Resource Allocation & Quotas

» Quotas

Overview

Create a new `demo` namespace and define quotas to restrict the use of cluster resources for the namespace.

```
kubectl create namespace demo
```

Compute Resource Quotas

Create a compute ResourceQuota manifest.

```
cat > quotas-compute.html <<EOF
apiVersion: v1
kind: ResourceQuota
metadata:
  name: compute-resources
spec:
  hard:
    pods: "4"
    requests.cpu: "1"
    requests.memory: 1Gi
    limits.cpu: "2"
    limits.memory: 2Gi
EOF
```

Create the compute ResourceQuota in the `demo` namespace based on the manifest.

```
kubectl create -f quotas-compute.html -n demo
```

View basic information for the quotas in the `demo` namespace.

```
kubectl get quota -n demo
```

View detailed information for the compute quotas in the `demo` namespace.

```
kubectl describe quota compute-resources -n demo
```

Attempt to create a new deployment that would violate the `demo` namespace quota.

```
kubectl run nginx -n demo --image nginx --port 80 --replicas 5
```

View the basic information for the deployment.

```
kubectl get deploy -n demo
```

View the detailed information for the deployment.

```
kubectl describe deploy nginx -n demo
```

View the detailed information for the ReplicaSet that was created by the deployment.

```
kubectl describe rs -n demo -l run=nginx
```

Clean up the deployment when you are finished.

```
kubectl delete deploy nginx -n demo
```

Object Count Quotas

Create an object count ResourceQuota manifest.

```
cat > quotas-objects.html <<EOF
apiVersion: v1
kind: ResourceQuota
metadata:
  name: object-counts
spec:
  hard:
    configmaps: "10"
    persistentvolumeclaims: "4"
    replicationcontrollers: "20"
    secrets: "1"
    services: "10"
    services.loadbalancers: "2"
EOF
```

Create the object count ResourceQuota in the `demo` namespace based on the manifest.

```
kubectl create -f quotas-objects.html -n demo
```

View basic information for the quotas in the `demo` namespace.

```
kubectl get quota -n demo
```

View detailed information for the object quotas in the `demo` namespace.

```
kubectl describe quota object-counts -n demo
```

Attempt to create a new secret that would violate the `demo` namespace quota.

```
kubectl create secret generic demo-credentials --from-literal password=demo -n demo
```

Clean Up

Remove the namespace, which will delete all resources for that namepsace.

```
kubectl delete namespace demo
```

```
kubectl get all ––all–namespaces
```