HLF 1.4 on AKS

2019년 8월 30일 금요일 오후 1:12

1. Install Python 3.7
   $sudo apt-get update sudo apt-get install -y build-essential libpq-dev libssl-dev openssl libffi-dev zlib1g-dev
   $sudo apt-get install -y python3.7
   $sudo apt-get install -y python3-pip python3-dev python3-venv
   $python3.7 -m pip install --upgrade pip

2. Make sure Python version is 3.7

3. Clone Nephos library from github
   $git clone https://github.com/Dongbumlee/nephos.git
   $cd nephos
   $python3 -m venv ./venv

4. Install requirements
   $cd nephos
   $sudo pip install -r requirements.txt

5. Install additional requirements by manually
   $sudo pip install PyYAML --ignore-installed
   $sudo pip install pyasn1-modules --ignore-installed

6. Install Hyperledger Fabric utility binaries (HLF version 1.4.3)
   $cd nephos
   $curl -o ./bootstrap.sh https://raw.githubusercontent.com/hyperledger/fabric/master/scripts/bootstrap.sh
   $sudo ./bootstrap.sh -d # -d : don't download docker files on my machine

7. Set PATH for Hpyerledger Fabric utility binaries (\nephos\fabric-samples\bin)
   $sudo nano ~/.bashrc

   Add PATH info like below and save
   export PATH=/(your nephos downloaded folder path)/nephos/fabric-samples/bin:$PATH

   Refresh Path
   $source ~/.bashrc

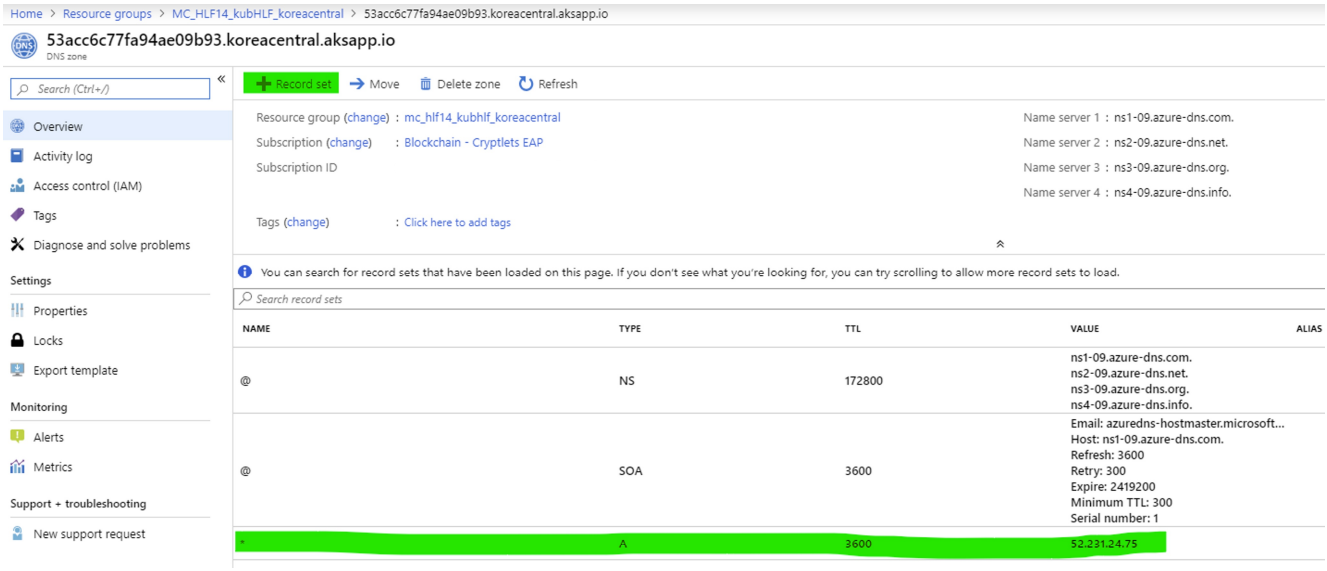
   Check whether Path is working
   $cryptogen
   ```
   usage: cryptogen [] [ ...]

   Utility for generating Hyperledger Fabric key material

   Flags:
   --help Show context-sensitive help (also try --help-long and --help-man).

   Commands:
   help [...]
   Show help.

   generate []
   Generate key material

   showtemplate
   Show the default configuration template

   version
   Show version information

   extend []
   Extend existing network
   ```

8. Create and set up AKS cluster on Azure
   a. Create Resource group on your subscription
   b. Create AKS in your resource group
   c. Get Credential from K8S cluster
      i. Install kubectl (https://kubernetes.io/docs/tasks/tools/install-kubectl/)
      ii. Get K8s Credential(https://docs.microsoft.com/en-us/cli/azure/aks?view=azure-cli-latest#az-aks-get-credentials)
         1) az aks get-credentials --name (your aks cluster name) --resource-group (your resource group aks cluster deployed)
      iii. Install Helm (https://github.com/MicrosoftDocs/azure-docs/blob/master/articles/aks/kubernetes-helm.md)
   d. Install Ingress Controller on K8S cluster
      i. Using Helm, install nginx ingress
         $helm install stable/nginx-ingress

      ii. Check public IP for ingress controller
         $kubectl get svc -A

         ```
         default   [redacted]-nginx-ingress-controller           LoadBalancer   10.0.102.9    52.231.24.75   80:30892/TCP,443:32690/TCP
         default   [redacted]-nginx-ingress-default-backend      ClusterIP      10.0.92.45    <none>         80/TCP
         ```

      iii. Add a A record to your DNS zone, point to the nginx public ip
         1) Go resource group for K8S cluster (MC_(resource group name)_(cluster name)_(region name)
         2) Select DNS zone
         3) Create A record for ingress-controller's public IP



e. Install Certificate Manager on K8S cluster(https://hub.helm.sh/charts/jetstack/cert-manager)
$ kubectl apply -f https://raw.githubusercontent.com/jetstack/cert-manager/release-0.10/deploy/manifests/00-crds.yaml
$ kubectl label namespace cert-manager certmanager.k8s.io/disable-validation="true"
$ helm repo add jetstack https://charts.jetstack.io
$ helm install --name cm --namespace cm jetstack/cert-manager

f. Update clusterissuer information and create
   i. Update email information in /nephos/examples/certManagerCI_production.yaml
   spec:acme:email: your email address
   ii. $kubectl create -f ./examples/certManagerCI_production.yaml

9. Update configuration files in nephos
   i. Update K8S cluster name in examples/prod/nephos_config.yaml
   core:
   Cluster: (your K8S name)
   ii. Update ca ingress host information
   Ingress:
   hosts:
   #ca.(your DNS zone name)
   - ca.(53acc6c77fa94ae09b93.koreacentral.aksapp.io)
   tls:
   hosts:
   #ca.(your DNS zone name)
   - ca.(53acc6c77fa94ae09b93.koreacentral.aksapp.io)

10. Launch installation
$ PYTHONPATH=. ./nephos/deploy.py --verbose -f ./examples/prod/nephos_config.yaml fabric 2>&1 | tee "hl_fabric_install_prod_$(date +"Y-%m-%d_%I-%M-%p").log"

- For fresh re-installation :
$rm -rf examples/prod/crypto/
$rm -f examples/prod/config/fabric-ca-client-config.yaml
$helm del --purge ca-pg
$helm del --purge ca
$helm del --purge cdb-peer1
$helm del --purge cdb-peer2
$helm del --purge kafka-hlf
$helm del --purge ord1
$helm del --purge ord2
$helm del --purge peer1
$helm del --purge peer2
$kubectl delete namespace cas
$kubectl delete namespace orderers
$kubectl delete namespace peers
$helm list