

AWS EKS

Command to create a EKS Cluster:

eksctl create cluster -r eu-central-1 --name **Testing-new1-rsc-cluster** --version 1.13 --nodegroup-name **test1-new-dev-workers** --node-type t3.medium --nodes 2 --nodes-min 1 --nodes-max 3 --node-ami auto --vpc-private-subnets=subnet-0889f4d7b1641748d,subnet-0ebca37dc8f461b1d -P

```
C:\Users\hariharan.v>eksctl create cluster -r eu-central-1 --name Testing-new1-rsc-cluster --version 1.13 --nodegroup-name test1-new-dev-workers --node-type t3.medium --nodes 2 --nodes-min 1 --nodes-max 3 --node-ami auto --vpc-private-subnets=subnet-0889f4d7b1641748d,subnet-0ebca37dc8f461b1d -P
[+] using region eu-central-1
[+] using existing VPC (vpc-08d109674c663617f) and subnets (private:[subnet-0ebca37dc8f461b1d subnet-0889f4d7b1641748d] public:[])
[+] custom VPC/subnets will be used; if resulting cluster doesn't function as expected, make sure to review the configuration of VPC/subnets
[+] nodegroup "test1-new-dev-workers" will use "ami-0b7127e7a2a38802a" [AmazonLinux2/1.13]
[+] using Kubernetes version 1.13
[+] creating EKS cluster "Testing-new1-rsc-cluster" in "eu-central-1" region
[+] will create 2 separate CloudFormation stacks for cluster itself and the initial nodegroup
[+] if you encounter any issues, check CloudFormation console or try 'eksctl utils describe-stacks --region=eu-central-1 --name=Testing-new1-rsc-cluster'
[+] CloudWatch logging will not be enabled for cluster "Testing-new1-rsc-cluster" in "eu-central-1"
[+] you can enable it with 'eksctl utils update-cluster-logging --region=eu-central-1 --name=Testing-new1-rsc-cluster'
[+] 2 sequential tasks: { create cluster control plane "Testing-new1-rsc-cluster", create nodegroup "test1-new-dev-workers" }
[+] building cluster stack "eksctl-Testing-new1-rsc-cluster-cluster"
[+] deploying stack "eksctl-Testing-new1-rsc-cluster-cluster"
[+] building nodegroup stack "eksctl-Testing-new1-rsc-cluster-nodegroup-test1-new-dev-workers"
[+] deploying stack "eksctl-Testing-new1-rsc-cluster-nodegroup-test1-new-dev-workers"
```

Command to list all EKS Cluster:

Installation of EKScctl tool : <https://docs.aws.amazon.com/eks/latest/userguide/getting-started-eksctl.html>

eksctl get cluster --region=eu-central-1

```
C:\Users\hariharan.v>eksctl get cluster --region=eu-central-1
NAME                                REGION
Testing-new1-rsc-cluster            eu-central-1
dev-jenkinsx-demo                   eu-central-1
dev44                               eu-central-1
edison-build04                      eu-central-1
edison-build2                       eu-central-1
edison2                             eu-central-1
```

Command to list Nodegroup:

eksctl get nodegroup --region=eu-central-1 --cluster=**Testing-new1-rsc-cluster**

```
C:\Users\hariharan.v>eksctl get nodegroup --region=eu-central-1 --cluster=Testing-new1-rsc-cluster
CLUSTER      NODEGROUP      CREATED          MIN SIZE  MAX SIZE  DESIRED CAPACITY  INSTANCE TYPE  IMAGE ID
Testing-new1-rsc-cluster  test1-new-dev-workers  2019-08-13T07:57:38Z  1         3         2                 t3.medium      ami-0b7127e7a2a38802a
```

Installing aws-iam-authenticator :

<https://docs.aws.amazon.com/eks/latest/userguide/install-aws-iam-authenticator.html>

aws eks update-kubeconfig --name **Testing-new1-rsc-cluster** --region=eu-central-1

```
PS C:\Users\hariharan.v> aws eks update-kubeconfig --name Testing-new1-rsc-cluster --region=eu-central-1
Updated context arn:aws:eks:eu-central-1:656460558808:cluster/Testing-new1-rsc-cluster in C:\Users\hariharan.v\.kube\config
```

Managing Users or IAM Roles for your Cluster :

<https://docs.aws.amazon.com/eks/latest/userguide/add-user-role.html>

aws-auth-cm.yaml:

```
1  apiVersion: v1
2  kind: ConfigMap
3  metadata:
4    name: aws-auth
5    namespace: kube-system
6  data:
7    mapRoles: |
8      - rolearn: arn:aws:iam::656460558808:role/eksctl-Testing-new1-rsc-cluster-n-NodeInstanceRole-1CXF00C3D66LL
9        username: system:node:{{EC2PrivateDNSName}}
10       groups:
11         - system:bootstrappers
12         - system:nodes
```

Role Arn:

We must copy role ARN from **CFT nodegroup stack** -> **Output** -> **Copy Role Arn**

CloudFormation > Stacks: eksctl-Testing-new1-rsc-cluster-nodegroup-test1-new-dev-workers

Stacks (46) Active View nested < 1 >

eksctl-Testing-new1-rsc-cluster-nodegroup-test1-new-dev-workers
2019-08-13 13:27:38 UTC+05
30
CREATE_COMPLETE

eksctl-Testing-new1-rsc-cluster-cluster
2019-08-13 13:16:02 UTC+05
30
CREATE_COMPLETE

eksctl-Testing-new1-rsc-cluster-cluster
2019-08-13 12:42:35 UTC+05
30
DELETE_FAILED

Stack info Events Resources **Outputs** Parameters Template Change sets

Outputs (5)

Key	Value	Description	Export name
FeatureLocalSecurityGroup	true	-	-
FeaturePrivateNetworking	true	-	-
FeatureSharedSecurityGroup	true	-	-
InstanceProfileARN	arn:aws:iam::656460558808:instance-profile/eksctl-Testing-new1-rsc-cluster-nodegroup-test1-new-dev-workers-NodeInstanceProfile-1KQC79ZU69VJ	-	eksctl-Testing-new1-rsc-cluster-nodegroup-test1-new-dev-workers-NodeInstanceProfile-1KQC79ZU69VJ
InstanceRoleARN	arn:aws:iam::656460558808:role/eksctl-Testing-new1-rsc-cluster-n-NodeInstanceRole-1CXF00C3D66LL	-	eksctl-Testing-new1-rsc-cluster-nodegroup-test1-new-dev-workers-NodeInstanceRole-1CXF00C3D66LL

Installing Kubectl: <https://kubernetes.io/docs/tasks/tools/install-kubectl/>

kubectl.exe apply -f .\aws-auth-cm.yaml

Command to list nodes:

kubectl.exe get nodes

```
PS C:\Users\hariharan.v> aws eks update-kubeconfig --name Testing-new1-rsc-cluster --region=eu-central-1
Updated context arn:aws:eks:eu-central-1:656460558808:cluster/Testing-new1-rsc-cluster in C:\Users\hariharan.v\.kube\config
PS C:\Users\hariharan.v> cd .\Downloads\
PS C:\Users\hariharan.v\Downloads> .\kubectl.exe get nodes
No resources found.
PS C:\Users\hariharan.v\Downloads> .\kubectl.exe apply -f .\aws-auth-cm.yaml
configmap/aws-auth created
PS C:\Users\hariharan.v\Downloads> .\kubectl.exe get nodes
```

NAME	STATUS	ROLES	AGE	VERSION
ip-10-152-61-199.eu-central-1.compute.internal	NotReady	<none>	5s	v1.13.7-eks-c57ff8
ip-10-152-61-79.eu-central-1.compute.internal	NotReady	<none>	4s	v1.13.7-eks-c57ff8

Single Screenshot Example:

```
C:\Users\hariharan.v>eksctl get cluster --region=eu-central-1
```

NAME	REGION
Testing-new1-rsc3-cluster	eu-central-1
dev-jenkinsx-demo	eu-central-1
dev44	eu-central-1
edison-build04	eu-central-1
edison-build2	eu-central-1
edison2	eu-central-1

```
C:\Users\hariharan.v>eksctl get nodegroup --region=eu-central-1 --cluster=Testing-new1-rsc3-cluster
```

CLUSTER	NODEGROUP	CREATED	MIN SIZE	MAX SIZE	DESIRED CAPACITY	INSTANCE TYPE	IMAGE ID
Testing-new1-rsc3-cluster	test1-new3-dev-workers	2019-08-19T12:14:34Z	1	3	2		
	t3.medium	ami-038bd8d3a2345061f					

```
C:\Users\hariharan.v>aws eks update-kubeconfig --name Testing-new1-rsc3-cluster --region=eu-central-1
Added new context arn:aws:eks:eu-central-1:656460558808:cluster/Testing-new1-rsc3-cluster to C:\Users\hariharan.v\.kube\config
C:\Users\hariharan.v>cd Downloads
C:\Users\hariharan.v\Downloads>kubectl.exe apply -f .\aws-auth-cm.yaml
Warning: kubectl apply should be used on resource created by either kubectl create --save-config or kubectl apply
configmap/aws-auth configured
C:\Users\hariharan.v\Downloads>kubectl.exe get nodes
```

NAME	STATUS	ROLES	AGE	VERSION
ip-10-152-61-113.eu-central-1.compute.internal	Ready	<none>	18h	v1.13.8-eks-cd3eb0
ip-10-152-61-147.eu-central-1.compute.internal	Ready	<none>	18h	v1.13.8-eks-cd3eb0

```
C:\Users\hariharan.v\Downloads>kubectl create deployment --image nginx testapp
deployment.apps/testapp created

C:\Users\hariharan.v\Downloads>kubectl get pod
```

NAME	READY	STATUS	RESTARTS	AGE
testapp-5d9f4546fd-n9xnt	1/1	Running	0	15s

```
C:\Users\hariharan.v\Downloads>kubectl exec -it testapp-5d9f4546fd-n9xnt -- /bin/bash
root@testapp-5d9f4546fd-n9xnt:/# apt-get update
Get:1 http://cdn-fastly.deb.debian.org/debian buster InRelease [118 kB]
Get:2 http://cdn-fastly.deb.debian.org/debian buster-updates InRelease [49.3 kB]
Get:3 http://cdn-fastly.deb.debian.org/debian buster/main amd64 Packages [7897 kB]
Get:4 http://cdn-fastly.deb.debian.org/debian buster-updates/main amd64 Packages [884 B]
Get:5 http://security-cdn.debian.org/debian-security buster/updates InRelease [39.1 kB]
Get:6 http://security-cdn.debian.org/debian-security buster/updates/main amd64 Packages [63.4 kB]
Fetched 8168 kB in 5s (1526 kB/s)
```