Lesson11 - Deploying Prometheus Monitoring

In previous lessons we deployed .NET core web application docker image and MSSQL docker image to Kuberneties cluster from scratch using secrets, persistent volume and ingress-nginx.

In this lesson we will learn how to deploy Prometheus monitoring tool to Kuberneties cluster. For this deployment the PC must have at least 8GB RAM.

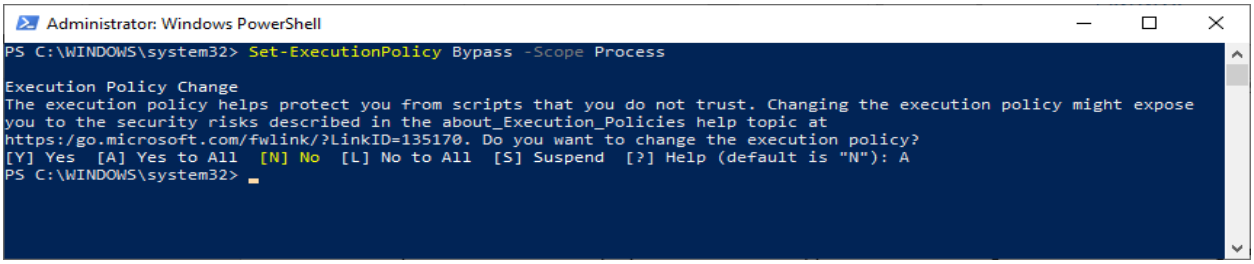
Install Chocolaty

Open PowerShell with administrator and run the commands below:

Get-ExecutionPolicy

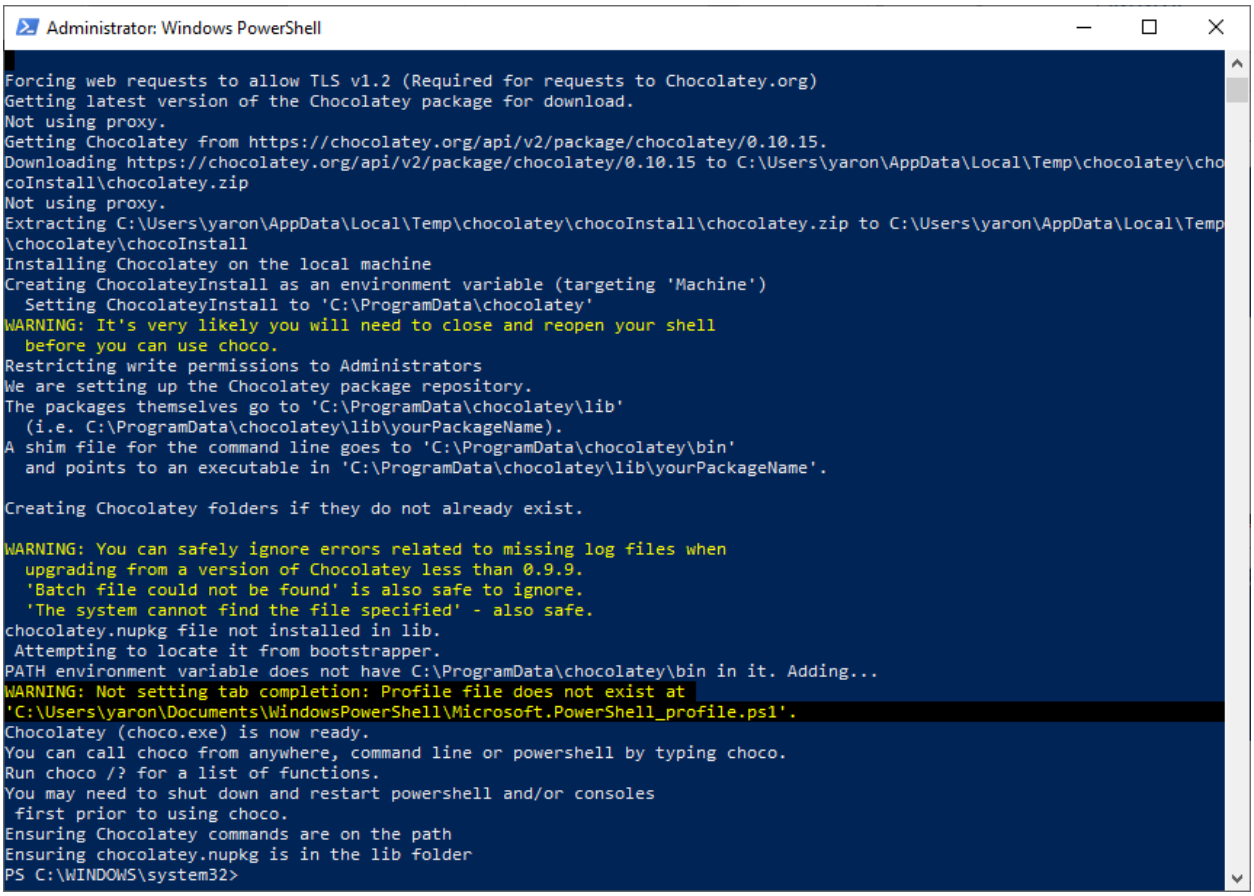
In case the command above return Restricted run the commands below to allow running scripts.

Set-ExecutionPolicy AllSigned and **Set-ExecutionPolicy Bypass -Scope Process**

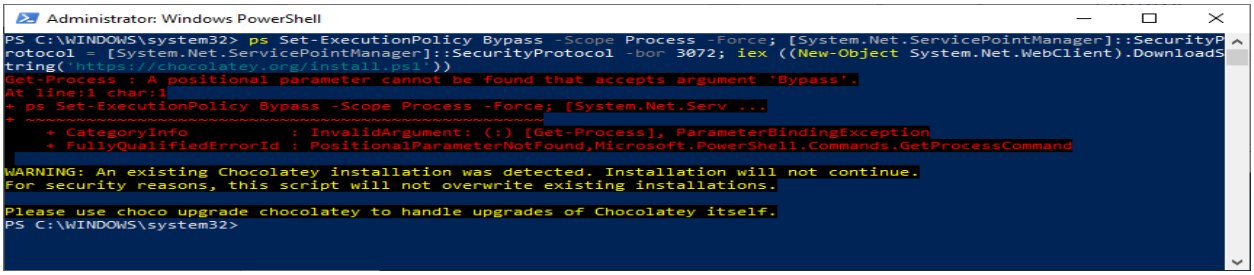


Run the command below to install Chocolaty:

ps Set-ExecutionPolicy Bypass -Scope Process -Force;
[System.Net.ServicePointManager]::SecurityProtocol =
[System.Net.ServicePointManager]::SecurityProtocol -bor 3072; iex ((New-Object System.Net.WebClient).DownloadString('https://chocolatey.org/install.ps1'))

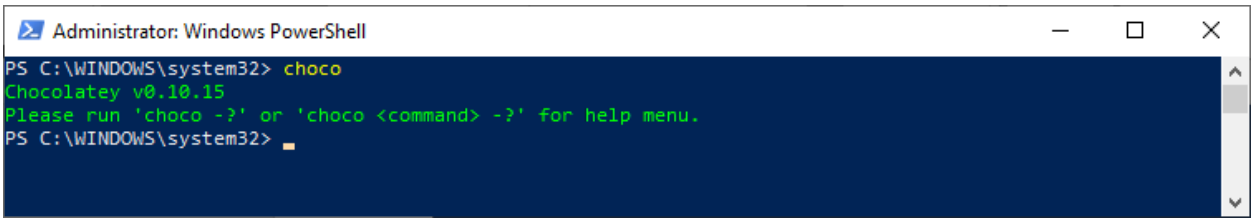


in case you get the error below run the command: **Remove-Item C:\ProgramData\chocolatey –Recurse** and run the command that install Chocolaty again.



Check that Chocolaty is installed:

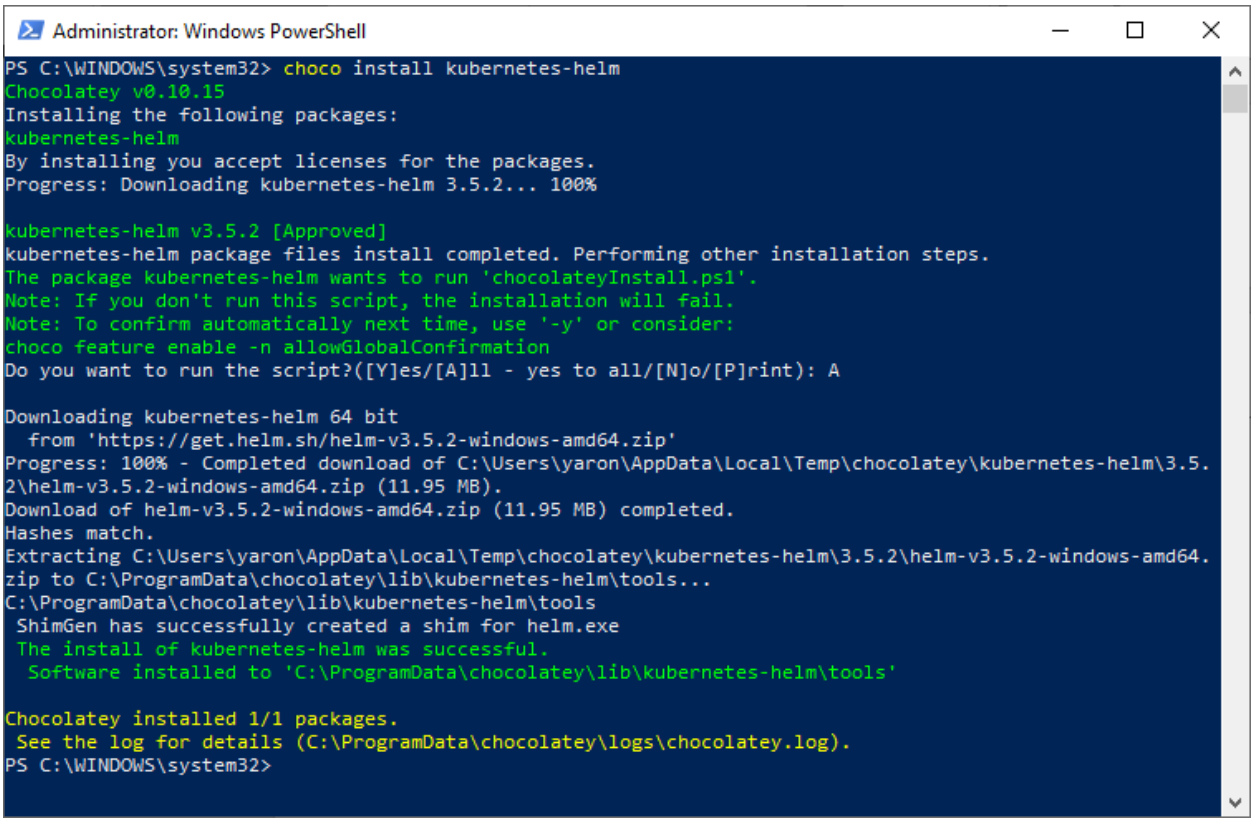
Choco



Install Kuberneties helm

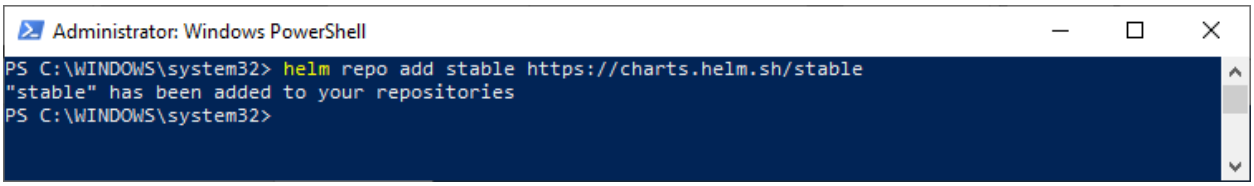
Run the command below to install Kuberneties helm:

choco install kubernetes-helm



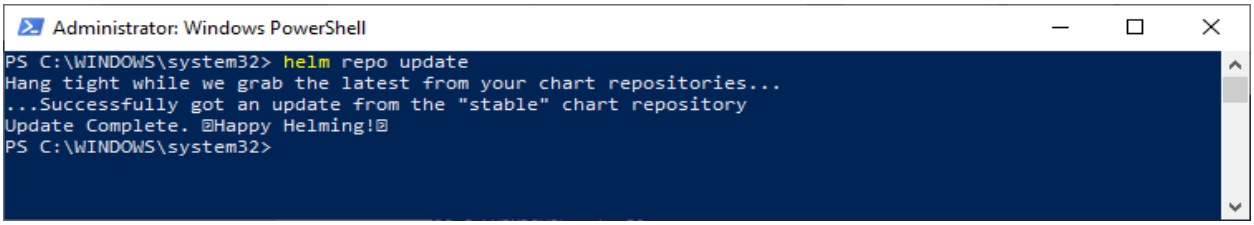
Add stable repository to helm (helm search repo stable):

helm repo add stable https://charts.helm.sh/stable



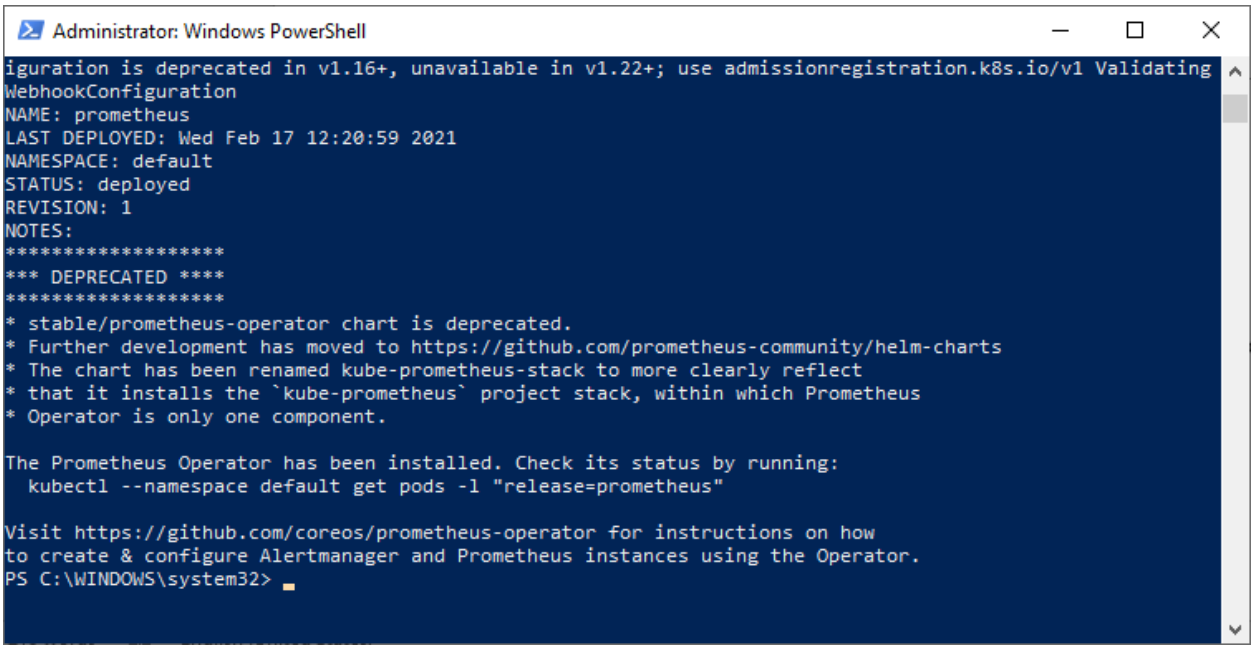
Update repository:

helm repo update



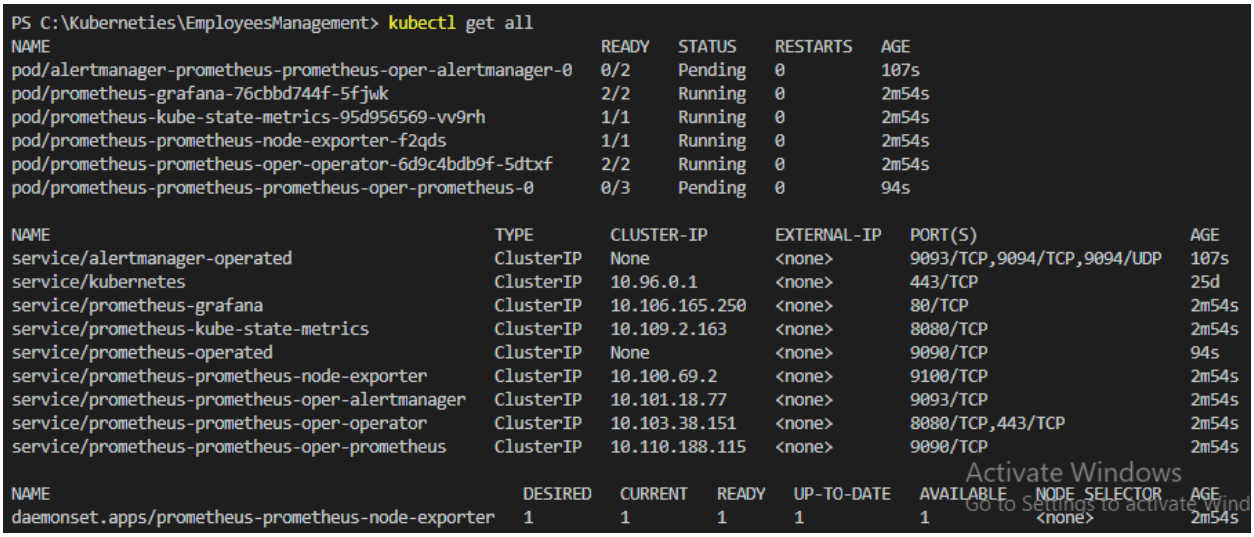
Run the command below to install prometheus-operator:

helm install prometheus stable/prometheus-operator

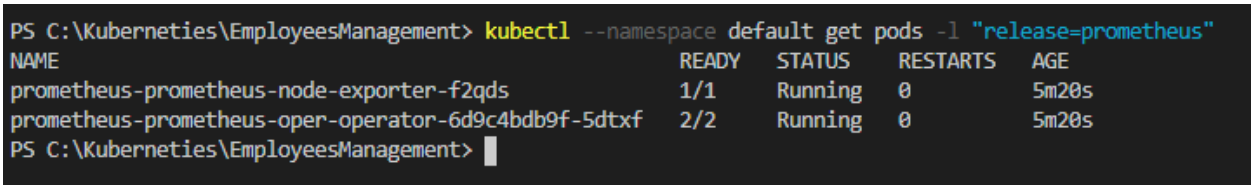


Open VS code and run in the terminal:

kubectl get all



kubectl --namespace default get pods -l "release=prometheus"



kubectl get pods

```
PS C:\Kuberneties\EmployeesManagement> kubectl get pods
NAME                                                READY   STATUS    RESTARTS   AGE
alertmanager-prometheus-prometheus-oper-alertmanager-0   2/2     Running   0          2m34s
prometheus-grafana-76cbbd744f-vh6mc                 2/2     Running   0          3m23s
prometheus-kube-state-metrics-95d956569-s9gns       1/1     Running   0          3m23s
prometheus-prometheus-node-exporter-8f65f           1/1     Running   0          3m23s
prometheus-prometheus-oper-operator-6d9c4bdb9f-488ts     2/2     Running   0          3m23s
prometheus-prometheus-prometheus-oper-prometheus-0       3/3     Running   1          113s
PS C:\Kuberneties\EmployeesManagement>
```

In case of problem with pod that cannot running open PowerShell and run the command below:

helm repo update and

helm uninstall prometheus stable/prometheus-operator

helm install prometheus stable/prometheus-operator

kubectl get pods (see that all pods are running)

kubectl get service prometheus-prometheus-oper-prometheus -o yaml

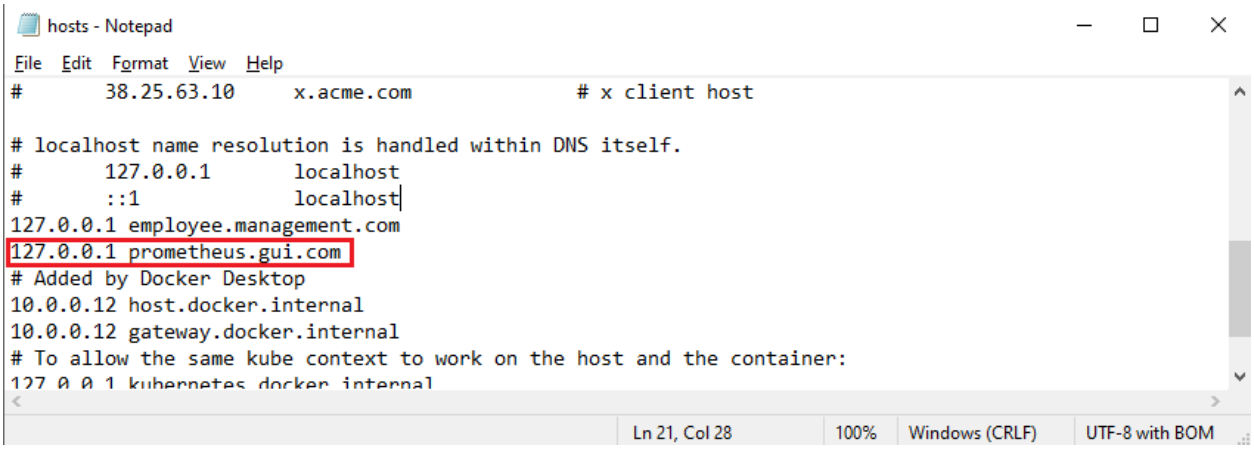
```
PS C:\Kuberneties\EmployeesManagement> kubectl get service prometheus-prometheus-oper-prometheus -o yaml
apiVersion: v1
kind: Service
metadata:
  annotations:
    meta.helm.sh/release-name: prometheus
    meta.helm.sh/release-namespace: default
  creationTimestamp: "2021-02-17T10:21:43Z"
  labels:
    app: prometheus-operator-prometheus
    app.kubernetes.io/managed-by: Helm
    chart: prometheus-operator-9.3.2
    heritage: Helm
    release: prometheus
    self-monitor: "true"
  managedFields:
```

Create ingress:

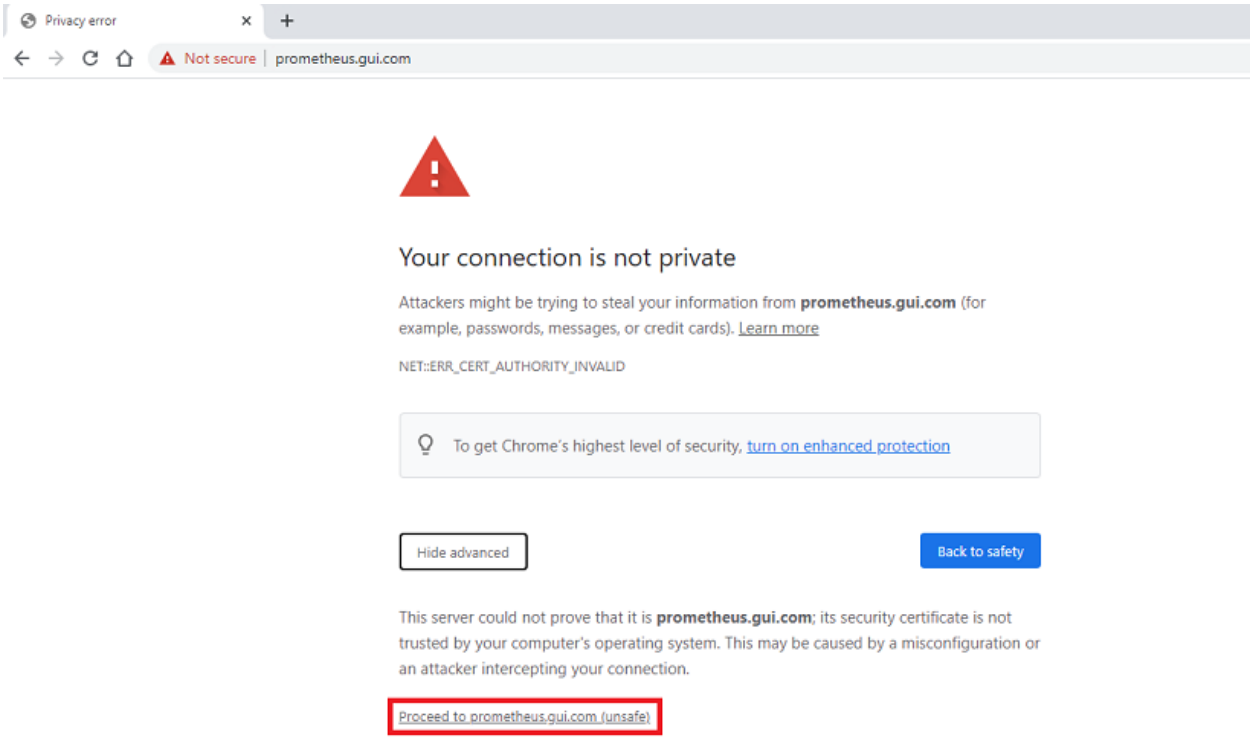
kubectl apply -f .\prometheus-ingress-controller.yml

```
PS C:\Kuberneties\EmployeesManagement\manifests> kubectl apply -f .\prometheus-ingress-controller.yml
Warning: networking.k8s.io/v1beta1 Ingress is deprecated in v1.19+, unavailable in v1.22+; use networking.k8s.io/v1 Ingress
ingress.networking.k8s.io/prometheus-ingress created
PS C:\Kuberneties\EmployeesManagement\manifests>
```

Add to C:\Windows\System32\drivers\etc\hosts: 127.0.0.1 prometheus.gui.com



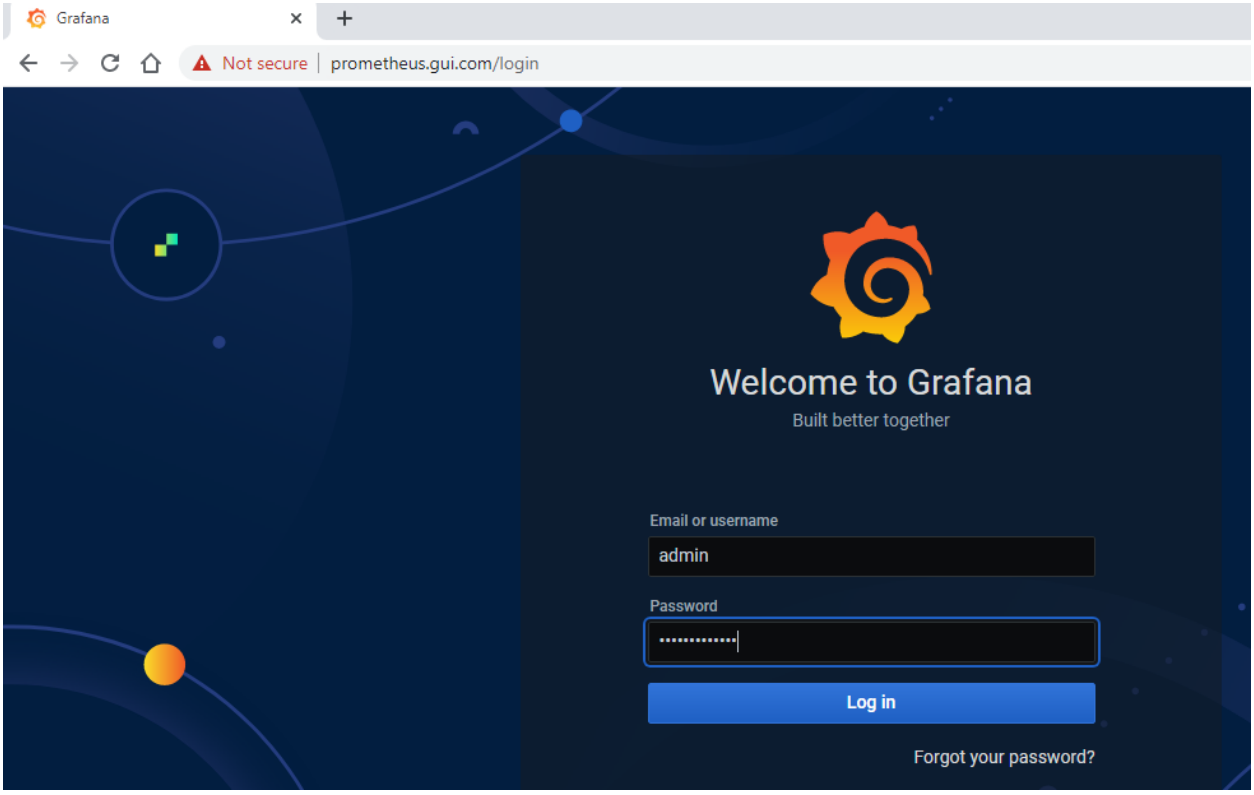
Open Chrome - https://prometheus.gui.com

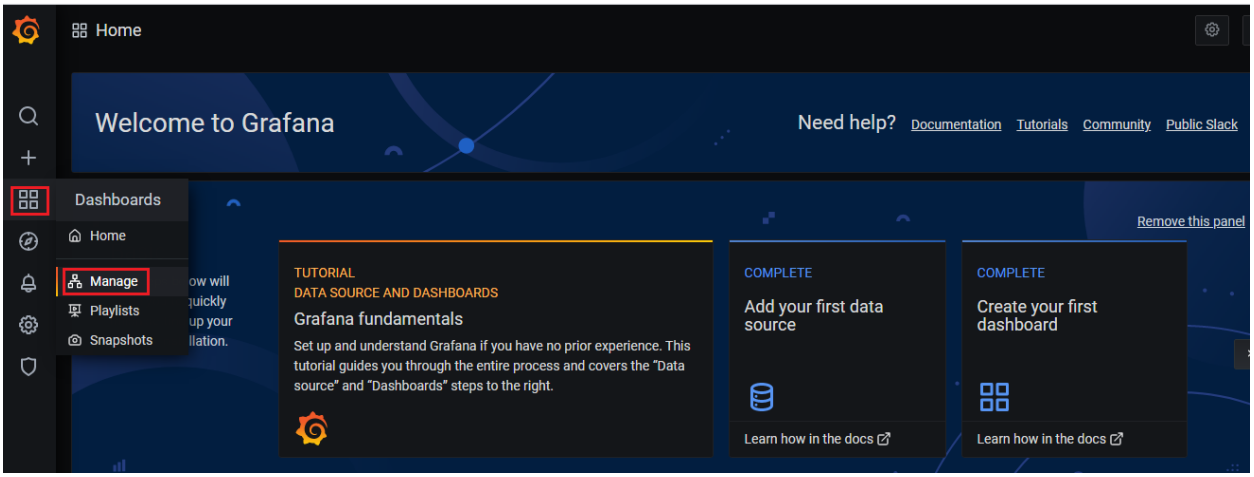


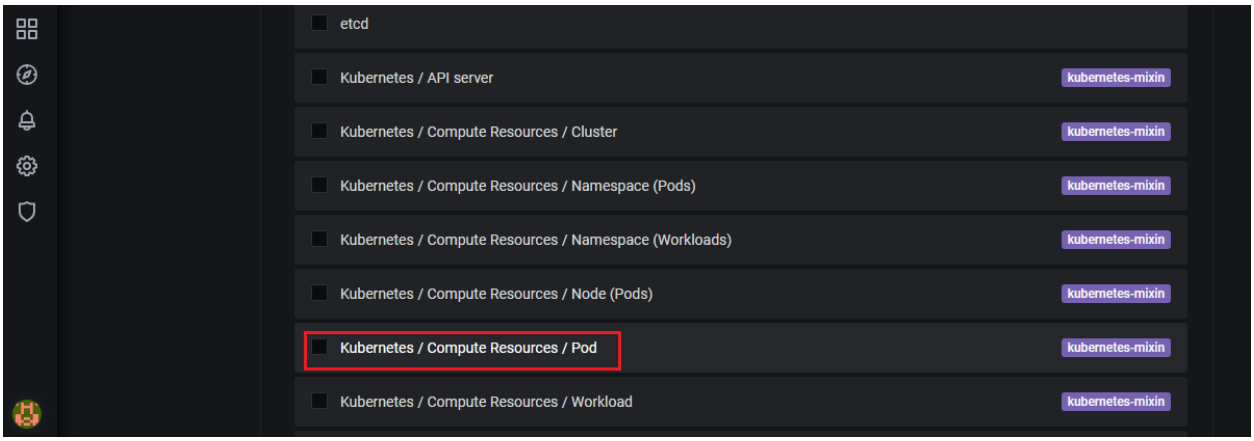
Login:

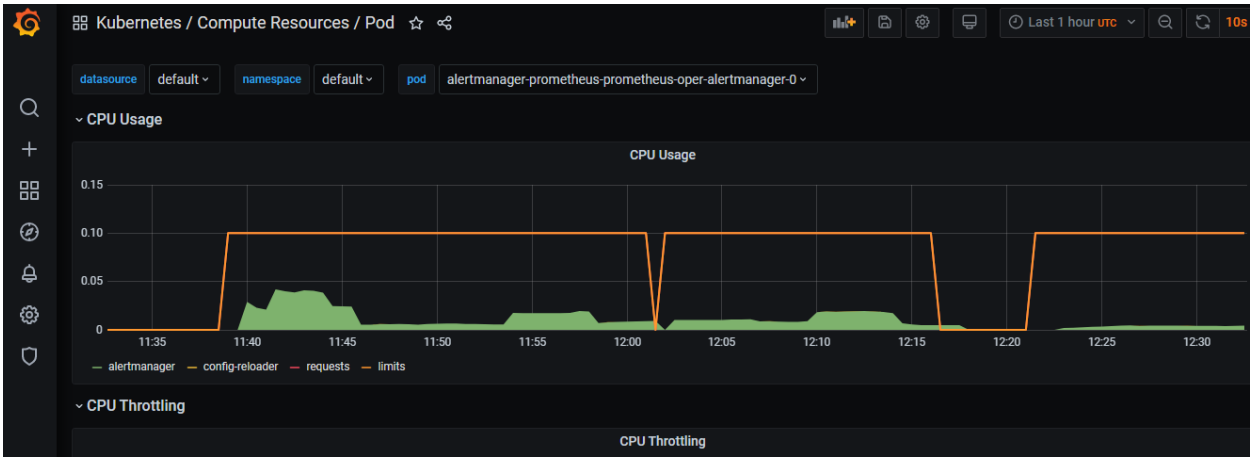
user: admin

password: prom-operator









Remove prometheus deployment:

helm uninstall prometheus stable/prometheus-operator

Done!