Creating Deployment for Attaching Claimed Volumes to Pods

In this lesson, we will create a Jenkins deployment for attaching claimed volumes to pods and look into the sequence of associated events.

WE'LL COVER THE FOLLOWING ^

- Looking into the Definition
- Deploying Resources
- Verification
- The Sequential Break-down

In the previous lesson, we looked into claiming the persistent volumes. The next step is to attach these claimed volumes to pods.

Looking into the Definition

Let's look into a Jenkins definition.

```
cat pv/jenkins-pv.yml
```

The relevant parts of the **output** as as follows.

```
apiVersion: apps/v1
kind: Deployment
metadata:
   name: jenkins
   namespace: jenkins
spec:
   ...
   template:
   ...
   spec:
      containers:
      - name: jenkins
```

```
volumeMounts:
    - name: jenkins-home
        mountPath: /var/jenkins_home
        ...
volumes:
    - name: jenkins-home
    persistentVolumeClaim:
        claimName: jenkins
...
```

You'll notice that, this time, we added a new volume <code>jenkins-home</code>, which references the *PersistentVolumeClaim* called <code>jenkins</code>. From the container's perspective, the claim is a volume.

Deploying Resources

Let's deploy Jenkins resources and confirm that everything works as expected.

```
kubectl apply \
   -f pv/jenkins-pv.yml \
   -record
```

The **output** is as follows.

```
namespace "jenkins" configured
ingress "jenkins" configured
service "jenkins" configured
deployment "jenkins" configured
```

Verification

We'll wait until the Deployment rolls out before proceeding with a test that will confirm whether Jenkins state is now persisted.

```
kubectl --namespace jenkins \
  rollout status \
  deployment jenkins
```

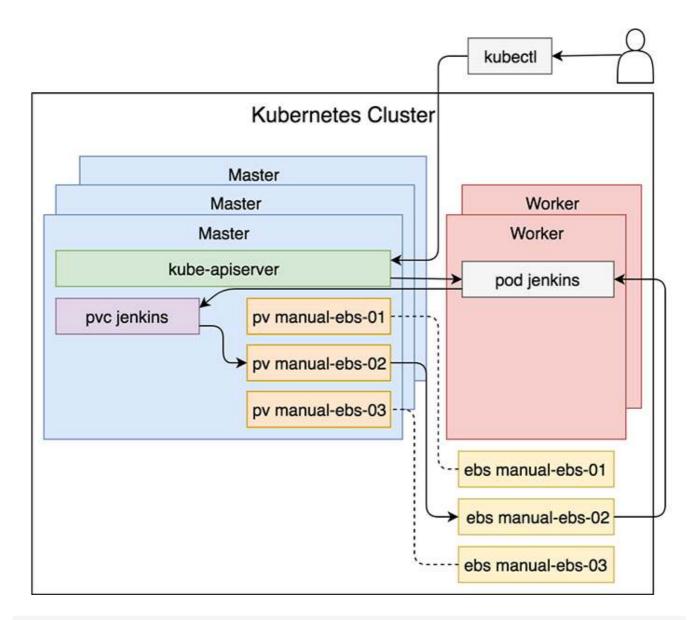
Once the rollout is finished, we'll see a message stating that the deployment "jenkins" was successfully rolled out.

We sent a request to the Kubernetes API to create a Deployment. As a result, we got a ReplicaSet that, in turn, created the <code>jenkins</code> Pod. It mounted the PersistentVolumeClaim, which is bound to the PersistenceVolume, that is tied

to the EBS volume. As a result, the EBS volume was mounted to the jenkins container running in a Pod.

The Sequential Break-down

A simplified version of the sequence of events is depicted in the below illustration.



The sequence of events initiated with a request to create a Jenkins Pod with the PersistentVolumeClaim

- 1. We executed kubectl command.
- 2. kubect1 sent a request to kube-apiserver to create the resources defined
 in pv/jenkins-pv.yml.
- 3. Among others, the jenkins Pod was created in one of the worker nodes.
- 4. Since jenkins container in the Pod has a PersistentVolumeClaim, it mounted it as a logical volume.

- 5. The PersistentVolumeClaim was already bound to one of the PersistentVolumes.
- 6. The PersistentVolume is associated with one of the EBS volumes.
- 7. The EBS volume was mounted as a physical volume to the jenkins Pod.

In the next lesson, we will verify the persistence of state and explore different types of failures that can occur.