Setup Kubernetes (K8s) Cluster on AWS

Create Ubuntu EC2 instance

install AWSCLI

curl https://s3.amazonaws.com/aws-cli/awscli-bundle.zip -o awscli-bundle.zip

apt install unzip python

unzip awscli-bundle.zip

#sudo apt-get install unzip - if you dont have unzip in your system

./awscli-bundle/install -i /usr/local/aws -b /usr/local/bin/aws

Install kubectl

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

chmod +x ./kubectl

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

Create an IAM user/role with Route53, EC2, IAM and S3 full access

Attach IAM role to ubuntu server

Note: If you create IAM user with programmatic access then provide Access keys.

aws configure

Install kops on ubuntu instance:

curl -LO 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

chmod +x kops-linux-amd64

sudo mv kops-linux-amd64 /usr/local/bin/kops

Create a Route53 private hosted zone (you can create Public hosted zone if you have a domain)

create an S3 bucket

aws s3 mb s3://dev.k8s.suntech.in

Expose environment variable:

export KOPS\_STATE\_STORE=s3://dev.k8s.suntech.in

Create sshkeys before creating cluster

ssh-keygen

Create kubernetes cluster definitions on S3 bucket

kops create cluster --cloud=aws --zones=us-east-2c --name=dev.k8s.suntech.in --dns-zone=suntech.in --dns private

Suggestions:

\* list clusters with: kops get cluster

\* edit this cluster with: kops edit cluster dev.k8s.suntech.in

\* edit your node instance group: kops edit ig --name=dev.k8s.suntech.in nodes

\* edit your master instance group: kops edit ig --name=dev.k8s.suntech.in master-us-east-2c

Create kubernetes cluser

kops update cluster dev.k8s. suntech.in –yes

kops update cluster --name dev.k8s.suntech.in –yes

Suggestions:

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

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

\* ssh to the master: ssh -i ~/.ssh/id\_rsa ubuntu@api.dev.k8s.suntech.in

\* 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/operations/addons.

Validate your cluster

kops validate cluster

To list nodes

kubectl get nodes

Deploying Nginx container on Kubernetes

Deploying Nginx Container

kubectl run sample-nginx --image=nginx --replicas=2 --port=80

kubectl get pods

kubectl get deployments

Expose the deployment as service. This will create an ELB in front of those 2 containers and allow us to publicly access them:

kubectl expose deployment sample-nginx --port=80 --type=LoadBalancer

kubectl get services -o wide

To delete cluster

kops delete cluster dev.k8s.valaxy.in --yes