AKS storage using Shared Disk & Availability Zones

Houssem Dellai

Azure Disk, by default LRS, is zonal resource.

Azure Disk could be ZRS, available in multiple Availability Zones.

Azure Disk, by default, is mounted to one single virtual machine.
Well, not anymore with Shared Disk.

master | 8 branches | 51 tags | Go to file | Add file | Code

andyzhangx Merge pull request #1643 from andyzhangx/update-cache-standard-f... ... 9055345 yesterday 2,628 commits

.github	chore: update dependencies of cloud-provider-azure	last week
charts	feat: increase csi-provisioner timeout to 30s	last month
deploy	feat: increase csi-provisioner timeout to 30s	last month
docs	Update driver-parameters.md	last week
hack	chore: add requirements.txt with fixed versions to use in pip install	2 weeks ago
pkg	feat: add disable-update-cache flag	3 days ago
test	Merge pull request #1662 from cvvz/update-dependencies-cloud-provi...	5 days ago
vendor	chore: upgrade azure cloud provider lib	3 days ago
.gitignore	fix: add latest helm chart	2 years ago
.golangci.yml	feat: add cloudConfigSecret in helm install	last year
CONTRIBUTING.md	doc: fix doc error	2 years ago
LICENSE	Initial commit	4 years ago
Makefile	chore: update dependencies of cloud-provider-azure	last week
OWNERS	chore: Add edreed to approvers	last year
README.md	Update README.md	3 days ago

About

Azure Disk CSI Driver

kubernetes | csi | k8s-sig-azure

- Readme
- Apache-2.0 license
- Code of conduct
- Security policy
- 111 stars
- 7 watching
- 158 forks

Releases 50

v1.25.0 release Latest
on Nov 25

+ 49 releases

Contributors 61

Shared Disks with AKS

Mounted to more than one node simultaneously

Use ReadWriteMany (RWX) accessMode and Raw Block Device with Block volumeMode

One single node can write at a time

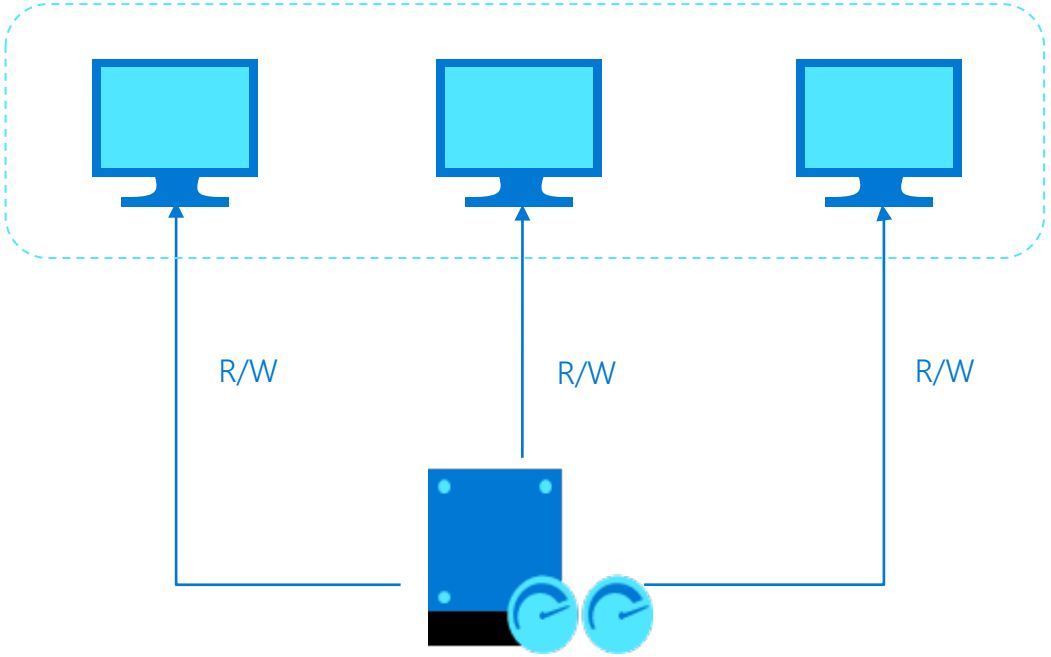
Container will see a device instead of a file system

Can be used with applications that can manage writes, reads, locks, caches, fencing on raw block volumes

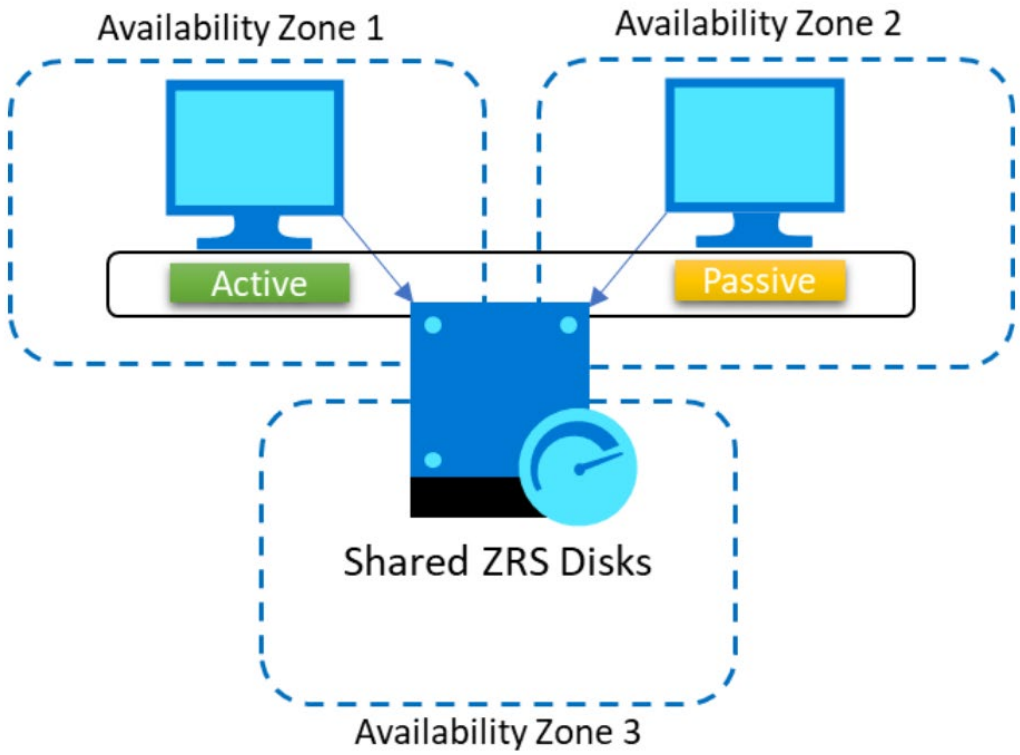
Can be used with PPG for lowest latency

Supports Ultra Disk, Premium SSD & Standard SSD

Supports LRS and ZRS disks

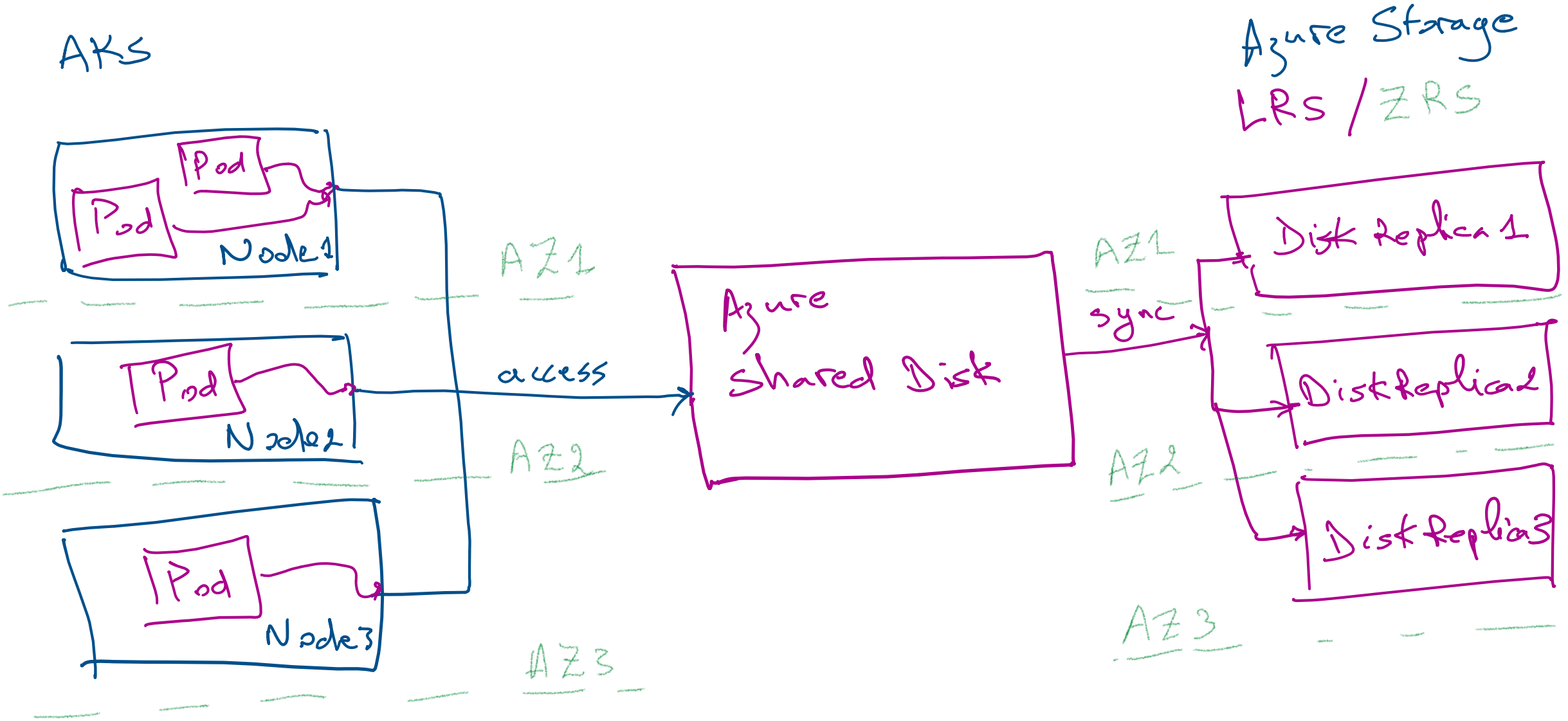


ZRS disk attached to clustered VMs and shared



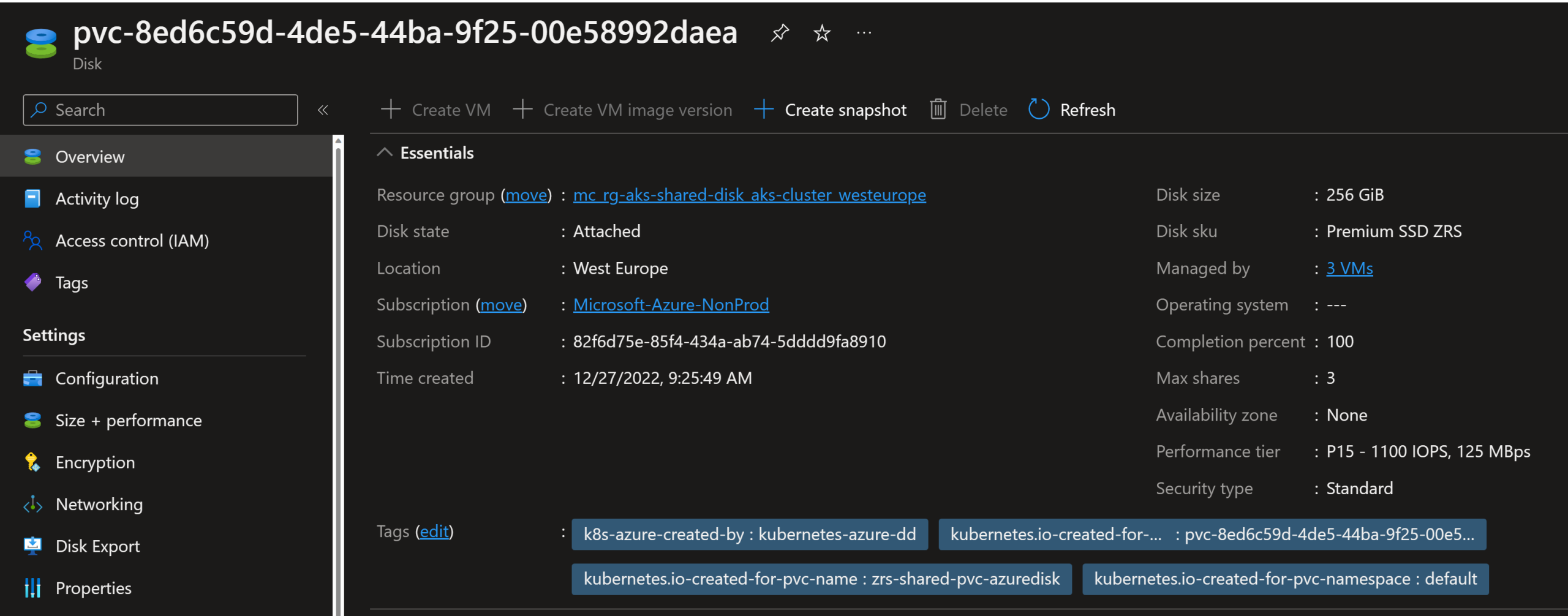
Using Availability Zones for VMs, you can allocate primary and secondary VMs in different zones for higher availability and attach a shared ZRS disk to the VMs in different zones.

How shared disk works



```yaml
apiVersion: storage.k8s.io/v1
kind: StorageClass
metadata:
  name: zrs-shared-managed-csi
provisioner: disk.csi.azure.com
parameters:
  skuName: Premium_ZRS
  maxShares: "2"
  cachingMode: None  # N/A with maxShares>1
reclaimPolicy: Delete
---
kind: PersistentVolumeClaim
apiVersion: v1
metadata:
  name: zrs-shared-pvc-azuredisk
spec:
  accessModes:
    - ReadWriteMany
  resources:
    requests:
      storage: 256Gi
  volumeMode: Block
  storageClassName: zrs-shared-managed-csi
```

```yaml
apiVersion: apps/v1
kind: Deployment
metadata:
  labels:
    app: nginx
  name: nginx
spec:
  replicas: 3
  selector:
    matchLabels:
      app: nginx
  template:
    metadata:
      labels:
        app: nginx
    spec:
      containers:
      - name: nginx
        image: nginx
        volumeDevices: # instead of volumeMounts
          - name: azuredisk
            devicePath: /dev/sdx # not mountPath
      volumes:
        - name: azuredisk
          persistentVolumeClaim:
            claimName: zrs-shared-pvc-azuredisk
```

Shared Disk is managed by more than 1 AKS node

Shared Disk could use ZRS feature