Lab5

```
sufiyanmemon@Sufiyans-Air Lab5 % minikube start
😄  minikube v1.32.0 on Darwin 13.4 (arm64)
✨  Automatically selected the docker driver
🎯  Using Docker Desktop driver with root privileges
👍  Starting control plane node minikube in cluster minikube
🚜  Pulling base image ...
🔥  Creating docker container (CPUs=4, Memory=2200MB) ...
🐳  Preparing Kubernetes v1.28.3 on Docker 24.0.7 ...
    ▪ Generating certificates and keys ...
    ▪ Booting up control plane ...
    ▪ Configuring RBAC rules ...
🔗  Configuring bridge CNI (Container Networking Interface) ...
🔎  Verifying Kubernetes components...
    ▪ Using image gcr.io/k8s-minikube/storage-provisioner:v5
🌟  Enabled addons: storage-provisioner, default-storageclass
🏄  Done! kubectl is now configured to use "minikube" cluster and "default" namespace by default
○ sufiyanmemon@Sufiyans-Air Lab5 %
```

```
Error: no repositories found. You must add one before updating
sufiyanmemon@Sufiyans-Air Lab5 % helm repo add prometheus-community https://prometheus-community.github.io/helm-charts
"prometheus-community" has been added to your repositories
```

```
sufiyanmemon@Sufiyans-Air Lab5 % helm repo update
Hang tight while we grab the latest from your chart repositories...
...Successfully got an update from the "prometheus-community" chart repository
Update Complete. ⸙Happy Helming!⸙
```

```
sufiyanmemon@Sufiyans-Air Lab5 % helm install prometheus prometheus-community/prometheus
NAME: prometheus
LAST DEPLOYED: Sun Feb  4 16:52:22 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/
```

```
sufiyanmemon@Sufiyans-Air Lab5 % kubectl get pods
NAME                                               READY   STATUS    RESTARTS   AGE
prometheus-prometheus-node-exporter-qxntl          1/1     Running   0          22s
prometheus-kube-state-metrics-5f984f4567-z9ksh     1/1     Running   0          22s
prometheus-alertmanager-0                          1/1     Running   0          22s
prometheus-server-d7ffd6955-vgp2x                  1/2     Running   0          22s
prometheus-prometheus-pushgateway-6dc56cdcf-thk2x  1/1     Running   0          22s
sufiyanmemon@Sufiyans-Air Lab5 % kubectl get svc
```

```
sufiyanmemon@Sufiyans-Air Lab5 % kubectl get svc
NAME                                  TYPE        CLUSTER-IP      EXTERNAL-IP   PORT(S)        AGE
kubernetes                            ClusterIP   10.43.0.1       <none>        443/TCP        5d
prometheus-alertmanager-headless      ClusterIP   None            <none>        9093/TCP       57s
prometheus-alertmanager               ClusterIP   10.43.185.227   <none>        9093/TCP       57s
prometheus-kube-state-metrics         ClusterIP   10.43.154.41    <none>        8080/TCP       57s
prometheus-server                     ClusterIP   10.43.18.27     <none>        80/TCP         57s
prometheus-prometheus-pushgateway     ClusterIP   10.43.85.154    <none>        9091/TCP       57s
prometheus-prometheus-node-exporter   ClusterIP   10.43.228.254   <none>        9100/TCP       57s
prometheus-server-ext                 NodePort    10.43.241.42    <none>        80:30286/TCP   5s
sufiyanmemon@Sufiyans-Air Lab5 % minikube ip
```

```
sufiyanmemon@Sufiyans-Air Lab5 % kubectl expose service prometheus-server --type=NodePort --target-port=9090 --name=prometheus-server-ext
service/prometheus-server-ext exposed
sufiyanmemon@Sufiyans-Air Lab5 % kubectl get svc
```

```
● sufiyanmemon@Sufiyans-Air Lab5 % kubectl get svc
  NAME                                 TYPE        CLUSTER-IP       EXTERNAL-IP    PORT(S)          AGE
  kubernetes                           ClusterIP   10.43.0.1        <none>         443/TCP          5d
  prometheus-alertmanager-headless     ClusterIP   None             <none>         9093/TCP         57s
  prometheus-alertmanager              ClusterIP   10.43.185.227    <none>         9093/TCP         57s
  prometheus-kube-state-metrics        ClusterIP   10.43.154.41     <none>         8080/TCP         57s
  prometheus-server                    ClusterIP   10.43.18.27      <none>         80/TCP           57s
  prometheus-prometheus-pushgateway    ClusterIP   10.43.85.154     <none>         9091/TCP         57s
  prometheus-prometheus-node-exporter  ClusterIP   10.43.228.254    <none>         9100/TCP         57s
  prometheus-server-ext                NodePort    10.43.241.42     <none>         80:30286/TCP     5s
⊗ sufiyanmemon@Sufiyans-Air Lab5 % minikube ip
```

```
● sufiyanmemon@Sufiyans-Air Lab5 % helm repo add grafana https://grafana.github.io/helm-charts
  "grafana" has been added to your repositories
  sufiyanmemon@Sufiyans-Air Lab5 % helm repo update
```

```
● sufiyanmemon@Sufiyans-Air Lab5 % helm repo update
  Hang tight while we grab the latest from your chart repositories...
  ...Successfully got an update from the "grafana" chart repository
  ...Successfully got an update from the "prometheus-community" chart repository
  Update Complete. ✱Happy Helming!✱
  sufiyanmemon@Sufiyans-Air Lab5 %
```

```
Update Complete. ✱Happy Helming!✱
● sufiyanmemon@Sufiyans-Air Lab5 % helm install grafana grafana/grafana
  NAME: grafana
  LAST DEPLOYED: Sun Feb  4 17:25:46 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.                            #####
  #################################################################################
  sufiyanmemon@Sufiyans-Air Lab5 %
```

```
  prometheus-server-5c99dfc547-jwfv9        1/1    Running    1 (40h ago)    45h
● sufiyanmemon@Sufiyans-Air Lab5 % kubectl get pods
  NAME                                              READY   STATUS     RESTARTS       AGE
  grafana-7c6d9c5bdd-ksbmq                          1/1     Running    1 (40h ago)    44h
  prometheus-alertmanager-0                         1/1     Running    1 (40h ago)    45h
  prometheus-kube-state-metrics-745b475957-tml5x    1/1     Running    2 (37s ago)    45h
  prometheus-prometheus-node-exporter-n45xn         1/1     Running    1 (40h ago)    45h
  prometheus-prometheus-pushgateway-6ccd698d79-4j4rc 1/1    Running    1 (40h ago)    45h
  prometheus-server-5c99dfc547-jwfv9                2/2     Running    2 (40h ago)    45h
○ sufiyanmemon@Sufiyans-Air Lab5 %
```

```
  prometheus-server-5c99dfc547-jwfv9        2/2    Running    2 (40h ago)    45h
● sufiyanmemon@Sufiyans-Air Lab5 % kubectl get svc
  NAME                                   TYPE        CLUSTER-IP       EXTERNAL-IP    PORT(S)          AGE
  grafana                                ClusterIP   10.96.99.192     <none>         80/TCP           44h
  grafana-ext                            NodePort    10.110.19.31     <none>         80:32469/TCP     44h
  kubernetes                             ClusterIP   10.96.0.1        <none>         443/TCP          45h
  prometheus-alertmanager                ClusterIP   10.100.55.191    <none>         9093/TCP         45h
  prometheus-alertmanager-headless       ClusterIP   None             <none>         9093/TCP         45h
  prometheus-kube-state-metrics          ClusterIP   10.99.47.140     <none>         8080/TCP         45h
  prometheus-prometheus-node-exporter    ClusterIP   10.100.105.53    <none>         9100/TCP         45h
  prometheus-prometheus-pushgateway      ClusterIP   10.109.42.16     <none>         9091/TCP         45h
  prometheus-server                      ClusterIP   10.106.207.6     <none>         80/TCP           45h
  prometheus-server-ext                  NodePort    10.107.145.113   <none>         80:31938/TCP     45h
○ sufiyanmemon@Sufiyans-Air Lab5 %
```
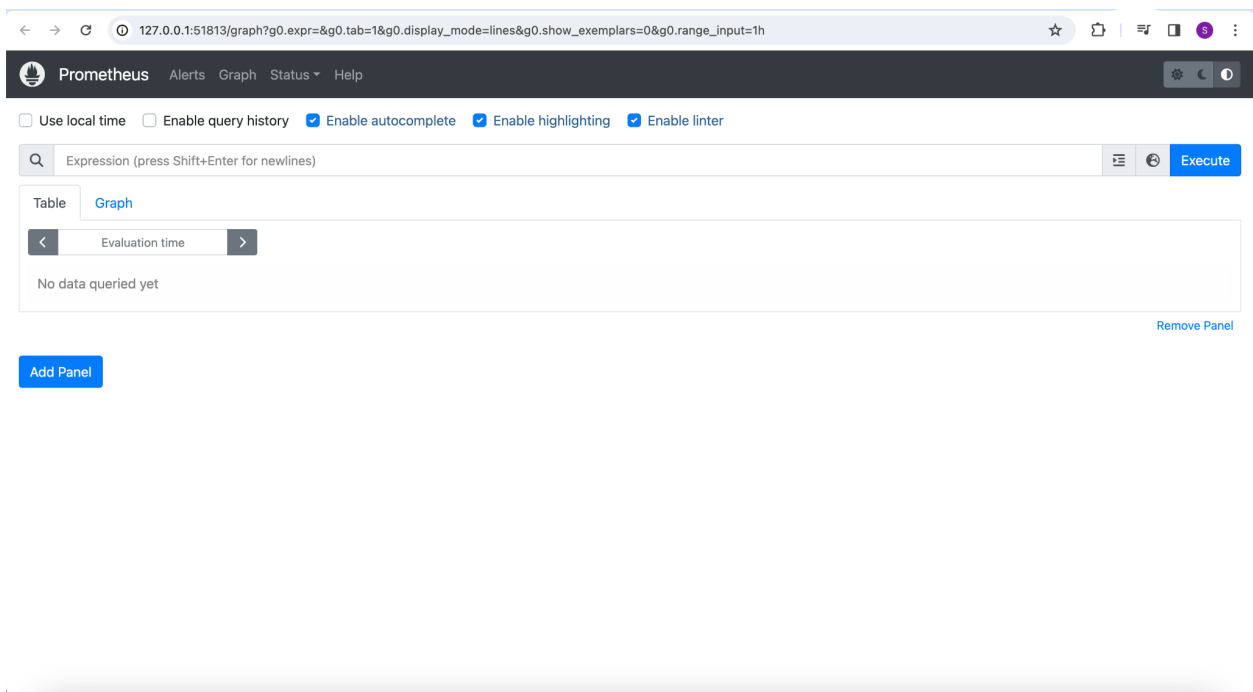
```
sufiyanmemon@Sufiyans-Air Class % minikube service prometheus-server-ext
|-----------|--------------------|-------------|--------------------------------|
| NAMESPACE |        NAME        | TARGET PORT |              URL               |
|-----------|--------------------|-------------|--------------------------------|
| default   | prometheus-server-ext |          80 | http://192.168.49.2:31938    |
|-----------|--------------------|-------------|--------------------------------|
🏃  Starting tunnel for service prometheus-server-ext.
|-----------|--------------------|-------------|--------------------------------|
| NAMESPACE |        NAME        | TARGET PORT |              URL               |
|-----------|--------------------|-------------|--------------------------------|
| default   | prometheus-server-ext |           | http://127.0.0.1:52099       |
|-----------|--------------------|-------------|--------------------------------|
🎉  Opening service default/prometheus-server-ext in default browser...
❗  Because you are using a Docker driver on darwin, the terminal needs to be open to run it.
```

127.0.0.1:51813/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

```
sufiyanmemon@Sufiyans-Air Lab5 % minikube service grafana-ext
|-----------|------------|-------------|-------------------------------|
| NAMESPACE |    NAME    | TARGET PORT |             URL               |
|-----------|------------|-------------|-------------------------------|
| default   | grafana-ext |          80 | http://192.168.49.2:32469   |
|-----------|------------|-------------|-------------------------------|
🏃  Starting tunnel for service grafana-ext.
|-----------|------------|-------------|-------------------------------|
| NAMESPACE |    NAME    | TARGET PORT |             URL               |
|-----------|------------|-------------|-------------------------------|
| default   | grafana-ext |            | http://127.0.0.1:51858      |
|-----------|------------|-------------|-------------------------------|
🎉  Opening service default/grafana-ext in default browser...
❗  Because you are using a Docker driver on darwin, the terminal needs to be open to run it.
```

Connections

Add new connection

Data sources

Cache level   ⓘ | Low   ⌄

Incremental querying (beta)   ⓘ   ◯

Disable recording rules (beta)   ⓘ   ◯

Other

Custom query parameters   ⓘ | Example: max_source_resolution=5m&timeout

HTTP method   ⓘ | POST   ⌄

Exemplars

+ Add

✓ **Successfully queried the Prometheus API.**

Next, you can start to visualize data by building a dashboard, or by querying data in the Explore view.

Delete   Save & test