**Kubernetes installation using KOPS method**

Follow the steps below to create K8’S cluster in AWS using KOPS

Pre-requisites

1. Launch ec2 ubuntu instance (t2. Micro)
2. Create a IAM user with the following permission

- AmazonEC2FullAccess

- AmazonRoute53FullAccess

- AmazonS3 Full Access

- IAM Full Access

- Amazon VPC Full Access

3. Create s3 bucket and enable bucket versioning

**KOPS Binary and KUBECTL Binary setup**

1. Download KOPS Binary setup

curl -Lo kops https://github.com/kubernetes/kops/releases/download/$(curl -s https://api.github.com/repos/kubernetes/kops/releases/latest | grep tag\_name | cut -d '"' -f 4)/kops-linux-amd64

1. Change the permissions for KOPS directory

chmod +x ./kops

1. Move the KOPS directory to the /usr directory

sudo mv ./kops /usr/local/bin/

(Based on Linux file hierarchy Multi user utilities/applications are stored in this directory)

1. Download KUBECTL Binary setup

curl -Lo kubectl https://storage.googleapis.com/kubernetes-release/release/$(curl -s <https://storage.googleapis.com/kubernetes-release/release/stable.txt)/bin/linux/amd64/kubectl>

1. Change the permissions for KUBECTL directory

chmod +x ./kubectl

1. Move the KUBECTL directory to the /usr directory

sudo mv ./kubectl /usr/local/bin/kubectl

1. Download AWS CLI

Sudo apt install awscli

1. AWS Configure

Login as IAM User using access key and secret access key

1. Add variable for access key and secret access key

export AWS\_ACCESS\_KEY\_ID=your access key

export AWS\_SECRET\_ACCESS\_KEY=your secret access key

1. We created s3 bucket to store state file which will be generated when we run KOPS cluster
2. Create a public key and private key using the following command

Ssh-keygen (it creates the keys in following name id\_rsa and id\_rsa.pub)

1. Create variable for cluster name and state file

export NAME=ragu.k8s.local (replace ragu with your cluster name but it should have .k8s./local )

export KOPS\_STATE\_STORE=s3://kops-buk-1610 (replace kops with your bucket name)

**Creating Kubernetes cluster using KOPS**

1. Create k8’s cluster using following command

kops create cluster --zones us-east-1a ${NAME}

(replace the zones with your choice )

1. It shows that Cluster configuration has been created.

Suggestions:

\* list clusters with: kops get cluster

\* edit this cluster with: kops edit cluster ragu.k8s.local

\* edit your node instance group: kops edit ig --name=ragu.k8s.local nodes-us-east-1a

\* edit your control-plane instance group: kops edit ig --name=ragu.k8s.local control-plane-us-east-1a

3. Finally configure your cluster with: kops update cluster --name ragu.k8s.local --yes --admin

4. It shows the following suggestions

Suggestions:

\* validate cluster: kops validate cluster --wait 10m

\* list nodes: kubectl get nodes --show-labels

\* ssh to a control-plane node: ssh -i ~/.ssh/id\_rsa ubuntu@

\* the ubuntu user is specific to Ubuntu. If not using Ubuntu please use the appropriate user based on your OS.

\* read about installing addons at: <https://kops.sigs.k8s.io/addons>.

**KOPS CLUSTER DETAILS**

1. To list all clusters - kops get cluster
2. TO edit cluster – kops edit cluster (cluster name)
3. TO edit worker node - kops edit ig --name=ragu.k8s.local nodes-us-east-1a
4. TO edit master node - kops edit ig --name=ragu.k8s.local control-plane-us-east-1a
5. To update cluster - kops update cluster --name ragu.k8s.local --yes –admin
6. TO delete cluster – kops delete cluster –name= ragu.k8s.local –state=s3:// kops-buk-1610