# RBAC

## Roles and Role Bindings

CRUD - Create, Read(one item & all items), Update, Delete

K8s Roles - ["create", "list", "get", "update", "delete"]

K8s Cmd -> k8s role

Create/run - create

get - list

Describe - get

Edit - update

Delete - delete

k create ns test

# Role and RB

kubectl create role developer --verb=create --verb=get --verb=list --verb=update --verb=delete --resource=pods -n test

kubectl create rolebinding developer-binding-swami --role=developer --user=swami -n test

k get roles -n test

# Pod - Will work

k get pods -n test --as swami

# Nodes - Will NOT work

k get nodes -n test --as swami

## Cluster Role & Role Binding

cat ~/.kube/config

k describe clusterrole admin

Cluster Roles are non-namespaced

You can use a ClusterRole to:

1. define permissions on namespaced resources and be granted within individual namespace(s)
2. define permissions on namespaced resources and be granted across all namespaces
3. define permissions on cluster-scoped resources - Nodes, pv

k get clusterroles

k get clusterrolebindings

k get clusterrole cluster-admin -o yaml

kubectl create clusterrole nodes-admin --verb=get,list,watch,create,delete --resource=nodes

kubectl create clusterrolebinding nodes-admin-binding-swami --clusterrole=nodes-admin --user=swami

k get nodes --as swami

# Resource quota

Create ns - quotaz

k create ns quotaz

apiVersion: v1

kind: ResourceQuota

metadata:

name: mem-cpu-demo

spec:

hard:

requests.cpu: "1"

requests.memory: 1Gi

limits.cpu: "2"

limits.memory: 2Gi

k apply -f quota -n quotaz

#### Pod 01

apiVersion: v1

kind: Pod

metadata:

name: quota-mem-cpu-demo

namespace: quotaz

spec:

containers:

- name: quota-mem-cpu-demo-ctr

image: nginx

resources:

limits:

memory: "800Mi"

cpu: "800m"

requests:

memory: "600Mi"

cpu: "400m"

#### Pod 02

apiVersion: v1

kind: Pod

metadata:

name: quota-mem-cpu-demo-2

namespace: quotaz

spec:

containers:

- name: quota-mem-cpu-demo-2-ctr

image: redis

resources:

limits:

memory: "2Gi"

cpu: "800m"

requests:

memory: "700Mi"

cpu: "400m"

ERROR: forbidden: exceeded quota: mem-cpu-demo,

requested: requests.memory=700Mi,used: requests.memory=600Mi, limited: requests.memory=1Gi