KOPS installation in AWS::  
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KOPS - Kubernetes Operations

1. Launch one Ubuntu EC2 instance and execute below steps to install kops.

2. kops binary download

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

3. aws cli setup to enable Ubuntu workstation to interact with aws.  
apt-get update  
apt-get install -y python-pip   
sudo pip install awscli

aws –version

4.  
- Create IAM user & make a note of access key & secruity key  
- Create S3 bucket and enable versioning.

aws configure -- Give access & security access key details here..

or

Apply the IAM role to your Ubuntu workstation so that it will have the necessary access.

5. kubectl installation (K8s cli)

snap install kubectl --classic  
kubectl version

Genereate SSH keys which will be used to connect to master/nodes  
ssh-keygen -f .ssh/id\_rsa

6. Environment variables setup -- Remember cluster name should ends **with k8s.local**

update these two vars in .bashrc & .profile in ~ dir.

export KOPS\_CLUSTER\_NAME=lab1.k8s.local ( please give your own cluster name)  
export KOPS\_STATE\_STORE=s3://kops-state-lab1-bucket ( remember S3 bucket should be unique across complete AWS, so request you to use your own meaningful name)

7. Create cluster:: -- This will actually prepare the configuration files.  
kops create cluster \  
--node-count=2 \  
--node-size=t2.micro \  
--master-size=t2.micro \  
--zones=us-east-1b \  
--name=${KOPS\_CLUSTER\_NAME}

(optional)if you wanted to review & edit the cluster configuration:

kops edit cluster --name ${KOPS\_CLUSTER\_NAME}

RUN if you're okay withe the configuration run the command with --yes as like below:

**kops update cluster --name ${KOPS\_CLUSTER\_NAME} –yes**

Output shows like below..::  
 Cluster is starting. It should be ready in a few minutes.

Suggestions:  
 \* validate cluster: kops validate cluster  
 \* list nodes: kubectl get nodes --show-labels  
 \* ssh to the master: ssh -i ~/.ssh/id\_rsa admin@api.lab.k8s.local

To validate the cluster::

kops validate cluster

Validating cluster lab1.k8s.local

INSTANCE GROUPS  
 NAME ROLE MACHINETYPE MIN MAX SUBNETS  
 master-us-east-1a Master m3.medium 1 1 us-east-1a  
 nodes Node t2.medium 1 1 us-east-1a

NODE STATUS  
 NAME ROLE READY  
 ip-172-20-52-91.ec2.internal node True  
 ip-172-20-54-252.ec2.internal master True

Your cluster lab.k8s.local is ready