Lab 13 : Vertical Pod Autoscaling

Training Goals Covered:

- Deploy a workload which includes a stress script command.
- Configure Vertical Pod Autoscaling (VPA).
- Observe and analyze the behavior.

Steps:

1. Configure the VPA (my-vpa) with the following:
    a. updateMode: "**Off**"
    b. Target: **deployment/hamster**

```
Shell
apiVersion: autoscaling.k8s.io/v1
kind: VerticalPodAutoscaler
metadata:
  name:
spec:
  targetRef:
    apiVersion: "apps/v1"
    kind: Deployment
    name: hamster
  updatePolicy:
    updateMode: "Off"
```

2. Watch the VPA.

```
Shell
kubectl get vpa my-vpa -w
```

The field **PROVIDED** appears as **False**. Why?
→ There is no deployment called **hamster** running.

```
Shell
k describe vpa my-vpa | grep "Message:"
    Message:              Cannot read targetRef. Reason: Deployment
default/hamster does not exist
```

3. Create a deployment named **hamster**.
    a. Image: **registry.k8s.io/ubuntu-slim:0.14**
    b. Resources
        i. Requests: **100m CPU and 50Mi Memory.**

Shell

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name:
spec:
  selector:
    matchLabels:
      app: hamster
  template:
    metadata:
      labels:
        app: hamster
    spec:
      containers:
        - name: hamster
          image: registry.k8s.io/ubuntu-slim:0.14
          resources:
            requests:
              cpu: "100m"
              memory: "50Mi"
          command: ["/bin/sh"]
          args: ["-c", "while true; do timeout 0.5s yes >/dev/null; sleep 0.5;
done"]
```

Shell

```
k apply -f deploy.yaml
deployment.apps/hamster created
```

4. Check again the PROVIDED field in the VPA.

```shell
kubectl get vpa my-vpa -w
NAME     MODE   CPU    MEM     PROVIDED   AGE
my-vpa   Off    627m   250Mi   True       8m18s
```

5. Understand the VPA recommendations.

```shell
k describe vpa my-vpa | grep -A14 "Recommendation:"
  Recommendation:
    Container Recommendations:
      Container Name:  hamster
      Lower Bound:
        Cpu:     598m
        Memory:  250Mi
      Target:
        Cpu:     627m
        Memory:  250Mi
      Uncapped Target:
        Cpu:     627m
        Memory:  250Mi
      Upper Bound:
        Cpu:     15189m
        Memory:  3504160258
```

6. Delete resources.