

EKS-1

Create eks cluster using eksctl

1. During creation, Specify

- Cluster name
- Kubernetes version
- Control plane role
- Subnets for Control Plane
- Control Plane security Group
- Add tag: owner, purpose on Control Plane
- Node Group Name
- Node Instance Role
- Subnets for Node Group
- Node Instance SSH key pair
- Node Instance Security Group
- Node Instance Instance Type
- Node Instance Disk
- Add tag: owner, purpose on Node Group
- Node Group Size: min, max

```
ERROR: unknown flag: --version
jay@Jay-Patel:~$ eksctl
The official CLI for Amazon EKS

Usage: eksctl [command] [flags]

Commands:
  eksctl create      Create resource(s)
  eksctl get         Get resource(s)
  eksctl update      Update resource(s)
  eksctl upgrade     Upgrade resource(s)
  eksctl delete      Delete resource(s)
  eksctl set         Set values
  eksctl unset       Unset values
  eksctl scale       Scale resources(s)
  eksctl drain       Drain resource(s)
  eksctl utils       Various utils
  eksctl completion  Generates shell completion scripts
  eksctl version     Output the version of eksctl
  eksctl help        Help about any command

Common flags:
  -C, --color string  toggle colorized logs (valid options: true, false, fabulous) (default "true")
  -h, --help          help for this command
  -v, --verbose int   set log level, use 0 to silence, 4 for debugging and 5 for debugging with AWS debug logging (default 3)

Use 'eksctl [command] --help' for more information about a command.
```

Create role

1 2 3 4

Review

Provide the required information below and review this role before you create it.

Role name* eks-cluster-jay

Use alphanumeric and '+=, @, _' characters. Maximum 64 characters.

Role description Allows EKS to manage clusters on your behalf.



Maximum 1000 characters. Use alphanumeric and '+=, @, _' characters.

Trusted entities AWS service: eks.amazonaws.com

Policies AmazonEKSClusterPolicy [↗](#)
 AmazonEKSServicePolicy [↗](#)

Permissions boundary Permissions boundary is not set

Create role

1 2 3 4

Review

Provide the required information below and review this role before you create it.

Role name* jay-node-role-eks

Use alphanumeric and '+=, @, _' characters. Maximum 64 characters.

Role description Allows EC2 instances to call AWS services on your behalf.



Maximum 1000 characters. Use alphanumeric and '+=, @, _' characters.

Trusted entities AWS service: ec2.amazonaws.com

Policies AmazonEKS_CNI_Policy [↗](#)
 AmazonEC2ContainerRegistryReadOnly [↗](#)
 AmazonEKSWorkerNodePolicy [↗](#)

```
apiVersion: eksctl.io/v1alpha5
kind: ClusterConfig
metadata:
  name: eks1-jay-cluster
  region: us-east-1
vpc:
  id: "vpc-006b77e885e346f82"
  cidr: "10.0.0.0/16"
  subnets:
    public:
      us-east-1a:
        id: "subnet-087cddd9f9e9fb1b7"
        cidr: "10.0.1.0/24"
      us-east-1b:
        id: "subnet-052a7fb445b1ed477"
        cidr: "10.0.2.0/24"
      us-east-1c:
        id: "subnet-08b47134470eee395"
        cidr: "10.0.3.0/26"
iam:
  serviceRoleARN: "arn:aws:iam::187632318301:role/eks-cluster-jay"
```

```

serviceRoleARN: "arn:aws:iam::187632318301:role/eks-cluster-jay"

nodeGroups:
- name: "jay-ng-1-worker"
  instanceType: t2.micro
  minSize: 1
  desiredCapacity: 2
  maxSize: 3
  availabilityZones: ["us-east-1c", "us-east-1b", "us-east-1a"]
  volumeSize: 20
  iam:
    instanceProfileARN: "arn:aws:iam::187632318301:role/jay-node-role-eks"
  ssh:
    publicKeyName: Jay-ALB
    allow: true
  securityGroups:
    withShared: true
    withLocal: true
    attachIDs: ['sg-07847821be8581a15']
  tags:
    'owner': 'jay-eks1-node'
    'purpose': 'jay-eks1-exercise'

```

ne 28, Column 21

```

jay@Jay-Patel:Videos $ eksctl create cluster -f jay-eks.yml
[i] eksctl version 0.16.0
[i] using region us-east-1
[✓] using existing VPC (vpc-006b77e885e346f82) and subnets (private:[] public:[subnet-087cddd9f9e9fb1b7 subnet-052a7fb445b1ed477 subnet-08b474470eee395])
[i] custom VPC/subnets will be used; if resulting cluster doesn't function as expected, make sure to review the configuration of VPC/subnets.
[i] nodegroup "jay-ng-1-worker" will use "ami-0f15d55736fd476da" [AmazonLinux2/1.14]
[i] using EC2 key pair "Jay-ALB"
[i] using Kubernetes version 1.14
[i] creating EKS cluster "eks1-jay-cluster" in "us-east-1" region with un-managed nodes
[i] 1 nodegroup (jay-ng-1-worker) was included (based on the include/exclude rules)
[i] will create a CloudFormation stack for cluster itself and 1 nodegroup stack(s)
[i] will create a CloudFormation stack for cluster itself and 0 managed nodegroup stack(s)
[i] if you encounter any issues, check CloudFormation console or try 'eksctl utils describe-stacks --region=us-east-1 --cluster=eks1-jay-cluster'
[i] CloudWatch logging will not be enabled for cluster "eks1-jay-cluster" in "us-east-1"
[i] you can enable it with 'eksctl utils update-cluster-logging --region=us-east-1 --cluster=eks1-jay-cluster'
[i] Kubernetes API endpoint access will use default of {publicAccess=true, privateAccess=false} for cluster "eks1-jay-cluster" in "us-east-1"
[i] 2 sequential tasks: { create cluster control plane "eks1-jay-cluster", create nodegroup "jay-ng-1-worker" }
[i] building cluster stack "eksctl-eks1-jay-cluster-cluster"
[i] deploying stack "eksctl-eks1-jay-cluster-cluster"

[i] building nodegroup stack "eksctl-eks1-jay-cluster-nodegroup-jay-ng-1-worker"
[i] deploying stack "eksctl-eks1-jay-cluster-nodegroup-jay-ng-1-worker"
[i] all EKS cluster resources for "eks1-jay-cluster" have been created
[✓] saved kubeconfig as "/home/jay/.kube/config"
[i] adding identity "arn:aws:iam::187632318301:role/jay-node-role-eks" to auth ConfigMap
[i] nodegroup "jay-ng-1-worker" has 0 node(s)
[i] waiting for at least 1 node(s) to become ready in "jay-ng-1-worker"
[i] nodegroup "jay-ng-1-worker" has 2 node(s)
[i] node "ip-10-0-1-211.ec2.internal" is not ready
[i] node "ip-10-0-2-104.ec2.internal" is ready
[i] kubectl command should work with "/home/jay/.kube/config", try 'kubectl get nodes'
[✓] EKS cluster "eks1-jay-cluster" in "us-east-1" region is ready
jay@Jay-Patel:Videos $
jay@Jay-Patel:Videos $

```

```

jay@Jay-Patel:Videos $ eksctl get cluster
NAME              REGION
diksha-eks        us-east-1
eks1-jay-cluster  us-east-1
jay@Jay-Patel:Videos $

```

eks1-jay-cluster

[Delete](#)

General configuration

Kubernetes version

1.14

Platform version

eks.9

Status

Updating

API server endpoint

<https://2C82583F4D666216BBC545CF60F1899C.gr7.us-east-1.eks.amazonaws.com>

OpenID Connect provider URL

<https://oidc.eks.us-east-1.amazonaws.com/id/2C82583F4D666216BBC545CF60F1899C>

Certificate authority

```
LS0tLS1CRUdJTIBDRVJUSUZJQ0FUR50tLS0tCk1JSUN5REND
QWJDZ0F3SUJBZ0lCQURBTklna3Foa2lHOXcwQkFRc0ZBREJ
WTVJND0VRWURWUVFERXdwcmlRSmwKY201bGRHVnpNQj
QVRFRld01EUXhNRFlJOTk0RFEaF9wWk1hEVE1ZTlURRd0Q9ERTBQ
```

Cluster ARN

arn:aws:eks:us-east-1:187632318301:cluster/eks1-jay-cluster

Cluster IAM Role ARN

arn:aws:iam::187632318301:role/eks-cluster-jay

```
jay@Jay-Patel:~ $ kubectl get svc
NAME                TYPE        CLUSTER-IP    EXTERNAL-IP    PORT(S)    AGE
kubernetes          ClusterIP   172.20.0.1    <none>         443/TCP    13m
jay@Jay-Patel:~ $ kubectl get node
NAME                                STATUS    ROLES    AGE    VERSION
ip-10-0-1-132.ec2.internal          NotReady <none>    1s    v1.14.9-eks-1f0ca9
jay@Jay-Patel:~ $
```

2. Authentication Management

1. Add new 1 IAM user into the cluster

```
jay@Jay-Patel:~ $ kubectl edit -n kube-system configmap/aws-auth
```

Add this in configmap/aws-auth in kube-system to give access to eks cluster to deploy the pods.

```
mapUsers: |
```

```
- userarn: arn:aws:iam::187632319301:user/jay.patel@tothenew.com
```

```
  username: jay
```

```
  groups:
```

```
- system:masters
```

2. Enable a EC2 server to access Cluster master API without using access/secret key

Create policy

1

2

A policy defines the AWS permissions that you can assign to a user, group, or role. You can create and edit a policy in the visual editor and using JSON. [Learn more](#)

This policy contains an error. You are required to choose a resource. [Learn more](#)



Visual editor

JSON

[Import managed policy](#)

[Expand all](#) | [Collapse all](#)

▼ EKS (All actions)

[Clone](#) [Remove](#)

▶ Service EKS

▶ Actions Manual actions

*

▶ Resources All resources

Create policy

1

2

Review policy

Name*

jay-eks1

Use alphanumeric and '+,=, @, _' characters. Maximum 128 characters.

Description

jay-eks-testing-ec2

Maximum 1000 characters. Use alphanumeric and '+,=, @, _' characters.

Summary

Filter

Service ▼

Access level

Resource

Request condition

Allow (1 of 226 services) [Show remaining 225](#)

EKS

Full access

All resources

None

[Instances](#) > Attach/Replace IAM Role

Attach/Replace IAM Role

Select an IAM role to attach to your instance. If you don't have any IAM roles, choose Create new IAM role to create a role in the IAM console. If an IAM role is already attached to your instance, the IAM role you choose will replace the existing role.

Instance ID i-08d9591fea4917f0c (Aman) ⓘ

IAM role*

jay-eks1-ec2 ▼



[Create new IAM role](#) ⓘ

* Required

[Cancel](#)

[Apply](#)

```
aws eks describe-cluster --name eks1-jay-cluster --region us-east-1
```

3. Eksctl command to terminate the stack

```
eksctl delete cluster -f jay-eks.yml
```