

# Monitoring Setup: Prometheus and Grafana on Kubernetes

---

## ✓ Prerequisites

- A running Kubernetes cluster
  - `kubectl` configured to access the cluster
  - Helm installed (`helm version` to verify)
- 

## ☆☆ Step 1: Install Prometheus and Grafana

### Add Prometheus Helm repo:

```
# helm repo add prometheus-community
https://prometheus-community.github.io/helm-charts
# helm repo update
```

### Install Prometheus and Grafana using Helm:

```
# helm install monitoring-stack prometheus-community/kube-prometheus-stack \
--namespace monitoring \
--create-namespace
```

---

## Step 2: Verify Namespace and Pods

### Check the namespace:

```
# kubectl get ns
```

### List pods in the monitoring namespace:

```
# kubectl get pods -n monitoring -o wide
```

### Expected Pods:

NAME	READY	STATUS	RESTARTS	AGE
alertmanager-prometheus-kube-prometheus-alertmanager-0	2/2	Running	0	15d
prometheus-grafana-797b99954c-mfjp8	3/3	Running	2 (15d ago)	15d
prometheus-kube-prometheus-operator-57c889df6b-8crnp	1/1	Running	0	15d
prometheus-kube-state-metrics-6c7dddf848-rzx96	1/1	Running	0	15d
prometheus-prometheus-kube-prometheus-prometheus-0	2/2	Running	0	8d
prometheus-prometheus-node-exporter-2hsdf	1/1	Running	0	15d
prometheus-prometheus-node-exporter-bjrtf	1/1	Running	0	15d
prometheus-prometheus-node-exporter-s9mkg	1/1	Running	0	15d
prometheus-prometheus-node-exporter-sws42	1/1	Running	0	15d

---

## Step 3: Expose Services via NodePort

### A. Expose Prometheus on Port 30005:

```
# kubectl patch svc prometheus-operated -n monitoring \
-p '{"spec": {"type": "NodePort", "ports": [{"port": 80, "targetPort": 9000,
"nodePort": 30005}]}}'
```

Note: The Prometheus service name may vary. Use `kubectl get svc -n monitoring` to confirm the name (prometheus-operated or similar).

### B. Expose Grafana on Port 30006:

```
# kubectl patch svc prometheus-grafana -n monitoring \
-p '{"spec": {"type": "NodePort", "ports": [{"port": 80, "targetPort": 3000,
"nodePort": 30006}]}}'
```

---

## Step 4: Get Grafana Admin Credentials

### Default Login:

- Username: admin
- Password: prom-operator

### To retrieve credentials via kubectl:

```
# kubectl get secret -n monitoring prometheus-grafana \
-o jsonpath="{.data.admin-user}" | base64 --decode && echo

# kubectl get secret -n monitoring prometheus-grafana \
-o jsonpath="{.data.admin-password}" | base64 --decode && echo
```

---

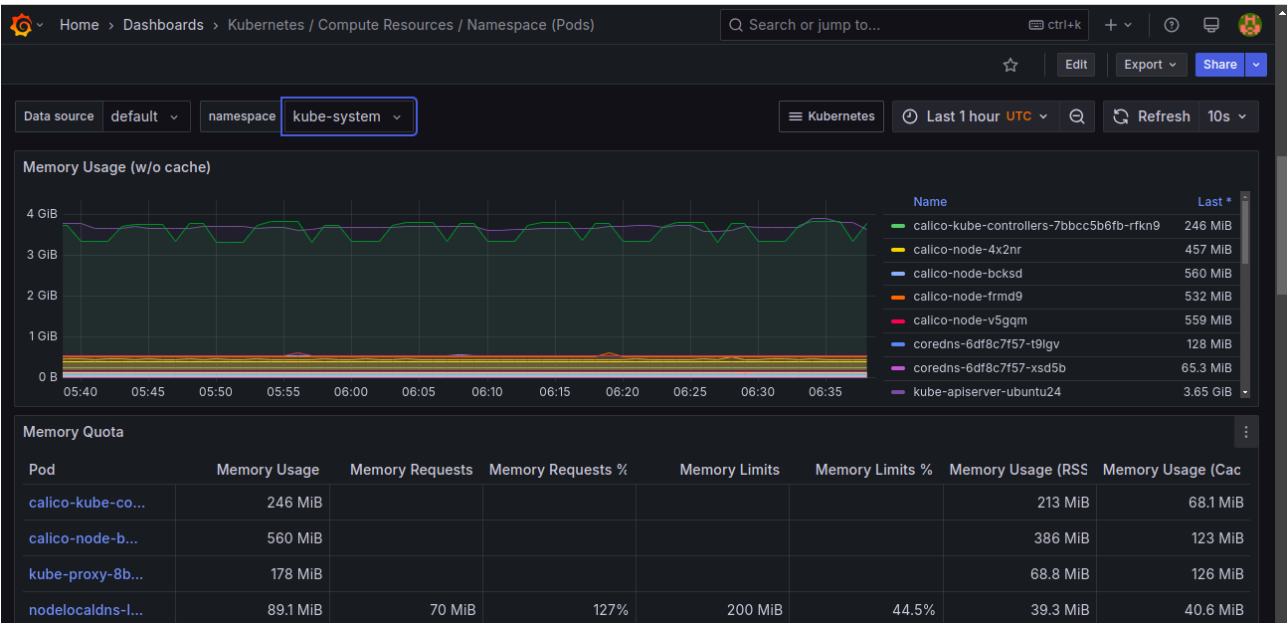
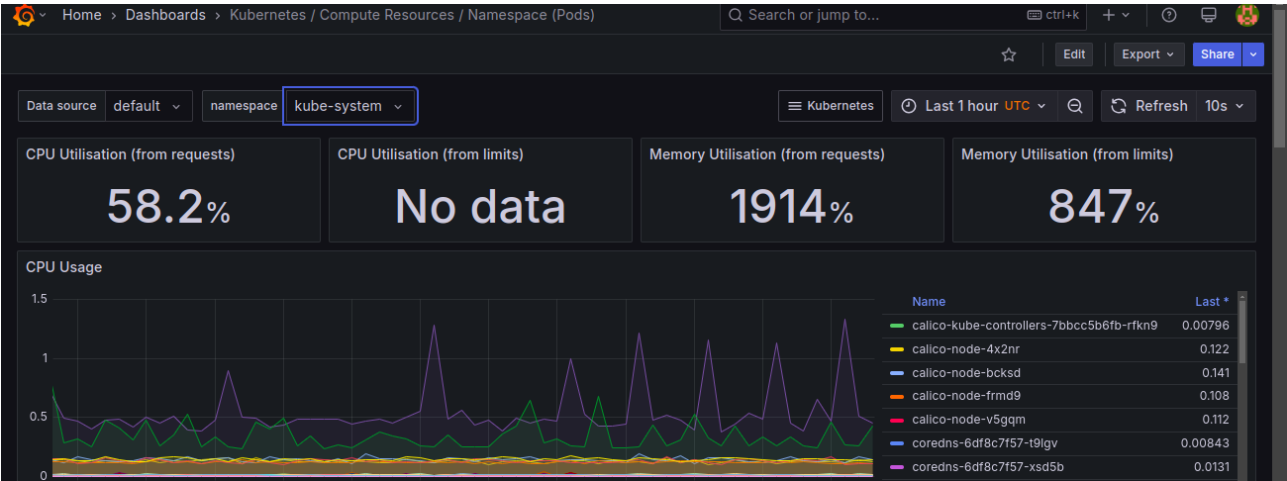
## Step 5: Access Dashboards

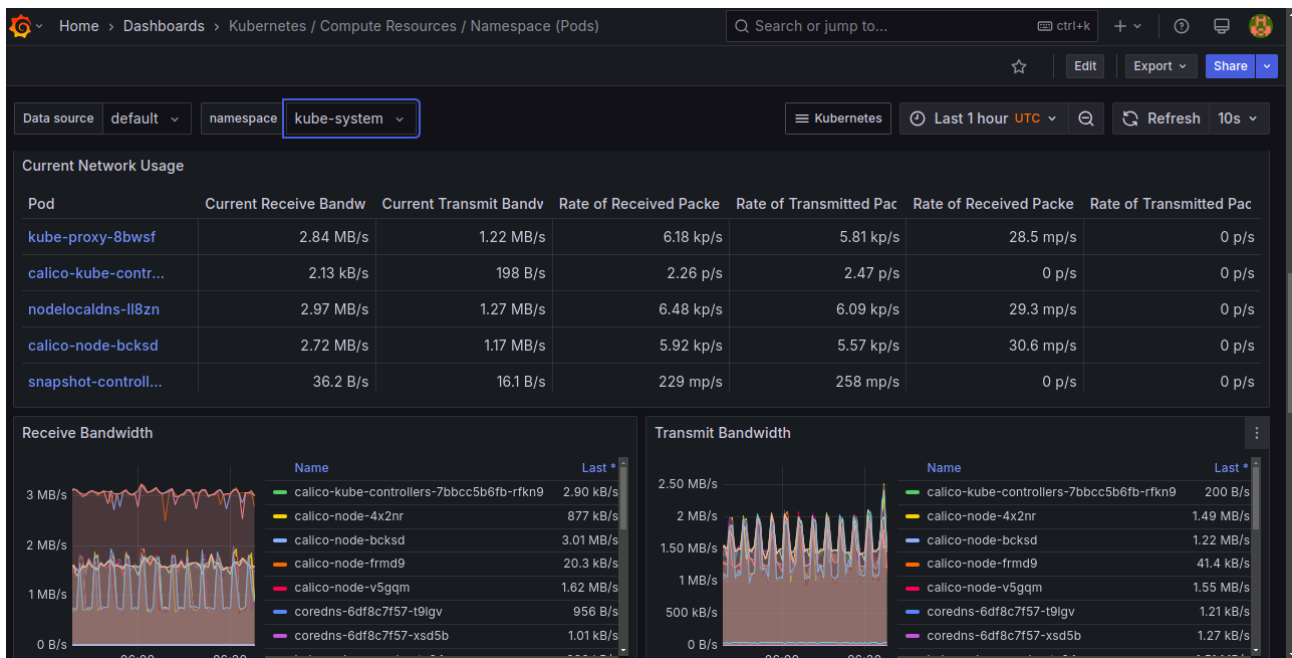
Assuming your Node IP is 192.168.111.245:

- Grafana UI: <http://192.168.111.245:30005>
- Prometheus UI: <http://192.168.111.245:30006>

Log in to Grafana using the credentials from Step 4.

Here is my Dashboard of kube-system namespace pods :





## Notes

- All resources are deployed in the `monitoring` namespace.
- Ensure NodePorts `30005` and `30006` are open in your firewall or security group.
- It's recommended to change the default Grafana password after the first login.
- For secure access in production, consider using an Ingress controller with TLS.