BCDV 4032 - Building Scalable Blockchain App

Lab - 5

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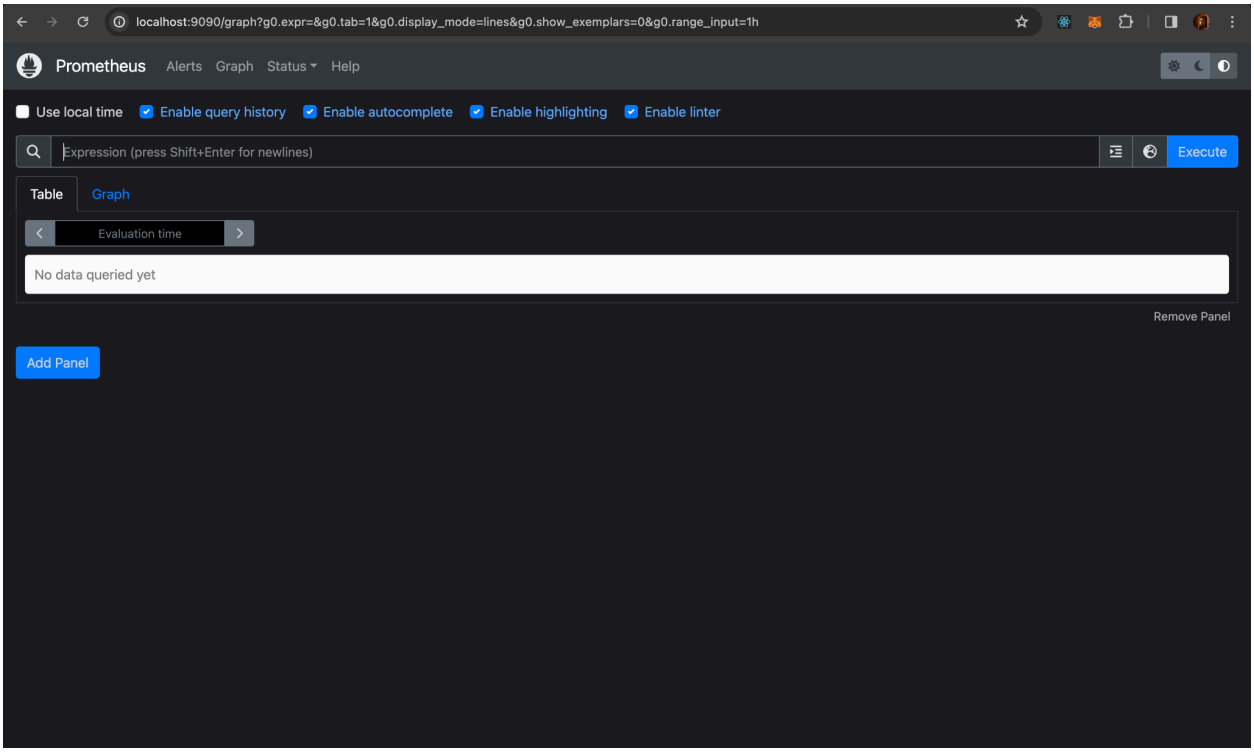
1. Install Prometheus

```
Last login: Mon Jan 29 00:31:36 on ttys003
aratrika@Aratrikas-MacBook-Air ~ % helm repo add prometheus-community https://prometheus-community.github.io/helm-charts
"prometheus-community" has been added to your repositories
aratrika@Aratrikas-MacBook-Air ~ % helm repo update
Hang tight while we grab the latest from your chart repositories...
...Successfully got an update from the "prometheus-community" chart repository
...Successfully got an update from the "bitnami" chart repository
Update Complete. ⎈Happy Helming!⎈
aratrika@Aratrikas-MacBook-Air ~ % helm install prometheus prometheus-community/prometheus
NAME: prometheus
LAST DEPLOYED: Mon Jan 29 20:34:52 2024
NAMESPACE: default
STATUS: deployed
REVISION: 1
TEST SUITE: None
NOTES:
The Prometheus server can be accessed via port 80 on the following DNS name from within your cluster:
prometheus-server.default.svc.cluster.local


Get the Prometheus server URL by running these commands in the same shell:
  export POD_NAME=$(kubectl get pods --namespace default -l "app.kubernetes.io/name=prometheus,app.kubernetes.io/instance=prometheus" -o jsonpath="{.items[0].metadata.name}")
  kubectl --namespace default port-forward $POD_NAME 9090


The Prometheus alertmanager can be accessed via port 9093 on the following DNS name from within your cluster:
prometheus-alertmanager.default.svc.cluster.local


Get the Alertmanager URL by running these commands in the same shell:
  export POD_NAME=$(kubectl get pods --namespace default -l "app.kubernetes.io/name=alertmanager,app.kubernetes.io/instance=prometheus" -o jsonpath="{.items[0].metadata.name}")
  kubectl --namespace default port-forward $POD_NAME 9093
#################################################################################
######   WARNING: Pod Security Policy has been disabled by default since    #####
######            it deprecated after k8s 1.25+. use                        #####
######            (index .Values "prometheus-node-exporter" "rbac"          #####
###### .          "pspEnabled") with (index .Values                         #####
######            "prometheus-node-exporter" "rbac" "pspAnnotations")       #####
######            in case you still need it.                                #####
#################################################################################


The Prometheus PushGateway can be accessed via port 9091 on the following DNS name from within your cluster:
prometheus-prometheus-pushgateway.default.svc.cluster.local


Get the PushGateway URL by running these commands in the same shell:
  export POD_NAME=$(kubectl get pods --namespace default -l "app=prometheus-pushgateway,component=pushgateway" -o jsonpath="{.items[0].metadata.name}")
  kubectl --namespace default port-forward $POD_NAME 9091

For more information on running Prometheus, visit:
https://prometheus.io/
```

```
aratrika@Aratrikas-MacBook-Air ~ % kubectl get pods
NAME                                             READY   STATUS              RESTARTS      AGE
dapp-6596849f7c-v6gt8                            1/1     Running             3 (20h ago)   24h
ganache-75b5ff5b44-9zstr                         1/1     Running             3 (20h ago)   26h
mongodb-0                                        1/1     Running             4 (20h ago)   26h
prometheus-alertmanager-0                        0/1     ContainerCreating   0             16s
prometheus-kube-state-metrics-745b475957-fg7zd   0/1     ContainerCreating   0             16s
prometheus-prometheus-node-exporter-v85hk        1/1     Running             0             16s
prometheus-prometheus-pushgateway-6ccd698d79-fwl6m   0/1     Running             0             16s
prometheus-server-bc7ccb595-jlfwt                0/2     ContainerCreating   0             16s
react-56dcf7b8f4-xxg97                           1/1     Running             3 (20h ago)   26h
aratrika@Aratrikas-MacBook-Air ~ % kubectl get svc
NAME                                 TYPE           CLUSTER-IP       EXTERNAL-IP   PORT(S)          AGE
dapp                                 LoadBalancer   10.102.94.247    <pending>     4000:30678/TCP   26h
ganache                              ClusterIP      10.97.49.1       <none>        8545/TCP         26h
kubernetes                           ClusterIP      10.96.0.1        <none>        443/TCP          3d1h
mongodb                              ClusterIP      10.103.177.242   <none>        27017/TCP        26h
prometheus-alertmanager              ClusterIP      10.102.85.188    <none>        9093/TCP         28s
prometheus-alertmanager-headless     ClusterIP      None             <none>        9093/TCP         28s
prometheus-kube-state-metrics        ClusterIP      10.99.239.41     <none>        8080/TCP         28s
prometheus-prometheus-node-exporter  ClusterIP      10.107.126.241   <none>        9100/TCP         28s
prometheus-prometheus-pushgateway    ClusterIP      10.98.151.171    <none>        9091/TCP         28s
prometheus-server                    ClusterIP      10.100.249.229   <none>        80/TCP           28s
react                                LoadBalancer   10.105.155.55    <pending>     3000:31236/TCP   26h
```

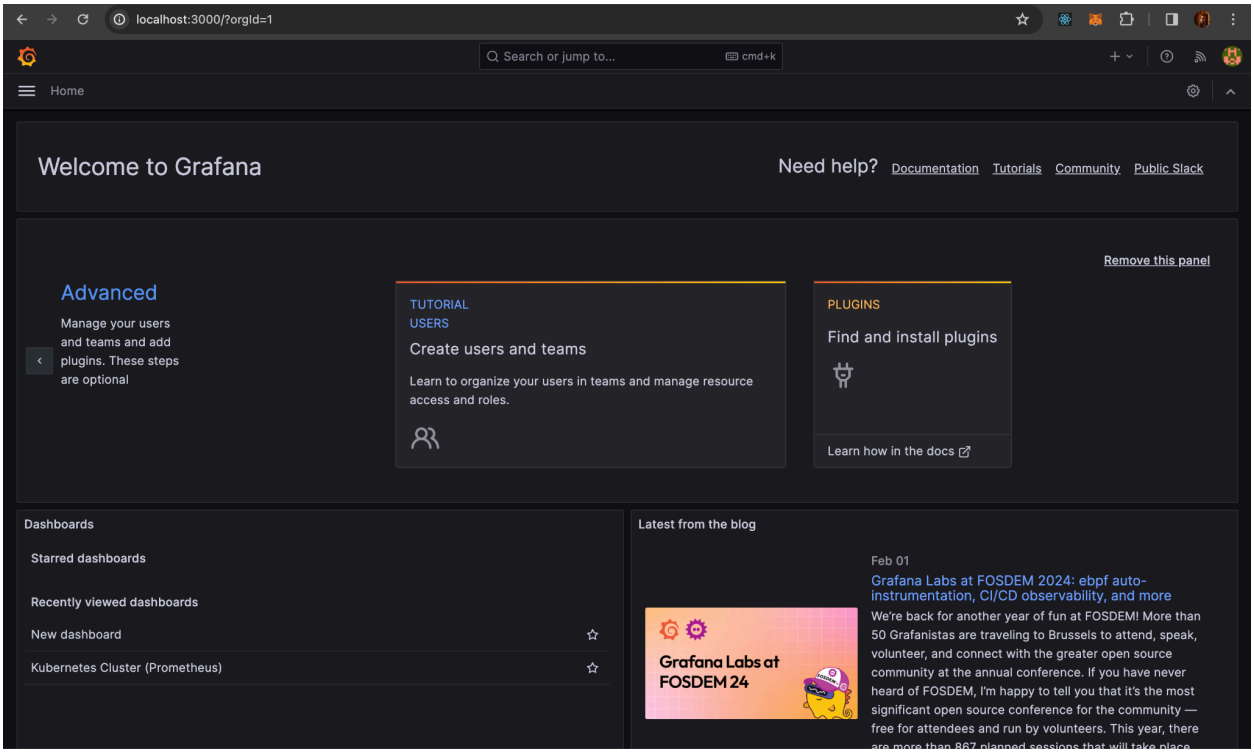
```
aratrika@Aratrikas-MacBook-Air ~ % kubectl port-forward svc/prometheus-server-ext 9090:80
Forwarding from 127.0.0.1:9090 -> 9090
Forwarding from [::1]:9090 -> 9090
Handling connection for 9090
Handling connection for 9090
Handling connection for 9090
```


localhost:9090/graph?g0.expr=&g0.tab=1&g0.display_mode=lines&g0.show_exemplars=0&g0.range_input=1h
Prometheus
Alerts
Graph
Status
Help
Use local time
Enable query history
Enable autocomplete
Enable highlighting
Enable linter
Expression (press Shift+Enter for newlines)
Execute
Table
Graph
Evaluation time
No data queried yet
Remove Panel
Add Panel

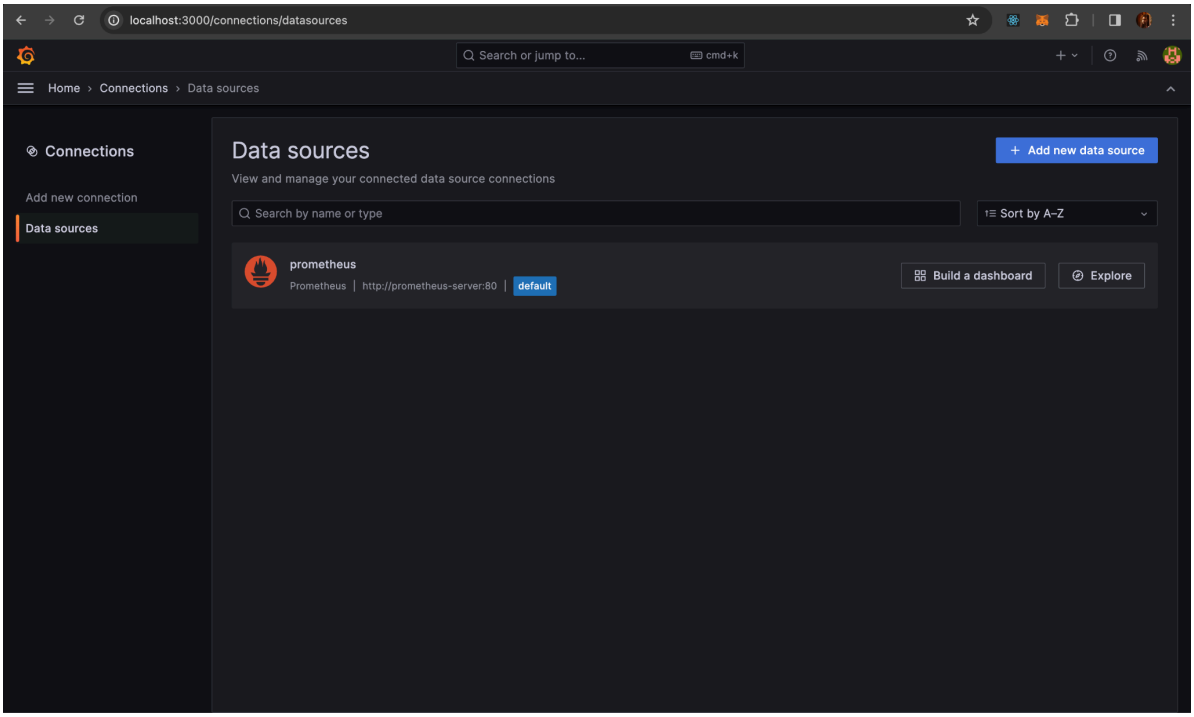
2. Install Grafana

```
Last login: Mon Jan 29 20:41:28 on ttys000
aratrika@Aratrikas-MacBook-Air ~ % helm repo add grafana https://grafana.github.io/helm-charts
"grafana" has been added to your repositories
aratrika@Aratrikas-MacBook-Air ~ % helm install grafana grafana/grafana
NAME: grafana
LAST DEPLOYED: Mon Jan 29 20:42:33 2024
NAMESPACE: default
STATUS: deployed
REVISION: 1
NOTES:
1. Get your 'admin' user password by running:

   kubectl get secret --namespace default grafana -o jsonpath="{.data.admin-password}" | base64 --decode ; echo


2. The Grafana server can be accessed via port 80 on the following DNS name from within your cluster:

   grafana.default.svc.cluster.local

   Get the Grafana URL to visit by running these commands in the same shell:
     export POD_NAME=$(kubectl get pods --namespace default -l "app.kubernetes.io/name=grafana,app.kubernetes.io/instance=grafana" -o jsonpath="{.items[0].metadata.name}")
     kubectl --namespace default port-forward $POD_NAME 3000

3. Login with the password from step 1 and the username: admin
#################################################################################
######   WARNING: Persistence is disabled!!! You will lose your data when   #####
######            the Grafana pod is terminated.                            #####
#################################################################################
aratrika@Aratrikas-MacBook-Air ~ %
```

```
aratrika@Aratrikas-MacBook-Air ~ % kubectl port-forward svc/grafana-ext 3000:80
Forwarding from 127.0.0.1:3000 -> 3000
Forwarding from [::1]:3000 -> 3000
Handling connection for 3000
Handling connection for 3000
Handling connection for 3000
Handling connection for 3000
Handling connection for 3000
Handling connection for 3000
Handling connection for 3000
```



3. Connect Prometheus as Data source to Grafana



4. Custom dashboard with 3 visualizations