

Lab: Exposing Applications using NodePort Services

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root@AnushaKubernetes: ~/kubernetes
root@AnushaKubernetes:~# cd ~/kubernetes
root@AnushaKubernetes:~/kubernetes# nano service-pods.yml
root@AnushaKubernetes:~/kubernetes# cat -n ~/kubernetes/service-pods.yml
1  apiVersion: v1
2  kind: Pod
3  metadata:
4    name: firstpod
5    labels:
6      app: hello-world-app
7  spec:
8    containers:
9      - name: first
10       image: "gcr.io/google-samples/hello-app:2.0"
11
12 ---
13 apiVersion: v1
14 kind: Pod
15 metadata:
16   name: secondpod
17   labels:
18     app: hello-world-app
19 spec:
20   containers:
21     - name: second
22       image: "gcr.io/google-samples/hello-app:2.0"
root@AnushaKubernetes:~/kubernetes# kubectl apply -f ~/kubernetes/service-pods.yml
pod/firstpod created
pod/secondpod created
root@AnushaKubernetes:~/kubernetes# kubectl get pods -o wide
NAME          READY   STATUS    RESTARTS   AGE   IP            NODE
firstpod      1/1     Running   0           22s   10.244.0.6    miniku
secondpod     1/1     Running   0           22s   10.244.0.7    miniku
root@AnushaKubernetes:~/kubernetes# cat -n ~/kubernetes/service-np.p.yml
```

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p.yml
cat: /root/kubernetes/service-np.yml: No such file or directory
root@AnushaKubernetes:~/kubernetes# nano service-np.yml
root@AnushaKubernetes:~/kubernetes# cat -n ~/kubernetes/service-np.yml
1  apiVersion: v1
2  kind: Service
3  metadata:
4    name: np-service
5  spec:
6    type: NodePort
7    selector:
8      app: hello-world-app
9    ports:
10     - protocol: TCP
11       port: 80
12       targetPort: 8080
13       nodePort: 30007
root@AnushaKubernetes:~/kubernetes# kubectl apply -f ~/kubernetes/service-np.yml
service/np-service created
root@AnushaKubernetes:~/kubernetes# kubectl get service np-service
NAME      TYPE        CLUSTER-IP   EXTERNAL-IP   PORT(S)
np-service  NodePort    10.105.64.5   <none>        80:30007/TCP
root@AnushaKubernetes:~/kubernetes# CLUSTER_IP=$(kubectl get svc np-service -o jsonpath='{.spec.clusterIP}')
error: flag needs an argument: 'o' in -o
See 'kubectl get --help' for usage.
root@AnushaKubernetes:~/kubernetes# CLUSTER_IP=$(kubectl get svc np-service -o jsonpath='{.spec.clusterIP}')
root@AnushaKubernetes:~/kubernetes# curl $CLUSTER_IP
curl: (28) Failed to connect to 10.105.64.5 port 80 after 135026 ms: Couldn't connect to server
root@AnushaKubernetes:~/kubernetes# ifconfig eth0
Command 'ifconfig' not found, but can be installed with:
apt install net-tools
root@AnushaKubernetes:~/kubernetes# ifconfig eth0
```

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root@AnushaKubernetes: ~/kubernetes
root@AnushaKubernetes:~/kubernetes# ifconfig eth0
Command 'ifconfig' not found, but can be installed with:
apt install net-tools
root@AnushaKubernetes:~/kubernetes# curl http://PrivateIP:30007
curl: (6) Could not resolve host: PrivateIP
root@AnushaKubernetes:~/kubernetes# apt install net-tools
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  net-tools
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 204 kB of archives.
After this operation, 811 kB of additional disk space will be used
.
Get:1 http://azure.archive.ubuntu.com/ubuntu noble/main amd64 net-
tools amd64 2.10-0.1ubuntu4 [204 kB]
Fetched 204 kB in 0s (7244 kB/s)
Selecting previously unselected package net-tools.
(Reading database ... 64791 files and directories currently instal
led.)
Preparing to unpack .../net-tools 2.10-0.1ubuntu4_amd64.deb ...
Unpacking net-tools (2.10-0.1ubuntu4) ...
Setting up net-tools (2.10-0.1ubuntu4) ...
Processing triggers for man-db (2.12.0-4build2) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on
this host.
root@AnushaKubernetes:~/kubernetes# ifconfig eth0
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```
root@AnushaKubernetes: ~/kubernetes
this host.
root@AnushaKubernetes:~/kubernetes# ifconfig eth0
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
    inet 10.1.0.4 netmask 255.255.255.0 broadcast 10.1.0.255
    inet6 fe80::20d:3aff:fed0:912c prefixlen 64 scopeid 0x20
<link>
    ether 00:0d:3a:d0:91:2c txqueuelen 1000 (Ethernet)
    RX packets 52168 bytes 117377835 (117.3 MB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 54206 bytes 12574841 (12.5 MB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

root@AnushaKubernetes:~/kubernetes# ^C
root@AnushaKubernetes:~/kubernetes# curl http://10.1.0.4:30007
curl: (7) Failed to connect to 10.1.0.4 port 30007 after 0 ms: Cou
ldn't connect to server
root@AnushaKubernetes:~/kubernetes# ^C
root@AnushaKubernetes:~/kubernetes# minikube ip
192.168.49.2
root@AnushaKubernetes:~/kubernetes# kubectl get svc
NAME          TYPE          CLUSTER-IP    EXTERNAL-IP    PORT(S)
kubernetes    ClusterIP     10.96.0.1     <none>          443/TCP
np-service    NodePort      10.105.64.5   <none>          80:30007/TCP

root@AnushaKubernetes:~/kubernetes# curl http://PrivateIP:30007
curl: (6) Could not resolve host: PrivateIP
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curl: (6) Could not resolve host: PrivateIP
root@AnushaKubernetes:~/kubernetes# ^C
root@AnushaKubernetes:~/kubernetes# curl http://192.168.49.2:30007

Hello, world!
Version: 2.0.0
Hostname: firstpod
root@AnushaKubernetes:~/kubernetes# curl http://192.168.49.2:30007

Hello, world!
```

```
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

root@AnushaKubernetes:~/kubernetes# ^C
root@AnushaKubernetes:~/kubernetes# curl http://10.1.0.4:30007
curl: (7) Failed to connect to 10.1.0.4 port 30007 after 0 ms: Couldn't connect to server
root@AnushaKubernetes:~/kubernetes# ^C
root@AnushaKubernetes:~/kubernetes# minikube ip
192.168.49.2
root@AnushaKubernetes:~/kubernetes# kubectl get svc
NAME         TYPE          CLUSTER-IP    EXTERNAL-IP    PORT(S)
kubernetes   ClusterIP     10.96.0.1     <none>         443/TCP
np-service   NodePort      10.105.64.5   <none>         80:30007/TCP
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root@AnushaKubernetes:~/kubernetes# curl http://192.168.49.2:30007

Hello, world!
Version: 2.0.0
Hostname: firstpod
root@AnushaKubernetes:~/kubernetes# curl http://192.168.49.2:30007

Hello, world!
Version: 2.0.0
Hostname: secondpod
root@AnushaKubernetes:~/kubernetes# kubectl delete service np-service
service "np-service" deleted
root@AnushaKubernetes:~/kubernetes# kubectl delete pods firstpod secondpod
pod "firstpod" deleted
pod "secondpod" deleted
root@AnushaKubernetes:~/kubernetes#
```