

# **BCDV 4032 - Building Scalable Blockchain App**

**Lab - 5**

**Name - Aratrika Mukherjee**

**Student ID: 101413594**

# 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-jlftw 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

AlertsGraphStatus▼Help

⚙️🌙🔔

☐ Use local time

☒ Enable query history

☒ Enable autocomplete

☒ Enable highlighting

☒ Enable linter

🔍

Expression (press Shift+Enter for newlines)

⌵⌚Execute

TableGraph

<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
```

Welcome to Grafana

Need help? [Documentation](#) [Tutorials](#) [Community](#) [Public Slack](#)

**Advanced**  
Manage your users and teams and add plugins. These steps are optional

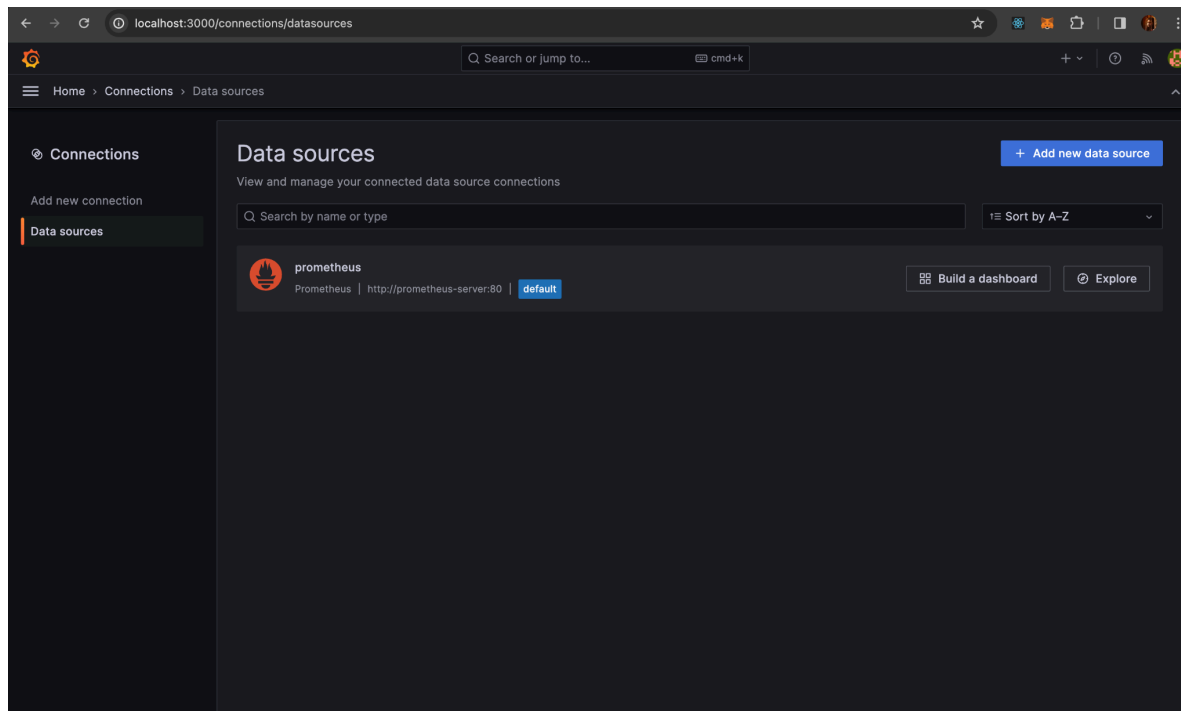
**TUTORIAL USERS**  
Create users and teams  
Learn to organize your users in teams and manage resource access and roles.

**PLUGINS**  
Find and install plugins  
Learn how in the docs

**Dashboards**  
Starred dashboards  
Recently viewed dashboards  
New dashboard  
Kubernetes Cluster (Prometheus)

**Latest from the blog**  
Feb 01  
Grafana Labs at FOSDEM 24: ebpf auto-instrumentation, CI/CD observability, and more  
We're back for another year of fun at FOSDEM! More than 50 Grafanistas are traveling to Brussels to attend, speak, volunteer, and connect with the greater open source community at the annual conference. If you have never heard of FOSDEM, I'm happy to tell you that it's the most significant open source conference for the community — free for attendees and run by volunteers. This year, there are more than 867 planned sessions that will take place.

### 3. Connect Prometheus as Data source to Grafana



### 4. Custom dashboard with 3 visualizations

