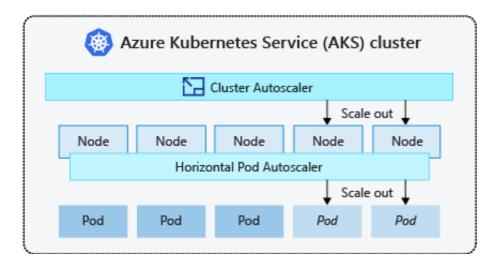
Kubernetes Toy Setup to Reproduce Issues



Creation of Resource Group

az group create --name myResourceGroup --location eastus

Creation of AKS Cluster and Enabling Cluster Autoscaler

```
az aks create --resource-group myResourceGroup --name myAKSCluster --node-vm-size
Standard_DS1_v2 --node-count 1 --vm-set-type VirtualMachineScaleSets --load-balanc
er-sku standard --enable-cluster-autoscaler --min-count 1 --max-count 3
```

More Information

- 1. Automatically scale a cluster to meet application demands on Azure Kubernetes Service (AKS)
- 2. az aks commands
- 3. Dv2 and DSv2-series

Run and Expose php-apache Server

Define a Docker Image

```
$ vi Dockerfile

FROM php-5-apache
COPY index.php /var/www/index.php
RUN chmod a+rx index.php
```

Define CPU Intensive Application

```
$ vi index.php

<?php
    $x = 0.0001;
    for ($i = 0; $i <= 1000000; $i++) {
        $x += sqrt($x);
    }
    echo "OK!";
?>
```

Define Kubernetes Configuration for the Application

```
$ vi php-apache.yml
apiVersion: apps/v1
kind: Deployment
metadata:
    name: php-apache
spec:
    selector:
        matchLabels:
            run: php-apache
    replicas: 1
    template:
        metadata:
            labels:
                run: php-apache
        spec:
            containers:
                - name: php-apache
                  image: k8s.gcr.io/hpa-example
                  ports:
                       - containerPort: 80
                  resources:
                       limits:
                           cpu: 500m
                           memory: 128Mi
                       requests:
                           cpu: 200m
                           memory: 64Mi
apiVersion: v1
kind: Service
metadata:
    name: php-apache
    labels:
        run: php-apache
spec:
    ports:
        - port: 80
selector:
    run: php-apache
```

Deploy and Test the Setup

```
kubectl apply -f php-apache.yaml
kubectl get all
kubectl get nodes
```

Enable Autoscaling the Pods

kubectl autoscale deployment php-apache --cpu-percent=50 --min=1 --max=10

Test Autoscaling Setup

kubectl get hpa

Increase Load

kubectl run -i --tty load-generator --rm --image=busybox --restart=Never -- /bin/s
h -c "while sleep 0.01; do wget -q -0- http://php-apache; done"

Test Autoscaling

kubectl get hpa
kubectl get deployment php-apache

Stop Load

1. Hit Ctrl + C

kubectl get deployment php-apache

Delete the Entire Setup

az group delete --name myResourceGroup --yes --no-wait