Workload scalability

Use Case 16

Deploy and configure an application for autoscaling.

#hub-spoke-model #scalability
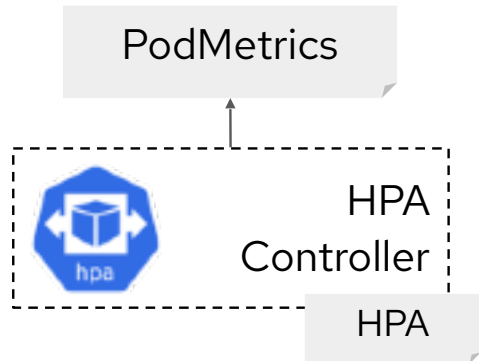
Red Hat
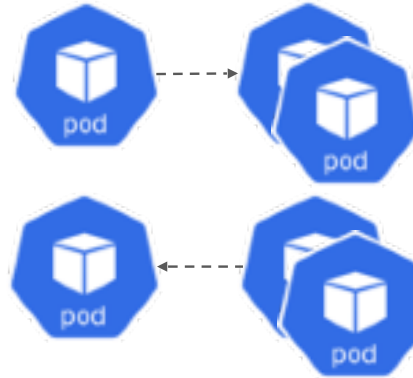OpenShift

Horizontal scalability (scale in/out based cpu and memory utilization)

CPU amd Memory

PodMetrics

HPA
Controller

HPA

1. Usage > Threshold

3. Usage < Threshold

2. Scale out

4. Scale in

Utilization (55%) exceeds threshold (50%) [1]
Pod is scaled [2]
| +3 min not scaled out [3]
| +2 min not scaled in [3]
Utilization falls below threshold
Pod is scaled in [4]

```
apiVersion: autoscaling/v2beta2 (1)
kind: HorizontalPodAutoscaler
metadata:
  name: cpu-autoscale
spec:
  scaleTargetRef:
    apiVersion: apps.openshift.io/v1 (2)
    kind: DeploymentConfig (3)
    name: example (4)
  minReplicas: 1 (5)
  maxReplicas: 10 (6)
  metrics:
  - type: Resource
    resource:
      name: cpu
      target:
        type: AverageValue (7)
        averageValue: 500m (8)
```

1. Specify the API version
2. Specify the API version of the object to apply [1]
3. Specify the type of object to apply [1]
4. Specify the object name to apply
5. Specify the number of pod replicas to scale in
6. Specify the number of pod replicas to scale out
7. Select usage (Average Value) or utilization
8. Specify CPU usage [2]

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Use Case Catalog

Day 1

1. **UC01** : Cluster as a service
2. **UC02**: VM as a service
3. **UC03**: Namespace as a service
4. **UC04**: Container as a service
5. **UC05**: Cloud native as a service
6. **UC06**: VM migration as a service
7. **UC07**: Baseline Configuration
8. **UC08**: Custom Policies
9. **UC09**: Control Policy Scope
10. **UC10**: AuthN and Identity Providers
11. **UC11**: Authorization and RBAC
12. **UC12**: Zero Trust enforcement
13. **UC13**: Workload network policies

Day 2

14. **UC14**: Cross provider connectivity
15. **UC15**: Hybrid workload
16. **UC16**: Workload scalability
17. **UC17**: Cluster autoscaling
18. **UC18**: Metrics and Logging
19. **UC19**: Network graphs
20. **UC20**: Policy violation dashboard
21. **UC21**: Day 2 Operations
22. **UC22**: Cluster upgrades
23. **UC23**: Developer onboarding
24. **UC24**: Trusted SW supply chain

Day 3 (hands-on workshop)

25. **UC25**: Node Resiliency
26. **UC26**: Cluster and site resiliency
27. **UC27**: Backup & Restore

Hands-on labs

1. **UC02**: VM as a service
2. **UC04**: Container as a service
3. **UC06**: VM migration as a service
4. **UC11**: Authorization and RBAC
5. **UC12**: Zero Trust enforcement
6. **UC16**: Workload scalability
7. **UC24**: Trusted SW supply chain

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