MONITORING IN K8S

Prometheus and Grafana are two popular open-source tools commonly used in conjunction with Kubernetes (K8s) for monitoring and visualization of applications and infrastructure.

Prometheus:

Prometheus in Kubernetes is a monitoring tool that helps keep an eye on the health and performance of applications and the overall system running in a Kubernetes cluster.

Grafana:

Grafana in Kubernetes (K8s) is a tool used for creating visual dashboards to monitor and analyze the performance of applications and infrastructure within a Kubernetes cluster.

STEPS TO SETUP PROMETHEUS & GRAFANA IN KOPS:

INSTALL HEML:

- curl -fsSL -o get_helm.sh https://raw.githubusercontent.com/helm/helm/main/scripts/get-helm-3
- chmod 700 get_helm.sh
- ./get_helm.sh
- helm version

INSTALL K8S METRICS SERVER:

- kubectl apply -f https://github.com/kubernetes-sigs/metrics-server/releases/latest/download/components.yaml

Verify that the metrics-server deployment is running the desired number of pods

- kubectl get pods -n kube-system
- kubectl get deployment metrics-server -n kube-system

INSTALL PROMETHEUS:

- helm repo add prometheus-community https://prometheus-community.github.io/helm-charts

UPDATE HELM CHART REPOS:

- helm repo update
- helm repo list

CREATE PROMETHEUS NAMESPACE:

- kubectl create namespace prometheus
- kubectl get ns

INSTALL PROMETHEUS:

- helm install prometheus prometheus-community/prometheus --namespace prometheus --set alertmanager.persistentVolume.storageClass="gp2" --set server.persistentVolume.storageClass="gp2"
- kubectl get pods -n prometheus
- kubectl get all -n prometheus

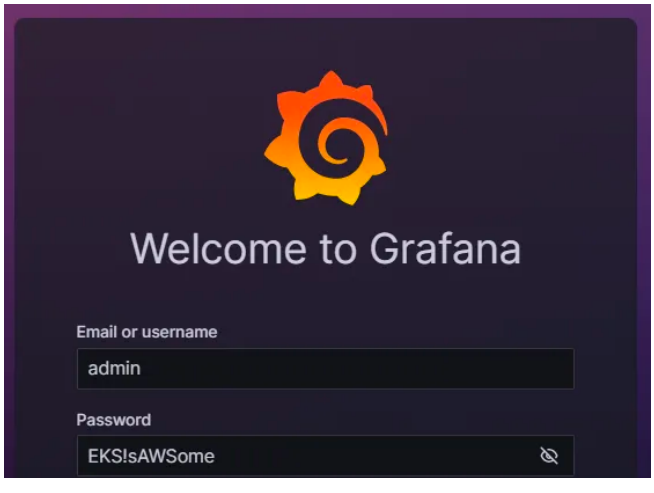
CREATE GRAFANA NAMESPACE:

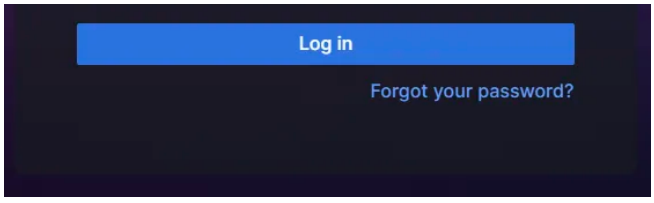
- kubectl create namespace grafana

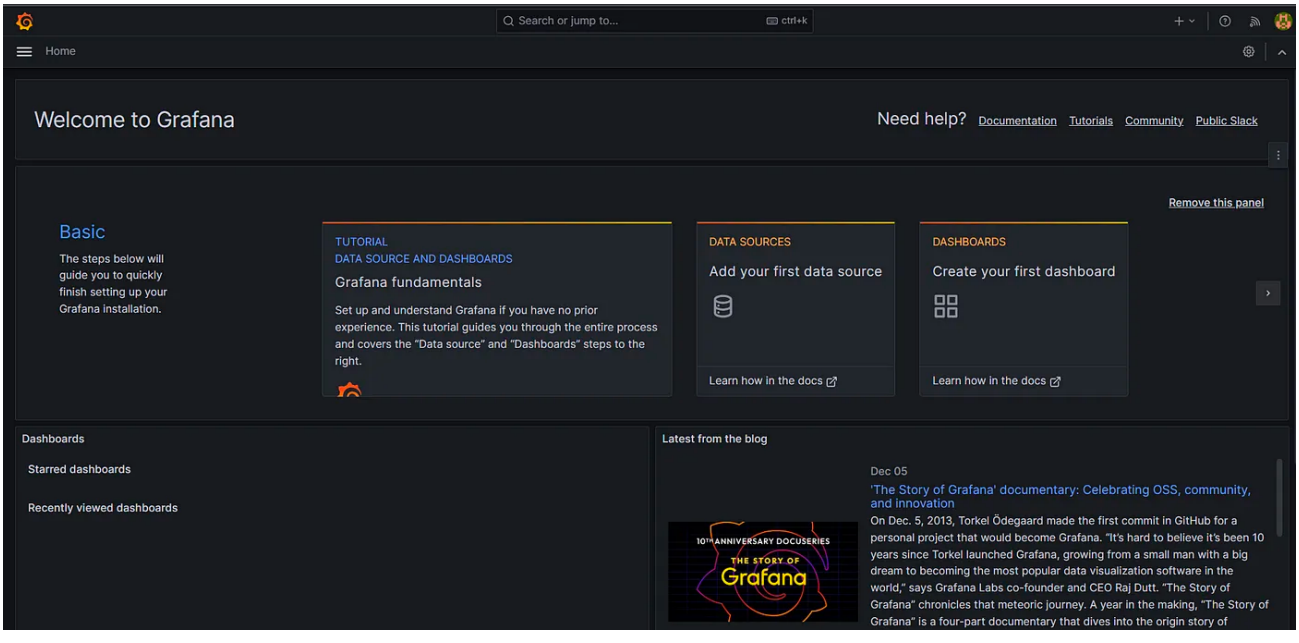
INSTALL GRAFANA:

- helm repo add grafana https://grafana.github.io/helm-charts
- helm install grafana grafana/grafana --namespace grafana --set persistence.storageClassName="gp2" --set persistence.enabled=true --set adminPassword='EKS!sAWSome' --set service.type=LoadBalancer
- kubectl get pods -n grafana
- kubectl get service -n grafana

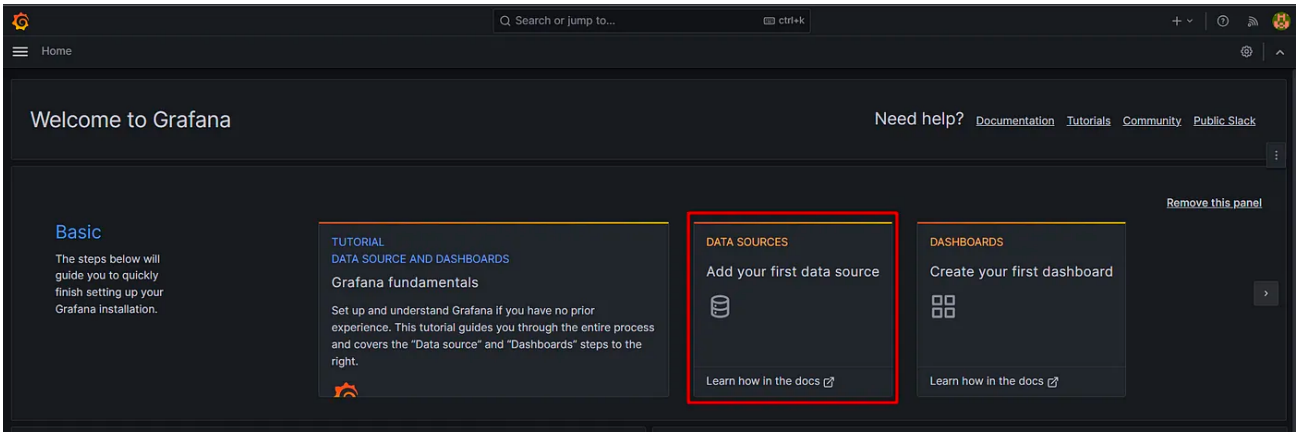
Copy the EXTERNAL-IP and paste in browser





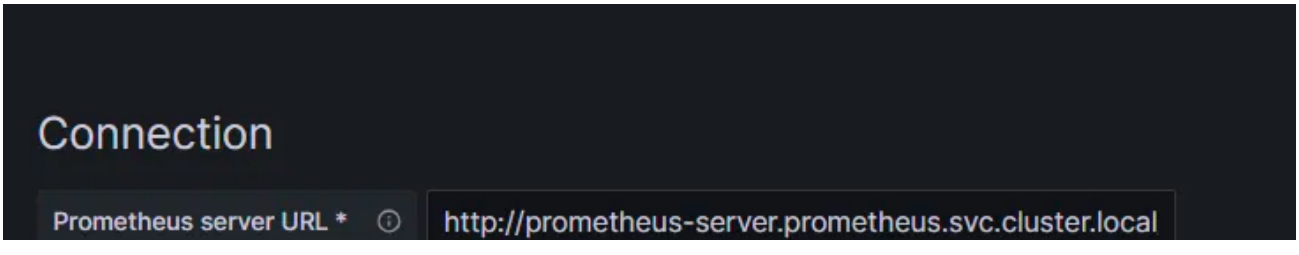


Go to Grafana Dashboard → Add the Datasource → Select the Prometheus



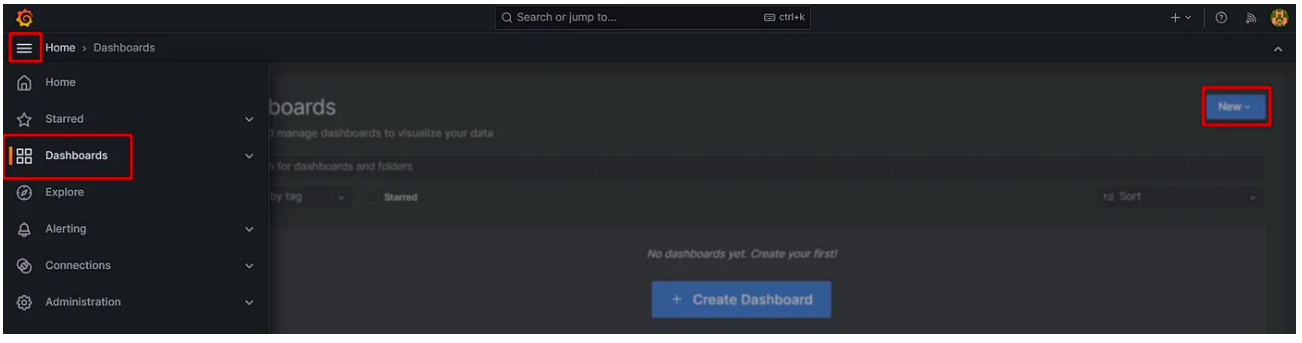
add the below ***url*** in **Connection** and **save and test**

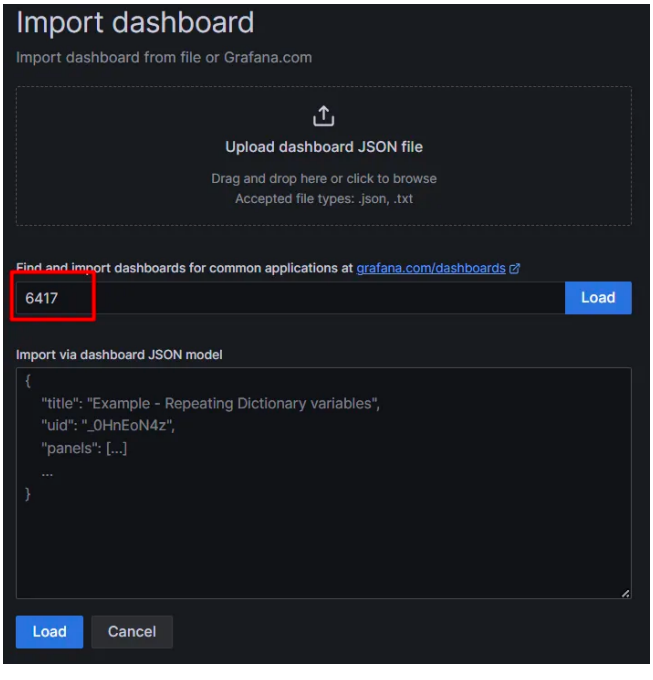
http://prometheus-server.prometheus.svc.cluster.local/

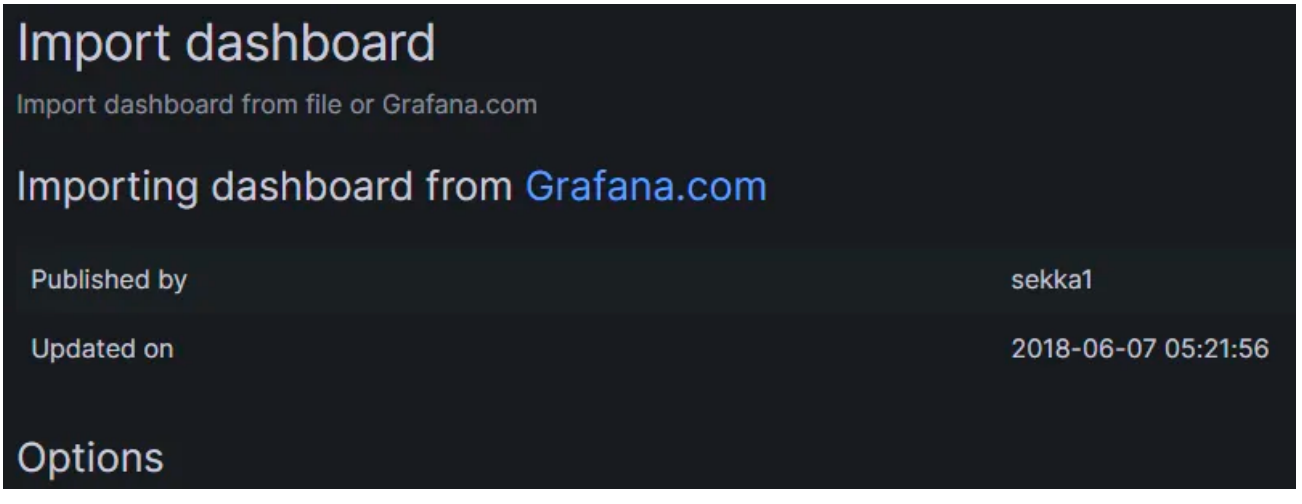


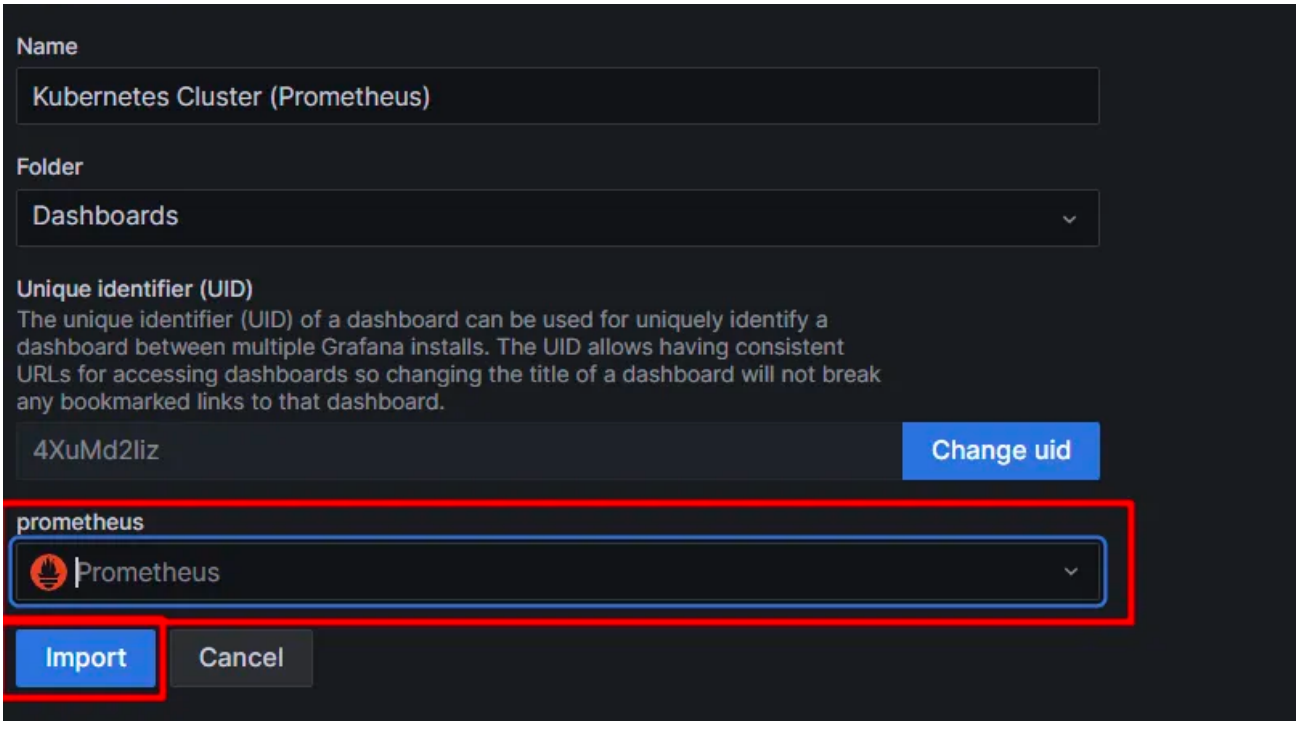
Import Grafana dashboard from Grafana Labs

grafana dashboard → new → Import → 6417 → load → select prometheus → import









NOW DEPLOY ANY APPLICATION AND SEE THE RESULT IN DASHBOARD.

ADD 315 PORT TO MONITOR THE FOLLOWING TERMS:

- Network I/O pressure.
- Cluster CPU usage.
- Cluster Memory usage.
- Cluster filesystem usage.
- Pods CPU usage.

ADD 1860 PORT TO MONITOR NODES INDIVIDUALLY