GlusterFS on PVC

1.What's GlusterFS.?

\* GlusterFS is a scalable network filesystem in userspace.

\* GlusterFS is free and open-source software.

\* GlusterFS is managed and orchestrated like any other app in Kubernetes.

\* It is used for storage for large scale files.

\* It advantages is any applications thats need access a file quickly and delivered it

to user or our application. and its faster than our relative file systems like NFS.

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Prerequisite of install GlusterFS on PVC:

\* Ubuntu-20

\* Create kubernetes cluster

\* Configure the Client Machine

\* Create a Configuration File for GlusterFS

\* Master and workernodes

\* Download kubekey

2.How to install GlusterFS in Ubuntu20 VMs.?

\* We have install on glusterFS package on ubuntu server by using command of

sudo apt install -y glusterfs-server glusterfs-client.

\* Then we have to start and status our glusterFS application.

sudo systemctl start glusterd.service

sudo systemctl status glusterd.service

\* Then we have to group them. like we can open the created host file like

vi /etc/hosts.

ex:ip adress node1

ip adress node2

\* And then we can add our nodes ip address in "vi /etc/hosts" file.

\* these nodes are talk to each other

\* Then now we make sure need to group them single storage pool

\* Then we check the glusterFS peer status.

gluster peer probe node.

gluster peer status.

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3.How to Integrate with Kubernetes.?

# Replicated volume creation:

\* Then we make directory in worker nodes

mkdir /gluster

\* And then we create volume by using command

gluster volume create <volumename> replicas 2 node1:/gluster/brick1

\* Then we need to check the replicated volume is created or not.

gluster volume info

\* Then start and check the gluster volume status

gluster volume start <volumename>

gluster volume status.

gluster volume list.

gluster volume info.

#Volume Mount:

\* Create a directory for mount a volume in client machine.

ex: mkdir /mnt/volume1

\* then go to mount the volume under this derectory

mount -t glusterfs <ourworkernode>:<volumename>

<clientmachinevolumedirectory>

mount | grep volume

\* then we have to change directory to client machine volume directory

ex: cd /mnt/volume1/

\* For example to know our file is shared or not. testing purpose I Have a file

creating this folder.

touch file1

automatically its succsessfully created file in all worker node

4.#Sample-PV Manifest file:

\* Create a manifest file for PV

vi glusterfs-pv.yaml

apiVersion: v1

kind: PersistentVolume

metadata:

name: task-pv-volume

labels:

type: local

spec:

storageClassName: glusterfs

capacity:

storage: 10Gi

accessModes:

-ReadWriteOnce

hostPath:

path: "/mnt/volume1"

kubectl apply glusterfs-pv.yaml

kubectl get pv

5.#Sample-PVC Manifestfile:

\*Create a manifest file for PVC

vi glusterfs-pvc.yaml

apiVersion: v1

kind: PersistentVolumeClaim

metadata:

name: task-pv-claim

spec:

storageClassName: glusterfs

accessModes:

- ReadWriteOnce

resources:

requests:

storage: 3Gi

kubectl apply glusterfs-pvc.yaml

kubectl get pvc

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5.# NGINX pod that uses the GlusterFS on PVC:

\*Create a manifest file for pod with attach PVC

vi glusterfs-pod.yaml

apiVersion: v1

kind: Pod

metadata:

name: nginx-pod1

labels:

name: nginx-pod1

spec:

containers:

- name: nginx-pod1

image: gcr.io/google\_containers/nginx-slim:0.8

ports:

- name: web

containerPort: 80

volumeMounts:

- name: gluster-vol1

mountPath: /mnt/volume1

volumes:

- name: gluster-vol1

persistentVolumeClaim:

claimName: gluster1 <1>

kubectl apply glusterfs-pod.yaml

kubectl get pods -o wide