Azure Kubernetes Service

Azure Kubernetes Service (AKS) is a managed Kubernetes service that lets you quickly deploy and manage clusters.

Azure Kubernetes Service (AKS) simplifies deploying a managed Kubernetes cluster in Azure by offloading the operational overhead to Azure. As a hosted Kubernetes service, Azure handles critical tasks, like health monitoring and maintenance. Since Kubernetes masters are managed by Azure, you only manage and maintain the agent nodes. Thus, AKS is free; you only pay for the agent nodes within your clusters, not for the masters.

You can create an AKS cluster using:

- The Azure CLI
- The Azure portal
- Azure PowerShell
- Using template-driven deployment options, like Azure Resource Manager templates and Terraform

Docker image support and private container registry:

AKS supports the Docker image format. For private storage of your Docker images, you can integrate AKS with Azure Container Registry.

To create a private image store, see Azure Container Registry.

Azure container Registry:

To Push Images into ACR from az cli:

// Login into Azure

az login

// Login in your repository

az acr login --name < acr_repository_name>

// Tag your repository

docker tag name < acr_repository_name>.azurecr.io/image_name

// Push the image to the repository

docker push < acr_repository_name>.azurecr.io/image_name

Kubernetes has a rich ecosystem of development and management tools that work seamlessly with AKS. These tools include Helm and the Kubernetes extension for Visual Studio Code.

Installed tools:

1) Helm : Helm Install (V2.12.1)

2) az cli : az CLI Install

3) kubectl : Kubectl Install

Throughout the lifecycle of your Azure Kubernetes Service (AKS) cluster, you may need to access an AKS node. This access could be for maintenance, log collection, or other troubleshooting operations.

kubectl-exec is a shell script that allows you to get into a node shell.

Installation steps:

```
wget https://github.com/mohatb/kubectl-exec/raw/master/kubectl-exec
chmod +x ./kubectl-exec
sudo mv ./kubectl-exec /usr/local/bin/kubectl-exec
```

Usage:

```
Interactive:
$ kubectl-exec

Non-Interactive
$ kubectl-exec <NODE-NAME>
```

OR

To Setup ssh access follow the docs:

https://docs.microsoft.com/en-us/azure/aks/ssh#configure-virtual-machine-scale-set-based-aks-clusters-for-ssh-access

References:

Proposed Architecture: https://docs.google.com/presentation/d/1ctbwjH2rbOK1uDiIpCwYLjF7JnYu6Ef0hprNisvdQmo/edit#slide=id.gade8499004_0_8

aks url: https://docs.microsoft.com/en-us/azure/aks/intro-kubernetes

devops-starter: https://docs.microsoft.com/en-us/azure/devops-project/overview

acr url: https://docs.microsoft.com/en-us/azure/container-registry/container-registry-get-started-azure-cli#log-in-to-registry

ssh access url: https://docs.microsoft.com/en-us/azure/aks/ssh#configure-virtual-machine-scale-set-based-aks-clusters-for-ssh-access

kubectl-exec url: https://github.com/mohatb/kubectl-exec