Imagine that, you want to quickly test something on your Kubernetes cluster

Then, what is your go-to option?

Play-With-K8s

Concept

Udemy

Objectives

Concept

- Overview of Play-with-K8s

Review Demo

- Review Demo
  a. Add new instances
  b. Configure “Master”
  c. Configure “Worker Node”
  d. Test and Validate

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Part -1

Overview of Play-with-k8s

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Play-with-k8s (PWK)

https://labs.play-with-k8s.com/

Kubernetes Playground

Github or Docker account is required

Provided by Docker and Created by Tutorius

Creates K8s Cluster in Seconds

Released in mid 2017

Four hours time limit

Review Demo

a. Create Cluster
b. Configure Master
c. Configure Worker Node
d. Test

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https://labs.play-with-k8s.com/

03:44:16

CLOSE SESSION

Instances

+ ADD NEW INSTANCE

192.168.0.13
node1

be6d9kq6_be6dena6gd5000dbc7jg

IP
192.168.0.13

Memory
1.19% (47.41MiB / 3.906GiB)

CPU
13.03%

URL
ip172-18-0-50-be6d9kq6gd5000dbc740.direct.labs.play-with

DELETE

```
1. Initializes cluster master node:

kubeadm init --apiserver-advertise-address $(hostname -i)


2. Initialize cluster networking:

kubectl apply -n kube-system -f \
    "https://cloud.weave.works/k8s/net?k8s-version=$(kubectl version | base64 |
tr -d '\n')"


3. (Optional) Create an nginx deployment:

kubectl apply -f https://raw.githubusercontent.com/kubernetes/website/master/co
ntent/cn/docs/user-guide/nginx-app.yaml


                        The PWK team.
```

PWK: Configuring “Master”

1. Add new instance

2. Initialize Master node

```
kubeadm init --apiserver-advertise-address $(hostname -i)
```

3. Configure Network

```
kubectl apply -n kube-system -f \
    "https://cloud.weave.works/k8s/net?k8s-version=$(kubectl version | base64 |tr -d '\n')"
```

```
You should now deploy a pod network to the cluster.
Run "kubectl apply -f [podnetwork].yaml" with one of the options listed at:
  http://kubernetes.io/docs/admin/addons/

You can now join any number of machines by running the following on each node
as root:

  kubeadm join --token 428b96.6772947ee3180a04 192.168.0.13:6443 --discovery-token-ca-cert-hash sha256:d820afde82d62c81e4b
c7fd0bffca3b1fec70896a6557d39d4120e4f135f291a

Waiting for api server to startup.....
Warning: kubectl apply should be used on resource created by either kubectl create --save-config or kubectl apply
daemonset "kube-proxy" configured
No resources found
[node1 ~]$ kubectl apply -n kube-system -f \
>     "https://cloud.weave.works/k8s/net?k8s-version=$(kubectl version | base64 |tr -d '\n')"
serviceaccount "weave-net" created
clusterrole "weave-net" created
clusterrolebinding "weave-net" created
role "weave-net" created
```

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PWK: Configuring “Worker”

1. Add new instance

2. Join worker node to the cluster:

```
kubeadm join --token [...] --discovery-token-ca-cert-hash [...]
```

```
[node2 ~]$   kubeadm join --token 428b96.6772947ee3180a04 192.168.0.13:6443 --discovery-token-ca-cert-hash sha256:d820afde
82d62c81e4bc7fd0bffca3b1fec70896a6557d39d4120e4f135f291a
Initializing machine ID from random generator.
[kubeadm] WARNING: kubeadm is in beta, please do not use it for production clusters.
[preflight] Skipping pre-flight checks
[discovery] Trying to connect to API Server "192.168.0.13:6443"
[discovery] Created cluster-info discovery client, requesting info from "https://192.168.0.13:6443"
[discovery] Requesting info from "https://192.168.0.13:6443" again to validate TLS against the pinned public key
[discovery] Cluster info signature and contents are valid and TLS certificate validates against pinned roots, will use API
 Server "192.168.0.13:6443"
[discovery] Successfully established connection with API Server "192.168.0.13:6443"
[bootstrap] Detected server version: v1.8.15
[bootstrap] The server supports the Certificates API (certificates.k8s.io/v1beta1)

Node join complete:
* Certificate signing request sent to master and response
  received.
* Kubelet informed of new secure connection details.

Run 'kubectl get nodes' on the master to see this machine join.
```

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PWK: Testing Cluster

```
[node1 ~]$  kubectl get no
NAME      STATUS    ROLES     AGE       VERSION
node1     Ready     master    11m       v1.10.2
node2     Ready     <none>    9m        v1.10.2
```

```
[node1 ~]$  kubectl run kubernetes-bootcamp --image=gcr.io/google-samples/kubernetes-bootcamp:v1 --port=8080
deployment "kubernetes-bootcamp" created
```

```
[node1 ~]$  kubectl get po
NAME                                  READY     STATUS    RESTARTS   AGE
kubernetes-bootcamp-54fbf9f945-69kl5  1/1       Running   0          4m
```

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Summary

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Play-With-K8s
Demo