Three-tier Application Deployment on AWS EKS

Follow these steps to deploy the application on AWS EKS.

Code repository

https://github.com/LondheShubham153/TWSThreeTierAppChallenge

Video Tutorial

https://youtube.com/live/wgmYbSN6_Is

IAM

Create a user “eks-admin” with AdministratorAccess
Create Security Credentials Access Key and Secret access key

EC2

Create an ubuntu instance (region us-west-2)

ssh to the instance from local

Install AWS CLI v2

curl "https://awscli.amazonaws.com/awscli-exe-linux-x86_64.zip" -o "awscliv2.zip"
sudo apt install unzip
unzip awscliv2.zip
sudo ./aws/install -i /usr/local/aws-cli -b /usr/local/bin --update

Setup your access by

aws configure

Install Docker

sudo apt-get update
sudo apt install docker.io
docker ps
sudo chown $USER /var/run/docker.sock

Install kubectl

curl -o kubectl
https://amazon-eks.s3.us-west-2.amazonaws.com/1.19.6/2021-01-05/bin/linux/amd64/kubectl
chmod +x ./kubectl
sudo mv ./kubectl /usr/local/bin
kubectl version --short --client

Install eksctl

curl --silent --location "https://github.com/weaveworks/eksctl/releases/latest/download/eksctl_$(uname -s)_amd64.tar.gz" | tar xz -C /tmp
sudo mv /tmp/eksctl /usr/local/bin
eksctl version

Setup EKS Cluster

eksctl create cluster --name three-tier-cluster --region us-west-2 --node-type t2.medium --nodes-min 2 --nodes-max 2
aws eks update-kubeconfig --region us-west-2 --name three-tier-cluster
kubectl get nodes

Run Manifests

kubectl create namespace two-tier-ns
kubectl apply -f .
Kubectl delete -f .

eksctl delete cluster --name my-cluster --region us-west-2

Install AWS Load Balancer

curl -O https://raw.githubusercontent.com/kubernetes-sigs/aws-load-balancer-controller/v2.5.4/docs/install/iam_policy.json

aws iam create-policy --policy-name AWSLoadBalancerControllerIAMPolicy --policy-document file://iam_policy.json

eksctl utils associate-iam-oidc-provider --region=us-west-2 --cluster=my-cluster --approve

eksctl create iamserviceaccount --cluster=my-cluster --namespace=kube-system --name=aws-load-balancer-controller --role-name AmazonEKSLoadBalancerControllerRole

--attach-policy-arn=arn:aws:iam::626072240565:policy/AWSLoadBalancerControllerIAMPolicy --approve --region=us-west-2

sudo snap install helm --classic

helm repo add eks https://aws.github.io/eks-charts

helm repo update eks

helm install aws-load-balancer-controller eks/aws-load-balancer-controller -n kube-system --set clusterName=my-cluster --set serviceAccount.create=false --set serviceAccount.name=aws-load-balancer-controller

kubectl get deployment -n kube-system aws-load-balancer-controller

kubectl apply -f full_stack_lb.yaml