Kubernetes+GlusterFS: Lightning Ver.

Mohamed Ashiq Liazudeen & José A. Rivera

GlusterFS

GlusterFS is a distributed, software-defined filesystem. Storage devices, called "bricks", are selected on one or more nodes to form logical storage volumes across a Gluster cluster.

◇ Runs on commodity hardware (even a <u>Raspberry Pi</u>!)

◇ Scale-out design: easy to increase storage by simply adding more nodes

◇ Provides features like cross-node and cross-site replication, usage balancing, and iSCSI storage access

heketi

heketi is the RESTful volume management interface for GlusterFS.

◇   Allows for programmatic access to the most common GlusterFS volume management tasks

◇   Can manage multiple clusters from a single instance

◇   Lightweight, reliable, and simple

Full Hyper-Convergence

Now, both GlusterFS and heketi run in containers on your Kubernetes or OpenShift cluster.

◇ Requires some additional administrative changes, but greatly reduces hardware costs

◇ Applications have native access to GlusterFS-backed storage via heketi

◇ The GlusterFS containers don't have to run on all nodes, they can be set to run only on nodes that can fulfill its storage needs
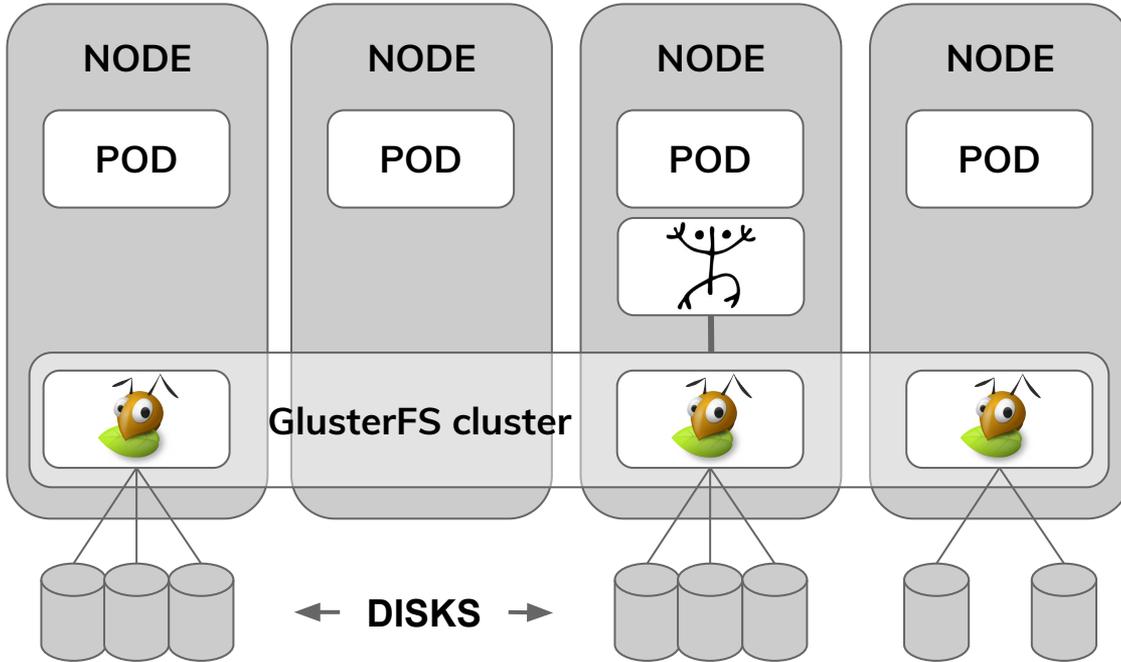
◇ Easy to scale out

Dynamic Provisioning

User

2

```
apiVersion: v1
kind: PersistentVolumeClaim
metadata:
 name: gluster1
 annotations:
   volume.beta.kubernetes.io/storage-class: gluster
spec:
 accessModes:
  - ReadWriteMany
 resources:
  requests:
   storage: 5Gi
```

1

```
apiVersion: storage.k8s.io/v1beta1
kind: StorageClass
metadata:
  name: gluster
provisioner: kubernetes.io/glusterfs
parameters:
 endpoint: "heketi-storage-endpoints"
 resturl: "http://10.47.0.1:8080"
 restuser: "joe"
 restuserkey: "My Secret Life"
```

Admin

Storage

4

3

Persistent Volume
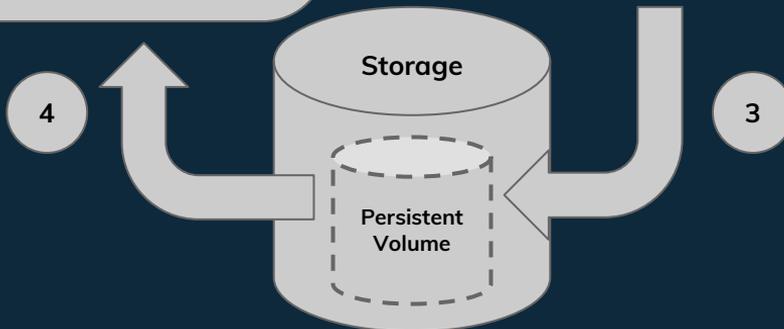
DEMO!

Sorry online readers. ;)

Thanks!

Find **Ashiq** at:

◇ **@MohamedAshiqrh** on GitHub
◇ mliyazud@redhat.com

Find **José** at:

◇ **@jarrpa** on GitHub and Twitter
◇ jarrpa@redhat.com

Projects:

◇ **GlusterFS** - https://www.gluster.org
◇ **heketi** - https://github.com/heketi/heketi
◇ https://github.com/gluster/gluster-kubernetes
◇ https://github.com/gluster/gluster-containers