

## Install AWS CLI and Configure

```
curl "https://awscli.amazonaws.com/awscli-exe-linux-x86_64.zip" -o "awscliv2.zip"
```

```
sudo apt install unzip
```

```
unzip awscliv2.zip
```

```
sudo ./aws/install
```

```
Initiating: aws/dist/debian/parsers/etc/include/1somset.txt
You can now run: /usr/local/bin/aws --version
[ec2-user@ip-172-31-9-225 ~]$ aws --version
aws-cli/2.15.7 Python/3.11.6 Linux/6.1.66-91.160.amzn2023.x86_64 exe/x86_64.amzn.2023 prompt/off
[ec2-user@ip-172-31-9-225 ~]$
```

Okay now after installing the AWS CLI, let's configure the **AWS CLI** so that it can authenticate and communicate with the AWS environment.

aws configure

```
[ec2-user@ip-172-31-9-225 ~]$ aws configure
AWS Access Key ID [None]:
AWS Secret Access Key [None]:
Default region name [None]: ap-south-1
Default output format [None]:
[ec2-user@ip-172-31-9-225 ~]$
```

## Install and Setup Kubectl

Moving forward now we need to set up the **kubectl** also onto the EC2 instance.

```
curl -LO "https://storage.googleapis.com/kubernetes-release/release/$(curl -s
https://storage.googleapis.com/kubernetes-
release/release/stable.txt)/bin/linux/amd64/kubectl"
```

```
chmod +x ./kubectl
```

```
sudo mv ./kubectl /usr/local/bin
```

kubectl version

```
The connection to the server localhost:8080 was refused - did you specify the right host or port?
[ec2-user@ip-172-31-9-225 ~]$ kubectl version
Client Version: v1.29.0
Kustomize Version: v5.0.4-0.20230601165947-6ce0bf390ce3
The connection to the server localhost:8080 was refused - did you specify the right host or port?
[ec2-user@ip-172-31-9-225 ~]$
```

## Install and Setup eksctl

```
curl --silent --location  
"https://github.com/weaveworks/eksctl/releases/latest/download/eksctl_$(uname -  
s)_amd64.tar.gz" | tar xz -C /tmp  
  
sudo mv /tmp/eksctl /usr/local/bin  
  
eksctl version
```

```
[ec2-user@ip-172-31-9-225 tmp]$ eksctl version  
0.167.0  
[ec2-user@ip-172-31-9-225 tmp]$
```

## Install Helm chart

```
$ 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
```

```
[ec2-user@ip-172-31-9-225 ~]$ helm version  
version.BuildInfo{Version:"v3.13.1", GitCommit:"3547a4b5bf5edb5478ce352e18858d8a552a4110", GitTreeState:"clean", GoVersion:"go1.20.8"}  
[ec2-user@ip-172-31-9-225 ~]$
```

This way we install all AWS CLI, kubectl, eksctl and Helm.

Follow below steps to install terraform on AmazonLinux.

```
sudo yum install -y yum-utils shadow-utils  
sudo yum-config-manager --add-repo  
https://rpm.releases.hashicorp.com/AmazonLinux/hashicorp.repo  
sudo yum -y install terraform
```

```
Complete!  
[ec2-user@ip-172-31-9-225 eks-helm]$ terraform version  
Terraform v1.6.6  
on linux_amd64  
[ec2-user@ip-172-31-9-225 eks-helm]$
```

## Creating an Amazon EKS cluster using terraform

Code available in <https://github.com/ksnithya/blue-green.git>

git clone <https://github.com/ksnithya/blue-green.git>

cd blue-green

terraform init

terraform plan

terraform apply

aws eks --region ap-south-1 update-kubeconfig --name eks\_cluster\_demo

## Installing the Kubernetes Metrics Server

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

```
[ec2-user@ip-172-31-9-225 blue-green]$ kubectl apply -f https://github.com/kubernetes-sigs/metrics-server/releases/latest/download/components.yaml
serviceaccount/metrics-server created
clusterrole.rbac.authorization.k8s.io/system:aggregated-metrics-reader created
clusterrole.rbac.authorization.k8s.io/system:metrics-server created
rolebinding.rbac.authorization.k8s.io/metrics-server-auth-reader created
clusterrolebinding.rbac.authorization.k8s.io/metrics-server:system:auth-delegator created
clusterrolebinding.rbac.authorization.k8s.io/system:metrics-server created
service/metrics-server created
deployment.apps/metrics-server created
apiservice.apiregistration.k8s.io/v1beta1.metrics.k8s.io created
[ec2-user@ip-172-31-9-225 blue-green]$
```

kubectl get deployment metrics-server -n kube-system

```
[ec2-user@ip-172-31-9-225 blue-green]$ kubectl get deployment metrics-server -n kube-system
NAME          READY   UP-TO-DATE   AVAILABLE   AGE
metrics-server 1/1      1             1           49s
[ec2-user@ip-172-31-9-225 blue-green]$
```

## Install Prometheus

Now we install the Prometheus using the helm chart.

Add Prometheus helm chart repository

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

Update the helm chart repository

helm repo update

helm repo list

```
[ec2-user@ip-172-31-9-225 blue-green]$ helm repo add prometheus-community https://prometheus-community.github.io/helm-charts
"prometheus-community" has been added to your repositories
[ec2-user@ip-172-31-9-225 blue-green]$ 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!☑
[ec2-user@ip-172-31-9-225 blue-green]$ helm repo list
NAME                URL
prometheus-community https://prometheus-community.github.io/helm-charts
[ec2-user@ip-172-31-9-225 blue-green]$
```

Create prometheus namespace

kubectl create namespace Prometheus

## Install Prometheus

helm install prometheus prometheus-community/kube-prometheus-stack -n prometheus

```
[ec2-user@ip-172-31-9-225 blue-green]$ helm install prometheus prometheus-community/kube-prometheus-stack -n prometheus
NAME: prometheus
LAST DEPLOYED: Thu Jan  4 10:59:12 2024
NAMESPACE: prometheus
STATUS: deployed
REVISION: 1
NOTES:
kube-prometheus-stack has been installed. Check its status by running:
  kubectl --namespace prometheus get pods -l "release=prometheus"
```

View the Prometheus dashboard by forwarding the deployment ports

```
[ec2-user@ip-172-31-9-225 blue-green]$ kubectl get all -n prometheus
NAME                                     READY   STATUS    RESTARTS   AGE
pod/alertmanager-prometheus-kube-prometheus-alertmanager-0  2/2     Running   0           24m
pod/prometheus-grafana-57cc5d6996-x6ht4  3/3     Running   0           24m
pod/prometheus-kube-prometheus-operator-558444bb59-kzbb7    1/1     Running   0           24m
pod/prometheus-kube-state-metrics-6cd846d5cf-wz8gg          1/1     Running   0           24m
pod/prometheus-prometheus-kube-prometheus-prometheus-0      2/2     Running   0           24m
pod/prometheus-prometheus-node-exporter-2rnvg               1/1     Running   0           24m
pod/prometheus-prometheus-node-exporter-jcgbk               1/1     Running   0           24m

NAME                                     TYPE          CLUSTER-IP      EXTERNAL-IP      PORT(S)          AGE
service/alertmanager-operated            ClusterIP      None             <none>           9093/TCP,9094/TCP,9094/UDP 24m
service/prometheus-grafana               ClusterIP      172.20.135.170   <none>           80/TCP           24m
service/prometheus-kube-prometheus-alertmanager ClusterIP      172.20.182.94    <none>           9093/TCP,8080/TCP 24m
service/prometheus-kube-prometheus-operator ClusterIP      172.20.19.197    <none>           443/TCP          24m
service/prometheus-kube-prometheus-prometheus ClusterIP      172.20.205.170   <none>           9090/TCP,8080/TCP 24m
service/prometheus-kube-state-metrics    ClusterIP      172.20.92.26     <none>           8080/TCP         24m
service/prometheus-operated              ClusterIP      None             <none>           9090/TCP         24m
service/prometheus-prometheus-node-exporter ClusterIP      172.20.75.193    <none>           9100/TCP         24m

NAME                                     DESIRED   CURRENT   READY   UP-TO-DATE   AVAILABLE   NODE SELECTOR   AGE
daemonset.apps/prometheus-prometheus-node-exporter 2          2         2       2             2           kubernetes.io/os=linux 24m

NAME                                     READY   UP-TO-DATE   AVAILABLE   AGE
deployment.apps/prometheus-grafana       1/1     1             1           24m
deployment.apps/prometheus-kube-prometheus-operator 1/1     1             1           24m
deployment.apps/prometheus-kube-state-metrics 1/1     1             1           24m

NAME                                     DESIRED   CURRENT   READY   AGE
replicaset.apps/prometheus-grafana-57cc5d6996 1          1         1       24m
replicaset.apps/prometheus-kube-prometheus-operator-558444bb59 1          1         1       24m
replicaset.apps/prometheus-kube-state-metrics-6cd846d5cf 1          1         1       24m

NAME                                     READY   AGE
statefulset.apps/alertmanager-prometheus-kube-prometheus-alertmanager 1/1     24m
statefulset.apps/prometheus-prometheus-kube-prometheus-prometheus 1/1     24m
[ec2-user@ip-172-31-9-225 blue-green]$
```

kubectl port-forward statefulset.apps/prometheus-prometheus-kube-prometheus-prometheus 9090 -n prometheus &

run `curl localhost:9090/graph`

```
[ec2-user@ip-172-31-9-225 blue-green]$ curl localhost:9090/graph
Handling connection for 9090
<!doctype html><html lang="en"><head><meta charset="utf-8"/><link rel="shortcut icon" href="/favicon.ico"/><meta name="viewport" content="width=device-width,initial-scale=1,shrink-to-fit=no"/><meta name="theme-color" content="#000000"/><script>const GLOBAL_CONSOLES_LINK="",GLOBAL_AGENT_MODE="false",GLOBAL_READY="true"</script><link rel="manifest" href="/manifest.json" cross origin="use-credentials"/><title>Prometheus Time Series Collection and Processing Server</title><script defer="defer" src="/static/js/main.8abd4fa4.js"></script><link href="/static/css/main.132f8b2.css" rel="stylesheet"/></head><body class="bootstrap"><noscript>You need to enable JavaScript to run this app.</noscript><div id="root"></div></body></html>[ec2-user@ip-172-31-9-225 blue-green]$ kubectl port-forward s
```

## Install Grafana

Add the **Grafana** helm chart repository. Later, Update the helm chart repository.

helm repo add grafana https://grafana.github.io/helm-charts

helm repo update

Create a namespace Grafana

kubectl create namespace Grafana

## Install the Grafana

```
helm install grafana grafana/grafana \

--namespace grafana \

--set adminPassword='Venkat@123' \

--set service.type=LoadBalancer
```

```
[ec2-user@ip-172-31-9-225 blue-green]$ kubectl get all -n grafana
NAME                                READY    STATUS    RESTARTS   AGE
pod/grafana-86b8884954-8q995       1/1      Running   0           18s

NAME                                TYPE          CLUSTER-IP      EXTERNAL-IP      PORT(S)          AGE
service/grafana                     LoadBalancer 172.20.42.202    ad49ef87dbec742d9a930b9cb301b163-206512672.ap-south-1.elb.amazonaws.com 80:30163/TCP      18s

NAME                                READY    UP-TO-DATE   AVAILABLE   AGE
deployment.apps/grafana             1/1      1             1           18s

NAME                                DESIRED    CURRENT    READY    AGE
replicaset.apps/grafana-86b8884954 1           1           1        18s
[ec2-user@ip-172-31-9-225 blue-green]$ kubectl get all -n grafana
NAME                                READY    STATUS    RESTARTS   AGE
pod/grafana-86b8884954-8q995       1/1      Running   0           2m9s

NAME                                TYPE          CLUSTER-IP      EXTERNAL-IP      PORT(S)          AGE
service/grafana                     LoadBalancer 172.20.42.202    ad49ef87dbec742d9a930b9cb301b163-206512672.ap-south-1.elb.amazonaws.com 80:30163/TCP      2m9s

NAME                                READY    UP-TO-DATE   AVAILABLE   AGE
deployment.apps/grafana             1/1      1             1           2m9s

NAME                                DESIRED    CURRENT    READY    AGE
replicaset.apps/grafana-86b8884954 1           1           1        2m9s
```

We can change the service of Prometheus to LoadBalance.

```
kubectl get service/prometheus-kube-prometheus-prometheus -n prometheus -o
yaml>prometheus.yml
```

```
[ec2-user@ip-172-31-9-225 blue-green]$ cat prometheus.yml
```

```
apiVersion: v1
```

```
kind: Service
```

```
metadata:
```

```
  annotations:
```

```
    meta.helm.sh/release-name: prometheus
```

```
    meta.helm.sh/release-namespace: prometheus
```

```
  labels:
```

```
    app: kube-prometheus-stack-prometheus
```

```
    app.kubernetes.io/instance: prometheus
```

```
    app.kubernetes.io/managed-by: Helm
```

```
    app.kubernetes.io/part-of: kube-prometheus-stack
```

```
    app.kubernetes.io/version: 55.5.1
```

```
  chart: kube-prometheus-stack-55.5.1
```

```
heritage: Helm
release: prometheus
self-monitor: "true"
name: prometheus-kube-prometheus-prometheus
namespace: prometheus
resourceVersion: "6646"
uid: 0e68febb-a677-49b9-86b6-85602ea04fcc
spec:
  ports:
    - name: http-web
      port: 9090
      protocol: TCP
      targetPort: 9090
    - appProtocol: http
      name: reloader-web
      port: 8080
      protocol: TCP
      targetPort: reloader-web
  selector:
    app.kubernetes.io/name: prometheus
    operator.prometheus.io/name: prometheus-kube-prometheus-prometheus
  sessionAffinity: None
  type: LoadBalancer
status:
  loadBalancer: {}
[ec2-user@ip-172-31-9-225 blue-green]$
```

**kubectl replace -f prometheus.yml --force**

above command will replace the service to LOadbancer.

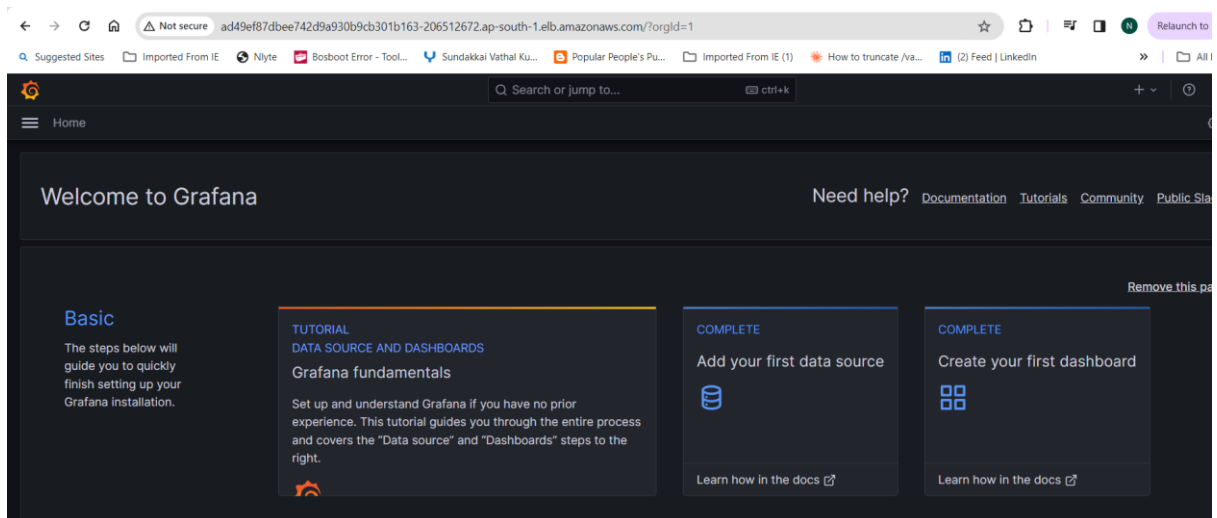
```

[ec2-user@ip-172-31-9-225 blue-green]$ kubectl get svc -n prometheus
NAME                                TYPE                CLUSTER-IP      EXTERNAL-IP      PORT(S)
alertmanager-operated              ClusterIP            None             <none>            9093/TCP,9094/TCP
prometheus-grafana                 ClusterIP            172.20.135.170  <none>            80/TCP
prometheus-kube-prometheus-alertmanager ClusterIP            172.20.182.94   <none>            9093/TCP,8080/TCP
prometheus-kube-prometheus-operator ClusterIP            172.20.19.197   <none>            443/TCP
prometheus-kube-prometheus-prometheus LoadBalancer        172.20.135.89   a42ebed6a0c7b452e8ceb0e561929310-198954771.ap-south-1.elb.amazonaws.com 9090:32005/TCP
prometheus-kube-state-metrics      ClusterIP            172.20.92.26    <none>            8080/TCP
prometheus-operated                ClusterIP            None             <none>            9090/TCP
prometheus-prometheus-node-exporter ClusterIP            172.20.75.193   <none>            9100/TCP
[ec2-user@ip-172-31-9-225 blue-green]$ ls -l

```

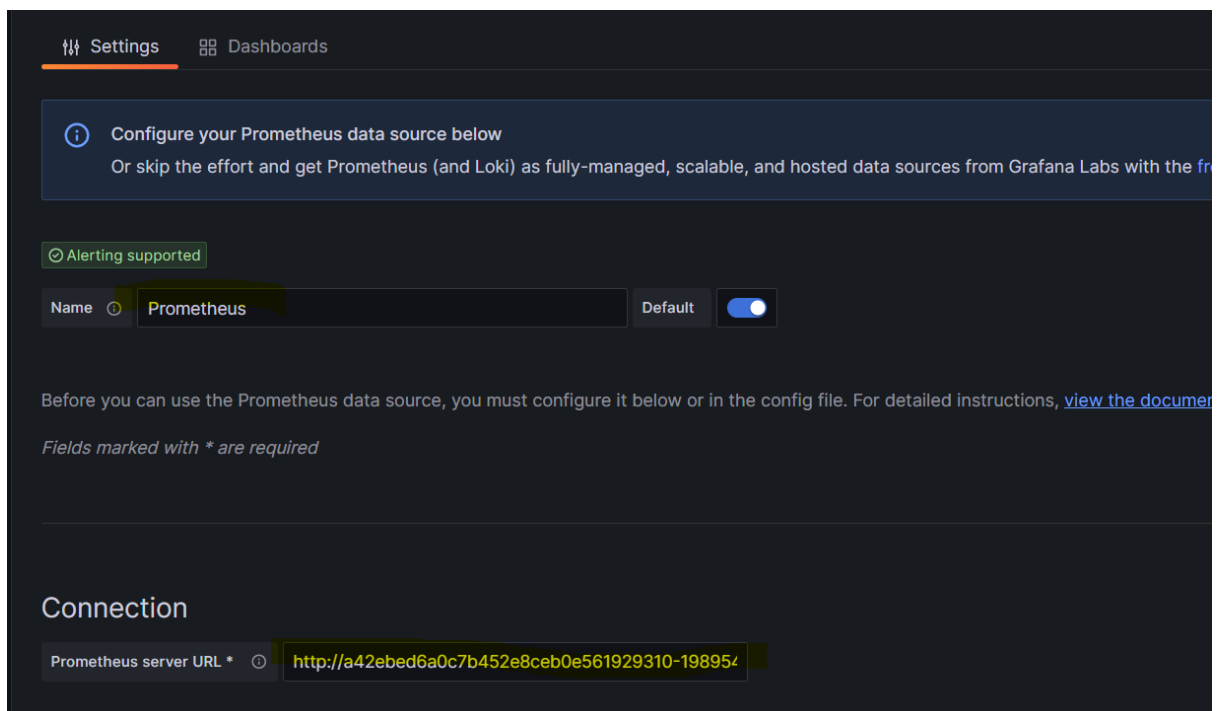
We can access the Grafana using Loadbalancer URL.

<http://ad49ef87dbee742d9a930b9cb301b163-206512672.ap-south-1.elb.amazonaws.com:80>



Now we can add our Prometheus to it.

Home -> connections -> Datasource -> Add



Give name and Prometheus service Loadbalancer URL.


Now we create dashboard.

Home -> dashboard -> New -> Import( we use existing Grafana dashboard)

“6417” dashboard of Kubernetes.

## Import dashboard

Import dashboard from file or Grafana.com

  
**Upload dashboard JSON file**  
Drag and drop here or click to browse  
Accepted file types: .json, .txt

Find and import dashboards for common applications at [grafana.com/dashboards](https://grafana.com/dashboards)

Import via dashboard JSON model

```
{
  "title": "Example - Repeating Dictionary variables",
  "uid": "_0HnEoN4z",
  "panels": [...]
  ...
}
```



Give name, Select the Prometheus we have created. Then import it.

Published by

sekka1

Updated on

2018-06-07 05:21:56

Options

Name

Kubernetes Cluster (Prometheus)

⚠️ A dashboard or a folder with the same name already exists

Folder

Dashboards

Unique identifier (UID)

The unique identifier (UID) of a dashboard can be used for uniquely identify a dashboard between multiple Grafana installs. The UID allows having consistent URLs for accessing dashboards so changing the title of a dashboard will not break any bookmarked links to that dashboard.

4XuMd2liz

Change uid

⚠️ Dashboard named 'Kubernetes Cluster (Prometheus)' in folder 'General' has the same UID

prometheus

Select a Prometheus data source

Import (Overwrite)

Cancel

