



AWS EKS HANDS-ON

FOR DEVOPS ENGINEERS

***TRAIN WITH
SHUBHAM***

AMAZON ELASTIC KUBERNETES SERVICE (EKS) NOTES

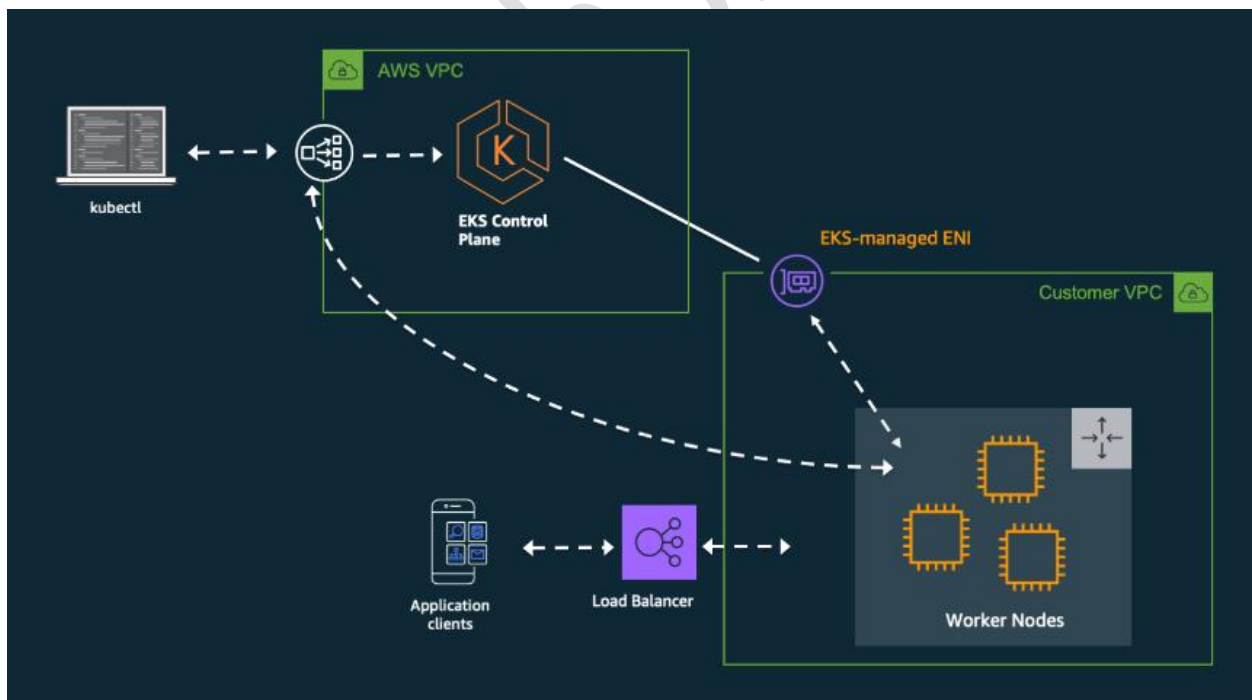
What is Amazon EKS?

- Amazon Elastic Kubernetes Service (EKS) is a managed Kubernetes service provided by AWS. It makes it easy to deploy, manage, and scale containerized applications using Kubernetes.

Benefits of Amazon EKS

- Scalability: EKS allows you to scale your applications effortlessly as your requirements change.
- High Availability: It offers a highly available and reliable environment for your applications.
- Easy Management: AWS manages the control plane, so you can focus on your applications.

Architectural Diagram:



AMAZON ELASTIC KUBERNETES SERVICE (EKS) NOTES

Setting up Amazon EKS:

1) Create an AWS Account

- If you haven't already, sign up for an AWS free tier account.

2) Install AWS CLI

- Install and configure the AWS Command Line Interface (CLI) on your local.

COMMANDS:

```
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
```

3) Create an IAM Role for EKS

- Create an IAM role with the necessary permissions for EKS.

STEPS:

1. Create an IAM User:

- Go to the AWS IAM console.
- Create a new IAM user named "eks-admin."
- Attach the "AdministratorAccess" policy to this user.

2. Create Security Credentials:

- After creating the user, generate an Access Key and Secret Access Key for this user.

4) Launch AWS instance and get access to the instance

5) Configure AWS CLI:

6) Configure the AWS CLI with the Access Key and Secret Access Key from step 2:

AMAZON ELASTIC KUBERNETES SERVICE (EKS) NOTES

7) Kubernetes tools setup:

```
aws configure
```

- **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
```

8) EKS Cluster Setup:

- Use eksctl to create the EKS cluster

NOTE: Make sure to replace <cluster-name> and <region> with your desired values

```
eksctl create cluster --name <cluster-name> --region <region> --node-type
t2.micro --nodes-min 2 --nodes-max 2
```

- Update your kubeconfig to connect to the newly created EKS cluster:

```
aws eks update-kubeconfig --region <region> --name <cluster-name>
```

9) Verify Nodes:

```
kubectl get nodes
```


AMAZON ELASTIC KUBERNETES SERVICE (EKS) NOTES

Basic to Advanced EKS Commands

1. Get Cluster Information

```
aws eks describe-cluster --name <cluster-name> --region <region>
```

2. List Worker Nodes

```
kubectl get nodes
```

3. Deploy an application

```
kubectl apply -f <yaml-file>
```

4. Scale a Deployment

```
kubectl scale deployment <deployment-name> --replicas=<number>
```

5. View Pods in a Namespace

```
kubectl get pods -n <namespace>
```

6. Check Cluster Events

```
kubectl get events
```

7. Create a Persistent Volume

```
kubectl apply -f <pv-definition.yaml>
```

8. Apply a Rolling Update

```
kubectl set image deployment/<deployment-name> <container-name>=<new-image>
```

9. Enable Autoscaling

```
kubectl autoscale deployment <deployment-name> --min=3 --max=5
```