*If you want to preserve the data even after a pod deletion or pod failures, you should use persistent volumes. For GKE, you have to option to create google cloud persistent disk and use it as a persistent volumes for the pods.*

**Setup Persistent Volume For GKE**

**Note:** When using persistent Volume, only one replica will be able to do read-write operation. With more than one replica, you can only use the PD in the read mode.

In this article, I have added to steps to setup persistent volume for the pods running in GKE.

Before deploying the pods, we should create a [storage class](https://kubernetes.io/docs/concepts/storage/storage-classes/#introduction)

The following config will create a storage class gold with gce-pd as the volume [provisioner](https://kubernetes.io/docs/concepts/storage/storage-classes/#provisioner).



|  |  |
| --- | --- |
| 1  2  3  4  5  6  7 | kind: StorageClass  apiVersion: storage.k8s.io/v1  metadata:    name: gold  provisioner: kubernetes.io/gce-pd  parameters:    type: pd-ssd |

Now, we will create a [persistentVolumeClaim (PVC).](https://kubernetes.io/docs/concepts/storage/persistent-volumes/#persistentvolumeclaims) We will use this volume claim in our deployment config.

The following config will create a PVC named jenkins-data in jenkins namespace under gold storage class that we have created first. You can change these names accordingly.



|  |  |
| --- | --- |
| 1  2  3  4  5  6  7  8  9  10  11  12 | apiVersion: v1  kind: PersistentVolumeClaim  metadata:    name: jenkins-data    namespace: jenkins  spec:    accessModes:    - ReadWriteOnce    resources:      requests:        storage: 50Gi    storageClassName: gold |

In the Kubernetes deployment config, you can use the newly created PVC using the following volume definition.



|  |  |
| --- | --- |
| 1  2  3  4 | volumes:    - name: jenkins-persistent-storage      persistentVolumeClaim:         claimName: jenkins-data |

**Example Deployment Config With Persistent Volume Claim**

A full [Jenkins container definition](https://devopscube.com/jenkins-master-build-slaves-docker-container/) using persistent volume is shown below.

Under container spec I defined the volume name and mount path required for the container.

Under Volumes definition, I have mentioned the volume name and our newly created persistent disk for mounting it to the pod.

[irp posts=”647″ name=”Jenkins Tutorial For Beginners – Getting Started Guide”]

This deployment creates a Jenkins pod with all its data mounted to the persistent volume. So, even if you delete the pod, a new pod will come up and mount itself to the persistent volume. So you will see the new Jenkins pod with all the old data and configurations.



|  |  |
| --- | --- |
| 1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27 | apiVersion: extensions/v1beta1 # for versions before 1.7.0 use apps/v1beta1  kind: Deployment  metadata:    name: jenkins-deployment    namespace: jenkins  spec:    replicas: 1    selector:      matchLabels:        app: jenkins    template:      metadata:        labels:          app: jenkins      spec:        containers:        - name: jenkins          image: bibinwilson/priveleged-jenkins          ports:          - containerPort: 8080          volumeMounts:                - name: jenkins-persistent-storage                  mountPath: /var/jenkins\_home        volumes:        - name: jenkins-persistent-storage          persistentVolumeClaim:             claimName: jenkins-data |

Hope this article helps. Let me know in the comment section, if you face any issues,

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