

Lab: Using Kustomize with Kubernetes


Prerequisites

- Kubernetes cluster (Minikube, Kind, or any cluster)
 - `kubectl` installed
 - `kustomize` installed (or use `kubectl kustomize`)
-


Directory Structure

```
kustomize-lab/
├── base/
│   ├── deployment.yaml
│   ├── service.yaml
│   └── kustomization.yaml
└── overlays/
    ├── dev/
    │   ├── kustomization.yaml
    │   └── patch.yaml
    └── prod/
        ├── kustomization.yaml
        └── patch.yaml
```


Create the Base Configuration

 `base/deployment.yaml`

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: nginx
spec:
  replicas: 2
  selector:
    matchLabels:
      app: nginx
  template:
    metadata:
      labels:
        app: nginx
    spec:
      containers:
        - name: nginx
          image: nginx:1.21
          ports:
            - containerPort: 80
```

 base/service.yaml


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

 base/kustomization.yaml

```
resources:
  - deployment.yaml
  - service.yaml
```

Create Overlays

Dev Overlay

 overlays/dev/kustomization.yaml


```
resources:
  - ../../base

patches:
  - path: patch.yaml
```

 overlays/dev/patch.yaml

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: nginx
spec:
  replicas: 1
```

Prod Overlay

 overlays/prod/kustomization.yaml

```
resources:
  - ../../base

patches:
  - path: patch.yaml
```

 overlays/prod/patch.yaml

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: nginx
spec:
  replicas: 4
```

Apply the Configurations

Dev

```
kubectl apply -k overlays/dev
```

Prod

```
kubectl apply -k overlays/prod
```

Verify

```
kubectl get deployments  
kubectl get services
```

You should see an `nginx` deployment with the correct number of replicas depending on the environment.

Clean Up

```
kubectl delete -k overlays/dev  
# or  
kubectl delete -k overlays/prod
```

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