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

START OPTIONS (cont.)

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

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 delete -p *<name>*
Delete a named cluster

minikube node add
Add a worker node

minikube node list
List nodes

ADDONS

minikube addons list
Show all addons and their state

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

minikube addons disable *<addon>*
Turn an addon off

minikube addons enable ingress
Add an NGINX ingress controller

ADDONS (cont.)

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

minikube dashboard --url
Print the dashboard URL only

IMAGES

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

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