# minikube Local Kubernetes

## CONCEPTS

minikube runs a single-node cluster on your machine. With the docker driver the node is a container; with VM drivers it is a virtual machine.

**Your machine** minikube CLI + kubectl
**Driver** docker, podman, kvm2, virtualbox
**minikube node** container or VM
**Kubernetes** control plane, pods

Every cluster is a profile (default: minikube). Pass -p <name> to any command to target another one.

Services of type LoadBalancer stay pending until minikube tunnel is running in a separate terminal.

minikube start also sets the kubectl context to the profile name, so plain kubectl works afterwards.

## CLUSTER LIFECYCLE

**minikube start**
Create the cluster or start a stopped one

**minikube stop**
Stop the cluster, keep its state

**minikube delete**
Delete the cluster

**minikube status**
Show host, kubelet and API server state

**minikube delete --all**
Delete every profile

## START OPTIONS

**minikube start --driver** *<driver>*
Choose docker, podman, kvm2 or another

**minikube start --cpus** *<n>* **--memory** *<size>*
Size the node

**minikube start --kubernetes-version** *<vX.Y.Z>*
Pin the Kubernetes version

**minikube start --nodes** *<n>*
Create a multi-node cluster

**minikube start --container-runtime** *<name>*
docker, containerd or cri-o

## START OPTIONS (cont.)

**minikube start --addons** *<a,b>*
Enable addons at start

**minikube config set driver** *<driver>*
Make a driver the default

cpus, memory and driver are fixed at creation. To change them, delete the profile and start again.

## PROFILES AND NODES

**minikube start -p** *<name>*
Create or start a named cluster

**minikube profile list**
List clusters and their status

**minikube profile** *<name>*
Set the active profile

**minikube stop -p** *<name>*
Stop a named cluster

**minikube node add**
Add a worker node

## ADDONS

**minikube addons list**
Show all addons and their state

**minikube addons enable** *<addon>*
Turn an addon on

## ADDONS (cont.)

**minikube addons enable ingress**
Add an NGINX ingress controller

**minikube addons enable metrics-server**
Make kubectl top work

## REACHING SERVICES

**minikube service** *<name>*
Open a service in the browser

**minikube service** *<name>* **--url**
Print the URL only

**minikube service list**
List services and URLs

**minikube tunnel**
Give LoadBalancer services an IP

**minikube ip**
Print the node IP

**minikube dashboard**
Open the Kubernetes dashboard

## IMAGES

**minikube image load** *<image>*
Copy a local image into the cluster

## IMAGES (cont.)

**minikube image build -t** *<tag>* *<dir>*
Build inside the cluster

**minikube image ls**
List images in the cluster

**eval $(minikube docker-env)**
Point docker at the node's engine

Images with the :latest tag trigger a pull. Use a versioned tag or imagePullPolicy: IfNotPresent for local images.

## ACCESS AND DEBUGGING

**minikube kubectl --** *<args>*
Run kubectl matching the cluster

**minikube ssh**
Open a shell on the node

**minikube logs**
Show cluster logs for debugging

**minikube mount** *<host-dir>*:*<node-dir>*
Mount a host folder into the node

**minikube update-context**
Fix kubeconfig after an IP change