Kubernetes monitoring with prometheus and grafana

Notes

Using homemade kluster with prometheus and windows machine for grafana

Sorry for the crappy pdf but conversion from markdown to pdf sucks

1. Setting up prometheus

- creating a monitoring namespace

```
k get namespaces

NAME              STATUS   AGE
default           Active   47d
kube-system       Active   47d
kube-public       Active   47d
kube-node-lease   Active   47d
mqtt              Active   46d
monitoring        Active   7s
```

- creating kluster role for prometheus using

```
k create -f clusterRole.yaml
clusterrole.rbac.authorization.k8s.io/prometheus created
clusterrolebinding.rbac.authorization.k8s.io/prometheus created
```

  - creating konfig map

```
kubectl create -f config-map.yaml
configmap/prometheus-server-conf created
```

- changes to prometheus-deployment.yaml adding selector node for arm64 since the rpi4 has more memory

```
    nodeSelector:
      kubernetes.io/arch: arm64
```

- deploying prometheus

```
kubectl create  -f prometheus-deployment.yaml
deployment.apps/prometheus-deployment created

kubectl get deployments --namespace=monitoring
NAME                                  READY   STATUS    RESTARTS      AGE
prometheus-deployment-7cd478cf54-jrf24   1/1     Running   1 (12s ago)   96s
```

2. Setting up Grafana

- konfig map yaml

```
apiVersion: v1
kind: ConfigMap
metadata:
name: grafana-datasources
namespace: monitoring
data:
prometheus.yaml: |-
  {
      "apiVersion": 1,
      "datasources": [
          {
             "access":"proxy",
              "editable": true,
              "name": "prometheus",
              "orgId": 1,
              "type": "prometheus",
              "url": "http://prometheus-service.monitoring.svc:8080",
              "version": 1
          }
      ]
  }
```

- applying the konfing map

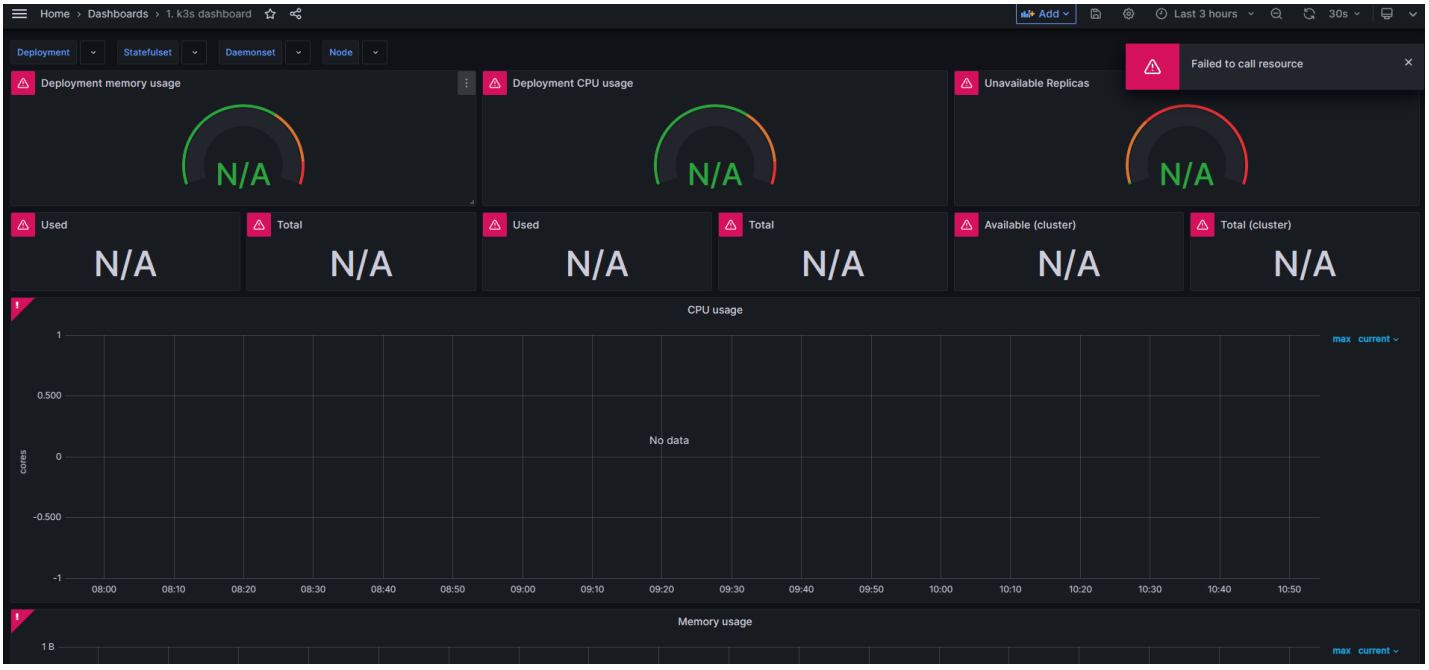
```
kubectl create -f grafana-datasource-config.yaml

configmap/grafana-datasources created
```

- creating grafana-deployment.yaml changing limit

```
    limits:
              memory: 500M
              cpu: "1000m"
            requests:
              memory: 500M
              cpu: "500m"
```

- applying grafana-deployment.yaml
- running grafana with the suggested dashboard, source issues occured



- checking the prometheus source in grafana, we see this

```
Error reading Prometheus: Post "http://prometheus-service.monitoring.svc:8080/api/v1/query": dial tcp: lookup prometheus-service.monitoring.svc
```

Which might suggest the service isn't running.

- checking running services - the prometheus service isn't running in the monitoring

```
k get svc -n monitoring
NAME      TYPE       CLUSTER-IP     EXTERNAL-IP   PORT(S)          AGE
grafana   NodePort   10.43.60.154   <none>        3000:32000/TCP   27m
```

- checking previous steps it seems the service step was forgotten

```
 k apply -f prometheus-service.yaml --namespace=monitoring
deployment.apps/prometheus-service created
```

- checking data source from grafana

  `Data source is working`
- live dashboard