



Pierwsze kroki z Kubernetes

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Zadanie 1: Instalacja Kubernetesa - kind

Omówienie

Zadanie ma celu zaprezentowanie nieprodukcyjnej metody instalacji Kubernetesa przy pomocy pakietu kind.

Wymagania początkowe








- System operacyjny Linux z działającym dockerem.

Ćwiczenie


1. Logujemy się do systemu, w który będziemy uruchamiać Kubernetesa.
2. Instalujemy **kind** (zgodnie z instrukcją na stronie <https://kind.sigs.k8s.io/docs/user/quick-start/#installation>), np.:
 - Linux - binary - wchodzimy na adres <https://github.com/kubernetes-sigs/kind/releases> i pobieramy plik **kind-linux-amd64** z ostatniego wydania, zapisujemy go jako **kind** oraz zmieniamy mu uprawnienia **chmod 755 kind**
 - Linux - LinuxBrew - **brew install kind**
 - macOS - MacPorts - **sudo port selfupdate && sudo port install kind**
 - macOS - Homebrew - **brew install kind**.
3. Jeżeli na danym użytkowniku nie posiadamy uprawnień do dockera (np.: **docker ps**) to podnosimy uprawnienia do użytkownika root: **sudo -i**.
4. Pobieramy z repozytorium <https://github.com/so-do/kubernetes> plik **cluster.yaml** (katalog **pierwsze-kroki/day1**).
5. Wykonujemy polecenie **kind create cluster --config cluster.yaml**.

Oczekiwany rezultat:

```
sodo@sodo:~# kind create cluster --config ../cluster.yaml
Creating cluster "kind" ...
  ✓ Ensuring node image (kindest/node:v1.25.3) 🎁
  ✓ Preparing nodes 📦 📦 📦 📦 📦 📦
```

✓ Configuring the external load balancer 
 ✓ Writing configuration 
 ✓ Starting control-plane 
 ✓ Installing CNI 
 ✓ Installing StorageClass 
 ✓ Joining more control-plane nodes 
 ✓ Joining worker nodes 
 Set kubectl context to "kind-kind"
 You can now use your cluster with:

```
kubectl cluster-info --context kind-kind
```

Have a nice day! 

- Instalujemy narzędzie `kubectl` zgodnie z manuałem -
<https://kubernetes.io/docs/tasks/tools/install-kubectl/> (Google: kubectl)
- Weryfikujemy działanie klastra komendami `kubectl version`, `kubectl get pods -A`
 oraz `kubectl get nodes`

Oczekiwany rezultat:

```
sodo@sodo:~# kubectl version
WARNING: This version information is deprecated and will be replaced
with the output from kubectl version --short. Use --output=yaml|json
to get the full version.
Client Version: version.Info{Major:"1", Minor:"24",
GitVersion:"v1.24.2",
GitCommit:"f66044f4361b9f1f96f0053dd46cb7dce5e990a8",
GitTreeState:"clean", BuildDate:"2022-06-15T14:14:10Z",
GoVersion:"go1.18.3", Compiler:"gc", Platform:"linux/amd64"}
Kustomize Version: v4.5.4
Server Version: version.Info{Major:"1", Minor:"25",
GitVersion:"v1.25.3",
GitCommit:"434bfd82814af038ad94d62ebe59b133fcb50506",
GitTreeState:"clean", BuildDate:"2022-10-25T19:35:11Z",
GoVersion:"go1.19.2", Compiler:"gc", Platform:"linux/amd64"}
sodo@sodo:~# kubectl get pods -A
NAMESPACE          NAME
READY  STATUS    RESTARTS   AGE
kube-system         coredns-565d847f94-cw24l      1/1
Running 0        3m5s
kube-system         coredns-565d847f94-kdjtn      1/1
```

| | | | |
|-------------|---|---|-----|
| Running | 0 | 3m5s | |
| kube-system | | etcd-kind-control-plane | 1/1 |
| Running | 0 | 3m13s | |
| kube-system | | etcd-kind-control-plane2 | 1/1 |
| Running | 0 | 2m38s | |
| kube-system | | etcd-kind-control-plane3 | 1/1 |
| Running | 0 | 2m20s | |
| kube-system | | kindnet-6q79z | 1/1 |
| Running | 0 | 3m5s | |
| kube-system | | kindnet-7cfdp | 1/1 |
| Running | 0 | 2m7s | |
| kube-system | | kindnet-bzscx | 1/1 |
| Running | 0 | 2m7s | |
| kube-system | | kindnet-dvzn5 | 1/1 |
| Running | 0 | 2m49s | |
| kube-system | | kindnet-hhgms | 1/1 |
| Running | 0 | 2m7s | |
| kube-system | | kindnet-mwmgz | 1/1 |
| Running | 0 | 2m24s | |
| kube-system | | kube-apiserver-kind-control-plane | 1/1 |
| Running | 0 | 3m14s | |
| kube-system | | kube-apiserver-kind-control-plane2 | 1/1 |
| Running | 0 | 2m31s | |
| kube-system | | kube-apiserver-kind-control-plane3 | 1/1 |
| Running | 0 | 2m20s | |
| kube-system | | kube-controller-manager-kind-control-plane | 1/1 |
| Running | 0 | 3m14s | |
| kube-system | | kube-controller-manager-kind-control-plane2 | 1/1 |
| Running | 0 | 2m44s | |
| kube-system | | kube-controller-manager-kind-control-plane3 | 1/1 |
| Running | 0 | 2m18s | |
| kube-system | | kube-proxy-6dcf6 | 1/1 |
| Running | 0 | 3m5s | |
| kube-system | | kube-proxy-6swgl | 1/1 |
| Running | 0 | 2m7s | |
| kube-system | | kube-proxy-nz6jb | 1/1 |
| Running | 0 | 2m24s | |
| kube-system | | kube-proxy-psvjj | 1/1 |
| Running | 0 | 2m7s | |
| kube-system | | kube-proxy-rk952 | 1/1 |
| Running | 0 | 2m7s | |
| kube-system | | kube-proxy-skbrp | 1/1 |
| Running | 0 | 2m49s | |
| kube-system | | kube-scheduler-kind-control-plane | 1/1 |
| Running | 0 | 3m13s | |

```

kube-system      kube-scheduler-kind-control-plane2      1/1
Running 0        2m38s
kube-system      kube-scheduler-kind-control-plane3      1/1
Running 0        76s
local-path-storage local-path-provisioner-684f458cdd-6zx4c 1/1
Running 0        3m5s
sodo@sodo:~# kubectl get nodes
NAME                STATUS    ROLES    AGE     VERSION
kind-control-plane  Ready    control-plane  3m30s   v1.25.3
kind-control-plane2 Ready    control-plane  3m4s    v1.25.3
kind-control-plane3 Ready    control-plane  2m39s   v1.25.3
kind-worker         Ready    <none>       2m22s   v1.25.3
kind-worker2        Ready    <none>       2m22s   v1.25.3
kind-worker3        Ready    <none>       2m22s   v1.25.3

```