**Kubernetes Cluster Setup using Azure Container Service**

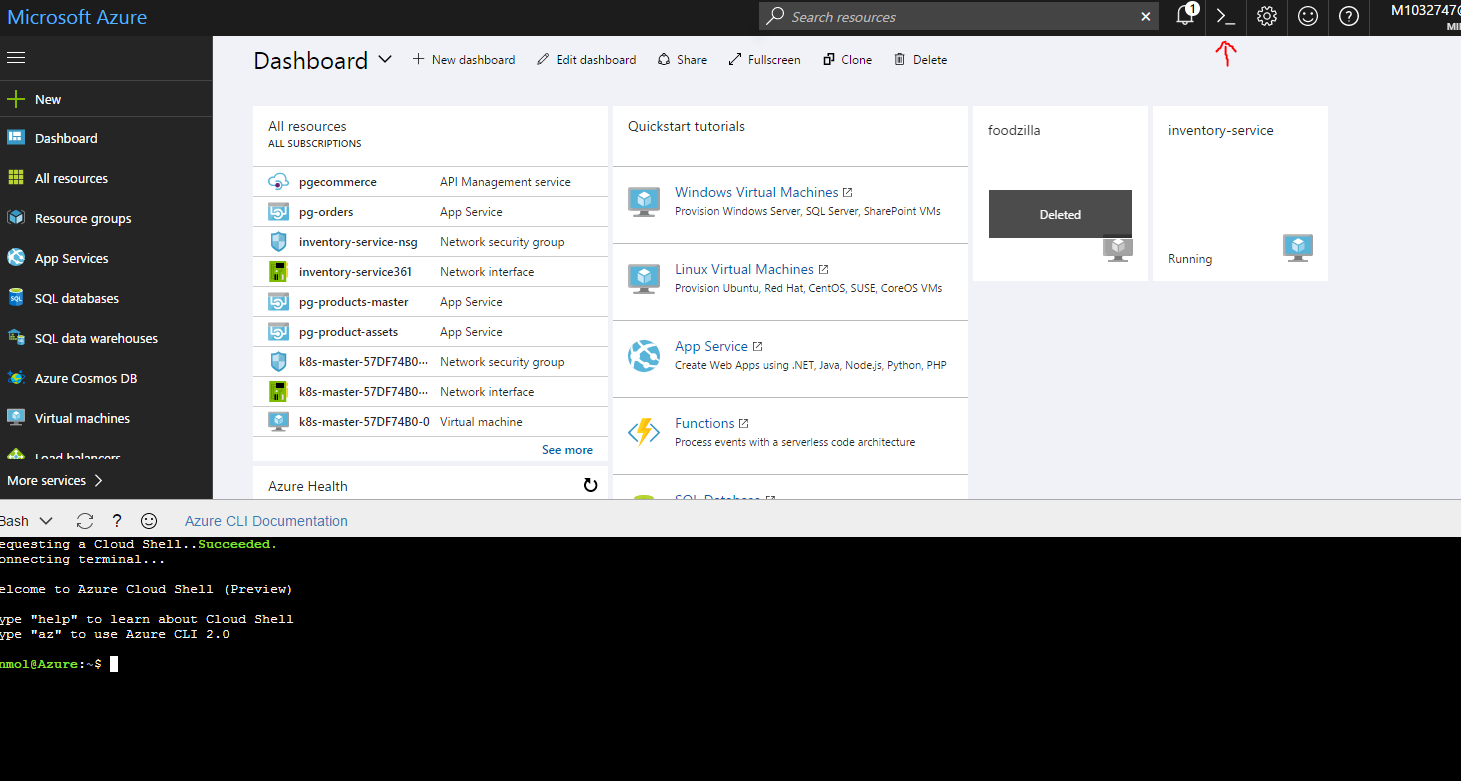
(\*Note- if these brackets “<>” appear somewhere with values filled in, that means you have to give your own names for that without putting <>)

**Prerequisites:**

1. Azure Account Subscription
2. Azure CLI 2.0 (in your local system, if possible) Either portal Azure CLI or download the Azure CLI 2.0.
3. Kubectl.exe file in your local machine (a package used to run kubernetes command) to see Kubernetes Dashboard once deployed on local as they don’t provide direct access to dashboard. Again its optional
4. SSH Keys – You can create them initially and store them in ~/.ssh/id\_rsa.pub file or you can create them later during cluster creation.

**Steps:**

1. If you are not planning to create a cluster only and want to join the existing cluster, kindly ignore the steps 2- 8 and directly go on step 9.
2. Login to Azure Portal with your credentials and click on Azure CLI. The CLI will appear as shown in figure



1. Creation of **Resource Group**

Write these commands in Azure CLI

**RESOURCE\_GROUP= <my-resource-group>(any name you want to give)**

**LOCATION=westus (or any other upto you)**

**az group create --name=$RESOURCE\_GROUP --location=$LOCATION**

(this command creates a resource group, same can be done from UI also)

1. Write these commands then to add a DNS\_PREFIX and CLUSTER\_NAME

**DNS\_PREFIX=<some-unique-value>** (it will appear in DNS of Master, give alphanumeric names unique to what you are doing)

**CLUSTER\_NAME=<any-acs-cluster-name>** (give a proper name as it will be used later on)

1. Starting the Cluster through ACS

Write this command next in the CLI-

**az acs create**

**--orchestrator-type=kubernetes**

**--resource-group <my-resource-group>**

**--name=$CLUSTER\_NAME**

**--dns-prefix=$DNS\_PREFIX**

**--generate-ssh-keys**

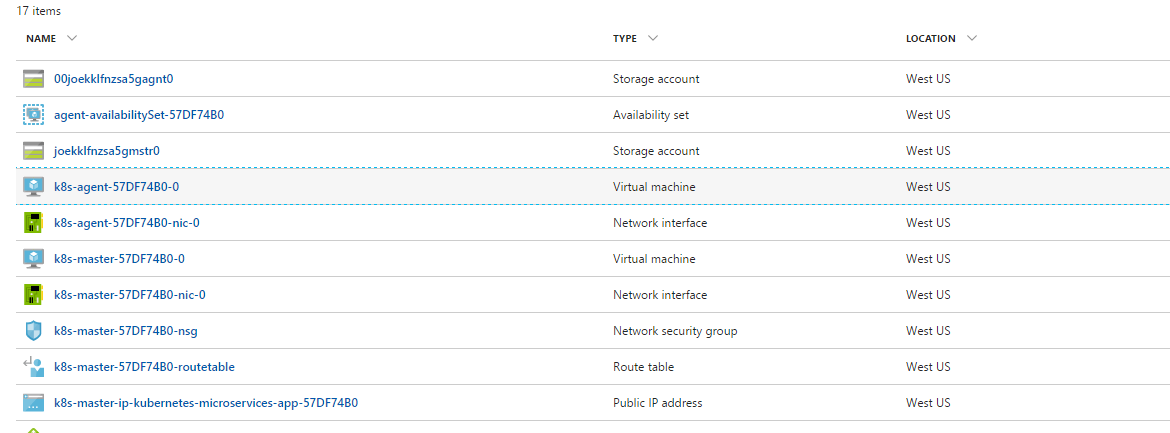
**--admin-username=<username> (Any username you can remember)**

**--admin-password=<password> (Any password easy to remember)**

**--master-count=1**

**--agent-count=1**

After few mins when this command completes, you will note a cluster successfully being setup under the resource group you created. Once you click on that resource group, you will see few items like the ones given below with few of them having names starting with k8.



1. After this, write the following command

**az acs kubernetes get-credentials --resource-group=<my-resource-group> --name=$CLUSTER\_NAME**

This command will download the Kubernetes cluster Configuration to the **~/.kube/config** file. This is very important command and shouldn’t be missed otherwise cluster won’t be setup properly

1. Now you are connected to cluster but if you want to view the Kubernetes Dashboard after the connection, it’s recommended to see the download steps for installing Kubectl library in your local machine and run it as a part of Command Prompt.

Refer to this link for installing kubectl: (<https://kubernetes.io/docs/tasks/tools/install-kubectl/> )

1. Now to configure kubectl, first copy the content from **~/.kube/config** file in the AZURE CLI using **cat config** command. Then switch to **<C:\Users\<your username>\.kube>**. If .kube folder is not there at specified location create one through cmd by writing command **mkdir .kube** inside **<C:\Users\<your username>\>.** After that create one config file inside .**kube** directory of type file using Notepad ++. Paste the contents copied using **cat** command above to this file and save it. Now, add kubectl.exe directory path in your system path variables inside environment variables. After that open cmd, you are ready to use all the kubectl commands and connect to your cluster from your local also apart from Azure CLI inside Azure portal.

*(Note- Check the config file properly after copying as it is a yaml file where extra whitespaces and wrong indentation can cause issues, for reference, use config file added in the documentation repository)*

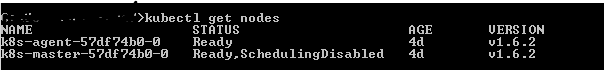
1. In order to connect to the existing cluster from your local or azure portal which is already up and running , copy and paste the config file attached in this documentation to **<C:\Users\<your username>\.kube**> for windows or in **~/.kube/ folder for azure portal CLI** and run the kubectl commands from cmd/CLI.

(Create .**kube** folder if doesn’t exist using cmd command **mkdir .kube** )

Refer to this link for installing kubectl: (<https://kubernetes.io/docs/tasks/tools/install-kubectl/> )

1. Run command : **kubectl get nodes**

This will give you information about the master node and agent node running in the cluster



Once you execute this and see the status of both nodes as ready, that means your cluster is working fine.

1. Use the command **kubectl proxy** to view the Kubernetes Dashboard by setting up a proxy tunnel to the Kubenetes API Server. You can view the dashboard on <http://localhost:8001/ui>

It will look like this

