**03. Create VPA Manifest, Deploy, Load Test, Analyse and Clean-Up**

--- Reference - <https://github.com/stacksimplify/aws-eks-kubernetes-masterclass/tree/master/16-EKS-VPA-Vertical-Pod-Autoscaler>

**Create & Deploy VPA manifest**

**Create VPA Manifest**

--- Create a VPA manifest for our above Application which we deployed just now.

apiVersion: "autoscaling.k8s.io/v1beta2"

kind: VerticalPodAutoscaler

metadata:

  name: kubengix-vpa

spec:

  targetRef:

    apiVersion: "apps/v1"

    kind: Deployment

    name: vpa-demo-deployment # it is our deployment name.

  resourcePolicy:

    containerPolicies:

      - containerName: '\*'

        minAllowed:

          cpu: 5m

          memory: 5Mi

        maxAllowed:

          cpu: 1

          memory: 500Mi

        controlledResources: ["cpu", "memory"]

**Deploy VPA Manifest**

**# Deploy**

--- **kubectl apply -f kube-manifests/02-VPA-Manifest.yml**

**# List VPA**

--- **kubectl get vpa**

**# Describe VPA**

--- **kubectl describe vpa kubengix-vpa**

**Generate Load**

--- Open 3 more new terminals and execute below 3 load generation commands

**# Terminal 1 - List and watch pods**

--- **kubectl get pods -w**

**# Terminal 2 - Generate Load**

--- **kubectl run --generator=run-pod/v1 apache-bench -i --tty --rm --image=httpd -- ab -n 500000 -c 1000 http://vpa-demo-service-nginx.default.svc.cluster.local/**

**# Terminal 3 - Generate Load**

--- **kubectl run --generator=run-pod/v1 apache-bench2 -i --tty --rm --image=httpd -- ab -n 500000 -c 1000 http://vpa-demo-service-nginx.default.svc.cluster.local/**

**# Terminal 4 - Generate Load**

--- **kubectl run --generator=run-pod/v1 apache-bench3 -i --tty --rm --image=httpd -- ab -n 500000 -c 1000 http://vpa-demo-service-nginx.default.svc.cluster.local/**

**Describe pods which were re-launched by VPA Updater**

**# List Pods**

--- **kubectl get pods**

**# Describe pods**

--- **kubectl describe pod <recently-relaunched-pod>**

**Important Nodes about VPA**:

* VPA Updater can re-launch new pod with updated CPU and Memory when you atleast have 2 pods in a deployment.
* If we have only one pod, unless we manually delete that pod, it will not launch new pod with VPA recommended CPU and memory considerign the application availability scenario.

**Clean-Up**

--- **kubectl delete -f kube-manifests/**