******* AutoScale Kubernetes *********

1. Create Kubernetes Cluster if doesn't exists already
kops create cluster --yes --state=s3://kops-bucket-a87654 --zones=ap-south-1a --node-size=t2.micro --master-size=t2.micro --name=level360degree.uk

2. Verify the Status of Cluster and wait until get the Status Successful
kops validate cluster --state=s3://kops-bucket-a87654

3. Create Manifest File of Deployment & Service

4. Deploy the Deployment

5. Create HPA for the deployment
kubectl autoscale deployment hpa-example --min=2 --max=10 --cpu-percent=50

Add Watch to verify the latest status of Cluster by below Commands. (This is Optional as not impacting the Functionality of Cluster)
kubectl get service,hpa,pod -owide
watch -n1 !!

6. Verify Status of HPA
kubectl describe hpa
kubectl get hpa

7. Install Metric Server
A. First Delete the existing Metric Server if any
kubectl delete -n kube-system deployments.apps metrics-server

B. Get the Metric Server form GitHub
git clone https://github.com/kubernetes-incubator/metrics-server.git

C. Edit the file deploy/1.8+/metrics-server-deployment.yaml to override the default command by adding a command section.
```
containers:
- name: metrics-server
    image: k8s.gcr.io/metrics-server-amd64:v0.3.1
    command:
      - /metrics-server
      - --kubelet-insecure-tls
      - --kubelet-preferred-address-types=InternalIP,Hostname,InternalDNS,ExternalDNS,ExternalIP
```

D. Add metrics-server to your Kubernetes instance.
kubectl create -f metric-server/deploy/1.8+

8. Verify the logs of Metric-Server by below commands
kubectl -n kube-system get pods
kubectl -n kube-system logs

Also Verify that, are we getting the metrices.

```
kubectl top nodes
kubectl top pods

9. Create the WebHook in Cluster for Kubelet
A. Edit Cluster :
kops edit cluster --state=s3://kops-bucket-a87654

B. Add below section for Kubelet, ignore if already Present.
kubelet:
    anonymousAuth: false
    authenticationTokenWebhook: true
    authorizationMode: Webhook

C. Update the Kubernetes Cluster.
kops update cluster --state=s3://kops-bucket-a87654
level360degree.uk --yes

D. Rolling-Update the Kubernetes Cluster to get this new Setting
Effective on Cluster.
kops rolling-update cluster --state=s3://kops-bucket-a87654
level360degree.uk --yes


10. Run Busy Box Image on Cluster to access the existing Service.
kubectl run -i --tty busy-box --image=busybox /bin/sh

11. Verify that is Service Accessible
wget http://hpa-example.default.svc.cluster.local:31010

12. Put load on Cluster by executing above command in loop on
BusyBox Shell.
while true; do wget -q -O- http://hpa-
example.default.svc.cluster.local:31010; done
```