



Summary

- All pods have connections between them in the same cluster
- Good practice in security is to isolate every system/ pod
- Firewalling is used for filtering network packets
- Network policies are a resource in Kubernetes for firewall
- Network policies
 - Ingress:- Network packet coming into the server is called Ingress
 - Egress:- Network packet going outside the server is called Egress
- In Kubernetes by default, there is no firewalling
- Practical:-Creating network policy
 - Creating deployment & exposing

```
C:\Users\Vimal Daga>kubectl create deployment myd --image=vimal/webserver-apache-php
deployment.apps/myd created

C:\Users\Vimal Daga>kubectl get pods
NAME                                READY   STATUS    RESTARTS   AGE
myd-8648fd7b4-jjrrq                0/1     ContainerCreating   0           3s

C:\Users\Vimal Daga>kubectl expose deploy myd --type=NodePort --port=80
service/myd exposed

C:\Users\Vimal Daga>kubectl get svc
NAME            TYPE        CLUSTER-IP   EXTERNAL-IP   PORT(S)          AGE
kubernetes      ClusterIP   10.96.0.1     <none>         443/TCP          59s
myd             NodePort    10.102.40.60 <none>         80:31544/TCP     7s
```

- Creating network policy
 - Network policy to deny all
 - Manifest file

```
apiVersion: networking.k8s.io/v1
kind: NetworkPolicy
metadata:
  name: alldeny
spec:
  podSelector: {}
  policyTypes:
  - Ingress
```

- Creating a network policy to deny all

```
C:\Users\Vimal Daga\Documents\Container2021-ws>notepad firewall_deny.yml

C:\Users\Vimal Daga\Documents\Container2021-ws>kubectl apply -f firewall_deny.yml
networkpolicy.networking.k8s.io/alldeny created

C:\Users\Vimal Daga\Documents\Container2021-ws>kubectl get networkpolicy
NAME          POD-SELECTOR  AGE
alldeny       <none>        2s
mywebsec      app=myd       9m38s

C:\Users\Vimal Daga\Documents\Container2021-ws>_
```

- Creating ingress network policy

- Manifest file

```
apiVersion: networking.k8s.io/v1
kind: NetworkPolicy
metadata:
  name: mywebsec
spec:
  podSelector:
    matchLabels:
      app: myd

  policyTypes:
  - Ingress

  ingress:
  - ports:
    - port: 80
      protocol TCP
```

- Creating ingress network policy

```
C:\Users\Vimal Daga\Documents\Container2021-ws>notepad firewall_deny.yml

C:\Users\Vimal Daga\Documents\Container2021-ws>kubectl apply -f firewall_deny.yml
networkpolicy.networking.k8s.io/alldeny created

C:\Users\Vimal Daga\Documents\Container2021-ws>kubectl get networkpolicy
NAME          POD-SELECTOR  AGE
alldeny       <none>        2s
mywebsec      app=myd       9m38s

C:\Users\Vimal Daga\Documents\Container2021-ws>_
```

- Kubernetes supports network policy in limited plugins