

INGRESS

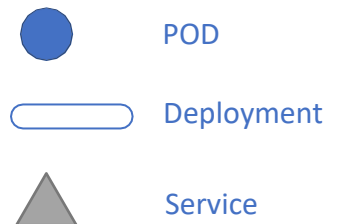
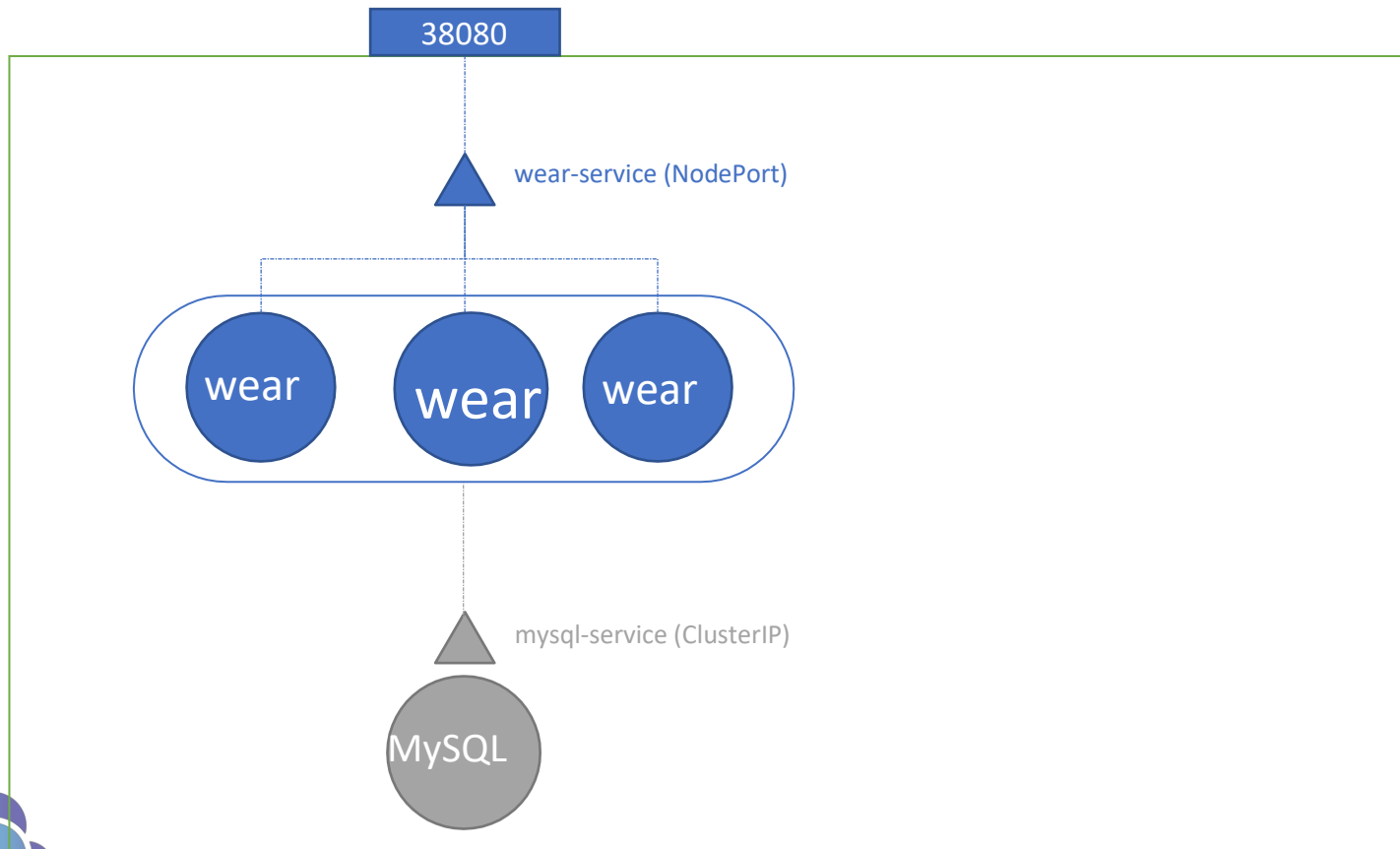


www.my-online-store.com



www.my-online-store.com

http://<node-ip>:38080



www.my-online-store.com



<node-ip>

http://my-online-store.com:38080

38080



wear-service (NodePort)

wear

wear

wear





`http://my-online-store.com`

80

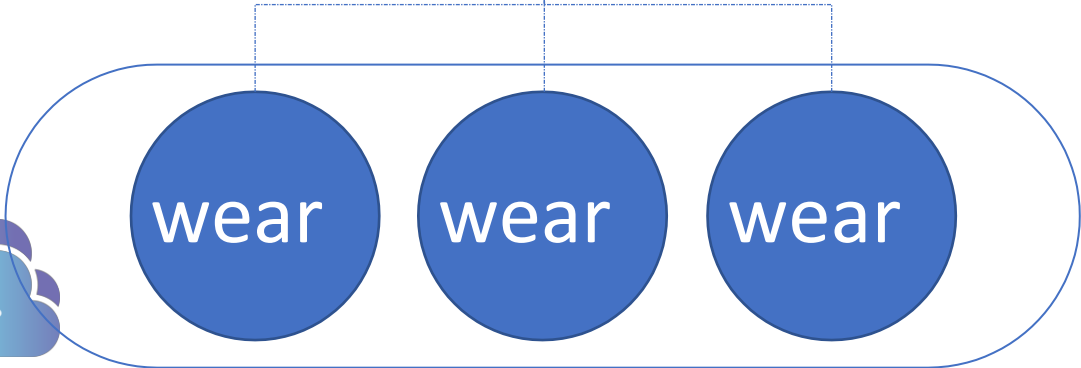


proxy-server

38080



wear-service (NodePort)



www.my-online-store.com



<node-ip>

http://my-online-store.com:38080

38080



wear-service (NodeBalancer)

wear

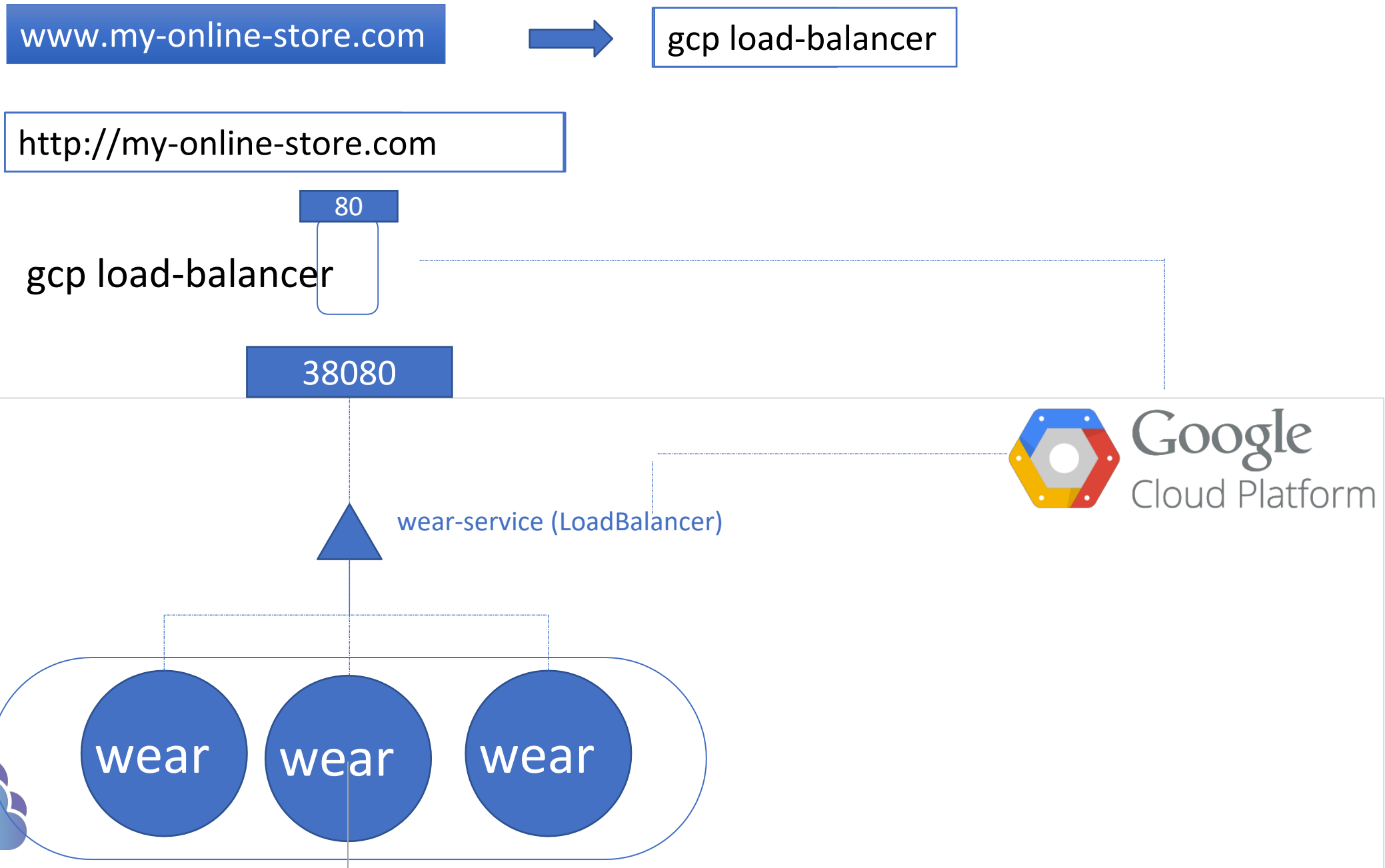
wear

wear

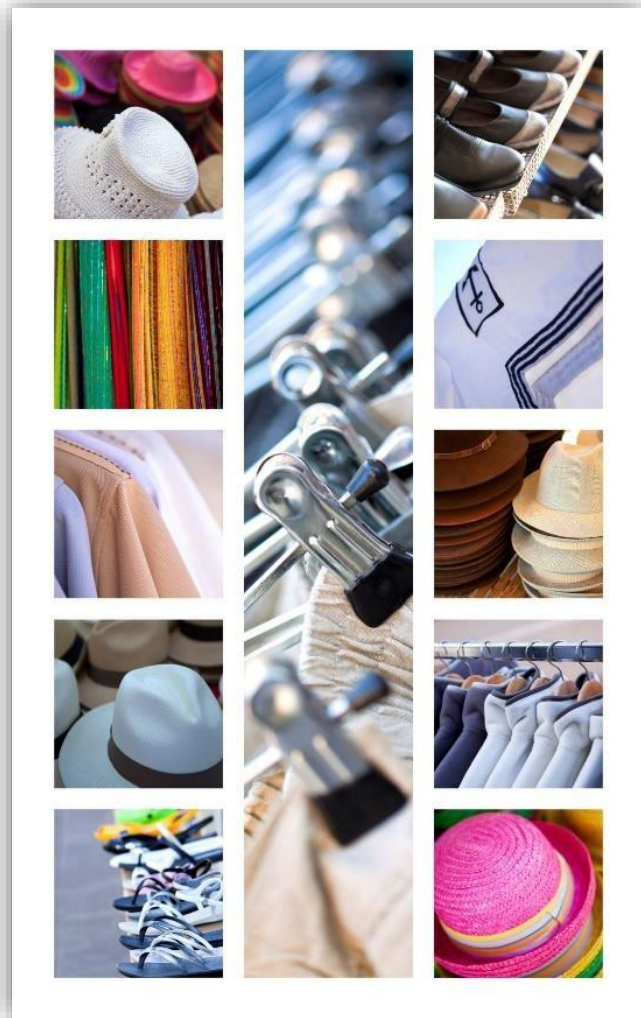


Google
Cloud Platform





www.my-online-store.com or www.my-online-store.com/watch





http://my-online-store.com

gcp load-balancer

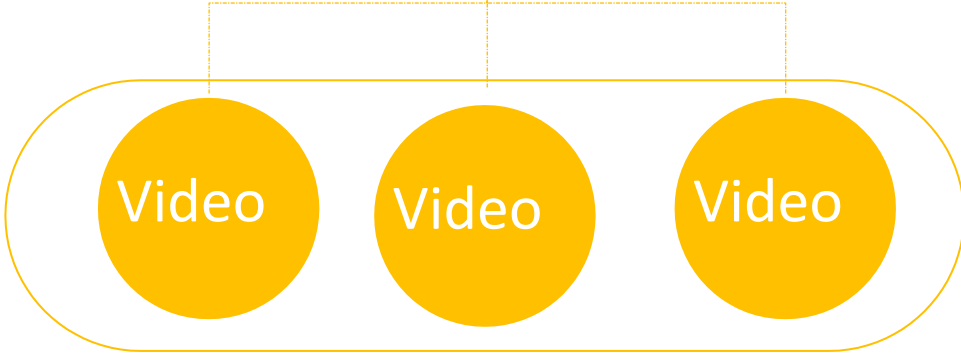
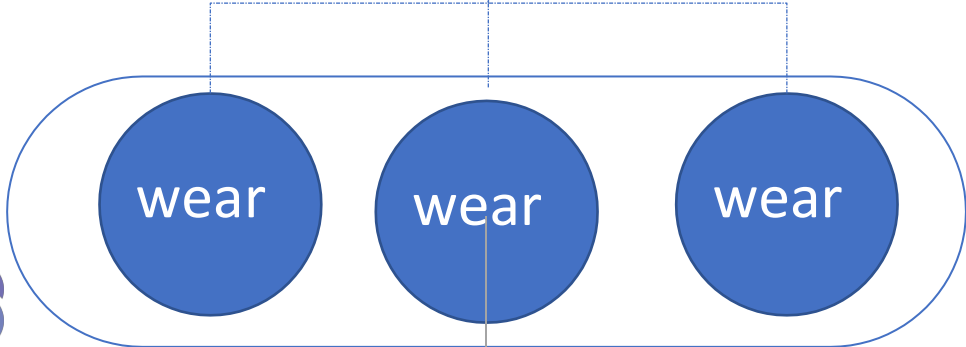
gcp load-balancer-2

38080

38282

wear-service (LoadBalancer)

video-service (LoadBalancer)



www.my-online-store.com



yet another load-balancer

https://my-online-store.com



yet another load-balancer

/apparel -> gcp load-balancer

/video -> gcp load-balancer-2

gcp load-balancer

gcp load-balancer-2

38080

38282

wear-service (LoadBalancer)

video-service (LoadBalancer)

wear

wear

wear

Video

Video

Video



www.my-online-store.com



yet another load-balancer

https://my-online-store.com



yet another load-balancer



/apparel -> gcp load-balancer

/video -> gcp load-balancer-2

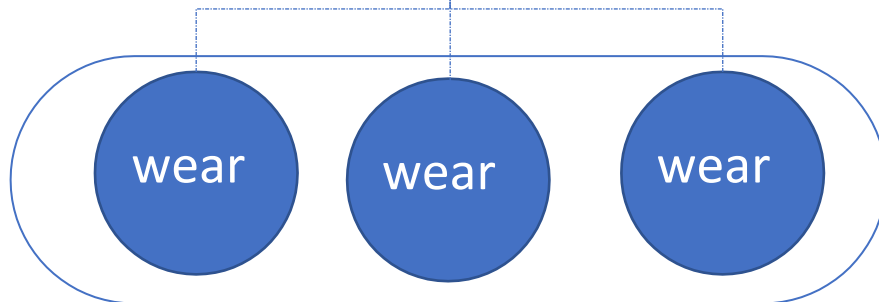
gcp load-balancer



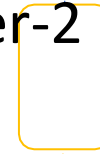
380 0



wear-service (LoadBalancer)



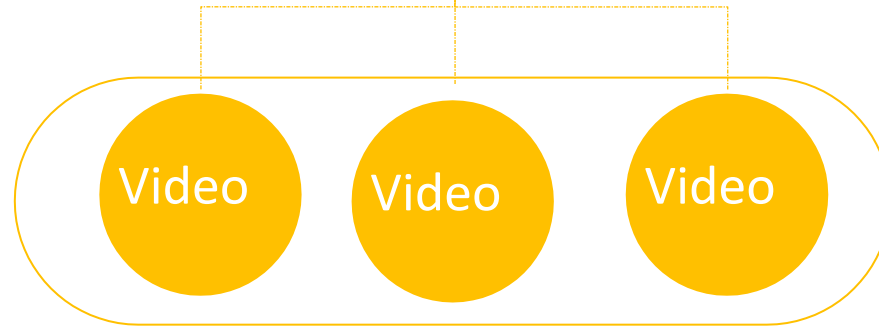
gcp load-balancer-2



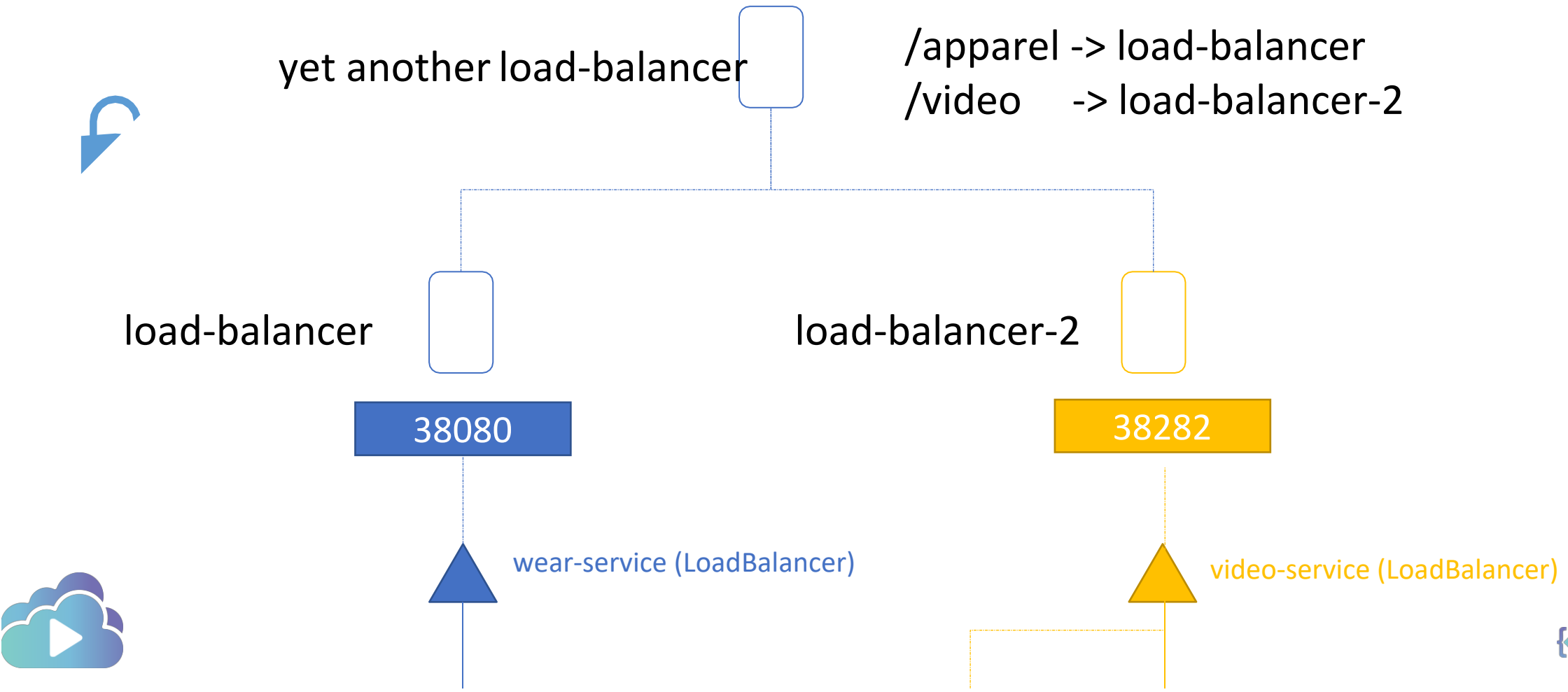
382 2



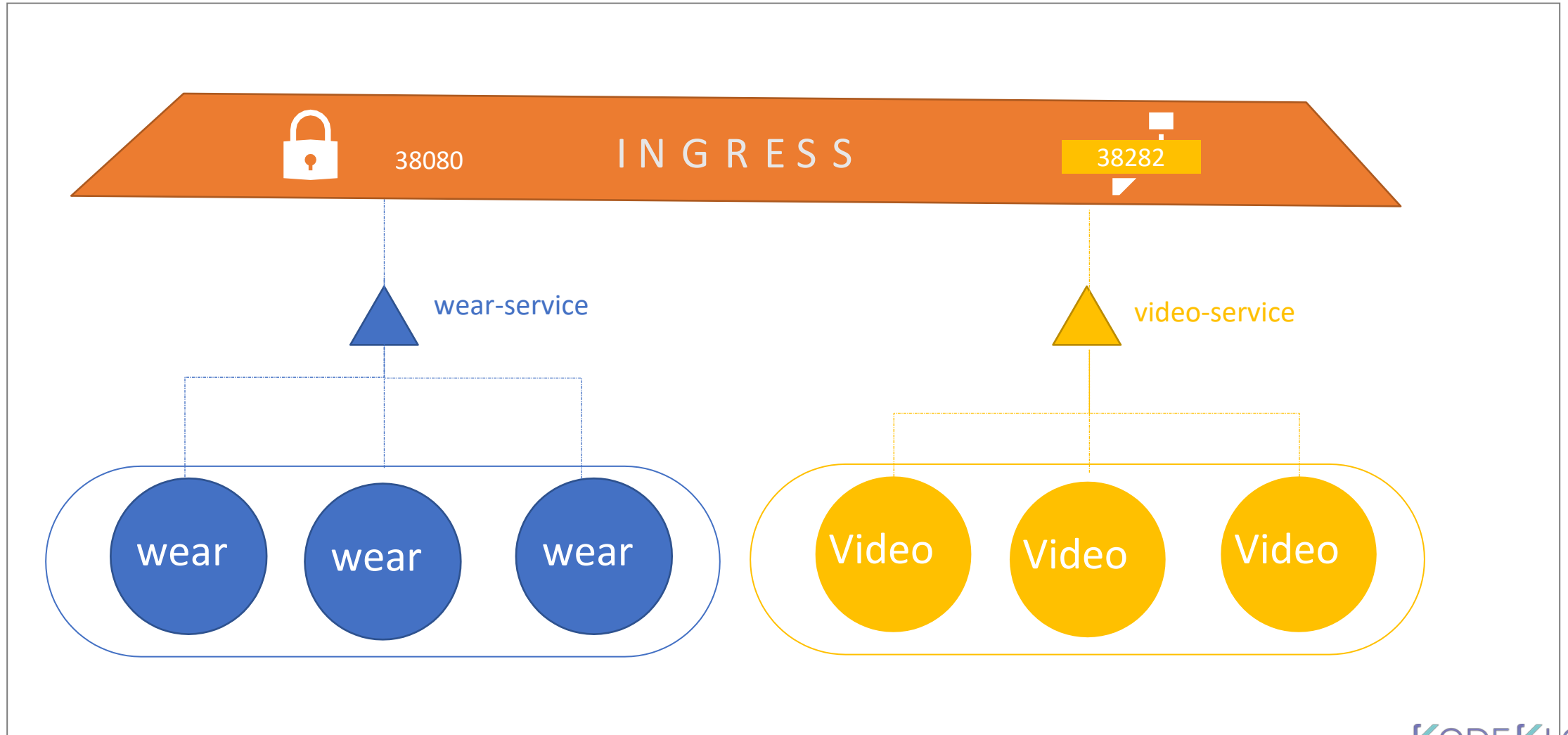
video-service (LoadBalancer)



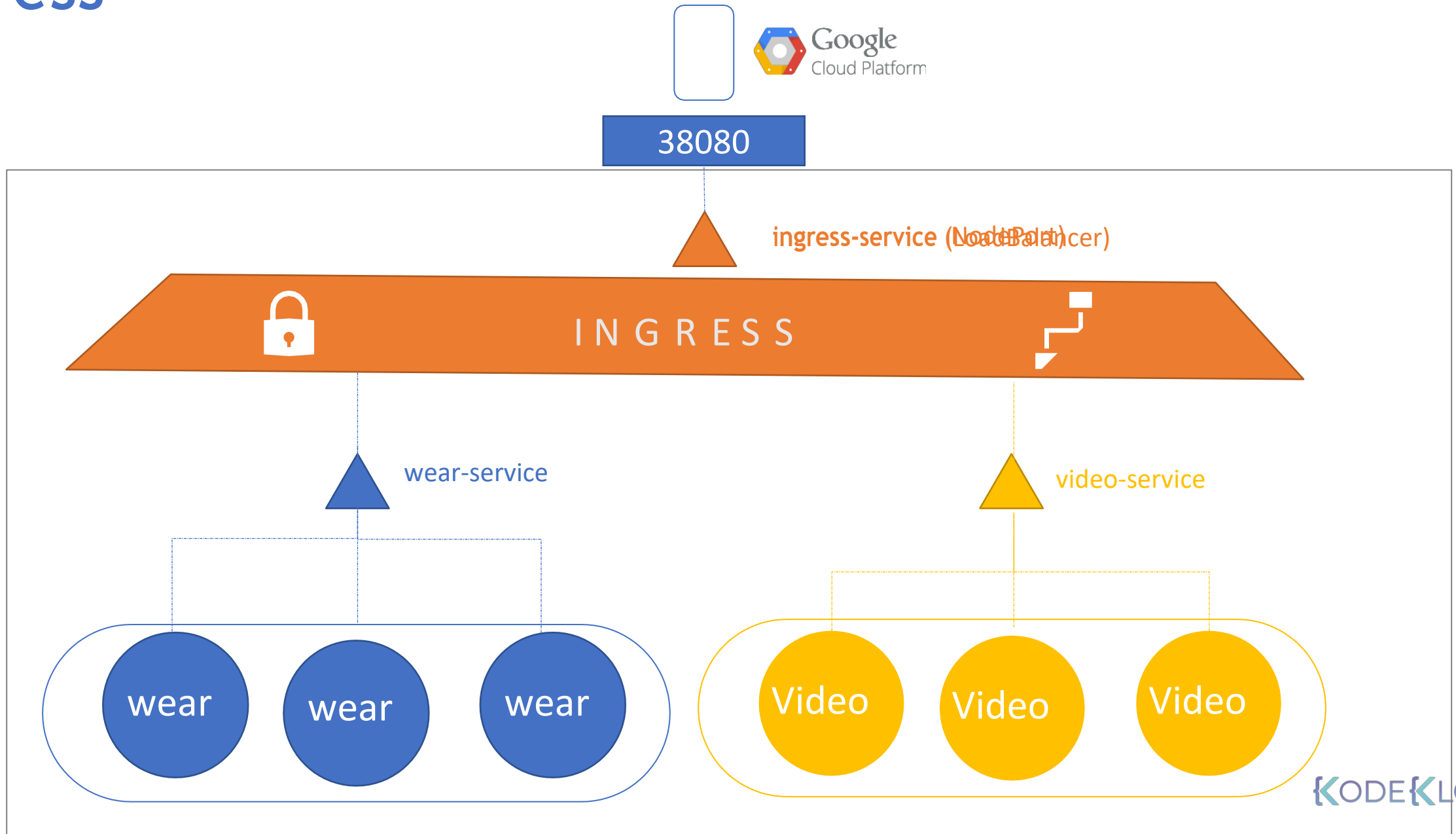
Ingress



Ingress



Ingress



Ingress

1. Deploy

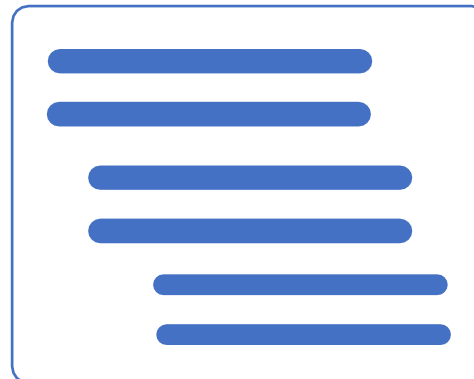


INGRESS CONTROLLER



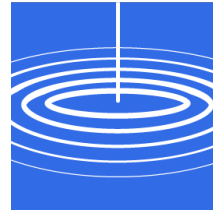
2. Configure

INGRESS RESOURCES

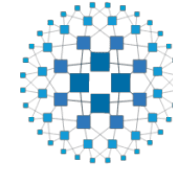


INGRESS CONTROLLER

**GCP HTTP(S)
Load Balancer (GCE)**



Contour



HAPROXY



Istio



INGRESS CONTROLLER



ConfigMap

nginx-configuration

```
kind: ConfigMap
apiVersion: v1
metadata:
  name: nginx-configuration
```

```
apiVersion: extensions/v1beta1
kind: Deployment
metadata:
  name: nginx-ingress-controller
spec:
  replicas: 1
  selector:
    matchLabels:
      name: nginx-ingress
  template:
    metadata:
      labels:
        name: nginx-ingress
    spec:
      containers:
        - name: nginx-ingress-controller
          image: quay.io/kubernetes-ingress-controller/nginx-ingress-controller:0.21.0
          args:
            - /nginx-ingress-controller
            - --configmap=$(POD_NAMESPACE)/nginx-configuration
```

INGRESS CONTROL



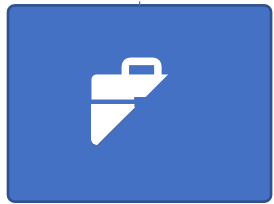
ConfigMap

nginx-configuration

```
kind: ConfigMap
apiVersion: v1
metadata:
  name: nginx-configuration
```

```
name: nginx-ingress-controller
spec:
  replicas: 1
  selector:
    matchLabels:
      name: nginx-ingress
  template:
    metadata:
      labels:
        name: nginx-ingress
    spec:
      containers:
        - name: nginx-ingress-controller
          image: quay.io/kubernetes-ingress-
            controller/nginx-ingress-controller:0.21.0
      args:
        - /nginx-ingress-controller
        - --configmap=$(POD_NAMESPACE)/nginx-configuration
      env:
        - name: POD_NAME
          valueFrom:
            fieldRef:
              fieldPath: metadata.name
        - name: POD_NAMESPACE
          valueFrom:
            fieldRef:
              fieldPath: metadata.namespace
```

INGRESS CONTROL

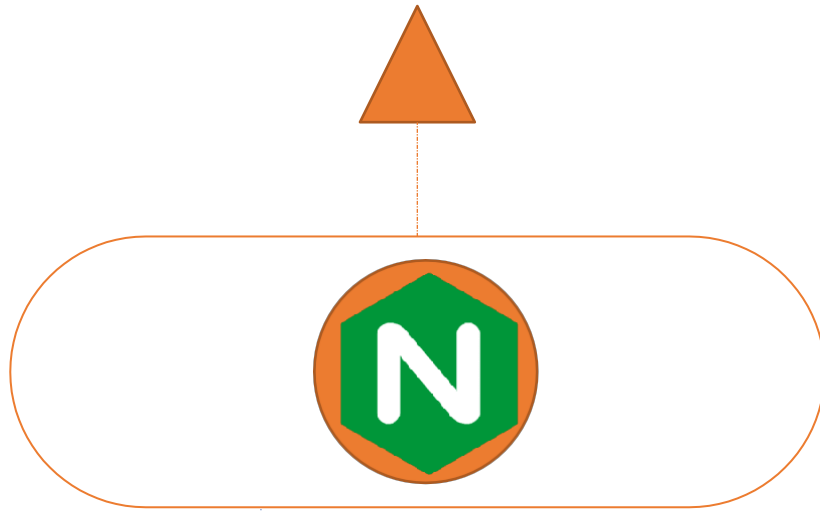


ConfigMap
nginx-configuration

```
kind: ConfigMap
apiVersion: v1
metadata:
  name: nginx-configuration
```

```
- name: nginx-ingress-controller
  image: quay.io/kubernetes-ingress-
    controller/nginx-ingress-controller:0.21.0
args:
  - /nginx-ingress-controller
  - --configmap=$(POD_NAMESPACE)/nginx-configuration
env:
  - name: POD_NAME
    valueFrom:
      fieldRef:
        fieldPath: metadata.name
  - name: POD_NAMESPACE
    valueFrom:
      fieldRef:
        fieldPath: metadata.namespace
ports:
  - name: http
    containerPort: 80
  - name: https
    containerPort: 443
```

INGRESS CONTROL



ConfigMap

nginx-configuration

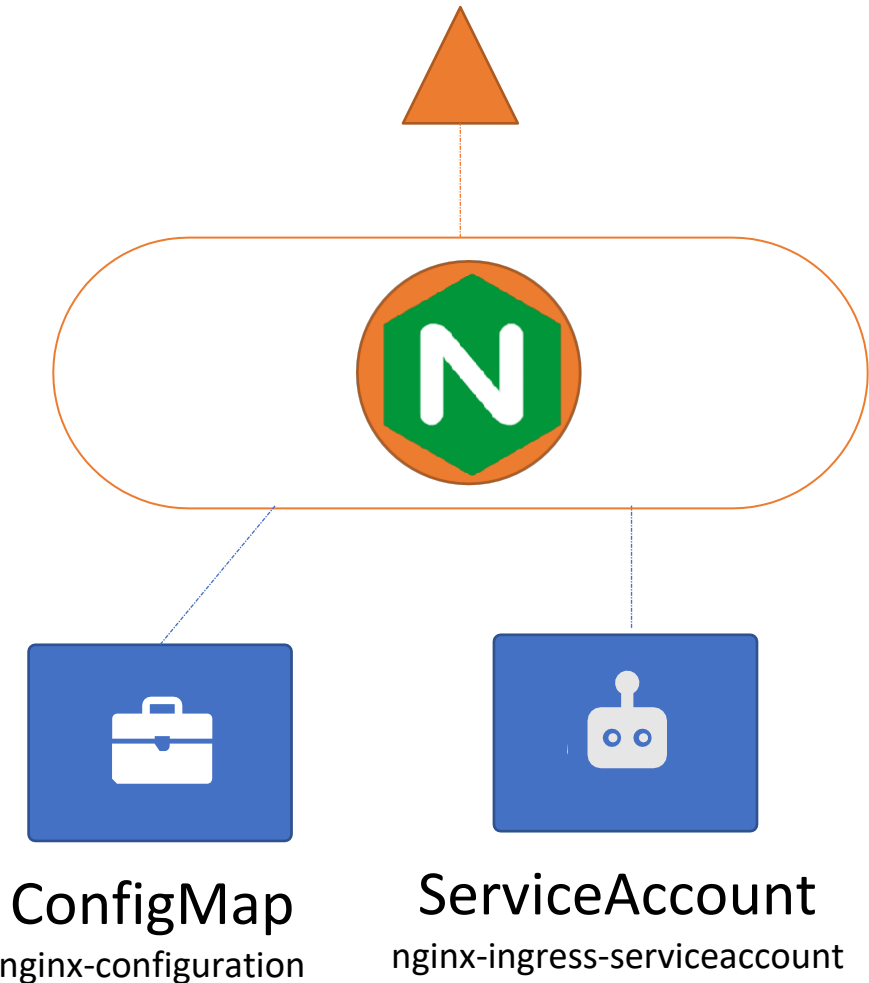
```
kind: ConfigMap
apiVersion: v1
metadata:
  name: nginx-configuration
```

```
fieldPath: metadata.namespace

ports:
  - name: http
    containerPort: 80
  - name: https
    containerPort: 443
```

```
apiVersion: v1
kind: Service
metadata:
  name: nginx-ingress
spec:
  type: NodePort
  ports:
    - port: 80
      targetPort: 80
      protocol: TCP
      name: http
    - port: 443
      targetPort: 443
      protocol: TCP
      name: https
  selector:
    name: nginx-ingress
```

INGRESS CONTROLLER



```
kind: ConfigMap
apiVersion: v1
metadata:
  name: nginx-configuration
```

```
protocol: TCP
- port: 443
  targetPort: 443
  protocol: TCP
  name: https
selector:
  name: nginx-ingress
```

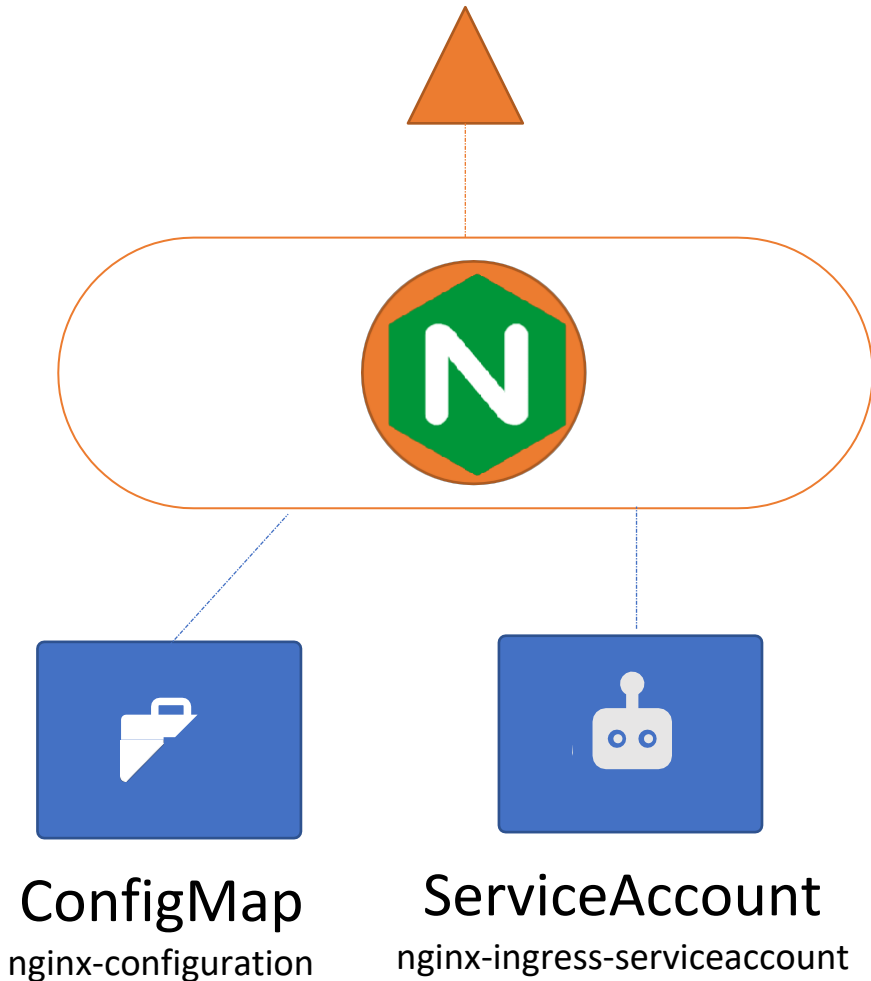
```
apiVersion: v1
kind: ServiceAccount
metadata:
  name: nginx-ingress-serviceaccount
```

Roles

~~ClusterRole~~

~~RoleBinding~~

INGRESS CONTROLLER



Deployment

```
apiVersion: extensions/v1beta1
kind: Deployment
metadata:
  name: nginx-ingress-controller
spec:
  replicas: 1
  selector:
    matchLabels:
      name: nginx-ingress
  template:
    metadata:
      labels:
        name: nginx-ingress
    spec:
      containers:
        - name: nginx-ingress-controller
          image: quay.io/kubernetes-ingress-controller/nginx-ingress-controller:0.21.0
      args:
        - /nginx-ingress-controller
        - --configmap=$(POD_NAMESPACE)/nginx-configuration
      env:
        - name: POD_NAME
          valueFrom:
            fieldRef:
              fieldPath: metadata.name
        - name: POD_NAMESPACE
          valueFrom:
            fieldRef:
              fieldPath: metadata.namespace
      ports:
        - name: http
          containerPort: 80
        - name: https
          containerPort: 443
```

Service

```
apiVersion: v1
kind: Service
metadata:
  name: nginx-ingress
spec:
  type: NodePort
  ports:
    - port: 80
      targetPort: 80
      protocol: TCP
      name: http
    - port: 443
      targetPort: 443
      protocol: TCP
      name: https
  selector:
    name: nginx-ingress
```

ConfigMap

```
kind: ConfigMap
apiVersion: v1
metadata:
  name: nginx-configuration
```

Auth

```
apiVersion: v1
kind: ServiceAccount
metadata:
  name: nginx-ingress-serviceaccount
```

Roles

ClusterRoles

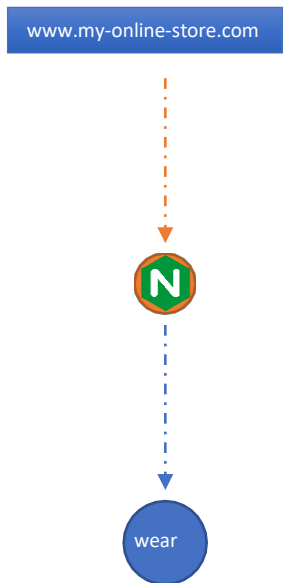
RoleBindings



INGRESS RESOURCE



INGRESS RESOURCE

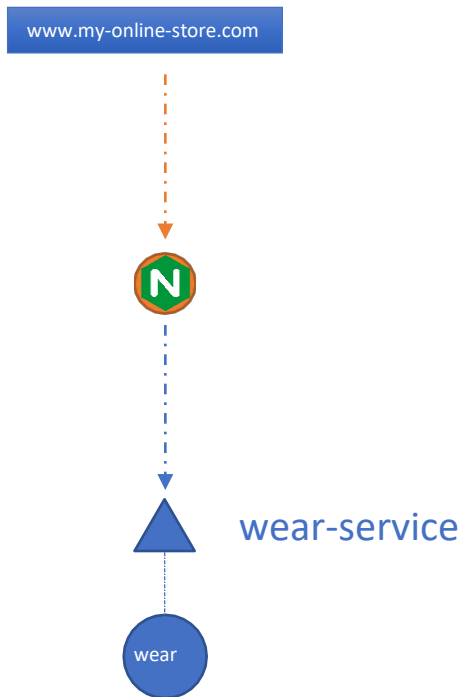


Ingress-wear.yaml

```
apiVersion: extensions/v1beta1
kind: Ingress
metadata:
  name: ingress-wear
spec:
```



INGRESS RESOURCE



Ingress-wear.yaml

```
apiVersion: extensions/v1beta1
kind: Ingress
metadata:
  name: ingress-wear
spec:
  backend:
    serviceName: wear-service
    servicePort: 80
```

```
kubectl create -f Ingress-wear.yaml
```

```
ingress.extensions/ingress-wear created
```

```
kubectl get ingress
```

```
ingress-wear      *           80           2s
```



INGRESS RESOURCE - RULES

www.my-online-store.com

Rule 1

www.wear.my-online-store.com

Rule 2

www.watch.my-online-store.com

Rule 3

Everything Else

Rule 4



INGRESS RESOURCE - RULES

DNS Name		Forward IP	
www.my-online-store.com		10.123.23.12 (INGRESS SERVICE)	
www.wear.my-online-store.com		10.123.23.12	
www.watch.my-online.store.com		10.123.23.12	
www.my-wear-store.com		10.123.23.12	
www.my-online-store.com	www.my-watch-store.com	10.123.23.12	ing Else
Rule 1			Rule 4



INGRESS RESOURCE - RULES

www.my-online-store.com

www.wear.my-online-store.com

www.watch.my-online-store.com

Everything Else

http://www.my-online-store.com/wear

http://www.my-online-store.com/watch

http://www.my-online-store.com/listen

Rule 1

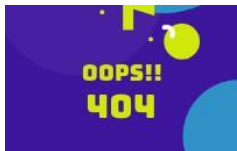
Path /wear



Path /watch



Path /



Rule 2

Rule 3

Rule 4



INGRESS RESOURCE - RULES

www.my-online-store.com

www.wear.my-online-store.com

www.watch.my-online-store.com

Everything Else

tp://www.my-online-store.com/wear

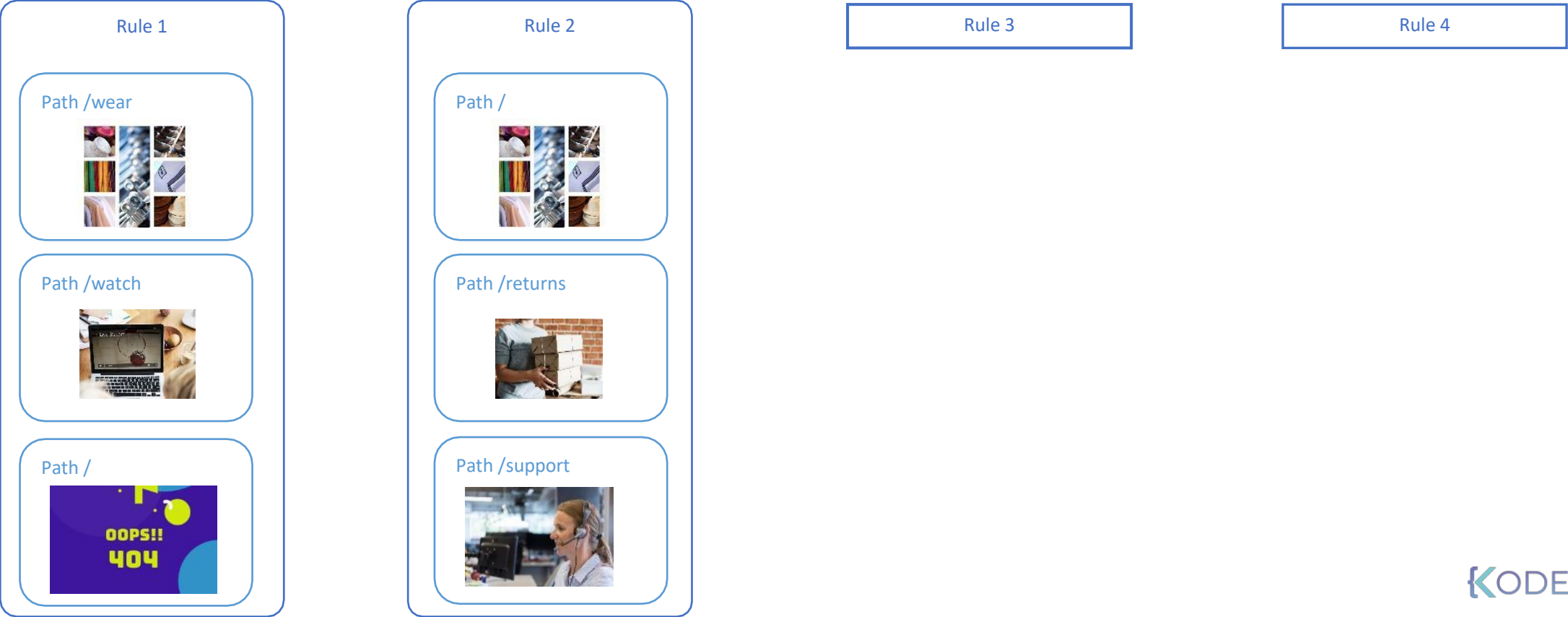
tp://www.my-online-store.com/watch

tp://www.my-online-store.com/listen

http://www.wear.my-online-store.com/

http://www.wear.my-online-store.com/returns

http://www.wear.my-online-store.com/support



INGRESS RESOURCE - RULES

www.my-online-store.com

www.wear.my-online-store.com

www.watch.my-online-store.com

Everything Else

http://www.my-online-store.com/wear

http://www.wear.my-online-store.com/

http://www.watch.my-online-store.com/

http://www.my-online-store.com/watch

http://www.wear.my-online-store.com/returns

http://www.watch.my-online-store.com/movies

http://www.my-online-store.com/listen

http://www.wear.my-online-store.com/support

http://www.watch.my-online-store.com/tv

Rule 1

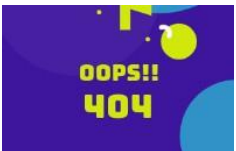
Path /wear



Path /watch



Path /



Rule 2

Path /



Path /returns



Path /support



Rule 3

Path /



Path /movies



Path /tv



Rule 4



INGRESS RESOURCE - RULES

www.my-online-store.com

www.wear.my-online-store.com

www.watch.my-online-store.com

Everything Else

http://www.my-online-store.com/wear

http://www.wear.my-online-store.com/

http://www.watch.my-online-store.com/

http://www.listen.my-online-store.com/

http://www.my-online-store.com/watch

http://www.wear.my-online-store.com/returns

http://www.watch.my-online-store.com/movies

http://www.eat.my-online-store.com/

http://www.my-online-store.com/listen

http://www.wear.my-online-store.com/support

http://www.watch.my-online-store.com/tv

http://www.drink.my-online-store.com/tv

Rule 1

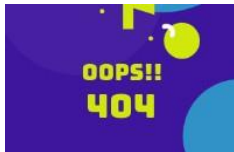
Path /wear



Path /watch



Path /



Rule 2

Path /



Path /returns



Path /support



Rule 3

Path /



Path /movies



Path /tv

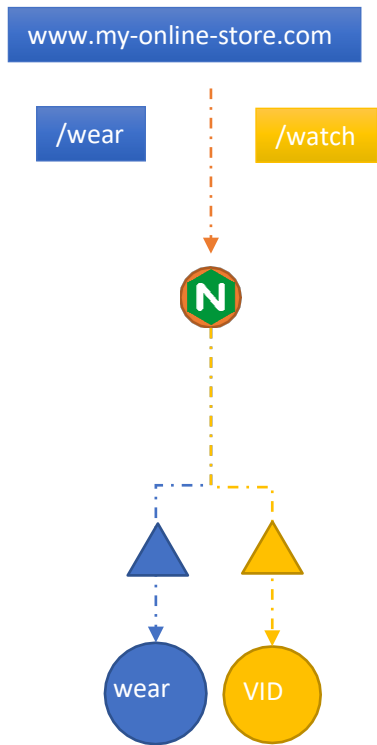


Rule 4

Path /



INGRESS RESOURCE



Ingress-wear.yaml

```
apiVersion: extensions/v1beta1
kind: Ingress
metadata:
  name: ingress-wear
spec:
  backend:
    serviceName: wear-service
    servicePort: 80
```

Ingress-wear-watch.yaml

```
apiVersion: extensions/v1beta1
kind: Ingress
metadata:
  name: ingress-wear-watch
spec:
  rules:
    - http:
        paths:
          - path: /wear

    - path: /watch
      backend:
        serviceName: watch-service
        servicePort: 80
```



INGRESS RESOURCE

```
kubectl describe ingress ingress-wear-watch
```

Name: ingress-wear-watch

Namespace: default

Address:

Default backend: default-http-backend:80 (<none>)

Rules:

Host	Path	Backends
------	------	----------

----	----	-----
------	------	-------

*

	/wear	wear-service:80 (<none>)
--	-------	--------------------------

	/watch	watch-service:80 (<none>)
--	--------	---------------------------

Annotations:

Events:

Type	Reason	Age	From	Message
-----	-----	-----		-----
Normal	CREATE	14s	nginx-ingress-controller	Ingress default/ingress-wear-watch



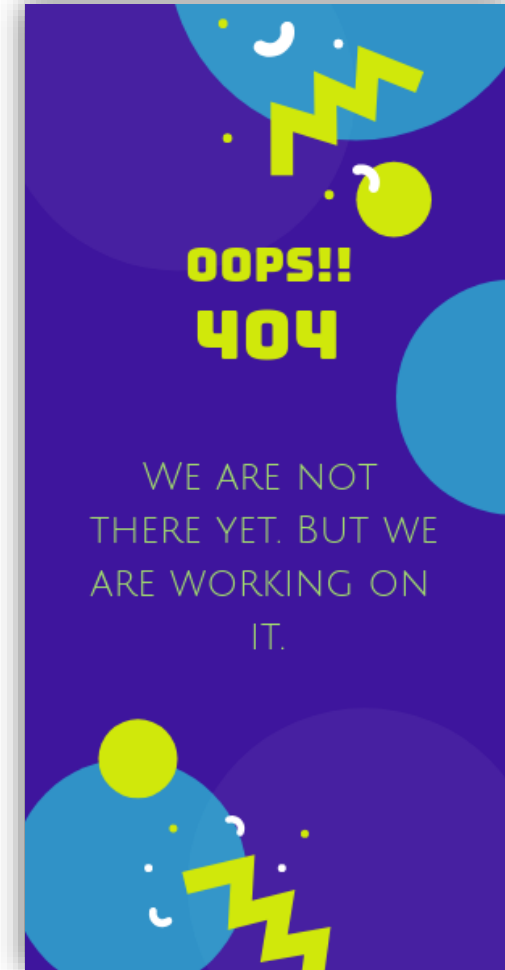
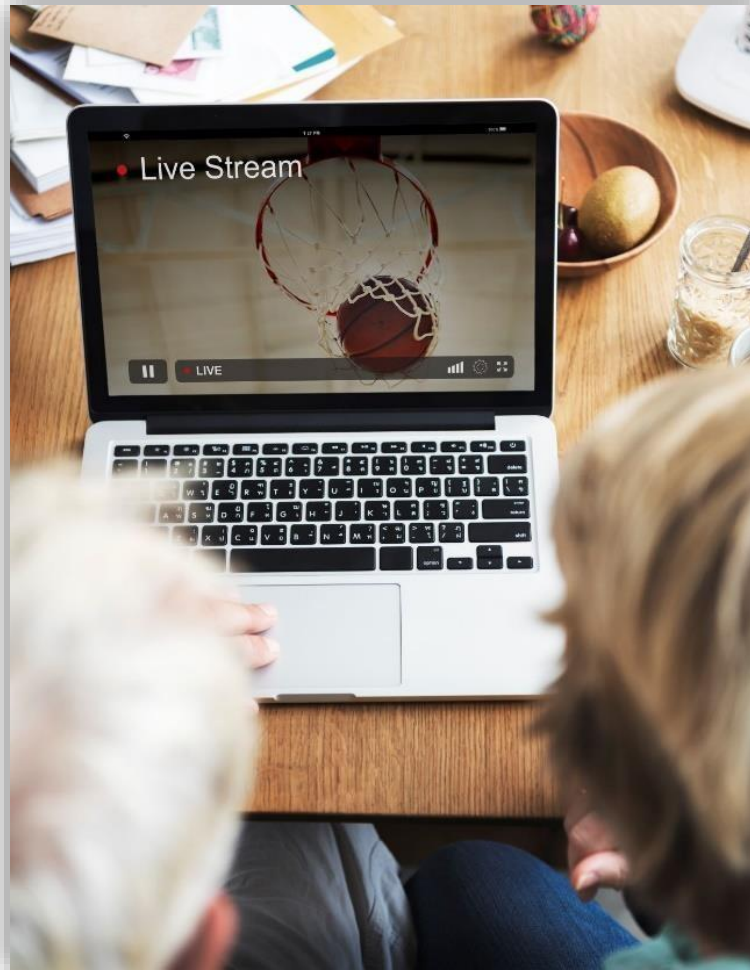
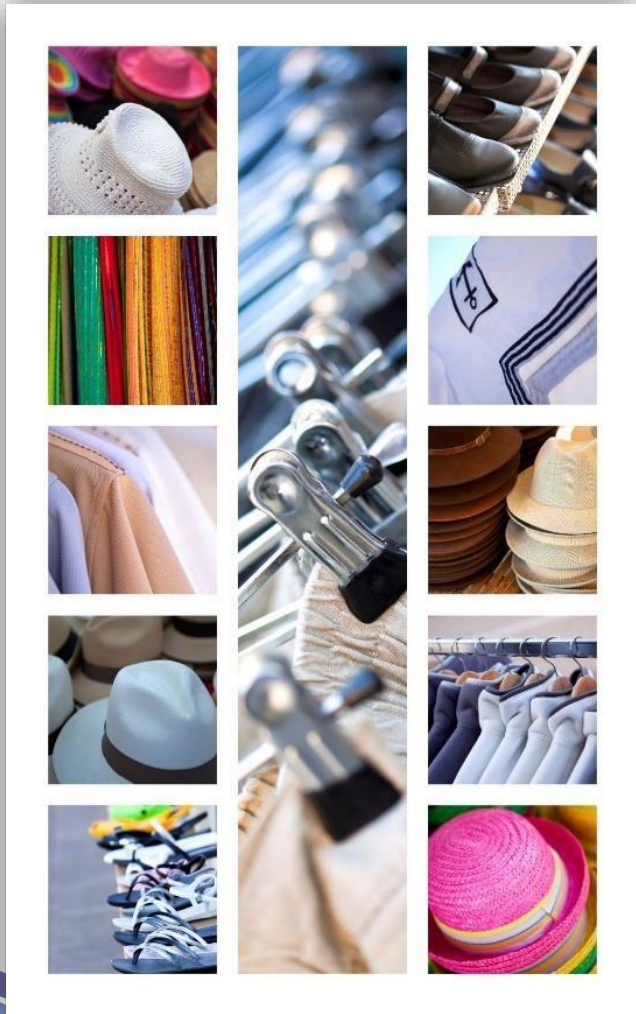
INGRESS RESOURCE

www.my-online-store.com/eat

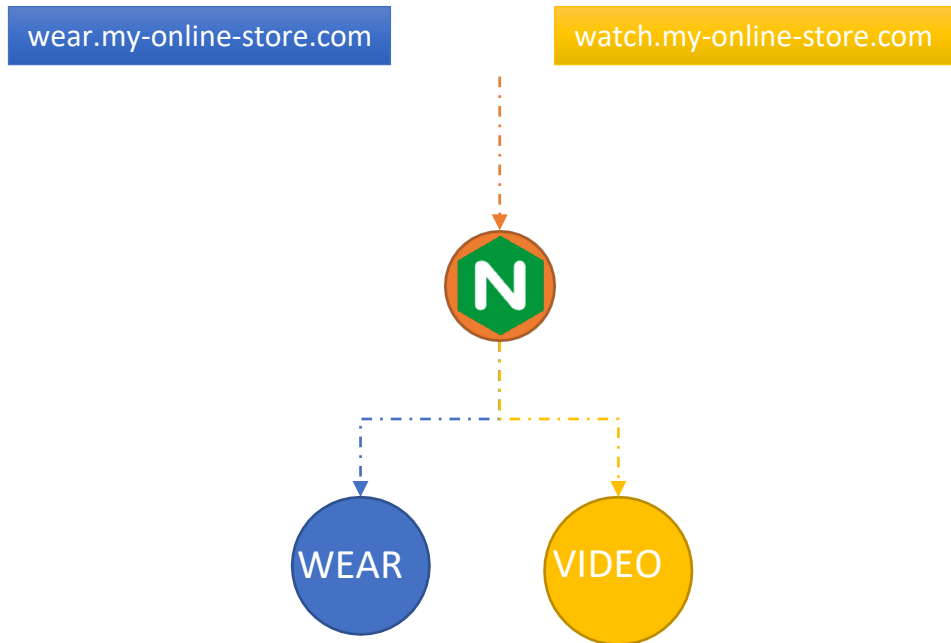
www.my-online-store.com/liste

www.my-online-store.com/wear

www.my-online-store.com www.my-online-store.com/watch



INGRESS RESOURCE



Ingress-wear-watch.yaml

```
apiVersion: extensions/v1beta1
kind: Ingress
metadata:
  name: ingress-wear-watch
spec:

  rules:
  - host: wear.my-online-store.com
    http:
      paths:
      - backend:
          serviceName: wear-service
          servicePort: 80
  - host: watch.my-online-store.com
    http:
      paths:
      - backend:
          serviceName: watch-service
          servicePort: 80
```



INGRESS RESOURCE

Ingress-wear-watch.yaml

```
apiVersion: extensions/v1beta1
kind: Ingress
metadata:
  name: ingress-wear-watch
spec:
  rules:
  - http:
      paths:
      - path: /wear
        backend:
          serviceName: wear-service
          servicePort: 80
      - path: /watch
        backend:
          serviceName: watch-service
          servicePort: 80
```

Ingress-wear-watch.yaml

```
apiVersion: extensions/v1beta1
kind: Ingress
metadata:
  name: ingress-wear-watch
spec:
  rules:
  - host: wear.my-online-store.com
    http:
      paths:
      - backend:
          serviceName: wear-service
          servicePort: 80
  - host: watch.my-online-store.com
    http:
      paths:
      - backend:
          serviceName: watch-service
          servicePort: 80
```



