Prometheus Monitoring Solution for Kubernetes

This guide provides step-by-step instructions for deploying Prometheus to monitor a Kubernetes cluster and its applications.

Prerequisites

- Kubernetes Cluster: A running Kubernetes cluster.
- Helm Installed: Install Helm if not already available.
- kubectl Installed: Ensure kubectl is configured to access the cluster.

Steps :

Step 1: Add Prometheus Helm Chart Repository

```
helm repo add prometheus-community https://prometheus-community.github.io/helm-charts
helm repo update
# This command adds the official Prometheus community repository and updates the Helm repository cache.
```

Step 2: Install Prometheus

Install Prometheus using the Helm chart:

```
helm install prometheus prometheus-community/prometheus
```

This installs Prometheus in the default namespace. To install it in a specific namespace, use:

```
helm install prometheus prometheus-community/prometheus -n <namespace> --create-namespace
```

Step 3: Verify the Installation

```
helm list -n default
```

Step 4: Verify Prometheus pods are running:

```
kubectl get pods -n default
```

Step 5: Access Prometheus UI

Forward the Prometheus server port to your local machine: (windows)

```
$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
```

Access the Prometheus web interface in your browser:

http://localhost:9090