Levy Andrew EKS Documentation

Task 1

1. Open a Command prompt

2. Type these commands to create a folder for the project and use it as the working directory

   mkdir EKS_Assignment

   cd EKS_Assignment

3. Type this command to create the ngnix deployment yaml file and click on yes

   notepad ngnix-deployment.yaml

4. Paste the following code in the file

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: sample-app
spec:
  replicas: 2
  selector:
    matchLabels:
      app: nginx
  template:
    metadata:
      labels:
        app: nginx
    spec:
      containers:
        - name: nginx
          image: public.ecr.aws/nginx/nginx:1.19.6
          ports:
            - name: http
              containerPort: 80


---
apiVersion: v1
kind: Service
metadata:
  name: nginx-service-nodeport
spec:
  type: NodePort
  selector:
    app: nginx
  ports:
    - protocol: TCP
      port: 80
      targetPort: 80
```

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5. Type this command to create the ingress-controller yaml file and click on yes

   notepad ingress-controller.yaml

6. Paste the following code in the file

```
apiVersion: networking.k8s.io/v1
kind: Ingress
metadata:
  name: simple-ingress
  annotations:
    kubernetes.io/ingress.class: alb
    alb.ingress.kubernetes.io/scheme: internet-facing
    alb.ingress.kubernetes.io/target-type: instance
spec:
  rules:
    - http:
        paths:
          - path: /
            pathType: Prefix
            backend:
              service:
                name: nginx-service-nodeport
                port:
                  number: 80
```

7. Type this commands to create a cluster on EKS (Elastic Kubernetes Service)

   eksctl create cluster --name EKSAssignment

8. Type this commands to see the all node

   kubectl get nodes

9. Type this command to see the cluster and the loadbalancer

   eksctl get cluster

10. Type this command to view your cluster OpenID Connect provider URL

    aws eks describe-cluster --name EKSAssignment ^ --query "cluster.identity.oidc.issuer" --output text

11. Here is the output

    https://oidc.eks.us-east-2.amazonaws.com/id/358F2FCF44FD690E8DA4E2862AF1F353

12. Type this command to list the IAM OIDC providers in your account

    aws iam list-open-id-connect-providers

13. Type this command to create an IAM OIDC identity provider for your cluster

    eksctl utils associate-iam-oidc-provider --cluster EKSAssignment –approve

14. Type this command to list the IAM OIDC providers in your account

aws iam list-open-id-connect-providers

15. Type this command to download the (Role Base Access Control) rbac-role yaml (it contain the ingress controller and services) file from github and naming it rbac-role.yaml

    curl -o rbac-role.yaml ^ https://raw.githubusercontent.com/RobinNagpal/kubernetes-tutorials/master/06_tools/007_alb_ingress/01_eks/rbac-role.yaml

16. Type this command to apply the rbac-role yaml file

    kubectl apply -f rbac-role.yaml

17. Type this command to see the cluster that you just create

    kuber get alb-ingress-controller

18. Type this command to download iam policy json file

    curl -o iam_policy.json https://raw.githubusercontent.com/kubernetes-sigs/aws-load-balancer-controller/v2.3.0/docs/install/iam_policy.json

19. Type this command to create the AWS policy

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

20. Type this command to create the service account

    eksctl create iamserviceaccount ^ --cluster= EKSAssignment ^ --namespace=kube-system ^ --name=aws-load-balancer-controller ^ --attach-policy-arn=arn:aws:iam::278144774015:policy/AWSLoadBalancerControllerIAMPolicy ^ --override-existing-serviceaccounts ^ --approve

21. Type this command to create certificate manager for the ingress controller

    kubectl apply ^ --validate=false ^ -f https://github.com/jetstack/cert-manager/releases/download/v1.5.4/cert-manager.yaml

22. Type this command to make the load balancer controller by downloading the file from GitHub

    curl -Lo v2_3_0_full.yaml https://github.com/kubernetes-sigs/aws-load-balancer-controller/releases/download/v2.3.0/v2_3_0_full.yaml

23. Edit the file that was downloaded v2_3_0_full.yaml (replace {cluster-name= *EKSAssignment*}

    notepad v2_3_0_full.yaml

24. Type this command to apply the v2_3_0_full yaml file

    kubectl apply -f v2_3_0_full.yaml

25. Type this command to view the controller

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

26. Type this command to create the ngnix-deployment yaml file

    kubectl apply -f Ngnix-deployment.yaml

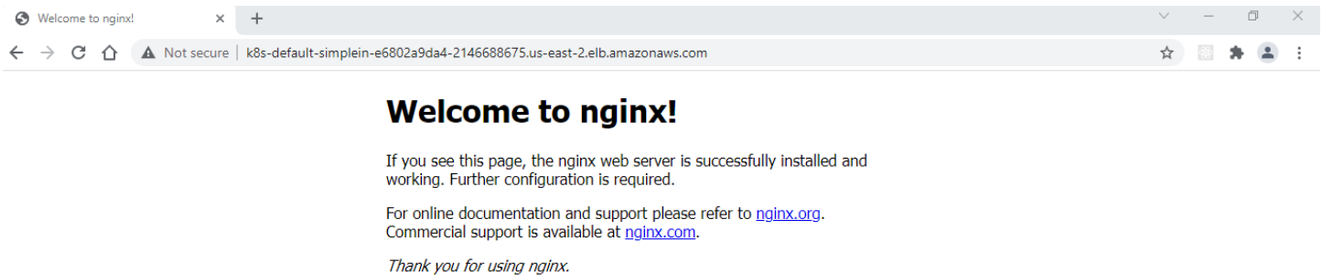
27. Type this command to create the ingress-controller yaml file

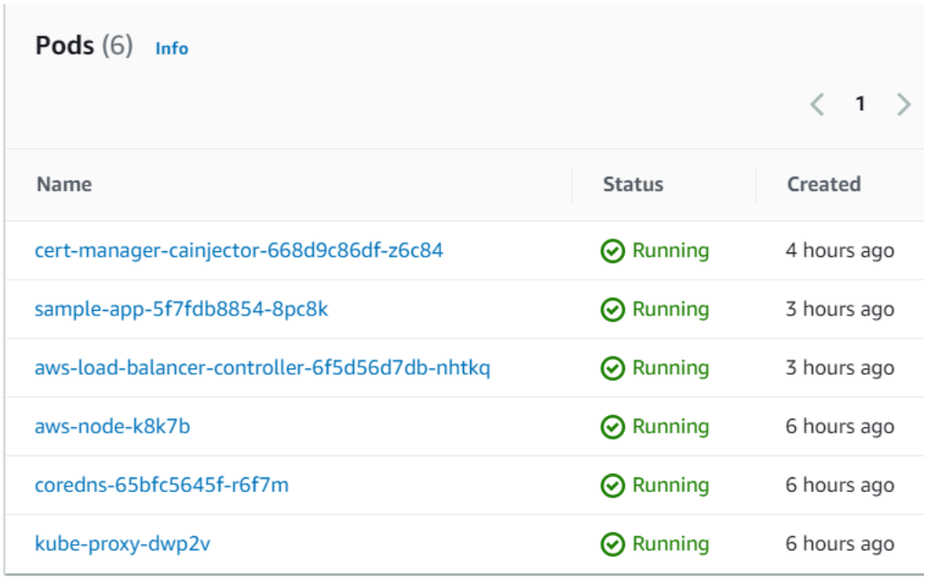
    kubectl apply -f ingress-controller.yaml

28. Type this command to see the status of the pod

    kubectl get {name}

29. Go to AWS EC2 and on loadbalancer to get the DNS record and paste it in a web browser.





30. Type this command to delete the cluster

    eksctl delete cluster --name EKSAssignment