kind Kubernetes in Docker

CONCEPTS

Each kind node is a container. Your cluster lives inside Docker (or Podman), so it needs no VM and starts in under a minute.

Docker / Podman host runtime
- **Node container** kindest/node image
  - **Kubernetes** kubelet, pods

Loaded images with a :latest tag are pulled anyway. Use a versioned tag or imagePullPolicy: IfNotPresent.

Contexts are named kind-<name>, so the default cluster is kind-kind.

CLUSTERS

`kind create cluster`
Create a cluster named kind

`kind create cluster --name <name>`
Create a named cluster

`kind get clusters`
List clusters

`kind delete cluster`
Delete the default cluster

`kind delete cluster --name <name>`
Delete a named cluster

`kind create cluster --image kindest/node:<tag>`
Pick the Kubernetes version

`kind create cluster --wait 5m`
Block until the control plane is ready

`kind get nodes --name <name>`
List node containers

`kind version`
Show the kind version

CONFIG FILE

`kind create cluster --config <file>`
Create from a config file

`nodes: [{role: control-plane}, {role: worker}]`
Add worker nodes

`extraPortMappings: [{containerPort, hostPort}]`
Publish a node port on the host

IMAGES

`kind load docker-image <image>`
Copy a local image into the nodes

`kind load docker-image <image> --name <name>`
Load into a named cluster

`kind load image-archive <file.tar>`
Load an image from a tarball

KUBECONFIG

`kubectl cluster-info --context kind-<name>`
Check you can reach the cluster

`kubectl config use-context kind-<name>`
Switch kubectl to this cluster

`kind get kubeconfig --name <name>`
Print the kubeconfig

`kind export kubeconfig --name <name>`
Write the context into your kubeconfig

DEBUGGING

`kind export logs <dir>`
Dump node and pod logs to a folder

`docker exec -it <name>-control-plane bash`
Shell into a node