

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
192.168.1.10
• 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
192.168.1.10
● 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
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 %
● 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-6ccdd698d79-4j4rc  1/1      Running   1 (40h ago)  45h
prometheus-server-5c99dfc547-jwfv9             2/2      Running   2 (40h ago)  45h
● sufiyanmemon@Sufiyans-Air Lab5 %
● 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 %

```

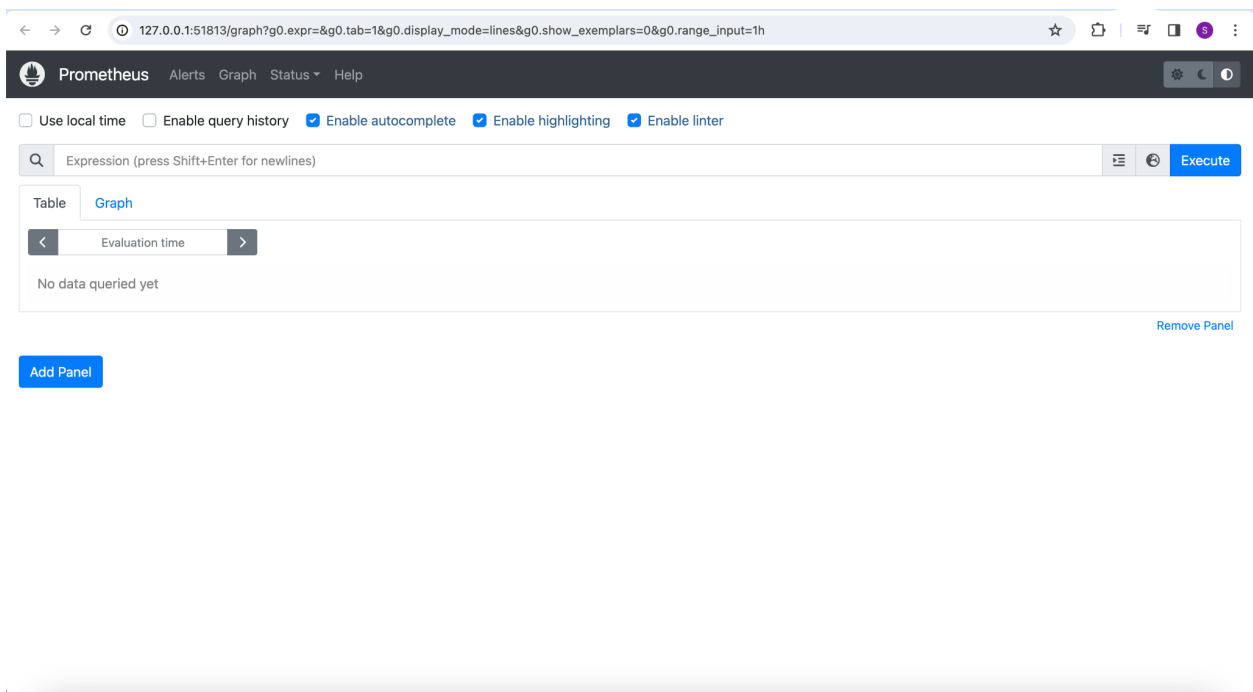
```
○ sufiyanmemon@Sufiyans-Air Class % minikube service prometheus-server-ext
```

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.



```
○ 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.

← → ↻ ⓘ 127.0.0.1:51858/?orgId=1 ☆ 🗄️ 🗨️ 📱 3 ⋮

⚙️ Home 🔍 Search or jump to... cmd+k + ▾ ⌚ 🔊 🧑

Welcome to Grafana

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

⋮


Basic

The steps below will guide you to quickly finish setting up your Grafana installation.

TUTORIAL
DATA SOURCE AND DASHBOARDS


Grafana fundamentals

Set up and understand Grafana if you have no prior experience. This tutorial guides you through the entire process and covers the "Data source" and "Dashboards" steps to the right.



DATA SOURCES


Add your first data source



Learn how in the docs [↗](#)

DASHBOARDS

Create your first dashboard



Learn how in the docs [↗](#)

[Remove this panel](#)

➤

Dashboards

Starred dashboards


Recently viewed dashboards

Latest from the blog

Feb 05

Infinity plugin for Grafana: Grafana Labs will now maintain the versatile data source plugin

Grafana was initially renowned for its ability to help users visualize time series data for platforms like Graphite and Elasticsearch. However, as the landscape evolved, demand surged for Grafana to embrace a wider array of data




← → ↻ ⓘ 127.0.0.1:51858/connections/datasources/prometheus ☆ 🗄️ 🗨️ 📱 3 ⋮

⚙️ Home > Connections > Add new connection > Prometheus 🔍 Search or jump to... cmd+k + ▾ ⌚ 🔊 🧑

⚙️ **Connections**

Add new connection

Data sources

 **Prometheus**

From Grafana Labs Signature **Add new data source**

Core

Open source time series database & alerting

[Learn more](#)

Overview Version history

Prometheus Data Source - Native Plugin

Grafana ships with built in support for Prometheus, the open-source service monitoring system and time series database.

Read more about it here:

<http://docs.grafana.org/datasources/prometheus/>

127.0.0.1:51858/connections/datasources/edit/c40a41b0-dc22-4c79-b5a3-340909db7d4f

🔍 Search or jump to...

cmd+k

+ ▾

🕒

📶

👤

Home > Connections > Data sources > prometheus

🔌 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

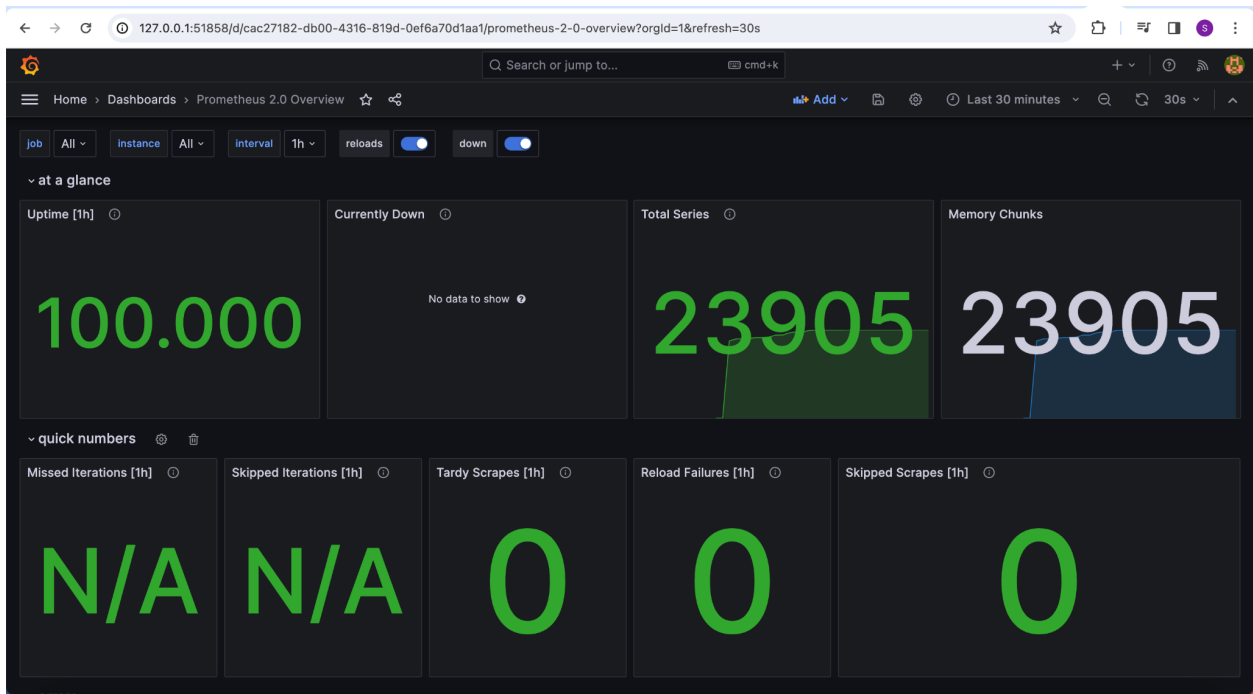
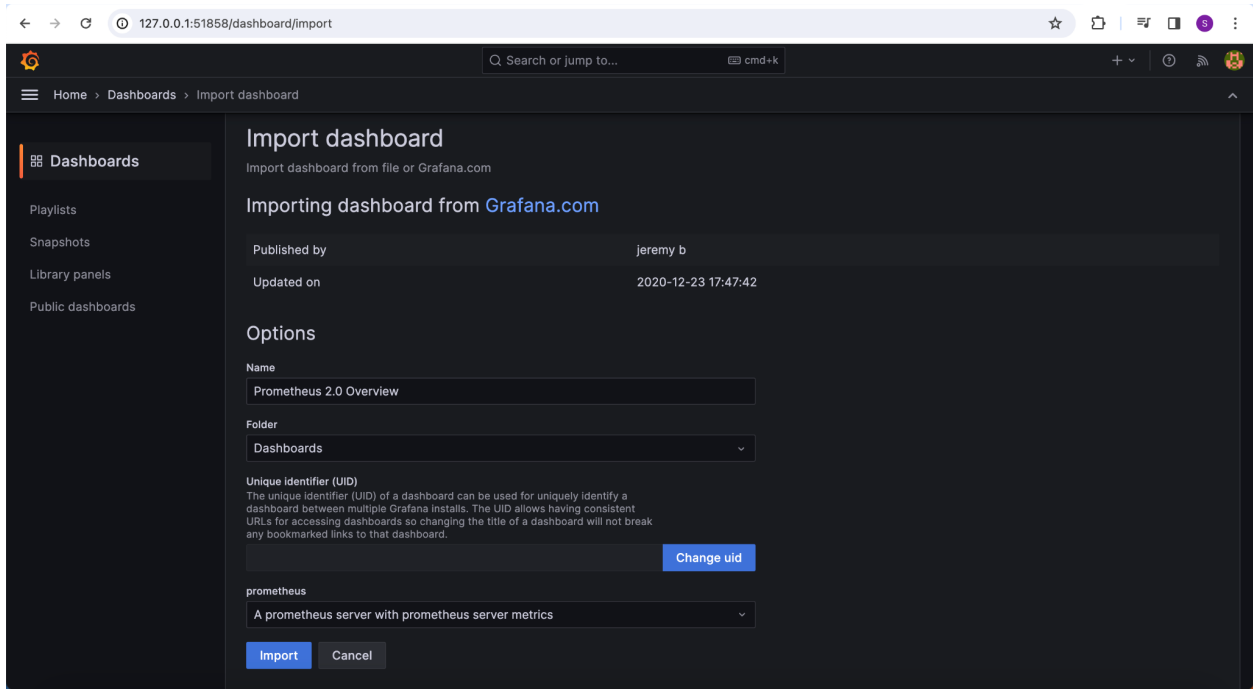
+ Add

✓ 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



127.0.0.1:54711/dashboard/new?orgId=1&editPanel=1&showCategory=Panel%20options

Home > Dashboards > New dashboard > Edit panel

Table view ☐ Fill Actual Last 6 hours

Panel Title

No data

Query 1 Transform data 0 Alert 0

A (prometheus)

Kick start your query Explain ☐ Run queries Builder Code

Metrics browser > `sum by (namespace) (kube_pod_info)`

Options Legend: Auto Format: Time series Step: auto Type: Range Exemplars: false

+ Add query + Expression

Time series

Search options

All Overrides

Panel options

Title `pod info`

Description

Transparent background ☐

Panel links

Repeat options

Tooltip

Tooltip mode ☐ Single ☐ All ☐ Hidden

Legend

Visibility ☒

