Learn Azure Kubernetes Service

By

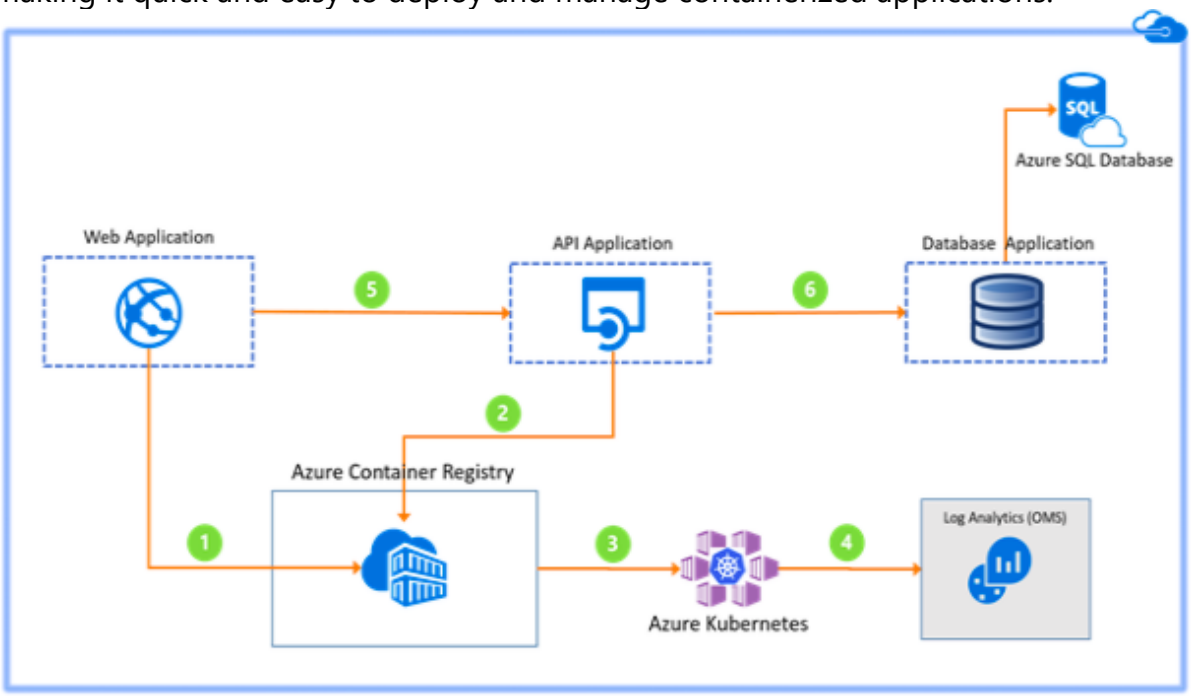
Stanley Stephen

Linkedin: https://www.linkedin.com/in/contactstanley/
Github: https://github.com/stanleymca/Learn_from_Stanley
Email: s.stanley.mca@gmail.com

Azure Kubernetes Service (AKS)

AKS is a highly available, secure, and fully managed Kubernetes service.

Azure Kubernetes Service (AKS) manages your hosted Kubernetes environment, making it quick and easy to deploy and manage containerized applications.



Create AKS cluster using Azure Portal

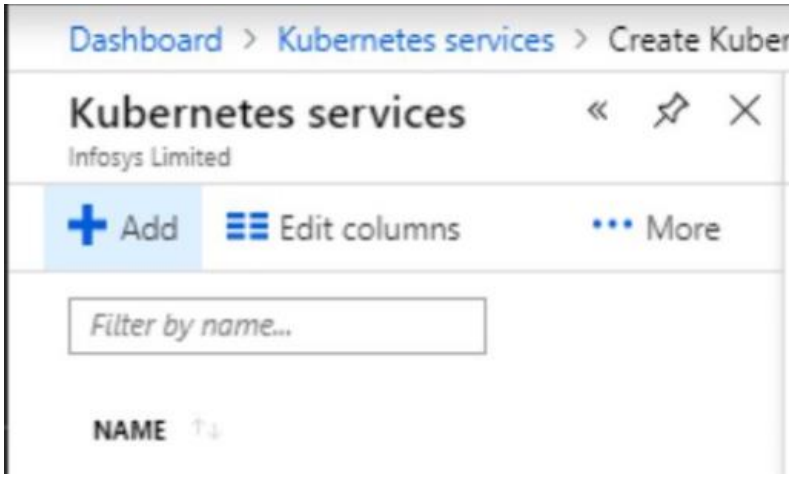
Sign in to the Azure portal at [https://portal.azure.com.](https://portal.azure.com)

If you don't have an account, sign up for free tier. You will get $ 200 credit with 1-month validity.

Step 1: In the top search bar, search with AKS and click on "Kubernetes Service" and click on "Add"

Stanley Stephen, M.C.A.,

Linkedin: https://www.linkedin.com/in/contactstanley/
Github: https://github.com/stanleymca/Learn_from_Stanley/AKS_by_Stanley.pdf
Email: s.stanley.mca@gmail.com



Step 2: To create an AKS cluster, complete the following steps:

1. Basics: Configure the following options:

   PROJECT DETAILS

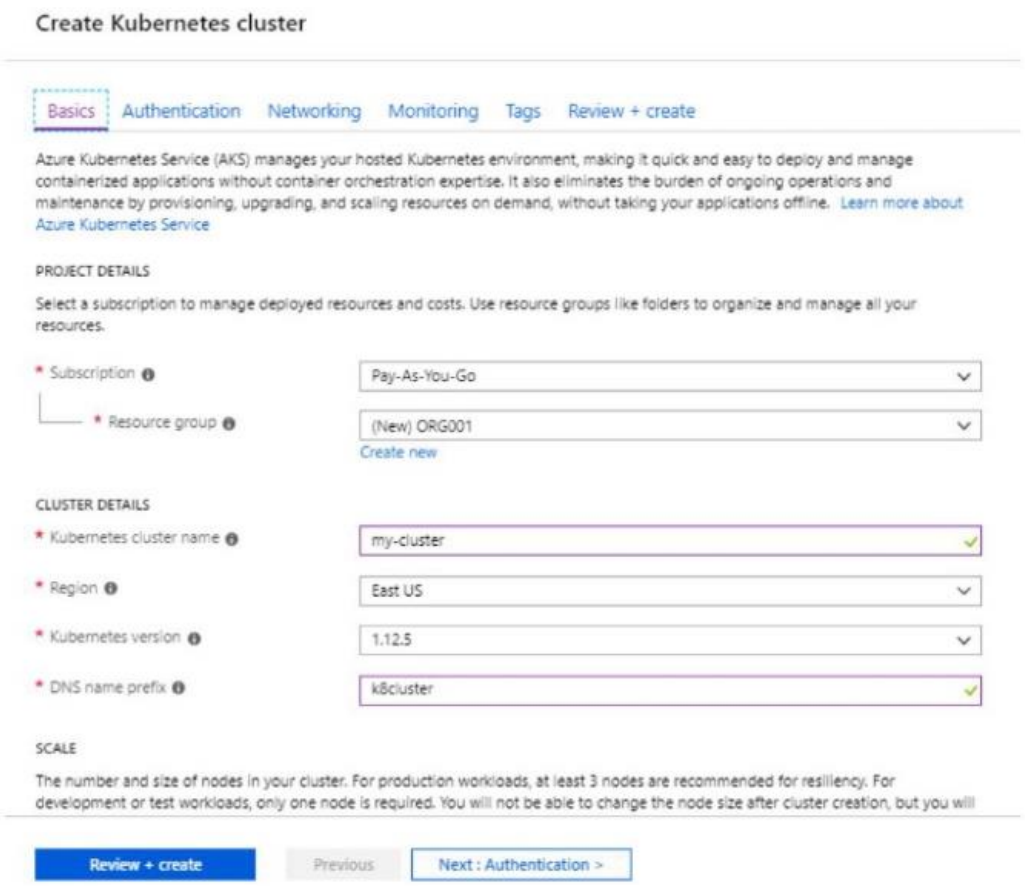
   CLUSTER DETAILS

   SCALE

2. Authentication: Configure the following options:

1. Create a new service principal or Configure to use an existing one.
2. Enable the option for Kubernetes role-based access controls (RBAC). These
3. Controls provide more fine-grained control over access to the Kubernetes resources deployed in your AKS cluster.

Linkedin: https://www.linkedin.com/in/contactstanley/
Github: https://github.com/stanleymca/Learn_from_Stanley/AKS_by_Stanley.pdf
Email: s.stanley.mca@gmail.com

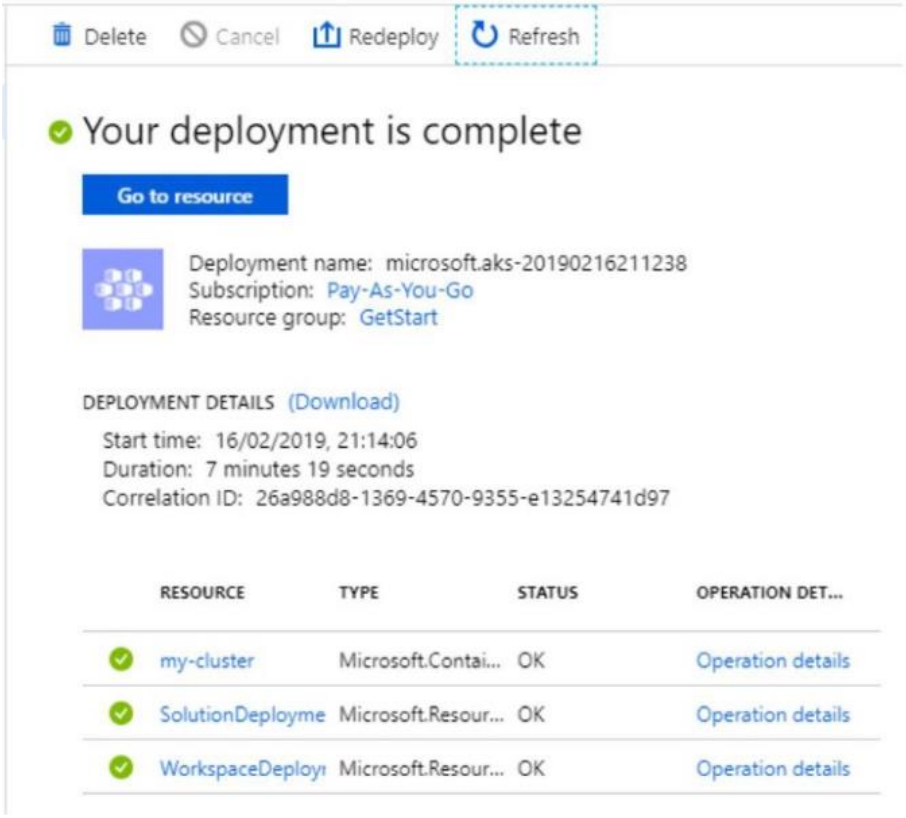


Step 3: Select Review + create and then Create when validated successfully.

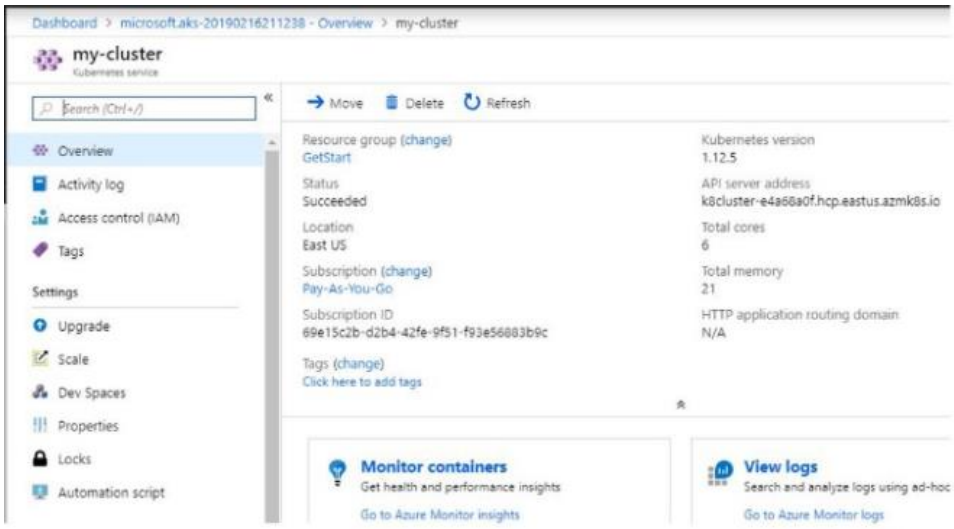
It will take some to provision AKS cluster for you. Once deployment completed, click on “Go to resources”.

Stanley Stephen, M.C.A.,

Linkedin: https://www.linkedin.com/in/contactstanley/
Github: https://github.com/stanleymca/Learn_from_Stanley/AKS_by_Stanley.pdf
Email: s.stanley.mca@gmail.com



It will take you to the AKS clusters page.

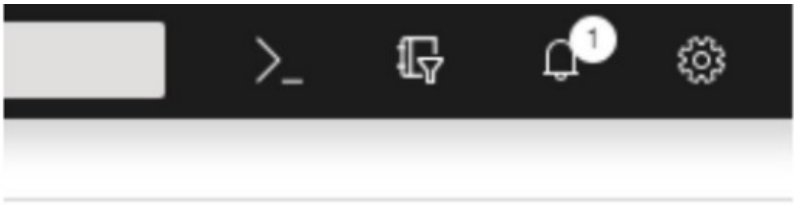


Step 4: Connect to the cluster

Cloud shell is pre-loaded with kubectl. Open cloud shell using the button on the top right-hand corner of the Azure portal.

 Stanley Stephen, M.C.A.,

Linkedin: https://www.linkedin.com/in/contactstanley/
Github: https://github.com/stanleymca/Learn_from_Stanley/AKS_by_Stanley.pdf
Email: s.stanley.mca@gmail.com



notification

To assemble kubectl to attach to your Kubernetes cluster, use the az aks get-credentials command.

```
$ az aks get-credentials — resource-group GetStart — name my-cluster
```

To verify the association to your cluster, use the kubectl get command to come to an inventory of the cluster nodes.

```
$ kubectl get nodes
NAME STATUS ROLES AGE VERSION
aks-agentpool-74406193–0 Ready agent 4m52s v1.12.5
aks-agentpool-74406193–1 Ready agent 5m9s v1.12.5
aks-agentpool-74406193–2 Ready agent 5m3s v1.12.5
```

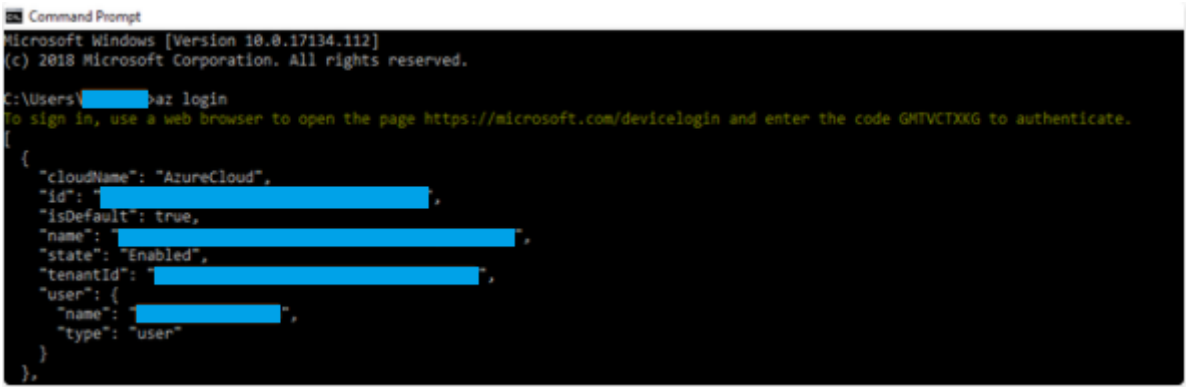
Now your cluster is ready to deploy your application.

Creating the AKS cluster using the Azure CLI

1. Open the **Command Prompt** with administrative mode.

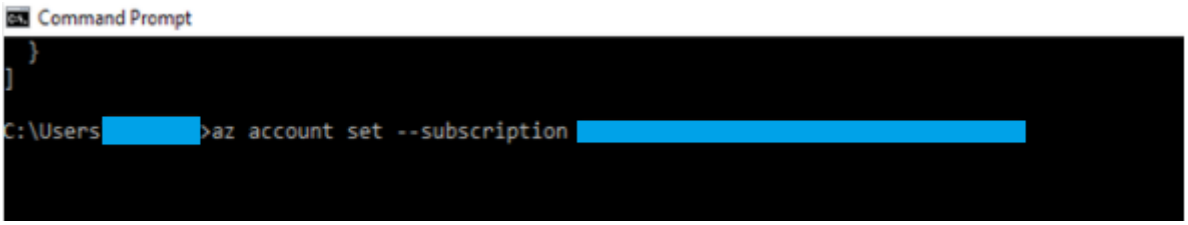
2. The first step for using the Azure CLI is logging in:

az login



Note: This login **method** is configured using the OAuth DeviceProfile flow.

3. If you have multiple subscriptions in Azure, you might need to use az account list and az account set –subscription <Your Azure Subscription ID> to make sure you're working on the right one:



4. Create a resource group

1. You need a resource group to contain the AKS instance. (Technically it doesn't matter which location you deploy the resource group too, but I suggest going with one that is supported by AKS and sticking with it throughout the setup.)

2. Create a resource group with the az group create command. An Azure resource group is a logical group in which Azure resources are deployed and managed.

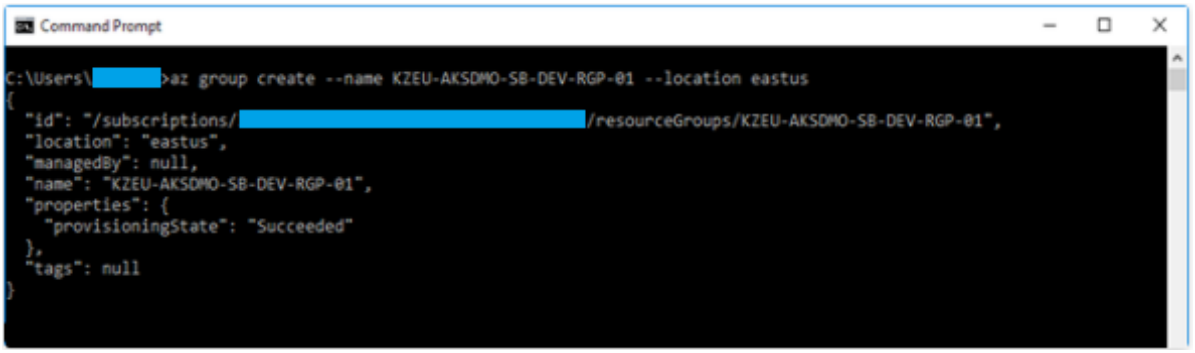
3. When creating a resource group you are asked to specify a location, this is where your resources will live in Azure.

Stanley Stephen, M.C.A.,

Linkedin: https://www.linkedin.com/in/contactstanley/
Github: https://github.com/stanleymca/Learn_from_Stanley/AKS_by_Stanley.pdf
Email: s.stanley.mca@gmail.com

4. The following command creates a resource group named **KZEU-AKSDMO-SB-DEV-RGP-01** in the **eastus** location.

```
az group create –name KZEU-AKSDMO-SB-DEV-RGP-01 –location eastus
```

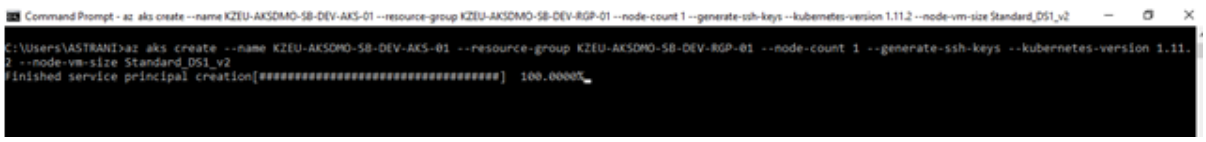


Create AKS cluster

1. Next you need to create the AKS cluster:

2. Use the az aks create command to create an AKS cluster. The following command creates a cluster named *DemoAKS01* with one node.

```
az aks create –name KZEU-AKSDMO-SB-DEV-AKS-01 –resource-group KZEU-AKSDMO-SB-DEV-RGP-01 –node-count 1 –generate-ssh-keys –kubernetes-version 1.11.2 –node-vm-size Standard_DS1_v2
```



After several minutes the command completes and returns JSON-formatted information about the cluster.

Important: Save the JSON output during a separate computer file, as a result of you would like the ssh keys later during this document.

Stanley Stephen, M.C.A.,

Linkedin: https://www.linkedin.com/in/contactstanley/
Github: https://github.com/stanleymca/Learn_from_Stanley/AKS_by_Stanley.pdf
Email: s.stanley.mca@gmail.com

Note: If you get the below error whereas running the on top of az aks create command, then you'll re-run an equivalent command once more

Note:

While creating AKS, internally a new resource group is created (like **MC_<Resource Group Name>_<AKS Name>_<Resource Group Location>**) which is consists of Virtual machine, Virtual network, DNS Zone, Availability set, Network interface, Network security group, Load balancer and Public IP address etc.…

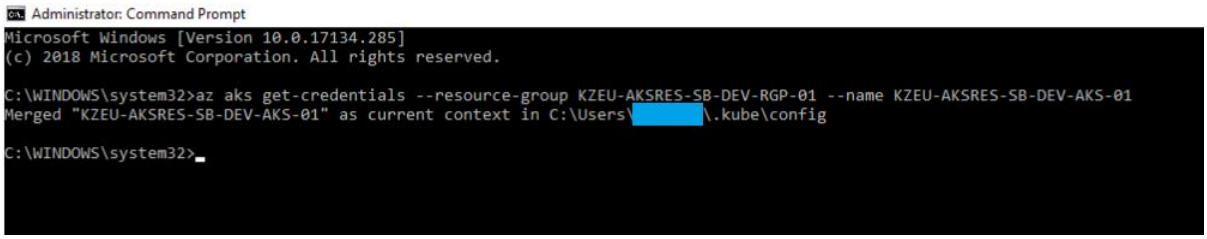
Connect to the cluster

1. To manage a Kubernetes cluster use kubectl, the Kubernetes command-line client.
2. If you want to install it locally, use the az aks install-cli command.

az aks install-cli

Connect kubectl to your Kubernetes cluster by using the az aks get-credentials command and configure accordingly. This step downloads credentials and configures the Kubernetes **user interface** to use them.

az aks get-credentials –resource-group KZEU-AKSDMO-SB-DEV-RGP-01 –name KZEU-AKSDMO-SB-DEV-AKS-01



Verify the connection to your cluster via the kubectl get command to return a list of the cluster nodes. Note that this can take a few minutes to appear.

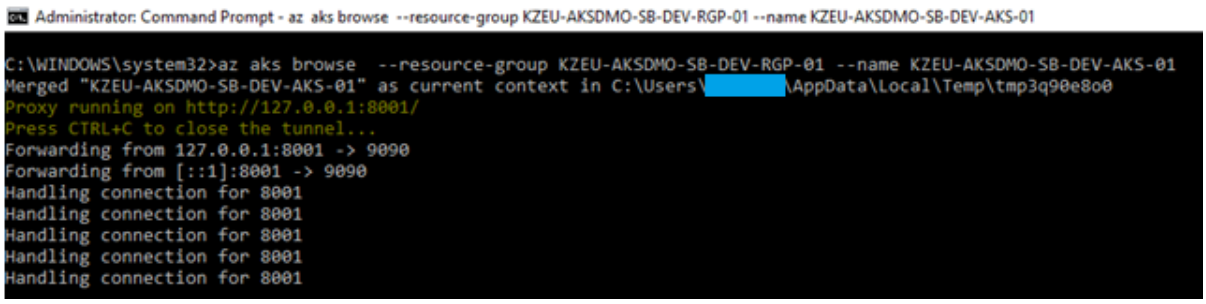
kubectl get nodes

Stanley Stephen, M.C.A.,

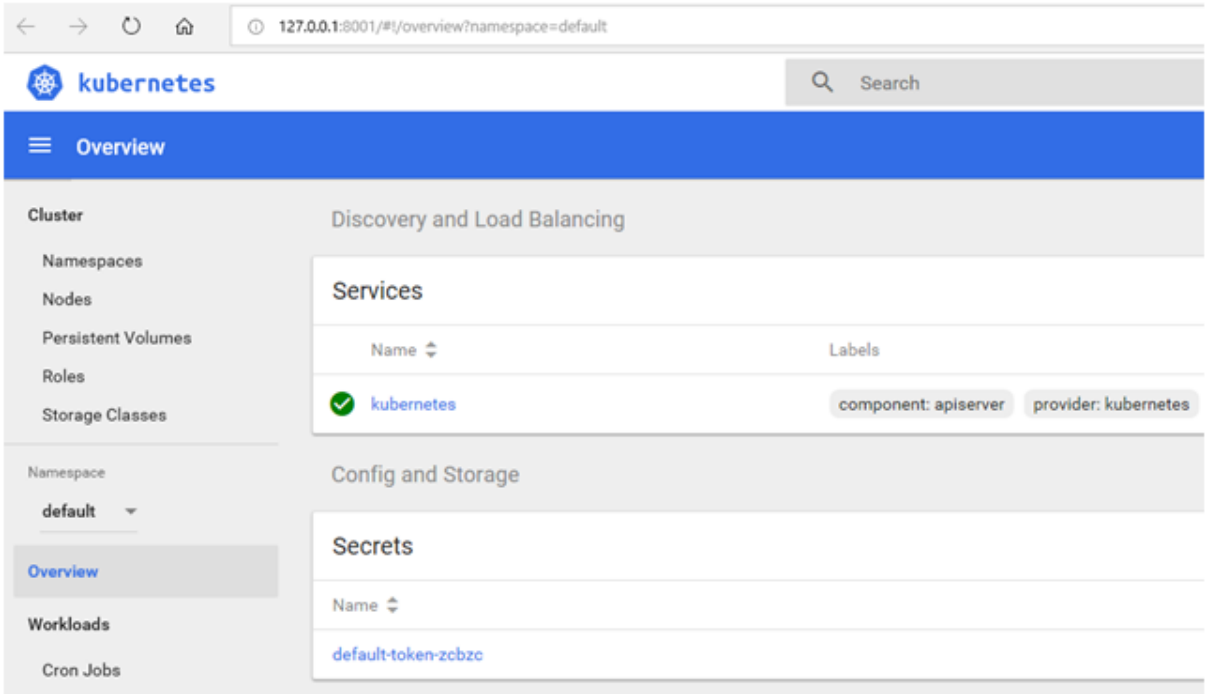
Linkedin: https://www.linkedin.com/in/contactstanley/
Github: https://github.com/stanleymca/Learn_from_Stanley/AKS_by_Stanley.pdf
Email: s.stanley.mca@gmail.com

You should also check that you are able to open the Kubernetes dashboard by running

az aks browse –resource-group KZEU-AKSDMO-SB-DEV-RGP-01 –name KZEU-AKSDMO-SB-DEV-AKS-01



This will launch a browser tab with a graphical representation:



 Stanley Stephen, M.C.A.,

Linkedin: https://www.linkedin.com/in/contactstanley/
Github: https://github.com/stanleymca/Learn_from_Stanley/AKS_by_Stanley.pdf
Email: s.stanley.mca@gmail.com