Class Assignment / Homework IX
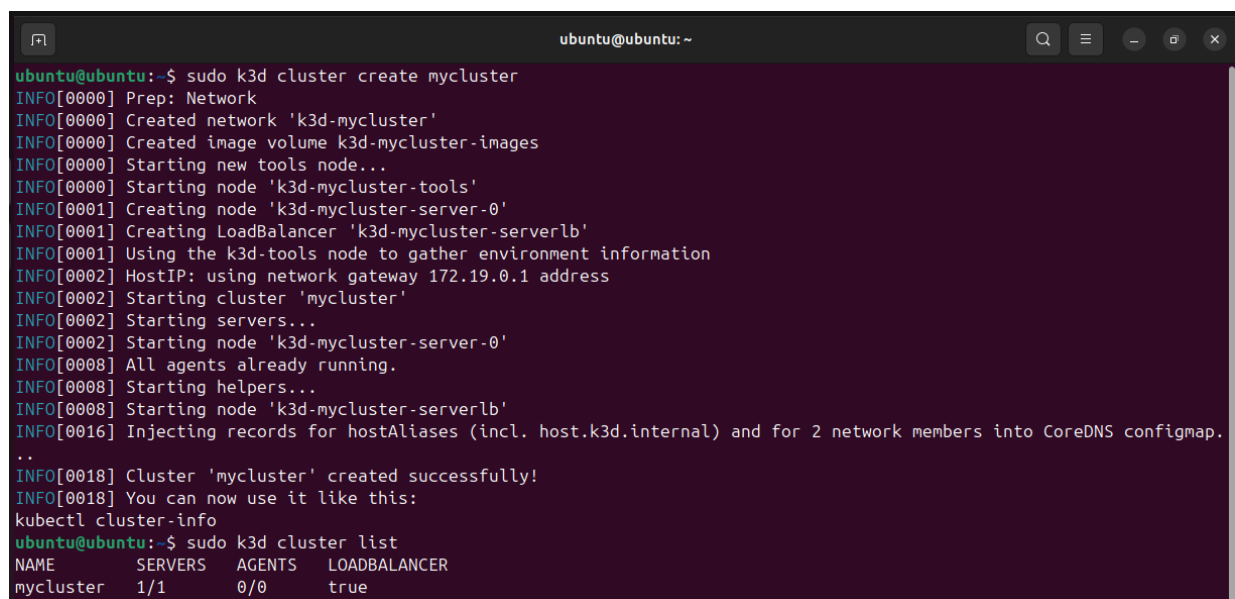
- **Create deployments and services for two Pods:**

    - **One for the app version 1.0 from the last homework**

    - **One for the app version 2.0 from the last homework**

- **Create ingress pointing to the two apps:**

    - **path based: localhost/ver1**

    - **path based: localhost/ver2**

    - **host based: ver1.\<index\>.com**

    - **host based: ver2.\<index\>.com**

- **Deploy manifests and ingress**

- **Access the four ingress rules in your local browser**

bojan@bojan-VirtualBox:~$ sudo k3d cluster create mycluster
INFO[0000] Prep: Network
INFO[0000] Created network 'k3d-mycluster'
INFO[0000] Created image volume k3d-mycluster-images
INFO[0000] Starting new tools node...
INFO[0001] Creating node 'k3d-mycluster-server-0'
INFO[0002] Pulling image 'ghcr.io/k3d-io/k3d-tools:5.6.3'
INFO[0003] Pulling image 'docker.io/rancher/k3s:v1.28.8-k3s1'
INFO[0007] Starting node 'k3d-mycluster-tools'
INFO[0025] Creating LoadBalancer 'k3d-mycluster-serverlb'
INFO[0027] Pulling image 'ghcr.io/k3d-io/k3d-proxy:5.6.3'
INFO[0037] Using the k3d-tools node to gather environment information
INFO[0037] HostIP: using network gateway 172.18.0.1 address
INFO[0037] Starting cluster 'mycluster'
INFO[0037] Starting servers...
INFO[0037] Starting node 'k3d-mycluster-server-0'
INFO[0048] All agents already running.
INFO[0048] Starting helpers...
INFO[0048] Starting node 'k3d-mycluster-serverlb'
INFO[0056] Injecting records for hostAliases (incl. host.k3d.internal) and for 2 network members into CoreDNS configmap...
INFO[0058] Cluster 'mycluster' created successfully!
INFO[0058] You can now use it like this: kubectl cluster-info

bojan@bojan-VirtualBox:~$ sudo kubectl get nodes
NAME   STATUS   ROLES   AGE   VERSION
k3d-mycluster-server-0 Ready   control-plane,master 26s   v1.28.8+k3s1

bojan@bojan-VirtualBox:~$ nano deployment-ver1.yaml
bojan@bojan-VirtualBox:~$ sudo kubectl apply -f deployment-ver1.yaml
deployment.apps/app-ver1 created
service/app-ver1-service created

bojan@bojan-VirtualBox:~$ nano deployment-ver2.yaml
bojan@bojan-VirtualBox:~$ sudo kubectl apply -f deployment-ver2.yaml
deployment.apps/app-ver2 created
service/app-ver2-service created

```
ubuntu@ubuntu:~$ nano deployment-ver1.yaml
ubuntu@ubuntu:~$
ubuntu@ubuntu:~$ sudo kubectl apply -f deployment-ver1.yaml
deployment.apps/app-ver1 created
service/app-ver1-service created
ubuntu@ubuntu:~$
ubuntu@ubuntu:~$ nano deployment-ver2.yaml
ubuntu@ubuntu:~$
ubuntu@ubuntu:~$ sudo kubectl apply -f deployment-ver2.yaml
deployment.apps/app-ver2 created
service/app-ver2-service created
ubuntu@ubuntu:~$
```

```
  GNU nano 7.2                          deployment-ver2.yaml *
apiVersion: apps/v1
kind: Deployment
metadata:
  name: app-ver2
spec:
  replicas: 1
  selector:
    matchLabels:
      app: myapp
      version: v2
  template:
    metadata:
      labels:
        app: myapp
        version: v2
    spec:
      containers:
      - name: myapp
        image: ristov211151/nginx-static:2.0
        ports:
        - containerPort: 80
---
apiVersion: v1
kind: Service
metadata:
  name: app-ver2-service
spec:
  selector:

    app: myapp
    version: v2
  ports:
  - protocol: TCP
    port: 80
    targetPort: 80
```

```yaml
apiVersion: apps/v1
kind: Deployment
metadata:
  name: app-ver1
spec:
  replicas: 1
  selector:
    matchLabels:
      app: myapp
      version: v1
  template:
    metadata:
      labels:
        app: myapp
        version: v1
    spec:
      containers:
      - name: myapp
        image: ristov211151/nginx-static:1.0
        ports:
        - containerPort: 80
---
apiVersion: v1
kind: Service
metadata:
  name: app-ver1-service
spec:
  selector:

    app: myapp
    version: v1
  ports:
  - protocol: TCP
    port: 80
    targetPort: 80
```

bojan@bojan-VirtualBox:~$ sudo kubectl apply f https://raw.githubusercontent.com/kubernetes/ingress-nginx/main/deploy/static/provider/kind/deploy.yaml
namespace/ingress-nginx created
serviceaccount/ingress-nginx created
serviceaccount/ingress-nginx-admission created
role.rbac.authorization.k8s.io/ingress-nginx created
role.rbac.authorization.k8s.io/ingress-nginx-admission created
clusterrole.rbac.authorization.k8s.io/ingress-nginx created
clusterrole.rbac.authorization.k8s.io/ingress-nginx-admission created
rolebinding.rbac.authorization.k8s.io/ingress-nginx created
rolebinding.rbac.authorization.k8s.io/ingress-nginx-admission created
clusterrolebinding.rbac.authorization.k8s.io/ingress-nginx created
clusterrolebinding.rbac.authorization.k8s.io/ingress-nginx-admission created
configmap/ingress-nginx-controller created
service/ingress-nginx-controller created
service/ingress-nginx-controller-admission created
deployment.apps/ingress-nginx-controller created
job.batch/ingress-nginx-admission-create created
job.batch/ingress-nginx-admission-patch created
ingressclass.networking.k8s.io/nginx created
validatingwebhookconfiguration.admissionregistration.k8s.io/ingress-nginx-admission created

```
bojan@bojan-VirtualBox:~$ sudo kubectl apply -f https://raw.githubusercontent.com/kubernetes/ingress-nginx/main/deploy/static/provider/kind/deploy.yaml
namespace/ingress-nginx created
serviceaccount/ingress-nginx created
serviceaccount/ingress-nginx-admission created
role.rbac.authorization.k8s.io/ingress-nginx created
role.rbac.authorization.k8s.io/ingress-nginx-admission created
clusterrole.rbac.authorization.k8s.io/ingress-nginx created
clusterrole.rbac.authorization.k8s.io/ingress-nginx-admission created
rolebinding.rbac.authorization.k8s.io/ingress-nginx created
rolebinding.rbac.authorization.k8s.io/ingress-nginx-admission created
clusterrolebinding.rbac.authorization.k8s.io/ingress-nginx created
clusterrolebinding.rbac.authorization.k8s.io/ingress-nginx-admission created
configmap/ingress-nginx-controller created
service/ingress-nginx-controller created
service/ingress-nginx-controller-admission created
deployment.apps/ingress-nginx-controller created
job.batch/ingress-nginx-admission-create created
job.batch/ingress-nginx-admission-patch created
ingressclass.networking.k8s.io/nginx created
validatingwebhookconfiguration.admissionregistration.k8s.io/ingress-nginx-admission created
bojan@bojan-VirtualBox:~$
```

bojan@bojan-VirtualBox:~$ nano ingress-path.yaml

bojan@bojan-VirtualBox:~$ sudo kubectl apply -f ingress-path.yaml
Error from server (InternalError): error when creating "ingress-path.yaml": Internal error occurred: failed calling webhook "validate.nginx.ingress.kubernetes.io": failed to call webhook: Post "https://ingress-nginx-controller-admission.ingress-nginx.svc:443/networking/v1/ingresses?timeout=10s": no endpoints available for service "ingress-nginx-controller-admission"

bojan@bojan-VirtualBox:~$ nano ingress-host.yaml

bojan@bojan-VirtualBox:~$ sudo kubectl apply -f ingress-host.yaml
Error from server (InternalError): error when creating "ingress-host.yaml": Internal error occurred: failed calling webhook "validate.nginx.ingress.kubernetes.io": failed to call webhook: Post "https://ingress-nginx-controller-admission.ingress-nginx.svc:443/networking/v1/ingresses?timeout=10s": no endpoints available for service "ingress-nginx-controller-admission"
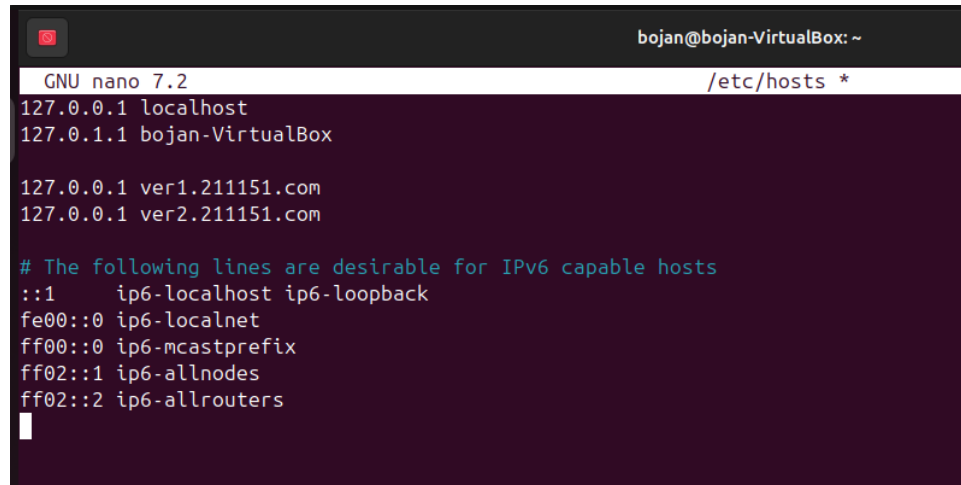
```yaml
  GNU nano 7.2                          ingress-path.yaml *
apiVersion: networking.k8s.io/v1
kind: Ingress
metadata:
  name: app-ingress-path
  annotations:
    nginx.ingress.kubernetes.io/rewrite-target: /
spec:
  rules:
  - http:
      paths:
      - path: /ver1
        pathType: Prefix
        backend:
          service:
            name: app-ver1-service
            port:
              number: 80
      - path: /ver2
        pathType: Prefix
        backend:
          service:
            name: app-ver2-service
            port:
              number: 80
```

```yaml
  GNU nano 7.2                          ingress-host.yaml *
apiVersion: networking.k8s.io/v1
kind: Ingress
metadata:
  name: app-ingress-host
spec:
  rules:
  - host: ver1.211151.com
    http:
      paths:
      - path: /
        pathType: Prefix
        backend:
          service:
            name: app-ver1-service
            port:
              number: 80
  - host: ver2.211151.com
    http:
      paths:
      - path: /
        pathType: Prefix
        backend:
          service:
            name: app-ver2-service
            port:
              number: 80
```

bojan@bojan-VirtualBox:~$ sudo nano /etc/hosts

```
bojan@bojan-VirtualBox:~$
bojan@bojan-VirtualBox:~$ sudo nano /etc/hosts
bojan@bojan-VirtualBox:~$
```

```
                                          bojan@bojan-VirtualBox: ~

  GNU nano 7.2                                        /etc/hosts *
127.0.0.1 localhost
127.0.1.1 bojan-VirtualBox

127.0.0.1 ver1.211151.com
127.0.0.1 ver2.211151.com

# The following lines are desirable for IPv6 capable hosts
::1     ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters
```

bojan@bojan-VirtualBox:~$ sudo kubectl apply -f ingress-path.yaml
Error from server (InternalError): error when creating "ingress-path.yaml": Internal error occurred: failed calling webhook "validate.nginx.ingress.kubernetes.io": failed to call webhook: Post "https://ingress-nginx-controller-admission.ingress-nginx.svc:443/networking/v1/ingresses?timeout=10s": no endpoints available for service "ingress-nginx-controller-admission"

bojan@bojan-VirtualBox:~$ sudo kubectl apply -f ingress-host.yaml
Error from server (InternalError): error when creating "ingress-host.yaml": Internal error occurred: failed calling webhook "validate.nginx.ingress.kubernetes.io": failed to call webhook: Post "https://ingress-nginx-controller-admission.ingress-nginx.svc:443/networking/v1/ingresses?timeout=10s": no endpoints available for service "ingress-nginx-controller-admission"
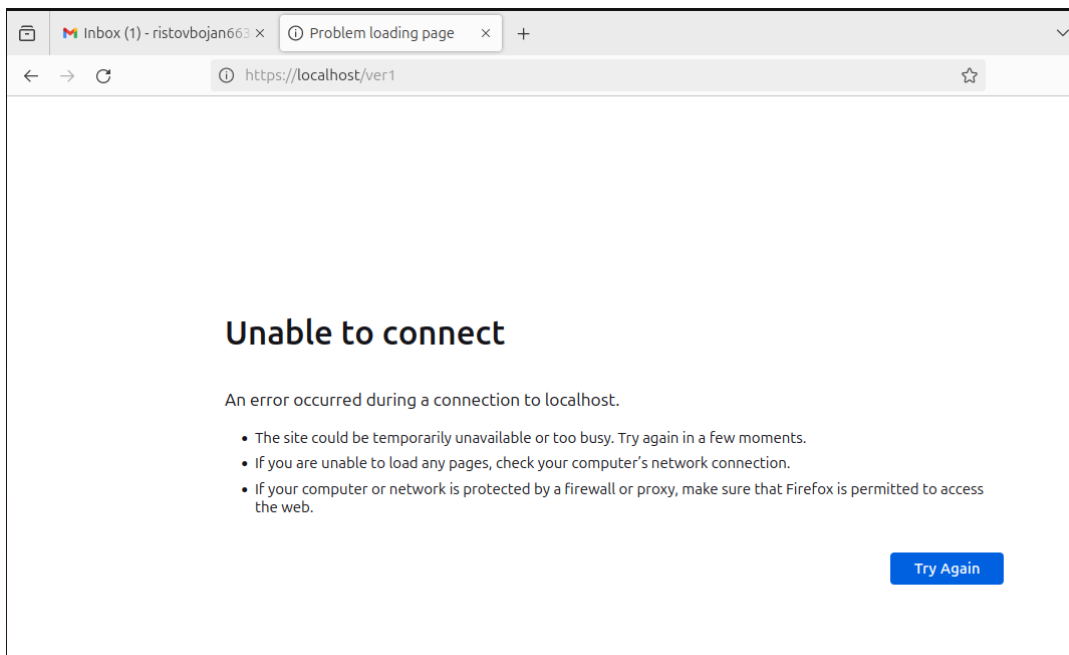
```
bojan@bojan-VirtualBox:~$ sudo kubectl apply -f ingress-path.yaml
Error from server (InternalError): error when creating "ingress-path.yaml": Internal error occurred: failed calling webh
ook "validate.nginx.ingress.kubernetes.io": failed to call webhook: Post "https://ingress-nginx-controller-admission.ing
ress-nginx.svc:443/networking/v1/ingresses?timeout=10s": no endpoints available for service "ingress-nginx-controller-ad
mission"
bojan@bojan-VirtualBox:~$ sudo kubectl apply -f ingress-host.yaml
Error from server (InternalError): error when creating "ingress-host.yaml": Internal error occurred: failed calling webh
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ress-nginx.svc:443/networking/v1/ingresses?timeout=10s": no endpoints available for service "ingress-nginx-controller-ad
mission"
bojan@bojan-VirtualBox:~$
```

Unable to connect

An error occurred during a connection to localhost.

- The site could be temporarily unavailable or too busy. Try again in a few moments.
- If you are unable to load any pages, check your computer's network connection.
- If your computer or network is protected by a firewall or proxy, make sure that Firefox is permitted to access the web.

Try Again

bojan@bojan-VirtualBox:~$ sudo docker pull registry.k8s.io/ingress-nginx/controller:v1.10.1

v1.10.1: Pulling from ingress-nginx/controller
4abcf2066143: Already exists
174322f2e6ca: Pull complete
13a7f744121d: Pull complete
4a6ea03c0fcf: Pull complete
66c651b73dae: Pull complete
6eeedb1c73fd: Pull complete
4f4fb700ef54: Pull complete
c2d703637550: Pull complete
913596314f73: Pull complete
30f79a88830d: Pull complete
59783218594c: Pull complete
05387319168b: Pull complete
e5ae625e7f9a: Pull complete
9f17e0295547: Pull complete
d07aa56a04ff: Pull complete
Digest: sha256:e24f39d3eed6bcc239a56f20098878845f62baa34b9f2be2fd2c38ce9fb0f29e
Status: Downloaded newer image for registry.k8s.io/ingress-nginx/controller:v1.10.1
registry.k8s.io/ingress-nginx/controller:v1.10.1

bojan@bojan-VirtualBox:~$ sudo kubectl delete ns ingress-nginx
namespace "ingress-nginx" deleted

bojan@bojan-VirtualBox:~$ sudo kubectl apply -f https://raw.githubusercontent.com/kubernetes/ingress-nginx/main/deploy/static/provider/kind/deploy.yaml
namespace/ingress-nginx created
serviceaccount/ingress-nginx created
serviceaccount/ingress-nginx-admission created
role.rbac.authorization.k8s.io/ingress-nginx created
role.rbac.authorization.k8s.io/ingress-nginx-admission created
clusterrole.rbac.authorization.k8s.io/ingress-nginx unchanged
clusterrole.rbac.authorization.k8s.io/ingress-nginx-admission unchanged
rolebinding.rbac.authorization.k8s.io/ingress-nginx created
rolebinding.rbac.authorization.k8s.io/ingress-nginx-admission created
clusterrolebinding.rbac.authorization.k8s.io/ingress-nginx unchanged
clusterrolebinding.rbac.authorization.k8s.io/ingress-nginx-admission unchanged
configmap/ingress-nginx-controller created
service/ingress-nginx-controller created
service/ingress-nginx-controller-admission created
deployment.apps/ingress-nginx-controller created
job.batch/ingress-nginx-admission-create created
job.batch/ingress-nginx-admission-patch created
ingressclass.networking.k8s.io/nginx unchanged
validatingwebhookconfiguration.admissionregistration.k8s.io/ingress-nginx-admission configured

```
bojan@bojan-VirtualBox:~$ sudo kubectl delete ns ingress-nginx
namespace "ingress-nginx" deleted
bojan@bojan-VirtualBox:~$
bojan@bojan-VirtualBox:~$ sudo kubectl apply -f https://raw.githubusercontent.com/kubernetes/ingress-nginx/main/deploy/s
tatic/provider/kind/deploy.yaml
namespace/ingress-nginx created
serviceaccount/ingress-nginx created
serviceaccount/ingress-nginx-admission created
role.rbac.authorization.k8s.io/ingress-nginx created
role.rbac.authorization.k8s.io/ingress-nginx-admission created
clusterrole.rbac.authorization.k8s.io/ingress-nginx unchanged
clusterrole.rbac.authorization.k8s.io/ingress-nginx-admission unchanged
rolebinding.rbac.authorization.k8s.io/ingress-nginx created
rolebinding.rbac.authorization.k8s.io/ingress-nginx-admission created
clusterrolebinding.rbac.authorization.k8s.io/ingress-nginx unchanged
clusterrolebinding.rbac.authorization.k8s.io/ingress-nginx-admission unchanged
configmap/ingress-nginx-controller created
service/ingress-nginx-controller created
service/ingress-nginx-controller-admission created
deployment.apps/ingress-nginx-controller created
job.batch/ingress-nginx-admission-create created
job.batch/ingress-nginx-admission-patch created
ingressclass.networking.k8s.io/nginx unchanged
validatingwebhookconfiguration.admissionregistration.k8s.io/ingress-nginx-admission configured
bojan@bojan-VirtualBox:~$
```
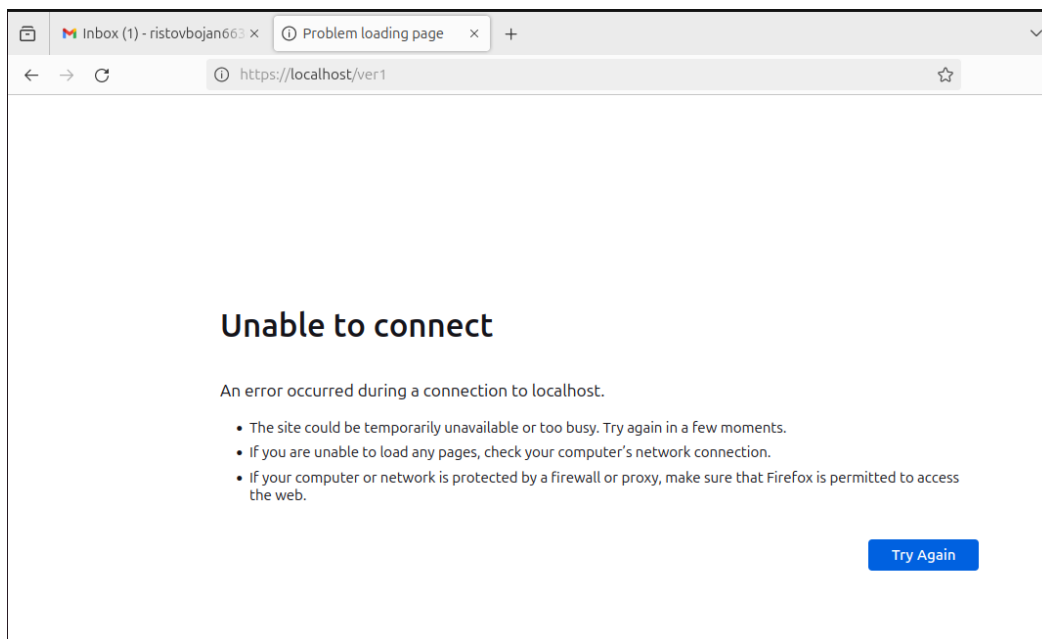
bojan@bojan-VirtualBox:~$ sudo kubectl apply -f ingress-path.yaml
Error from server (InternalError): error when creating "ingress-path.yaml": Internal error
occurred: failed calling webhook "validate.nginx.ingress.kubernetes.io": failed to call webhook:
Post "https://ingress-nginx-controller-admission.ingress-
nginx.svc:443/networking/v1/ingresses?timeout=10s": no endpoints available for service
"ingress-nginx-controller-admission"

bojan@bojan-VirtualBox:~$ sudo kubectl apply -f ingress-host.yaml
Error from server (InternalError): error when creating "ingress-host.yaml": Internal error
occurred: failed calling webhook "validate.nginx.ingress.kubernetes.io": failed to call webhook:
Post "https://ingress-nginx-controller-admission.ingress-
nginx.svc:443/networking/v1/ingresses?timeout=10s": no endpoints available for service
"ingress-nginx-controller-admission"

```
bojan@bojan-VirtualBox:~$ sudo kubectl apply -f ingress-path.yaml
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mission"
bojan@bojan-VirtualBox:~$ sudo kubectl apply -f ingress-host.yaml
Error from server (InternalError): error when creating "ingress-host.yaml": Internal error occurred: failed calling webh
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ress-nginx.svc:443/networking/v1/ingresses?timeout=10s": no endpoints available for service "ingress-nginx-controller-ad
mission"
bojan@bojan-VirtualBox:~$
```


Изработил:

Бојан Ристов (211151)