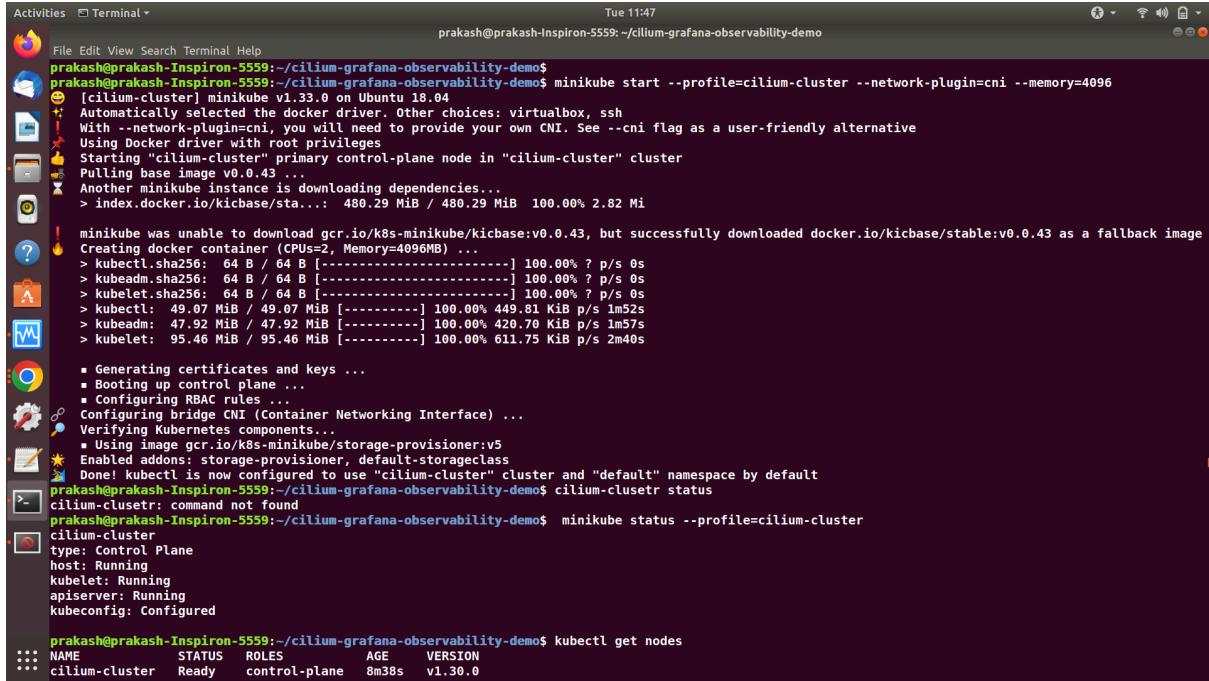


## COMMANDS:

1) minikube start --profile=cilium-cluster  
--network-plugin=cni --memory=4096



```
Tue 11:47
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ minikube start --profile=cilium-cluster --network-plugin=cni --memory=4096
[cilium-cluster] minikube v1.33.0 on Ubuntu 18.04
* Automatically selected the docker driver. Other choices: virtualbox, ssh
* With --network-plugin=cni, you will need to provide your own CNI. See --cni flag as a user-friendly alternative
* Using Docker driver with root privileges
* Starting "cilium-cluster" primary control-plane node in "cilium-cluster" cluster
* Pulling base image v0.0.43 ...
* Another minikube instance is downloading dependencies...
> index.docker.io/kicbase/sta...: 480.29 MiB / 480.29 MiB 100.00% 2.82 Mi

! minikube was unable to download gcr.io/k8s-minikube/kicbase:v0.0.43, but successfully downloaded docker.io/kicbase/stable:v0.0.43 as a fallback image
* Creating docker container (CPUs=2, Memory=4096MB) ...
> kubectl.sha256: 64 B / 64 B [-----] 100.00% ? p/s 0s
> kubeadm.sha256: 64 B / 64 B [-----] 100.00% ? p/s 0s
> kubelet.sha256: 64 B / 64 B [-----] 100.00% ? p/s 0s
> kubectl: 49.07 MiB / 49.07 MiB [-----] 100.00% 449.81 KiB p/s 1m52s
> kubeadm: 47.92 MiB / 47.92 MiB [-----] 100.00% 420.70 KiB p/s 1m57s
> kubelet: 95.46 MiB / 95.46 MiB [-----] 100.00% 611.75 KiB p/s 2m40s

* 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 "cilium-cluster" cluster and "default" namespace by default
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ cilium-clusetr status
cilium-clusetr: command not found
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ minikube status --profile=cilium-cluster
cilium-cluster
type: Control Plane
host: Running
kubelet: Running
apiserver: Running
kubeconfig: Configured

prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ kubectl get nodes
NAME STATUS ROLES AGE VERSION
cilium-cluster Ready control-plane 8m38s v1.30.0
```

2) minikube status --profile=cilium-cluster

3) kubectl get nodes

4) kubectl config use-context cilium-cluster

5) kubectl create -f

<https://raw.githubusercontent.com/cilium/cilium/v1.7/install/kubernetes/quick-install.yaml>

6) kubectl create -f

<https://raw.githubusercontent.com/cilium/hubble/v0.5/tutorials/deploy-hubble-servicemap/hubble-all-minikube.yaml>

```
Tue 11:48  
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ minikube status --profile=cilium-cluster  
cilium-cluster  
type: Control Plane  
host: Running  
kubelet: Running  
apiserver: Running  
kubeconfig: Configured  
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ kubectl get nodes  
NAME STATUS ROLES AGE VERSION  
cilium-cluster Ready control-plane 8m38s v1.30.0  
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ kubectl config use-context cilium-cluster  
Switched to context "cilium-cluster"  
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ kubectl create -f https://raw.githubusercontent.com/cilium/cilium/v1.7/install/kubernetes/quick-install.yaml  
serviceaccount/cilium created  
serviceaccount/cilium-operator created  
configmap/cilium-config created  
clusterrole.rbac.authorization.k8s.io/cilium created  
clusterrole.rbac.authorization.k8s.io/cilium-operator created  
clusterrolebinding.rbac.authorization.k8s.io/cilium created  
clusterrolebinding.rbac.authorization.k8s.io/cilium-operator created  
Warning: spec.template.metadata.annotations[scheduler.alpha.kubernetes.io/critical-pod]: non-functional in v1.16+; use the "priorityClassName" field instead  
daemonset.apps/cilium created  
deployment.apps/cilium-operator created  
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ kubectl create -f https://raw.githubusercontent.com/cilium/hubble/v0.5/tutorials/deployment-hubble-servicemap/hubble-all-minikube.yaml  
serviceaccount/hubble created  
clusterrole.rbac.authorization.k8s.io/hubble created  
clusterrole.rbac.authorization.k8s.io/hubble-ui created  
clusterrolebinding.rbac.authorization.k8s.io/hubble created  
clusterrolebinding.rbac.authorization.k8s.io/hubble-ui created  
service/hubble-grpc created  
service/hubble-ui created  
daemonset.apps/hubble created  
deployment.apps/hubble-ui created  
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ kubectl get nodes  
NAME STATUS ROLES AGE VERSION  
cilium-cluster Ready control-plane 9m43s v1.30.0
```

7) kubectl get pods -n kube-system

8) kubectl create namespace jobs-demo

```

Activities Terminal Tue 11:50
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ deployment.apps/hubble-ui created
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ kubectl get nodes
NAME           STATUS   ROLES      AGE    VERSION
cilium-cluster Ready    control-plane   9m43s   v1.30.0
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ kubectl get pods
No resources found in default namespace.
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ kubectl get pods -n kube-system
NAME          READY   STATUS    RESTARTS   AGE
cilium-25vbb   0/1    Init:0/1  0          82s
cilium-operator-5985f476d4-5fsf7  1/1    Running   0          82s
coredns-7db6d8ff4d-wcr9k        0/1    ContainerCreating  0          14s
etcd-cilium-cluster            1/1    Running   0          10m
hubble-ui-64f558b696-p6c5p     0/1    ContainerCreating  0          69s
hubble-wm896                   0/1    ContainerCreating  0          69s
kube-apiserver-cilium-cluster  1/1    Running   0          10m
kube-controller-manager-cilium-cluster 1/1    Running   1 (10m ago)  10m
kube-proxy-9f997                1/1    Running   0          9m54s
kube-scheduler-cilium-cluster  1/1    Running   0          10m
storage-provisioner            1/1    Running   1 (8m46s ago)  10m
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ kubectl create namespace jobs-demo
namespace/jobs-demo created
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ kubectl -n jobs-demo apply -f https://app.isovalent.com/demos/jobs.yaml
^Z
[5]+  Stopped                  kubectl -n jobs-demo apply -f https://app.isovalent.com/demos/jobs.yaml
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ kubectl apply -n jobs-demo -f https://app.isovalent.com/demos/jobs.yaml
Unable to connect to the server: dial tcp: lookup app.isovalent.com on 127.0.0.53:53: no such host
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ kubectl create namespace jobs-demo
Error from server (AlreadyExists): namespaces "jobs-demo" already exists
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ kubectl apply -n jobs-demo -f https://app.isovalent.com/demos/jobs.yaml
^Z
[5]+  Stopped                  kubectl apply -n jobs-demo -f https://app.isovalent.com/demos/jobs.yaml
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ kubectl apply -n jobs-demo -f https://app.isovalent.com/demos/jobs.yaml
Unable to connect to the server: dial tcp: lookup app.isovalent.com on 127.0.0.53:53: no such host
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ # Download the YAML file
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ wget https://app.isovalent.com/demos/jobs.yaml
--2024-05-21 10:58:03. - https://app.isovalent.com/demos/jobs.yaml
Resolving app.isovalent.com (app.isovalent.com)... failed: Name or service not known.
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ wget: unable to resolve host address 'app.isovalent.com'
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ # Apply the YAML file to the jobs-demo namespace
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ kubectl apply -n jobs-demo -f jobs.yaml
error: the path "jobs.yaml" does not exist
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ kubectl -n jobs-demo apply -f https://app.isovalent.com/demos/jobs.yaml
^Z
[5]+  Stopped                  kubectl -n jobs-demo apply -f https://app.isovalent.com/demos/jobs.yaml
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ kubectl -n jobs-demo apply -f https://app.isovalent.com/demos/jobs.yaml
Unable to connect to the server: dial tcp: lookup app.isovalent.com on 127.0.0.53:53: no such host

```

## 9) jobs.yaml

```

apiVersion: batch/v1
kind: Job
metadata:
  name: example-job
spec:
  template:
    metadata:
      name: example-pod
    spec:
      containers:
        - name: example-container
          image: busybox
          command: ["echo", "Hello, World!"]
      restartPolicy: Never

```

[This yaml file is just as example I took to actually see the output, you can include any YAML file here].

10) kubectl -n jobs-demo apply -f 'home/jobs.yaml'

11) kubectl get pods -n jobs-demo

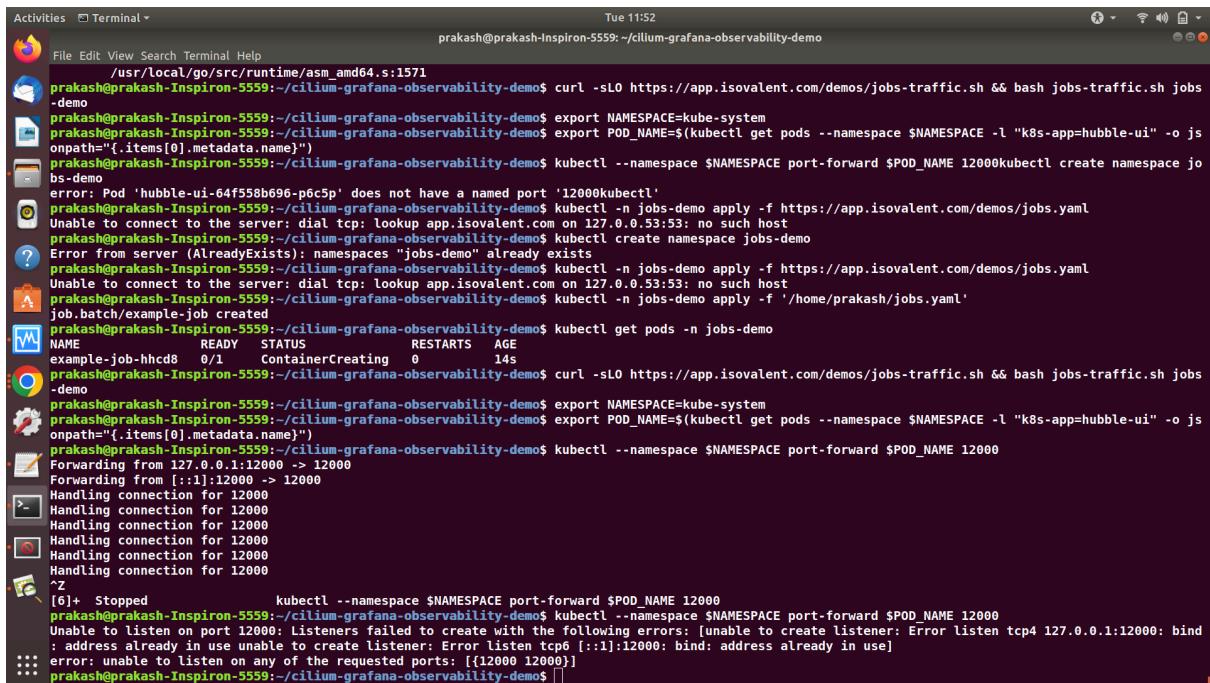
12) curl -sLO <https://app.isovalent.com/demos/jobs-traffic.sh>

&& bash jobs-traffic.sh jobs-demo

## 12) Accessing User Interface

By default the Hubble UI is deployed without ingress service, in order to access UI you can use the following port-forward command:

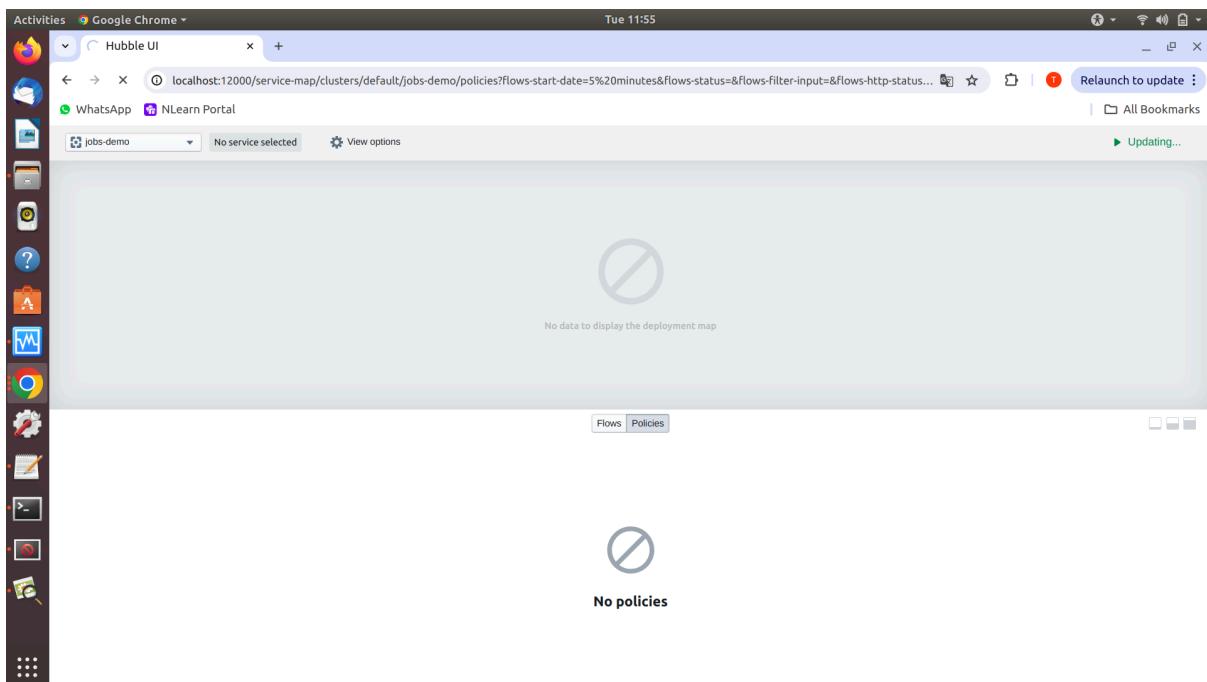
```
export NAMESPACE=kube-system
export POD_NAME=$(kubectl get pods --namespace $NAMESPACE -l "k8s-app=hubble-ui" -o
jsonpath="{.items[0].metadata.name}")
kubectl --namespace $NAMESPACE port-forward $POD_NAME 12000
```



The screenshot shows a terminal window with the following session:

```
Tue 11:52
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo
File Edit View Search Terminal Help
/usr/local/go/src/runtime/asm_amd64.s:1571
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ curl -sLO https://app.isovalent.com/demos/jobs-traffic.sh && bash jobs-traffic.sh jobs
-demo
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ export NAMESPACE=kube-system
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ export POD_NAME=$(kubectl get pods --namespace $NAMESPACE -l "k8s-app=hubble-ui" -o js
onpath='{.items[0].metadata.name}')
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ kubectl --namespace $NAMESPACE port-forward $POD_NAME 12000
kubectl create namespace jobs-demo
error: Pod 'hubble-ui-64f558b696-p6c5p' does not have a named port '12000'
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ kubectl -n jobs-demo apply -f https://app.isovalent.com/demos/jobs.yaml
Unable to connect to the server: dial tcp: lookup app.isovalent.com on 127.0.0.53:53: no such host
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ kubectl create namespace jobs-demo
Error from server (AlreadyExists): namespaces "jobs-demo" already exists
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ kubectl -n jobs-demo apply -f https://app.isovalent.com/demos/jobs.yaml
Unable to connect to the server: dial tcp: lookup app.isovalent.com on 127.0.0.53:53: no such host
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ kubectl -n jobs-demo apply -f '/home/prakash/jobs.yaml'
job.batch/example-job created
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ kubectl get pods -n jobs-demo
NAME          READY   STATUS    RESTARTS   AGE
example-job-hcd8  0/1    ContainerCreating   0          14s
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ curl -sLO https://app.isovalent.com/demos/jobs-traffic.sh && bash jobs-traffic.sh jobs
-demo
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ export NAMESPACE=kube-system
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ export POD_NAME=$(kubectl get pods --namespace $NAMESPACE -l "k8s-app=hubble-ui" -o js
onpath='{.items[0].metadata.name}')
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ kubectl --namespace $NAMESPACE port-forward $POD_NAME 12000
Forwarding from 127.0.0.1:12000 -> 12000
Forwarding from [::]:12000 -> 12000
Handling connection for 12000
^Z
[6]+  Stopped                  kubectl --namespace $NAMESPACE port-forward $POD_NAME 12000
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$ kubectl --namespace $NAMESPACE port-forward $POD_NAME 12000
Unable to listen on port 12000: Listeners failed to create with the following errors: [unable to create listener: Error listen tcp4 127.0.0.1:12000: bind
: address already in use unable to create listener: Error listen tcp6 [::]:12000: bind: address already in use]
error: unable to listen on any of the requested ports: [[12000 12000]]
prakash@prakash-Inspiron-5559:~/cilium-grafana-observability-demo$
```

13) Open <http://localhost:12000> in your browser



### **To stop the cluster :**

```
minikube stop --profile=cilium-cluster
```

```
minikube delete --profile=cilium-cluster
```

### Reference:

<https://github.com/cilium/hubble/blob/v0.5/Documentation/installation.md>

---

<https://github.com/isovalent/cilium-grafana-observability-demo/blob/main/README.md>

## Running Prometheus & Grafana

### Install Prometheus & Grafana

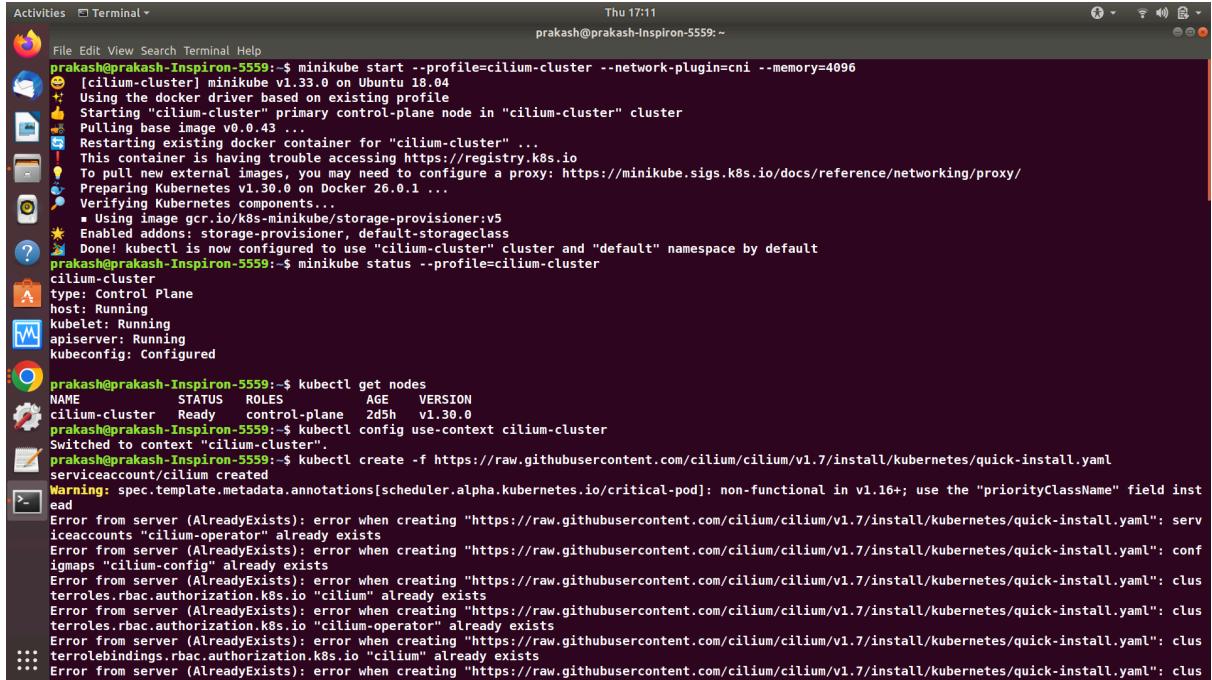
1) kubectl apply -f

<https://raw.githubusercontent.com/cilium/cilium/HEAD/examples/kubernetes/addons/prometheus/monitoring-example.yaml>

### Deploy Cilium and Hubble with metrics enabled

2) curl -LO https://github.com/cilium/cilium/archive/main.tar.gz

3) tar xzf main.tar.gz



```
Thu 17:11  
prakash@prakash-Inspiron-5559:~  
prakash@prakash-Inspiron-5559:~$ minikube start --profile=cilium-cluster --network-plugin=cni --memory=4096  
[cilium-cluster] minikube v1.33.0 on Ubuntu 18.04  
+ Using the docker driver based on existing profile  
Starting "cilium-cluster" primary control-plane node in "cilium-cluster" cluster  
Pulling base image v0.0.43 ...  
Restarting existing docker container for "cilium-cluster" ...  
This container is having trouble accessing https://registry.k8s.io  
To pull new external images, you may need to configure a proxy: https://minikube.sigs.k8s.io/docs/reference/networking/proxy/  
Preparing Kubernetes V1.30.0 on Docker 26.0.1 ...  
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 "cilium-cluster" cluster and "default" namespace by default  
prakash@prakash-Inspiron-5559:~$ minikube status --profile=cilium-cluster  
cilium-cluster  
type: Control Plane  
host: Running  
kubelet: Running  
apiserver: Running  
kubeconfig: Configured  
prakash@prakash-Inspiron-5559:~$ kubectl get nodes  
NAME STATUS ROLES AGE VERSION  
cilium-cluster Ready control-plane 2d5h v1.30.0  
prakash@prakash-Inspiron-5559:~$ kubectl config use-context cilium-cluster  
Switched to context "cilium-cluster".  
prakash@prakash-Inspiron-5559:~$ kubectl create -f https://raw.githubusercontent.com/cilium/cilium/v1.7/install/kubernetes/quick-install.yaml  
serviceaccount/cilium created  
Warning: spec.template.metadata.annotations[scheduler.alpha.kubernetes.io/critical-pod]: non-functional in v1.16+; use the "priorityClassName" field instead  
Error from server (AlreadyExists): error when creating "https://raw.githubusercontent.com/cilium/cilium/v1.7/install/kubernetes/quick-install.yaml": serviceaccounts "cilium-operator" already exists  
Error from server (AlreadyExists): error when creating "https://raw.githubusercontent.com/cilium/cilium/v1.7/install/kubernetes/quick-install.yaml": configmaps "cilium-config" already exists  
Error from server (AlreadyExists): error when creating "https://raw.githubusercontent.com/cilium/cilium/v1.7/install/kubernetes/quick-install.yaml": clusterrole.rbac.authorization.k8s.io "cilium" already exists  
Error from server (AlreadyExists): error when creating "https://raw.githubusercontent.com/cilium/cilium/v1.7/install/kubernetes/quick-install.yaml": clusterrole.rbac.authorization.k8s.io "cilium-operator" already exists  
Error from server (AlreadyExists): error when creating "https://raw.githubusercontent.com/cilium/cilium/v1.7/install/kubernetes/quick-install.yaml": clusterbindings.rbac.authorization.k8s.io "cilium" already exists  
Error from server (AlreadyExists): error when creating "https://raw.githubusercontent.com/cilium/cilium/v1.7/install/kubernetes/quick-install.yaml": clusterrolebindings.rbac.authorization.k8s.io "cilium" already exists
```

Deploy Cilium via Helm as follows to enable all metrics:

```
4) helm install cilium ./cilium \  
--namespace kube-system \  
--set prometheus.enabled=true \  
--set operator.prometheus.enabled=true \  
--set hubble.enabled=true \  
--set hubble.metrics.enableOpenMetrics=true \  
--set  
hubble.metrics.enabled="{dns,drop,tcp,flow,port-distribution,icmp,httpv2:exemplars=  
true;labelsContext=source_ip\,source_namespace\,source_workload\,destination_ip\,de  
stination_namespace\,destination_workload\,traffic_direction}"
```

```

Activities Terminal Thu 17:12 prakash@prakash-Inspiron-5559:~ 
prakash@prakash-Inspiron-5559:~$ kubectl create -f https://raw.githubusercontent.com/cilium/cilium/v1.7/install/kubernetes/quick-install.yaml
serviceaccount/cilium created
Warning: spec.template.metadata.annotations[scheduler.alpha.kubernetes.io/critical-pod]: non-functional in v1.16+; use the "priorityClassName" field instead
Error from server (AlreadyExists): error when creating "https://raw.githubusercontent.com/cilium/cilium/v1.7/install/kubernetes/quick-install.yaml": serviceaccounts "cilium-operator" already exists
Error from server (AlreadyExists): error when creating "https://raw.githubusercontent.com/cilium/cilium/v1.7/install/kubernetes/quick-install.yaml": configmaps "cilium-config" already exists
Error from server (AlreadyExists): error when creating "https://raw.githubusercontent.com/cilium/cilium/v1.7/install/kubernetes/quick-install.yaml": clusterroles.rbac.authorization.k8s.io "cilium" already exists
Error from server (AlreadyExists): error when creating "https://raw.githubusercontent.com/cilium/cilium/v1.7/install/kubernetes/quick-install.yaml": clusterroles.rbac.authorization.k8s.io "cilium-operator" already exists
Error from server (AlreadyExists): error when creating "https://raw.githubusercontent.com/cilium/cilium/v1.7/install/kubernetes/quick-install.yaml": clusterrolebindings.rbac.authorization.k8s.io "cilium" already exists
Error from server (AlreadyExists): error when creating "https://raw.githubusercontent.com/cilium/cilium/v1.7/install/kubernetes/quick-install.yaml": clusterrolebindings.rbac.authorization.k8s.io "cilium-operator" already exists
Error from server (AlreadyExists): error when creating "https://raw.githubusercontent.com/cilium/cilium/v1.7/install/kubernetes/quick-install.yaml": daemonsets.apps "cilium" already exists
Error from server (AlreadyExists): error when creating "https://raw.githubusercontent.com/cilium/cilium/v1.7/install/kubernetes/quick-install.yaml": deployments.apps "cilium-operator" already exists
prakash@prakash-Inspiron-5559:~$ kubectl create -f https://raw.githubusercontent.com/cilium/hubble/v0.5/tutorials/deploy-hubble-servicemap/hubble-all-minikube.yaml
Error from server (AlreadyExists): error when creating "https://raw.githubusercontent.com/cilium/hubble/v0.5/tutorials/deploy-hubble-servicemap/hubble-all-minikube.yaml": serviceaccounts "hubble" already exists
Error from server (AlreadyExists): error when creating "https://raw.githubusercontent.com/cilium/hubble/v0.5/tutorials/deploy-hubble-servicemap/hubble-all-minikube.yaml": serviceaccounts "hubble-ui" already exists
Error from server (AlreadyExists): error when creating "https://raw.githubusercontent.com/cilium/hubble/v0.5/tutorials/deploy-hubble-servicemap/hubble-all-minikube.yaml": clusterroles.rbac.authorization.k8s.io "hubble" already exists
Error from server (AlreadyExists): error when creating "https://raw.githubusercontent.com/cilium/hubble/v0.5/tutorials/deploy-hubble-servicemap/hubble-all-minikube.yaml": clusterrolebindings.rbac.authorization.k8s.io "hubble" already exists
Error from server (AlreadyExists): error when creating "https://raw.githubusercontent.com/cilium/hubble/v0.5/tutorials/deploy-hubble-servicemap/hubble-all-minikube.yaml": clusterrolebindings.rbac.authorization.k8s.io "hubble-ui" already exists
Error from server (AlreadyExists): error when creating "https://raw.githubusercontent.com/cilium/hubble/v0.5/tutorials/deploy-hubble-servicemap/hubble-all-minikube.yaml": services "hubble-grpc" already exists
Error from server (AlreadyExists): error when creating "https://raw.githubusercontent.com/cilium/hubble/v0.5/tutorials/deploy-hubble-servicemap/hubble-all-minikube.yaml": services "hubble-ui" already exists
Error from server (AlreadyExists): error when creating "https://raw.githubusercontent.com/cilium/hubble/v0.5/tutorials/deploy-hubble-servicemap/hubble-all-minikube.yaml": daemonsets.apps "hubble" already exists
Error from server (AlreadyExists): error when creating "https://raw.githubusercontent.com/cilium/hubble/v0.5/tutorials/deploy-hubble-servicemap/hubble-all-minikube.yaml": daemonsets.apps "hubble" already exists
prakash@prakash-Inspiron-5559:~$ kubectl get pods -n kube-system
NAME          READY   STATUS    RESTARTS   AGE
cilium-operator-5985f476d4-zt7km   1/1    Running   9 (23m ago)  22h
cilium-vjnhg   0/1    Error     23          3h29m
coredns-7db6d8ff4d-7dnp6        0/1    Terminating   0          3h19m
coredns-7db6d8ff4d-8pgv         0/1    ContainerCreating   0          64s
etcd-cilium-cluster            1/1    Running   6 (3m30s ago)  20h
hubble-kkczr                  0/1    Error     9          4h4m
hubble-ui-64f558b696-p6c5p      0/1    Error     0          24h
kube-apiserver-cilium-cluster   1/1    Running   7 (3m30s ago)  20h
kube-controller-manager-cilium-cluster 1/1    Running   11 (2m9s ago)  20h
kube-proxy-9tf97                1/1    Running   6 (3m30s ago)  20h
kube-scheduler-cilium-cluster   1/1    Running   6 (3m30s ago)  20h
storage-provisioner             1/1    Running   17 (88s ago)   20h
prakash@prakash-Inspiron-5559:~$ kubectl create namespace jobs-demo
Error from server (AlreadyExists): namespaces "jobs-demo" already exists
prakash@prakash-Inspiron-5559:~$ kubectl get pods -n jobs-demo
NAME          READY   STATUS    RESTARTS   AGE
example-job-hhcd8  0/1    ContainerCreating   0          2d4h
prakash@prakash-Inspiron-5559:~$ curl -sL0 https://app.isovalent.com/demos/jobs-traffic.sh && bash jobs-traffic.sh jobs-demo
prakash@prakash-Inspiron-5559:~$ export NAMESPACE=kube-system
prakash@prakash-Inspiron-5559:~$ export POD_NAME=$(kubectl get pods --namespace $NAMESPACE -l "K8s-app=hubble-ui" -o jsonpath=".items[0].metadata.name")
prakash@prakash-Inspiron-5559:~$ kubectl --namespace $NAMESPACE port-forward $POD_NAME 12000
error: error upgrading connection: unable to upgrade connection: pod not found ("hubble-ui-64f558b696-p6c5p_kube-system")
prakash@prakash-Inspiron-5559:~$ kubectl get pods -n kube-system -l k8s-app=hubble-ui
NAME          READY   STATUS    RESTARTS   AGE
hubble-ui-64f558b696-p6c5p  0/1    Error     0          2d4h
prakash@prakash-Inspiron-5559:~$ kubectl logs -n kube-system hubble-ui-64f558b696-p6c5p
> hubble-ui-backend@ start /workspace/server
> node ./build/src/main.js
{"name":"frontend","hostname":"hubble-ui-64f558b696-p6c5p","pid":18,"level":30,"msg":"Starting Hubble UI 🚀","time":"2024-05-21T05:41:23.919Z","v":0}
{"name":"frontend","hostname":"hubble-ui-64f558b696-p6c5p","pid":18,"level":30,"msg":"Initialized DBs in 55 ms","time":"2024-05-21T05:41:24.368Z","v":0}
{"name":"frontend","hostname":"hubble-ui-64f558b696-p6c5p","pid":18,"level":30,"msg":"Listening on port 12000 keep-alive timeout 0 ms headers timeout 12000 ms","time":"2024-05-21T05:41:24.664Z","v":0}
{"name":"frontend","hostname":"hubble-ui-64f558b696-p6c5p","pid":18,"reg_id":"39fb0211-1c2a-4c8b-971e-0b83f5a2d40a","user":"admin@localhost","level":50,"err":{"message":"getaddrinfo EAI_AGAIN hubble-grpc.kube-system.svc.cluster.local","name":"Error","stack":"Error: getaddrinfo EAI_AGAIN hubble-grpc.kube-system.svc.cluster.local at GetAddrInfoReqWrap.onlookupall [as oncomplete] (dns.js:76:26)","code":"EAI_AGAIN"},"msg":"getaddrinfo EAI_AGAIN hubble-grpc.kube-system.svc.cluster.local","time":"2024-05-21T06:07:20.978Z","v":0}

```

```

Activities Terminal Thu 17:12 prakash@prakash-Inspiron-5559:~ 
File Edit View Search Terminal Help
{"name":"frontend","hostname":"hubble-ui-64f558b696-p6c5p","pid":18,"req_id":"b589521e-4e9c-4889-868a-05af059650dd","user":"admin@localhost","level":50,"err":{"message":"Unexpected error value: \\"Can't fetch cilium network policies via k8s api. 404 status from /apis/cilium.io/v2/ciliumnetworkpolicies\\\"", "locations":[{"line":4,"column":7}], "path":["viewer","clusters"], "extensions":{"code":"INTERNAL_SERVER_ERROR"},"msg":"","time":"2024-05-21T06:08:01.124Z"}, "v":0}
prakash@prakash-Inspiron-5559:~$ kubectl get pods -n kube-system -l k8s-app=cilium
NAME          READY   STATUS    RESTARTS   AGE
cilium-vjnnng  0/1     CrashLoopBackOff  27 (37s ago)  3h33m
prakash@prakash-Inspiron-5559:~$ kubectl delete pod -n kube-system cilium-vjnnng
pod "cilium-vjnnng" deleted
prakash@prakash-Inspiron-5559:~$ kubectl apply -f https://raw.githubusercontent.com/cilium/cilium/HEAD/examples/kubernetes/addons/prometheus/monitoring-example.yaml
namespace/cilium-monitoring unchanged
serviceaccount/prometheus-k8s unchanged
configmap/grafana-config configured
configmap/grafana-cilium-dashboard configured
configmap/grafana-cilium-operator-dashboard unchanged
configmap/grafana-hubble-dashboard configured
configmap/grafana-hubble-l7-http-metrics-by-workload unchanged
configmap/prometheus configured
clusterrole.rbac.authorization.k8s.io/prometheus unchanged
service/grafana unchanged
service/prometheus unchanged
deployment.apps/grafana configured
deployment.apps/prometheus configured
prakash@prakash-Inspiron-5559:~$ curl -LO https://github.com/cilium/cilium/archive/main.tar.gz
% Total % Received % Xferd Average Speed Time Time Current
          Dload Upload Total Spent Left Speed
[...]
  0 43.2M  0 43.2M  0      0  0:00:01 ---:--:-- 0
100 43.2M  0 43.2M  0 3103k  0 0:00:14 ---:--:-- 4809k
prakash@prakash-Inspiron-5559:~$ tar xzf main.tar.gz
prakash@prakash-Inspiron-5559:~$ helm install cilium ./cilium \
>   --namespace kube-system \
>   --set prometheus.enabled=true \
>   --set operator.prometheus.enabled=true \
>   --set hubble.enabled=true \
>   --set hubble.metrics.enabled=true \
>   --set hubble.metrics.enabled="{dns,drop,tcp,flow,port-distribution,icmp,httpV2:exemplars=true;labelsContext=source_ip\,source_namespace\,source_workload,destination_ip\,destination_namespace\,destination_workload\,traffic_direction}" \
>   --set hubble.metrics.enabled="{}"
walk.go:74: found symbolic link in path: /home/prakash/cilium/Documentation/_api resolves to /home/prakash/cilium/api
walk.go:74: found symbolic link in path: /home/prakash/cilium/examples/crd resolves to /home/prakash/cilium/pkg/k8s/apis/cilium.io/client/crds
Activities Terminal Thu 17:12 prakash@prakash-Inspiron-5559:~ 
File Edit View Search Terminal Help
service/prometheus unchanged
deployment.apps/grafana configured
deployment.apps/prometheus configured
prakash@prakash-Inspiron-5559:~$ curl -LO https://github.com/cilium/cilium/archive/main.tar.gz
% Total % Received % Xferd Average Speed Time Time Current
          Dload Upload Total Spent Left Speed
[...]
  0 43.2M  0 43.2M  0      0  0:00:01 ---:--:-- 0
100 43.2M  0 43.2M  0 3103k  0 0:00:14 ---:--:-- 4809k
prakash@prakash-Inspiron-5559:~$ tar xzf main.tar.gz
prakash@prakash-Inspiron-5559:~$ helm install cilium ./cilium \
>   --namespace kube-system \
>   --set prometheus.enabled=true \
>   --set operator.prometheus.enabled=true \
>   --set hubble.enabled=true \
>   --set hubble.metrics.enabled=true \
>   --set hubble.metrics.enabled="{dns,drop,tcp,flow,port-distribution,icmp,httpV2:exemplars=true;labelsContext=source_ip\,source_namespace\,source_workload,destination_ip\,destination_namespace\,destination_workload\,traffic_direction}" \
>   --set hubble.metrics.enabled="{}"
walk.go:74: found symbolic link in path: /home/prakash/cilium/Documentation/_api resolves to /home/prakash/cilium/api
walk.go:74: found symbolic link in path: /home/prakash/cilium/examples/crd resolves to /home/prakash/cilium/pkg/k8s/apis/cilium.io/client/crds
walk.go:74: found symbolic link in path: /home/prakash/cilium/install/kubernetes/cilium/files/cilium-agent/dashboards/cilium-dashboard.json resolves to /home/prakash/cilium/install/kubernetes/cilium/files/cilium-agent/dashboards/cilium-dashboard.json
walk.go:74: found symbolic link in path: /home/prakash/cilium/examples/kubernetes/addons/prometheus/files/grafana-dashboards/cilium-operator-dashboard.json resolves to /home/prakash/cilium/install/kubernetes/cilium/files/cilium-operator/dashboard.json
walk.go:74: found symbolic link in path: /home/prakash/cilium/examples/kubernetes/addons/prometheus/files/grafana-dashboards/hubble-dashboard.json resolves to /home/prakash/cilium/install/kubernetes/cilium/files/hubble/dashboards/hubble-dashboard.json
walk.go:74: found symbolic link in path: /home/prakash/cilium/examples/kubernetes/addons/prometheus/files/grafana-dashboards/hubble-l7-http-metrics-by-workload.json resolves to /home/prakash/cilium/install/kubernetes/cilium/files/hubble/dashboards/hubble-l7-http-metrics-by-workload.json
Error: INSTALLATION FAILED: Chart.yaml file is missing
prakash@prakash-Inspiron-5559:~$ kubectl -n cilium-monitoring port-forward service/grafana --address 0.0.0.0 --address :: 3000:3000
Forwarding from 0.0.0.0:3000 -> 3000
Forwarding from [::]:3000 -> 3000
Handling connection for 3000
error: lost connection to pod
prakash@prakash-Inspiron-5559:~$ ls Chart.yaml
ls: cannot access 'Chart.yaml': No such file or directory
prakash@prakash-Inspiron-5559:~$ []

```

## How to access Grafana

Expose the port on your local machine

- 5) kubectl -n cilium-monitoring port-forward service/grafana --address 0.0.0.0 --address :: 3000:3000

Access it via your browser: <http://localhost:3000>

The screenshot shows the Grafana home page. On the left, there's a sidebar with various icons for navigation. The main area features a dark-themed dashboard titled "Welcome to Grafana". It includes sections for "Basic" (with a guide to setting up data sources and dashboards), "TUTORIAL DATA SOURCE AND DASHBOARDS" (with a "Grafana fundamentals" section), and "COMPLETE" (with "Add your first data source" and "Create your first dashboard" sections). Below these are "Dashboards" and "Latest from the blog" sections. A specific blog post titled "How to visualize Amazon CloudWatch metrics in Grafana" is highlighted.

## How to access Prometheus

Expose the port on your local machine

```
6) kubectl -n cilium-monitoring port-forward service/prometheus --address 0.0.0.0 --address :: 9090:9090
```

Access it via your browser: <http://localhost:9090>

The screenshot shows the Prometheus Graph interface. At the top, there's a search bar with the query "scrape\_duration\_seconds" and an "Execute" button. Below the search bar is a "Graph" tab. The main area displays a single orange line chart representing the "scrape\_duration\_seconds" metric over time. The x-axis shows the date "2024-05-23 10:41". The y-axis ranges from 0 to 10. A tooltip at the end of the chart shows the following data:

```
Thu, 23 May 2024 10:41:56 GMT
scrape_duration_seconds: 10.000273405
beta.kubernetes.io_node_name: minikube
beta.kubernetes.io_os: linux
instance: 10.0.2.15:9090
job: kubernetes-cadvisor
kubernetes.io_arch: amd64
kubernetes.io_hostname: cilium-cluster
kubernetes.io_os: linux
minikube: 10.0.2.15:6789
minikube_k8s_io_name: cilium-cluster
minikube_k8s_io_update_time: 2024-05-21T10:45:05Z
minikube_k8s_io_updated_at: 2024-05-21T10:45:05Z
minikube_k8s_io_version: v1.33.0
```

