K8S – Name spaces Issue and resolution
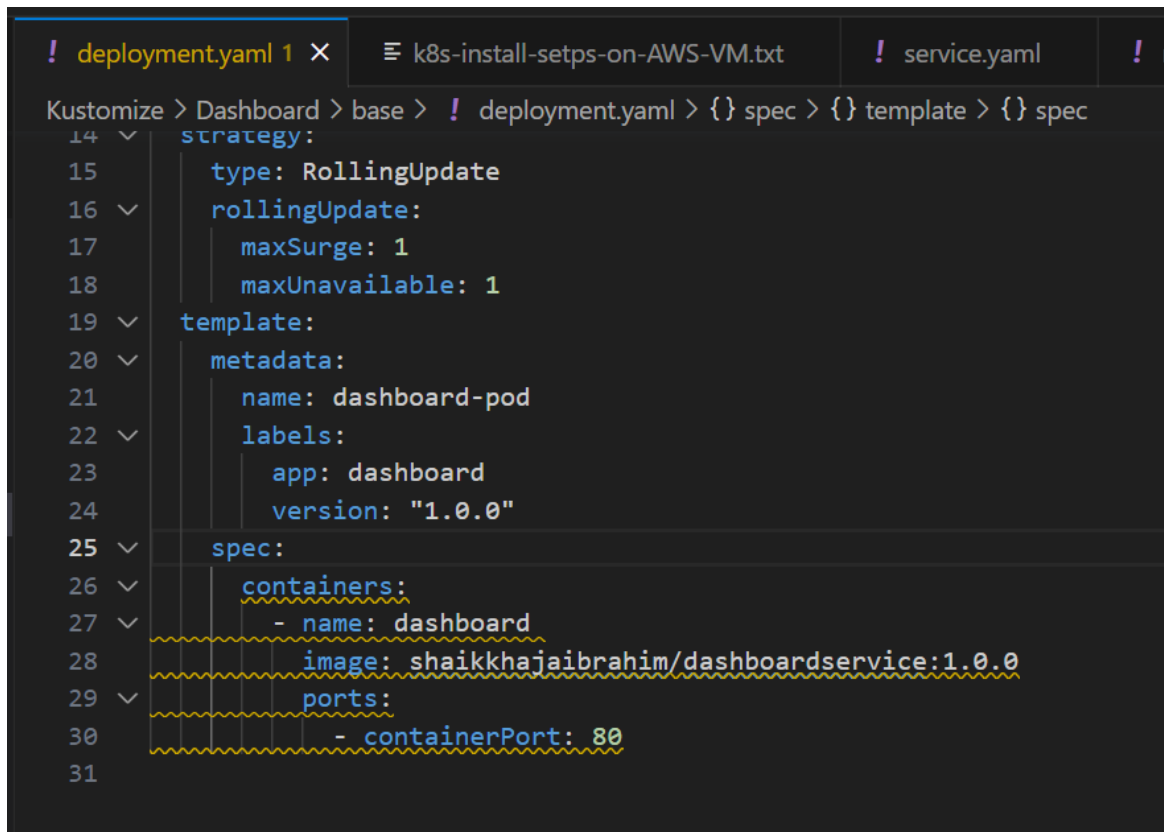
While discussing name space concept, we could not able to create name spaces via manifest files. Hence, we created ns manually by (kubectl create ns dev).I think it did not worked out well. Because, I have kept different versions in labels section of qa, env (2.00) and uat (3.0.0) as below screen shot. To test, I have applied in all the environments, which shows default version which we have mentioned in deployment.yaml.
 It is not showing the versions in diff environments.

Steps as below

original deployment file with version 1.0.0

QA & DEV env labels with version dev= 1.0 & QA = 2.0

Kustomize > Dashboard > overlays > dev > ! kusto

kustomization.yaml - Kubernetes native configur

```
 1    ---
 2    resources:
 3      - ../../base
 4
 5    namespace: dev
 6    namePrefix: dev-
 7    labels:
 8      - pairs:
 9          env: dev
10          version: "1.0"
```

Kustomize > Dashboard > overlays > qa > ! kusto

kustomization.yaml - Kubernetes native configu

```
 1    ---
 2    resources:
 3      - ../../base
 4
 5    namespace: qa
 6    namePrefix: qa-
 7    labels:
 8      - pairs:
 9          env: qa
10          version: "2.0"
```

But after applying in respective envs as (kubectl apply -k .) it is not taking values from env files. In-fact, I believe it is referring to deployment.yaml version only

```
ubuntu@ip-172-31-28-199:~/k8s-class-work/Kustomize/Dashboard/overlays/dev$ cd ..
ubuntu@ip-172-31-28-199:~/k8s-class-work/Kustomize/Dashboard/overlays$ cd qa
ubuntu@ip-172-31-28-199:~/k8s-class-work/Kustomize/Dashboard/overlays/qa$ kubectl delete -k .
service "qa-dashboard" deleted
deployment.apps "qa-dashboard-deployment" deleted
horizontalpodautoscaler.autoscaling "qa-dashboard-pod" deleted
ubuntu@ip-172-31-28-199:~/k8s-class-work/Kustomize/Dashboard/overlays/qa$ kubectl apply -k .
service/qa-dashboard created
deployment.apps/qa-dashboard-deployment created
horizontalpodautoscaler.autoscaling/qa-dashboard-pod created
ubuntu@ip-172-31-28-199:~/k8s-class-work/Kustomize/Dashboard/overlays/qa$ kubectl get po --show-labels
NAME                                    READY   STATUS    RESTARTS   AGE    LABELS
dashboard-deployment-59f788766b-8jsgr   1/1     Running   0          2d     app=dashboard,pod-template-hash=59f788766b,version=1.0.0
dashboard-deployment-59f788766b-ksjxq   1/1     Running   0          2d     app=dashboard,pod-template-hash=59f788766b,version=1.0.0
ubuntu@ip-172-31-28-199:~/k8s-class-work/Kustomize/Dashboard/overlays/qa$ kubectl get po --show-labels -n qa
NAME                                       READY   STATUS    RESTARTS   AGE    LABELS
qa-dashboard-deployment-7cfb48c9b8-m949b   1/1     Running   0          25s    app=dashboard,pod-template-hash=7cfb48c9b8,version=1.0.
0
qa-dashboard-deployment-7cfb48c9b8-mxmgv   1/1     Running   0          25s    app=dashboard,pod-template-hash=7cfb48c9b8,version=1.0.
0
```

```
        delete
ubuntu@ip-172-31-28-199:~/k8s-class-work/Kustomize/Dashboard/overlays/dev$ kubectl delete -k .
service "dev-dashboard" deleted
deployment.apps "dev-dashboard-deployment" deleted
horizontalpodautoscaler.autoscaling "dev-dashboard-pod" deleted
ubuntu@ip-172-31-28-199:~/k8s-class-work/Kustomize/Dashboard/overlays/dev$ kubectl apply -k .
service/dev-dashboard created
deployment.apps/dev-dashboard-deployment created
horizontalpodautoscaler.autoscaling/dev-dashboard-pod created
ubuntu@ip-172-31-28-199:~/k8s-class-work/Kustomize/Dashboard/overlays/dev$ kubectl get po --show-labels
NAME                                    READY   STATUS    RESTARTS   AGE    LABELS
dashboard-deployment-59f788766b-8jsgr   1/1     Running   0          2d     app=dashboard,pod-template-hash=59f788766b,version=1.0.0
dashboard-deployment-59f788766b-ksjxq   1/1     Running   0          2d     app=dashboard,pod-template-hash=59f788766b,version=1.0.0
ubuntu@ip-172-31-28-199:~/k8s-class-work/Kustomize/Dashboard/overlays/dev$ kubectl get po --show-labels -n dev
NAME                                        READY   STATUS    RESTARTS   AGE    LABELS
dev-dashboard-deployment-7cfb48c9b8-4xmln   1/1     Running   0          27s    app=dashboard,pod-template-hash=7cfb48c9b8,version=1.0
.0
dev-dashboard-deployment-7cfb48c9b8-52f5n   1/1     Running   0          27s    app=dashboard,pod-template-hash=7cfb48c9b8,version=1.0
.0
```

To recheck, I have tried changing the version in deployment .yaml

```
deployment.yaml 1 ×    ≡ k8s-install-setps-on-AWS-VM.txt    ! service.yaml    ! na
Kustomize > Dashboard > base >  ! deployment.yaml > {} spec > {} template > {} metadata > {
 14      strategy:
 15        type: RollingUpdate
 16        rollingUpdate:
 17          maxSurge: 1
 18          maxUnavailable: 1
 19      template:
 20        metadata:
 21          name: dashboard-pod
 22          labels:
 23            app: dashboard
 24            version: "2.0.0"
 25        spec:
 26          containers:
 27            - name: dashboard
 28              image: shaikkhajaibrahim/dashboardservice:1.0.0
 29              ports:
 30                - containerPort: 80
 31
```

As expected, The changes are not picking from envs. reflecting from version specified in deployment.yaml

```
ubuntu@ip-172-31-28-199:~/k8s-class-work/Kustomize/Dashboard/overlays/dev$ kubectl apply -k .
service/dev-dashboard unchanged
deployment.apps/dev-dashboard-deployment configured
horizontalpodautoscaler.autoscaling/dev-dashboard-pod unchanged
ubuntu@ip-172-31-28-199:~/k8s-class-work/Kustomize/Dashboard/overlays/dev$ kubectl get po --show-labels -n qa
NAME                                      READY   STATUS    RESTARTS   AGE   LABELS
qa-dashboard-deployment-8679c856f7-6cwvp  1/1     Running   0          29s   app=dashboard,pod-template-hash=8679c856f7,version=2.0.
0
qa-dashboard-deployment-8679c856f7-9xlxq  1/1     Running   0          29s   app=dashboard,pod-template-hash=8679c856f7,version=2.0.
0
ubuntu@ip-172-31-28-199:~/k8s-class-work/Kustomize/Dashboard/overlays/dev$ kubectl get po --show-labels -n dev
NAME                                       READY   STATUS    RESTARTS   AGE   LABELS
dev-dashboard-deployment-8679c856f7-lbwzs  1/1     Running   0          10s   app=dashboard,pod-template-hash=8679c856f7,version=2.0
.0
dev-dashboard-deployment-8679c856f7-zvdjf  1/1     Running   0          10s   app=dashboard,pod-template-hash=8679c856f7,version=2.0
.0
```

To try again, I have tried deleting the name space which we created manually (kubectl delete ns dev) and tried with manifest files. It is not working.

```
ubuntu@ip-172-31-28-199:~/k8s-class-work/Kustomize/Dashboard/overlays/dev$ kubectl apply -k .
error: namespace transformation produces ID conflict: [{"apiVersion":"v1","kind":"Namespace","metadata":{"annotations":{"internal.con
fig.kubernetes.io/previousKinds":"Namespace","internal.config.kubernetes.io/previousNames":"dev","internal.config.kubernetes.io/previ
ousNamespaces":"_non_namespaceable_"},"name":"dev"}} {"apiVersion":"v1","kind":"Namespace","metadata":{"annotations":{"internal.confi
g.kubernetes.io/previousKinds":"Namespace","internal.config.kubernetes.io/previousNames":"qa","internal.config.kubernetes.io/previous
Namespaces":"_non_namespaceable_"},"name":"dev"}}]
```

Solution

Hope, I have cracked it.

As a step 1: first we need to run the namespace.yaml file as (kubectl create -f namespaces.yaml)
which will create the name spaces.
namespace/dev created
namespace/qa created

namespace/uat created.

```
ubuntu@ip-172-31-28-199:~/k8s-class-work/Kustomize/Dashboard/base$ kubectl create -f namespaces.yaml
namespace/dev created
namespace/qa created
namespace/uat created
```

Step 2: Apply all the changes as per the env (kubectl apply -k ./)

Step 3 : We need to look into all the services: as (kubectl get all --show-labels -n dev). Refer below
image for changes:

 Note: I have changed label version as **(1.0.3)** in ../ ../dev/kustomization.yaml, which is reflected as
same

```
ubuntu@ip-172-31-28-199:~/k8s-class-work/Kustomize/Dashboard/overlays/dev$ kubectl get all --show-labels -n dev
NAME                                              READY   STATUS    RESTARTS   AGE   LABELS
pod/dev-dashboard-deployment-7f749f765c-j46bg     1/1     Running   0          18m   app=dashboard,pod-template-hash=7f749f765c,version
=2.0.0
pod/dev-dashboard-deployment-7f749f765c-jklqh     1/1     Running   0          18m   app=dashboard,pod-template-hash=7f749f765c,version
=2.0.0

NAME                      TYPE           CLUSTER-IP      EXTERNAL-IP                                                              PORT
(S)        AGE   LABELS
service/dev-dashboard     LoadBalancer   172.20.245.91   ad23007a6db3349d69fa463c8883489f-1378861997.us-east-2.elb.amazonaws.com  80:3
1314/TCP   18m   env=dev,version=1.0.3

NAME                                  READY   UP-TO-DATE   AVAILABLE   AGE   LABELS
deployment.apps/dev-dashboard-deployment   2/2     2            2           18m   env=dev,version=1.0.3

NAME                                            DESIRED   CURRENT   READY   AGE   LABELS
replicaset.apps/dev-dashboard-deployment-7f749f765c   2         2         2       18m   app=dashboard,pod-template-hash=7f749f765c,ve
rsion=2.0.0
```