

Lab (1) Kubernetes

Assignment:

- create minikube cluster
- create nginx deployment with 3 replicas
- create service to point to this deployment, type cluster IP
- create debug pod to test the service

Solution:

Create yaml file with the required resources

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: nginx-deployment
  labels:
    app: nginx
spec:
  replicas: 3
  selector:
    matchLabels:
      app: nginx
  template:
    metadata:
      labels:
        app: nginx
    spec:
      containers:
        - name: nginx
          image: nginx
          ports:
            - containerPort: 80
```

```
---
apiVersion: v1
kind: Service
metadata:
  name: nginx-srv
spec:
  selector:
    app: nginx
  ports:
    - port: 80
      targetPort: 80
```

```
---
apiVersion: v1
kind: Pod
metadata:
  name: nginx
spec:
  containers:
    - name: nginx
      image: nginx
```

The Created resources

```
controlplane $ kubectl get deployments
NAME                READY   UP-TO-DATE   AVAILABLE   AGE
nginx-deployment    3/3     3             3           17m
controlplane $ kubectl get services
NAME                TYPE        CLUSTER-IP      EXTERNAL-IP   PORT(S)    AGE
kubernetes          ClusterIP   10.96.0.1        <none>         443/TCP    23d
nginx-srv           ClusterIP   10.111.108.109   <none>         80/TCP     11m
controlplane $ kubectl get pods
NAME                                READY   STATUS    RESTARTS   AGE
nginx                               1/1     Running   0           18m
nginx-deployment-55f598f8d-bbw7s    1/1     Running   0           18m
nginx-deployment-55f598f8d-sxrs4    1/1     Running   0           18m
nginx-deployment-55f598f8d-xpxsx    1/1     Running   0           18m
controlplane $
```

and now we can test the service by using nginx pod

```
controlplane $ kubectl exec -it nginx
error: you must specify at least one command for the container
controlplane $ kubectl exec -it nginx /bin/bash
kubectl exec [POD] [COMMAND] is DEPRECATED and will be removed in a future version. Use kubectl exec [POD] -- [COMMAND] instead.
root@nginx:/# curl 10.111.108.109:80
<!DOCTYPE html>
<html>
<head>
<title>Welcome to nginx!</title>
<style>
html { color-scheme: light dark; }
body { width: 35em; margin: 0 auto;
font-family: Tahoma, Verdana, Arial, sans-serif; }
</style>
</head>
<body>
<h1>Welcome to nginx!</h1>
<p>If you see this page, the nginx web server is successfully installed and
working. Further configuration is required.</p>

<p>For online documentation and support please refer to
<a href="http://nginx.org/">nginx.org</a>.<br/>
Commercial support is available at
<a href="http://nginx.com/">nginx.com</a>.</p>

<p><em>Thank you for using nginx.</em></p>
</body>
</html>
root@nginx:/#
```