1. **Init Kubernetes cluster**

* On master node:

./master.sh

* On worker nodes:

./worker.sh

1. **Add on requirements for cluster**

List of requirements:

**On master node run:**

* ***Nginx ingress controller 1***

*cd installation/ingress-controller-1/deployments*

*kubectl apply -f common/ns-and-sa.yaml*

*kubectl apply -f common/default-server-secret.yaml*

*kubectl apply -f common/nginx-config.yaml*

*kubectl apply -f common/ingress-class.yaml*

*kubectl apply -f rbac/rbac.yaml*

*kubectl apply -f deployment/nginx-ingress.yaml*

*kubectl create -f service/nodeport.yaml*

* ***Nginx ingress controller 2***

*cd installation/ingress-controller-2/deployments*

*kubectl apply -f common/ns-and-sa.yaml*

*kubectl apply -f common/default-server-secret.yaml*

*kubectl apply -f common/nginx-config.yaml*

*kubectl apply -f common/ingress-class.yaml*

*kubectl apply -f rbac/rbac.yaml*

*kubectl apply -f deployment/nginx-ingress.yaml*

*kubectl create -f service/nodeport.yaml*

* **Prometheus & Grafana**

*cd installation/* *prometheus*

kubectl apply -f prometheus/

kubectl apply -f node-exporter/

kubectl apply -f kube-state-metrics-configs/

kubectl apply -f grafana/

* **Locust\_exporter**: install on master (.24.13) and worker1 (.24.14)

*sudo docker run -d --net=host containersol/locust\_exporter*

* **Locust:**

**On master (.24.13)**

python3 -m venv $HOME/generator1

source $HOME/generator1/bin/activate

pip install -U pip

pip3 install locust

**On worker (.24.14)**

python3 -m venv $HOME/generator2

source $HOME/generator2/bin/activate

pip install -U pip

pip3 install locust

1. **Run application**

**On master node:**

**- run deployment A:**

*cd run-app/deploymentA/*

*kubectl apply -f deploymentA.yaml*

*kubectl apply -f svc-deploymentA.yaml*

*kubectl apply -f ingress-resource-1.yaml*

**- run deployment B:**

*cd run-app/deploymentB/*

*kubectl apply -f deploymentB.yaml*

*kubectl apply -f svc-deploymentB.yaml*

*kubectl apply -f ingress-resource-2.yaml*

**- apply HPA to deploymentB**

*cd run-app/deploymentB/*

*kubectl apply -f components.yaml*

*kubectl apply -f hpa.yaml*

**- apply ai-scaler to deploymentA ( any minute at second ":5-10")**

*cd scaler/*

*kubectl apply -f demo-scaler.yaml*

*Run load-generator (any minute at second ":9-11")*

**generator1 on master node (192.168.24.13):**

*source $HOME/generator1/bin/activate*

*locust -f longcustomshape.py*

*access URL: 192.168.24.13:8089*

*host: http://deploya.example.com:* *32205 --> start swarming (any minute at second ":9-11")*

**generator2 on worker node (192.168.24.14):**

*source $HOME/generator2/bin/activate*

*locust -f longcustomshape.py*

*access URL: 192.168.24.14:8089*

*host: http://deployb.example.com:* *32725 --> start swarming (any minute at second ":9-11")*

1. **How to run scaler**

sudo apt install python3-dev python3-venv libffi-dev gcc libssl-dev git

python3 -m venv $HOME/demo-daivd

source $HOME/demo-daivd/bin/activate

pip install -U pip

pip install -r requirements.txt

python3 main.py