**Overview**

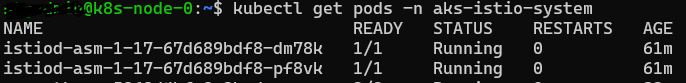
This document will guide you how to setup the Prometheus (to collect the metrics from the AKS cluster) and Grafana (to visualize the metrics from the Prometheus on a Dashboard).

**Prerequisites:**

* K8S (AKS, EKS) cluster is setup and application is deployed on it.
* Clone this source code from GitHub <https://github.com/sieunhantanbao/sd2411_azure_infrastructure>
  + git clone <https://github.com/sieunhantanbao/sd2411_azure_infrastructure.git>
  + cd sd2411\_azure\_infrastructure/

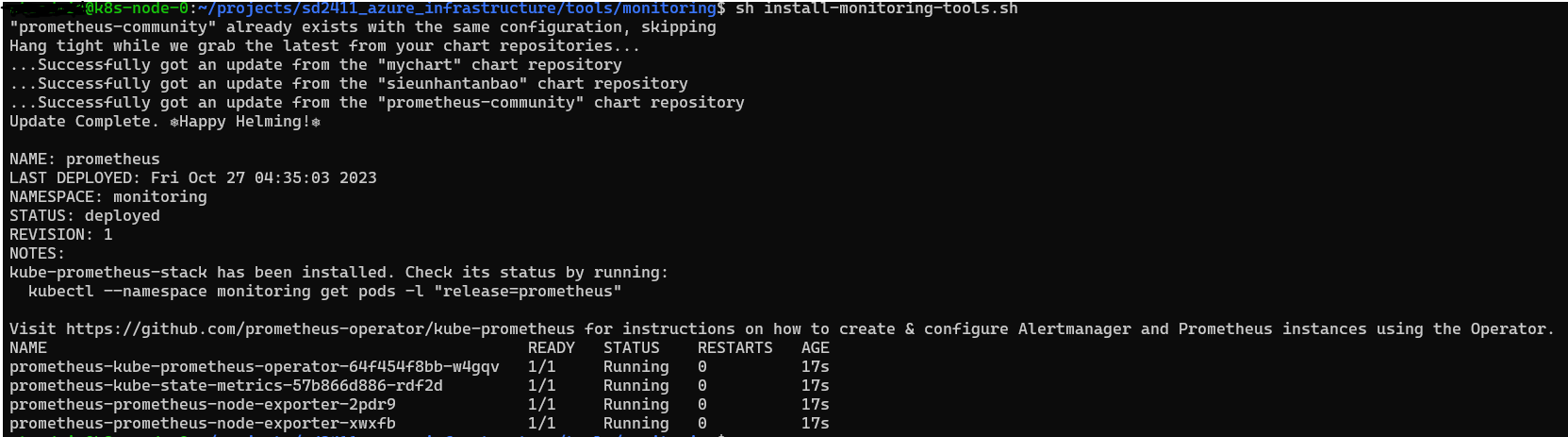
1. **Install Istio**

Refer to [this document](https://learn.microsoft.com/en-us/azure/aks/istio-deploy-addon) to enable the Istio for the AKS cluster.

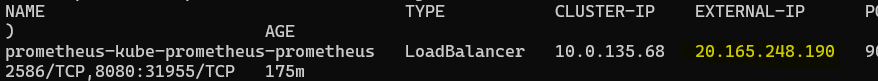
* Run this Azure CLI command to enable the Istio on the existing AKS cluster
  + az aks mesh enable --resource-group ${RESOURCE\_GROUP} --name ${CLUSTER}
* Confirm the Istio is installed successfully
  + kubectl get pods -n aks-istio-system 
* Enable sidecar injection for a namespace
  + kubectl label namespace qa istio.io/rev=asm-1-17

**Note:** We can refer to [this document](https://learn.microsoft.com/en-us/azure/aks/istio-deploy-ingress) to enable ingress gateway.

1. **Install Prometheus and Grafana to AKS cluster**

* Change directory to */tools/monitoring/*
* Run the below commands
  + Get AKS context: az aks get-credentials --resource-group *<your resource group>* --name *<your aks cluster name>*
  + Deploy Prometheus and Grafana: **sh install-monitoring-tools.sh**

1. **Setup Grafana Dashboard to use the metrics from Prometheus**

* Change the Service type of the Prometheus service to LoadBalancer to allow Grafana to access
  + kubectl edit svc/prometheus-kube-prometheus-prometheus -n monitoring
* Access to Prometheus through the external IP 

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* Configure Grafana to get data (metrics) from Prometheus
  + Use kubectl port forward to access the Grafana on local: **kubectl port-forward --namespace monitoring svc/prometheus-grafana 8080:80**
* Login to Grafana at: <http://localhost:8080/> (username/password: **admin/prom-operator**)

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* Create your first data source (Prometheus) A screenshot of a computer

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* Import new Dashboard A screenshot of a computer

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* Input **1860** to the “Import via grafana.com” (more detail can be found here <https://grafana.com/grafana/dashboards/>) and click “Load”

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* View the Imported Dashboard A screenshot of a computer

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