API resources on the server |

## Helm

Helm is the package manager for Kubernetes. See https://helm.sh/docs/intro/install/ for installation instructions.

| Command | Description |
|---|---|
| `helm install <name> <chart>` | Install a chart with a name |
| `helm install <name> <chart> --namespace <namespace>` | Install a chart in a specific namespace |
| `helm list` | List releases |
| `helm uninstall <name>` | Uninstall a release |
| `helm upgrade <name> <chart>` | Upgrade a release |