RUNNING MYSQL IN K8S

Version: 03.10.19
Mykola Marzhan

Has been developing deployment, update and monitoring systems since 2004.
WHAT IS AN OPERATOR?
WHAT IF IT FAILS?
MYSQL OPERATOR

Client Application

DB Pod 1

DB Pod 2

DB Pod 3

Group Replication
PERCONA XTRADBD CLUSTER
WHAT ABOUT PERSISTENCY?
<table>
<thead>
<tr>
<th>Persistent Volume Claim Provisioner</th>
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<tbody>
<tr>
<td>AWS EBS, AWS EFS</td>
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<tr>
<td>Google Cloud PD</td>
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<td>Azure Disk, Azure File</td>
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<td>Digital Ocean</td>
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<td>Ceph</td>
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<td>Glusterfs</td>
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<td>NFS</td>
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<td>iSCSI</td>
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<td>OpenEBS</td>
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<td>OpenStack Cinder</td>
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<td>StorageOS</td>
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<td>Flex</td>
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<td>Flocker</td>
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<td>Quobyte</td>
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<tr>
<td>Portworx Volume</td>
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<td>Dell EMC ScaleIO</td>
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<td>VMware vSphere Volume</td>
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PersistentVolumeClaim
Automatic emptyDir
Automatic hostPath
PERSISTENCY

PersistentVolumeClaim
Automatic emptyDir
Automatic hostPath

MySQL
PersistentVolumeClaim
Manual ReadWriteMany
PERSISTENCY

PersistentVolumeClaim
Automatic emptyDir
Automatic hostPath

PersistentVolumeClaim
Manual ReadWriteMany

PersistentVolumeClaim
Automatic emptyDir
Automatic hostPath
Can I scale up/down?
HOW CAN I RUN MULTI-REGION CLUSTER?
WHEN IS TRANSACTION FINISH?

- All nodes certified
- Majority of nodes certified
- Finished on master
PFFF, SO, IN SHORT
HOW CAN I RUN A MULTI-REGION CLUSTER?
WHAT ABOUT BACKUPS?
BACKUP DESTINATION

S3 compatible storage
PersistentVolumeClaim
BACKUP DESTINATION

S3 compatible storage  S3 compatible storage
PersistentVolumeClaim
BACKUP DESTINATION

S3 compatible storage
PersistentVolumeClaim

S3 compatible storage

S3 compatible storage
Google Cloud Storage
Azure Blob Storage
BACKUP TOOL

Percona XtraBackup
direct streaming

mysqlldump
direct streaming

Percona XtraBackup
save and stream
WHAT ABOUT RESTORE?
RESTORE SOURCE

S3 compatible storage
Persistent Volume

S3 compatible storage

S3 compatible storage
Google Cloud Storage
Azure Blob Storage
HTTP URL
WHAT ABOUT MONITORING?
MONITORING

Percona Monitoring and Management

Prometheus
MySQL Enterprise Monitor

Prometheus
Orchestrator
WHAT ABOUT **ENCRYPTION**?
ENCRYPTION

TLS for client-server
TLS for replication
keyring is disabled

TLS for client-server
TLS for replication
keyring is disabled

No TLS for client-server
No TLS for replication
keyring is disabled
WHAT ABOUT EASY BUTTON?
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<th>Service Broker</th>
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<th>Proxying</th>
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