

Kubernetes in Docker (KinD)

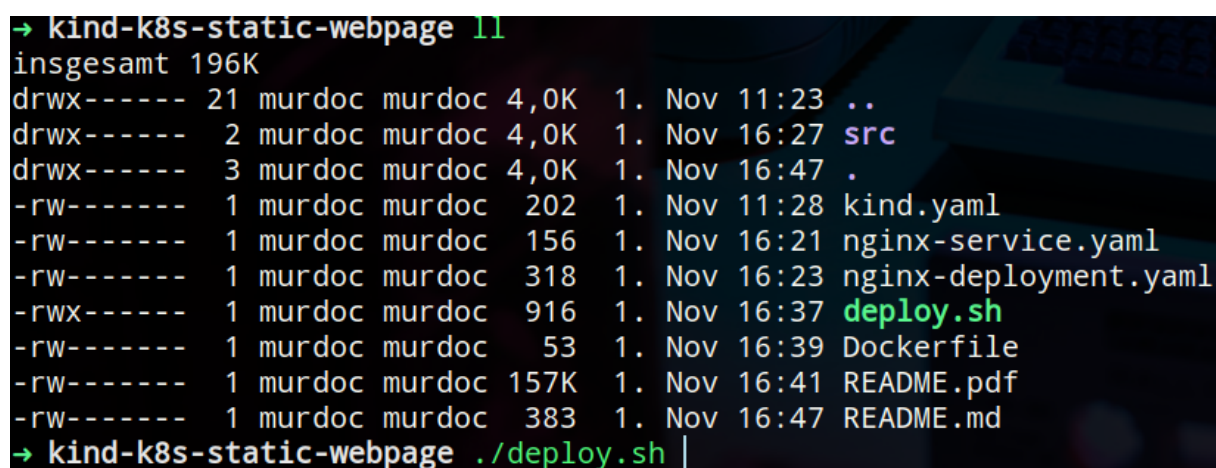
This project compiles a local Docker container and then deploys it to the kind cluster. Afterwards, the application and the service are deployed in the KinD-k8s cluster.

Prerequisites

The following components must be installed:

- docker
- kind
- kubectl

Deploy



```
→ kind-k8s-static-webpage ll
insgesamt 196K
drwx----- 21 murdoc murdoc 4,0K 1. Nov 11:23 ..
drwx----- 2 murdoc murdoc 4,0K 1. Nov 16:27 src
drwx----- 3 murdoc murdoc 4,0K 1. Nov 16:47 .
-rw----- 1 murdoc murdoc 202 1. Nov 11:28 kind.yaml
-rw----- 1 murdoc murdoc 156 1. Nov 16:21 nginx-service.yaml
-rw----- 1 murdoc murdoc 318 1. Nov 16:23 nginx-deployment.yaml
-rwx----- 1 murdoc murdoc 916 1. Nov 16:37 deploy.sh
-rw----- 1 murdoc murdoc 53 1. Nov 16:39 Dockerfile
-rw----- 1 murdoc murdoc 157K 1. Nov 16:41 README.pdf
-rw----- 1 murdoc murdoc 383 1. Nov 16:47 README.md
→ kind-k8s-static-webpage ./deploy.sh |
```

Abbildung 1: image_2021-11-01-16-48-39

Start the deployment with

```
deploy.sh
```

```

• Joining worker nodes ...
✓ Joining worker nodes
Set kubect context to "kind-kind"
You can now use your cluster with:

kubectl cluster-info --context kind-kind

Thanks for using kind! ☺
+++ build docker image +++
Sending build context to Docker daemon  1.65MB
Step 1/3 : FROM nginx
--> 87a94228f133
Step 2/3 : EXPOSE 80
--> Using cache
--> 899130bff289
Step 3/3 : COPY src/ /usr/share/nginx/html
--> Using cache
--> d8c7be5e4f06
Successfully built d8c7be5e4f06
Successfully tagged blog:0.1.0
+++ loading docker image into kind +++
Image: "blog:0.1.0" with ID "sha256:d8c7be5e4f062f9ea4922efae5a66131ddd513ca69c5ea0eacbcf6376aedec37" not yet present on node "kind-worker2", loading...
Image: "blog:0.1.0" with ID "sha256:d8c7be5e4f062f9ea4922efae5a66131ddd513ca69c5ea0eacbcf6376aedec37" not yet present on node "kind-control-plane", loading...
Image: "blog:0.1.0" with ID "sha256:d8c7be5e4f062f9ea4922efae5a66131ddd513ca69c5ea0eacbcf6376aedec37" not yet present on node "kind-worker", loading...
deployment.apps/nginx-deployment created
service/nginx-service created
+++ waiting 15 seconds +++
http://172.18.0.3:30022 I
% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
           Dload  Upload   Total   Spent    Left     Speed
-----
100 199 100 199    0     0  236k      0 --:--:-- --:--:-- --:--:-- 194k
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.1//EN" "http://www.w3.org/1999/xhtml">
<html>
  <head>
    <title>Blog</title>
  </head>
  <body>
    Just a small test!
  </body>
</html>
-----
→ kind-k8s-static-webpage | (master) kind-k8s-static-webpage

```

Abbildung 2: image_2021-11-01-17-15-20

Destroy cluster

Getting rid of a KinD cluster

```
kind delete cluster
```

kubectl

```
kubectl get all -A
```

```

→ kind-k8s-static-webpage k get all -A
NAMESPACE      NAME                                     READY   STATUS    RESTARTS   AGE
default        pod/nginx-deployment-7c85dc44d4-4nsqv  1/1     Running   0           22m
default        pod/nginx-deployment-7c85dc44d4-9bflx  1/1     Running   0           22m
kube-system    pod/coredns-558bd4d5db-d872f          1/1     Running   0           22m
kube-system    pod/coredns-558bd4d5db-xn6f8          1/1     Running   0           22m
kube-system    pod/etcd-kind-control-plane            1/1     Running   0           22m
kube-system    pod/kindnet-hx2tg                      1/1     Running   0           22m
kube-system    pod/kindnet-jqmmh                      1/1     Running   0           22m
kube-system    pod/kindnet-p6s48                      1/1     Running   0           22m
kube-system    pod/kube-apiserver-kind-control-plane  1/1     Running   0           22m
kube-system    pod/kube-controller-manager-kind-control-plane  1/1     Running   0           22m
kube-system    pod/kube-proxy-45lmp                   1/1     Running   0           22m
kube-system    pod/kube-proxy-fb2j8                   1/1     Running   0           22m
kube-system    pod/kube-proxy-mmvr                    1/1     Running   0           22m
kube-system    pod/kube-scheduler-kind-control-plane  1/1     Running   0           22m
local-path-storage pod/local-path-provisioner-547f784dff-t8csl  1/1     Running   0           22m

NAMESPACE      NAME                                     TYPE      CLUSTER-IP   EXTERNAL-IP   PORT(S)          AGE
default        service/kubernetes                      ClusterIP    10.96.0.1     <none>         443/TCP          23m
default        service/nginx-service                  NodePort    10.96.173.59  <none>         80:32427/TCP     22m
kube-system    service/kube-dns                       ClusterIP    10.96.0.10    <none>         53/UDP,53/TCP,9153/TCP 23m

NAMESPACE      NAME                                     DESIRED   CURRENT   READY   UP-TO-DATE   AVAILABLE   NODE SELECTOR   AGE
kube-system    daemonset.apps/kindnet                  3         3         3       3             3           <none>          22m
kube-system    daemonset.apps/kube-proxy               3         3         3       3             3           kubernetes.io/os=linux 23m

NAMESPACE      NAME                                     READY   UP-TO-DATE   AVAILABLE   AGE
default        deployment.apps/nginx-deployment        2/2     2             2           22m
kube-system    deployment.apps/coredns                  2/2     2             2           23m
local-path-storage deployment.apps/local-path-provisioner    1/1     1             1           22m

NAMESPACE      NAME                                     DESIRED   CURRENT   READY   AGE
default        replicaset.apps/nginx-deployment-7c85dc44d4  2         2         2       22m
kube-system    replicaset.apps/coredns-558bd4d5db          2         2         2       22m
local-path-storage replicaset.apps/local-path-provisioner-547f784dff  1         1         1       22m
→ kind-k8s-static-webpage | (master) kind-k8s-static-webpage

```

Abbildung 3: image_2021-11-01-16-59-07,p